Centrico BRIEFING NOTE
Using ITS to manage Europe´s busiest roads

Exploring Innovative Approaches in ITS – IV

SUMMARY

Traffic problems, on the TERN and in conurbation areas, are expected to increase in the coming years. In their battle with forever growing congestion some countries have decided to set up programmes with ambitious innovative projects to alleviate these problems. o show what the future can bring this note on a selection of innovative projects was written. This is a sequel of three briefing notes published 2005/2006 (available under: www.centrico.org).

THE NETHERLANDS

Blue Alert

A passing ambulance with its sirens on can confuse road users. When they are not in eyesight they have to depend on their hearing. And it is difficult to know exactly where the sound is coming from. The Netherlands will do a pilot providing passenger cars with warning sensor for emergency services. When an emergency service vehicle is approaching the sensor will flash blue, indicating the road user to make way.

High Water? – Open Road!

It has become clear that nature is not configurable. The endurable trust in dikes and dunes is gone. Innovative solutions are needed because flood prevention alone is not enough any more. We have to prepare ourselves to minimise the damages of flooding.

This can be done in two ways:

1. Reduce the area of flooding and reduce the time of flooding (compartmentalisation).
2. Evacuate as many people, animals and valuables as possible.

Infrastructure is the eminent factor in this: the infrastructure offers the natural evacuation routes.

How can infrastructure (roads) serve its purpose as long and efficiently as possible during a flood?

How can natural or artificial elements be used to create smarter compartments?

Rijkswaterstaat wants to develop a toolbox for responsible authorities to make smart decisions in case of a flood.

Five principles were defined:

- Robust roads
- Flexible roads
- Information provision
- Integral approach of evacuation, sheltering and controlling the scene
- Secondary flood defence structures

The Dutch pilot “High water? – Open road!” aims to set up scenarios of the effects of flooding on the road network. This will be based on a combination of available flooding models and traffic management plans. Based on these scenarios weak links in the road infrastructure can be determined. Both results will be used as input for the toolbox.

For interesting weak links implementation pilots will be started. If necessary, the pilot location can be different from the actual weak link; the pilot is for demonstration purposes.

An important aspect of the project is the complex and political sensitive context in which these issues occur. Thus the interaction with internal and external stakeholders is crucial for a success of the project.

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At the end of 2008 a national disaster management exercise is planned. The goal is to participate with at least one implementation pilot.

Temporary bridge – example of a solution during a flood

Car as a Sensor

Nowadays every car has a onboard computer. RWS plans several pilots to study the possibilities of using this onboard information for traffic management. An example:

It could be possible to know where and when it rains based on the windscreen wiper activity and temperature. A traffic manager can adjust signalling on the road based on this information.

ENGLAND

ANPR

Most of the Highways Agency‘s recent innovative solutions are geared around Safety. For instance the Agency has been trialling the use of ANPR (Automatic Number Plate Recognition) to control traffic speeds through roads works. The ANPR system captures the speeding vehicle and subsequently displays the registration number on an electronic display.

It is not intended for prosecution but to shame the motorist.

ANPR is also increasingly used to regulate traffic speed in road works and during planned events measuring average speed over a specified distance and can be used for prosecution if the speed is exceeded. This solution is more effective than the fixed point cameras and are now becoming permanent installations as they have proved to be extremely successful.

Companion

In addition, the Agency has conducted an investigation into advance warning systems, in particular COMPANION. When breakdown in traffic flow is detected, the warning to approaching vehicles is relayed by flashing beacons. This system is expected to be a more cost effective solution than the MIDAS system currently deployed by the HA. This better value system could be used for infilling gaps in the MIDAS coverage. The Agency is currently awaiting a decision on conducting a COMPANION pilot.

BELGIUM

Smart Salting Vehicles

During winter time, it is always difficult to respond quickly and at the right location in case of snow. Therefore, Wallonia has equipped salting vehicles with sensors (to know the quantity of salt left, fuel, ...) and GPRS on-board system to be able to follow in real time the vehicles on the Internet and have a constant communication line.

GERMANY

VII and Galileo

Hessen aims to develop and test technologies needed to allow cars to communicate with each other and with the nearby roadside infrastructure. Target is to increase road safety and efficiency and to reduce the impact on environment. It is planned to use Vehicle Infrastructure Interface (VII) technology to communicate traffic management information. Furthermore it is planned to use Galileo technology for automatic tracking of mobile units.

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