



+ PSIRoads/MDS

# Proactive and cooperative traffic management

Optimising traffic flows with an intelligent, holistic approach

- + Reduce dangerous situations by circumnavigating congestion or areas requiring protection
- + Increase air quality by circumnavigating highly polluted areas
- + Timely response to planned and unplanned events (e.g. football games, concerts, accidents) to avoid traffic jams
- + Increase attractiveness of cities by taking into consideration the needs of its citizens

Every driver has experienced this situation before: Your navigation device recommends using a certain route – but when you get there, the traffic is already heavy. The multi-criteria decision support PSIroads/MDS offers a smart solution. The software PSIroads/MDS allows the user to take a short look into the future and base decisions on the coming traffic scenario. PSIroads/MDS utilises the artificial intelligence tool Qualicision.

With this tool, traffic flows can be managed more flexibly than ever before. PSIroads/MDS optimises the use of transport networks in a way that everybody can reach their individual destinations in the best way possible. The system allows road operators and environmental authorities to control the traffic flow based on freely defined, strategic and environmental goals. In addition, possible measures for traffic management are assessed based on the current and anticipated traffic situation with reference to the destination. Furthermore, rules for the cooperation of various road operators are defined and applied according to the situation. This allows traffic management across the boundaries of responsibilities.

The main goal is to combine the individual goals of road users to get from A to B as quickly, directly and congestion-free as possible, with those of the cities—to prevent congestion, road hazards and air pollution.

In contrast to routes given by car navigation systems, the self-learning software PSIroads/MDS ensures that road users use different routes but also different carriers (e-vehicles, buses and trains, car-sharing, bicycles etc.) and recommends different times (leave earlier or later) to get to the same destination.

Successfully tested: As part of an EU funded Pre-Commercial Procurement (PCP) project PSIroads/MDS was implemented with the Dutch traffic authority (Rijkswaterstaat) and the British highways operator Highways England.

Awarded: PSIroads/MDS has been awarded with the German Mobility Price 2017 by the German Federal Ministry of Transport.



Strategic settings for multi-criteria decisions



Overview of Amsterdam's traffic flow



Qualicision goal function to parameter the infl (example)