

Special half-day Free Tutorial for registered GLRC 2018 attendees: Wednesday, Oct. 17, 12:00 – 5:00 PM EST

“Trusted Models, Collaborative Learning, Accelerated Capability”



2018 Annual INCOSE
Great Lakes Regional Conference
SYSTEMS AT THE CROSSROADS

17 - 20 October 2018 | Indianapolis, Indiana

WORKSHOP (AND CONFERENCE) REGISTRATION

https://www.incose.org/glrc2018/attendees_2018/registration

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WORKSHOP ABSTRACT

Are you ready? The idea of a connected, transparent community focused on learning and accelerating the realization of new products and processes is not just for the future. It’s needed now in support of the “digital” transformation—not just for each enterprise, but for whole supply chains, regulators, and the life cycle management processes. With this transformation come unexpected complexities...in coordination, the digitization of systems involved in realization, security, and more importantly...how work is performed.

Now, emerging systems challenges and opportunities are leading to a new wave of “virtual” (model-based) methods, high performance computing resources, technical disciplines, and standards. Computational and similar models, whether human-made or machine-learned, are increasingly being applied to the most critical issues of health and medicine, critical infrastructure systems, advanced manufacturing materials and processes, safety-critical systems, and socio-technical webs of interdependent systems and processes.

For it to work, the new system and its models must demonstrate they are trustworthy, through “trust” standards developed in partnership with regulators to fully realize the value to industry and the community.

The V4 Institute is an Indiana-based, private-led, public-private collaboration of member enterprises and institutions for the purpose of promoting collaboration, facilitating integration and establishing trust in the models and processes needed in the digital transformation. The V4 Institute is now launching five public projects in this space, and invites participation of additional collaborators interested in joining the V4 Institute.

Attendees at this half-day Institute will gain an awareness of the significance of these opportunities and challenges, V4i’s process and capabilities as a potential accelerator, and how related projects advance our common cause.

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Time	Topic	Speaker
12:00-12:20	1 Introductions: V4 Institute, Workshop Attendees	<i>Doug Koeneman</i>
	1.1 Workshop Objectives and Materials	
	1.2 Introducing the V4 Institute	
	1.3 Workshop Attendee Introductions and Interests	
12:20–12:40	2 Context: Challenges and Opportunities	<i>John Matlik, Doug Koeneman, Bill Schindel</i>
	2.1 Digital Engineering Has Arrived	
	2.2 Challenges to Innovation: Complexity, Regulatory and Other Risks, Development Costs and Time, Expectations	
	2.3 Opportunities: Virtual Models, Model VVUQ as a Proxy for Learning and Mutual Trust, Economic Leverage of Model-Based Patterns	
12:40–2:30	3 Two Decades of Related Progress on Related Methods and Standards	<i>Bill Schindel</i>
	3.1 System V&V versus Model V&V, Model VVUQ for Trustable Models, Physics-Based Models, Data-Driven Models, Hybrid Models, Tools, History	
	3.2 Decades of Advancement in the Discipline of <i>Trustable</i> Computational Modeling in Critical Domains: Supporting Mathematics, Sandia, NASA, ASME Committees, Research	<i>Sankaran Mahadevan</i>
	3.3 Collaboration by Regulatory, Engineering Society, and Enterprise Players: Pattern Support for Model VVUQ Discipline, Guides, Standards, Examples	<i>Bill Schindel</i>
2:30-3:00	Break	
3:00-4:15	4 V4 Institute: Targeted Outcomes, Roadmap, Properties, Collaboration Projects	<i>Joe Veranese</i>
	4.1 V4I: Origin, Mission, Context, Stakeholder Features, Roadmap, Membership, Models of Products as well as Production, Protecting Proprietary Assets while Creating Shared Value	
	4.2 Breakout Sessions: Rotating Speed-Dating Poster Sections on Launch Projects--	<i>Tengfei Luo, Craig Stewart, Todd Simons, Sankaran Mahadevan, Bill Schindel, Doug Koeneman</i>
	4.2.1 Product Design Type Certification by Virtual Modeling & Simulation	
	4.2.2 Manufacturing Type Certification by Virtual Modeling & Simulation	
	4.2.3 System Level V&V by Virtual Modeling & Simulation	
	4.2.4 Verification and Validation of Models	
	4.2.5 Secure Model Repository Reference Pattern	
	4.2.6 V4I Framework: S*Metamodel, S*Patterns, Model VVUQ Pattern	
4:15-5:00	5 Invitation to Collaborate	<i>Doug Koeneman</i>
	5.1 Collaborate to Accelerate Your Learning; Collaborate for Early Access to Assets	
	5.2 Membership and Members	
	5.3 Discussion	
5:00	6 Adjourn	