MSCA ETN Safer Autonomous Systems (SAS)

ESR 15: Civil liability challenges for the mobility field

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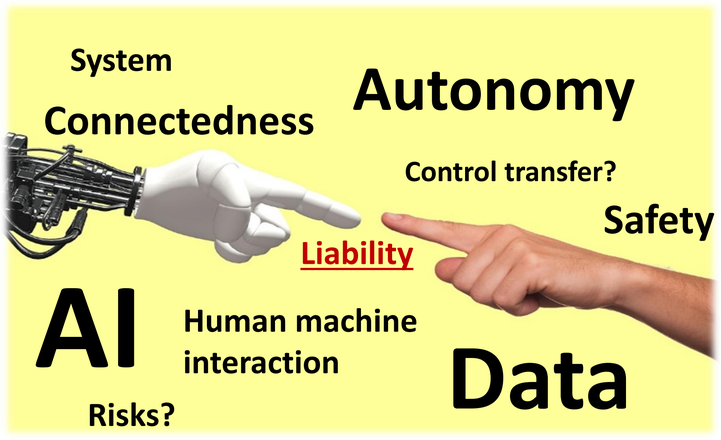
Safer Autonomous Systems



What are Autonomous Systems?

- **No universally accepted definition. However, they could be described as:**
  - **Systems that are able to take decisions autonomously and adapt to their environment.**

ESR 15: "Between safety and liability: towards a liability allocation framework for autonomous systems"

Objectives:

- **Identify the legal criteria accommodating these technologies.**
- **Develop a liability allocation mechanism framework as a risk regulation tool improving legal certainty for the involved stakeholders.**

Expected outcomes:

- **Legal assessment of current criteria and mechanisms for allocating liability in autonomous systems.**
- **Identify legal criteria to guide policymakers and legislators in the development and interpretation of a flexible and balanced liability allocation framework.**

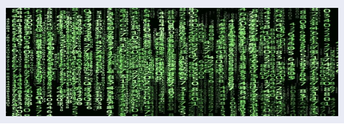
SAS in a Nutshell

The SAS project is an **EU funded research H2020 MSCA ETN program** that aims to identify ways to build trust in autonomous systems by providing innovative answers to multiple challenges.

15 PhD Early Stage Researchers (ESR) carry out research through an **inter-disciplinary** approach.

This **training network involves** some of Europe's **flagship companies** and **leading academic and research entities**[1].

Main Features

AI enabled	
Data driven	
(Inter)connected	

Transport Applications

Road	
Maritime	
Aviation	

Legal Challenges

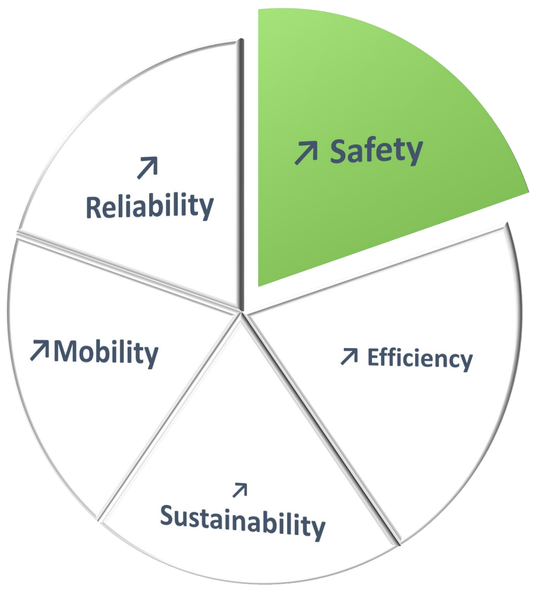
Author: Nick Youngson (source: Picpedia.org)

SAS Project Objectives

The project aims at addressing some of the most challenging issues related to the development and deployment of autonomous systems.

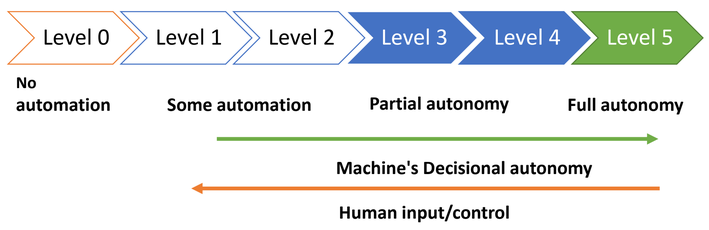
1) **Design safe and dependable autonomous systems:** increased autonomy means that human operators will have less direct control over these systems. The challenge resides in *designing sufficiently reliable and robust systems* that remain safe under all conditions.
2) **Provide adequate validation and testing methods:** verification, through testing, is one of the most well known methods of revealing a system's unsafe behavior or state. However the dynamic nature of autonomous systems will highly challenge this traditional approach. Field conditions testing of such artifacts will be too costly and time consuming. *Model based* testing is seen as a viable approach. However, research is required to prove the practical validity of using such a method.
3) **Build strong safety assurance mechanisms:** autonomous systems will challenge current safety standards and regulations which are based on the assumption that the system's full behavior is known during the design stage and that it can be verified prior to its deployment. *New safety assurance mechanisms will need to be developed and implemented* in order to sustainably accommodate the arrival of autonomous systems.

Technology's Benefits



Case Study: Smart Vehicles

Different levels of autonomy (SAE scale):



Who is liable when an accident occurs ?

Much legal uncertainty as to the identification of the legally responsible party or parties.

Disruptive features	*Legal effects*
Autonomy and decisional independence	***→ Fading function of the human operator : towards increased liability exposure of the manufacturer?***
Mobility as a complex Eco-System	***→ New actors and new risks : enlarging the scope of potential liable parties?***
Increased Digitalization and Connectivity	***→ Technological inter-dependencies : blurring the attribution of damage?***

Contact

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*LAAS-CNRS
*Fraunhofer
*Bosch
*Horiba MIRA
*RH Marine

[1]Project Partners
*Technische Universität Kaiserslautern
*Case New Holland Industrial
*SICK AG
*Jaguar-Land Rover
*Lloyd's Register
*Airbus
*Naïo Technologies
*Equinor ASA
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