

Press Release

Research project AKTIV – towards networked traffic and transportation

Modern traffic management helps increase road capacity by ten percent and reduce the probability of traffic congestion by 15 percent.

Karlsruhe/Mendig, July 5, 2010. The ideal basis for intelligent traffic management would be built on a network for information exchange between all parties involved in traffic and transportation. Intelligent means to use the road network in an efficient and optimal manner, to improve traffic flow and reduce the number of traffic jams and road accidents. The "Traffic Management" project that is part of the research initiative AKTIV shows how this vision can become reality. The results were presented to the public in Mendig on June 23.

"We are developing a network that enables traffic management systems to "interact" with in-vehicle information and assistance devices as well as with infrastructure units," explains project manager Dr. Michael Ortgiese, Vice President Research & Innovation at PTV Germany. Future traffic management will allow vehicles and gantry signs to "communicate" with each other. A novel information network between drivers, vehicles and roadside infrastructure is the key. New technologies will combine traffic information centres, roadside infrastructure and intelligent vehicles. PTV analyses these scenarios together with numerous members of the Aktiv research initiative.

"Our aim is to reduce the probability of traffic congestion by 15% and to increase road capacity by 10%," says Michael Ortgiese. For almost three decades PTV has been focussing on truly innovative optimisation technology for traffic and transportation. As a member of the Aktiv research team, PTV provides technology for traffic information collection and processing, for road network optimisation and dynamic navigation included in cooperative vehicle-infrastructure systems.

Communication with networked vehicle infrastructure

"A completely new approach is used which includes infrastructure such as gantry signs, traffic signals or construction sites in the information cycle in

order to enhance traffic management“, says Ortgiese. So-called roadside units fitted to gantries collect information sent from passing vehicles. It will also be possible to directly transfer traffic information to the vehicle and to use driver assistance systems for further data processing. Faster provision of information proves to be particularly valuable regarding road safety near construction zones.

Adaptive navigation is an application in networked traffic and transportation. The navigation system analyses data from traffic information centres and services. Additionally, it permanently receives information about traffic conditions and travel speeds of other road users. Moreover, it can take strategic route recommendations into account. The virtual traffic guidance system of a traffic management centre edits the vehicle data and the data collected by stationary units, such as induction loops or sensor systems. The recommendations are then transmitted to the vehicles by means of gantry signs, roadside units (RSU) and a central service platform.

All information available was gathered in the central data pool developed by PTV. Strategic recommendations and up-to-date traffic information are included in a coordinated package of measures. The aim is to provide consistent information displayed on gantry signs and navigation devices that allow drivers to follow the recommendations, and thus to ensure optimal use of the road network.

Interaction of different elements

The traffic management team develops a cooperative system that includes the following elements: A Network Optimiser selects the best traffic management strategy based on the current traffic conditions and presents the optimal way of getting traffic through the network. After distributing the data and information by means of the Information Platform, the Adaptive Navigation system displays the best route through the network. The Virtual Traffic Guidance System stabilises traffic flow and the Construction Site Guide guides drivers safely through the construction zones. Should traffic come to a halt on the motorway, intelligent traffic signals will optimise traffic flow on the diversion routes.

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Background information:

As an AKTIV project partner, PTV AG is responsible for:

1. Subproject - Information Platform

- Concept for the intelligent distribution of information in cooperative systems as a basis for optimum data supply throughout the entire information chain.
- Control software for the exchange of traffic data between traffic management centres, traffic infrastructure, service providers and on-board systems.
- Optimum processes for the import, export, integration, distribution and preparation of data

2. Subproject - Network Optimiser

- Web-based framework for the display of traffic flow and traffic messages
- Desktop framework for the display of traffic flow and forecast, etc.

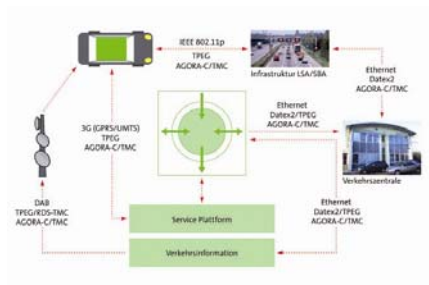
3. Subproject - Virtual Traffic Guidance System

- Provision of messages and instructions (Client) for the display of gantry sign information in the vehicle

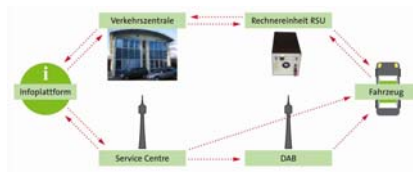
4. Subproject - Adaptive Navigation

- Cooperative navigation services to be used by the control centre and in the vehicle.

Images



(V6_Infoaustausch.jpg) Information flow and exchange formats



(V2_Infoaustausch.jpg) Communication channels in a cooperative system



(sbaAnzeige_ptv01.bmp) Dynamic speed information in the vehicle

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PTV Planung Transport Verkehr AG

The PTV Group provides cutting-edge software technology and consulting to enable customers to meet their mobility needs. It helps people plan and manage traffic and transportation, provides them with the latest traffic reports and assists them in optimising their long-term resource allocation. Since 1979, the independent corporate group has been a leading provider of products and solutions for travel, traffic and transportation planning.

Strong international demand has fuelled dynamic growth: We currently have over 700 employees worldwide crafting innovative solutions for our customers in the public and private sectors. Our Karlsruhe headquarters acts as a development and innovation centre with tight links to research and educational institutions. We additionally maintain shareholdings and subsidiaries in Germany, Europe and every continent in the world.

In the Traffic Software, Transport Consulting and Logistics Software business fields, PTV technology forms the foundation of a host of brand-name products and our own leading map&guide and PTV Vision product lines.

PTV. The transportation experts.

Research initiative Aktiv

Aktiv stands for "Adaptive and Cooperative Technologies for Intelligent Traffic". The research initiative has a budget of 60 million euros, most of it is funded by the project partners. 25 million euros are funded by Federal Ministry of Economics and Technology and 2.1 million by the Federal Ministry of Education and Research. 28 partners from science and industry (automobile manufacturers and suppliers, electronics, telecommunications, IT, research institutions and road and transport authorities) are involved in the project. The project partners are: Adam Opel GmbH, AUDI AG, AZT Automotive GmbH, BMW Group, Federal Highway Research Institute, Continental, Daimler AG, Ericsson, Ford Research Centre Aachen GmbH, Hesse's Department of Roads and Transportation, University of Applied Sciences, Saarland, IBEO, ifak e.V. Magdeburg, MAN Nutzfahrzeuge AG, PTV AG, Robert Bosch GmbH, Siemens AG, Technical University Braunschweig, Technical University of Munich, Tele Atlas Germany GmbH, Transver GmbH, University of Kassel, Vodafone Group R&D Germany and Volkswagen AG. Numerous university and research departments as well as small- and medium-sized companies are also involved in the projects.