TRA 2008 Conference

eVALUE –
Testing and Evaluation Methods for ICT-based Safety Systems

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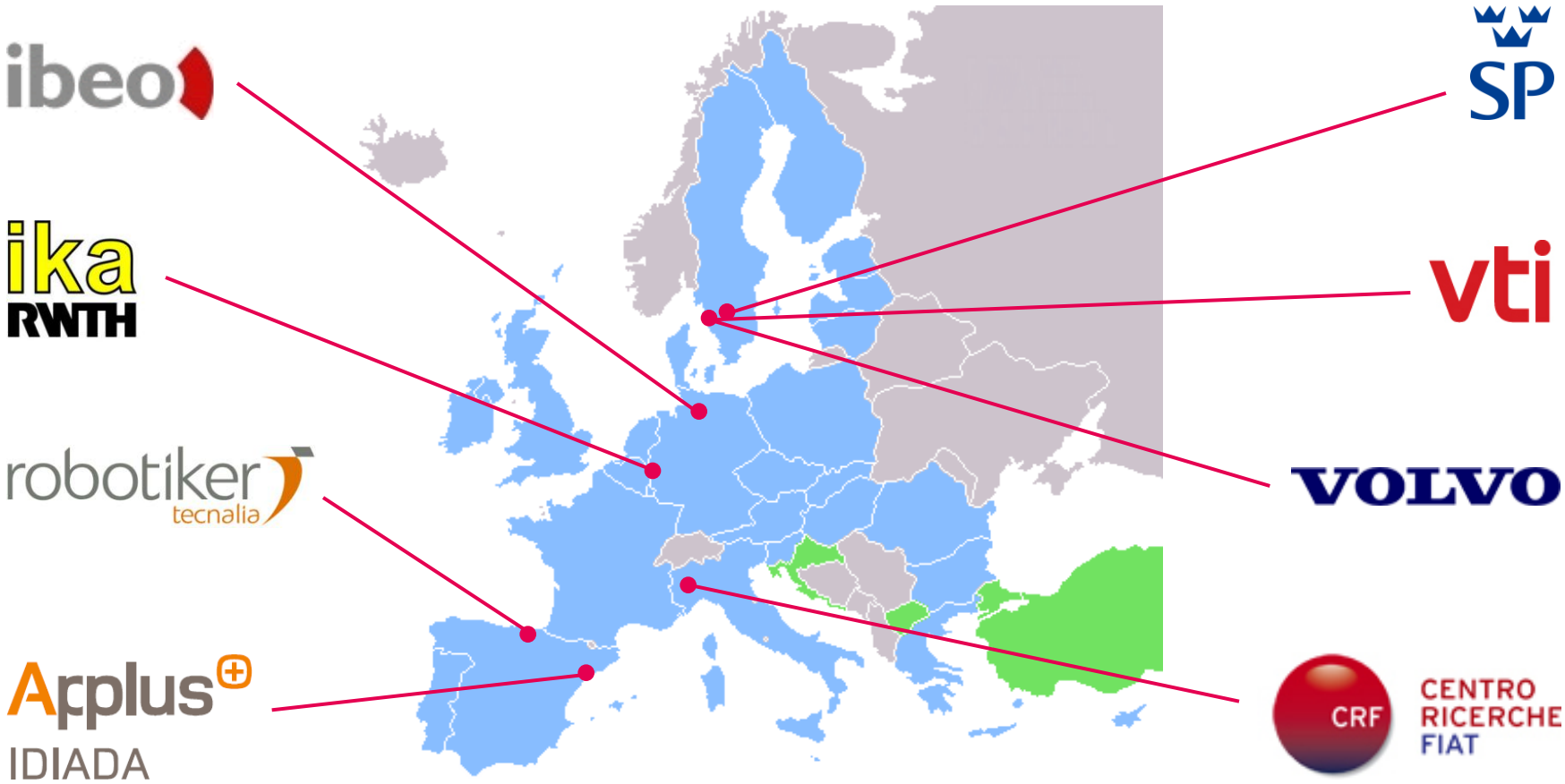
Project Overview

- **Budget**
  - Overall budget: 3,760,442 €
  - EC funding: 2,349,982 €
- **Duration**
  - Start: 1 January 2008
  - End: 31 December 2010
- **Consortium**
  - Coordinator: Micha Lesemann, IKA RWTH Aachen University
  - Partners: SP Sweden, VTI, VTEC, IDIADA, Tecnalia Robotiker, IBEO, CRF

Project Overview



Overall Objectives of the Project

To develop testing and evaluation methods for ICT-based safety systems.

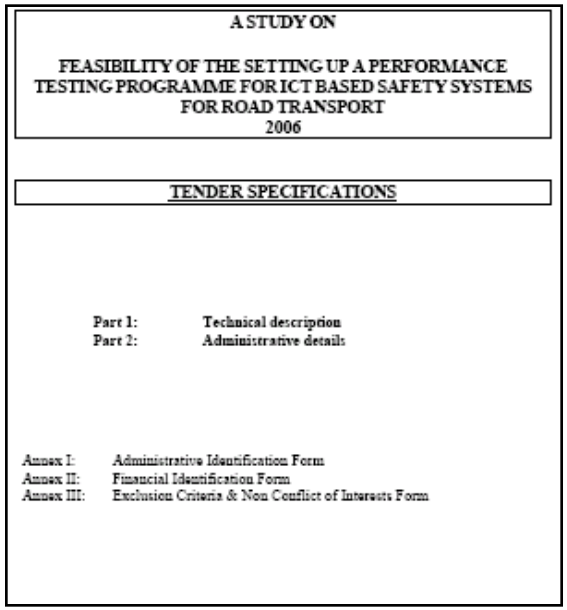
AND thereby

To increase public perception and customer acceptance of ICT-based safety systems.

To support development of ICT-based safety systems at vehicle OEMs and suppliers.

Results of the ASTE Study

- **ASTE - a feasibility study for setting up of a performance testing programme for ICT based safety systems for road transport**
- Aims of the ASTE study
  - Feasibility of setting up an independent performance and conformance testing programme for IVSS
  - Needed methods and principles for V&V of ICT-based safety systems
  - Consensus on the proposed principle
- ASTE partners:
  - Lindholmen Science Park
  - Volvo Car Corporation
  - Volvo Technology
  - SP
  - VTI Swedish National Road and Transport Research Institute



A STUDY ON

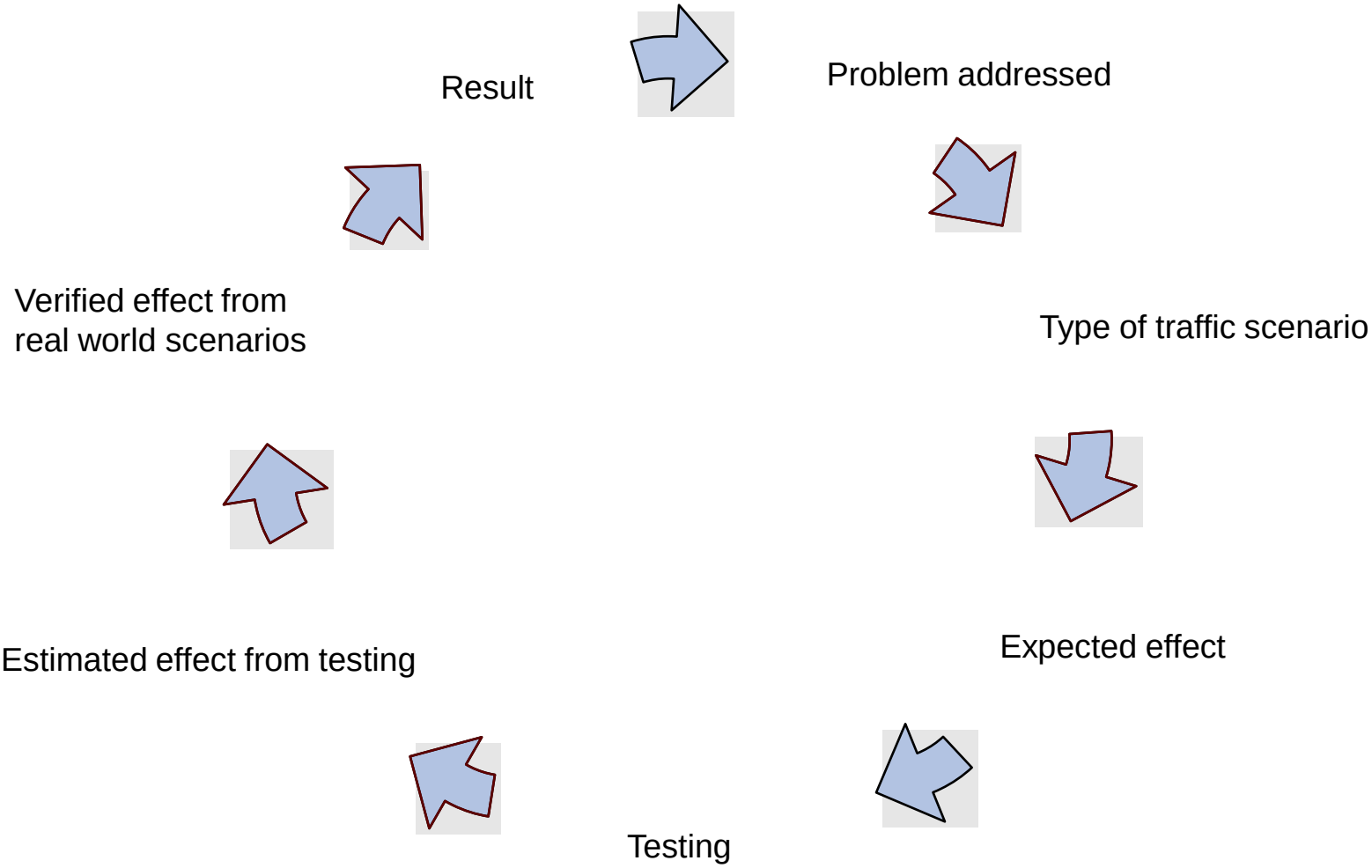
FEASIBILITY OF THE SETTING UP A PERFORMANCE TESTING PROGRAMME FOR ICT BASED SAFETY SYSTEMS FOR ROAD TRANSPORT
2006

TENDER SPECIFICATIONS

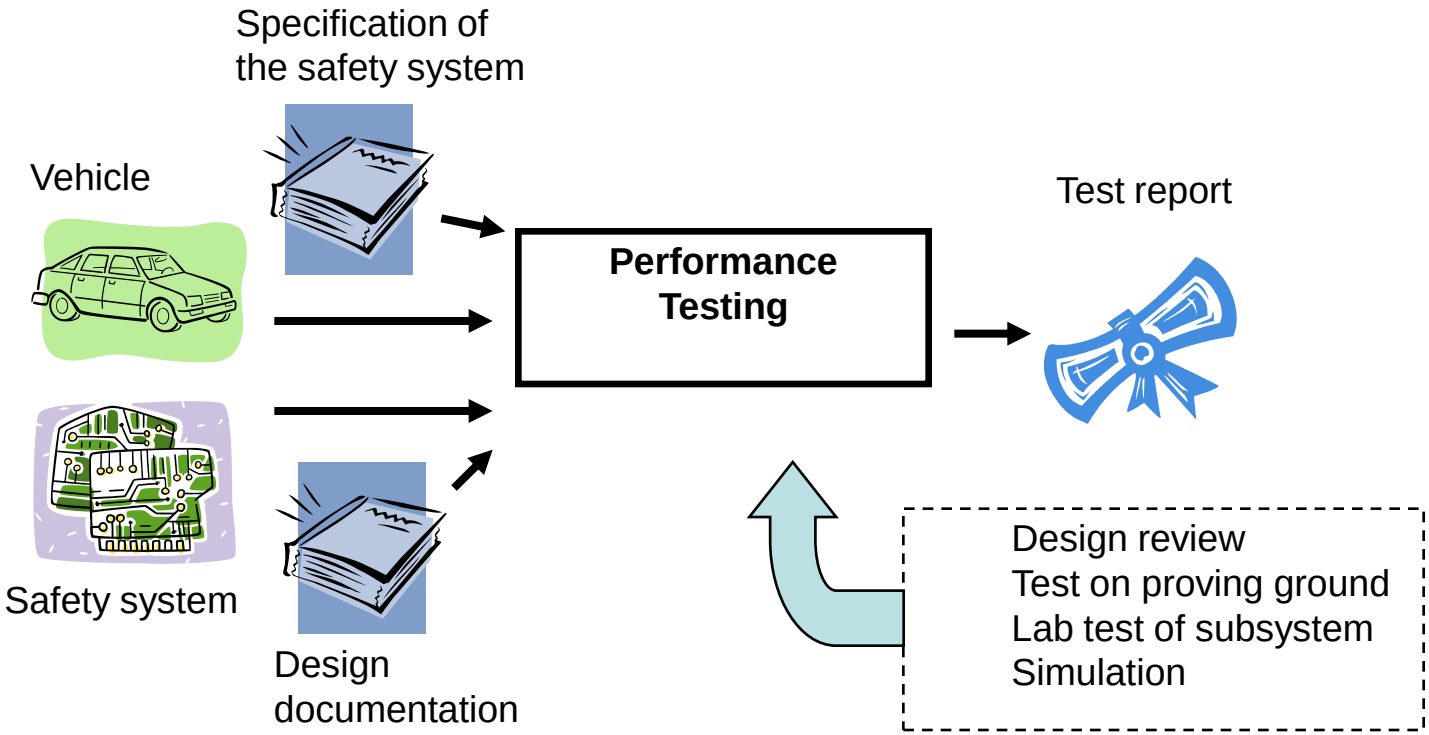
Part 1: Technical description
Part 2: Administrative details

Annex I: Administrative Identification Form
Annex II: Financial Identification Form
Annex III: Exclusion Criteria & Non Conflict of Interests Form

Overall Approach and Methodology

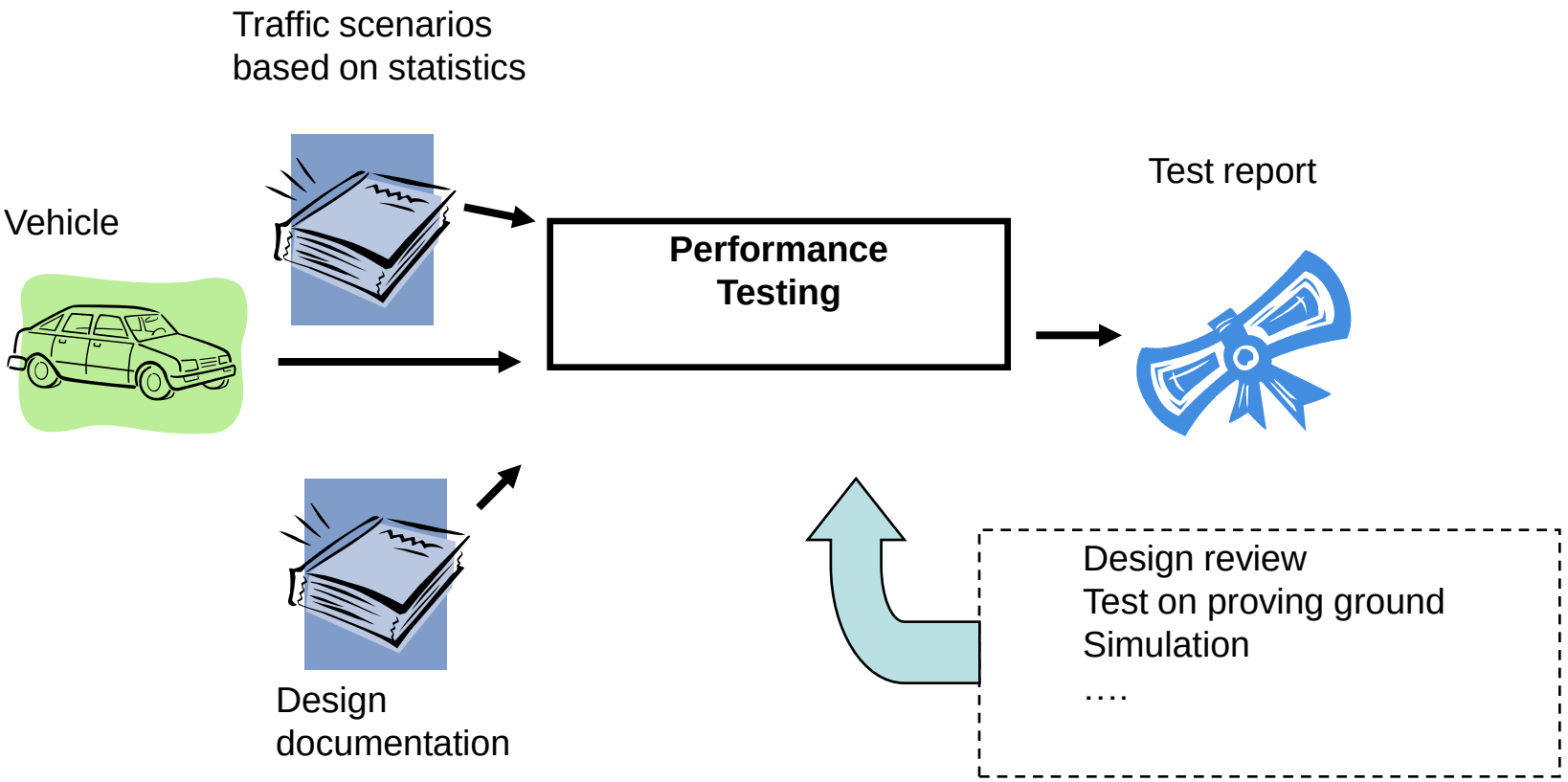


System-based performance Testing



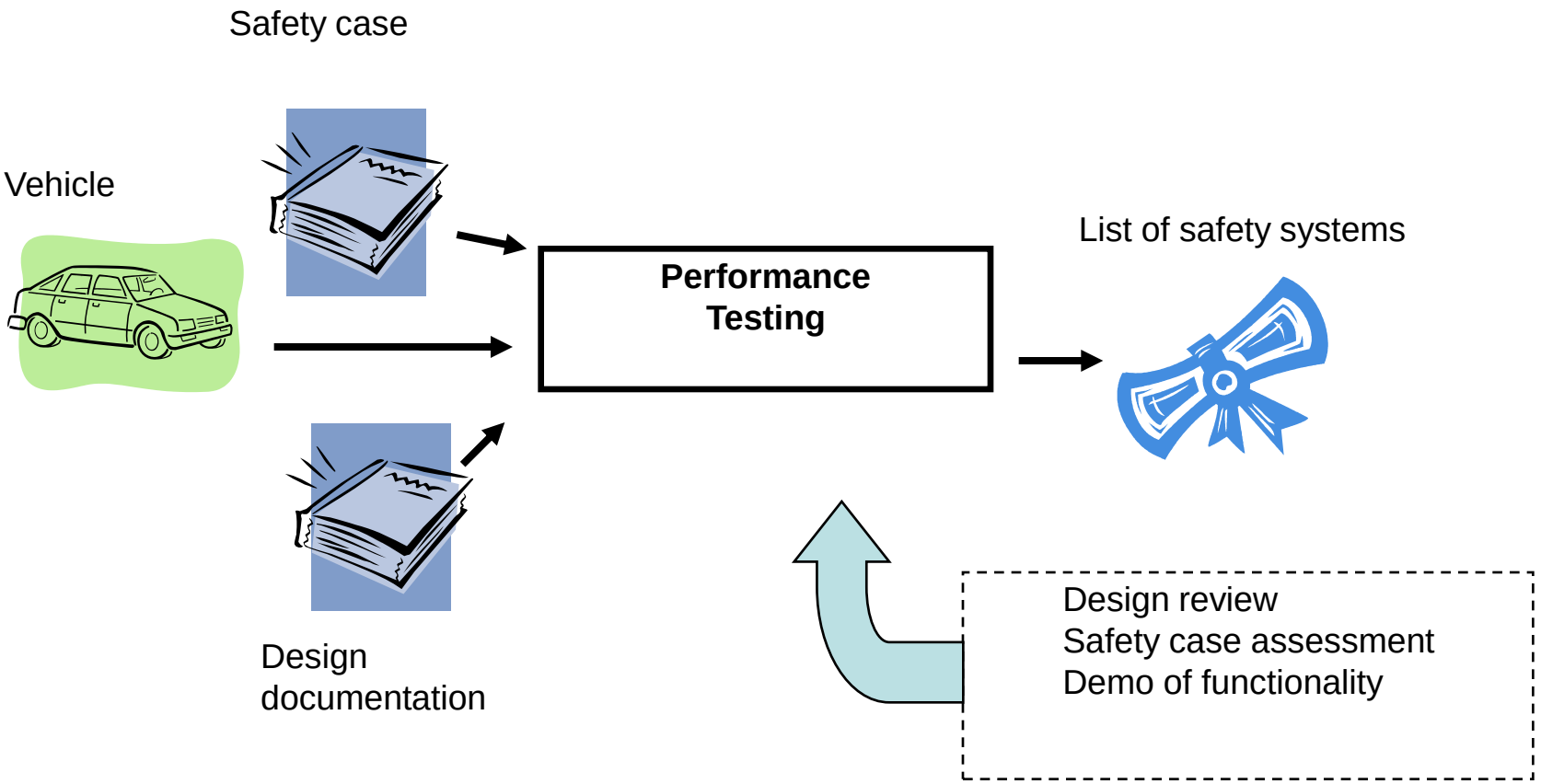
- Test cases derived from specific system capabilities and mapped to traffic scenarios
- Performance of different systems with similar functions but with different layout and technology (by clustering systems)
- As a first step, development of minimum requirements would be required

Scenario-based performance Testing



- Test cases derived from traffic scenarios
- Testing on vehicle level- with vehicle as ”black box”
- A limited amount of representative test scenarios are needed to be defined? Possible?

Document-based performance Testing

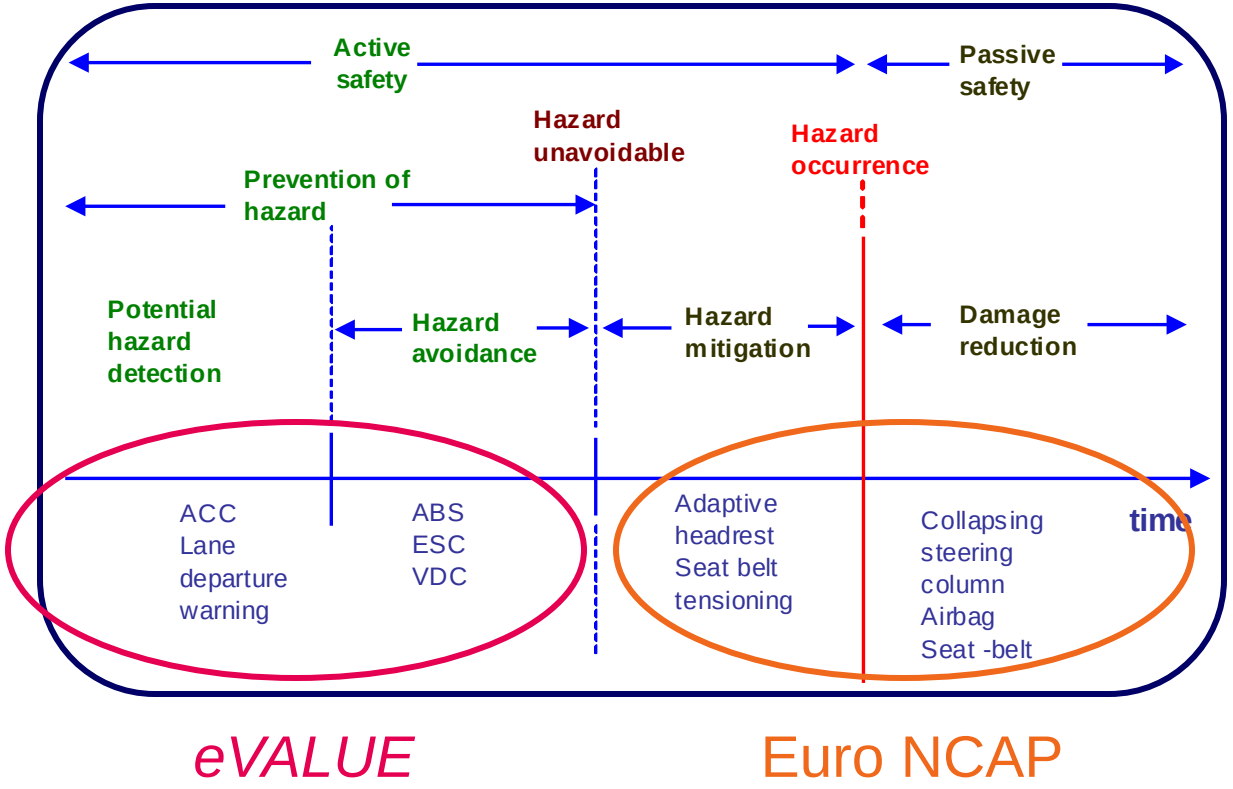


- Used as complement to physical testing
- In particular valuable for e.g.HMI testing?

Conclusions of the ASTE Study

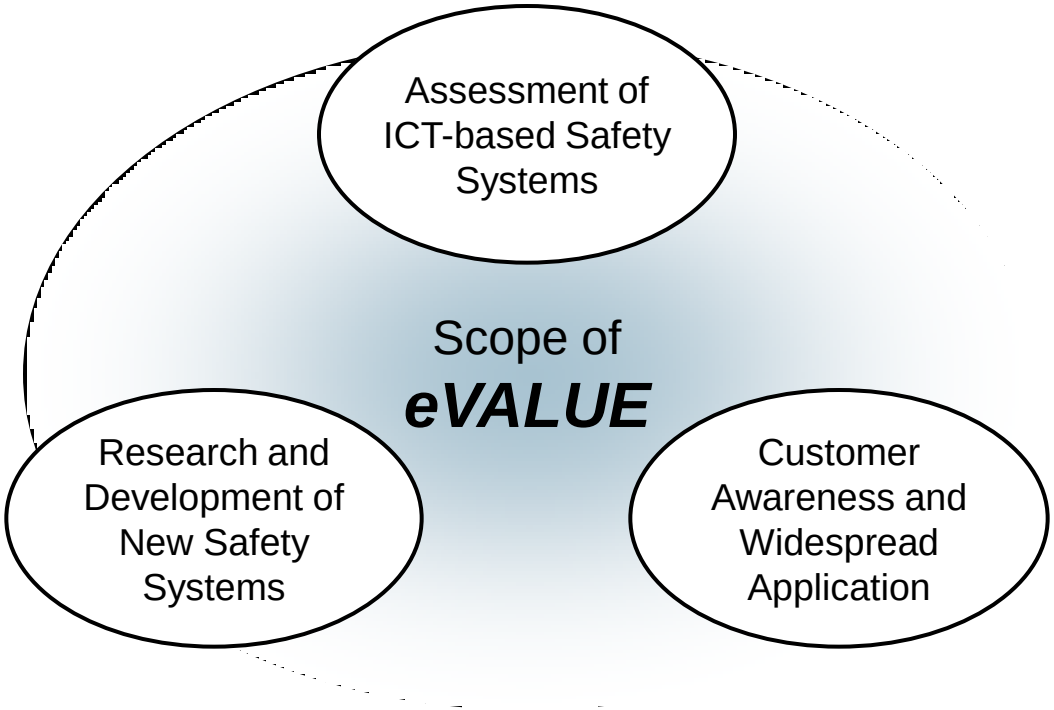
- Performance testing is technically and economically feasible
- Vehicle active safety performance shall be tested in traffic scenarios
- The performance test results must be possible to communicate in a very simple way
- Consensus between different stakeholders will be possible

Overall Objectives of eVALUE



eVALUE has a similar goal like Euro NCAP, namely the objective and easy-to-understand assessment of safety systems.

Overall Objectives of the Project

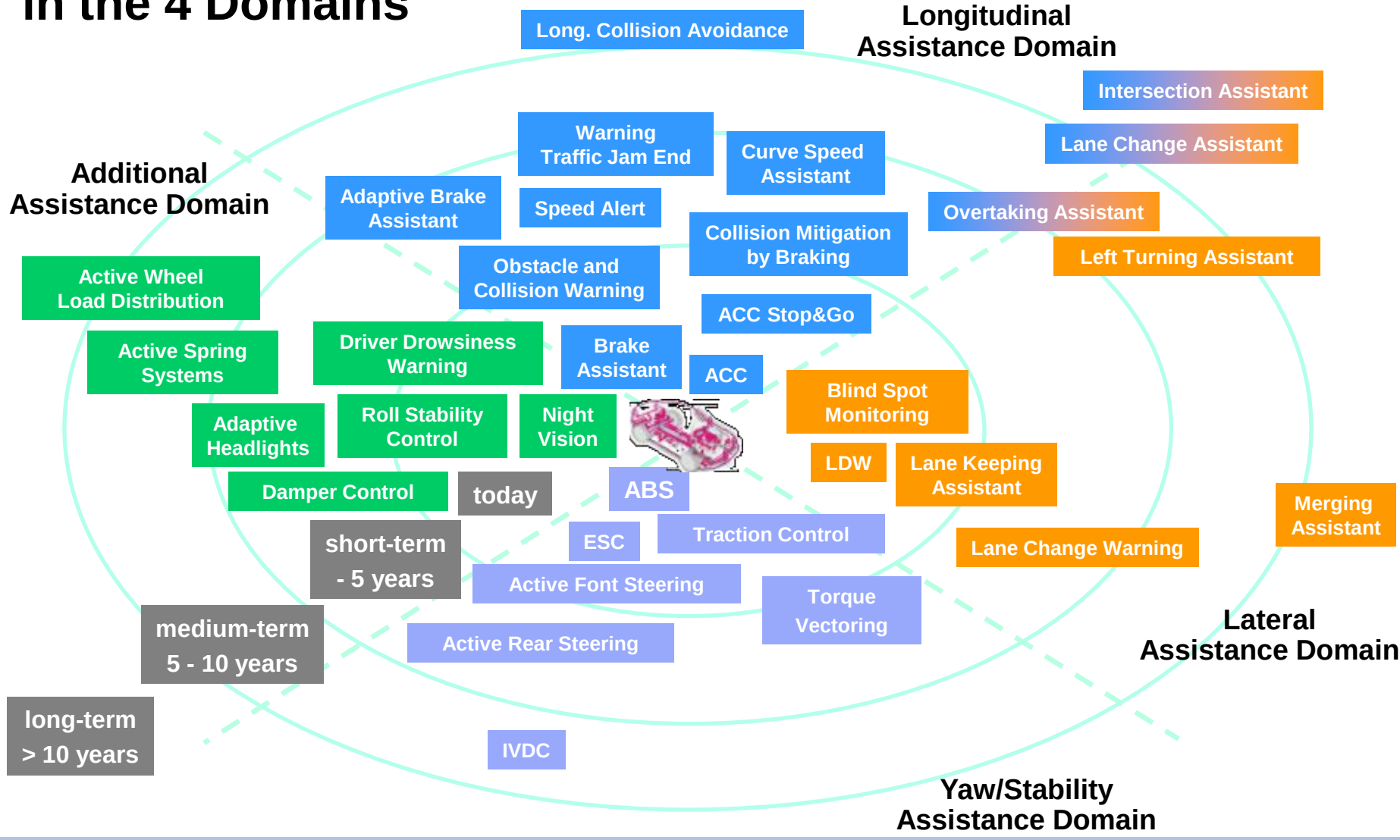


eVALUE takes all concerned interest groups into account.

Major Achievements of the Project

- **What we will do:**
  - Define objective evaluation and testing methods and performance criteria
  - Build a de-facto standard
  - Regard current and upcoming active safety systems
  - Consider system interaction and system integration
  - Physical testing, supported by simulation
  - Communication with key stakeholders like OEMs, suppliers, national authorities, customer organisations, ISO working groups etc.
  - Raise public awareness for the topic, e.g. by easy-to-understand benchmarks
- **What we will <u>not</u> do:**
  - Direct standardisation of testing
  - Define fail/pass criteria for the developed test methods

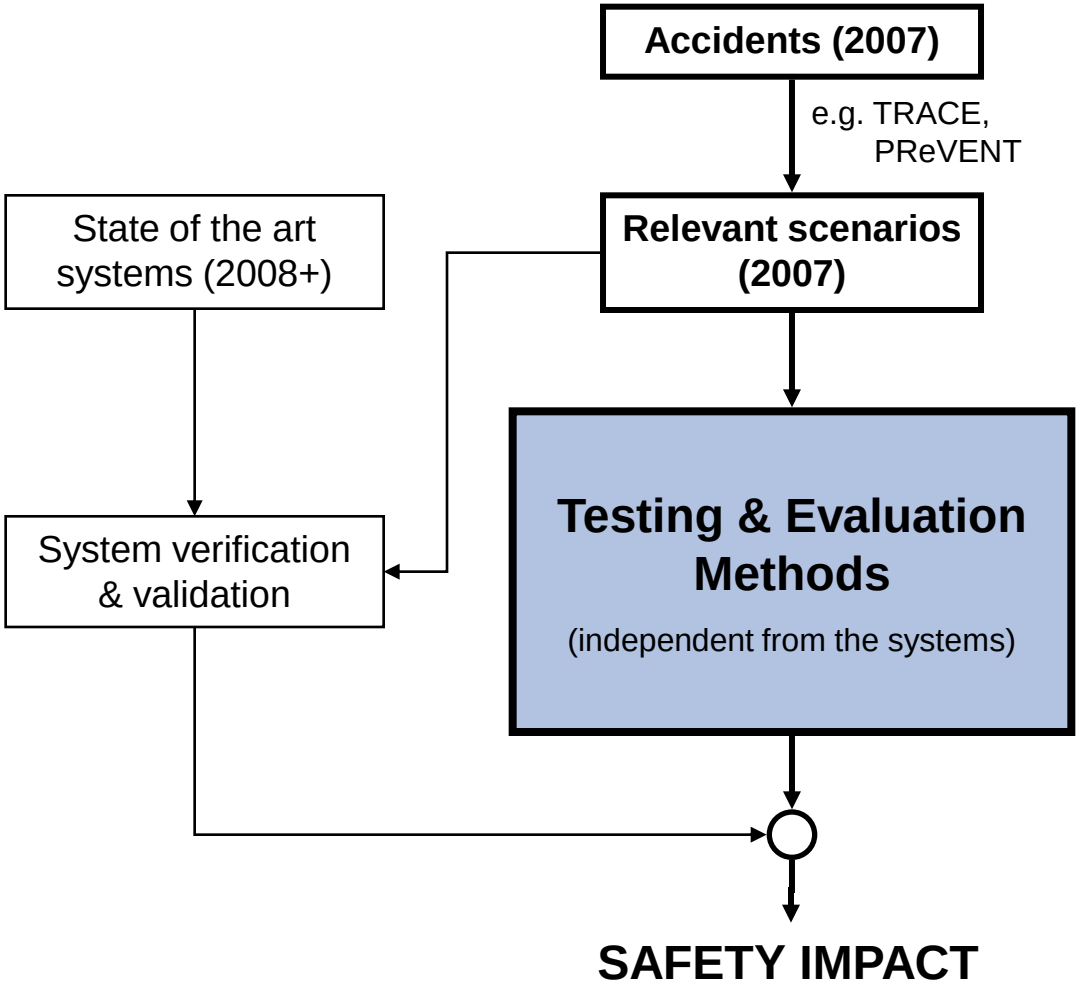
Roadmap – Time Horizon for safety relevant ICT-Systems in the 4 Domains



Scope of eVALUE - Chosen Systems

- Systems for automotive preventive safety systems, address at least one domain and available on the market with penetration rates of >50.000 vehicles
- System Cluster 1 (longitudinal assistance)
  - ACC
  - Forward Collision Warning
  - Collision Mitigation, by braking
- System Cluster 2 (lateral assistance):
  - Blind Spot Detection
  - Lane Departure Warning
  - Lane Keeping Assistant
- System Cluster 3 (yaw/stability assistance):
  - ABS
  - ESC
- System Cluster 4 (additional assistance):
  - Not defined at this stage (ICT-based systems becoming available during project duration)

eVALUE Testing & Evaluation Methods
General Approach



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Thank you for your attention!

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