

Centrico BRIEFING NOTE

Using ITS to manage Europe's busiest roads



Travel Time Dissemination

SUMMARY

The provision of travel time information reduces driver stress and increases driver comfort, with associated road safety benefits. With a focus on the SAPN network in France, this note describes how individual partners within CENTRICO are using new techniques to estimate and disseminate travel times to drivers.

THE PROVISION OF TRAVEL TIME IS BECOMING INCREASINGLY COMMON ACROSS THE CENTRICO AREA

Most of the countries within CENTRICO provide travel time information to drivers:

France: France has invested considerably in systems to provide travel time estimates to motorists. Perhaps the best known of these applications is along the Paris orbital motorway, the Périphérique, where variable message signs provide travel times to upcoming junctions. Travel times are also provided on selected interurban motorways, often using innovative estimation techniques. Section 2 of this briefing note explains the approach taken by the French motorway company SAPN to generate travel times from existing spot speed detectors on the A13 motorway northwest of Paris.

The Netherlands: The Netherlands is currently trialling a variety of approaches to estimate travel times on Dutch motorways. One such approach estimates travel times by analysing speed and flow data from existing inductive loops. In a number of experimental schemes, VMS provide drivers with travel times to upcoming destinations.

Belgium: Flanders participates in a Floating Car Data pilot project. A new technology for measuring real time traffic flow based on anonymously sampling the

positions of mobile phones in moving vehicles is tested. This approach will possibly provide travel time.

Moreover, Flanders is also implementing a real-time simulation model, which uses traffic count data to forecast travel times. Brussels is studying plate recognition technologies in order to give travel time at main tunnels entrances.

Germany: Travel time information is available in NRW and Hessen. In NRW, a simulation tool is being enhanced to estimate travel times based on online data from inductive loops. In Hessen, a model is used to forecast congestion using inductive loop data. Based on estimates of driving speed, travel time between intersections is also determined.

England: The Highways Agency now provides a Traffic Forecaster tool that allows the road user to calculate the estimated travel time depending on the time and date of travel. The National Traffic Control Centre has installed Automatic Number Plate Recognition (ANPR) cameras to determine travel times across much of the English motorway and trunk road network, which feeds its data into the forecaster (www.highways.gov.uk/traffic/forecast.aspx) tool calculations. Private organisations have also taken initiatives to collect travel times by monitoring the movement of fleets of probe vehicles.

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USING SPOT SPEEDS TO GENERATE TRAVEL TIMES - THE APPROACH OF SAPN

A) Determination of Travel Times

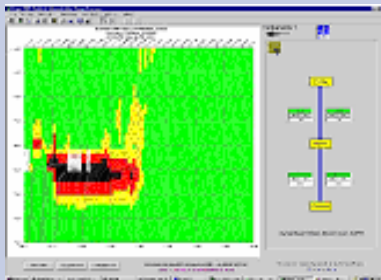
The SAPN (Société des Autoroutes Paris-Normandie) manages 380 km of motorways that connect Paris with the cities of Rouen, Le Havre and the Normandy coast.

Provision of travel time information is a priority for SAPN, who wants to provide accurate journey time information to drivers, particularly on the heavily charged A13 motorway northwest of Paris, given its high traffic volumes and high rate of HGVs.

The company studied several approaches and concluded that accurate travel times could be estimated from spot speed measurements, thus enabling the firm to take advantage of previous traffic monitoring investments. Recognising the need to install additional detectors to achieve sufficient detector density, SAPN reviewed several detector technologies in terms of performance, cost and ease of maintenance. For the A13 application, the firm selected Infrared radar as the preferred solution.



Using data from the new IR radar detectors and from existing inductance loops, the SAPN system estimates travel times using a multiple linear regression model, incorporating flow, speed and occupancy data. The system produces graphic displays of traffic conditions and travel time estimates between major junctions on a 6-minute cycle.



B) Travel Time Dissemination

SAPN's SSA (Système de Supervision Autoroutier) controls the dissemination of travel information to drivers. The travel time system provides information directly to the SSA, which then transmits travel times and are disseminated to drivers using:

- SAPN's traffic radio service on 107.7 FM
- Variable Message Signs
- Internet
- WAP
- Interactive Voice Services (Fonifo)
- Traffic News on Television



C) Evaluation

The SAPN conducted a satisfaction survey that proved travel time information is well perceived (>80 %) and very reliable (93 %). Following this positive feedback from drivers, the SAPN is progressively extending the travel time system to incorporate additional motorway sections, refine the estimation and to closely match the drivers' expectation.

NEXT STEPS

With the emergence of sophisticated in car systems, the demand for travel time information is increasing. In response to this demand and given the proven safety benefits associated with calmer, well informed drivers, the CENTRICO partnership is making the provision of travel time information an increasing priority for ITS investment.

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For further information on other CENTRICO activities visit:

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