



Slide 1 features a header image showing a driver's perspective with yellow sensor waves and a street scene with yellow ghost cars. The PReVENT logo is in the top right. The main content area contains the PReVENT logo, the title "The PReVENT Approach", and the presenter's name "Matthias Schulze, DaimlerChrysler AG". At the bottom, there are logos for the European Union, Information Society Technologies, and Safety. A footer bar includes contact information and the event name.

PReVENT

The PReVENT Approach

Matthias Schulze, DaimlerChrysler AG

www.prevent-ip.org
prevent@mail.ertico.com

Information Society Technologies

Safety

PReVENT IP Exhibition, Versailles, 19.09.2007

1



Slide 2 features a header image similar to slide 1. The title "A Step back in history" is in the top left. The main content area contains a bulleted list of historical programs and two images. The first image shows a futuristic city with a beam of light from the moon, captioned "PROMETHEUS vision of an integrated traffic and transport system, BMW, 1989". The second image shows a car on a test track with a sensor rig, captioned "AC-ASSIST acceptance tests Airport Kaiserslautern, 1997". A footer bar is at the bottom.

A Step back in history

- **PROMETHEUS and DRIVE 1**
 - Highly integrated traffic and transport system with cooperation and interaction between all participants
 - Example: PROMETHEUS CED 4 Copdrive
- **Subsequent framework programmes (1996 – 2003)**
 - Focus on singular in-vehicle systems for driver support
 - Example: AC-ASSIST

PROMETHEUS vision of an integrated traffic and transport system, BMW, 1989


AC-ASSIST acceptance tests Airport Kaiserslautern, 1997

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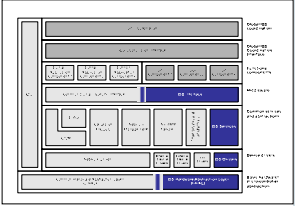
2

Today's approach



- 6th Framework Programme (2004 – 2008)

PREVENT:
Integrated approach to substantially **reduce accident probability** and **mitigate collision consequences**




Draft software architecture for Integrated in-vehicle safety systems, EASIS 2004

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3

The vision of PReVENT



- PReVENT creates a „**virtual safety belt**“ around the vehicle by
 - developing a set of **affordable, easy to deploy** and **complementary safety functions**
 - using an **integrated approach** to increase system capabilities and achieve maximum benefit

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4

The „Virtual Safety Belt“

The diagram illustrates the 'Virtual Safety Belt' concept, showing a car on a road with various safety systems represented by colored zones and labels:

- Foresighted Driving:** Includes Electronic Horizon and Hazard Messaging.
- Warning & Assistance Systems:** Includes Lane Support, Safe Speed, and Side following.
- Pre-crash Systems, Reversible Protection Systems:** Includes Collision Mitigation, Lane Support, and Pre-Crash (100ms, 10ms).
- Other labels:** Safety, Lane Support, Side following, Lane Support, Vulnerable Road User, and Safe Speed.

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5

Preventive and active safety

The diagram compares Preventive and Active Safety with Passive Safety, showing the progression from Inform to Intervene and the resulting accident severity:


Preventive and Active Safety			Passive Safety			
Inform	Support	Intervene	CRASH	Safety systems soft level	Safety systems hard level	Rescue systems & services
Foresighted driving	Warning & assistance systems	Pre-crash systems & reversible protection systems		Minor accident	Severe accident	Post-crash
Measures to avoid accidents			Measures to mitigate consequences			
Examples	Accident prevention and collision mitigation			Occupant Protection		eCall
	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	Airbags Vehicle crashworthiness Materials (energy absorption) Intelligent restraint system	Improved response services & Emergency vehicle clearing

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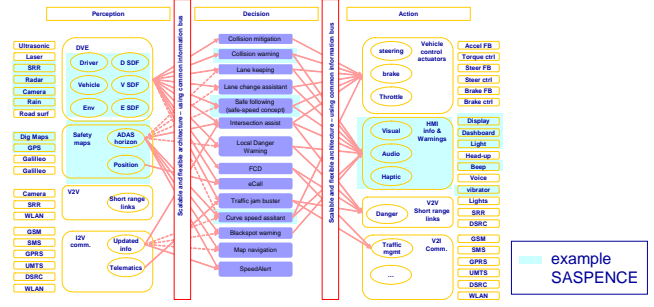
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6

Integrated safety architecture




- **One common architecture for all PReVENT applications**
 - Jointly developed by AIDE, EASIS, GST, and PReVENT

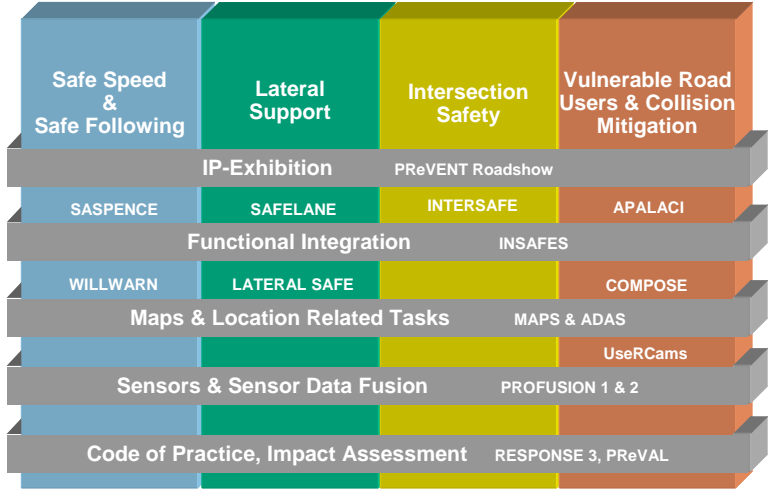


The diagram illustrates a three-stage architecture: Perception, Decision, and Action. Perception includes sensors like Ultrasonic, Laser, SRK, Radar, Camera, and GPS. Decision involves processing units like DVE, Driver, Vehicle, Env, and ADAS. Action includes actuators like steering, brake, throttle, and V2V communication. A box labeled 'example SASPENCE' is shown at the bottom right of the diagram.

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7

PReVENT functional fields





The chart shows four main functional fields: Safe Speed & Safe Following, Lateral Support, Intersection Safety, and Vulnerable Road Users & Collision Mitigation. Below these are various project names and integration levels, such as IP-Exhibition, PreVENT Roadshow, SASPENCE, SAFELANE, INTERSAFE, APALACI, Functional Integration, INSAFES, WILLWARN, LATERAL SAFE, COMPOSE, Maps & Location Related Tasks, MAPS & ADAS, UseRCams, Sensors & Sensor Data Fusion, PROFUSION 1 & 2, Code of Practice, Impact Assessment, and RESPONSE 3, PReVAL.

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8

Pre-competitive cooperation

Collaboration between IPs and STREPs

HMI Concept

- Automotive Industry
- Suppliers
- Research Institutes

C2C and C2I Comm.

- Suppliers
- Automotive Industry

GST

ADAS Maps

- Suppliers
- Automotive Industry

Advanced Restraint Systems

- Suppliers
- Automotive Industry
- Research Institutes

Environment Sensing / Sensor Fusion

- Suppliers
- Research Institutes
- Automotive Industry

In-vehicle Network

- Automotive Industry
- Suppliers

EASIS

Actuators

- Suppliers
- Automotive Industry
- Research Institutes


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The PReVENT partners


- **More than 50 partners from industry, public authorities, institutes, universities, public private organisations:**
- **OEMs:**
DCAG, 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, ERTICO, fka, FHG, FORGIS, FORWISS, ICCS, IMC, INRIA, LCPC, LUND, MW, NTUA, TNO, TUC, TRANSVER, TRL, UNI HANNOVER, UNIPR, UNISI, UNITN, VTT

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Project data



- Project duration:
 - February 2004 – January 2008
- Project budget:
 - 55 Million €
 - 29.8 Million € EU contribution

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