



Systems, Software and Safety 2024

System and software safety in electronic systems is becoming increasingly central in many industries and indeed as part of often critical societal infrastructure. The systems become ever more complex, connected and autonomous — and the software continues to grow. This poses many challenges even for mature organizations, requiring approaches that go beyond established best practices.

The Scandinavian conference on safety critical systems and software has become a central meeting place for Scandinavian safety experts from industry, public and academic organizations. This year we collaborate with Swedish Electromobility Centre at Chalmers, and special focus will be on safety in electrification of transport. It is an opportunity to share experiences and make new contacts. The conference features one day with distinguished keynotes, industrial and research presentations. In the evening directly after the last presentations there is a conference dinner to meet old friends and establish new contacts.

Warm welcome to the conference, this year in Göteborg.

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Time: 20 November 2024

Place: Lindholmen, Göteborg

Organizers: Addalot Consulting AB,
Swedish Electromobility Centre/
Chalmers, KTH and ICES

Cost (excl. VAT): Early bird* Late
Standard 1995:- 2995:-

Social dinner 20/11: 495 :-

*Early bird price before October 6

Final registration: 15 November

Full program and registration:

<http://safety.addalot.se/>

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**Swedish
Electromobility
Centre**

Wednesday 20 November

Time	Content	Presenter
08:45-09:20	Registration and coffee	
09:20-09:30	Welcome and introduction	Organizers
09:30-10:30	Keynote: Innovations and safety implications of electrified aircraft.	Johan Helsing, Heart Aerospace
10:30-10:45	Coffee	
10:45-11:20	Data-Driven Survival Modeling for Predictive Maintenance	Mattias Krysander, Linköping University
11:20-11:55	Ontology-based representation for assurance and compliance	Barbara Gallina, Mälardalen University
11:55-12:55	Lunch	
12:55-13:55	Keynote: The Emerging Battery Market - Navigating Safety Challenges	Anton Nytén, Etteplan
13:55-14:30	Holistic perspectives on safety of Automated Driving Systems	Magnus Gyllenhammar, Zenseact
14:30-15:05	Vehicle-Level Thermal Safety of Lithium-ion Batteries: Experimental Analysis and Method	Changfu Zou, Chalmers
15:05-15:25	Coffee	
15:25-16:00	Case study: Automotive SPICE® extensions with functional safety at Volvo Group	Mark Hirche, Pem Motion and Micael Wintsten, Combitech
16:00-16:35	Quantitative fault tree analysis (qFTA) for autonomous systems	Noah Carlsson – Edge Case Research
16:50	Dinner	

Keynote summaries:

Innovations and safety implications of electrified aircraft, Johan Helsing, Heart Aerospace

Heart Aerospace mission is to decarbonize and democratize air travel. For this, we are developing the ES-30 aircraft and a unique Electric Hybrid Propulsion System (EHPS). The ES-30 will rely on batteries for shorter full-electric flights and will rely on turbine engines as an energy reserve and for extended trips. The electric propulsion system introduces a new level of aerospace electrification in terms of installed power, and the hybrid propulsion system introduces a new level of system complexity. On top of this, every sub-system in the aircraft has to be designed to support full-electric aviation. The minimum level of system safety which will be required for an approved aircraft design is available in the EASA's CS-25 Certification Specifications along with the EHPS Special Condition E-19. This keynote speech will cover some of the main aspects of how Heart Aerospace is planning to meet the aviation system safety standards, comparing EHPS to traditional solutions across the system and subsystem levels.

The Emerging Battery Market - Navigating Safety Challenges, Anton Nytén, Etteplan

As the global demand for energy storage solutions surges, the battery market is experiencing unprecedented growth. From electric vehicles to renewable energy storage, batteries play a pivotal role in shaping our sustainable future. However, this rapid expansion brings forth critical safety considerations that cannot be overlooked. In this presentation, we delve into the dynamic landscape of the emerging battery market. We explore the latest advancements in lithium-ion, solid-state, and beyond. However, beyond performance metrics and energy density, safety remains paramount. The talk will thus address the critical importance of robust safety protocols, from cell design to manufacturing and end-of-life management where topics such as thermal management, the impact of the regulatory framework and risk mitigation strategies will be discussed.



Johan Helsing

Mattias Krysander



Barbara Gallina

Anton Nytén



Magnus Gyllenhammar

Changfu Zou



Mark Hirche

Micael Wintsten

