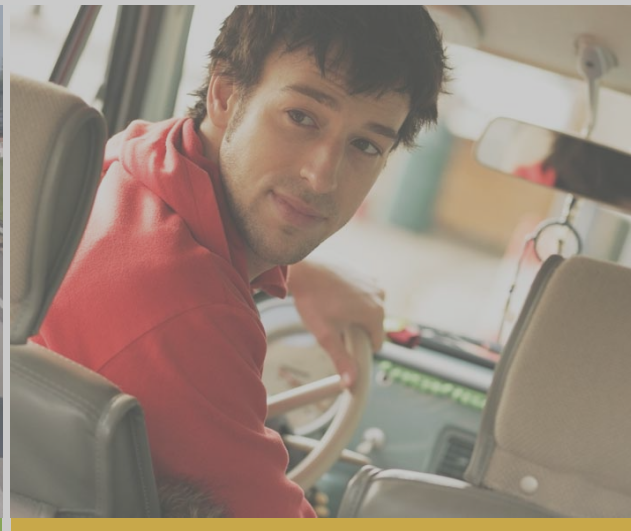


Verkehrsmanagement - VM



Aktive Sicherheit - AS



Cooperative Cars - CoCar



Aktiv-CoCar Workshop

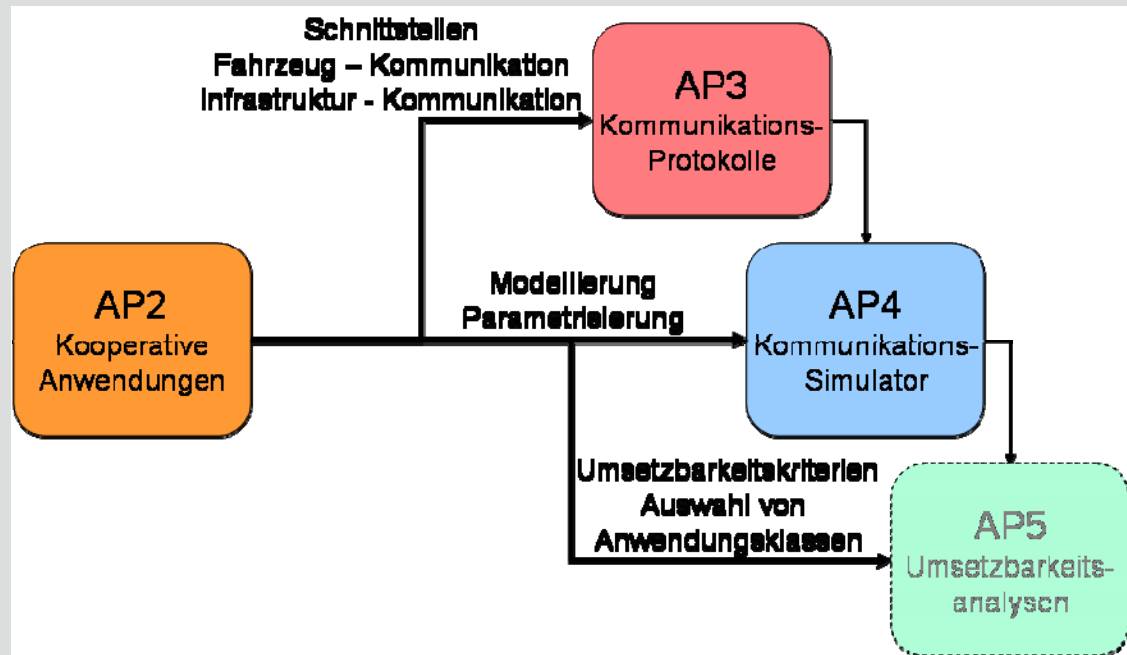
Resultat der CoCarAnforderungsanalyse

Gerhard Nöcker, DaimlerChrysler AG
Stefan Gläser, Volkswagen AG

Anforderungen kooperativer Fahrzeuganwendungen an Mobilkommunikation

- Sammlung nützlicher Anwendungen mit Kurzbeschreibung
- Anforderungen hinsichtlich Zeitverhalten, Datenfluss und Informationsinhalt
- Klassifizierung bezüglich der Kommunikationsanforderungen
- Auswahlprozess
- Pilotanwendungen

➤ Deliverable D01



Anwendungsbereiche

- Sicherheit (Gefahrenwarnung, Manöverunterstützung)
- Verkehr (Verkehrsablauf, Verkehrsfluss, Navigation)
- Dienste (Information, Infotainment)

Anwendungen und Anforderungsanalyse

- Sammlung von 59 Anwendungen in 3 Listen
- Kurzbeschreibung mit Anforderungen
- Gruppierung nach Anwendungsbereichen
- Klassifikation nach Kommunikationsanforderungen
- Auswahl von 11 Pilotanwendungen für Simulation

	Car-initiated	Backend-initiated
Car provided Info	<ul style="list-style-type: none"> • Warning (uplink) (road works, weather conditions, obstacles, accidents, emergence vehicles slow vehicles,...) • Monitoring (uplink) (XFCD, free-flow tolling) 	<ul style="list-style-type: none"> • Remote Vehicle Status control (Location, Locked/Unlocked, petrol level, route recalculation, remote diagnostics ...)
Backend provided Info	<ul style="list-style-type: none"> • Information retrieval service • Data/software update request (map updates, traffic information, route calculation ...) (pull) 	<ul style="list-style-type: none"> • Warnings (downlink) (road works, weather conditions, obstacles, accidents, emergence vehicles slow vehicles,...) • Data/software update (push)

<p>Car information push (warning, monitoring) - uplink</p>	
<p>Car information reception (broadcast/multicast/geocast) - downlink</p>	
<p>Data/software push – downlink</p>	
<p>Car information retrieval (data/software updates) - uplink (request)/downlink (response)</p>	
<p>Backend information retrieval (push) - downlink (request)/uplink (response)</p>	

Pilot Applications for Group Communication

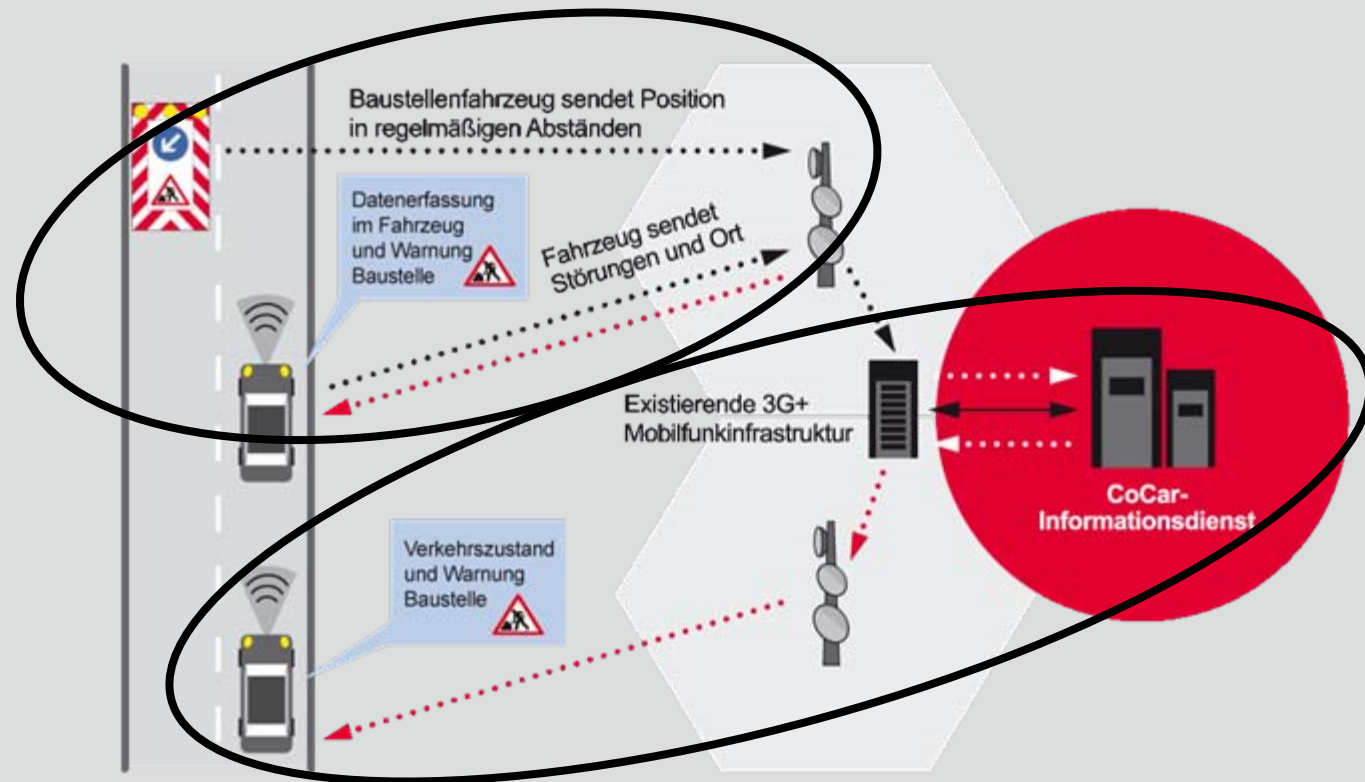
Class		Application	Requirements
A+C	Safety	Emergency Brake Light	Event, very fast, short range, few data, few senders
A+C	Safety	Hazard Warnings Accident Traffic Jam Weather Warning Obstacle	Event, fast, medium range, few data, few senders
B+C	Safety Traffic	Special Vehicles Emergency Vehicle Slow Moving Vehicle / Moving Road Works (Road Works = stationary vehicle)	Periodic, fast, medium range, few data, few senders
B+C	Safety Traffic	Manoeuvring Assistance Intersection Manoeuvring Assistance Lane Change Manoeuvring Assistance Longitudinal Manoeuvring Assistance	Periodic, very fast, short range, few data, many senders
B	Safety Traffic	Monitoring - Floating Car Data Collection	Periodic, few data, many senders

Selected Pilot Applications for Services

Class		Application	Requirements
A	Service	Logistics for goods being loaded and unloaded	Event, high reliable, long range, few data, few senders, few receivers
C	Safety	In-vehicle signing (push)	Change-event-based information, geocast, few data, one sender, many receivers
D	Traffic	Traffic Information Service (push)	Periodic information, geocast, few data, many receivers
E	Service	Breakdown Call Remote Diagnostics	Very secure, high reliable, long range, large data, one sender, one receiver
E	Service	General Internet Services, Audio/Movie streaming	Long range, large data, few users per cell
F	Service	Remote Vehicle Status Control	Secure, reliable, long range, few data, one sender, one receiver

- Group Communication
braucht kurze Reaktionszeiten (Datenreflektor)

- Services sind **zentralengestützt und brauchen einen hohen Datendurchsatz**



Nächste Schritte

- Spezifikation der Protokolle
- Simulation der Pilotanwendungen
- Bewertung der Simulationsergebnisse (Machbarkeit)
- Prototypische Realisierung