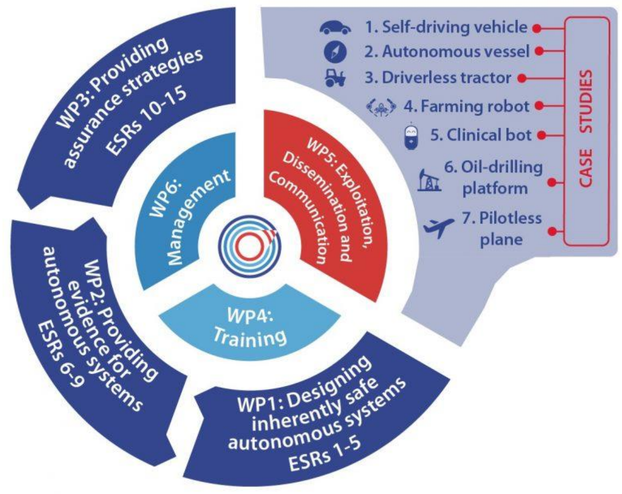
Safer Autonomous Systems

European Training Network for Safer Autonomous Systems

The main objective of the **Safer Autonomous Systems (SAS) project** is to identify ways that we can establish people's trust in autonomous systems by making these systems demonstrably safer.



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ESR 1: Raul S. Ferreira — LAAS CNRS

Development of a generic framework to monitor and handle safety of autonomous systems at run-time

Implement and validate a framework facilitating black/grey-box monitoring of autonomous functionality at run-time

ESR 2: Yuan Liao — Fraunhofer IKS

Development of an adaptive platform for resilient autonomous systems based on a MAPE-K cycle

Integrate adaptive functionality and fault-tolerance into a safe, fail-operational run-time adaptation platform for resilient autonomous systems

ESR 3: João V. Zacchi — Fraunhofer IKS

Dynamic safety handling of autonomous systems-of-systems with run-time safety contracts

Extend the current state-of-the-arte dynamic safety contracts facilitating a more systematic, yet more modular and flexible, dynamic safety assurance of autonomous systems

ESR 4: Dejana Ugrenovic — KU LEUVEN

Creating software design guidelines and testing specifications for non-functional requirements in safety-critical autonomous systems

Develop innovative software design and testing guidelines, related to non-functional requirements

ESR 5: Aleksandr Ovechkin — KU LEUVEN

Making connectivity work reliably in a diverse range of environments

Compare the effectiveness of different types of diverse redundancy and the robustness of different wireless communication protocols for different environments

ESR 6: Luca V. Sartori — LAAS CNRS

Virtual worlds generation for testing autonomous robots in simulation

Develop a complete and generic framework allowing simulation-based testing of an autonomous robot in virtual worlds

ESR 7: Zaid Tahir — University of York

Rigorous design and evaluation of situation coverage testing for autonomous vehicles

Create and empirically evaluate a testing method and prototype tools for simulated-situation testing of autonomous cars

ESR 8: Ahmad Adee — BOSCH Invented for life

Model-based system analysis techniques to determine propagation paths of functional insufficiencies in software-intensive systems

Investigate the application of model-based system analysis techniques for functional insufficiencies, including probabilistic ways to model the uncertainties

ESR 9: Hassan Tirmizi — KU LEUVEN

Model-based system analysis of the robustness of autonomous systems against electromagnetic interference

integrate behavioral system models within a highly-efficient, statistical framework for electromagnetic simulations

ESR 10: Fang Yan — University of York

From static assurance cases at design-time to executable assurance cases at run-time

Establish an executable model of structured argumentation in which the safety case consists of an executable set of rules to be sustained and maintained at run-time

ESR 11: Vibhu Gautam — University of York

Assurance case structures for machine learning in the decision making of highly autonomous systems

Establish and evaluate assurance case structures for the assurance of machine learning in safety-critical applications

ESR 12: Tianlei Miao — RH MARINE

Assuring autonomous sailing from A to B while minimizing operational costs

Integrate optimization algorithms, collision avoidance algorithms and current motion control systems of vessels in order to simulate a number of scenario's fulfilling the defined objectives

ESR 13: Haris Aftab — University of York

Safety assurance for clinical conversational bots

Develop a safety concept for clinical conversational bots, considering the intended clinical use, core technologies, medical conditions and patient variations

ESR 14: Luis P. C. Yelavives — MIRA (A HORIBA COMPANY)

Dependability assurance for vehicle autonomy

Develop a unified and holistic approach to developing a range of assurance cases that could address a range of aspects of dependability for highly automated and fully autonomous vehicles

ESR 15: Orian Dheu — KU LEUVEN

Between safety and liability: towards a liability allocation framework for safe autonomous systems

Explore different models for liability allocation in various domains towards the development of a framework for allocation of liability in complex ecosystems

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