

31st SafeTRANS Industrial Day

Realistic modeling of target architectures for the virtual validation of safety-critical systems

How to enable the use of virtual validation in safety assurance cases?

Using traditional field tests only for the validation of highly automated and autonomous systems cannot be done efficiently, due to the high complexity of both the systems themselves and the environments in which they need to perform. More and more test, validation and verification methods are therefore based on virtual validation, especially on simulation, using models of the systems under test and their environments. An open research question is to what extent both the system and environmental models as well as the simulation algorithms can be improved to such an extent that simulation accuracy and validity – i.e. conformance to reality – achieves the level needed for safety assurance cases in (type) certification.

Continuing the discussions and topic of the 30th SafeTRANS Industrial Day (<http://www.safetrans-de.org/de/Veranstaltungen/2022/06/03/30.-safetrans-industrial-day>), this workshop focuses specifically on modeling and simulation of target architectures, including sensors and actuators. In particular, we will discuss the question of how target architectures can be virtualized in a way that (a) uses HW models that faithfully represent all safety relevant non-functional properties of the components also, e.g., timing behavior, power consumption, degradation behavior and fault models and (b) contain models of sensors and actuators that are sufficiently accurate to represent their functional and non-functional behavior.

Contributions covering the following, non-exclusive list of topics are therefore highly welcome:

- Virtualization and modeling of sensors/actuators
- Virtualization and modeling of the target architecture
- Levels of abstraction and their relationships to each other / hierarchical simulation models
- Accuracy, level of detail, and realism vs. simulation speed
- Use of simulation results in safety assurance cases
- Use cases

Please submit speaker, title and abstract (ca. ½ -1 page) of your presentation by **4. November 2022** to katja.bonhagen@safetrans-de.org. Selection and notification of acceptance will be done by Nov. 11.

Information about 31. SafeTRANS Industrial Day

Date: 28. November 2022
Venue: Hotel Abion Spreebogen Waterside, Alt Moabit 99, 10559 Berlin
Website: <https://www.safetrans-de.org/de/Veranstaltungen/2022/11/28/31.-safetrans-industrial-day>