Eyes on the road with smart data

International congress on Autonomous Driving and the Impact on Traffic Safety

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VIA
Traffic Solutions Software

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PRP Prevenção Rodoviária Portuguesa

Introduction

VIA
Traffic Solutions Software

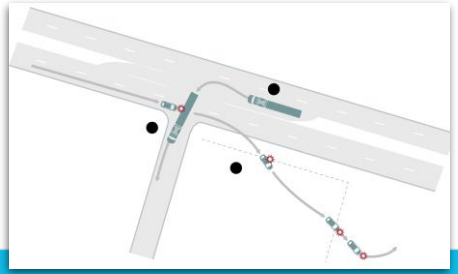
- Our goal is to make the roads and traffic safe
- Our customers: road authorities, policy makers and police
- Therefore we align our work on capacity building: many well educated professionals who work with good software and the best data
- We offer:
  - Software for data collection, monitoring and analysis
  - Training how to use the software in your work
  - Initiatives to fill in what is missing, like STAR

STAR
Smart Traffic Accident Reporting

POLITIE VERBOND VAN VERZEKERAARS TOMTOM here

Autonomous Driving and the impact on Traffic Safety

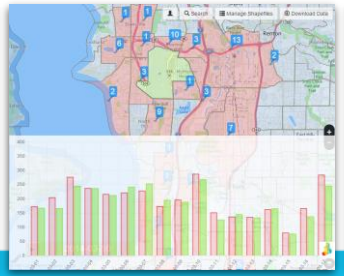
- Autonomous Driving (AD) will change traffic
  - Partly predictable effects
  - However there will be also unexpected effects
- Especially the transition period will be unpredictable
- More reasons to improve monitoring of road safety
  - Road authorities are responsible for safety of our roads
  - The police need to know how to respond on the change



AD will make traffic monitoring becoming more complete

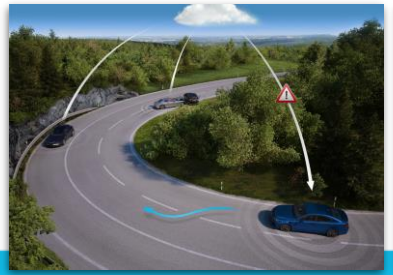
- AD brings a lot of modern techniques on board the vehicle
- A new data sources arises
- A new step in monitoring by statistics

Eyes on the road with smart data



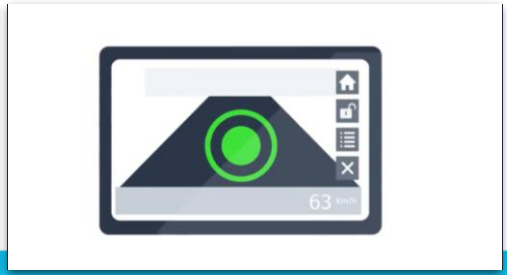
Making the invisible visible with the HD Live Map

- To help car manufacturers make autonomous vehicles a reality
- Not a map for humans, but for machines
  - **Mapping layer**: a precise representation of the road network combined with a localisation model
  - **Activity layer**, which records short-term changes to the road network, including lane closures and accidents
  - **Analytics layer**, which describes how people drive on these roads, and groups driving styles together into profiles



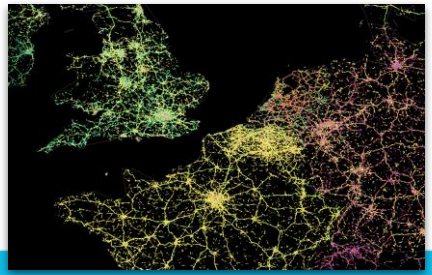
Floating Car Data

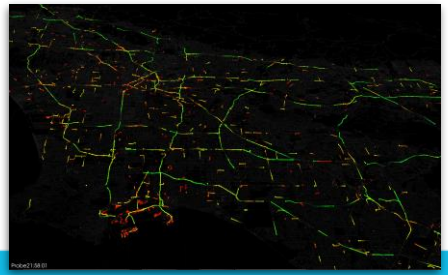
- Real time
  - New techniques on board makes driving safer
  - Connected cars receive and send relevant information
- Statistically speaking
  - Longer period of data can explain what happened
  - Evidenced based discussion
  - Learning by detailed evaluations



No future developments, but today's reality

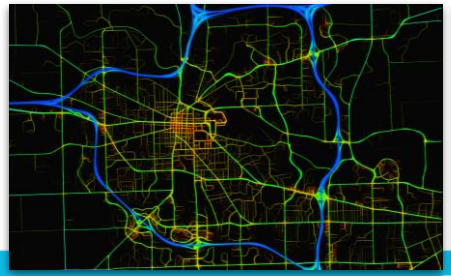
- Floating Car Data: trip data
  - Data collection by navigation systems & smartphones
  - Constant checking GPS coordinates during a trip
  - Stored data linked to a map
- FCD is now measuring speed and flow of traffic

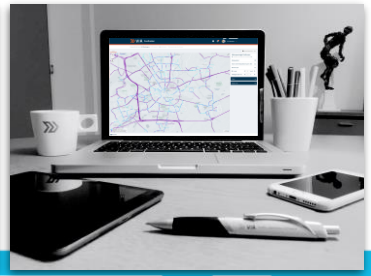




Traffic & road management

- Ask long term investments
- Based on statistics, not on real time data
- FCD brings the situation from outdoor to your PC monitor
  - Speed data from FCD is now available for a very dense road network
  - Big Data instead of measuring's along the road
- VIA developed user-friendly software, which helps you to support your traffic policy using Floating Car Data





Speed data brings a lot opportunities

- Speed is a important indicator for traffic management
  - **Speeding**: a negative impact on road safety and environmental aspects such as emissions and noise pollution
  - **Delays:** restricts the accessibility and traffic jams, due to the additional emission production, is harmful to the environment
  - **Incidents**: driven speed helps to map out the impact of traffic incidents on the surrounding roads

A evidence based approach for road safety

- Make your work more effective
  - Cost-effective engineering measures
  - Socially accountable speed enforcement
  - Monitoring & Evaluation becomes easy
- Let us help you with our software
  - Accidents
  - Speed

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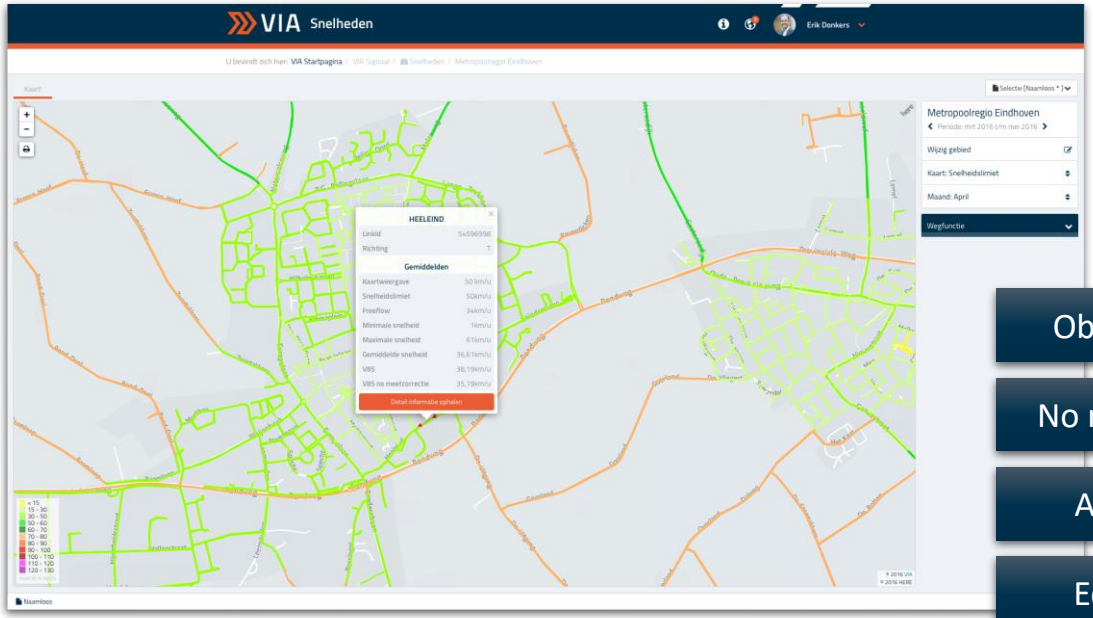
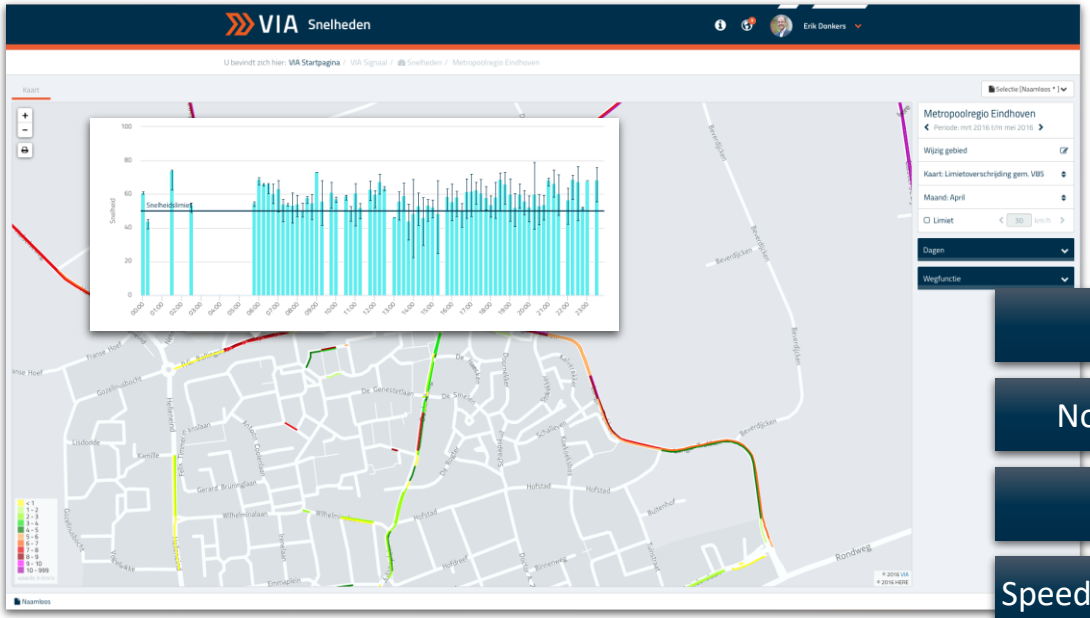
Dealing with citizens' complaints



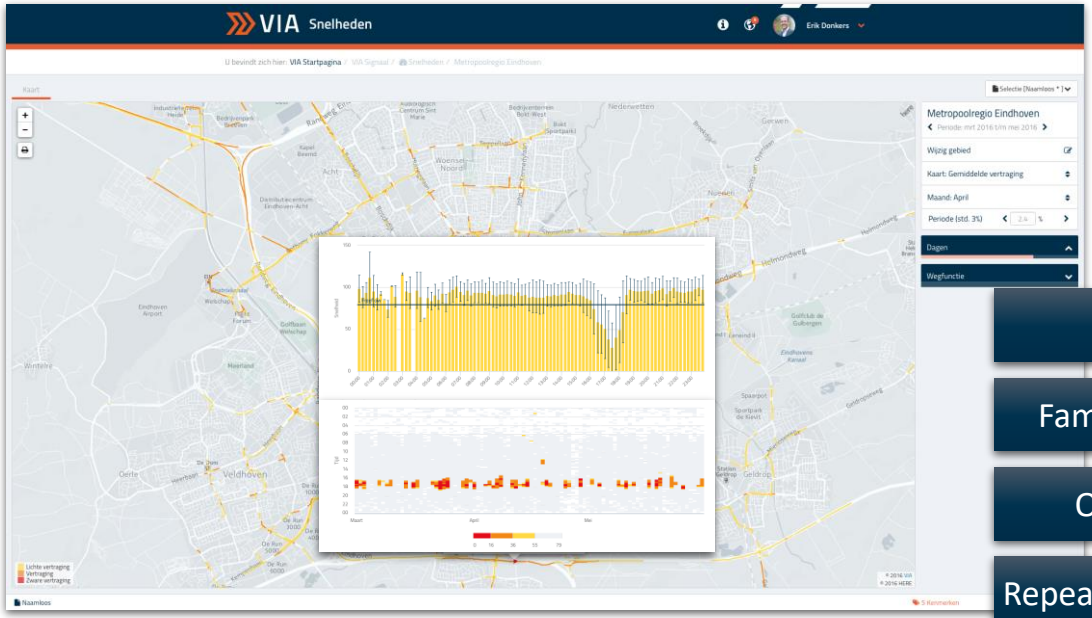
- Objective source of information
- No measurement required on site
- Available for almost all roads
- Equal handling of complaints

Complete overview of speeding



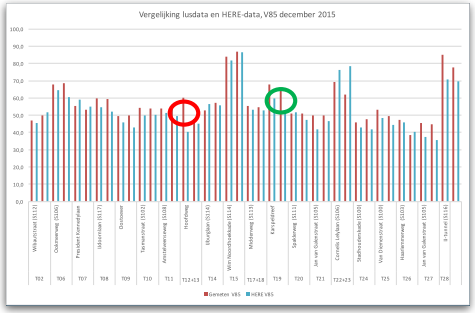
- Speed limit is included
- No point but route information
- Routes are comparable
- Speed for 15 minutes in each direction

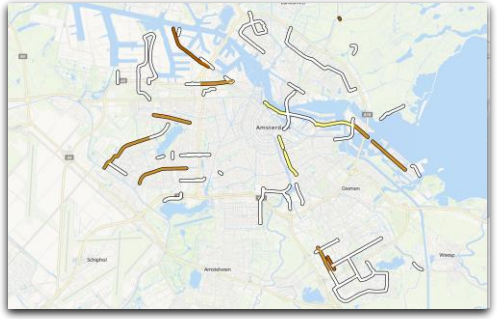
Bottlenecks in traffic flow



- Restriction on weekdays
- Familiar traffic jam in the evening
- Overview of 3-month period
- Repeating pattern discernible in graph

Case study Amsterdam





- Defect measurement point
- Measurement affected by speed bump

  Average speed difference 2,3 km/h lower

From 25 fixed test points

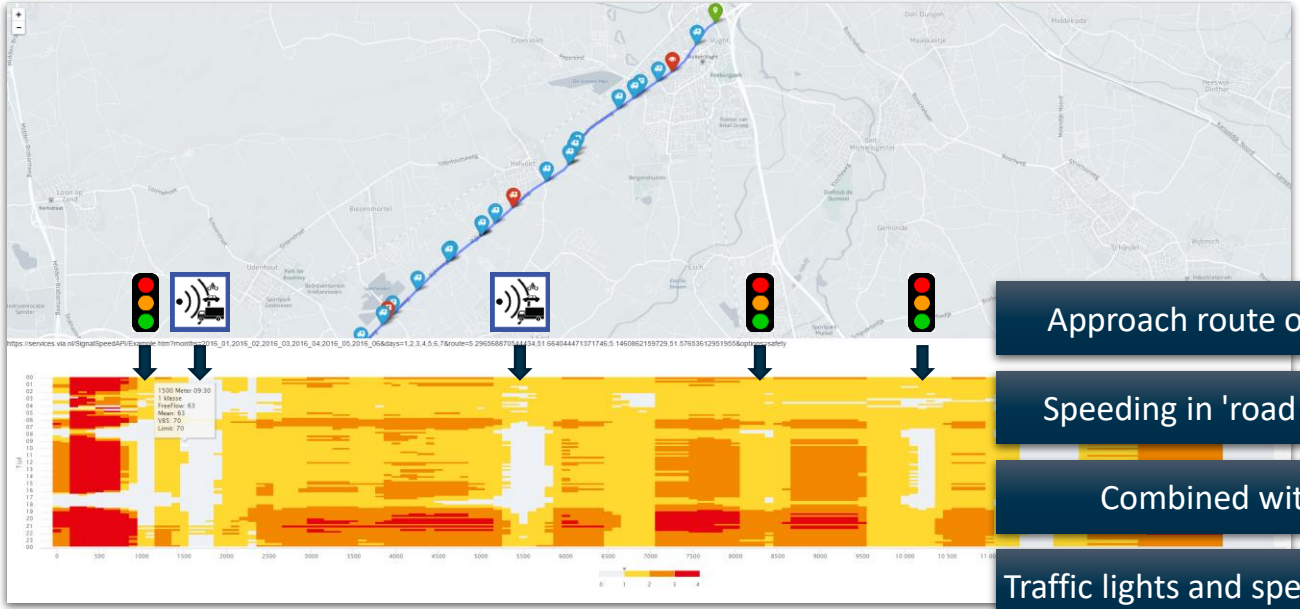
To full coverage of speed info

Safety Performance Index (SPI)
- Accidents
- Speed V85

Boxplot grouping

TOP 10 dangers roads

Speed & Accidents versus Traffic Lights & Speed Control



Approach route of 15 kilometres

Speeding in 'road - time' diagram

Combined with accidents

Traffic lights and speed controls visible

Conclusion

- AD is a opportunity for evidence based approach of road safety
- FCD is now available and usable in daily practice
- For the road administrator a ‘finger on the pulse’
- Police a chance to automation and optimizing enforcement
- Start to gain experience by working with Speed Data

See: www.via.nl/speed

Always a step ahead. VIA.NL

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