Future of Systems Engineering highlights

33rd Annual INCOSE international symposium

hybrid event

Honolulu HI USA

Future of SE (FuSE) Program Highlights

In January 2022, INCOSE published Systems Engineering Vision 2035: Engineering Solutions for a Better World https://www.incose.org/about-systems-engineering/se-vision-2035. The Vision recognizes the scale, interconnectedness, and non-determinism of 21st Century systems. The Future of Systems Engineering (FuSE) is the engineering and systems communities' initiative to realize the Vision in a holistic and comprehensive transdisciplinary manner https://www.incose.org/about-systems-engineering/fuse. The FuSE initiative addresses both the enablers and impediments, taking into account the political, economic, social, technical, environmental, and legal (PESTEL) factors.

Saturday, July 15

08:00-17:00 **Tutorial: Artificial Intelligence for Systems Engineers: Going Deep with Machine Learning and deep Neural Networks**
Ali Raz, Barclay Brown, Ramakrishnan Raman

Sunday, July 16

08:00-17:00 **Tutorial: Engineering Assured Trustworthy Secure Systems**
Mark Winstead, Michael McEvilley, Daryl Hild

Monday, July 17

10:00-12:10 **Invited Content: A Systems Approach to Sustainable Transport and Mobility Solutions**
Erika Palmer, Dale Brown, Carrie Cabak, Tom Lusco,Sarah Sheard, Marcel van de Ven

10:00-10:40 **Paper: Democratizing Systems Security**
Rick Dove, Mark Winstead, Holly Dunlap, Matthew Hause, Aleksandra Scalco, Adam Williams, Beth Wilson, Keith Willett

13:30-14:55 **Panel: Roundtable explores how security joins performance and safety as foundational systems design perspectives**
Rick Dove, Dawn Beyer, Tom McDermott, Mark Winstead

15:30-16:55 **Panel: Contrasting and Comparing Agile Systems Engineering and Agile Software Engineering**
Rick Dove, Duncan Kemp, Kerry Lunney, Robin Yeman; Keith Willett

16:15-16:55 **Presentation: Visualizing AGILEinside the V, mixing Code-Centric and Evidenced-Based development**
Robin Mikola, David Hetherington, Robert Peters

All times are HST

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Tuesday, July 18

10:00-12:10 **Panel: How can you help your area become a Smart City? Connect with the INCOSE Smart Cities Initiative**
Jennnifer Russell, Jargalsaikhan Dugar, Marcel van de Ven, Rael Kopace

13:30-14:55 **Invited Content: The Innovative Edge of Participatory Methods in Systems Engineering**
Jennifer Russel, Dale Brown, Randall Iliff, Dana Polojarvi

13:30-14:55 **Panel: The Future of Decision Analysis**
Frank Salvatore, Gregory Parnell, Devon Clark, Robert Kenley, Dan Hettema

15:30-16:55 **Panel: Bringing a Knife to a Gun Fight: Systems Engineering for the Modern World**
David Long, Jon Wade, Duncan Kemp, Erika Palmer

Wednesday, July 19

10:00-12:10 **Invited Content: Towards a Systems Engineering Foundation**
Ricardo Valerdi, Olivier de Weck Garry Smith, Lydia Kaiser

10:00-10:40 **Paper: The INCOSE Systems Engineering Heuristics: What Are They Telling Us About the Discipline?**
Caroline G. Thomas, Carly Fridlin, C. Robert Kenley

11:30-12:10 **Paper: Toward Systems Engineering Meta-Methodology**
Yaniv Mordecai

11:30-12:10 **Paper: Cyber Security at the Enterprise Level**
Mitchell Brooks, Matthew Hause

13:30-14:55 **Invited Content: Multi-Disciplinary Approaches to Addressing the Wicked Problems of Cyber-Physical-Social Systems**
Jon Wade , Michael Bruno, Olivier de Weck, Javier Calvo-Amodio, Erika Palmer, Hortense Gerardo

13:30-14:10 **Paper: Agile Systems Engineering – Eight Core Aspects**
Rick Dove, Kerry Lunney, Michael Orosz, Michael Yokell

14:15-14:55 **Paper: I-SHARE– INCOSE Systems Heuristics Application Repository: Sharing Systems Engineering Knowhow and Experience**
Dov Dori, Dorothy McKinney, Gan Wang, Scott Jackson

Thursday, July 20

10:45-11:25 **A Conceptual Framework for the SE of AI-Intensive Systems (SE4AI) – Considering Data Through the Life-Cycle**
Jawahar Bhalla, Stephen Cook, David Harvey

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For more information on FuSE, contact FuSE Program Management Office at fuse@incose.net

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Program subject to change - please check the symposium website (www.incose.org/symp2023) for any updates.