



**41<sup>ST</sup> ASECAP STUDY & INFORMATION DAYS 2013**

# *Are we ready for deployment of cooperative systems?*

Valamar Lacroma Dubrovnik Hotel  
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# *DEPLOYMENT – WHAT, WHY AND HOW?*

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Manfred Harrer



# COOPERATIVE SYSTEMS (C-ITS)

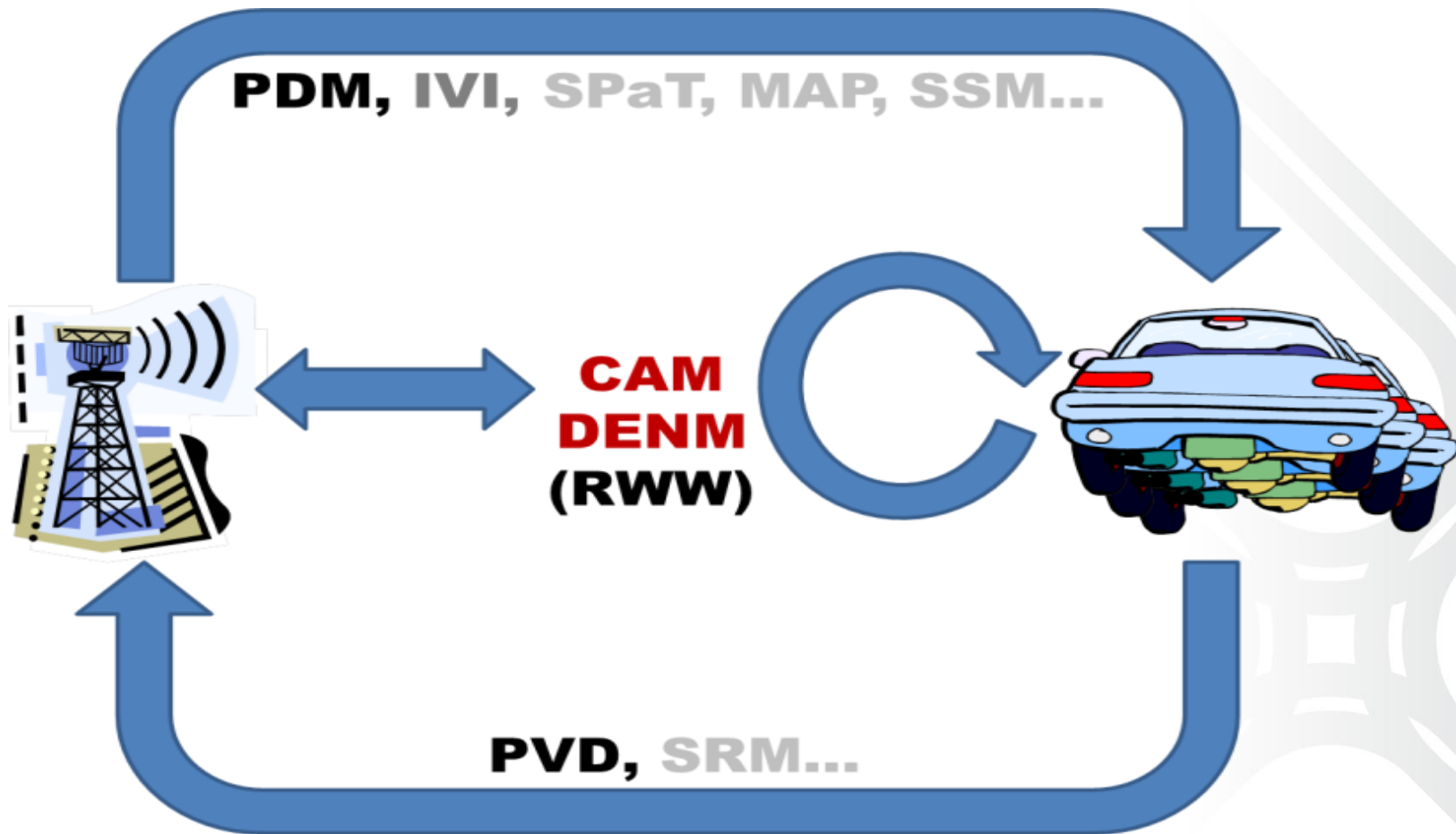
**Vision – driver's perspective today**



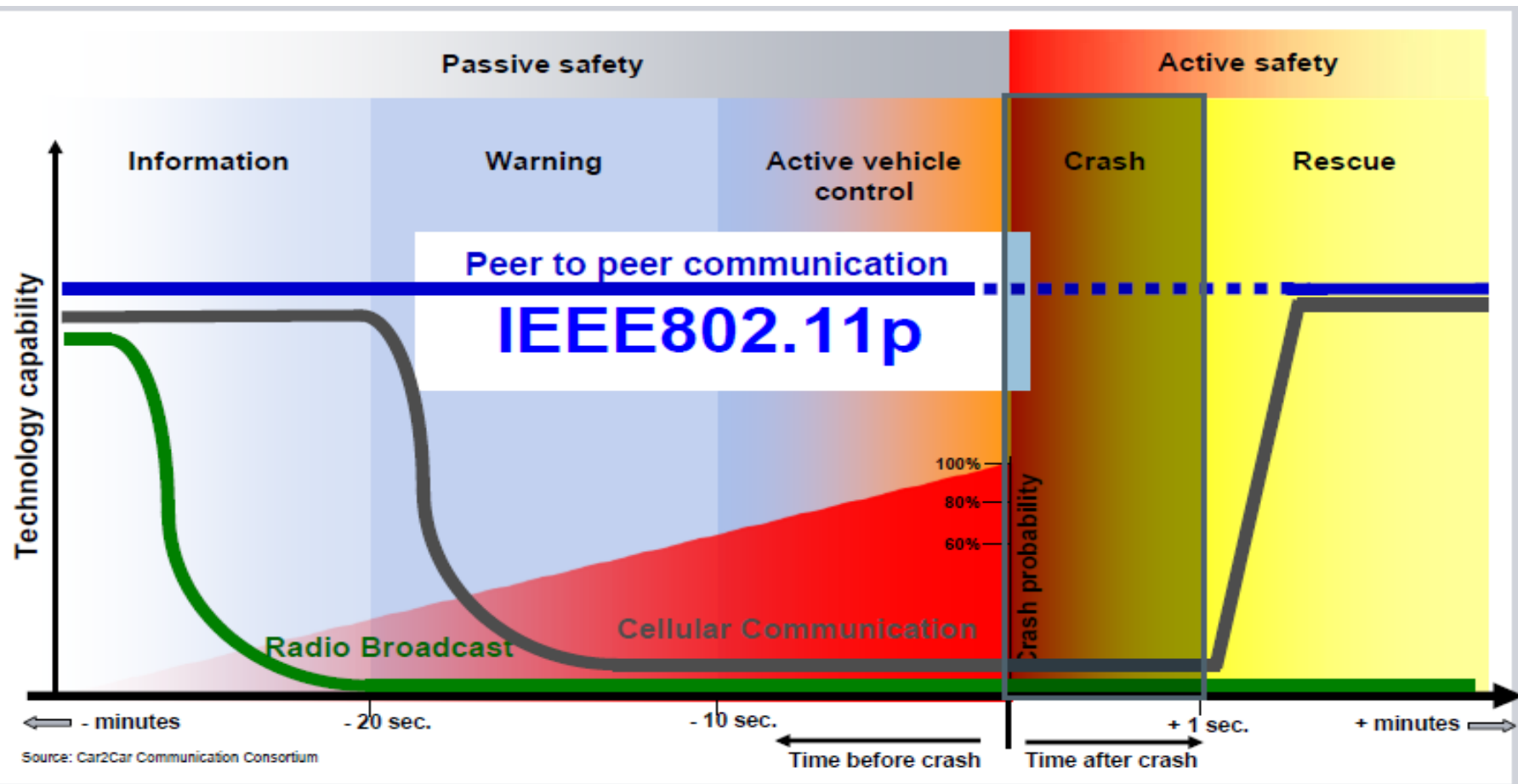
**Vision – driver's perspective tomorrow**



# Vehicle to Infrastructure Messages

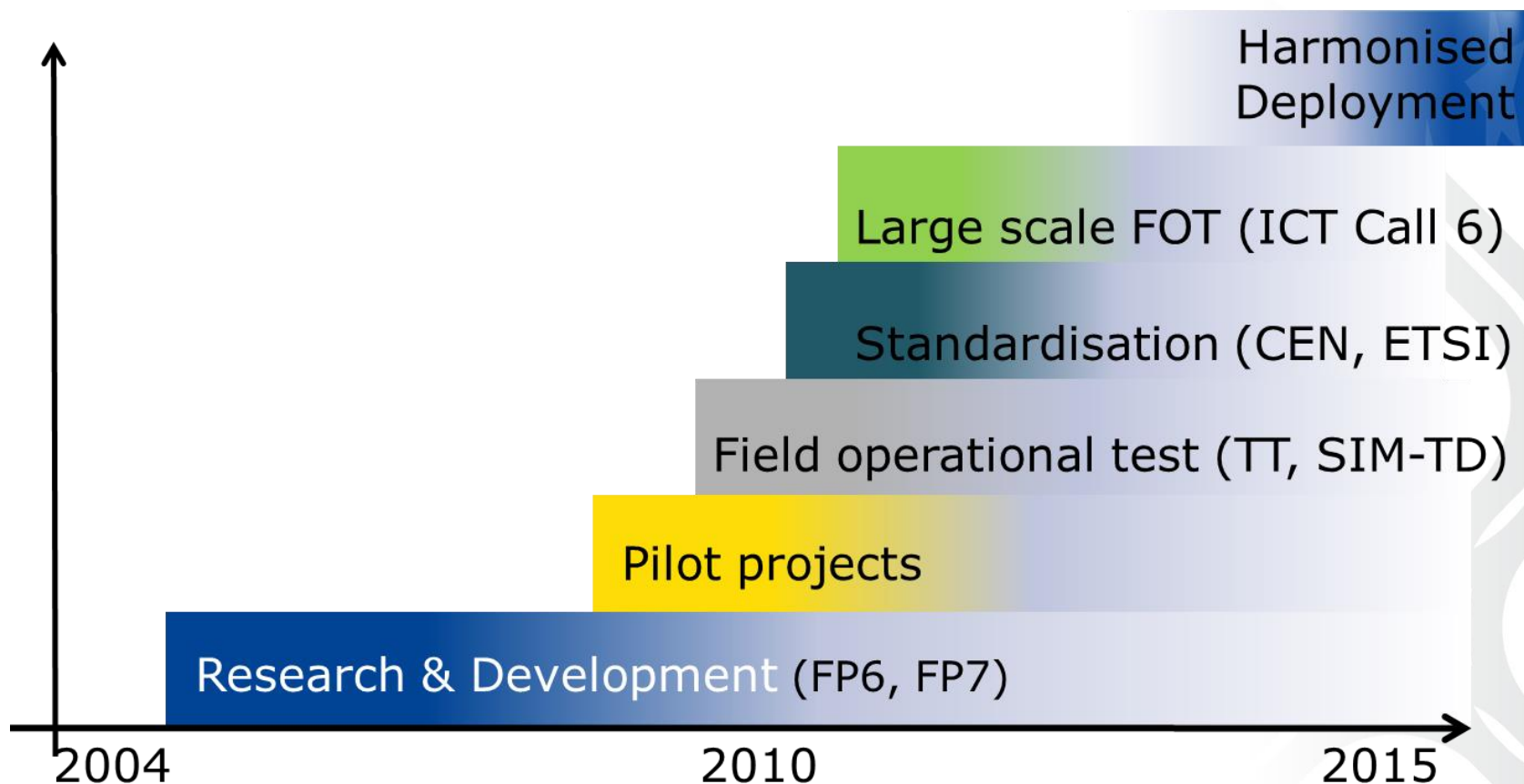


# TECHNOLOGY CAPABILITY & TIMING

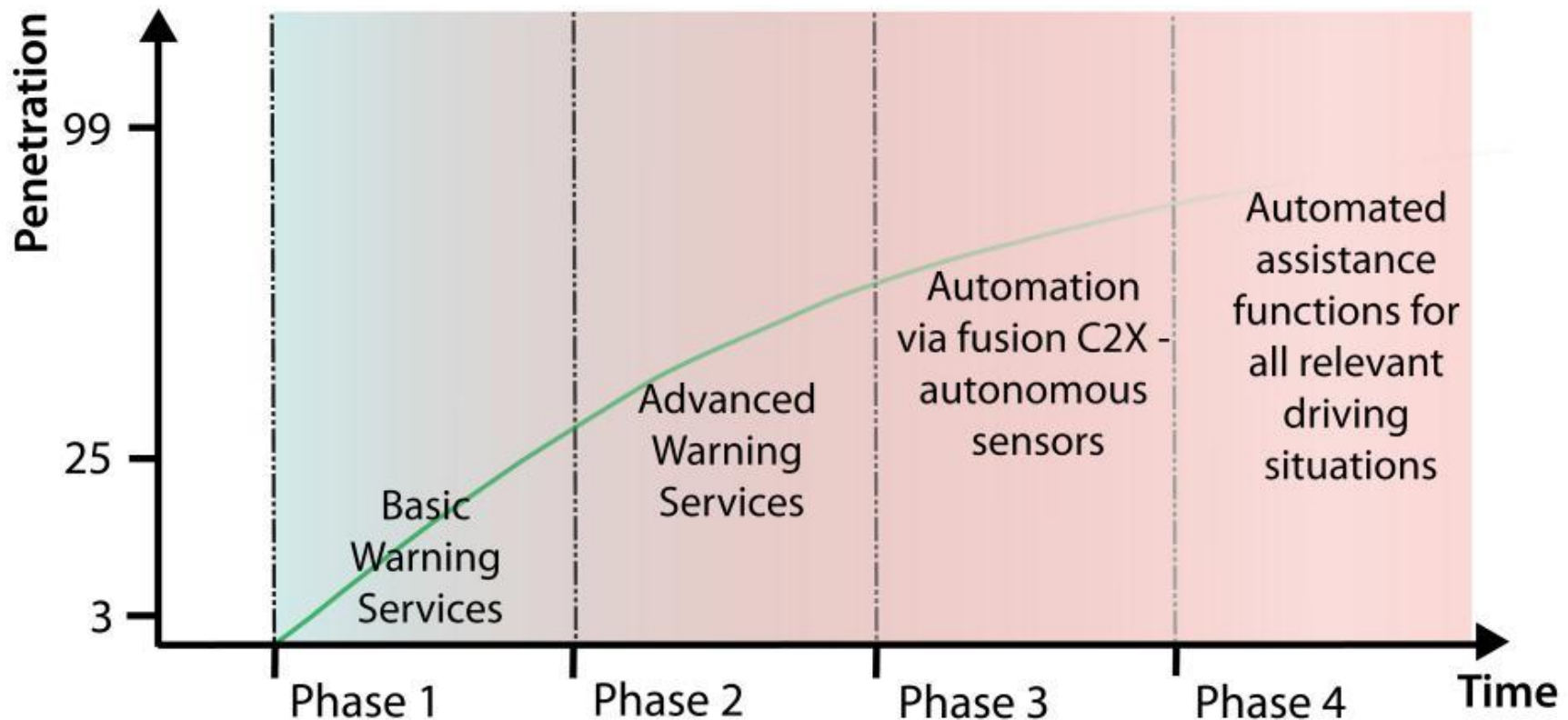




# ROAD-MAP TO DEPLOYMENT



# Phase Concept of C-ITS Deployment



# EXPECTED BENEFITS OF C-ITS

- **For road users:**
  - Introduction of new generation of traffic information services
  - Driver information services on the related road network by road operator
  - Better accuracy (timely and geographically) for information provision
  - Specific C-ITS use cases for specific needs (e.g. Road Works Warning, Speed Information)
  - Improving road safety, increasing traffic flow and therefore contributing to sustainability



# EXPECTED BENEFITS OF C2X

- **For road operators:**
  - Providing regularly traffic information, generated by the road operator, offered on-board in the vehicle
  - Improving traffic and event detection due to the availability of Floating Car Data (FCD)
  - Steering the introduction of advanced technology by road operators
  - Vehicles will exchange information from 2015 on anyhow, information from road operators will be included complementary
  - Reducing infrastructure investments and operation- and maintenance-costs



# USE CASES

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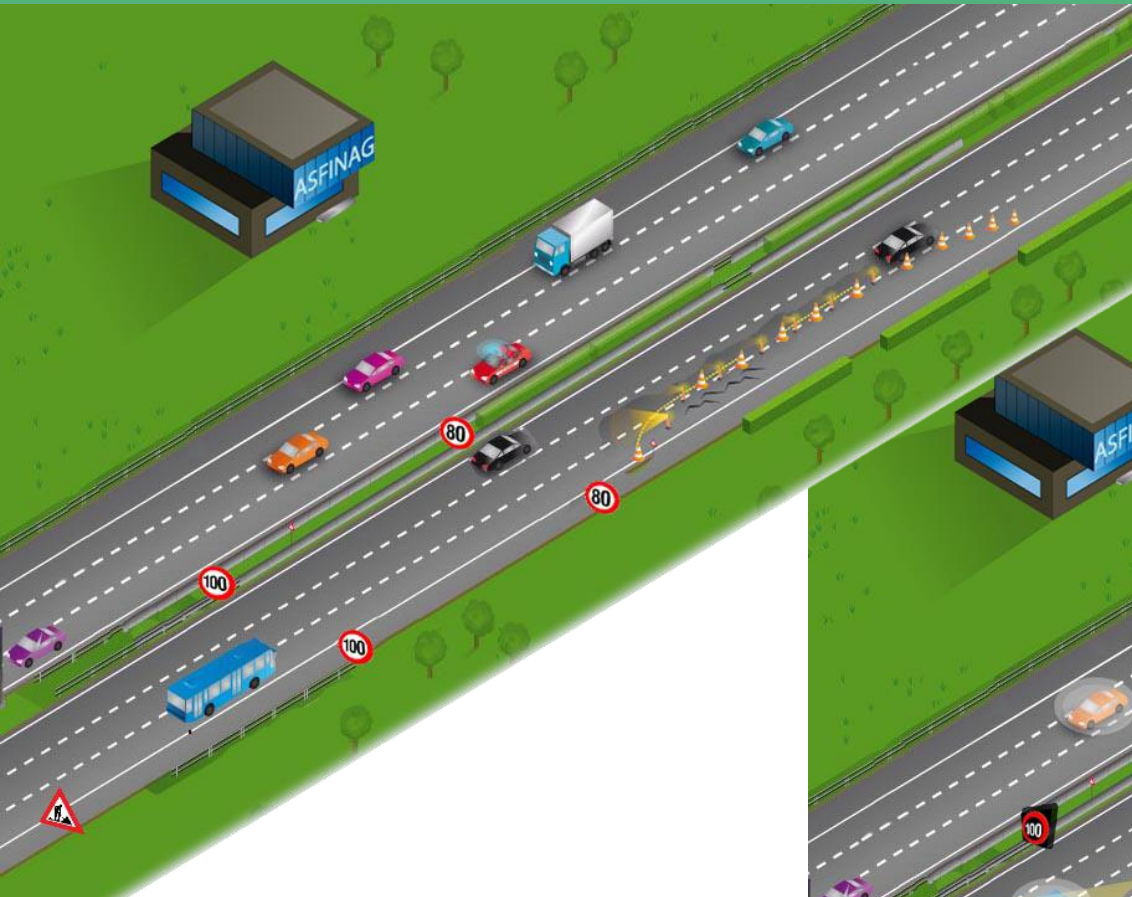
# ROAD WORKS WARNING

- Informing drivers of road works, its parameters and associated obstruction (e.g. reduced speed limits, closed lanes, deviated lanes, extended travel times etc.)
- The goal is to inform the driver in advance to increase awareness and to inform of potential dangerous conditions
- Very time and geographical accurate information directly “on the road”
- Improving road works data bases implicitly

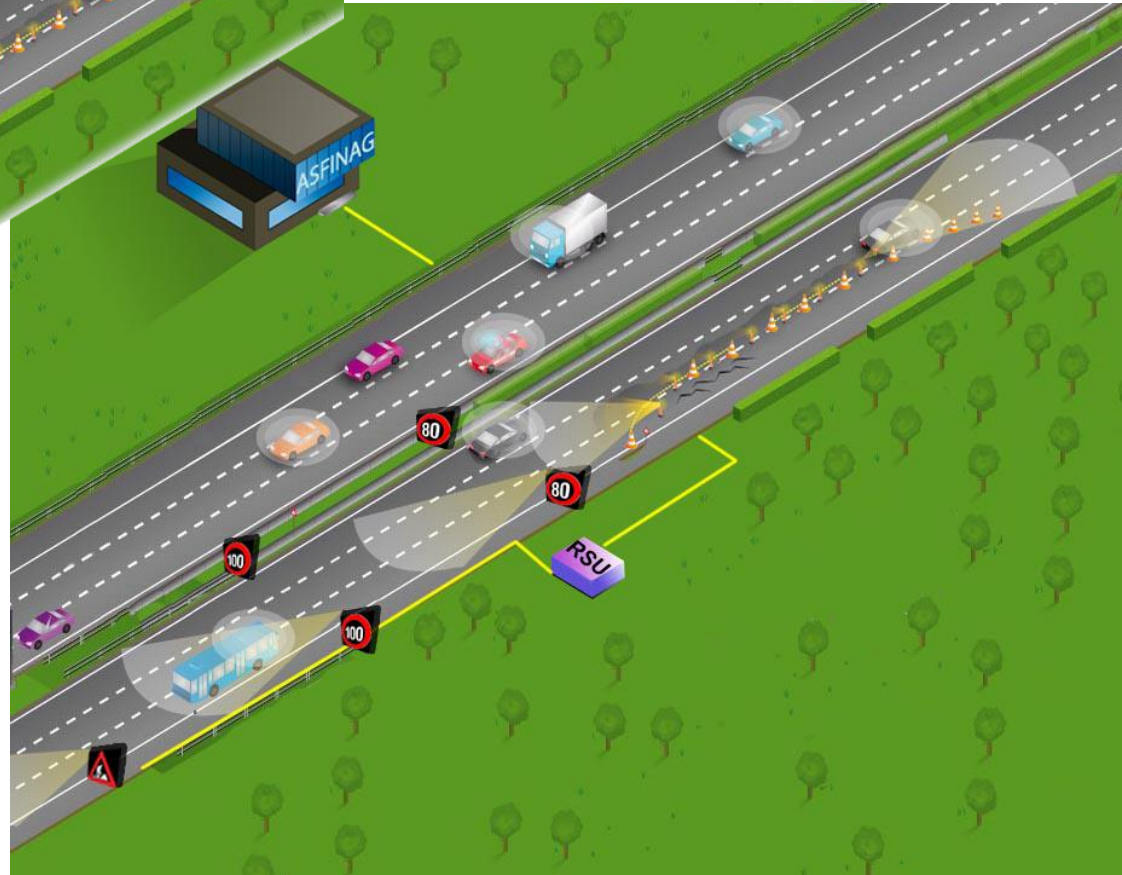


# ROAD WORKS WARNING

## Conventional Road Works Site



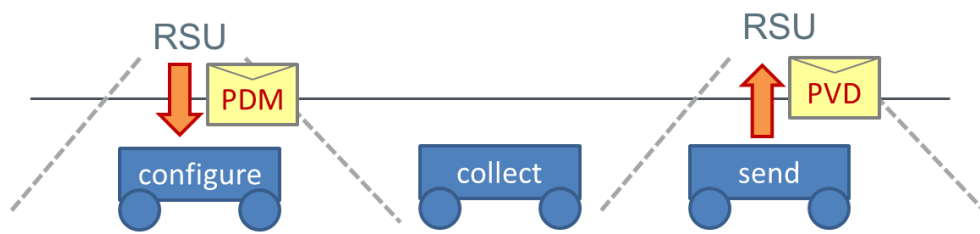
## Co-operative Road Works Site



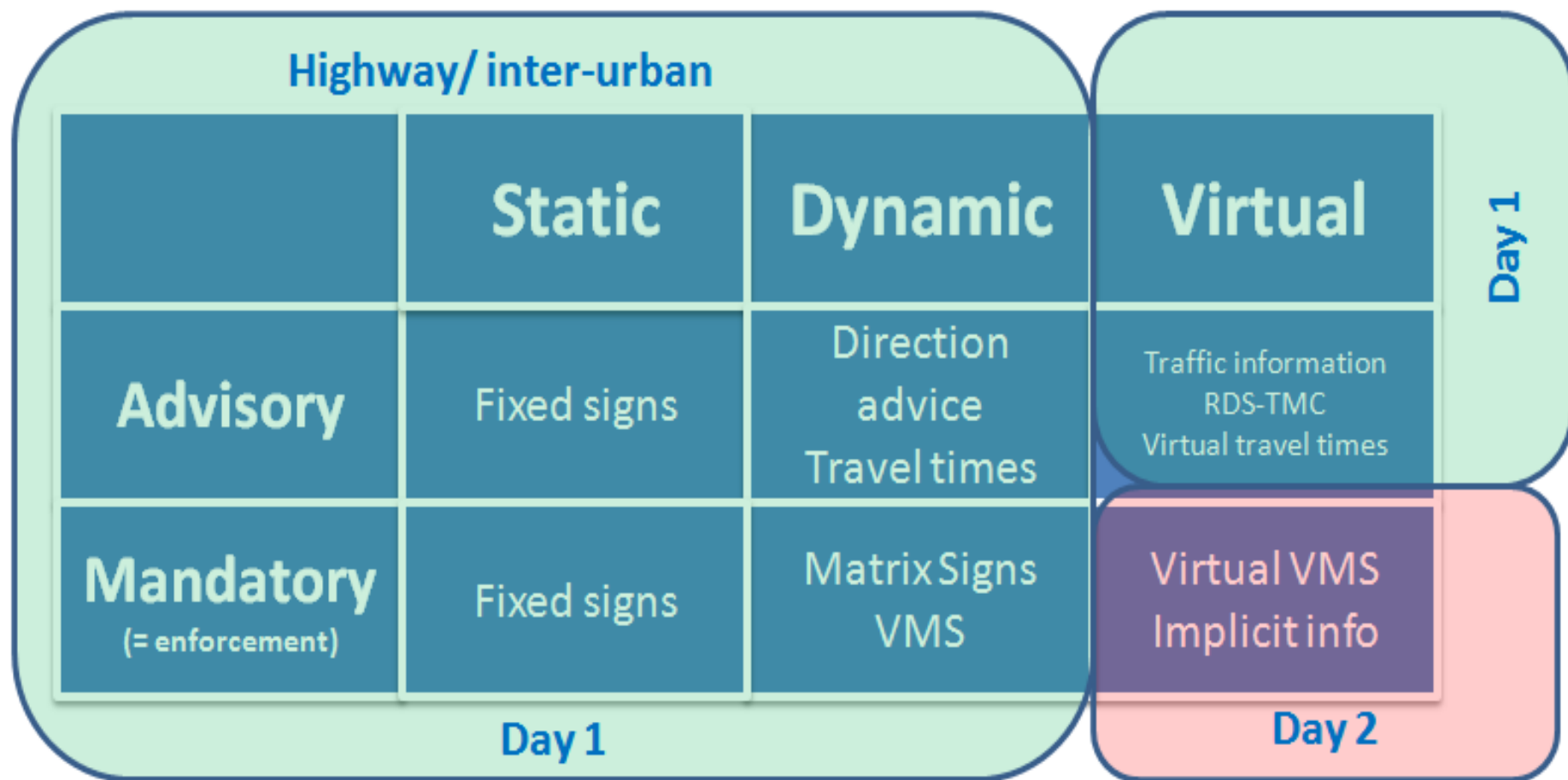


# PROBE VEHICLE DATA

- Collects data from vehicles and transmits this data to the traffic data center of road operators
- Messages contain vehicle-specific parameters and traffic relevant events detected by the vehicle
- Improve the raw data of traffic flow and situation
- Tests in Germany have shown, that an accuracy similar to having a traffic data sensor each 500m achieved with 2-4 % of vehicle penetration rate



# IN-VEHICLE SIGNAGE/INFORMATION



**SIGNAGE**

**INFORMATION**



# *READY FOR DEPLOYMENT?*

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# WHY IS C-ITS READY FOR DEPLOYMENT?

- CEN/ETSI issued set of basic standards for Day One Use Cases
- Field Operational Tests Demonstrations
- MoU Deployment of German vehicle manufacturers
- Lol of Amsterdam Group (ASECAP, CEDR, C2C CC, POLIS)
- C-ITS Corridor Initiative of AT/DE/NL (Rotterdam – Frankfurt – Vienna) – MoU to be signed shortly
- Other C-ITS Corridors in preparations in Europe
- National Deployment Projects in Europe (e.g. ECo-AT in Austria)



# RECOMMENDATIONS

Horizontal layers		Lead
1.	Cooperations	ASFINAG
2.	Identify R&D needs	ASFINAG
3.	Lead role of ASFINAG within C-ITS	ASFINAG
Regional layers		
4.	Roles & Responsibilities	ASFINAG
5.	Implement and Operate / Project Team	ASFINAG
6.	Define hot Spot Areas, corridors and regions	ASFINAG
7.	Business Models, Investment Planning	ASFINAG

# RECOMMENDATIONS

<b>European layers</b>		<b>Lead</b>
8.	Agree on first day use cases	AG
9.	Compliance assessment	C2C
10.	Security & Privacy framework	C2C
11.	System specification	Eco-AT
12.	Lifecycle Management	Eco-AT
13.	Hybrid Communication Concept	Eco-AT
14.	Nomadic Devices	-
15.	Marketing activities incl. Content Branding	-
16.	Availability, Quality, Reliability of Data and Service Levels	-
17.	Legal Issues	Eco-AT
<b>International layers</b>		
18.	Technical Standardisation	ETSI/CEN
19.	Co-existence (5,8-5,9 GHz)	ETSI



*THANK YOU FOR ATTENTION!*

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