How Prague's drivers are informed

How integration and prediction are essential to influence driver behaviour

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A timely delivery of information about the state of traffic situation to drivers and passengers prevents traffic congestion and accidents, reduces costs, negative environmental impact and contributes to a free flow of traffic and road safety. Last year, the traffic management system of Prague, capital of the Czech Republic, was enhanced with the provision of traffic information to drivers through information portals and variable message signs. The implemented telematic solution fulfills its function well and the implementation project was recently awarded in the national competition "Czech Transport Construction and Technology 2013".

The basis of the project titled "Solution to the provision of traffic information in Prague" was modernization and renewal of the existing traffic information provision system alongside with delivery, installation and commissioning of 51 information portals and variable message signs (VMS). The service provider is TSK Praha – the road administrator in the capital city of Prague. The general contractor of the project was a Czech company VARS BRNO a.s., who prepared a customized software solution based on its product SMARTiC to control all VMS in Prague. The uniqueness of the solution lies in the integration of all traffic management components into one system remotely operated from the Main Traffic Management Centre of Prague (HDRU).

DATA SOURCES

Real-time information on the traffic situation is acquired both from external and internal sources. External sources of information include the police, fire department, emergency medical services, central register of road closures, car park administrators, call centres, and Floating Car Data providers. Internal information sources are generated directly by telematic infrastructure operated by the municipal road administrator. This includes vehicle detectors, video surveillance systems, tunnels, weigh-in-motion systems and road weather stations. The data are processed in a uniform manner, evaluated and through the predefined scenarios used for traffic management and control in Prague.

An example of Prague's information portals displaying real-time traffic information

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MODERN LED VMS

In addition to traffic lights, variable message signs are now also used for Prague traffic management and control. Through them the drivers receive timely information on the state of tunnels, road accidents, traffic levels, travel times and delays, weather conditions, traffic restrictions or closures. These are modern, mostly full-matrix and full-colour RGB VMS providing excellent visibility even under adverse conditions.

Thanks to the full-colour full-matrix design with high density of display points, a high variability in display of traffic information is ensured – for example, in addition to the standard text information and graphic symbols, real-time schematic traffic level maps are now being displayed.

MANAGEMENT SCENARIOS

Essential for the correct function of the Prague VMS system are high quality traffic management scenarios. These correspond to the foreseeable traffic conditions at the VMS locations. By continuous evaluation of the traffic data, the so-called "traffic status" is defined. It is essential for initiation of a particular scenario by means of accepting a traffic measure and informing drivers through the VMS. The possible conditions include traffic density levels, accidents, icy roads, reduced visibility, closures or restrictions, etc. Such situations are automatically compared with the predefined scenarios for traffic management and control, and when predetermined conditions (a combination of states) are met, a particular scenario is initiated.

The VMS management system in Prague is highly sophisticated. As a situation may arise, when the conditions comply with multiple scenarios, it was necessary to set priorities and prevent the initiation of multiple conflicting scenarios.

Scenarios automatically set the weight (importance) of information to the particular traffic event based on the predefined areas of interest of individual VMS, the distance from the particular board as well as the type of traffic event (accident, road closure, etc.). Scenarios can be initiated either manually by a HDRU operator or automatically based on the real-time traffic information.

BENEFITS FOR DRIVERS

Thanks to the information displayed on the VMS as text or graphic symbols, the driver is able to respond to the current traffic situation and to avoid, for example, traffic jams or other unforseen events. In particular, very positively perceived are informations about travel times and delays which have replaced traffic levels information, allowing drivers to create a better view of the extent of their delay or to reevaluate their route.