

IS2023 Schedule at a glance virtual experience

VIRTUAL PROGRAM at IS2025													
Start time Ottawa, Canada	End time		MONDAY		TUESDAY		WEDNESDAY		Start time Ottawa, Canada	End time	THURSDAY		
					Systems Thinking, Critical Thinking, & Complexity Cecilia Haskins	Product Development Innovations Edem Tsei	Novel MBSE Approaches Yatin Jayawant	SE in Infrastructure and Healthcare Systems Michael Wozniak					
		Session V1			Paper#53: V1.1.1 / Applying Systems Thinking and Soft Systems Methodology to Explore the Complexity of Innovation in the Defense Industry Linn Merete Sandvold (Kongsberg Defence & Aerospace/ University of South-Eastern Norway; Mo Mansouri (Stevens Institute of Technology); Kristin Falk (University of South-Eastern Norway)	Paper#379: V1.2.1 / Outcome-Driven Product Development: An enabling system for complex system development projects Derek Wade (Kumido Adaptive Strategies); John Metcalf (Colorado State University)	Presentation#280: V2.1.1 / Accelerating agile MBSE deployment for next gen automotive architecture with gen AI based SysML V2 Yutika Patwardhan, Varun Sontakke, Paras Banjara (Tata Consultancy Services)	Paper#344: v2.2.1 / Engineering Hope via a Rapid Systems Engineering Approach to International Disaster Relief Calen Sims, Kathleen Ticer, David Gross (Florida State University)					
05:30	05:55			Paper#92: V1.1.2 / Complexity in the Context of Systems Engineering Rudolph Oosthuizen (Department of Engineering and Technology Management, University of Pretoria); Andrew Pickard (APICKARD LLC); Dean Beale (Independent Researcher); Dorothy McKinney (Lockheed Martin (Retired)); Kenneth Cureton (University of Southern California); Eileen Arnold (UTC / BAE Systems / Rockwell Collins (retired))	Paper#352: V1.2.2 / Case Study: Application of STPA in the development of a Fuel-Cell Propulsion System Jean Fernando Bertao Machado, Edem Tsei, Shaarujan Prabakaran, Daniel Wilding (Cranfield Aerospace Solutions)	Presentation#359: V2.1.2 / Exploration of MBSE Methodologies for Modeling Pre-Existing Systems Kathryn Wesson (Dassault Systems); Kian Blackey (Embry-Riddle Aeronautical University Prescott, AZ)	Paper#160: v2.2.2 / Systems-of-Systems Engineering Challenges: Experiences from the Road Construction Domain David Rylander (RISE Research Institutes of Sweden AB (RISE)); Jakob Axelsson (Mälardalens University (MDU))						
06:00	06:25			Paper#159: V1.1.3 / ChatGPT Dilemma: Effects of Generative AI on Higher Education in Systems Engineering Emin Simsek, Gerrit Muller, Kristin Falk (University of Southeastern Norway)	Presentation#234: V1.2.3 / Value Methodology as an Enabler for Architectural Definition: A Case Study in Product Development Fabien Cochet, Paola Mainardi, Gregorio Vettori (Baker Hughes)	Paper#264: V2.1.3 / Universal Systems Engineering Lifecycle Framework (USELIFE): An Integrated MBSE Approach For Managing System Lifecycle Complexity Yatin Jayawant, Prashant Chouhan, Nikunj Ganatra, Himanshu Upadhyay (Accenture Solutions Pvt Ltd.)	Paper#242: v2.2.3 / The Need for Systems Thinking in Digital Health Transformation Inas Khayal (Geisel School of Medicine at Dartmouth)						
06:30	06:55												
06:55	08:00	Break											
08:00	09:00	Keynote	Plenary featuring Keynote#2: P1 / Futurist		Plenary featuring Keynote#3: P2 / SE in practice		Plenary featuring Keynote#4: P3 / Space						
09:00	09:25		Langdon Morris		Jon Reijnevald (The Exploration Company (TEC))		Dr. Robert Thirsk (Canadian Space Agency)						
09:30	10:00	Break											
			SysML v2 Case Studies and Applications	Digital Engineering Strategies for Information Exchange and Visualization	MBSE Lightning Round	Systems Engineering Roles and Competencies	Sociotechnical, Environmental, and Cultural Systems Analysis	Tech Ops Track			SysML v2 Methodologies and Extensions Jeremy Doerr, Jeffery Williams	Systems Engineering Education and Competency Development Paul Schreinemakers, Chris Hoffman	
		Session 1	Presentation#65: 1.1.1 / Case Studies for Querying the Model - SysML V2 SysML V2:Model Queries;Model Analysis;Query;MBSE;CATIA Magic;Simulation Toolkit	Paper#319: 1.2.1 / TurboArch: Towards Automating System Architecture Decisions with a CoPilot System architecture;CoPilot;cognitive assistant;Large Language Models;lilities	Paper#238: 4.1.1 / OMG's Approach to Developing its SysMLv2 Certification Program Rick Steiner (University of Arizona); Terrance Milligan (Object Management Group); Matthew Johnson (Arcfield)	Paper#21: 4.2.1 / Why Systems Engineering Skills Are Critical for Successful Leadership of Large Complex Projects megaproject;leadership;skills;competencies;project complexity;enterprise leadership;skills development	Paper#324: 7.3.1 / Analyzing Systems Engineering Vision 2035 Through a Cultural Lens SE Vision;FUSE;Culture;China;Japan	INCOSE Content#1047: 7.6.1 / How INCOSE is Advancing the Practice of Systems Engineering		09:00	09:40	Digital Engineering;Methodology;Model-Based System Engineering;Digital Threads	Paper#110: 10.6.1 / Developing Competence in Competency Assessment and Development – Experiences from applying the INCOSE Systems Engineering Competency Framework from two Large Organizations Systems Engineering Competency Framework;Competency Management;Career Development
10:00	10:40		Presentation#79: 1.1.2 / Transforming an Acquisition Process with SysML v2 Model-Based Acquisition;Digital Engineering;Model-Based Systems Engineering;SysML v2	Presentation#153: 1.2.2 / A Knowledge Graph Framework for Failure Analysis and Prevention Systems Engineering;Aerospace Engineering;MBSE;Digital Engineering;Mission Assurance;Vulnerabilities;Data Visualization;Analysis;Human Computer Interaction	Paper#168: 4.1.2 / Explaining Model-Based Systems Engineering – Towards a Semiotic Perspective Eduard Kamburjan (IT University of Copenhagen); Johan Cederbladh (Mälardalen university)	Paper#40: 4.2.2 / Systems Engineering Roles for a New Era Systems engineering roles;digital engineering;artificial intelligence;value of roles;systems engineering challenges.	Paper#233: 7.3.2 / CONFIGURATION MANAGEMENT AS A DRIVER FOR SUSTAINABILITY Configuration Management pillars:Sustainability Development Goals;traceability;sustainable standards compliance;certificates;product end-of-life;circularity and recycling	INCOSE Content#1038: 7.6.2 / How are We Doing? FuSE Report Card on Realizing the Systems Engineering Vision 2035		09:45	10:25	Presentation#56: 10.2.2 / SysML v1 to SysML v2 Model Conversion Approach SysML v2;SysML Model Conversion;SysML Model Transformation;SysML v2 Transition;MBSE	Paper#118: 10.6.2 / Applying Systems Engineering to Systems Engineering Graduate Course Development Systems Engineering Process Application;Education and Training;Product Line Architecture;Agile Development
10:45	11:25		Paper#185: 1.1.3 / Exploring the Use of SysMLv2 for Solution Architecture Development with the MagicGrid Framework Model-Based Systems Engineering (MBSE);MagicGrid;SysMLv1;SysMLv2	Paper#320: 1.2.3 / Towards a Digital Engineering Ontology to Support Information Exchange Digital engineering;Model-based engineering;Ontology;Semantic web technologies	Paper#214: 4.1.4 / Methodology for Model-Based Certification Jay Silverman, Holly Handley (Old Dominion University)	Presentation#392: 4.2.3 / Qualifications, certifications, what's the point? How and why to formalize competency in your organization formalizing competency;qualifications;certification;implementing competency	Presentation#374: 7.3.3 / SE, S and T: A Sociotechnical Systems Analysis of United States Scientific and Technical Policymaking engineering policy and diplomacy;governmental systems analysis;decision making in governments;science and technology policymaking;systems engineering integration	INCOSE Content#1041: 7.6.3 / AI for SE and SE for AI		10:30	11:10	Presentation#174: 10.2.3 / Taming the beast: Best Practices of Extending SysML V2 SysML V2;MBSE;Language Extensions;Best Practices	Paper#166: 10.6.3 / Teaching Systems Engineering for Students – Experiences from the Swedish Education System Education;Systems Engineering;Experiences;Lessons Learned
11:30	12:10				Paper#177: 4.1.5 / Integrating system dynamics with systems modelling language for resilient system design Ivan Taylor (Policy Dynamics Inc.); Ken Cureton (University of Southern California); Al Thibeault (Amistra)				11:15	11:55	Presentation#191: 10.2.4 / MBSE Collaboration with SysML 2.0: A Pre Release Investigation from A&D PLM Action Group PLM;MBSE;SysML;SysML v2;KerML;interoperability	Paper#54: 10.6.4 / Emotional Intelligence as a Tool for Sustainable Development: Insights from Student Projects Emotional Intelligence;Sustainability;Systems Thinking;Global Challenges;Engineering Education	
12:10	13:30	Lunch							12:00	13:00			
				AI Practices and Enterprise Reliability Jay Silverman, Erik Herzog		Risk, Security, and Resiliency Modeling and Analysis Patrick Meharg, Joe Gregory	AI Ethics and Human-AI Interfaces Hannes Hick, Matthew Hause	Tech Ops Track Tami Katz, Jimmie McEver			Digital Transformation in Engineering Processes Phyllis Marbach, Gregory Parnell	Verification and Validation in Model-Based Environments Hannes Hick, Mark Winstead	
13:30	13:55	Session 2	Panel#201: 2.1 / Navigating Organizational Change: Transforming for a Digital Engineering Future Culture Change;Organizational Change;Digital Engineering;Change Management	Presentation#34: 2.2.1 / Observations in Establishing AI Practices in Highly Regulated Environments Artificial Intelligence;DevSecOps;Agile;Machine Learning	Panel#385: 5.1 / Think Like an Ecosystem: Re-envisioning the Future of Systems on Earth Ecological design;Sustainability;Nature-inspired Innovation;Interdisciplinary Collaboration	Paper#331: 5.2.1 / Digital Engineering Testbed for T&E: Operation Safe Passage Status and Lessons Learned Test & Evaluation;Systems Engineering;Digital Engineering;Digital Transformation	Presentation#90: 8.3.1 / Ensuring Safety in AI/LLM Systems for Open-Source Intelligence: An STPA-Guided Approach Large Language Models (LLMs);System Safety;Artificial Intelligence	INCOSE Content#1039: 8.6.1 / Shaping the Future with Complex and Adaptive Systems	13:00	13:25	Presentation#77: 11.2.1 / From Standards to Systems: Insights on Digital Transformation and MBSE Integration Standards;Digital standards;SysML;Model-based systems engineering;Digital transformation;MBSE;Digital integration;Ontology	Paper#210: 11.6.1 / Successfully Integrating Early Validation and Verification in Industrial MBSE MBSE;Simulation;Verification;Validation;Success factors	
14:00	14:25			Paper#98: 2.2.2 / Enterprise Architecting to Advance Reliability and Maintainability Decision-Making Enterprise Architectures;maintenance strategy;decision support;reliability;maintainability		Presentation#299: 5.2.2 / Model Based Test and Evaluation Master Plan: Applying Digital Transformation to T&E Strategy for Major Acquisition Programs Model Based Systems Engineering;MBSE;Model Based Test Engineering;MBTE;Test and Evaluation;T&E;Test and Evaluation Master Plan;TEMP;Digital Transformation;IDSK	Paper#307: 8.3.2 / Ethical Human-AI Agent Interface Considerations Human-AI Teaming;Decision-Making;Human Systems Integration;HSI;Combat Identification	INCOSE Content#1043: 8.6.2 / Conserving Energy as a Strategy for Dealing with Uncertainty and Dynamics in SE		13:30	13:55	Presentation#292: 11.2.2 / Taking CI-CD DevOps to Digital Engineering – Unit Testing, Model Assessments and Build Automation Digital Engineering;DevOps;MBSE;Model Assessment;Unit Test;CI/CD;Build Automation;Integration Testing;QA	Paper#178: 11.6.2 / Integrating configurator and model-based verification and validation to streamline the design process of large-scale ETO systems product configurator;v&v process;model-based systems engineering;model-based development;engineering-to-order product;pump system;motor design
14:30	14:55					Paper#396: 5.2.3 / Hidden Beliefs in Verification Decisions: An Experimental Study with Practitioners Verification;belief;expert performance;cognitive science;Bayesian network	Paper#314: 8.3.3 / AI outperforms 60 se graduates in creating causal loop diagram of janis groupthink phenomenon Artificial Intelligence;System Dynamics;Causal Loop Diagram;LLM;Groupthink		14:00	14:25	Paper#351: 11.2.3 / NASA's Hopes and Fears of Digital Engineering Digital engineering;MBSE;group model building;GMB;community-based system dynamics;CBSD	Paper#129: 11.6.3 / Performing verification and validation activities in a model-based environment Model-based Systems Engineering;Verification;Validation;INCOSE;Needs and Requirements	
15:00	15:30	Break											
			Systems Engineering Expertise Development Fabio Silva, Kirsten Helle		Digital Twin Applications and Verification Rick Steiner, Chris Hoffman	AI Systems for Safety-Critical Applications Enanga Fale, Duncan Kemp	Architecture, Verification, and Asset Management Alejandro Salado, Kirsten Helle	Tech Ops Track Tami Katz, Jimmie McEver					
15:30	15:55	Session 3	Panel#204: 3.1 / No Organization Builds just One: The Feature-Based Path to Product Line Success Product Line Engineering;System Family Engineering;Commonality and Variability;Systematic Reuse;Feature-based;Model-based	Paper#23: 3.2.1 / On The Importance of Being Able to Hold a Stake Stakeholders;needs;decomposition;roles;stakeholder integrator role;Belbin;Graves;Myers-Briggs	Paper#94: 6.1.1 / Bridging Realities: Bringing MBSE Models to Life with Digital Twins Model-Based Systems Engineering;Digital Twins;System Visualization;System Interactivity	Presentation#111: 6.2.1 / Engineering Trusted AI Systems for Mission-Critical Operations Trusted AI Systems;Human-AI Collaboration;Mission Engineering;Modular Open Systems Approach (MOSA);Digital Engineering;Cyber-Physical Systems Security;Mission-Critical Operations;Human Trust in AI	Presentation#384: 9.3.1 / Solving the Selfish Octopus Problem with the Reusable Asset Specification (RAS) 3.0 Reuse;MBSE;Models;Acquisition	INCOSE Content#1042: 9.6.1 / Addressing Sustainability through a new INCOSE Working Group			Plenary featuring Keynote#5: P4 / Sociotechnical Dr. William Donaldson (Christopher Newport University)		
16:00	16:25		Presentation#29: 3.2.2 / Shu Ha Ri for SE (For the Journey to Expertise in SE, Enhance the Path with Shu Ha Ri) mastery;generalists;specialists;wicked problems;shu ha ri	Presentation#329: 6.1.2 / Agile Systems Engineering of an Astronaut Digital Twin to Optimize Human Space Exploration spaceflights;systems engineering;agile;digital twin;systems biology;space medicine;precision medicine;Bayesian inference;computational systems physiology	Paper#87: 6.2.2 / A Digital Engineering Methodology for Design, Exploration and Validation of Safety-Critical Software for Integrating AI-based Algorithms Safety;MBSE;AI/ML;Quantitative safety assessment;AI/ML validation;OOD;OOD	Paper#353: 9.3.2 / Modular Design Method Considering System Architecture in Maritime Radar System for Autonomous Ship Modular Design;Maritime Radar System;System Architecture;Performance Optimization;Au-tonomous Ships	INCOSE Content#1045: 9.6.2 / Rally the Troops! The Secret Energy Driving All Innovation Ecosystems						
16:30	16:55			Paper#336: 6.1.3 / A Double-Helix Model for the V&V of Physical and Digital Twins Digital twin;verification and validation (V&V);systems theory	Paper#41: 6.2.3 / AI Starter Kit and Caveats for the Systems Engineer SE & AI;Getting Started;AI caveats;AI Cautions;AI Examples;Artificial Intelligence	Presentation#218: 9.3.3 / Driving the Future of MBSE: SysMLv2 and Simulation-Driven Verification for the example of an Electric Vehicle ePowertrain Battery System SysMLv2;MBSE;Architecture;Analysis;Modeling;Simulation;Verification	INCOSE Content#1044: 9.6.3 / Smarter Delivery of Infrastructure						