



EMEA WSEC 2023

Europe, Middle East, Africa

HYBRID EVENT

Workshop and Conference

Sevilla, Spain - 24-26 April, 2023



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Welcome from the Event Chair

I want to welcome you to the most representative event of INCOSE EMEA in 2023 on behalf of the EMEA WSEC 2023 organizing committee. This year a unique event combining the conference and the workshop in Seville, Spain. It will be an effective forum for academicians, researchers, and practitioners to advance knowledge, research, and technology aligned with the INCOSE Vision 2035 for a better world. With a theme inspired by the vital role that Systems Engineering can play in achieving the United Nations Sustainable Development Goals (UN SDGs), targeting Societal Challenges, and focusing on highly complex systems. One of the central aims of the event is to exchange ideas and to create networks within INCOSE EMEA, especially after the pandemic years we had. The agenda of this conference covers a wide range of exciting topics related to all theoretical and practical aspects of sustainability, including but not limited to Systems Engineering in a Sustainable World. Furthermore, social events will allow you to exchange thoughts with colleagues and create memories with them. We are creating a better world for all of us through Systems Engineering!

Anabel Fraga
Event Chair

Welcome from the Program Chair

On behalf of the EMEA WSEC 2023 technical program committee, I wish you all a very warm welcome to the first joint workshop and conference held by INCOSE's EMEA sector. Our chosen theme of sustainability has resulted in high engagement from across the systems engineering community and signals a call to action for systems engineering practitioners to help solve some of our biggest global issues. Now is the time to find our voice to ensure a better world for the future. I'm truly proud of the diverse program we have put together and that we can provide both an in-person and virtual offering to maximise the interactions whilst remaining inclusive to those who cannot travel. A wonderful occasion awaits, enabling professional and social exchanges with friends and colleagues both old and new. We hope you enjoy the variety of sessions on offer and seize the opportunity to make a difference.

Peter Graham
Program Chair

Program Committee

Event Chair Anabel Fraga, *Spain*
Technical Chair Louwrence Erasmus, *South Africa*
Program Chair Peter Graham, *UK*
Technical Workshop Chair Jean-Claude Roussel, *France*
Financial Chair René Oosthuizen, *South Africa*
Communications and Quality Chair David Ward, *Italy*
Technical Conference Co-Chair Omar Hammami, *France*
Technical Workshop Co-Chair Luca Paladino, *France*
Session Chair Coordinator Carlo Leardi, *Italy*
Chair for Student Outreach Tom Aldous, *UK*
Communications management Luis Andrés Olmedo, *Spain*
Sector EMEA Director Sven-Olaf Schulze, *Germany*
Event Management KMD Events

Special Thanks to Cecilia Haskins, Historian and Advisor. For her support to the Event Chair and the TPC.

About Sevilla

Sevilla, the capital of Andalusia, currently has almost 700,000 inhabitants. For centuries it has been famous for the leisure activities offered by its river, and for the Real Alcázar monument. The latter is where the royal family stay upon their visits to Sevilla, making it the oldest royal palace in Europe that is still in use. During your trip, you will discover the Feria de Abril, a lively annual festival since 1846. You will be able to enjoy delicious Spanish fare, while experiencing century-old Sevilla traditions.



Sevilla, capital de Andalucía, cuenta hoy casi 700 000 habitantes. Tiene su fama gracias a su actividad fluvial desde varios siglos. Uno de sus monumentos más importantes de Sevilla es el Real Alcázar. Palacio Real más viejo de Europa que sigue siendo usado como tal y es en este mismo que suele venir la familia Real de España cuando viene de visita a Sevilla.

Durante vuestro viaje en Sevilla, vais a descubrir la feria de abril que se establezco en 1846. Es la ocasión para todos de probar muchas comidas típicas de España, pero también de descubrir las tradiciones sevillanas que siguen siendo desde siempre.



Watch more about Sevilla <https://youtu.be/e8DdY4Ypttl>

General Information

Registration

The EMEA WSEC 2023 registration desk is located on Ground Floor and is open:

Sunday 23 April: 15:00 to 18:00
Monday 24 to Wednesday 26 April: 07:30 to 16:15

Badges

Yellow *Day Attendance*
White *Full Registration*
Purple *Guests*

Breakfasts

Breakfasts will not be provided by the event organisers. If you are staying at the Barceló Sevilla Renacimiento, breakfast for one person is included in the room rate and will be served at the hotel restaurant from 06:00 to 08:00.

Breaks

Morning and afternoon breaks will be served in the Ballroom Foyer. Morning breaks are from 10:30 to 11:00, Monday, Tuesday and Wednesday. Afternoon breaks from 15:00 to 15:30 Monday, Tuesday and Wednesday.

Lunches

Buffet lunches will be served from 12:30 to 13:30 in Restaurant Colón - Ground Floor.

Receptions

Ice Breaker Reception (*Ticket required*) - Foyer – Ground Floor
Monday, 24 April - 18:00 - 20:00

Social Event (*Ticket required*)
Tuesday, 25 April - 17:00 - 20:00
Departure from the hotel @ 16:15 by bus
please bring your passport with you.

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To connect to the internet, please use the wifi network
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Connect to the platform to access the e-proceedings. Enter the email address used to register to the Conference and the confirmation number included in your confirmation e-mail. Then you can navigate through the program to download individual papers or all papers.

Social Media

Help create some online Buzz by tweeting #EMEAWSEC, @incose_org

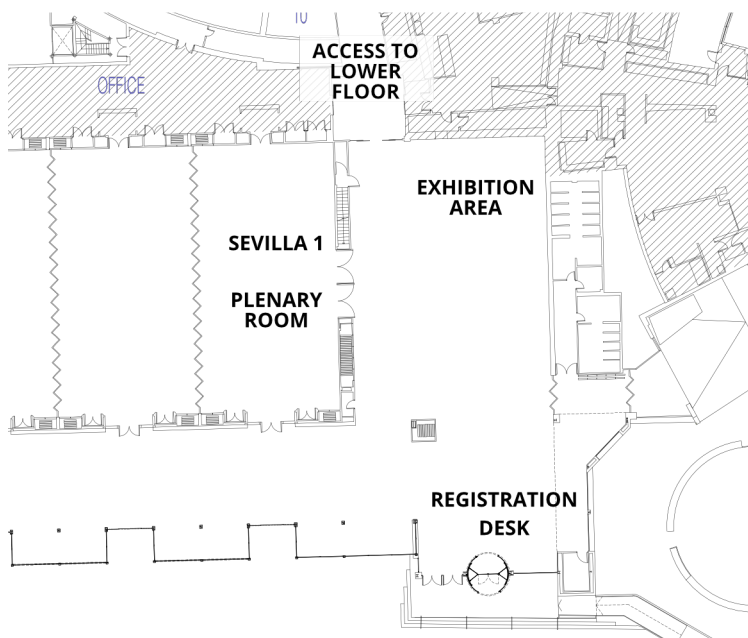
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Flash the QR code below or connect to the website with your smartphone or tablet and you will receive instructions how to download the app for Apple or Android devices.

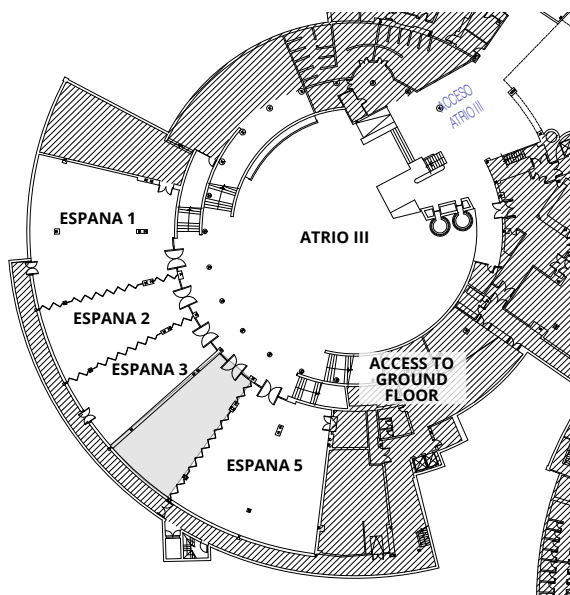


Floorplan

Ground floor



Lower floor



Exhibition

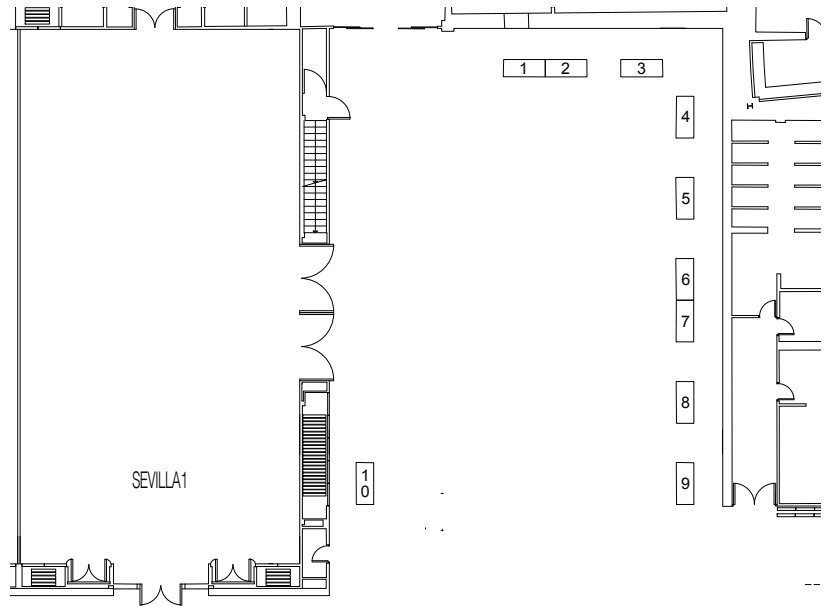
Exhibitors to date

Double

Jama Software	6-7
ULMA Embedded Solutions	1-2

Single

Dassault Systèmes	9
Ingenieria de Sistemas para la Defensa de España sa sme mp - ISDEFE	4
Project Performance International	3
The MathWorks S.L.	10
The REUSE Company	8
Tom Sawyer Software	5



Show Hours

Monday, 24 April	10:30 – 18:00
Tuesday, 25 April	10:30 – 16:00
Wednesday, 26 April	10:30 – 16:00



Monday Program

08:15	■	Welcome and Introduction	Sevilla 1
08:45	■	Welcome from INCOSE EMEA Sector Director, INCOSE President, and INCOSE President-Elect	Sevilla 1
09:05	■	 Keynote 1 : Some key messages from the 6th IPCC Synthesis Report <i>Gerhard Krinner (CNRS - IPCC)</i>	Sevilla 1
09:50	■	Announcement and Good day	Sevilla 1
10:00	■	Jama Software <i>Session: 1.1 sponsored by Jama Software</i>	Sevilla 1
	■	Semantic Systems Engineering - A case study with SAFRAN Group <i>Presenter(s): Jose Fuentes (The REUSE Company)</i> <i>Session: 1.2 sponsored by The REUSE Company</i>	España 1
	■	Tom Sawyer Software <i>Session: 1.3 sponsored by Tom Sawyer Software</i>	España 5
	■	INGENIERIA DE SISTEMAS PARA LA DEFENSA DE ESPAÑA SA SME MP - ISDEFE <i>Session: 1.4 sponsored by ISDEFE</i>	España 3
	□	SEP Test <i>Session: 1.5</i>	España 2
10:30		Break	Foyer 1
11:00	□	INCOSE Vision 2035 <i>Heinz Stoewer</i> <i>Session: 2.1.1</i>	Sevilla 1
	■	Realizing Digital Threads for engineering of sustainable products <i>Eran Gery (IBM)</i> <i>Session: 2.2.1</i>	España 1
	■	An MBSE Approach for Argonaut <i>Alberto Gonzalez Fernandez, Elaheh Maleki, Ludovic Duvet, Manon Tarrade (European Space Agency)</i> <i>Session: 2.3</i>	España 5
	■	Empowering Women Leaders in SE & Diversity, Equity and Inclusion Awareness <i>Anabel Fraga</i> <i>Session: 2.4</i>	España 3
	■	Engineering Sustainable Astronomical Research Infrastructure <i>Gelys Trancho, Sarah Gajadhar (TMT International Observatory)</i> <i>Session: 2.6.1</i>	Virtual Room 1
11:45	□	Introduction of Future of Systems Engineering (FuSE) initiative <i>Presenter(s): William Miller ; Ralf Hartmann</i> <i>Session: 2.1.2</i>	Sevilla 1
	■	Next-Generation Completeness and Consistency Management in the Digital Thread of the Future <i>Géza Kulcsár (inquiry labs)</i> <i>Session: 2.2.2</i>	España 1
	■	From Operational Concept Development to Systems Architecture Definition with SysML and MBSE Grid approach <i>Aurelijus Morkevicius, Aiste Aleksandraviciene</i> <i>Session: 3.3</i>	España 5
12:30		Lunch Sponsored by 	Restaurant Colón
13:30	□	FuSE Session 1: How might we advance Systems Engineering Methodologies to Engineer a more Sustainable World? A FuSE Workshop <i>Chris Hoffman, Martina Feichtner, Stephan Finkel</i> <i>Session: 3.1</i>	Sevilla 1
	■	Past, Present and Future of Systems Science as a Scientific Foundation of SE <i>Javier Calvo-Amodio, James Martin</i> <i>Session: 3.2</i>	España 1














Monday Program

13:30	Setting a common Systems Engineering Language: How concepts mapping can help <i>Jean Duprez</i> <i>Session: 3.4</i>	<i>España 3</i>
	How to apply for CSEP? <i>Courtney Wright, Joshi Mrunmayi (INCOSE)</i> <i>Session: 3.5.1</i>	<i>España 2</i>
	UAE's Energy System and GHG Emissions Reduction Pathways to Achieving National Goals by 2050 <i>Ammar Hummieda, Ali Bouabid (Khalifa University)</i> <i>Session: 3.6.1</i>	<i>Virtual Room 1</i>
13:55	How to Apply for ESEP <i>Courtney Wright, Frederic Autran (INCOSE)</i> <i>Session: 3.5.2</i>	<i>España 2</i>
14:15	How to Apply for Academic Equivalency <i>Courtney Wright, Bernardo Delicado (INCOSE)</i> <i>Session: 3.5.3</i>	<i>España 2</i>
	Interoperable Smart and Sustainable Urban Energy Systems (ISSUES) <i>Anabel Fraga (UC3M University); Raul Pastor (Seam, UC3M University); Luis López-Cozar (Azentúa)</i> <i>Session: 3.6.2</i>	<i>Virtual Room 1</i>
14:40	Impact of INCOSE Systems Engineering Handbook update on Certification Process <i>Courtney Wright, Joshi Mrunmayi (INCOSE)</i> <i>Session: 3.5.4</i>	<i>España 2</i>
15:00	<i>Break</i>	<i>Foyer 1</i>
15:30	Redefining and customizing the validation strategy to ensure accomplishment of UNESCO's Sustainable Development Goals. <i>Alberto Sols</i> <i>Session: 4.1.1</i>	<i>Sevilla 1</i>
	The ENYSE journey to build innovative and more sustainable products <i>Almudena Duran Peña (IBM)</i> <i>Session: 4.2.1</i>	<i>España 1</i>
	Smart Cities Initiative Metrics and UN Sustainability Goals : How to make it a perfect match <i>Jennifer Russell, Marcel Van de Ven, Matthew Hause</i> <i>Session: 4.4</i>	<i>España 3</i>
	Natural Systems <i>Curt McNamara</i> <i>Session: 4.5</i>	<i>España 2</i>
	Circular human sphere – The conceptual development of embedding a social pillar in the Circular Economy framework <i>Leandi Van der Linde, Siebert Benade (GSTM University of Pretoria)</i> <i>Session: 4.6.1</i>	<i>Virtual Room 1</i>
16:15	Engineering a sustainable world by enhancing the scope of systems of systems engineering and mastering dynamics <i>Rasmus Adler, Frank Elberzhager, Florian Balduf (Fraunhofer IESE)</i> <i>Session: 4.1.2</i>	<i>Sevilla 1</i>
	Challenges of systems engineering approach for innovative technologies <i>Kelly Lance (Nova Systems)</i> <i>Session: 4.2.2</i>	<i>España 1</i>
	Evolving the Systems Engineering Discipline to Address Global Challenges <i>Peter Brook (INCOSE Fellow)</i> <i>Session: 4.6.2</i>	<i>Virtual Room 1</i>
17:00	Workshop Feedback and Announcements <i>Session: P2</i>	<i>Sevilla 1</i>
18:00	<i>Ice Breaker Reception</i>	<i>Foyer 1</i>

Tuesday Program

08:15	■	Welcome and Introduction	Sevilla 1
08:25	■ 	Keynote 2 : Systems Engineering support for Industry to meet UN SDG <i>Cecilia Haskins (NTNU and USN)</i>	Sevilla 1
09:10	■	Announcement and Good day	Sevilla 1
09:15	■	ULMA Embedded Solutions <i>Session: 5.1 sponsored by ULMA Embedded Solutions</i>	Sevilla 1
	■	Dassault Systèmes <i>Session: 5.2 sponsored by Dassault Systèmes</i>	España 1
	■	Project Performance International <i>Session: 5.3 sponsored by Project Performance International</i>	España 5
	■	Bridging the Gap: What MathWorks Brings to MBSE <i>Presenter(s): Andrew Grabowski</i> <i>Session: 5.4 sponsored by The MathWorks S.L.</i>	España 3
09:45	□	Presidential Address <i>Session: 6.1</i>	Sevilla 1
09:45	■	SE application in Nuclear Big Science <i>Sebastiaan Voorderhake (Belgian Nuclear Research Centre)</i> <i>Session: 6.2</i>	España 1
	■	Enabling Architecture Thinking by using Architecture Spaces <i>Presenter(s): Anand Kumar</i> <i>Session: 6.3</i>	España 5
	■	Keeping People First in the Smart Cities Enterprise <i>Matthew Hause (SSI); Lars-Olof Kihlström (Syntell AB); Jennnifer Russell (Garver)</i> <i>Session: 6.4</i>	España 3
	■	Digital Interface Management System (DIMS) <i>Joshi Mrunmayi (ISAE Supaero); Mudit Mittal (Blue Kei)</i> <i>Session: 6.5</i>	España 2
10:30	■	Break Sponsored by  MathWorks	Foyer 1
11:00	■	The Archimedes Initiative: a Global Research Network <i>Moderator(s): Dinesh Verma (Stevens Institute of Technology);</i> <i>Panelist(s): Wouter Leibbrandt (TNO/Embedded Systems Institute (ESI)); Tom McDermott</i> <i>(Stevens Institute of Technology); Martin Törngren (KTH Royal Institute of Technology); André</i> <i>Bolles (Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR));</i> <i>Session: 7.1</i>	Sevilla 1
	□	FuSE Session 2: Extend the SE Vision 2035's Systems Engineering Challenges and Roadmap with active contribution by the EMEA participants <i>Paul Schreinemakers, Martina Feichtner, Stephan Finkel</i> <i>Session: 7.2</i>	España 1
	■	Sustainability enabled by Configuration Management <i>Adriana D'Souza</i> <i>Session: 7.4</i>	España 3
	■	Lean Healthcare Systems Engineering Process for Clinical Environment <i>Bo Oppenheim</i> <i>Session: 7.5</i>	España 2
	■	Study on the relationship between leadership and management from a Systems Engineering perspective <i>Anabel Fraga (Universidad Carlos III de Madrid); Natalie Davila-Rendon (LMCO); Raymond</i> <i>Wolfgang (Sandia); Luis Andes (INDRA); Francesco Dazzi (INAF - National Institute for</i> <i>Astrophysics); Elena Gallego Palacios (Thales); Adam Williams (Sandia)</i> <i>Session: 7.6.1</i>	Virtual Room 1

Tuesday Program

11:45		Exploring Explainable Artificial Intelligence to aid Systems Engineers in Design and Evaluation of Complex Systems <i>Ali K. Raz, Shou Matsumoto, Paulo Costa (George Mason University)</i> <i>Session: 7.6.2</i>	<i>Virtual Room 1</i>
12:30		Lunch Sponsored by 	<i>Restaurant Colón</i>
13:30		FuSE Session 3: Systems Engineering Foundations: An experiment on the Conservation of Complexity. A FuSE Workshop <i>Joshua , Martina Feichtner, Stephan Finkel</i> <i>Session: 8.1</i>	<i>Sevilla 1</i>
		Hazardous Waste Treatment <i>Moshe Katz</i> <i>Session: 8.2</i>	<i>España 1</i>
		PM-SE Integration : Focus on a serious game for students on eco-design considerations <i>España 3</i> <i>Jean-Claude Roussel, Jean-François Veron, John Lomax</i> <i>Session: 8.4</i>	
		Requirements Use Case on Sustainability <i>Tami Katz, Lou Wheatcraft, Jean Duprez</i> <i>Session: 8.5</i>	<i>España 2</i>
		MBSE Maturity Levels in European Railway Sector <i>Marc Sango (SNCF)</i> <i>Session: 8.6.1</i>	<i>Virtual Room 1</i>
14:15		Creating a general Collaborative Systems Thinking Culture in 7-steps for any organization and any sustainability application <i>Anabel Fraga (Universidad Carlos III de Madrid); Mickael Bouyaud (Ingenico); Natalie Davila-Rendon (Lockheed Martin Corporation); Raymond Wolfgang (SANDIA); Alex Deng (SNC-Lavalin Atkins); Jean Duprez (Airbus); Leema John (Eli Lilly & Company); Ryan Noguchi (Aerospace Corp.); Erika Palmer (Cornell University); Jay Patel (Lockheed Martin Corporation); Maria Romero (Aerospace Corp.); Michael Wozniak (Lockheed Martin Corporation)</i> <i>Session: 8.6.2</i>	<i>Virtual Room 1</i>
15:00		Break Sponsored by 	<i>Foyer 1</i>
15:30		Workshop Feedback and Announcements <i>Session: P4</i>	<i>Sevilla 1</i>
17:00		Social Event	
		Sponsored by 	

Wednesday Program

08:15	■	Welcome and Introduction	Sevilla 1
08:25	■	 Keynote 3 : Leading for a Sustainable Future <i>David Long (Blue Holon)</i>	Sevilla 1
09:10	■	Announcement and Good day	Sevilla 1
09:15	■	Jama Software <i>Session: 9.2 sponsored by Jama Software</i>	España 1
09:15	■	ULMA Embedded Solutions <i>Session: 9.3 sponsored by ULMA Embedded Solutions</i>	España 5
09:45	□	Technical Director Address <i>Session: 10.1</i>	Sevilla 1
	■	Utilization of integrated simulation modeling for process flow analysis and improvement in the Emergency Department <i>Aleksander Buczacki (Warsaw University of Technology); Ali Ghobadi (Kaiser Permanente Bernard J. Tyson School of Medicine, Department of Clinical Science, Pasadena, CA); Hassan Movahedi (Kaiser Permanente Orange County); Bohdan Oppenheim (Loyola Marymount University)</i> <i>Session: 10.2</i>	España 1
	■	Perspectives on Models <i>Erik Herzog (SAAB AB); Johanna Axehill (Saab AB); Åsa Nordling Larsson (Saab)</i> <i>Session: 10.3</i>	España 5
	■	Unifying the views of ecological and engineering resilience in applications of coupled human systems modelling for sustainable development <i>Steve Conrad (Colorado State University)</i> <i>Session: 10.4</i>	España 3
	■	Transformation Challenges in Transportation Industry and IVECO Group Approach <i>Tugrul Yildirim, Felice Radogna, Ayman Mokdad (IVECO Group)</i> <i>Session: 10.5</i>	España 2
10:30		Break	Foyer 1
11:00	□	FuSE Session 4: Extending systems engineering application to address climate change <i>Sevilla 1</i> <i>Gerhard Krinner, Tom Strandberg, Martina Feichtner, Stephan Finkel</i> <i>Session: 11.1</i>	
	■	Human System Integration (HSI) for Sustainability <i>Guy Boy, Christophe Merlo, Avi Harel, Grace Kennedy, Gauthier Fanmuy, Jean-Jacques Speyer, Stéphane Vales</i> <i>Session: 11.2</i>	España 1
	■	What if Architecture is a lever of Sustainability for Complex Systems <i>Christophe Surdieux, Jean-Luc Wippler, Prakhar Agarwal, Stéphane Rivet, Olivier Klotz</i> <i>Session: 11.3</i>	España 5
	■	Academic Council in EMEA Sector <i>Alejandro Salado, Rob Vingerhoeds</i> <i>Session: 11.4</i>	España 3
	■	Systems and SoS Engineering challenged to support EU's ambitious sustainability plans (focus on the 100% Electric Vehicle @2035 case) <i>Yann Chazal, Mickael Bouyaud, Stephen Powley</i> <i>Session: 11.5</i>	España 2
	□	SystSystems Thinking: From Pioneering to Mainstream <i>Presenter(s): Mike Jackson</i> <i>Session: 11.6.1</i>	Virtual Room 1

Wednesday Program

11:45		Automatic creation of trace links based on model content and meta data <i>Virtual Room 1</i> Martin Leo Valdivia Dabringer, Carina Freseemann, Rainer Stark (Technische Universität Berlin) <i>Session: 11.6.2</i>	
12:30		Lunch Sponsored by 	<i>Restaurant Colón</i>
13:30		Architecting sustainable infrastructure projects <i>Sevilla 1</i> Moderator(s): Rashmi Jain (Montclair State University); Panelist(s): Michael Salvato (Mott MacDonald); Yoshimasa Masuda (Carnegie Mellon University); Mark Enzer (Mott MacDonald); Naohiko Kohtake (Keio University); <i>Session: 12.1</i>	
		Architecting Sustainable Systems <i>España 1</i> Anand Kumar, Gary Smith, Mickael Bouyaud, Peter Bernus <i>Session: 12.2</i>	
		Human Centric Artificial Intelligence for Sustainable SE <i>España 5</i> Herve Panetto, Barclay Brown, Nouria Oliver <i>Session: 12.3</i>	
		Integration of Sustainable Development and Societal Responsibility in SE education : the example of Aquapoinc Greenhouse project <i>España 3</i> Christophe Merlo, Rob Vingerhoeds <i>Session: 12.4</i>	
		ISO STEP Standard and Systems Engineering <i>España 2</i> Pascal Hubert, Kyle Hall, Juan Carlos Mendo <i>Session: 12.5</i>	
15:00		Break <i>Foyer 1</i>	
15:30		Workshop Feedback <i>Sevilla 1</i>	
16:00		Awards Ceremony <i>Sevilla 1</i>	
16:15		Farewell and Announcement <i>Sevilla 1</i>	

INCOSE Mission

Overview

The International Council on Systems Engineering (INCOSE) is a not-for-profit membership organization that promotes international collaboration in systems engineering practice, education and research.

Vision

A better world through a systems approach.

Mission

To address complex societal and technical challenges by enabling, promoting, and advancing systems engineering and systems approaches.

Strategic Objectives

Premier. INCOSE is the premier choice of systems engineers everywhere for their professional development needs.

Future. INCOSE leads the community in shaping the future of systems engineering.

Value. INCOSE delivers ever greater value to a growing and increasingly diverse membership.

50+
Working Groups

100+
Corporate Advisory
Board Members

**Vibrant Academic
Community**
Faculty, Curriculum, Research,
Student Divisions, Youth Outreach

Chapters
70+ Chapters in over 35 Countries

For additional information about INCOSE,
visit our website www.incose.org
or contact us at info@incose.org

(FuSE)

Future of Systems Engineering

Vision: Inspire the global community to realize the SE Vision

- FuSE refines and evolves the SE Vision 2035 across competencies, research, tools & environment, practices, and applications.
- FuSE identifies critical gaps towards the vision realization and initiates & supports relevant actions
- FuSE fosters involvement and collaboration within and outside of INCOSE.
- FuSE educates, shares success, and expands.

The FuSE Program is organized in 4 streams.

Vision & Roadmaps



The Systems Engineering Vision and Roadmaps stream continuously refines, evolves, and complements the SE Vision 2035. Furthermore, the Vision and Roadmaps stream creates an integrated set of roadmaps across the four FuSE streams. The streams are interrelated and concurrently guide and influence each other. The intermediate stream goal is to frame the structural relationships and value models to support the roadmaps creation.

Foundations



The SE Foundations stream has its basis in both theory and industrial practice. The intermediate stream goal is to assess the adequacy of the foundations and identify gaps to determine future directions. Special consideration will be given to the theoretical foundation of the SE as a discipline on one hand and the practical application foundations using principles and heuristics on the other hand.

Methodologies



The SE Methodologies stream guides the advancement of practices, methods, and tools for engineering systems to be fit for purpose at the scale, interrelatedness, complexity, non-determinism, and emerging technology innovations such as AI and agility. The intermediate stream goal is to assess the adequacy of current INCOSE technical products, ongoing FuSE projects in this stream, and identify gaps.

Application Extensions



The SE Application Extensions stream integrates social sciences, soft systems, as well as initiatives such as Smart Cities to address grand challenges to meet human and societal needs as stated in the United Nations Sustainable Development Goals. The intermediate stream goal is to frame the value model to justify systems engineering's role at the policy table for these grand challenges.

INCOSE Certification

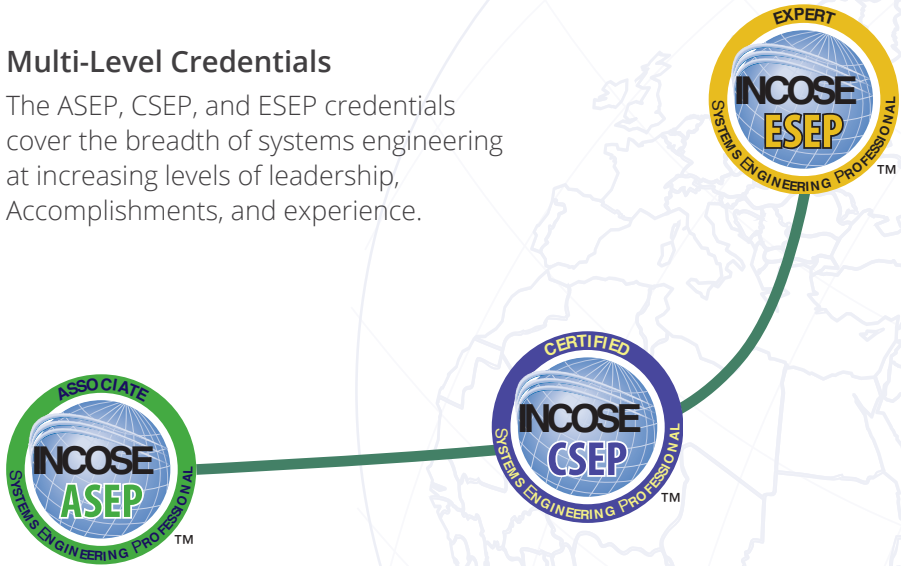
The International Council on Systems Engineering established a multi-level Certification Program to provide a formal method for recognizing the knowledge and experience of Systems Engineering Professionals (SEPs), regardless of where they may be in their career.

4000+
Certified

40+
Countries

Multi-Level Credentials

The ASEP, CSEP, and ESEP credentials cover the breadth of systems engineering at increasing levels of leadership, Accomplishments, and experience.



What is Certification?

Certification is a formal process whereby a community of knowledgeable, experienced, and skilled representatives of an organization, such as INCOSE, provides confirmation of an individual's competency (demonstrated knowledge, education, and experience) in a specified profession. Certification differs from licensing in that licenses are permissions granted by a government entity for a person to practice within its regulatory boundaries. Certification also differs from a "certificate" that documents the successful completion of a training or education program, in that it is not guaranteed simply by paying a fee, and certification must be maintained.

www.incose.org/certification

Notes





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Georgia Tech Research Institute, Johns Hopkins Whiting School of Engineering, LieberLieber Software GmbH - IncQuery, MathWorks, Systems Engineering Research Center, Tom Sawyer Software, University of Connecticut, University of Maryland-Engineering

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4

Days

2

Social events

11

Breaks and lunches

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and contact us TODAY - The IS2023 Organizing Team

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AUG
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SEPT
14-17

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