

# A Test Programme for Active Vehicle Safety – Detailed Discussion of the eVALUE Testing Protocols for Longitudinal and Stability Functionality

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22nd ESV Conference

13 - 16 June 2011

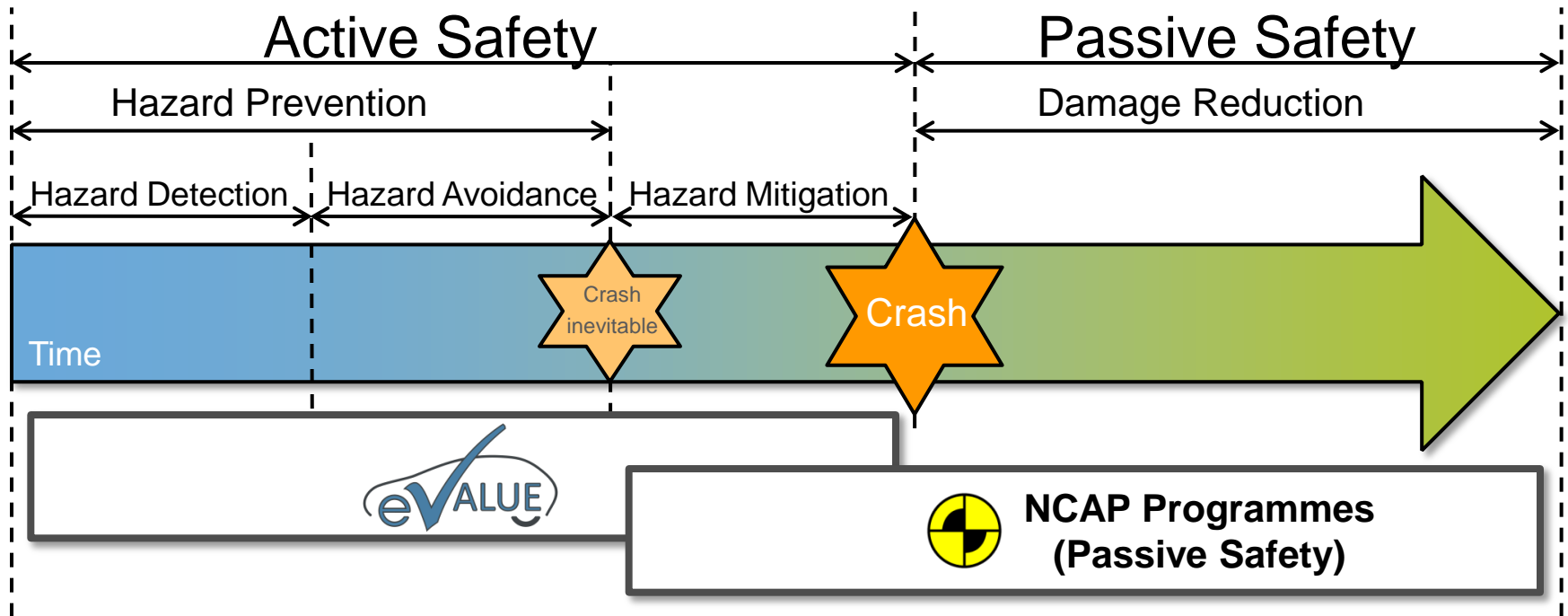
Washington DC, USA



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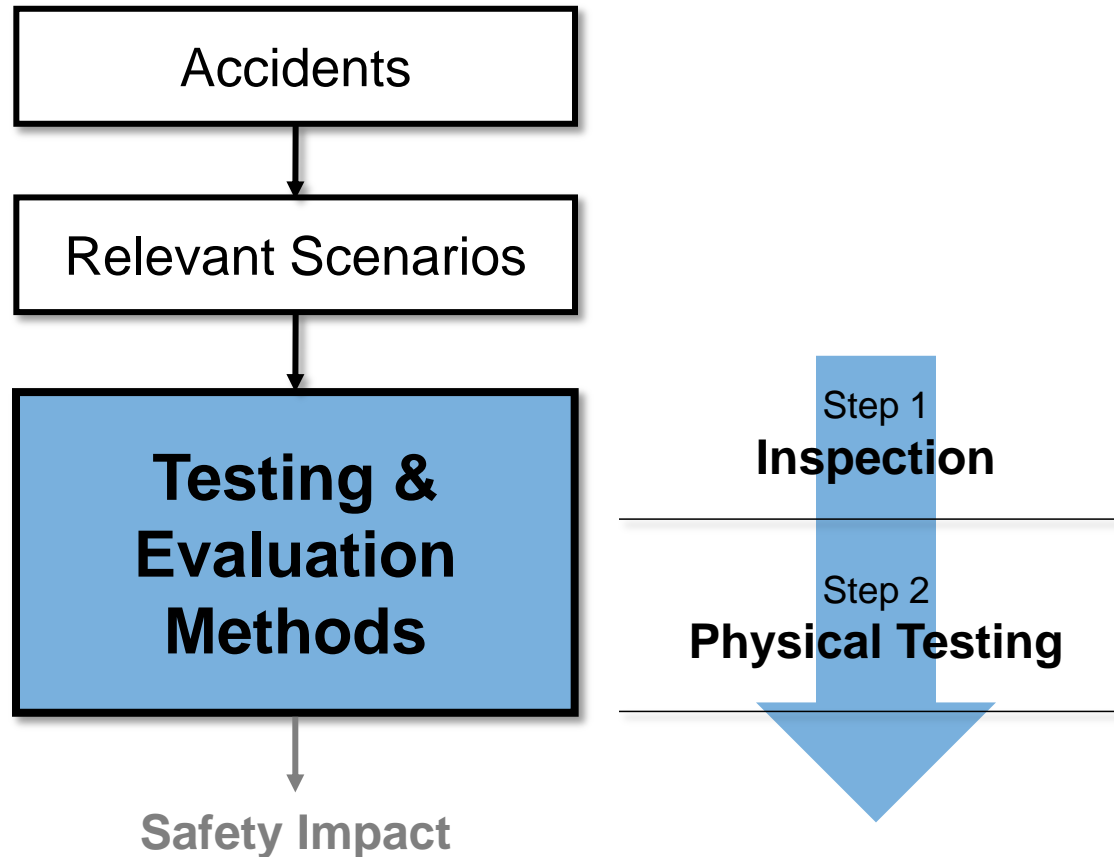
# Motivation for Active Safety Testing



# The eVALUE Project Scope



# The eVALUE Project Approach



# The eVALUE Project Testing Protocols

The testing protocols carry all relevant information such as:

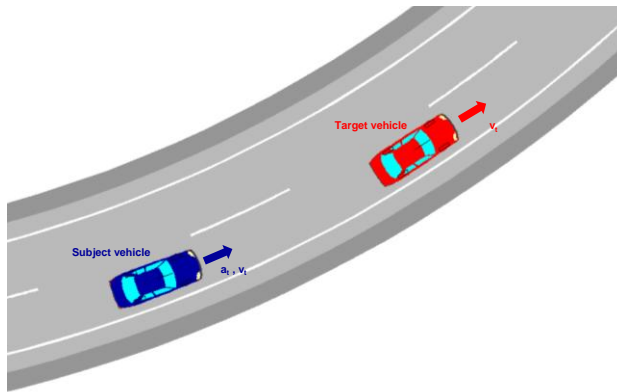
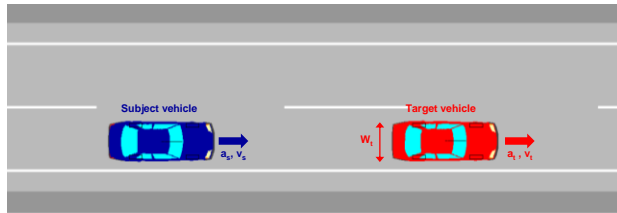
- Test principle
- Objectives
- Drivers
- Equipment and environment
- Required input
- Vehicle preparation
- Test procedure
- Data processing
- Uncertainties
- Result generation



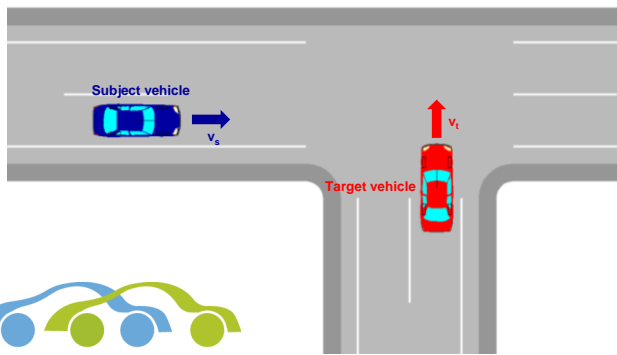
The draft versions can be downloaded from [www.evalue-project.eu](http://www.evalue-project.eu).

# The eVALUE Project

## Longitudinal Functionality Scenarios



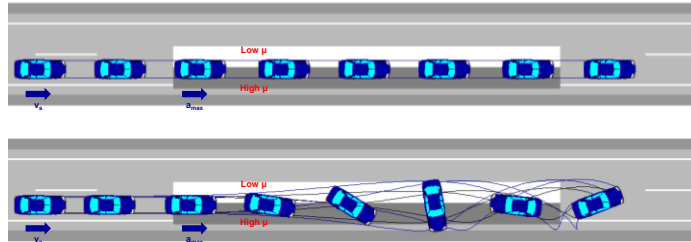
Avoidance of rear end collision (open loop)



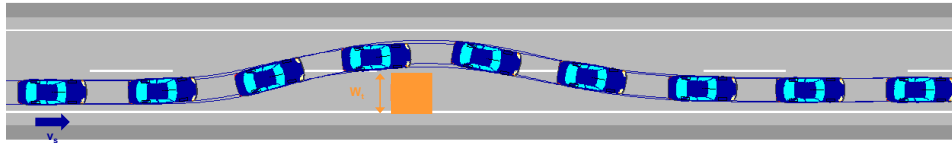
Avoidance of collision with transversally moving target (open loop)

# The eVALUE Project

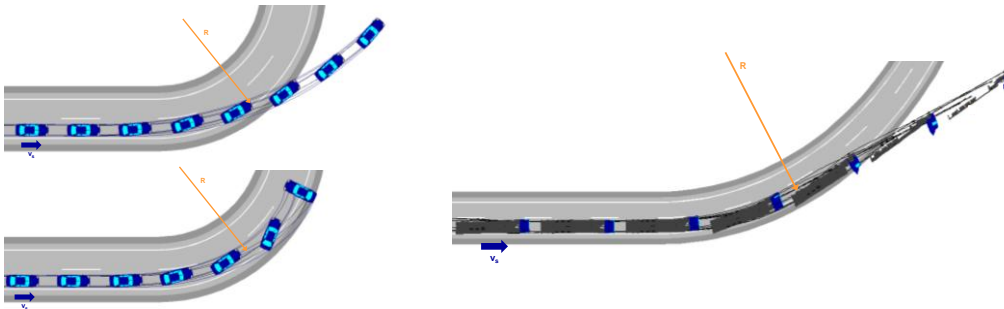
## Stability Functionality Scenarios



Emergency braking  
on  $\mu$ -split  
(open and closed loop)



Obstacle avoidance  
(open loop)



Highway exit  
(open loop)

# The eVALUE Project

## Safety Indicators

### Longitudinal Functionality

- Collision speed
- Time-to-collision (TTC) at warning



### Stability Functionality

- Mean longitudinal deceleration
- Equivalent deceleration
- Equivalent deceleration on different tracks
- Use of adherence
- Stability
- Yaw rate ratio
- Lateral displacement
- Driver intention following
- First steering wheel torque peak
- Wheel lift
- Relative radius
- Slip angle

# Harmonisation Process Initiatives

- Since the start of the eVALUE project, many initiatives have been formed and were or are still running in the field of active safety testing. This includes amongst others:

- ADAC
- AEB
- ASSESS
- CAMP-CIB
- vFSS

- It must now be the goal of all initiatives to come to harmonised standards which apply worldwide.

- ActiveTest is supporting this process actively.



# Harmonisation Process

## ActiveTest Workshops

### Frontal Assistant Systems

27-28 September 2011, Aachen (Germany)

- Scenarios
- Targets
- Physical testing
- Assessment



### ESC Performance Testing

8-9 November 2011, Santa Oliva (Spain)

- Standards and initiatives
- Avoidance manoeuvres
- Mu-split manoeuvres
- Understeering manoeuvres
- Assessment implementation



# Summary

- Performance testing of active safety functions is of high interest for all involved stakeholders in order to enhance customer understanding and penetration rates in the market.
- The eVALUE project has pioneered in this field with draft testing protocols for longitudinal and stability functionality.
- Many other initiatives have picked up the approach and currently present their more detailed, but often similar, draft protocols.
- A harmonisation process is now required in order to come to agreed protocols, thus limiting test efforts for different markets.
- The ActiveTest support action is providing a virtual and physical forum for this harmonisation process.

**Thank you very much for your kind attention!**

[www.activetest.eu](http://www.activetest.eu)



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The work leading to these results has received funding as a support action from the European Community's Seventh Framework Programme (FP7/2007–2013) under grant agreement n 269904.

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Active  
Test

