



How effective are cooperative safety & traffic efficiency applications?

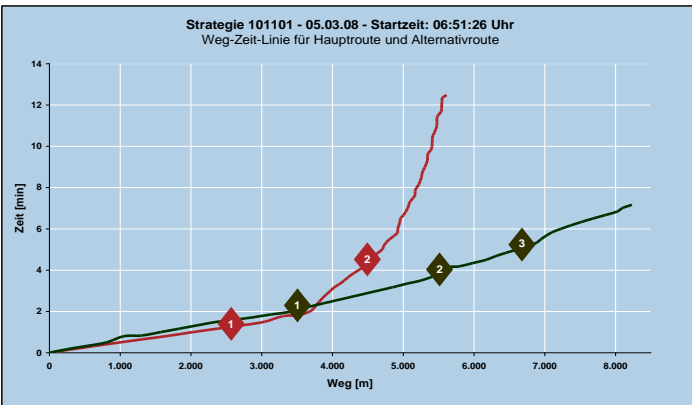
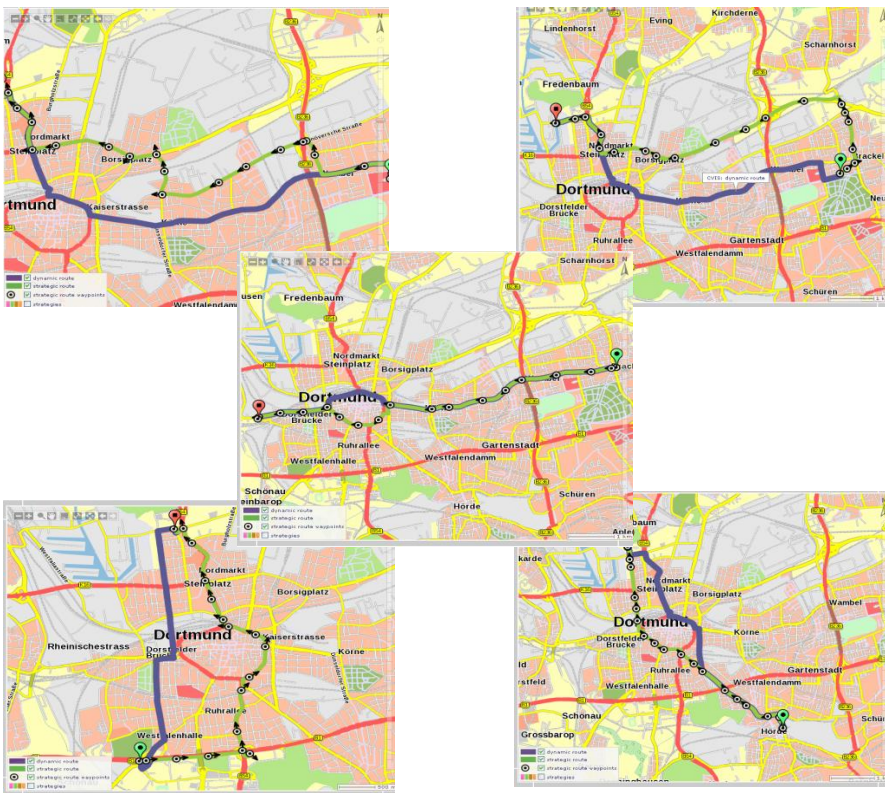
Siebe Turksma
Peek Traffic

DISCLAIMER

- The evaluation of cooperative efficiency and safety applications aimed at
 - Demonstrating the functionality and feasibility
 - Demonstrating the width and breadth of the application spectrum
 - Where possible get numerical results
- The tests were carried out with
 - Limited infrastructure
 - Low number of test vehicles
- A limited number of simulations were used to get a feel for real deployment scenarios

Field tests did not aim for statistical significance

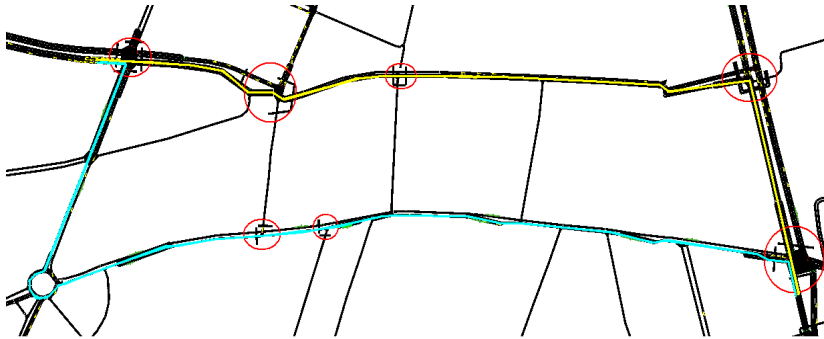
STRATEGIC ROUTING



- Time versus distance
- Test carried out with limited number of vehicles enhanced by modeling
- Cooperative technology helps

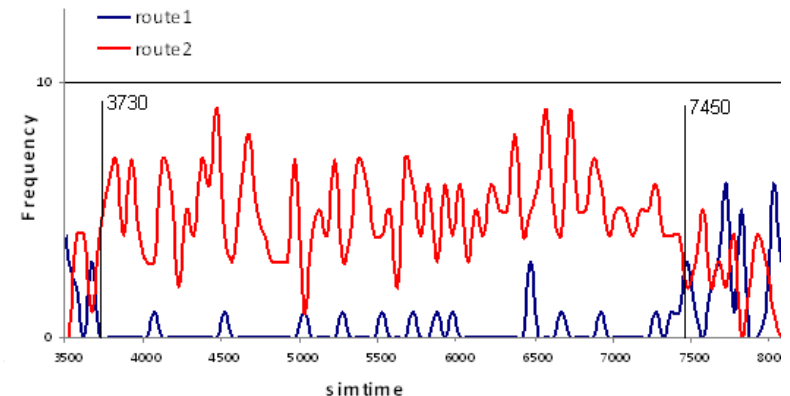
Cooperative technology helps strategic routing as a result better info and comms

MICRO ROUTING



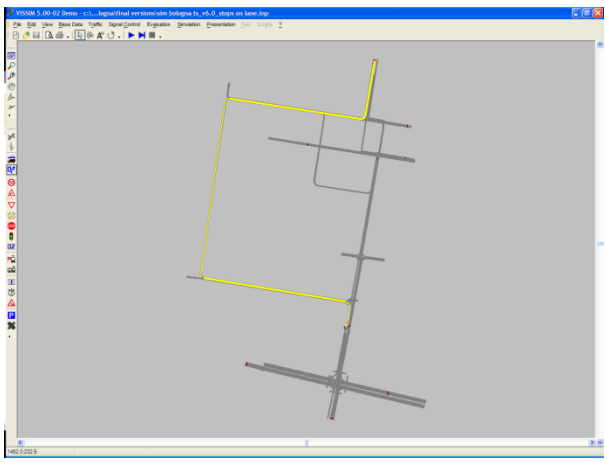
- Micro routing uses detailed information from traffic control equipment

- Micro simulation experiment
 - Does micro routing help to recover from an incident?
- Result
 - Traffic switches much quicker to alternative routes
 - New balance within two minutes



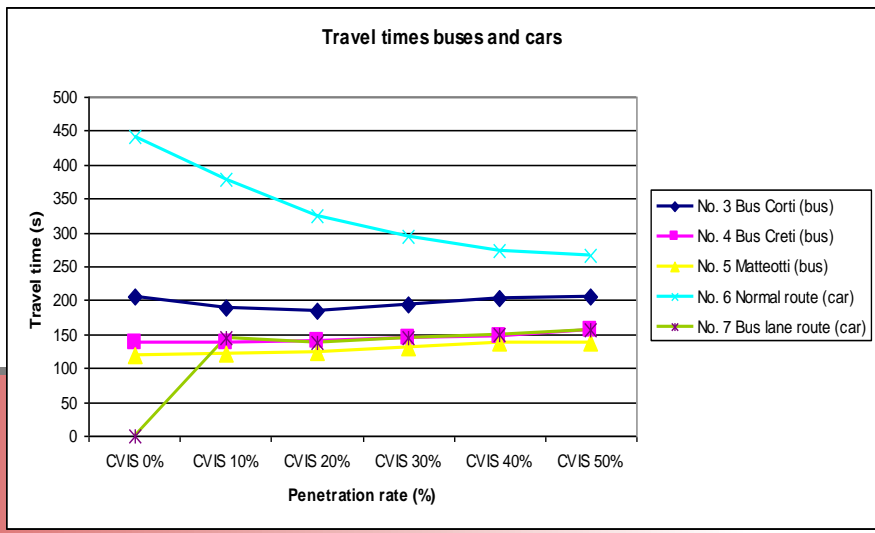
Micro routing is enabled by cooperative technology

DYNAMIC INFRASTRUCTURE USE – BUS LANE



- Micro simulation experiment
 - How many cooperative vehicles can be allowed on a dedicated bus lane without hindrance to public transport?
- Result
 - Dynamic bus-lane use can improve average travel times for cars with very limited impact on public transport service

• Selectively allowing cooperative vehicles on dedicated bus-lane

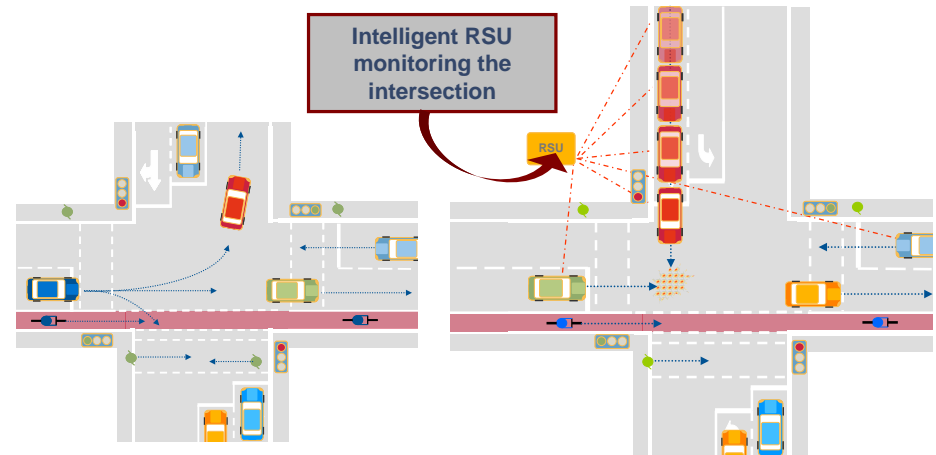


INTERSECTION SAFETY - IRIS



- Intersection safety scenarios based on extended detection and V2I communication have been tested in Dortmund and Helmond

- Driving simulator experiment:
 - Most drivers heeded the advice of the cooperative warning systems
 - Timing is critical



Potential impact of cooperative intersection is high: -8.9% fatalities -8.5% injuries

ACCESS CONTROL FOR TRUCKS



- Access criteria are flexible, e.g.
 - Dangerous goods
 - Environmental characteristics
 - Height, weight
- Access control is enabled by
 - Accurate positioning
 - Flexible communication
- Tests show that the system works as designed

Cooperative technology enables a transparent access control based on flexible criteria

CONCLUSIONS

- The majority of the tested applications show great potential
- Many applications are taken up in new initiatives, e.g.
 - FREILOT - fuel efficiency in heavy goods vehicles
 - eCoMove – cooperative technology for fuel savings
- New applications are being developed based on cooperative technology, e.g.
 - SPITS – e.g. shockwave damping, cooperative merging

Cooperative technology is here to stay

cooperative

Conference 2010

mobility