20th International Workshop on "Dependable Smart Embedded Cyber-Physical Systems and Systems-of-Systems" at SAFECOMP 2025 (DECSoS '25)

Stockholm at KTH, Sweden, Sept. 09, 2025

Co-hosted by EWICS TC7, ERCIM and the ECSEL/Chips-JU projects AIMS5.0, A-IQ Ready, PowerizeD, ShapeFuture, the Horizon Europe Coordination & Support Action INSTAR

Erwin Schoitsch, AIT Austrian Institute of Technology
Amund Skavhaug, NTNU, Trondheim, Norway

Final Programme

Welcome and Introduction

09:00 – 09:30 **DECSoS Workshop Introduction: European Research and Innovation Projects in the Field of Cyber-Physical Systems and Systems-of-Systems (Selective Overview on some EU Research projects);** *by Erwin Schoitsch and Amund Skavhaug.*

Session 1: Dependable AI "work in progress"

09:30 – 10:00 **Dependable AI Inference - A work-in-progress on CPU, Co-Processor and FPGA Approaches,** *by Carlos Rafael Tordoya T., Hans Dermot Doran, Pablo Ghiglino and Mandar Harshe.*

10:00 – 10:30 Coffee Break

Session 2: Autonomous Vehicles and Systems

10:30 – 11:00 **Methodology for Test Case Allocation based on a Formalized ODD,** *by Martin Skoglund, Fredrik Warg, Anders Thorsen, Sasikumar Punnekkat, and Hans Hansson.*

11:00 – 11:30 **Safety-Aware Strategy Synthesis for Autonomous System of Systems with UPPAAL,** *by Nazakat Ali, Muhammad Naeem, Julieth Patricia Castellanos Ardila, and Sasikumar Punnekkat.*

11:30 – 12:00 **From Bouncing Break-ins to Frictional Firewalls: Ideas about Interacting Requirements for Vehicle Safety and Security,** *by Luca Arnaboldi, David Aspinall, Christina Kolb and Sasa Radomirovic.*

12:00 – 13:00 Lunch Break

Session 3: Cybersecurity of complex Systems (of Systems)

13:00 – 13:30 **A ThreatGet-Based Framework for Aligning System Security with the Cyber Resilience Act,** *by Abdelkader Magdy Shaaban and Christoph Schmittner.*

13:30 – 14:00 **i7Fuzzer: Neural-Guided Fuzzing for Enhancing Security Testing of Stateful Protocols,** *by Loui Al Sardy, Avinash Rajendra Prasad , and Reinhard German.*

14:00 – 14:30 **Towards a Hybrid LLM-Based Intrusion Detection System for Cyber-Physical Systems Applications,** *by Mamdouh Muhammad, Abdelkader Magdy Shaaban, Reinhard German, and Loui Al Sardy.*

14:30 – 15:00 **PROTECTION: Provably Robust Intrusion Detection system for IoT through recursive Delegation,** *by Riad Ibadulla, and H. Asad.*

15:00 – 15:30 Coffee Break

Session 4: Critical CPS and System-of-Systems Applications & Testing

15:30 – 16:00 **Water Leak Detection System with Real-Time Leak Alert,** *by Rhea Frell Caballero and Chilly Chu.*

16:00 – 16:30 **Medicare: An AI-Driven Healthcare Consultation And Appointment System with LLM Chatbot,** *by Vansh Batra, Devansh Om Saxena, and Dr. Arun. A.*

16:30 – 17:00 **Towards Credible Simulators: A Validation Methodology for Safety-Critical Virtual Testing,** *by Ramana Reddy Avula, Mazen Mohamad, Behrooz Sangchoolie, and Marvin Damschen.*

17:00 – 17:30 **Cybersecurity in Partitioned Space Embedded Systems,** *by Luis Ortiz, Alfons Crespo, Marc Fontalba, Patricia Balbastre, José E. Simó, and Pedro Albertos.*