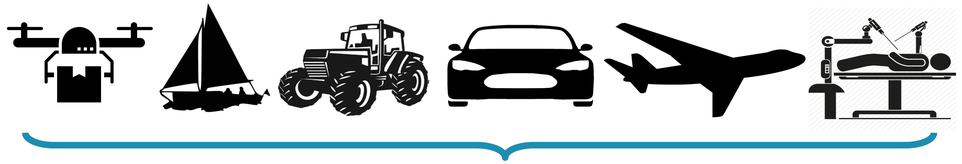
Wireless communication's robustness as one of the keys to bring safety to autonomous systems

Aleksandr Ovechkin, Tim Claeys, Dries Vanoost, Guy Vandenbosch, Davy Pissoort
ESAT-WaveCoRe , KU Leuven Bruges Campus

Plans for the deployment of Autonomous Systems (AS):



Ubiquitous implementation

Consequences of unsuccessful deployment:

All the problems endanger humans' life

Trust and safety problems

WP1

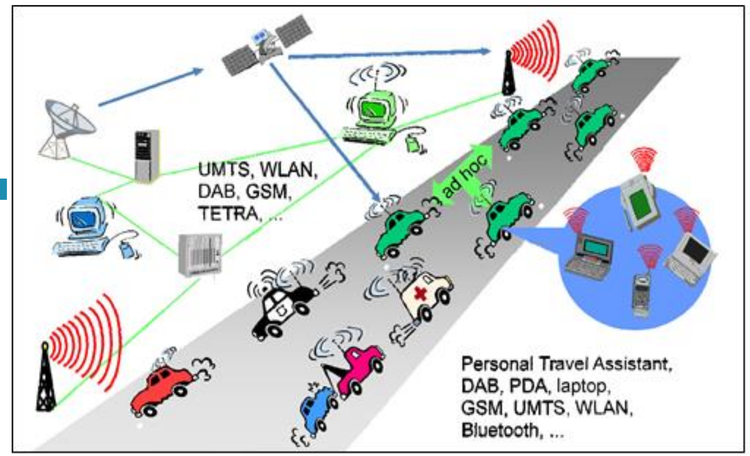
Early-stage researchers (ESRs):ESR1, ESR2, ESR3, ESR4

ESR5:

Electromagnetic disturbance (EMD)

Impaired communication

Safety-critical issue



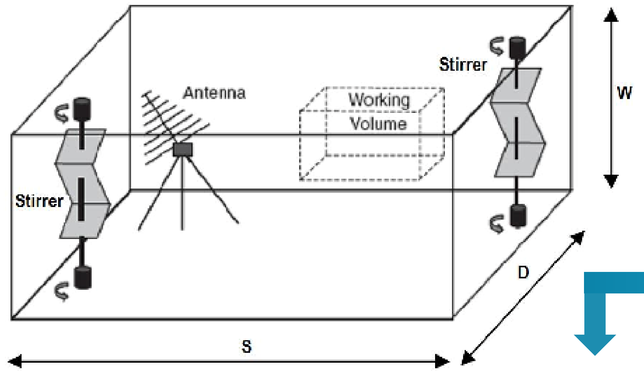
Objectives:

Increase the robustness of different wireless communication protocols for different types of EMD.

Expected results:

- Novel software and/or hardware-based techniques and measures
- Dependable wireless connectivity that is fault-tolerant or even fault-operational under diverse types of environmental stress

Reverberation chamber as a main tool to make wireless communication more resilient



Possibility to test many of the potential wireless protocols to be used in AS:

Allows to

Obtain main communication key performance indicators (KPIs):

- Packet Error Rate (PER)
- Communication latency
- Data throughput

Perform wireless co-existence tests

The SAS Project

Safer Autonomous Systems

Goal: make autonomous systems safer

Objectives:

Work Packages (WPs)

WP1

To integrate guaranteed safe behaviour directly into the architecture/design of the autonomous system

WP2

To prove by model-based safety-analysis techniques that the behaviour of an autonomous system remains safe under all possible conditions

WP3

To ensure that the safety-assurance strategies that combine the architectural/design measures with the evidence allow to have trust in the autonomous system, which is very likely to be learning and evolving

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