

Connected Cruise Control

An advisory system for efficient traffic flow

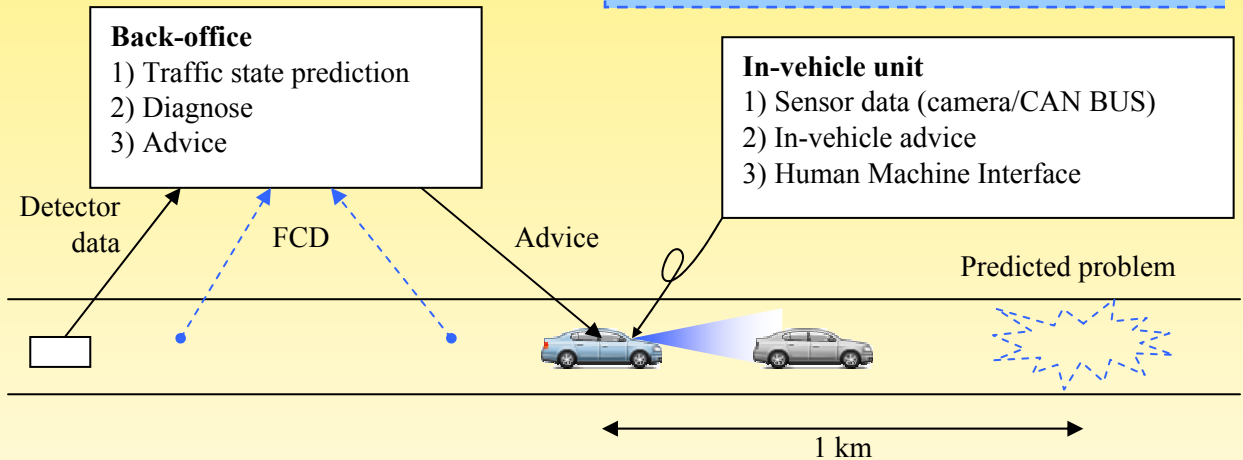
TRAIL



Goals of CCC

1. Improve efficiency of the road system
2. Implementation with existing technology
3. Individual benefits for the user

CCC system



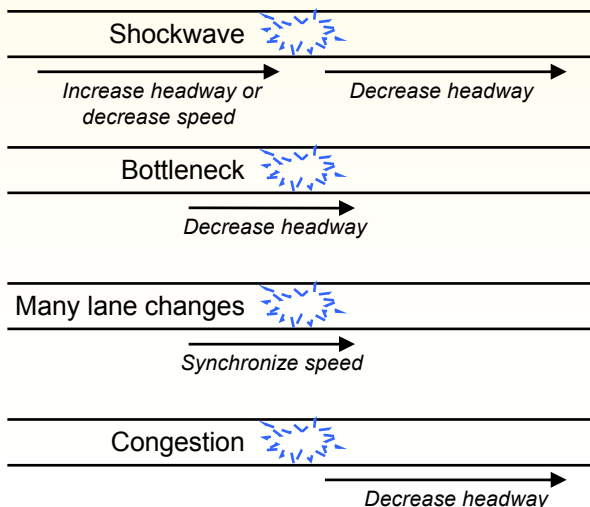
Retro-fit

- In-vehicle unit can be used in existing vehicles
- Integration into the current road system
- No extensive technological developments required

Contribution

- Real-time traffic flow estimation based on detector data and floating car data.
- 1st order macroscopic traffic flow prediction model at lane level, with (mandatory) lane changes.
- Insights in traffic flow stability, causes of breakdown, capacity drop etc.
- Adaptable microscopic simulation tool.
- Advice algorithm for improved traffic flow efficiency.

Advice



Effect

Less inflow and more outflow solve the shockwave. Area with lowered speed has higher outflow than shockwave.

Bottleneck has higher capacity. Break-down is delayed or prevented.

Less lane changes (no incentive). Lower disturbance by mandatory lane changes.

Reduced capacity drop and thus less congestion.



Authors: Ir. Wouter J. Schakel,
Prof. Dr. Ir. Bart van Arem, Dr. Ir. Rob van Nes
Delft University of Technology, Civil Engineering
and Geosciences, Transport & Planning

w.j.schakel@tudelft.nl