Contributions of the PReVENT IP to the Active Safety of Future Vehicles

Matthias Schulze, Daimler AG
Motivation

• About **50,000 people die** and more than **2 Million people get injured** annually on roads of the European member states

• Almost **200 Billion Euro** estimated costs for the society
PReVENT vision and objectives

• PReVENT creates an „electronic safety zone“ around the vehicle by
  – developing a set of affordable, easy to deploy and complementary preventive and active safety functions
  – using an integrated approach to increase system capabilities and achieve maximum benefit
Preventive and active safety

Preventive and Active Safety

Inform | Support | Intervene
---|---|---
Foresighted driving | Warning & assistance systems | Pre-crash systems & reversible protection systems

Passive Safety

Safety systems soft level | Safety systems hard level | Rescue systems & services

Minor accident | Severe accident | Post-crash

Accident prevention and collision mitigation

- Digital map-based & cooperative systems
- Haptic and acoustic interaction support for Lane warning, Distance & Speed Warning
- Brake Assistant
- Active vehicle controls
- Emergency braking
- Collision avoidance
- Reversible restraints

Occupant Protection

- Airbags
- Vehicle crashworthiness
- Materials (energy absorption)
- Intelligent restraint system

eCall

- improved response services & Emergency vehicle clearing

Measures to avoid accidents | Measures to mitigate consequences
The „electronic safety zone“
### PReVENT functional fields

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- **SASPENCE**: SASPENCE
- **SAFELANE**: SAFELANE
- **INTERSAFE**: INTERSAFE
- **APALACI**: APALACI
- **LATERAL SAFE**: LATERAL SAFE
- **COMPOSE**: COMPOSE
- **MAPS & ADAS**: MAPS & ADAS
- **UseRCams**: UseRCams
- **PROFUSION 1 & 2**: PROFUSION 1 & 2
- **RESPONSE 3, PReVAL**: RESPONSE 3, PReVAL
One common architecture for all PReVENT applications

– Jointly developed by AIDE, EASIS, GST, and PReVENT
PReVENT timeline

1st Phase Projects

- ProFusion 1

2nd Phase Projects

- Call 2nd Phase
- ProFusion 2
- Definition 3rd Phase

3rd Phase Projects

- 2004
- 2005
- 2006
- 2007

1st phase projects:
- Vertical subprojects, MAPS & ADAS

2nd phase projects:
- INSAFES, RESPONSE3

3rd phase projects:
- PReVAL, IP-Exhibition
Pre-competitive cooperation
Collaboration between IPs and STREPs

HMI Concept
- Automotive Industry
- Suppliers
- Research Institutes

Advanced Restraint Systems
- Suppliers
- Automotive Industry
- Research Institutes

Environment Sensing / Sensor Fusion
- Suppliers
- Research Institutes
- Automotive Industry

C2C and C2I Comm.
- Suppliers
- Automotive Industry

Actuators
- Suppliers
- Automotive Industry
- Research Institutes

In-vehicle Network
- Automotive Industry
- Suppliers

ADAS Maps
- Suppliers
- Automotive Industry

GST

EASIS
PReVENT IP Exhibition
Versailles September 18 – 22, 2007
The PReVENT partners

- More than 50 partners from industry, public authorities, institutes, universities, public private organisations:

  - OEMs:
    DAG, AUDI, BMW AG, BMW F+T GmbH, CRF, FFA, PSA Peugeot Citroen, REGIENOV, VTEC, VOLVO CAR, VW

  - Suppliers:
    BLAUPUNKT, BOSCH, DELPHI, FCS, IBEO, IMITA, LEW, NAVIGON NAVTEQ, PHILIPS, SAGEM, SIEMENS, SIEMENS VDO, Signalbau Huber, TELEATLAS, TRW CONEKT, VDO

  - Institutes & others:
    AVV, CERTH/HIT, CIDAUT, CNRS IDFA, EICT ERTICO, fka, FHG, FORGIS, FORWISS, ICCS, IMC, INRIA, LCPC, LUND, MW, NTUA, TNO, TUC, TRANSVER, TRL, UNI HANNOVER, UNIPR, UNISI, UNITN, VTT
The success of PREVENT would have been impossible without the great dedication of all project members and the encouragement and the support, that we enjoyed from the Commission and in particular from our Project Officers.