34th Annual INCOSE
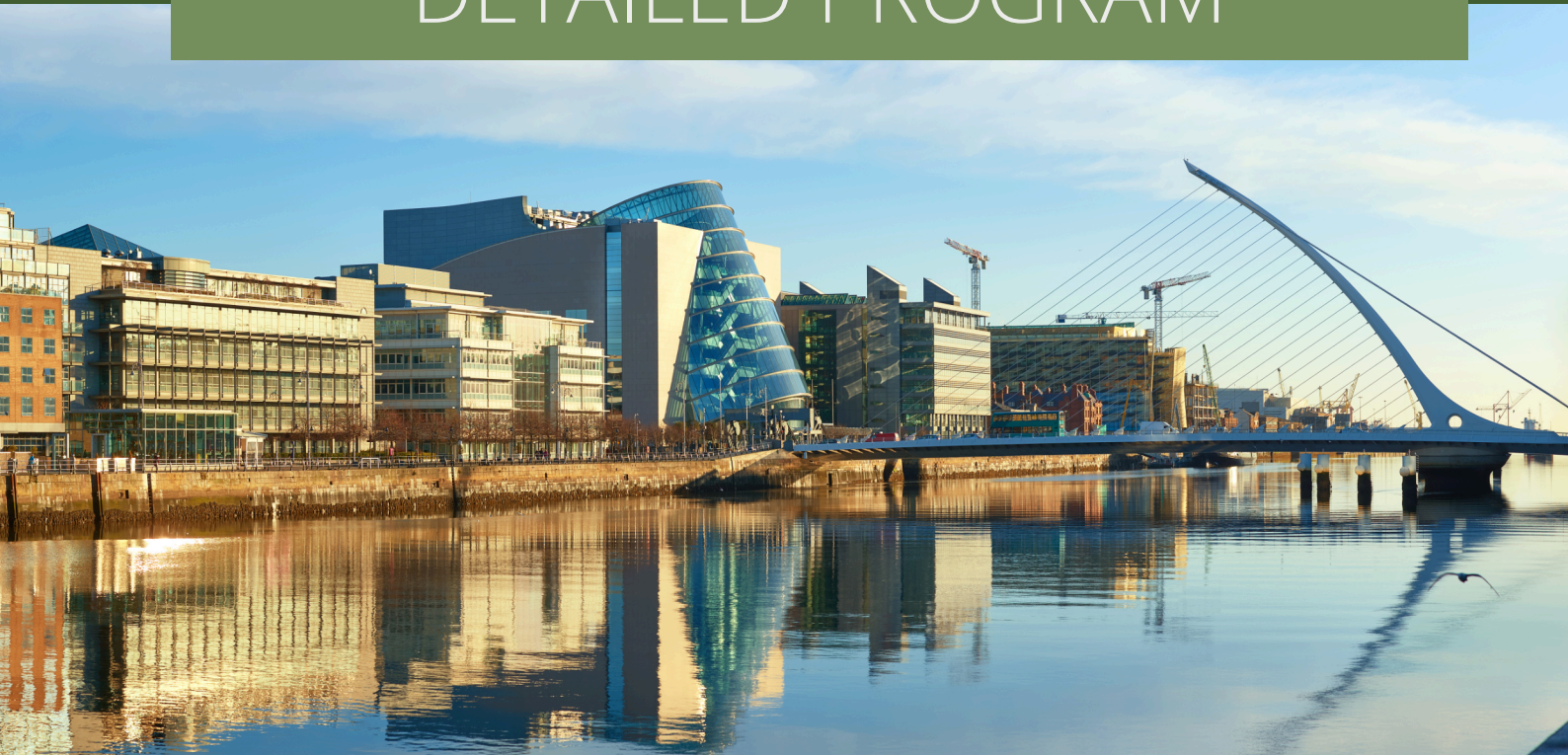## international symposium

hybrid event

Dublin, Ireland
July 2 - 6, 2024
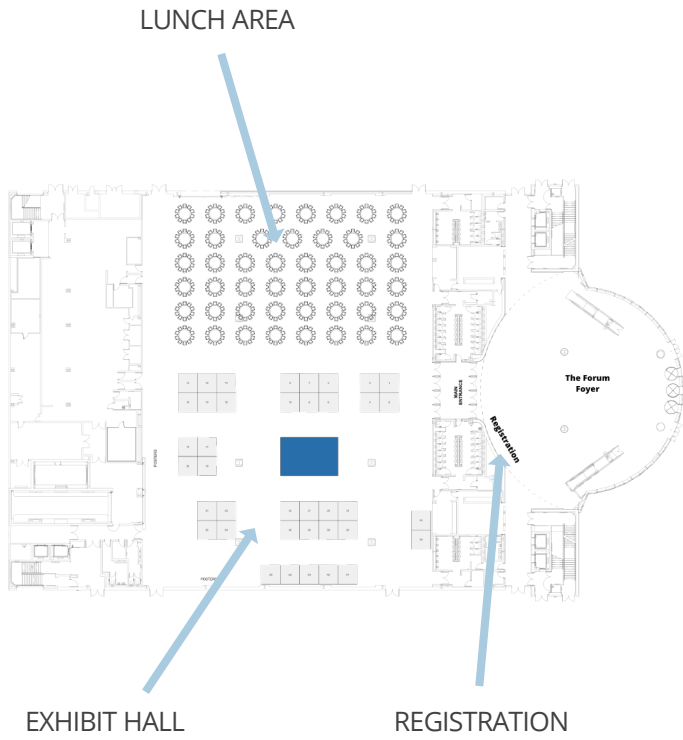
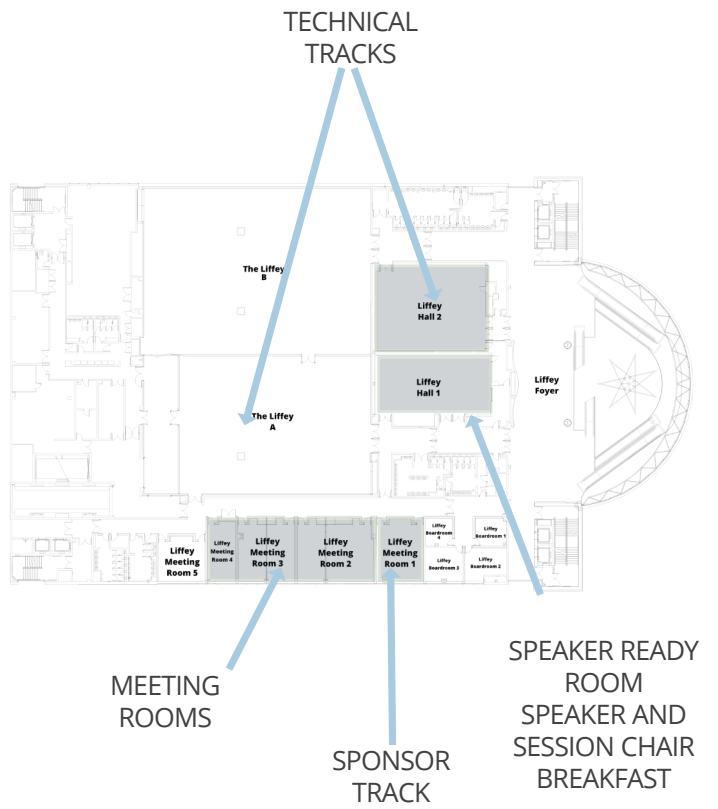## DETAILED PROGRAM

Program as of 20 June 2024
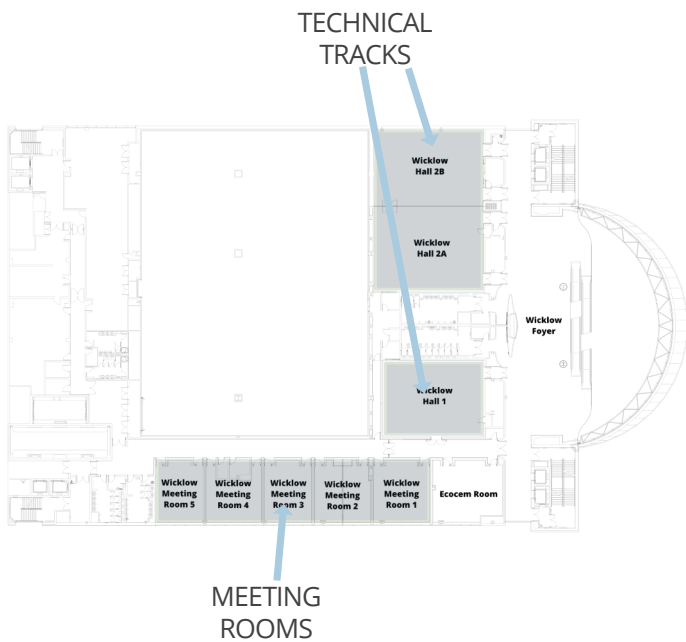
Floorplan

Ground Level

LUNCH AREA

EXHIBIT HALL

REGISTRATION

Level 1

TECHNICAL TRACKS

The Liffey B

The Liffey A

Liffey Hall 2

Liffey Hall 1

Liffey Foyer

Liffey Meeting Room 5

Liffey Meeting Room 4

Liffey Meeting Room 3

Liffey Meeting Room 2

Liffey Meeting Room 1

Liffey Boardroom 4

Liffey Boardroom 3

Liffey Boardroom 2

Liffey Boardroom 1

MEETING ROOMS

SPONSOR TRACK

SPEAKER READY ROOM
SPEAKER AND SESSION CHAIR BREAKFAST

Level 2

TECHNICAL TRACKS

Wicklow Hall 2B

Wicklow Hall 2A

Wicklow Foyer

Wicklow Hall 1

Wicklow Meeting Room 5

Wicklow Meeting Room 4

Wicklow Meeting Room 3

Wicklow Meeting Room 2

Wicklow Meeting Room 1

Ecocem Room

MEETING ROOMS

Level 3

PLENARY ROOM

The Auditorium

Auditorium Foyer

Exhibit Hall

POSTERS

POSTERS

22	INCQUERY 21
MID 24	SE SCHOLAR 23

PDSVISION 20	SENSmetry 19
MathWorks 18	PROJECT PERFORMANCE INTERNATIONAL 17

Ansys 14-16	QRA 15
	13
Tom Sawyer Software 12	IBM 11

A5
A4
A3
A2
A1

ptc 26	Systems Engineering Concept 25
VWAY 28	Georgia Tech Research Institute 27
tracecloud 30	THE REUSE COMPANY 29-31
jama software 32	

INCOSE

INCOSE Village

STUDIO SE 10	Belcan 9
DASSAULT SYSTEMES 6-8	ZUKEN 5-7

SIEMENS 2-4	THALES OBEO 1-3

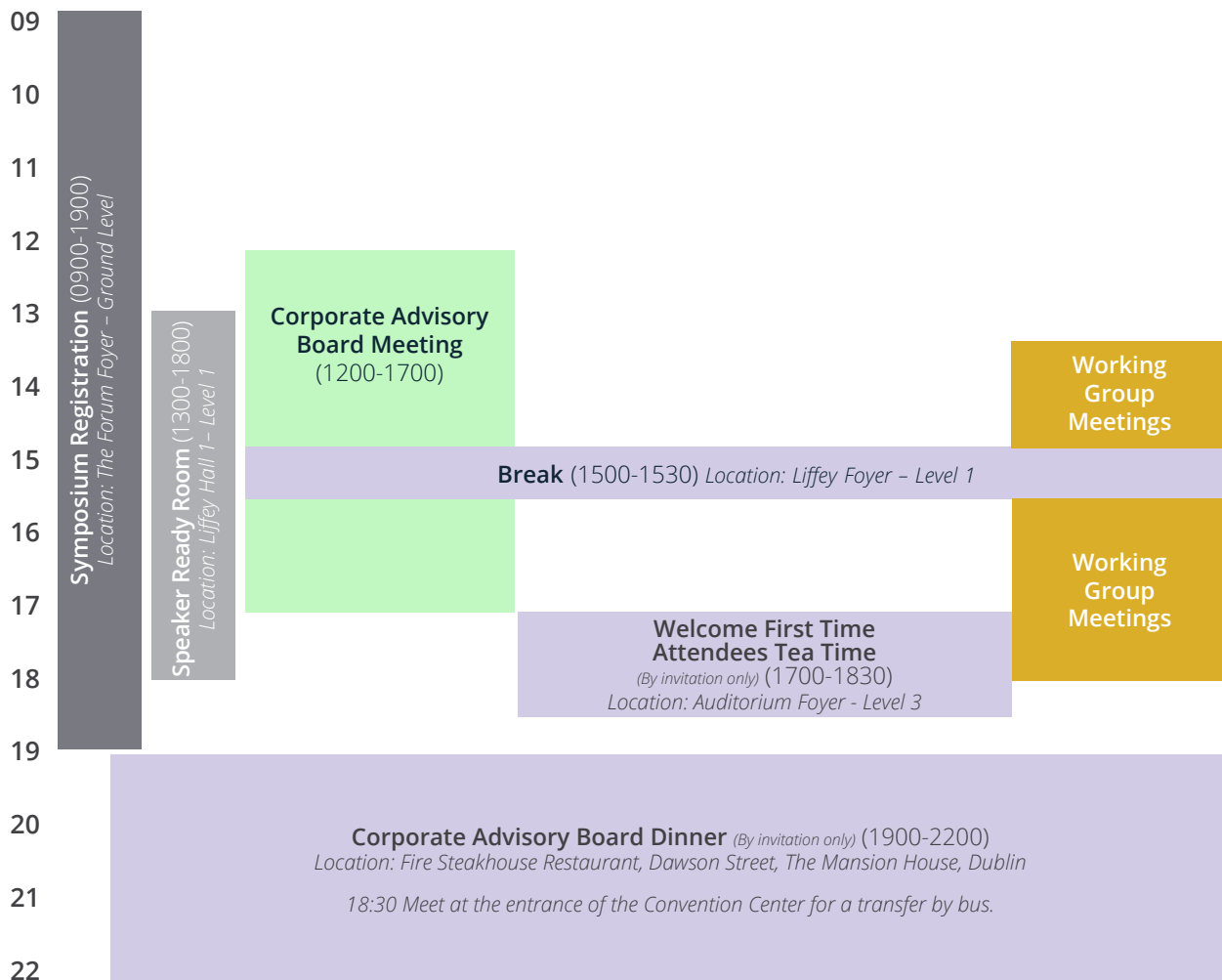UL Solutions
33-34

MAIN ENTRANCE
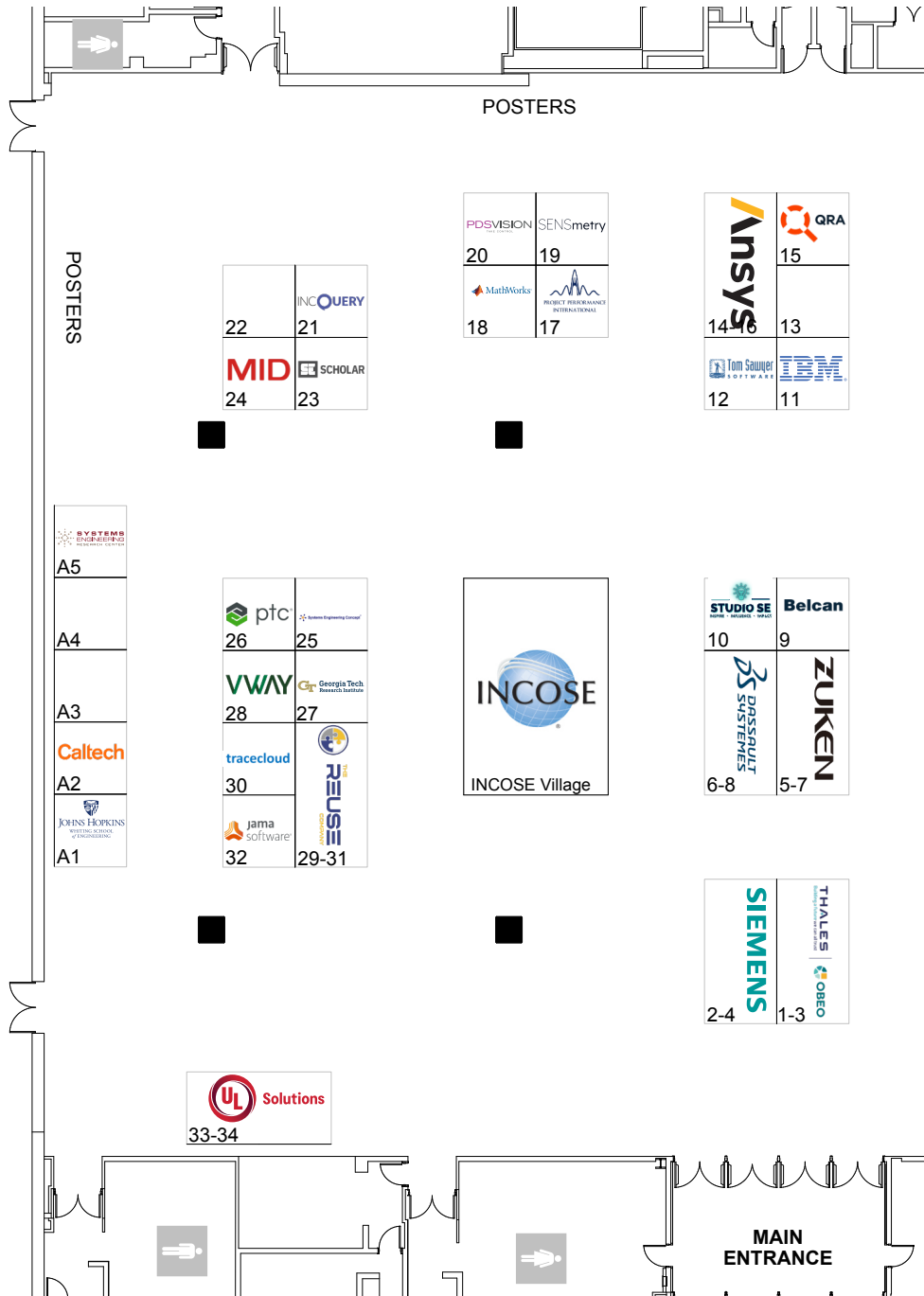
APP

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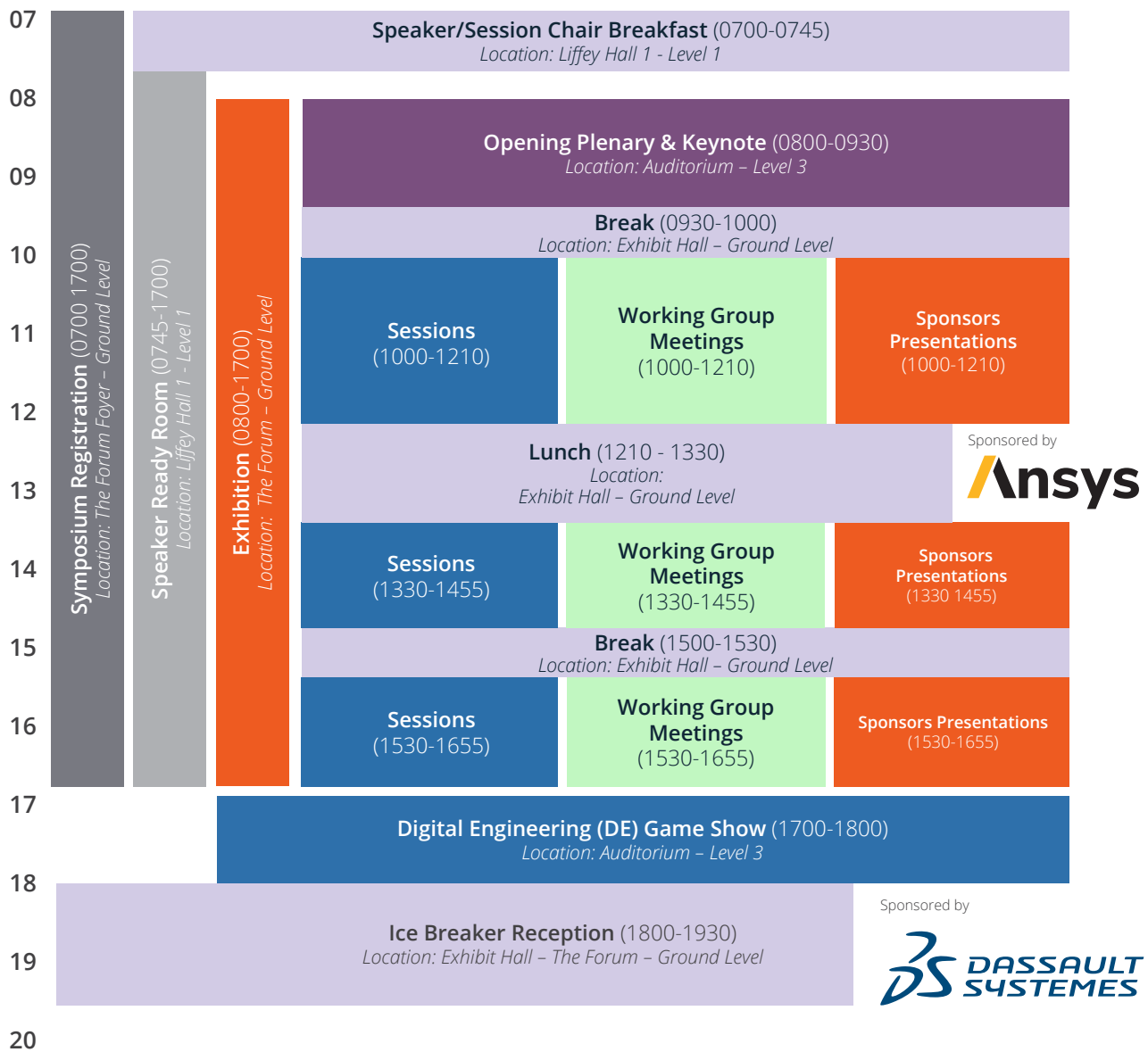
Monday

Overall Schedule

Meeting Name	Time Start	Time End	Meeting Listing	Room
Corporate Advisory Board Lunch	12:00	13:00	By invitation only	Liffey Hall 1
Corporate Advisory Board	13:00	17:00	By invitation only	Wicklow Hall 2A
Decision Analysis Working Group Meeting, Review of the Decision Analysis Data Model (DADM)	13:30	15:00	Open	EcoCem Room
Enterprise Value Working Group - Mid-Year F2F review	13:30	15:00	Open	Liffey Meeting Room 3A
Federated PLM needs and experience sharing	13:30	15:30	Open	Wicklow Meeting Room 1
Academic Council	14:00	16:00	Open	Liffey Meeting Room 3B
embedding Systems Engineering into Organizations	14:30	16:00	Open	Liffey Meeting Room 2B
BKCASE Governing Board	15:30	17:00	By invitation only	Liffey Meeting Room 3A
INCOSE Fellows - General Business	15:30	17:00	Closed	Wicklow Meeting Room 1

Business/Working Groups Meetings

Notes

Tuesday

Overall Schedule

Time				
07	Symposium Registration (0700 1700) *Location: The Forum Foyer – Ground Level*			**Speaker/Session Chair Breakfast** (0700-0745) *Location: Liffey Hall 1 - Level 1*
08		Speaker Ready Room (0745-1700) *Location: Liffey Hall 1 - Level 1*	Exhibition (0800-1700) *Location: The Forum – Ground Level*	**Opening Plenary & Keynote** (0800-0930) *Location: Auditorium – Level 3*
09				
10				**Break** (0930-1000) *Location: Exhibit Hall – Ground Level*

Sessions (1000-1210) — **Working Group Meetings** (1000-1210) — **Sponsors Presentations** (1000-1210)

Lunch (1210 - 1330) *Location: Exhibit Hall – Ground Level*

Sponsored by **Ansys**

Sessions (1330-1455) — **Working Group Meetings** (1330-1455) — **Sponsors Presentations** (1330 1455)

Break (1500-1530) *Location: Exhibit Hall – Ground Level*

Sessions (1530-1655) — **Working Group Meetings** (1530-1655) — **Sponsors Presentations** (1530-1655)

Digital Engineering (DE) Game Show (1700-1800) *Location: Auditorium – Level 3*

Ice Breaker Reception (1800-1930) *Location: Exhibit Hall – The Forum – Ground Level*

Sponsored by **3DS DASSAULT SYSTEMES**

Sponsor/Exhibitor Track

Posters

A Framework to use Bifurcation Analysis for Insight into Complex Systems Resilience
Rogelio Gracia Otalvaro, Bryan Watson (Embry-Riddle Aeronautical University)

Application of SysMLv1 vs SysMLv2 in the Scope of the MagicGrid Framework
Aiste Aleksandraviciene (No Magic); Zilvinas Strolia, Osvaldas Jankauskas (Dassault Systemes)

Applied Ideation Methodology Selector Tool
Martin Lindell, Benjamin Mansfield, Michael Olson, Carson Storey, Matt Wolf, Emily Wood, Jonathan Weaver (University of Detroit Mercy)

Context-Based Systems Engineering
Johan Bredin (Saab AB)

Data Element Mapping And Analysis (DEMA) To Enable Systematic Model Creation Using SysML
Allison Ledford, Susan Askew, Edward Huang (Auburn University)

Developing a Model-Based Systems Engineering Tool for Cybersecurity Risk Management of Micro-Electronic Devices
James Leland, Brett Schraeder, Colin Chilton, James Walliser (United States Air Force Academy)

Hardware-in-the-Loop with SysML and Cameo Systems Modeler
Philipp Helle, Gerrit Schramm (Airbus)

LLM-based Approach to Automatically Establish Traceability between Requirements and MBSE
Maria Bonner (Project Lead); Marc Zeller (Safety Expert); Gabor Schulz, Ana Savu (Software Engineer)

Leveraging Mbse Usage Through Model Checkers
Davy Masson, Lucas Olejarz (SAFRAN AIRCRAFT ENGINES)

Leveraging Mission Solution Configuration Through MBSE And Tradespace Exploration
Mohamed Eldesouky, Marcus Vinicius Pereira Pessoa (University of Twente); Vlad Stefanovici (Thales Netherlands)

MBSE for Real World Teams
David Hetherington (System Strategy, Inc); Oliver Hoehne (WSP); Pascal Roques (PRFC); Junji Kuriyama, Takashi Nishimura (Denso Create)

Model-Based Switching Costs
Haifeng Zhu (The Boeing Company)

Requirement Discovery Using Embedded Knowledge Graph with ChatGPT
Braxton Vangundy, Nipa Phojanamongkolkij (NASA Langley Research Center); Barclay Brown (Collins Aerospace); Ramana Polavarapu, Joshua Bonner (NASA Langley Research Center)

Security Interpretations and Elaborations on Systems Engineering Principles
Mark Winstead (MITRE)

Translating the STPA-SEC security method into a model-based engineering approach
Ehab Silawi (Tel Aviv University); Avi Shaked (University of Oxford); Yoram Reich (Tel Aviv University)

Business/Working Groups Meetings

Meeting Name	Time Start	Time End	Meeting Listing	Room
Systems Thinking RoundTable (STRT)	07:00	08:00	In person session	Wicklow Meeting Room 1
Certification Exam	10:00	13:00	Ticket Required	Liffey Meeting Room 2A
Knowledge Systems Working Group	13:30	14:55	Open	Wicklow Meeting Room 1
System Adaptability Working Group Meeting	13:30	14:55	Open	Liffey Meeting Room 2A
Asia Oceania Sector - Chapter Leader and Member Meeting	15:30	18:00	Open	Wicklow Meeting Room 1
Configuration Management Working Group Meeting	15:30	18:00	Open	Liffey Meeting Room 3A

Tuesday

Start time	End time		Track 1	Track 2	Track 3
Ireland			The Auditorium	Wicklow Hall 1	Wicklow Hall 2A
08:00	09:30	Keynote		**Professor Brian Collins** *University College London*	
09:30	10:00	Break			
			MBSE Application Domains	**Cybersecurity in SE**	**Maritime**
			Matthew Hause	Mark Winstead	Terje Fossnes
10:00	10:40	Session 1	Presentation#35: 1.1.1 / ANDES, the high resolution spectrograph for the ELT: the adoption of Model-Based Systems Engineering approach Alessio Zanutta, Marcello Agostino Scalera, Marco Riva, Andrea Balestra (INAF)	Paper#9: 1.2.1 / A Proposal for Model-Based Systems Engineering Method for Creating Secure Cyber-Physical Systems Martin Haug Larsen, Satyanarayana Kokkula, Gerrit Muller (University of South-Eastern Norway)	Presentation#399: 1.3.1 / System Product Line Cost and Investment Modeling Applied to UUVs Raymond Madachy, John Green (Naval Postgraduate School)
10:45	11:25		Paper#411: 1.1.2 / Black Hole Cinema: Application of Systems Engineering Methods to Expand and Enhance an Earth-sized Telescope Garret Fitzpatrick, Ryan Chaves (Center for Astrophysics | Harvard & Smithsonian)	Paper#287: 1.2.2 / Modeling Cybersecurity Operations to Improve Resilience Ivan Taylor (Policy Dynamics Inc.); Keith Willet (CTN Technologies)	Paper#320: 1.3.2 / Conceptual Modeling for Early-Phase Decision-Making in the Maritime Industry: A Case Study of Power Generation System Concept Selection Magnus Sjøhold Grønningsaeter (Kongsberg Maritime); Siv Engen (University of South-Eastern Norway)
11:25	12:10		Paper#260: 1.1.3 / Application of the ARCADIA Method on a Bulk Carrier Vessel Equipped with a Wind-assistance Device Mathias Dreier, Matthias Bajzek, Hannes Hick (Graz University of Technology); Nico Michels, Carsten Burchardt (Siemens Industry Software GmbH); Kazuhiro Aoyama (The University of Tokyo)	Paper#167: 1.2.3 / Enabling FuSE Security Objectives through Cyber Survivability Methods Barry Papke, Ronald Kratzke (Dassault Systems); Trae Span (Colorado State University); Nataliya Shevchenko (Software Engineering Institute - Carnegie Mellon University)	Presentation#494: 1.3.3 / A Value-Focused Thinking Approach to Assessing Container on Barge Readiness within Maritime Transportation Systems Heather Nachtmann (Maritime Transportation Research and Education Center, University of Arkansas); Fan Bu (University of Arkansas)
12:10	13:30	Lunch			
			MBSE Application Domains	**Security**	**Methods**
			James Martin	Yilong Yang	Jason Stroup
13:30	14:10	Session 2	Paper#109: 2.1.1 / Systems Engineering Application for Better Design and Analysis of an Assembly Process Adel Taghiyar (Dassault Systemes Deutschland GmbH); Saulius Pavalkis (Dassault Systèmes); Ralf God, Oliver C. Eichmann (Technische Universität Hamburg, Institut für Flugzeug-Kabinensysteme);	Paper#54: 2.2.1 / Secure Design: A Practical Approach for Systems Engineers Mark Winstead (MITRE)	Presentation#27: 2.3.1 / Systematically Pulverised EARS - Improvements in requirements authoring and presentation John Welford (WSP)
14:15	14:55		Paper#349: 2.1.2 / Extending Systems Engineering for Safety-Critical Defence Applications Katia Potiron (KNDS); James Inge (Ministry of defence)	Paper#465: 2.2.2 / Building a Scientific Foundation for Security: Multilayer Network Model Insights for System Security Engineering Adam Williams, Susan Caskey (Sandia National Laboratories)	Paper#247: 2.3.2 / Concept Design Failure Modes and Effects Analysis Using System Level Assessment David Genter (Cummins, Inc); Stephanie Bauer, Shamil Baldeosingh (Cummins)
15:00	15:30	Break			
			MBSE in Defense	**Industry 4.0**	**Deploying SE**
			Rick Hefner	Stueti Gupta	Thomas Manley
15:30	16:10	Session 3	Paper#42: 3.1.1 / Developing an Integrated Mission Simulation to Evaluate Technology Impact on Military Scenarios Tara Sarathi, Michael Shatz, Edward Londner, Chad Council (MIT Lincoln Laboratory)	Paper#342: 3.2.1 / IT/OT Integration by Design Georg Schäfer, Hannes Waclawek (Josef Ressel Centre for Intelligent and Secure Industrial Automation); Sarah Riedmann, Christoph Binder, Christian Neureiter (Josef Ressel Centre for Dependable System-of-Systems Engineering); Stefan Huber (Josef Ressel Centre for Intelligent and Secure Industrial Automation)	Presentation#475: 3.3.1 / Systems Engineering Capability Development using the "Green and Blue Track Approach" Tom Strandberg, Jonas Larsson, Kanika Garg (CAG Syntell AB)
16:15	16:55		Paper#232: 3.1.2 / Modeling swarm mission with COTS characterization: a series of return on experience Lorraine Brisacier-Porchon (ENSTA Paris); Omar Hammami (ENSTA PARIS)	Paper#23: 3.2.2 / Integrating IoT Technology with a Systems Engineering Approach to Improve the GHG Emission Accounting in the Waste Management Industry Tobias Hylleseth, Henri Giudici, Gerrit Muller (University of South-Eastern Norway)	Presentation#313: 3.3.2 / Easing SE implementation in daily life Henrik Balslev (CEO - ESEP)
17:00	18:00		**Digital Engineering (DE) Game Show**		
18:00	19:30		**Ice Breaker Reception**		

Broadcasted   **Best papers**

Track 4	Track 5	Track 6
Wicklow Hall 2B	The Liffey A	Liffey Hall 2

Systemic leadership in a TUNA world

V&V	Sociotechnical	SE Fundamentals
Erik Herzog	Paul Schreinemakers	David Long
Presentation#570: 1.4.1 / Hidden Beliefs in Verification Strategies Joanna Joseph, Alejandro Salado (University of Arizona)	Paper#466: 1.5.1 / The Human-Technology Spectrum: A Framework for Evaluating Sociotechnical System Function Allocation, Risk, and Performance Graeme Troxell (Cornell University); Christian Sprague (INCOSE)	INCOSE Content#1040: 1.6.1 / Engineering the Future Paul Nielsen (Carnegie Mellon University)
Paper#344: 1.4.2 / Early Validation of SysML Architectures by Extending MBSE with Co-Simulation using FMI and SSP Johan Cederbladh (Mälardalen university); Daniel Krems (AVL List)	Paper#367: 1.5.2 / Contemporary Systems Engineering for the UN SDGs and NAE Grand Challenges Shamsnaz Bhada (Worcester Polytechnic Institute); Erika Palmer (Cornell University); Cecila Haskins (NTNU)	INCOSE Content#1002: 1.6.2 / Systems Thinking: What Systems Engineers Need to Know Dr. Michael C Jackson OBE (University of Hull)
Paper#529: 1.4.3 / Theoretical Underpinnings to Establish Fidelity Conditions for Defining Verification Models Paul Wach (Virginia Tech); Alejandro Salado (The University of Arizona)	Paper#275: 1.5.3 / Multiple Pathways of Influence for Tightly and Loosely Structured Organizations: Implications for Systems Resilience Raquel Valdez, Thushara Gunda, Susan Caskey (Sandia National Laboratories)	INCOSE Content#1003: 1.6.3 / Requirements—Why Bother? Dr. Mike Ryan (Capability Associates Pty Ltd.)

V&V	Neurodiversity	SE Fundamentals
Davinia Rizzo	Chris Hoffman	Michael Wozniak
Paper#544: 2.4.1 / Validation Framework of a Digital Twin: A System Identification Approach Ibukun Phillips, C. Robert Kenley (Purdue University)	Paper#169: 2.5.1 / Promoting Neurodiversity Through MBSE and Other Technical Approaches Taylor Duffy (SPEC Innovations); Maria Romero (Modern Technology Solutions, Inc.)	INCOSE Content#1004: 2.6.1 / Architecture starts when you carefully split a system into two subsystems. There it begins... Maarten Bonnema (University of Twente)
Paper#266: 2.4.2 / Early Validation using Architectural Overviews (A3AO) a Case Study in an IoT Consultancy Eirik Hidle, Marianne Kjørstad (University of South East Norway)	Presentation#300: 2.5.2 / Symbiotic relationship between neurodiversity and systems thinking Suja Joseph-Malherbe (Letter27); Benjamin Mogridge (University of the West of England)	INCOSE Content#1005: 2.6.2 / Interfaces and the Somebody Else's Problem Field Paul Davies (Thesystemsengineer.uk)

T&E		SE Fundamentals
Daniel Call		David Long
Presentation#172: 3.4.1 / A flexible MBSE SysML Profile for effective Test & Evaluation Planning and Integration: Approach and Lessons from the Real World Arno Granados, Blake Abrecht (Strategic Technologies Consulting, an Arcfield Company)	Panel#129: 3.5 / Participatory Methods in SE **Moderator:** Jennnifer Russell (Garver); **Panelists:** Dale Brown (Hatch); René King (Project Performance International); Mariet Kurtz (Mitre Corporation)	INCOSE Content#1006: 3.6.1 / Engineering in the Digital Age – Revolutionize Digital Engineering with MBSE Prof. Dr.-Ing. Lydia Kaiser (Technische Universität Berlin)
Paper#264: 3.4.2 / Model-Based Decision Support using Test and Evaluation: A Lightweight Architecture Approach Awele Anyanhun, Craig Arndt (Georgia Tech Research Institute); Jeremy Werner (United States Department of Defense, Office of the Director, Operational Test and Evaluation)		INCOSE Content#1007: 3.6.2 / Embrace Yourself! Our Responsibilities and Competencies as Complex Problem Solvers Nicole Hutchison (Systems Engineering Research Center (SERC))

Wednesday

Overall Schedule

Symposium Registration (0700-1740) *Location: The Forum Foyer – Ground Level*	

Speaker/Session Chair Breakfast (0700-0745)
Location: Liffey Hall 1 - Level 1

Speaker Ready Room (0745-1740)
Location: Liffey Hall 1 - Level 1

Exhibition (0800-1700)
Location: The Forum – Ground Level

Plenary Session & Keynote (0800-0930)
Location: Auditorium - Level 3

Break (0930-1000)
Location: Exhibit Hall – Ground Level
Sponsored by Jama software

Sessions (1000-1210)

Working Group Meetings (1000-1210)

Sponsors Presentations (1000-1210)

Lunch (1210 - 1330)
Location: Exhibit Hall – Ground Level

Sessions (1330-1455)

Working Group Meetings (1330-1455)

Sponsors Presentations (1330 1455)

Break (1500-1530)
Location: Exhibit Hall – Ground Level
Sponsored by Jama software

Sessions (1530-1740)

Working Group Meetings (1530-1740)

Sponsors Presentations (1530-1655)

Sponsor/Exhibitor Track

Caltech (A2)	**10:00-10:20**	*(Liffey Meeting Room 1 - Level 1)*
Siemens Digital Industry Software (2-4)	**10:30-10:50**	*(Liffey Meeting Room 1 - Level 1)*
Dassault Systèmes (6-8)	**11:00-11:20**	*(Liffey Meeting Room 1 - Level 1)*
The REUSE Company (29-31)	**11:30-11:50**	*(Liffey Meeting Room 1 - Level 1)*
Sensmetry (19)	**13:30-13:50**	*(Liffey Meeting Room 1 - Level 1)*
ptc (26)	**14:00-14:20**	*(Liffey Meeting Room 1 - Level 1)*
Intercax, LLC	**15:30-15:50**	*(Liffey Meeting Room 1 - Level 1)*
Boeing	**16:00-16:20**	*(Liffey Meeting Room 1 - Level 1)*

Posters

A Configuration Management Strategy for Model-based Product Line Engineering in Aircraft Systems Development
Jordan Epp (University of Toronto); Thomas Robert, Olivier Ruch (Safran Landing Systems); Alison Olechowski (University of Toronto)

A modular simulation-based MBSE approach applied to a cloud-based system
Thomas Booth (Colorado State University, Nexus Digital Engineering, US Air Force); Sudipto Ghosh (Colorado State University)

An ontology example in Configuration Management at Airbus
Balachandar Ramachandiya Amarnath, Adriana D'Souza, Bernd Podey, Javier Reines, Moises Ramon Martinez (Airbus)

Exploring the Executable SysML Capabilities to Integrate and Operate Hardware in the Loop
Alexander Yeiser (Naval Postgraduate School); Saulius Pavalkis (Dassault Systemes); Oleg Yakimenko (Naval Postgraduate School)

Implementation of a Technical Peer Review Process: Principles, Policy, and Cultural Change
Francisco Alvarez, Leslie Britt, Jon Trujillo (Sandia National Laboratories)

Introduction of Systems Engineering Practices in a Product Lifecycle Management (PLM) course for master students
Krister Sutinen (Siemens PLM Software)

MBSE Analysis and Update of the U.S. Infrastructure Data Taxonomy (IDT) Using the U.S. National Critical Functions (NCFs)
Anthony Adebonojo (Northrop Grumman); Kirk Moen (Self Employed); Jennifer Russell (Garver, Inc)

Model-Based Systems Engineering Approach for Designing an Artificial Magnetic Field Generator System for Spacecraft Radiation Protection
Charles Baker, Steven Simske (Colorado State University)

Outcomes and Perspectives from the 4th ESA Model- Based Space Systems and Software Engineering Workshop (MBSE2023) on reducing the gap between model-based systems engineering and domain-specific approaches.
Nikolena Christofi, Nils Fischer (European Space Agency); Mohammad Chami (SysDice); Akos Horvath (Incquery Labs); Andreas Jung (European Space Agency); Marie De Roquemaurel (Airbus Defence and Space); Pierre Dissaux (Ellidiss Technologies); Catherine Morlet, Elaheh Maleki, Marcel Verhoef (European Space Agency)

Risk Management in Project Planning for Life Science R&D: An Integration of the NTCP Framework
Yangyang Zhao (University of Oslo); Terje Lehn Karlsen (University of Southeast Norway); Timothy Craig (Pfizer Worldwide Research)

Risk and Systems Analysis for Renewable Power Generation with Environmental and Other Stressors
Megan C. Marcellin, Gigi Pavur (University of Virginia); John J. Cardenas (United States Agency for International Development); Saddam Q. Waheed (Iraq Ministry of Water Resources); Benjamin D. Trump, Igor Linkov (U.S. Army Corps of Engineers); Venkataraman Lakshmi, James H. Lambert (University of Virginia)

Systems Perspective Outcomes from Aerospace Failure Investigations
Elizabeth Matranga, Calvin Fong, Dianne DeTurris (Cal Poly State University, San Luis Obispo, CA); Shannon Flumerfelt (Oakland University)

Tactical Network Bandwidth Analysis: Application of the Wearables Model-Based Systems Engineering - System Architecture (MBSE-SA)
Jillian Cyr, Tara Sarathi, James Balcius, Michael Shatz (MIT Lincoln Laboratory)

The European Space Agency MBSE Methodology
Alberto Gonzalez Fernandez, Elaheh Maleki, Nils Fischer, Evelyn Honoré-Livermore, Nikolena Christofi, Marcel Verhoef (European Space Agency (ESA))

Business/Working Groups Meetings

Meeting Name	Time Start	Time End	Meeting Listing	Room
Systems Thinking RoundTable (STRT)	07:00	08:00	In person session	Wicklow Meeting Room 1
EMEA Chapter leader Workshop	13:30	14:55	Open	EcoCem Room
Knowledge Systems Working Group	13:30	14:55	Open	Wicklow Meeting Room 1
SEBoK Overview & How to get involved!	13:30	14:55	Open	Liffey Meeting Room 2B
Smart Cities Meeting: Model effort	13:30	14:55	Open	Liffey Meeting Room 3A
System Adaptability Working Group Meeting	13:30	14:55	Open	Liffey Meeting Room 2A
Americas Sector Chapter Leaders	15:30	18:00	Open	Liffey Meeting Room 2B
DIgital Engineering Information Exchange (DEIXWG) Open Meeting	15:30	18:00	Open	Liffey Meeting Room 3B
INCOSE Fellows - General Business	15:30	18:00	Closed	Wicklow Meeting Room 1
Product Line Engineering Working Group - Meetup	15:30	18:00	Open	Liffey Meeting Room 3A
TLI Topical Engagement with Dave Snowden	15:30	18:00	By invitation only	EcoCem Room
Transportation WG - Industry Update	15:30	18:00	Open	Liffey Meeting Room 2A
Automotive WG meetings in Dublin	18:00	19:00	Open	EcoCem Room
INCOSE Foundation Board of Directors Meeting	18:00	19:00	Closed	Liffey Meeting Room 2B

Wednesday

Start time	End time		Track 1	Track 2	Track 3
Ireland			The Auditorium	Wicklow Hall 1	Wicklow Hall 2A
08:00	09:30	Keynote	**Dave Snowden** *The Cynefin Center*		
09:30	10:00	Break			

Session 4

			MBSE Lightning Round	**Complexity**	**Design**
			Mark Sampson, Troy Peterson	Ali Raz	Lorraine Brisacier-Porchon
10:00	10:40		Paper#558: 4.1.2 / The Effects of the Assessed Perceptions of MBSE on Adoption Daniel Call (Colorado State University); Daniel Herber, Steven Conrad (Colorado State University) Paper#326: 4.1.3 / MissionML: A Mission Architecture Modeling Language based on Unified Architecture Framework Yilong Yang (beihang university); Wenxiao Song, Chuangye Chang (beihang university); Xinghai Gao (institute of unmanned system) Paper#516: 4.1.4 / Using VR to Validate and Visualize MBSE-Designed Interfaces Sean Flanagan (Integration, Innovation, Inc.) Paper#174: 4.1.5 / The Nature of Technical Debt in the Development of Descriptive Models in MBSE Ryan Noguchi (The Aerospace Corporation) Paper#488: 4.1.6 / NASA's Use of MBSE and SysML Modeling to Architect the Future of Human Exploration Terry R. Hill (NASA); Audrey Morris-Eckart (NASA); Alanna E. Carnevale (Aerospace Corporation); Vinodini Sundaram (Booz Allen Hamilton); Leon Farhaj (Jacobs Technology)	Paper#401: 4.2.1 / Case Studies for Complexity Pattern Identification Andrew Pickard (APickard LLC); Richard Beasley (RB Systems); Dean Beale (Bristol University); Dorothy McKinney (Retired); Rudolph Oosthuizen (University of Pretoria); Dave Stewart (CACI); Kenneth Cureton (University of Southern California); Chandru Mirchandani (Leidos)	Paper#554: 4.3.1 / Evaluating the Scalability and Combinatorial Effectiveness of Design-for-Resilience Heuristics Oliver Rogoll, Benjamin Wierzbanowski, Bryan Watson (Embry-Riddle Aeronautical University)
10:45	11:25			Paper#489: 4.2.2 / Systems-Theoretic Concept Design: An Intent Model for Early Concept Generation 🏆 Alexander Hillman (Massachusetts Institute of Technology / US Air Force); Nancy Leveson, William Young (Massachusetts Institute of Technology)	Presentation#547: 4.3.2 / Spares Strategy for Programs in Development Phases: Quantifying Hardware Needs Prior to Production Davinia Rizzo (Aerospace Corporation)
11:30	12:10			Paper#124: 4.2.3 / Systems Engineering roles to handle emergent properties and behaviors in complex technical systems 🏆 Iris Graessler, Jan Pfeifer (Heinz Nixdorf Institute); Florian Hintz (3DSE Management Consultants GmbH); Nicolas Meyrl (Volkswagen Aktiengesellschaft)	Paper#197: 4.3.3 / A Systems Engineering Methodology for Manufacturing Enterprises Planning and Design Mengyu Guo (Department of Industrial Engineering, Tsinghua University)
12:10	13:30	Lunch			

Session 5

			Digital Transformation	**Systems Engineering Concepts**	**Military**
			Stepanie Chiesi	Frank Salvatore	Mike Shearin
13:30	14:10		Paper#269: 5.1.1 / Accelerating Digital Transformation through MBSE, Multi-physics Simulation and Digital Twin in Industry Jacques Martinez (Safran SEATS company); Imane Bouhali (ISAE and INSA Phd Student); Luca Palladino (Safran SEATS company); Vincent Idasiak (INSA Professor); Frederic Kratz, Jean-Yves Choley, Faida Mhenni (ISAE Professor)	Paper#84: 5.2.1 / System Revisited - Again Anthony Quayle (Independent researcher)	Presentation#455: 5.3.1 / Digital Engineering in Military Systems Integration Carly Fridlin, Nicole Olbrict (US Army Space and Missile Defense Command)
14:15	14:55		Presentation#91: 5.1.2 / The A to Z for Implementing a Digital Transformation on a Systems Project Kerry Lunney, Stephane Bonnet (Thales)	Paper#262: 5.2.2 / Enterprise: Exploration of Concepts, Perspectives and Implications for Systems Engineering Charles Keating (Old Dominion University); Polinpapilinho Katina (University of South Carolina Upstate); Joseph Bradley (Leading Change, LLC); Richard Hodge (DrRichardHodge.com); James Martin (The Aerospace Corporation); Sue Caskey (Sandia National Laboratories)	Presentation#219: 5.3.2 / An holistic view of the implementation of the Open Architecture Approach in military systems Raquel Lampaca Vieira Radoman, Michael Henshaw, Melanie King (Loughborough University); Tim Rabbets (QinetiQ ltd)
15:00	15:30	Break			

Session 6

			SE Practice	**Space**	**Nuclear and Panama Canal**
			Jennifer Russell	Mark Winstead	Michael Wozniak
15:30	16:10		Presentation#156: 6.1.1 / Analytic Viewpoint for Information Normalization (AVIaN): A model-based analytic viewpoint to promote consistency in systems engineering practice Richard Wise (Georgia Tech Research Institute)	Presentation#429: 6.2.1 / An adaptation of the ISO/IEC/IEEE 29110 system engineering process for the development of CubeSats Mamadou Lamine Ndao, Claude Baron (Université de Toulouse)	Paper#501: 6.3.1 / Design Basis Model for Hosting Small Modular Reactors Ron Claghorn (Idaho National Laboratory)
16:15	16:55		Paper#180: 6.1.2 / The Convergence of COSYSMO Parametric Cost Estimation with Model-Based Systems Engineering Barry Papke (DSassault Systems); Gan Wang, Sean Densford (Dassault Systems); Ricardo Valerdi (University of Arizona)	Paper#456: 6.2.2 / Modeling NASA's Procedural Requirement Processes - Implications for Digital Future Terry R. Hill, Patricia Nicoli, Steven Cornford, Robert Morgenstern (NASA); David Chiras (Ares Corporation); Patrick Barnes, Joshua Bendig (NASA)	Paper#77: 6.3.2 / Model-Based Systems Engineering (MBSE) Application in Nuclear Power Plants (NPP) Ken Kawamura, Habibi Husain Arifin, Ho Kit Robert Ong, Thomas Brun, Nasis Chimplee, Daphne Wu (Dassault Systèmes)
17:00	17:40		Paper#370: 6.1.3 / A Classical Modernization of the V-Model William Barnum, William Fisher, Mark Winstead, Stephen Walsh (The MITRE Corporation)	Paper#434: 6.2.3 / How the INCOSE Model-Based Capability Matrix has Steered Model-Based Systems Engineering Transformation at NASA Gregory Pierce, Patricia Nicoli, Terry Hill, Steven Cornford (NASA)	Paper#110: 6.3.3 / Systems Lessons from the Panama Canal Richard Beasley (RB Systems)

Broadcasted   🏆 **Best papers**

Track 4	Track 5	Track 6
Wicklow Hall 2B	The Liffey A	Liffey Hall 2

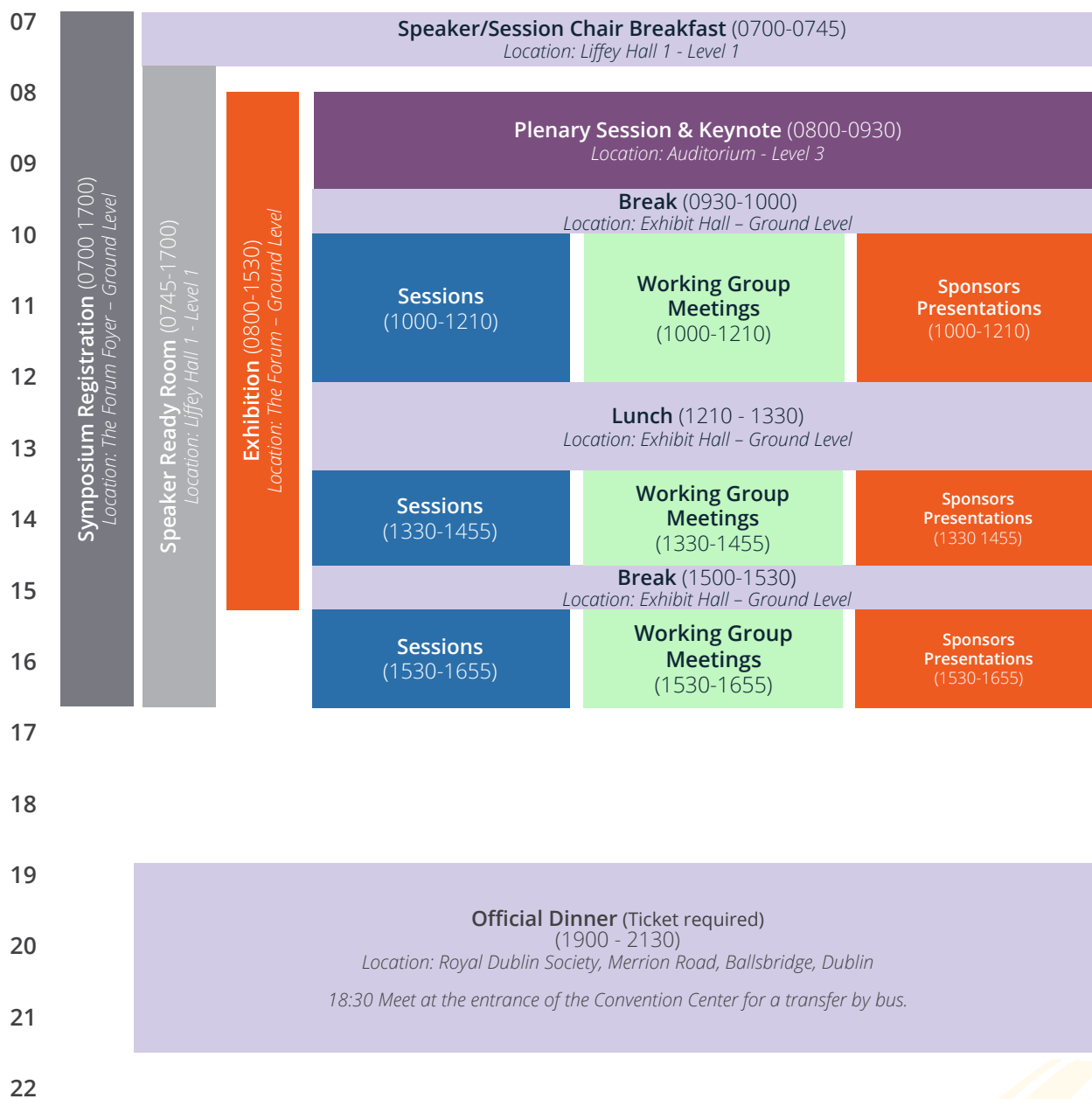## Risk, uncertainty and complexity

Risk	Education	Sustainability
Gregory Parnell	Maarten Bonnema	Gerrit Muller
Presentation#223: 4.4.1 / A Comprehensive Risk Assessment Methodology for Extended Product Lifecycles Jason Stroup, Alton Schultheis, Jeremy Doerr (Georgia Tech Research Institute; Iqbal Ahmed (Georgia Tech Research Institute (GTRI))	Presentation#438: 4.5.1 / An MBSE group project challenge as a learning experience for Masters degree students Paul Davies (thesystemsengineer.uk)	Paper#265: 4.6.1 / Sustainability Mindshift: Incorporating the Systems Perspective Charles Keating (Old Dominion University); Polinpapilinho Katina (University of South Carolina Upstate); James Pyne (Old Dominion University)
Paper#557: 4.4.2 / OMG Standard to Extend SysML to Reliability Engineering Myron Hecht (The Aerospace Corporation); Tomas Juknevicius (3ds); Kyle Post (Ford Motor Co.); Andrius Armonas (Dassault Systemes, UAB)	Presentation#561: 4.5.2 / From Arizona to the World: From Education to Application in Community Engaged Engineering Shelley Littin (University of Arizona)	Paper#312: 4.6.2 / Institute for Convergent Systems Engineering: A Strategic Plan for Ethical Sustainability Jon Wade, Hyo Duk Shin, Richard Gessner (University of California, San Diego)
Presentation#295: 4.4.3 / Right-sizing risk management approaches using lessons learned from Transportation and Infrastructure Industries Carrie Cabak, Laura Uden (NSI Engineering, Inc.); Russ Winchester (NSI Engineering, Inc)	Paper#168: 4.5.3 / When Moving Backward Means Moving Forward – Educating Systems Engineers in Designerly Ways of Thinking Marie Bengtsson (Linköping University); Johanna Axehill (Saab AB); Erik Herzog (SAAB AB)	Presentation#515: 4.6.3 / Designing for Resilience: Integrating Ecology into Engineered Systems Rae Lewark (Studio SE Ltd); Casey Medina, Allison Lyle (Studio SE Design)

STPA - Risk	Panel	Sustainability
Duncan Kemp		Cecilia Haskins
Paper#203: 5.4.1 / Application of the System-Theoretic Process Analysis (STPA) technique to enabling systems in the rail industry John Slowey (Think Systems)	Panel#281: 5.5 / What works and what does not work in teaching non-Systems Engineers about systems thinking **Moderator:** Jill Speece (California Polytechnic State University San Luis Obispo); **Panelists:** Kamran Eftekhari Shahroudi (Woodward Inc.); Martin Span (Colorado State University); Kirk Reinholtz (Colorado State University); Quentin Saulter (Colorado State University); Sarwat Chappell (Department of Defense); Graeme Troxel (Cornell University);	Presentation#175: 5.6.1 / Sustainably Designing Products / Designing Sustainable Products Jim Marsh (INCOSE Member); Gianluca Monticone, Edmund Mayer (IBM)
Paper#292: 5.4.2 / Integrating STPA Extended for Coordination into SysML Using RAAML Elizabeth Pennington, Kip Johnson, John Colombi (Air Force Institute of Technology); Kerianne Hobbs (Air Force Research Laboratory)		Presentation#492: 5.6.2 / Food Transformation (FX): A Systems Engineering Approach to Elevate Value through Cooking Recipe Design with Alternative Proteins Tomomi Nonaka (Waseda University); Tomomi Honda (Mukogawa Women's University); Seiko Shirasaka (KeioUniversity)

MBSE Adoption	Education	Sustainability
Tara Sarathi	Satyanarayana Kokkula	Kerry Lunney
Presentation#6: 6.4.1 / Advancing Transdisciplinarity from Concept to Practice Javier Calvo-Amodio (Oregon State University); James Martin (Aerospace Corporation)	Presentation#542: 6.5.1 / Full STEDE Ahead: Developing a Simulation Training Environment for Digital Engineering Nicole Hutchison (International Council on Systems Engineering)	Paper#57: 6.6.1 / The Electric Revolution: Fully Electric Transportation System On An Urban College Campus Zabi Sharifi, Mo Mansouri (Stevens Institute of Technology)
Paper#25: 6.4.2 / Innovation Ecosystem Dynamics, Value and Learning I: What Can Hamilton Tell Us? William Schindel (ICTT System Sciences)	Paper#484: 6.5.2 / The Digital Engineering Factory: Considerations, Current Status, and Lessons Learned Joe Gregory, John Masterson, Matthew Colson, Evan Martin, Niko Martell, Cj Reda, Richardo Larez, Sharon O'Neal (University of Arizona); Alejandro Salado (The University of Arizona); David Armenta (University of Arizona)	Paper#107: 6.6.2 / Evaluating the Eco-Efficiency of Urban Air Mobility: Understanding Environmental and Social Impacts for Informed Passenger Choices Raquel Hoffmann (Keio University); Fabio Silva (University of Southern California); Hidekazu Nishimura (Keio University)
Paper#428: 6.4.3 / Providing tailored heuristic advice to Systems Engineers Dean Beale (ServeMore Foundation); Rudolph Oosthuizen (University of Pretoria); Andrew Pickard, Dorothy McKinney (Self); Ken Cureton (University of Southern California); Dave Stewart (CACI); Eileen Arnold (Self)	Paper#389: 6.5.3 / A Model for Cybersecurity Education through Challenge Events Jeremy Daily (Colorado State University); Martin Span (Colorado State University/U.S. Air Force)	Presentation#202: 6.6.3 / Seeing the bigger picture with the Unified Architecture Framework (UAF) - Offshore Wind to Hydrogen Enterprise Joseph Hughes, Matti Koskipaa (Dassault Systèmes)

Thursday

Overall Schedule

Time					
07					

Symposium Registration (0700 1700)
Location: The Forum Foyer – Ground Level

Speaker Ready Room (0745-1700)
Location: Liffey Hall 1 - Level 1

Exhibition (0800-1530)
Location: The Forum – Ground Level

Speaker/Session Chair Breakfast (0700-0745)
Location: Liffey Hall 1 - Level 1

Plenary Session & Keynote (0800-0930)
Location: Auditorium - Level 3

Break (0930-1000)
Location: Exhibit Hall – Ground Level

Sessions (1000-1210)

Working Group Meetings (1000-1210)

Sponsors Presentations (1000-1210)

Lunch (1210 - 1330)
Location: Exhibit Hall – Ground Level

Sessions (1330-1455)

Working Group Meetings (1330-1455)

Sponsors Presentations (1330 1455)

Break (1500-1530)
Location: Exhibit Hall – Ground Level

Sessions (1530-1655)

Working Group Meetings (1530-1655)

Sponsors Presentations (1530-1655)

Official Dinner (Ticket required)
(1900 - 2130)
Location: Royal Dublin Society, Merrion Road, Ballsbridge, Dublin

18:30 Meet at the entrance of the Convention Center for a transfer by bus.

Sponsor/Exhibitor Track

Siemens Digital Industry Software (2-4)...**10:00-10:20** *(Liffey Meeting Room 1 - Level 1)*

Project Performance International (17)...**11:00-11:20** *(Liffey Meeting Room 1 - Level 1)*

Posters

A Technical Approach to the Digital Signature of MBSE Models
Risa Gorospe, Shannon Dubicki (The Johns Hopkins University Applied Physics Laboratory)

Addressing Cross-Domain Interoperability between Automotive and Smart Grid Architecture Models
Jounes-Alexander Gross, Katharina Polanec, Dominik Vereno, Christoph Binder, Christian Neureiter (Salzburg University of Applied Sciences)

Application of Model-Based Systems Engineering Within the Automotive Industry — a Current State
Daniel Brenk, Sebastian Seiffert, Artur Rauh (UL Method Park GmbH)

Are Electric Vehicles Always Better for the Environment?
Eng Seng Chia (College of Design and Engineering, National University of Singapore); Zhe Yang, Han Wang (NUS (Suzhou) Research Institute)

Do Algorithms Dream of Electric Requirements? Leveraging AI-Based Approaches for Automated Allocation and Clavssification of Requirements in Railway Engineering
David Martin, Jaume Sanso (SENER Mobility)

Evaluating Automotive Spice® As Process Requirements
Jan Frank (UL Solutions)

Leading in Uncertainty: A Framework to Improve Performance
Eric Specking (University of Arkansas); Andrew Murrell (Northrop Grumman); Alexander Chang (The Aerospace Corporation); Robert Schwenke (Sandia National Laboratory); Donna Long (Blue Holon); Mikaela Stewart (Cubic Transportation Systems); Luis Andes-Olmedo (Airbus Defence & Space)

Logical Architecture Optimization via a Markov chain based Hierarchical Clustering Method
Beatrice Melani (Politecnico di Milano); Davide Fabbroni (Leonardo Helicopters Division); Lucrezia Manieri, Alessandro Falsone, Maria Prandini (Politecnico di Milano)

Migrating To ARP4754A: Tailoring Of Architecture And Systems Requirements Definition Processes In The Rotorcraft Industry
Davide Fabbroni, Guido Casella (Leonardo Helicopters Division); David Ward (TMC Italia)

Model-Based Cybertronics Systems Engineering (MBCSE)
Susanna Solanti-Iltanen (Tampere University); Brendan Hall (Ardent Innovation Labs); Petri Solanti (Siemens Digital Industries Software)

Business/Working Groups Meetings

Meeting Name	Time Start	Time End	Meeting Listing	Room
Systems Thinking RoundTable (STRT)	07:00	08:00	In person session	Wicklow Meeting Room 1
MBSE Patterns Working Group Meetings	10:00	12:10	Open	EcoCem Room
CAB Engagement on AI with Mark Kelly	13:30	14:55	Open	Liffey Meeting Room 2B
SEBoK Overview & How to get involved!	15:30	16:55	Open	Liffey Meeting Room 2B
TLI Topical Engagement: Leading in an AI-enabled world	15:30	16:55	By invitation only	EcoCem Room

Thursday

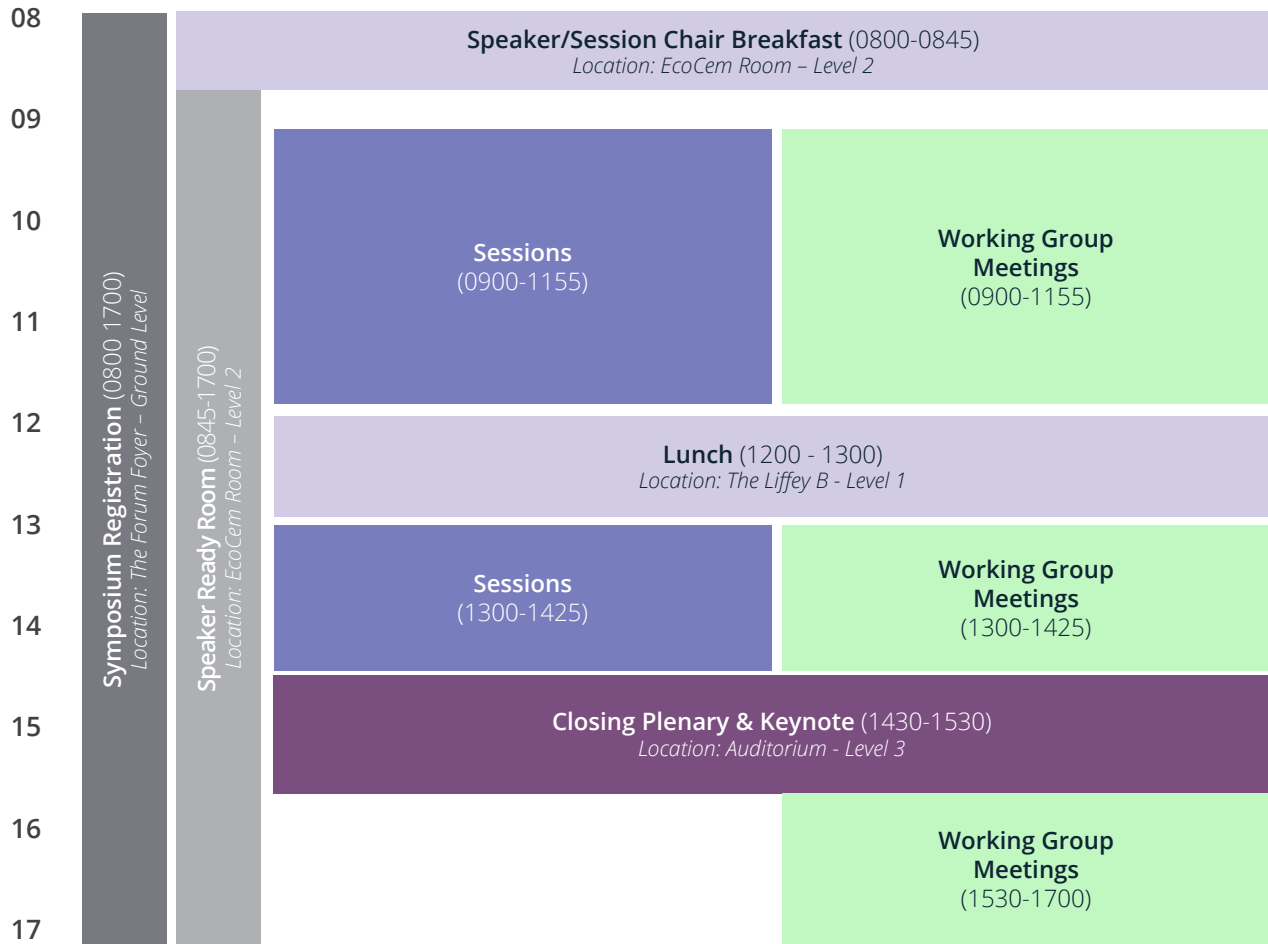| Start time	End time		Track 1	Track 2	Track 3
Ireland			The Auditorium	Wicklow Hall 1	Wicklow Hall 2A
08:00	09:30	Keynote	**Mark Kelly** *President of AI Ireland*		
09:30	10:00	Break			
		Session 7	**MBSE Methodologies**	**Digitalization**	**Modeling**
			Susan Caskey	Tara Sarathi	Daniel Call
10:00	10:40		Presentation#189: 7.1.1 / Enhancing Data-Driven Decision Making through MBSE Greg Parnell (University of Arkansas); C. Robert Kenley (Purdue University); Devon Clark (Deloitte Consulting); Frank Salvatore (SAIC); Jared Smith (Deloitte Consulting)	Presentation#17: 7.2.1 / How to Develop a Digitization Plan for Standards Leslie McKay (SAE International)	Paper#220: 7.3.1 / Modeling Principles to Moderate the Growth of Technical Debt in Descriptive Models Ryan Noguchi (The Aerospace Corporation)
10:45	11:25		Paper#148: 7.1.2 / Traceability – A vision for now and tomorrow Adriana D'Souza (Airbus); Louis Wheatcraft (Wheatland Consulting, LLC); Tami Katz (Ball Aerospace); Larry Gurule (CMPIC / I-Infusion / SAE SMC/G33); Michael J. Ryan (Capability Associates Pty Ltd); Aleksander Przybylo (Boeing)	Paper#555: 7.2.2 / One Model to Rule them All … and Through Emergence, Bind Them Jawahar Bhalla, Stephen Cook, David Harvey (The University of Adelaide)	Paper#563: 7.3.2 / A Model Based System Engineering Approach for Trucking Fleet Replacement Sean Bumgarner, Sarah Rudder, Jeremy Daily (Colorado State University)
11:30	12:10		Paper#412: 7.1.3 / Model-Based Systems Engineering (MBSE) Methodology for Integrating Autonomy into a System of Systems Using the Unified Architecture Framework Mohammadreza Torkjazi, Ali K. Raz (George Mason University)	Presentation#61: 7.2.3 / Digital Data Packages: Making the Digital Thread Work David Long (Blue Holon)	Paper#325: 7.3.3 / Identifying Reference Architecture Types for Stakeholder Groups in Industry 4.0 Sarah Riedmann, Christoph Binder, Christian Neureiter (Salzburg University of Applied Sciences)
12:10	13:30	Lunch			
		Session 8	**Smart Cities and Urban Planning**	**Panel**	**Vehicles**
			Paul Schreinemakers		Maarten Bonnema
13:30	14:10		Paper#52: 8.1.1 / Architecture of Nature-Based Smart City Introducing BaaS by Utilizing UAF Weiwei Chen, Atsushi Iwamura, Hidekazu Nishimura (Keio University)	Panel#448: 8.2 / Peace, Love, and Digital Understanding: How system models will bring us all together **Moderator:** Kirsten McCane (MathWorks); **Panelists:** Becky Petteys (MathWorks); Dennis Reed (Navy); Cristina Valera Munoz (Airbus); Risa Gorospe (The Johns Hopkins University Applied Physics Laboratory); Alexandra Beaudouin (Solent, powered by Smart4 Engineering);	Presentation#68: 8.3.1 / Design for Future Mobility: Four-Wheel Independent Steering System Architecture Design and Technology Roadmapping Case Study Woo Hyun Hwang, Sang Jun Park, Young Soo Shin, Min Ho Shin, Won Jun Kim (Hyundai MOBIS); Eun Suk Suh (Seoul National University)
14:15	14:55		Paper#371: 8.1.2 / Human-centered Smart Cities: an evaluation of a small community using the Smart Cities Initiative framework Jennnifer Russell (Garver); Jargalsaikhan Dugar (TUSSolution LLC); Joseph Sweeney (Naval Postgraduate School)		Paper#545: 8.3.2 / Hyundai's Modular MBSE Approach to 'Purpose Built Vehicle' Architecture Development Ilsoo Jeong (Hyundai Motor Group); Shashank Alai (Siemens DISW); Jaekap Joo (Hyundai Motor Group); Michael Baloh (Siemens DISW); Sunkil Yun (Hyundai Motor Group); Tae Kook Kim, Hwi Seob Park (Siemens DISW)
15:00	15:30	Break			
		Session 9	**Panel**	**Ontology**	**Systems Engineering in Context**
				Enanga Fale	Greg Pierce
15:30	16:10		Panel#382: 9.1 / Smart Cities from architecture to application: A socialization of industry best practices **Moderator:** Jennnifer Russell (Garver); **Panelists:** Christian Neureiter (Head of Josef Ressel Center for Dependable System-of-Systems Engineering Salzburg University of Applied Sciences); Cecilia Haskins (Norwegian University of Science and Technology (NTNU) and the University of Southeastern Norway (USN)); Martin Serrano (Insight SFI Research Centre for Data Analytics); Jawahar Balla (JB Engineering Systems)	Presentation#479: 9.2.1 / Towards an Ontology of Digital Engineering Terminology to Support Digital Information Exchange Joe Gregory (University of Arizona); Clarence Moreland (Modern Technology Solutions, Inc. (MTSI))	Paper#216: 9.3.1 / Design Thinking in a Systems Engineering World, within a Governmental Context Kavita Braun (JHU Applied Physics Laboratory)
16:15	16:55			Paper#487: 9.2.2 / Towards a Systems Engineering Ontology Stack Joe Gregory (University of Arizona); Alejandro Salado (The University of Arizona)	Presentation#436: 9.3.2 / System Engineering Challenges at Los Alamos National Laboratory: Modernizing the System's Thinking Approach Owen Dominguez, Jose Parga (Los Alamos National Laboratory)
19:00	21:30		**Official Dinner**		

Broadcasted   **Best papers**

Track 4	Track 5	Track 6
Wicklow Hall 2B	The Liffey A	Liffey Hall 2

AI in Action: Current Applications Transforming the World and Their Unintended Consequences

AI	Delivering Capabilities	Leadership
Nicole Hutchison	Richard Beasley	Stephanie Chiesi
Presentation#445: 7.4.1 / Survey of LLM Applications for Systems Engineering Barclay Brown (Collins Aerospace)	Presentation#90: 7.5.1 / Is the Journey to the End of the Project Rainbow a Minimal Viable Capability (MVC)? Kerry Lunney (Thales)	Presentation#471: 7.6.1 / Perspective and Influence and Leverage, Oh My! Leadership for Systems Engineers David Long (Blue Holon)
Paper#163: 7.4.2 / The Updated SERC AI and Autonomy Roadmap 2023 Tom McDermott, Kara Pepe, Megan Clifford (Stevens Institute of Technology)	Presentation#425: 7.5.2 / Enhancing Industry 4.0 Transformation Success with a Solution Debt Playbook Heidi Davidz (ManTech International); Matthew Taylor (MxD); Mark Schriner (ManTech International)	Paper#194: 7.6.2 / A System Dynamics Model of Organizational Resilience Ivan Taylor (Policy Dynamics Inc.); Niamat Ibne Hossain (Arkansas State University)
Paper#562: 7.4.3 / AI Systems Modeling Enhancer (AI-SME): Initial Investigations into a ChatGPT-enabled MBSE Modeling Assistant Brian Johns (United States Air Force Academy); Kristina Carroll, Casey Medina, Rae Lewark (Studio SE Ltd); James Walliser (United States Air Force Academy)	Presentation#256: 7.5.3 / Systems Engineering Innovation through 'Futures' Methods Bonnie Johnson (Naval Postgraduate School)	Presentation#573: 7.6.3 / A Systems Engineering Approach to Driving the 'Right' Organizational Culture and Life at the Right Pace Enanga Fale (Northrop Grumman, University of Charleston, Society of Women Engineers); Cherie Chain (Raytheon Technologies - Collins Aerospace, Society of Women EngineersImp)

AI	Agile	Leadership
Ali Raz	Satyanarayana Kokkula	Luis Andes Olmedo
Presentation#271: 8.4.1 / Optimizing Systems Engineering Workflows through Novel Applications of Large Language Models Edward Serzo (System Strategy, Inc. (SSI))	Paper#463: 8.5.1 / Synergizing Structure and Agility: A Comprehensive Analysis of SAFe Agile Framework through the Lens of Stafford Beer's Viable System Model Juan Martin Cadena, C. Robert Kenley (Purdue University)	Paper#184: 8.6.1 / How Systems Thinking Provides the Foundation for A W-Shaped Model of an Effective Technical Leader Michael Wozniak (Self)
Presentation#380: 8.4.2 / AI-Enhanced Autonomous Formation Flying - Definition of a Mission-driven and Safety-critical Software Development Environment Bernard Dion, Alexandre Luc, Nicolas Dalmasso, Guilherme Goretkin, Matthieu Paquet (Ansys)	Presentation#209: 8.5.2 / Practice to adapt MBSE as agility enabler to the agile software development for mobility platforms Daisuke Hashimoto, Yutaro Ito (Woven by Toyota, Inc.)	Paper#376: 8.6.2 / A Model for Trust and Distrust: The Systems Dynamics Approach Takashi Matsuura, Seiko Shirasaka (Graduate School of System Design and Management, Keio University)

AI	Digital Engineering Management	Leadership
Barclay Brown	Yilong Yang	Paul Davies
Presentation#74: 9.4.1 / Integrating IV&V into a generative AI Enterprise work culture Jason Blevins (National Railroad Passenger Corporation (Amtrak))	Paper#99: 9.5.1 / Enabling Digital Engineering with Federated PLM – Experiences from the Heliple-2 Project Erik Herzog (SAAB AB); Jad El-Khoury (Lynxwork AB); Eran Gery (Sudius Willert); Judith Crockford (Eurostep AB); Torbjörn Holm (Eurostep); Robert Nilsson (Volvo cars); Stefan Albilsson (IBM); Andrii Berezovskyi (Eurostep AB); Tord Ringenhall (Make Lynxwork AB)	Paper#273: 9.6.1 / Implications of Cultural Differences in the Systems Engineering Professional Competencies Heidi Hahn (New Mexico Tech)
Paper#437: 9.4.2 / Integrating AI with MBSE for Data Extraction from Medical Standards Ibrahim Ghanawi, Mohammad Wissam Chami, Mohammad Chami (SysDICE GmbH); Marko Coric (Mechatronic); Nabil Abdoun (SysDICE GmbH)	Paper#186: 9.5.2 / Enable Effective Digital Engineering Information Exchange using Digital Viewpoint Model (DVM) Framework Leqi Zhang (L3Harris); Jack Lam (NAVSEA Naval Surface Warfare Center); Sean McGervey (SSI)	Paper#410: 9.6.2 / Evolving Roles in Systems Engineering — Insights from Germany's Mechanical and Plant Engineering Sector Lydia Kaiser (Technische Universität Berlin); Daria Wilke (Fraunhofer Institute for mechatronic system design); Felix Förster (Institute of Smart Engineering and Machine Elements — Hamburg University of Technology); Ingmarie Köhler (Technische Universität Berlin); Roman Dumitrescu (Fraunhofer Institute for mechatronic system design)

Friday

Overall Schedule

Time				
08			**Speaker/Session Chair Breakfast** (0800-0845) *Location: EcoCem Room – Level 2*	

Symposium Registration (0800 1700) *Location: The Forum Foyer – Ground Level*

Speaker Ready Room (0845-1700) *Location: EcoCem Room – Level 2*

Sessions (0900-1155)

Working Group Meetings (0900-1155)

Lunch (1200 - 1300) *Location: The Liffey B - Level 1*

Sessions (1300-1425)

Working Group Meetings (1300-1425)

Closing Plenary & Keynote (1430-1530) *Location: Auditorium - Level 3*

Working Group Meetings (1530-1700)

Time markers: 08, 09, 10, 11, 12, 13, 14, 15, 16, 17

Posters

A Rapid Review of How Model-based Systems Engineering is Used in Healthcare Systems
Md Doulotuzzaman Xames, Taylan Topcu (Grado Department of Industrial and Systems Engineering, Virginia Tech)

Analysis of the Ability of the OSLC Standard to Improve Data Traceability in System Development
Lukas Portenlänger (University of Applied Sciences Munich); Andreas Korff (MAHLE International GmbH); Wolfgang Schönecker (consultens Professional Services); Claudio Zuccaro (University of Applied Sciences Munich)

Configuration Management of Sets of Links in a Federated Tool Environment
Adriana D'Souza (Airbus); David Hetherington (Asatte Press, Inc); Geza Kulcsar (IncQuery Labs); Bryan Orozco (NASA JPL); Aleksander Przybylo (Boeing); Istvan Rath (IncQuery Labs)

Impact Analysis of using Natural Language Processing and Large Language Model on Automated Correction of Systems Engineering Requirements
Lucas Henrique Marchiori (Ford Motor Company); Arthur Hendricks Mendes de Oliveira, Pedro Almeida Reis, Fernando Sarracini Júnior, Mairon Sena Cavalcante, Jonathan Vinicius de Lima, Luis Fernando Soares (Ford Motor Company Brazil)

Introducing a Three-Layer Model Taxonomy to Facilitate System-of-Systems Co-Simulation
Dominik Vereno, Katharina Polanec, Jounes-Alexander Gross, Christoph Binder, Christian Neureiter (Salzburg University of Applied Sciences)

Leveraging Large Language Models for Direct Interaction with SysML v2
John DeHart (Avian)

Modeling Enterprise Software with UAF
Matthew Hause (SSI); Lars-Olof Kihlstrom (CAG)

Models Models Everywhere! A practitioners view on the reality of modeling
Duncan Kemp (Loughborough University); Chris Hoffman (Cummins); Meaghan O'Neil (System Design and Strategy)

SoS - Global Solutions to Global Problems Using UAF
Kristina Carroll, Allison Lyle, Rae Lewark, Casey Medina (Studio SE Ltd); Aurelijus Morkevičius (Dassault Systèmes and Department of Information Systems Kaunas University of Technology)

Systems Architecture Meta-Model for the MagicGrid Framework
Aiste Aleksandraviciene, Zilvinas Strolia (Dassault Systemes); Aurelijus Morkevicius (Department of Information Systems Kaunas University of Technology and Dassault Systemes)

Towards UAF Implementation in SysML V2
Aurelijus Morkevicius (Department of Information Systems Kaunas University of Technology and Dassault Systemes); Gintare Krisciuniene (Dassault Systemes)

Truly Modular and Open System Design is Difficult
David Hetherington (System Strategy, Inc)

Unlocking Synergy: Leveraging SysML and Modelica with Bi-Directional Transformation and Simulation Integration Standards
Brian Pepper, Habibi Husain Arifin, Saulius Pavalkis, Jyothi Matam, Ronald Kratzke (Dassault Systèmes)

Business/Working Groups Meetings

Meeting Name	Time Start	Time End	Meeting Listing	Room
Systems Thinking RoundTable (STRT)	08:00	09:00	In person session	Wicklow Meeting Room 1
Certification Exam	09:00	12:00	Ticket required	Liffey Meeting Room 2A
Event Stakeholder Meeting	09:00	10:00	Closed	Liffey Meeting Room 4
IW2025 Meeting	10:00	11:00	Open	Liffey Meeting Room 4
IS2025 Meeting	11:00	12:00	Open	Liffey Meeting Room 4
Automotive WG meetings in Dublin		18:00	Open	Liffey Meeting Room 1
Requirements Working Group	15:30	18:00	Open	Wicklow Meeting Room 1

Friday

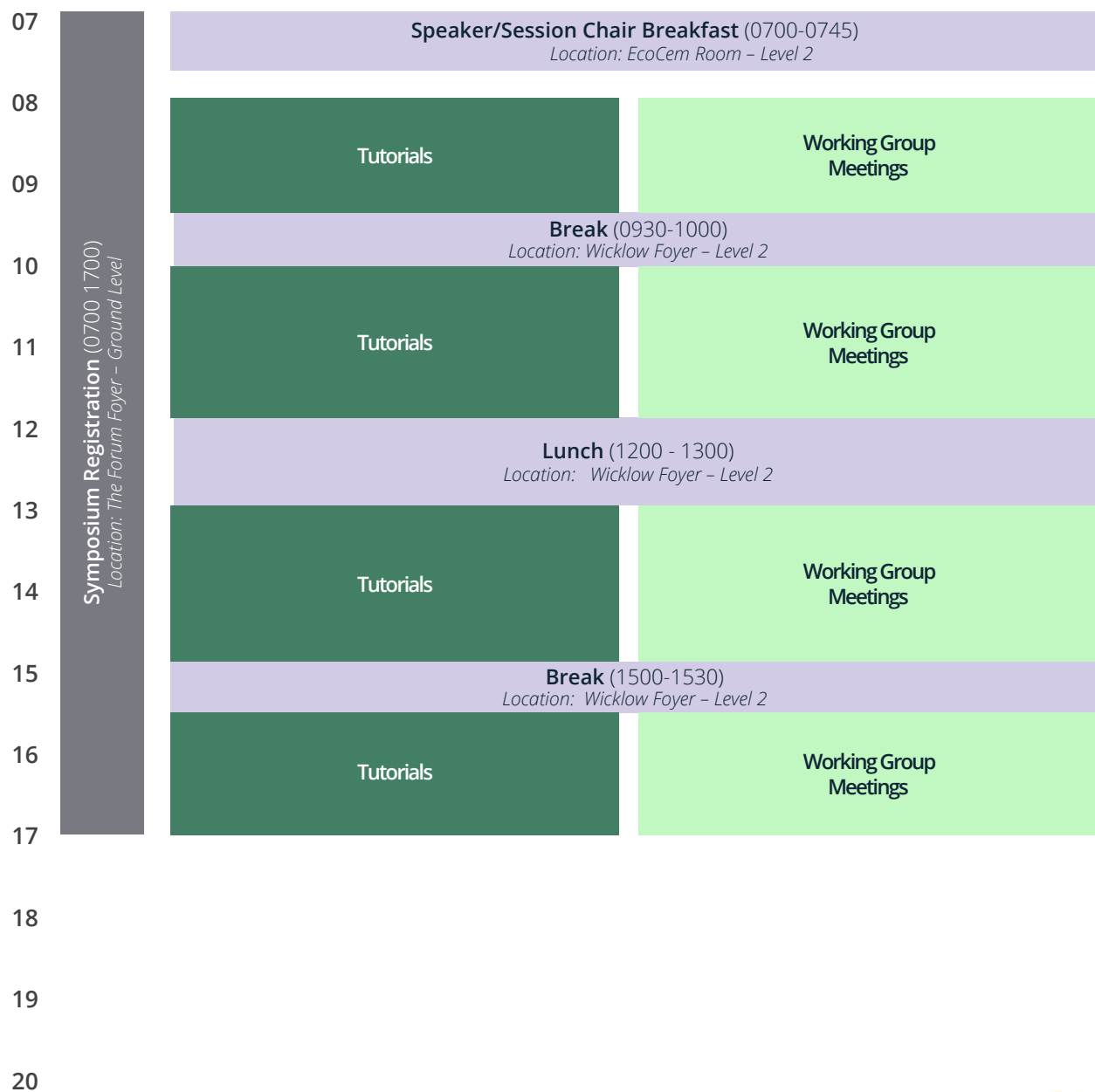| Start time	End time		Track 1	Track 2	Track 3
Ireland			The Auditorium	Wicklow Hall 1	Wicklow Hall 2A
				INCOSE	**MBSE Adoption**
				Richard Beasley	Nicole Hutchison
09:00	09:40	**Session 10**	Panel#1198: 10.1.1 / Building the digital bridge between MBSE and Engineering Simulation **Moderator:** Phyllis Marbach (SMSWG - INCOSE); **Panelists:** Ian Symington (NAFEMS); Bernardo Delicado (INCOSE); Hans Peter DeKoning (SMSWG); Alexander Busch (SMSWG, Ansys);	Paper#331: 10.2.1 / A Case Study of AI Usage within the INCOSE Technical Process Pete Chagnon, Rachelle Forney, Kenneth Harkenrider, Emily Wood, Yiyang Zhang, Jonathan Weaver (University of Detroit Mercy)	Presentation#282: 10.3.1 / Digital Engineering Capability Guidance and Maturity Assessment Framework Michael Shearin, Val Sitterle, Zac Connor (Georgia Tech Research Institute)
09:45	10:25			Presentation#379: 10.2.2 / Spreading the word: How the Brazilian INCOSE Chapter is Contributing to the Growth of the Local Systems Engineering Community Diego Rangel, Bruno Livramento (INCOSE Brasil)	Presentation#315: 10.3.2 / Optimizing MBSE adoption: Identifying and prioritizing forces Marjolein Velthuizen, Erwin Hofman, Marcus Pereira Pessoa, Maria Iacob (University of Twente)
10:30	11:10			Presentation#430: 10.2.3 / Safer Complex Systems Meaghan O'Neil (System Design and Strategy Ltd); Duncan Kemp (Ministry of Defence)	Paper#453: 10.3.3 / Empowering Model-Based Systems Engineering Through Metamodeling Richard Wise (Georgia Tech Research Institute); Rhett Zimmer (NAVAIR)
11:15	11:55		Paper#71: 10.1.2 / Excuse me Sir/Madam, which Model? Erik Herzog (SAAB AB); Johanna Axehill, Robert Hällqvist (Saab AB); John R. Palmer (The Boeing Company)	Presentation#69: 10.2.4 / The Latest on the INCOSE-PMI Alliance and integration between Program Management and Systems Engineering Tina Srivastava (MIT / Badge Inc.); Molly Kovaka (KOVAX LLC)	Presentation#85: 10.3.4 / The Contextual Metadata Layer (CoML) concept - unlocking collaboration in an uncertain/ BANI world Kyle Hall, Etienne Coetzee, Alan Lang (Airbus)
12:00	13:00	**Lunch**			
			System of Systems	**UAF**	**Human Factors**
			Luis Andes Olmedo	James Martin	Gerrit Muller
13:00	13:40	**Session 11**	Paper#332: 11.1.1 / An Agent-Based Ontology to Support Modeling of Socio-Technical Systems-of-Systems Jakob Axelsson (Mälardalen University)	Paper#482: 11.2.1 / Darth Vader's Secret Weapon: Implementing Mission Engineering with UAF Matthew Gagliardi, Matthew Hause (SSI); James Martin (The Aerospace Corporation); Mark Phillips (Raytheon)	Paper#160: 11.3.1 / Human Frailties: Springboard to Increased Systems Engineering Influence Eileen Arnold (Raytheon - BAE Systems (retired)); Dorothy Mckinney (Lockheed Martin (retired))
13:45	14:25		Presentation#362: 11.1.2 / Mission Engineering – Extending Systems of Systems Engineering to Mission Judith Dahmann, Peter Korfiatis (The MITRE Corporation)	Paper#564: 11.2.2 / Securing Your Eggs in Multiple Baskets – Assuring a Resilient and Secure Supply Chain Matthew Hause, Mitchell Brooks (SSI); Robert Kennedy (Clearfield)	Paper#458: 11.3.2 / A Method for Human Systems Integration Requirements within Model Based Systems Engineering Kenneth Corl, Erika Gallegos (Colorado State University)
14:30	15:30	**Plenary**	**Kathryn Cormican** *University of Galway*		

Broadcasted

🏆 **Best papers**

Track 4	Track 5	Track 6
Wicklow Hall 2B	Liffey Hall 1	Liffey Hall 2
Scaled Modeling	**Modular Open Systems Approach (MOSA)**	**Sociotechnical**
Susan Caskey		Cecilia Haskins
Presentation#65: 10.4.1 / Industrial DevOps and Digital Twins for Cyber-Physical Systems Suzette Johnson (Northrop Grumman); Robin Yeman (Carnegie Mellon, SEI)	Presentation#270: 10.5.1 / Towards a Reusable Model Based Systems Integration Framework Oliver Hoehne (WSP USA)	Paper#165: 10.6.1 / The Importance of Being Björn – Experiences from Five Age Cohorts of Female Systems Engineers Marianne Johansson, Johanna Axehill, Åsa Nordling Larsson (Saab AB); Linda Cederberg (Combitech AB); Stephanie Chiesi (Blue Origin); Erika Palmer (Cornell University)
Presentation#303: 10.4.2 / Enabling Systems Engineering at scale - the data asset management case Thomas Barre (AIRBUS)	Presentation#347: 10.5.2 / Product Assurance in the Model-Based System Engineering Ecosystem: Learning from Various Vertical Lift Platforms Timothy Russell (Boeing)	Paper#473: 10.6.2 / Aligning technical and project management through participatory approaches: An industrial case study Gisela Anaid Garza-Morales, Kostas Nizamis, Robert-Jan den Haan (University of Twente); Guido Gosselink (Thales Nederland b.V.); G. Maarten Bonnema (University of Twente)
Presentation#279: 10.4.3 / Modeling of Uncertainty in System and Enterprise Models Daniel Brookshier (Dassault Systèmes); James Martin (Aerospace Corporation)	Presentation#535: 10.5.3 / Start with the End in Mind: Envisioning the Strategic Role of MOSA in Defense Modernization Nadine Geier (Office of the Undersecretary of Defense (OUSD(R&E)) Systems Engineering); Monique Ofori (SAIC)	Paper#490: 10.6.3 / A New Horizon for Healthcare Delivery: A System of Systems Perspective and Governing Proposition Mohamed Mogahed, Mo Mansouri (Stevens Institute of Technology)
Presentation#309: 10.4.4 / Dealing with Emergence in Systems Engineering Models--Fewer Surprising Failures and more 'Happy Little Accidents' Steve Holt (Boeing)	Presentation#540: 10.5.4 / Evaluating MOSA Compliance in Defense Programs: Methodologies and Practical Approaches Nadine Geier (Office of the Undersecretary of Defense (OUSD(R&E)) Systems Engineering); John Tindle, Monique Ofori (SAIC)	Paper#474: 10.6.4 / A Systematic Literature Review of Policy Analysis and Modeling in Systems Engineering Shamsnaz Bhada (Worcester Polytechnic Institute); Dana Polojärvi (Maine Maritime Academy); Erika Palmer (Cornell University)
Decision Making	**Modular Open Systems Approach (MOSA)**	
Frank Salvatore	Joe Gregory	
Presentation#161: 11.4.1 / Using Systems Engineering and Decision Analysis in Descriptive, Predictive, and Prescriptive Analytics Gregory Parnell (Univeristy of Arkansas); Eric Specking (University of Arkansas); Randy Buchanan (Engineer Research and Development Center)	Presentation#543: 11.5.1 / Engineering Technical Management (ETM) Competencies to Support the MOSA Ecosystem Yvette Rodriguez (Defense Acquisition University); Monique Ofori (SAIC); Nadine Geier (Office of the Undersecretary of Defense (OUSD(R&E)) Systems Engineering)	Panel#397: 11.6 / Building Cultural Intelligence: The Role of Organizational Culture in Nurturing Leaders in Systems Engineering **Moderator:** Stueti Gupta (BlueKei Solutions Pvt Ltd); **Panelists:** Alice Squires (International Council on Systems Engineering); Anabel Fraga (Universidad Carlos III de Madrid); Javier Calvo-Amodio (Oregon State University); Victoria Patterson (Northrop Grumman);
Presentation#333: 11.4.2 / Trade Space Wonders: Expanding Horizons with Graph Embeddings to understand large trade space from generative methods. Kefan Sun, Mike Nicolai, Clement Bertheaume (Siemens Industry Software NV)	Presentation#392: 11.5.2 / MOSA Implementation Challenges and Opportunities; Perspectives from the NDIA Architecture Committee Robert Scheurer (National Defense Industrial Association (NDIA) SE Division Architecture Committee (Chair)); Edward Moshinsky (National Defense Industrial Association (NDIA) SE Division Architecture Committee (Co-Chair))	

Engineering Tomorrow: Navigating Pathways to Industry 5.0

Saturday

07	**Speaker/Session Chair Breakfast** (0700-0745) *Location: EcoCem Room – Level 2*
08	
09	Tutorials / Working Group Meetings
10	**Break** (0930-1000) *Location: Wicklow Foyer – Level 2*

Symposium Registration (0700 1700) *Location: The Forum Foyer – Ground Level*

Time	Left Column	Right Column
07	**Speaker/Session Chair Breakfast** (0700-0745) *Location: EcoCem Room – Level 2*	
08–09	Tutorials	Working Group Meetings
09–10	**Break** (0930-1000) *Location: Wicklow Foyer – Level 2*	
10–12	Tutorials	Working Group Meetings
12–13	**Lunch** (1200 - 1300) *Location: Wicklow Foyer – Level 2*	
13–15	Tutorials	Working Group Meetings
15	**Break** (1500-1530) *Location: Wicklow Foyer – Level 2*	
16–17	Tutorials	Working Group Meetings

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Tutorials

A.1 - Hands-on Journey on Variant Modelling with SysML: Features Models, Methods, SysML v2, and AI Insights 0800-1200
Marco Forlingieri (IBM Engineering), Tim Weilkiens (Oose)
Wicklow Hall 1 - Level 2 (Ticket required)

A.2 - Security as a Foundational Perspective in Systems Engineering: Engineering Trustworthy Secure Systems 0800-1700
Mark Winstead (The MITRE Corporation)
Wicklow Hall 2A - Level 2 (Ticket required)

A.3 - Dimensional Analysis. A helpful practice for identifying constraints on a system model developed using ISE&PPOOA MBSE methodology 0800-1700
Jose Luis Fernandez (Independent MBSE trainer), Juan Antonio Martinez (Department of Signal Theory and Communications, Escuela Politécnica. Universidad de Alcala de Henares.)
Wicklow Hall 2B - Level 2 (Ticket required)

A.4 - Embracing the Social Dimension of Systems Engineering 0800-1700
David Long (Blue Holon), Suja Joseph-Malherbe (Letter27)
Liffey Hall 1 - Level 1 (Ticket required)

A.5 - Open Source System Modeling with Python 0800-1700
Ryan Longshore, Raymond Madachy (Naval Postgraduate School)
Liffey Hall 2 - Level 1 (Ticket required)

A.6 - Systems Engineering for a Sustainable Future: Leveraging Emerging Technologies and Systems Modernization 0800-1700
Randall Anway (New Tapestry, LLC)
Liffey Meeting Room 3 - Level 1 (Ticket required)

C.1 - Use a Framework for SE in Early-Stage R&D to Build Your Bridge that Spans the Chasm Between Research and Engineering 1300-1700
Ann Hodges (Sandia National Labs (ret); SE in Early-Stage R&D Working Group Co-Chair; Enchantment Chapter Secretary, Past President), Michael DiMario (CEO, Astrum Systems; Lucent Bell Labs, retired; Lockheed Martin, retired; SE in Early-Stage R&D Working Group Co-Chair), Arno Granados (Strategic Technology Consulting; SE in Early-Stage R&D Working Group core member; Enchantment Chapter Past President)
Wicklow Hall 1 - Level 2 (Ticket required)

Business/Working Groups Meetings

Meeting Name	Time Start	Time End	Meeting Listing	Room
Enterprise Value WG	08:00	12:00	Open	Wicklow Meeting Room 1

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