Cooperative
ITS Corridor
Joint deployment

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Ministry of Infrastructure and the
Environment of the Netherlands

Bundesministerium
für Verkehr, Bau
und Stadtentwicklung

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Innovation und Technologie

Planned expansion of day 1 cooperative ITS applications

Cooperative ITS – safe and intelligent
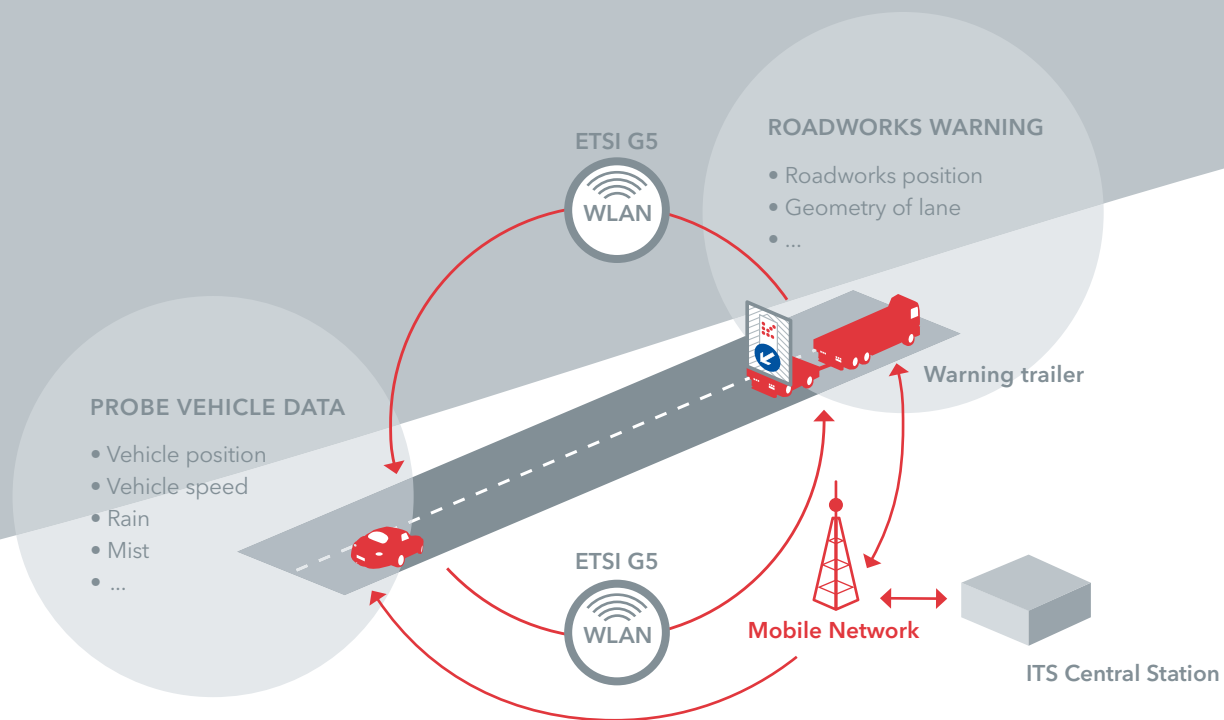
Noticing traffic jams before you see them. Detecting risks before they become a threat. Arriving at your destination safe and sound. This vision of safe and intelligent mobility can be realised by wireless connecting vehicles and infrastructure. In technical terms, it is achieved with so called cooperative Intelligent Transport Systems (C-ITS – also known as V2X communication for vehicle-to-vehicle and vehicle-to-infrastructure communication). Cooperative systems enable direct communication between vehicles, roadside infrastructure and traffic control centers.

The benefits of V2X communication are numerous. It enables anticipatory and safe driving, as drivers are informed about the current traffic situation and danger zones in time. In addition traffic centers receive precise and comprehensive information on the traffic situation from vehicles. In this way, it is possible to control the traffic flow more differentially, efficiently and quickly, resulting in an improved flow of traffic. The effect: more safety, less accidents, improved use of the road network, less congestion and a decrease in CO_2 emissions.

Intelligent mobility – beyond national borders

The basis for the pan-European deployment of cooperative ITS is already in place. The cooperative ITS technology has been developed within research and development projects (R&D) and are evaluated in field operational tests (FOTs). The majority of the enabling technology is already standardised. The non-technical aspects (e.g. organisational structures, safety concept, legal aspects) are currently addressed in public private partnerships in preparation for the market launch. On this basis, now the road operators in Germany, the Netherlands and Austria start joint deployment of cooperative ITS in Europe with partners from industry.

Cooperative ITS require the commitment of many partners from different branches of industry and politics. The Amsterdam Group, a strategic alliance of road operators and industry on a European level, is coordinating the efforts towards deploying cooperative ITS. Involved are CEDR as an organisation of public road operators, ASE-CAP as an umbrella association of the toll road operators, POLIS as an umbrella association of cities and the Car2Car-Communication Consortium representing the automotive manufacturers and associated industries.

ETSI G5 WLAN

ROADWORKS WARNING
- Roadworks position
- Geometry of lane
- ...

PROBE VEHICLE DATA
- Vehicle position
- Vehicle speed
- Rain
- Mist
- ...

ETSI G5 WLAN

Warning trailer

Mobile Network

ITS Central Station

Cooperative ITS Corridor
Rotterdam – Frankfurt/M. – Vienna

It is planned that the roadside cooperative ITS infrastructure for the initial services in the Cooperative ITS Corridor Rotterdam – Frankfurt/M. – Vienna will be installed by 2015. The EU Member States the Netherlands, Germany and Austria have signed a Memorandum of Understanding to realise this new technology in close cooperation. The deployment of the corridor has been agreed with industry. They will bring the first vehicles and telematic infrastructure onto the market also starting 2015. Concrete declarations of intent were already signed by the parties involved or are in preparation.

Two cooperative ITS services are first planned for use in the Cooperative ITS Corridor Rotterdam – Frankfurt/M. – Vienna:

1 Roadworks warning (RWW)
from the traffic control centers via the roadside infrastructure to the drivers

2 Probe Vehicle Data (PVD)
vehicles transmit data about the current situation on the road to the roadside infrastructure and the traffic control centers

In both cases, communication from the vehicle and infrastructure is established via short range communication (Wifi 802.11p, 5.9GHz) or the cellular network (3G, 4G). Both initial applications increase road safety and provide the basis for an improved traffic flow. Thanks to the collaboration of the automotive industry, service providers and road operators, cooperative ITS systems will be directly experienced by the road user and are useful for everyone.

Development projects started internationally

Preliminary development projects on which organisational, functional and technological aspects are being dealt with are already running in the Netherlands, Germany and Austria for the deployment of the first cooperative ITS. Both the preparation and the gradual deployment of the new technology are taking place in close exchange with the partners on a European level (i.e. standardisation organisations, Amsterdam Group, European Commission).

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