



FORSCHUNGSINITIATIVE
K O - F A S

Forschungsinitiative Ko-FAS - Neue Wege in der Fahrzeugsicherheit

Stephan Zecha
Continental Safety Engineering International GmbH

Aschaffenburg , 20. Mai 2010

Gefördert durch:



aufgrund eines Beschlusses
des Deutschen Bundestages

CONTENTS



Perspectives of traffic safety

Application of cooperative technologies for enhanced traffic safety

Ko-FAS: The new national research initiative for traffic safety

Overview technical concepts within Ko-FAS

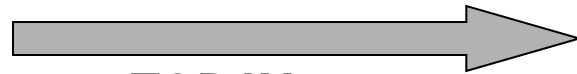
Highlights and current activities in sub-project Ko-TAG

Perspectives

Perspectives of Traffic Safety



MITIGATION

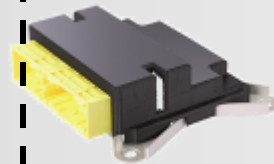


PREVENTION

TODAY

t

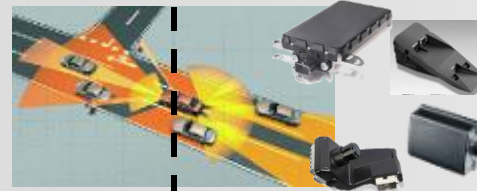
CONTACT



- ▶ Airbag Control Unit SPEED
- ▶ Pressure Satellites clipSat
- ▶ Acceleration Satellites

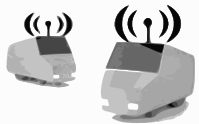
▶ Perception through contact

PREDICTIVE



- ▶ ADAS sensors: Camera, Radar, Infrared
- ▶ Chassis Sensors
- ▶ Perception through "vision"

CO-OPERATIVE



- ▶ eCall, Telematics Warning

▶ Cooperative perception

Ko-FAS: The new national research initiative for traffic safety



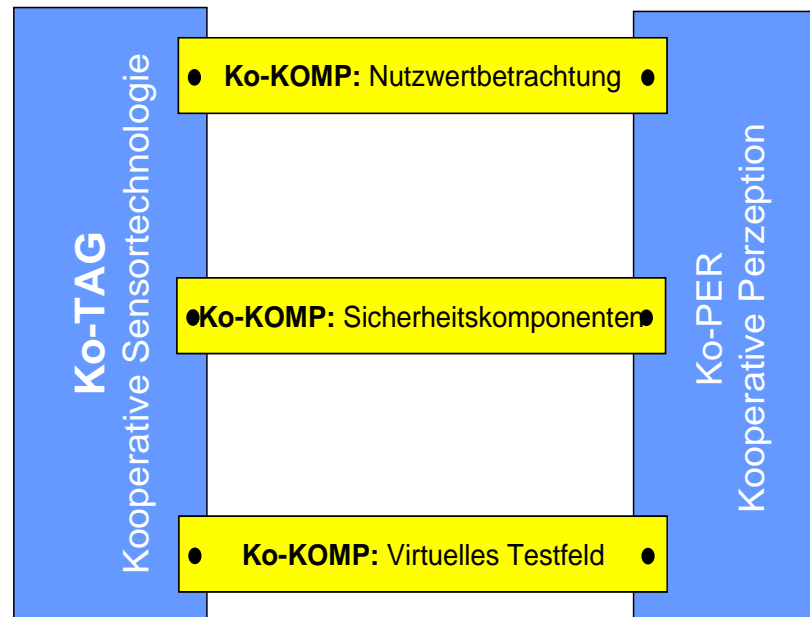
Ko-FAS: Kooperative Sensorik und kooperative Perzeption für die Präventive Sicherheit im Straßenverkehr

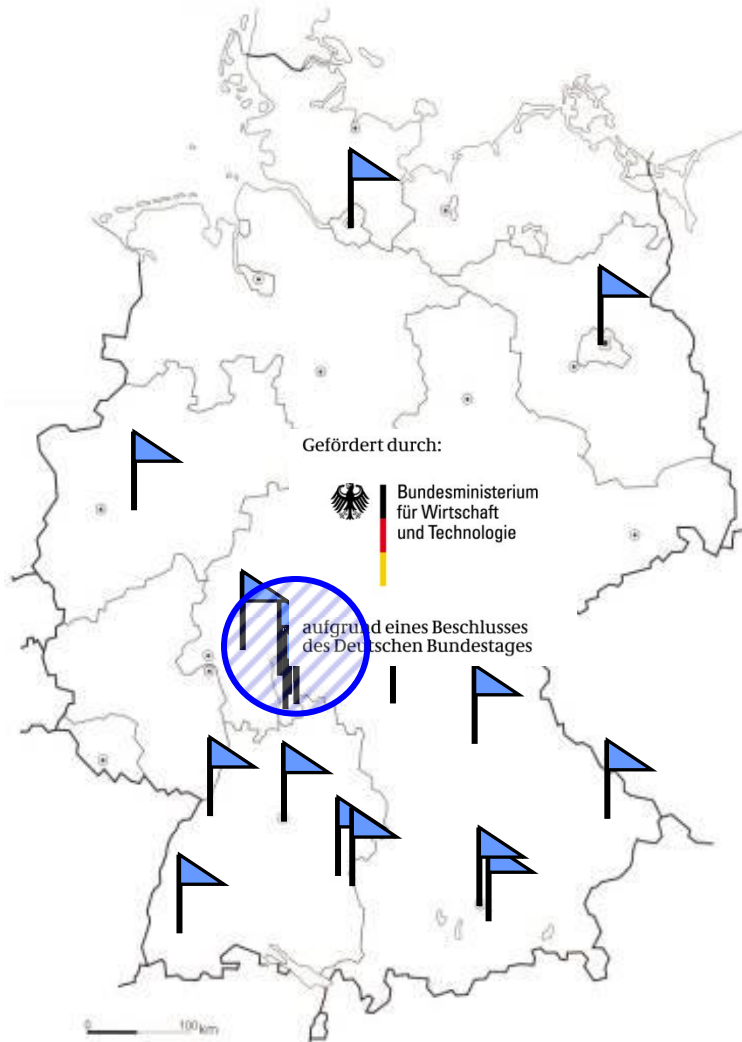
Funding: Bundesministerium für Wirtschaft und Technologie

Schedule: 8/2009 – 6/2013

Budget: ca. 25 Mio €

Project structure:





Key Partner:

BMW Forschung und Technik

Continental

Daimler

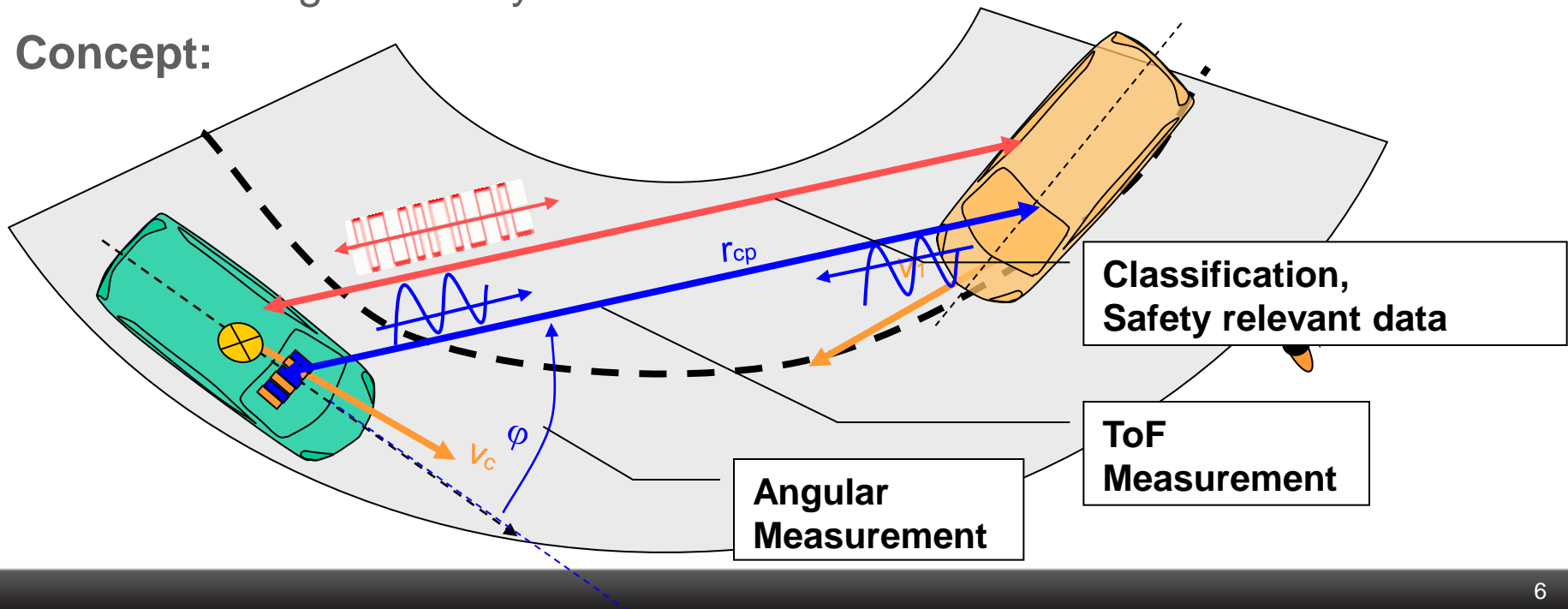
Fraunhofer Gesellschaft

Subproject Ko-TAG: Cooperative Transponder

Goal:

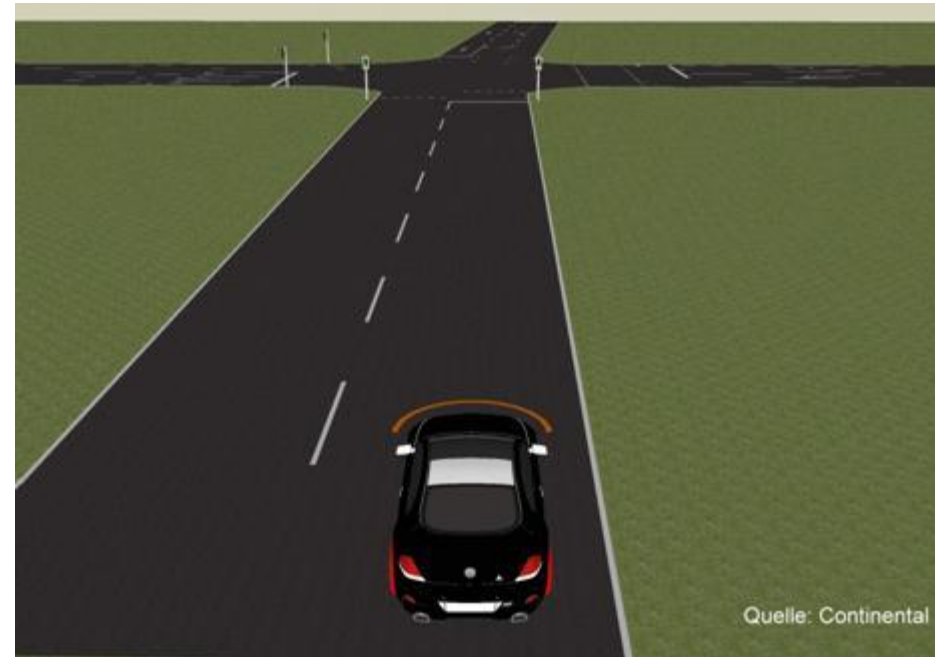
- Precise localization and classification
- Simultaneous tracking of relevant traffic partners
- Robustness provided by complementary ADAS sensor
- Exchange of safety relevant information

Concept:



Preventive Pedestrian Protection

Omnidirectional Safety





- **Multi-User capability:**

- Set-up network topology for handling of several hundred transponder carrier

- **Compatibility with C2C standards**

- Expectation: Only one (!) cooperative system in a vehicle
- Apply available C2C COM channels for data transmission
- Extend frequency bandwidth around allocated C2C frequency channels for distance measurement

Ko-TAG running activities

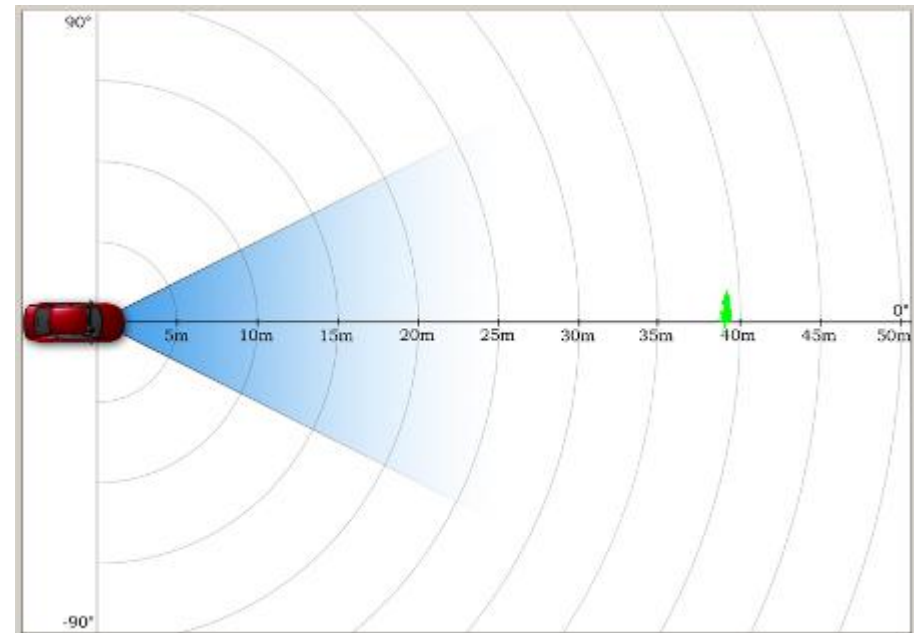
- First Ko-FAS (KO-TAG) H/W available since 4/2010



- Ko-TAG 0.9 Test campaigns: Frequency Trade-Off
 - Static (started in 4/2010)



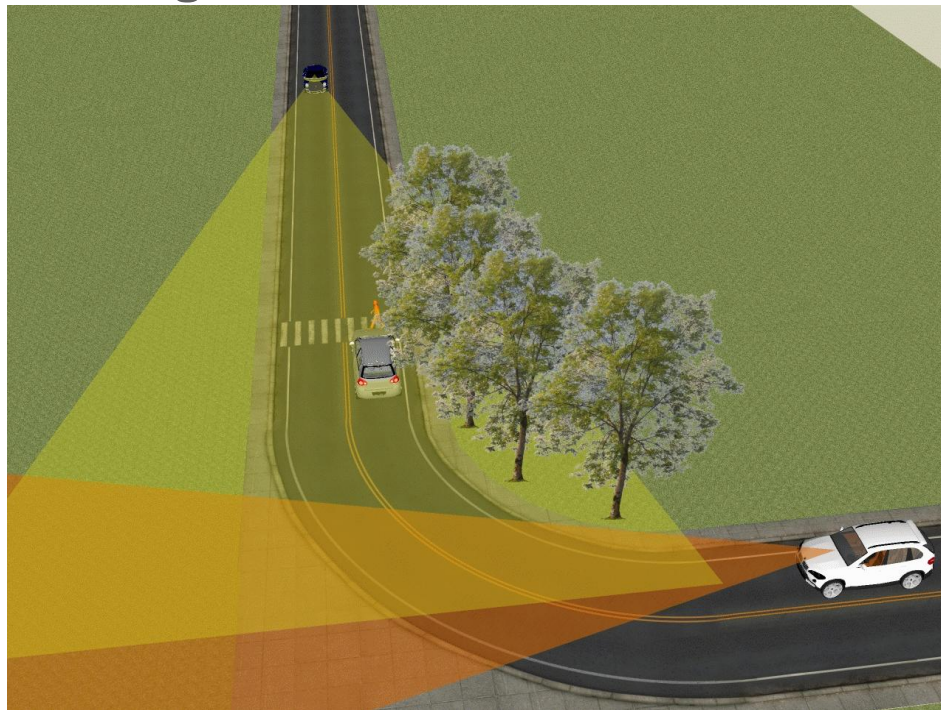
- Dynamic (in preperation)



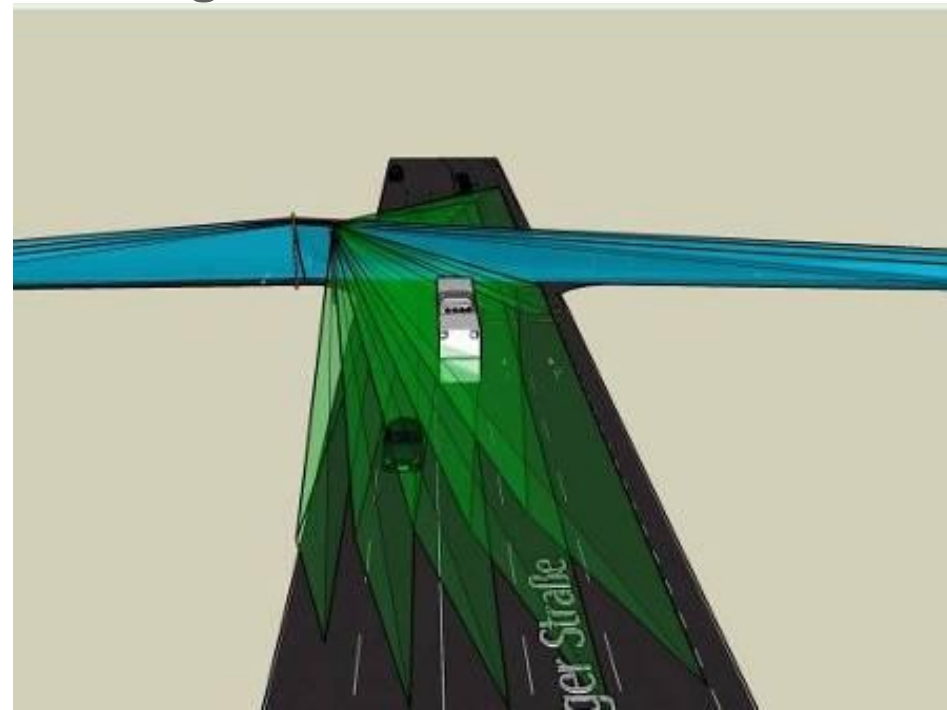
Subproject Ko-PER: Principle and applications



Longitudinal traffic



Crossing:



Ko-PER

Major working areas



Self-Localization:

- Beyond standard-GPS
- Application of sophisticated concepts using ADAS sensors, GPS

Cooperative Perception:

- Information based on „ADAS“ sensors in vehicles
- Exchange at object data level

Communication:

- Takeover of existing C2C standards
- Adaptation concerning latency of messages
- Stand-alone Road-Side-Units

Crossroads:

- Infrastructure Perception
- Communication broadcast

Subproject Ko-KOMP: Main features



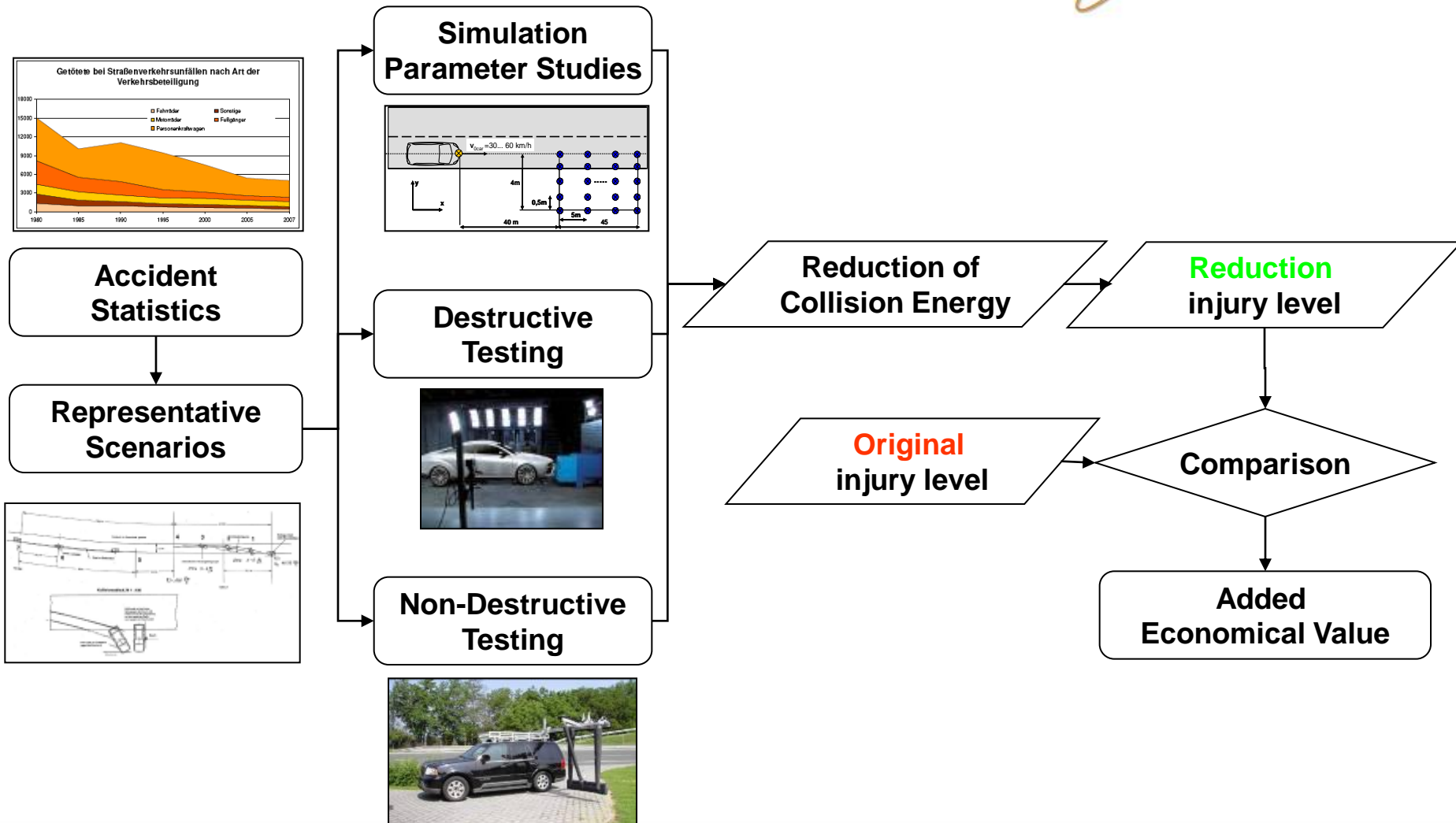
Goal:

- Research of protection measures for enhanced vehicle safety
- Benefit-analysis and added value for national economics
- Research of testing methods and simulation for evaluation of protection systems
- Cross-divisional support of other Ko-FAS subprojects

Concepts:



Ko-KOMP: Benefitanalysis Bottom-up





- Ko-FAS investigates technologies which are complementary to other research initiatives concerning cooperative technologies
- Precise localization techniques are the key feature for the application of cooperative vehicle safety systems
- Transponder system will provide an excellent added value for envisaged DSRC systems concerning relative positioning of traffic partners
- Compatibility to existing DSRC standards will be a major goal
- Ko-FAS will provide a valuable assessment of the safety benefits of advanced safety systems based on cooperative technologies



FORSCHUNGSINITIATIVE
K O - F A S

**Vielen Dank für
Ihre Aufmerksamkeit !**

Kontakt:

Continental Safety Engineering International GmbH

Stephan Zecha

Koordinator Forschungsinitiative Ko-FAS

Telefon: 06023 942-124

E-Mail: koordinator@Ko-FAS.de