



Network Control

If Motorways Could Think, Your Way Would be Clear

REFERENCE

Hessen Traffic Centre (VZH)

Hessian Regional Authority for Roads and Traffic

SAMPLE PROJECT

→ Traffic flow control in the Hessian motorway network

The VZH traffic centre is assigned responsibility as management and information centre for the motorway network in Hessen. It currently integrates 19 subcentres with 40 rerouting signs and calculates level of service from more than 3,400 induction loops or radar sensors.

The system distinguishes itself through its traffic engineering processes and models for the determination of traffic situations, prognoses and decision support. Several models are applied for the calculation and prediction of delay times and congestion lengths during peak hours and at work sites.

The results of the congestion prediction system are used together with knowledge of the motorway network to investigate rerouting recommendations. For this reason, primary and alternate routes in the Hessian motorway network are stored in the database. A rule-based traffic analysis system selects the most suitable scenarios and appropriate routes for the prevailing traffic situation.

The dissemination of the recommendations to the motorists occurs via rerouting systems in prism-technology as well as variable message signs (dWista – dynamic direction sign with integrated information on congestion).



Intelligent Load Balancing in the Highway Network

- **Determine current traffic pattern**
comprehensive, statistical database features long term historic knowledge
- **Incorporate events**
take holidays, vacation times, big events, etc. into account
- **Recognise special cases**
congestion detection with delay time calculation taking lane closure into account (work sites, accidents. ...)
- **Decide based on situation**
with selection of the best suited traffic pattern to match the currently prevailing situation

CHARACTERISTICS

Database

- online traffic monitoring based on appropriate sensors
- road network model based on a digital map
- display of main and alternate routes in the street network
- historic traffic patterns for traffic prediction with several typical historical data sets per road section

Decision support

- congestion detection with delay time calculation as a base for network control
- rule-based decision logic
- freely definable programs display interrelated measures
- interfaces to tie external triggers to freely configurable actions with defined priorities
- semi-automatic decision review by the operator; the system automatically checks the technical feasibility of the reroute

Signage

- activation of the rerouting system in prism-technology to modify destination display
- use of text displays to give concrete alternative route recommendations
- delay time displays on text boards for main and alternative routes so the motorist can decide for themselves

