IS2025 Schedule at a glance virtual experience

VIRTUAL PROGRAM at IS2025

Start time Ottawa, Canada	End time Ottawa, Canada		MONDAY	TUESDAY		WEDNESDAY		Start time Ottawa, Canada	End time Ottawa, Canada	THURSDAY	
				Systems Thinking, Critical Thinking, & Complexity	**Product Development Innovations**	**Novel MBSE Approaches**	**SE in Infrastructure and Healthcare Systems**				
				Cecilia Haskins	Edem Tsei	Yatin Jayawant	Cecilia Haskins				
05:30	05:55	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#382: v2.2.1 / Lifecycle Switching Costs Henry Zhu (New York)				
06:00	06:25			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 Systemes); Kian Blackey (Embry-Riddle Aeronautical University Prescott, AZ)	Paper#242: v2.2.2 / The Need for Systems Thinking in Digital Health Transformation Inas Khayal (Geisel School of Medicine at Dartmouth)				
06:30	06:55			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#54: v2.2.3 / Emotional Intelligence as a Tool for Sustainable Development: Insights from Student Projects Aparajita Jaiswal, Tugba Karabiyik (Purdue University)				
06:55	08:00	**Break**									
08:00	09:00	**Keynote**	**P1 / AI and the Future of Systems Engineering** **Langdon Morris**	**P2 / SE in practice** **Jon Reijneveld (The Exploration Company (TEC))**		**P3 / Preparation for Spaceflight** **Dr. Robert Thirsk (Canadian Space Agency)**					
09:00	09:25										
09:30	10:00	**Break**									
			SysML v2 Case Studies and Applications	**Digital Engineering Strategies for Information Exhange and Visualization**	**MBSE Lightning Round**	**Systems Engineering Roles and Competencies**	**Sociotechnical, Environmental, and Cultural Systems Analysis**	**Tech Ops Track**		**SysML v2 Methodologies and Extensions**	**Systems Engineering Education and Competency Development**
			Patrick Meharg, Gregory Pierce	Lori Zipes, William Scheible	Mark Sampson, Troy Peterson	Suzette Johnsoon, Richard Beasley	Guillaume Belloncle, Adam Williams	Tami Katz, Jimmie McEver		Jeremy Doerr, Jeffery Williams	Paul Schreinemakers, Chris Hoffman
10:00	10:40	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;ilities	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#168: 4.1.2 / Explaining Model-Based Systems Engineering – Towards a Semiotic Perspective Eduard Kamburjan (IT University of Copenhagen); Johan Cederbladh (Mälardalen university) Paper#165: 4.1.3 / An Initial Exploration of MULTI Level Modeling for Model-Based Systems Engineering Arne Lange (Karlsruhe Institute of Technology); Johan Cederbladh (Mälardalen University); Kevin Feichtinger, Thomas Weber (Karlsruhe Institute of Technology) Paper#214: 4.1.4 / Methodology for Model-Based Certification Jay Silverman, Holly Handley (Old Dominion University) 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)	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	Presentation#36: 10.2.1 / Using SysML v2 to Define a Digital Engineering Methodology 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
10:45	11:25		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#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
11:30	12:10		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		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 government;science and technology policymaking;systems engineering integration	INCOSE Content#1041: 7.6.3 / AI for SE and SE for AI	10:30	11:10	Paper#164: 10.2.3 / Enterprise Transformation Planning with UAF Model-Based Enterprise Architecture;UAF;Enterprise Transformation;Business Transformation;Digital Transformation;planning;enterprise as a system	Paper#166: 10.6.3 / Teaching Systems Engineering for Students – Experiences from the Swedish Education System Education;Systems Engineering;Experiences;Lessons Learned
									11:15	11:55	Paper#212: 10.2.4 / Next Generation MBPLE with SysML v2: Feature Modeling, Variability Modeling and API Potentials MBPLE;PLE;MBSE;SysML v2;Variability Modeling;Feature Modeling;Interoperability	Paper#344: 10.6.4 / Engineering Hope via a Rapid Systems Engineering Approach to International Disaster Relief Hackathon;Systems Engineering;Disaster Relief;International Collaboration;Damage Assessment;Computer Vision
12:10	13:30	**Lunch**							12:00	13:00		
				AI Practices and Enterprise Reliability		**Risk, Security, and Resiliency Modeling and Analysis**	**AI Ethics and Human-AI Interfaces**	**Tech Ops Track**		**Digital Transformation in Engineering Processes**	**Verification and Validation in Model-Based Environments**
				Jay Silverman		Patrick Meharg, Joe Gregory	Hannes Hick, Matthew Hause	Tami Katz, Jimmie McEver		Phyllis Marbach, Gregory Parnell	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	**Digital Twin Applications and Verification**	**AI Systems for Safety-Critical Applications**	**Architecture, Verification, and Asset Management**	**Tech Ops Track**			
				Fabio Silva, Kirsten Helle	Rick Steiner, Chris Hoffman	Enanga Fale, Duncan Kemp	Alejandro Salado, Kirsten Helle	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	14:30	15:30	**P4 / Let's Talk about SYSTEMS engineering...and get others to Listen** **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 spaceflight;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;OD;ODD	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				