

# Cooperative ITS Corridor – Joint Deployment

"Holistic" Road Works Warning

Teun Hendriks

On behalf of BASt



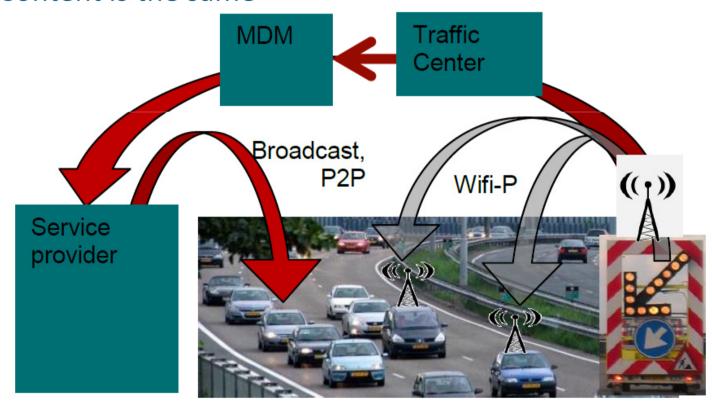






### "Holistic" Roadworks Warning

- Two different communication channels used
- Content is the same









### Traffic information domains, technologies considering proximity to anevent

Table 1: Traffic information domains

Domain:	Network	Local	close range
Target range:	100-1Km	1km - 100m	100m -1m
Primary function domain:	navigation, information, warning	warning, positioning of vehicle in traffic flow	Direct response to surroundings
Decision times:	single minutes	single seconds	sub-second
Infrastructure:	Long range	Short range I2V	in-vehicle sensors, close range V2V
Examples of technology used:	Cellular telecom, FM- RDS, DAB	Wifi-p, LTE	Wifi-p, Camera, Radar, Lidar
Examples of protocols used:	TMC, TPEG-TEC, TPEG-TFP	ETSI DENM	ETSI CAM, sensor observations







## "Holistic Road Works Warning" *Principal challenges*

- Appropriate information at each stage
- Multi-standards information exchange
- Seamless change-over experience for driver





## "Holistic Road Works Warning" *C-ITS Corridor + TPEG feed*

### **BASt** objectives

- Experiment with TPEG feed within the C-ITS Corridor
  - Next testing phase planned for autumn 2015
- Identify needed standards changes
- Partners sought to for testing phase
  - Service providers wanting to take in data from MDM and produce an (experimental) TPEG feed
  - Clients with TPEG implementations
  - Especially clients with both ETSI G5 and TPEG implementations









## "Holistic Road Works Warning" *C-ITS Corridor information*

- C-ITS Corridor information is available on the project web site
- Architecture, Data Model and Interface Description available
- http://www.c-its-corridor.de



Politische Dimension

Technologisch-industrielle
Dimension

ANWENDUNGEN

COOPERATIONEN

CAGANISATION

Technologisch-industrielle
Dimension

ANWENDUNGEN

COOPERATIONEN

Technologisch-industrielle
Dimension

ANWENDUNGEN

Technologisch-industrielle
Dimension

Technologisch-industrielle
Dimension

Technologisch-industrielle
Dimension

KONTAKT

#### Einführung im Korridor: Rotterdam – Frankfurt/M. – Wien

Verkehrshindernisse wahrnehmen, bevor man sie sieht. Gefahren erkennen, bevor sie zur Bedrohung werden. Sicher und entspannt ans Ziel kommen. Die Vernetzung von Fahrzeugen und Infrastruktur bringt uns der Vision einer intelligenten und unfallfreien Mobilität näher. Technisch gelingt dies durch kooperative Systeme. Sie ermöglichen die direkte Kommunikation zwischen Fahrzeugen, straßenseitiger Verkehrsleittechnik und Verkehrsleitzentralen. Man spricht in diesem Zusammenhang von V2X-Kommunikation (Vehicle-to-Vehicle- bzw. Vehicle-to-Infrastructure-Kommunikation) oder von C-ITS (Cooperative Intelligent Transport Systems).

Intelligente Mobilität - über Landesgrenzen hinweg









# Thank you for your kind attention Suggestions or Questions?

#### **Project lead Cooperative ITS Corridor**

Federal Ministry of Transport and Digital
Infrastructure
Dipl.-Ing. Konstantin Sauer
Robert-Schuman-Platz 1, 53175 Bonn
Ref-StB12@bmvi.bund.de

#### **Project office Cooperative ITS Corridor**

c/o K&S GmbH Projektmanagement
Dr. Andreas Kreutzer
Fon +49 (241) 160 1959,
Fax +49 (241) 160 1963,
office@c-its-corridor.de





