**enviroCar –
A Citizen Science Platform for Sustainable Traffic**

Prof. Dr. Albert Remke, 52°North

Mobilty

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Mobilty & Environment

Science

Citizens

Government

Industry

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Citizen Science

„Citizen's Participation in Scientific Research "

http://caise.insci.org/news/79/51/Public-Participation-in-Scientific-Research/d,resources-page-item-detail

http://blogs.plos.org/citizensci/

CitizenSci
Projects, people, and perspectives
fueling new frontiers for citizen science

Research Questions

Related Work

Build Theories

Select Methods

Experiments, Observations, Measurements..

Analysis, Interpretation

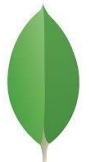Discurs, Dissemination

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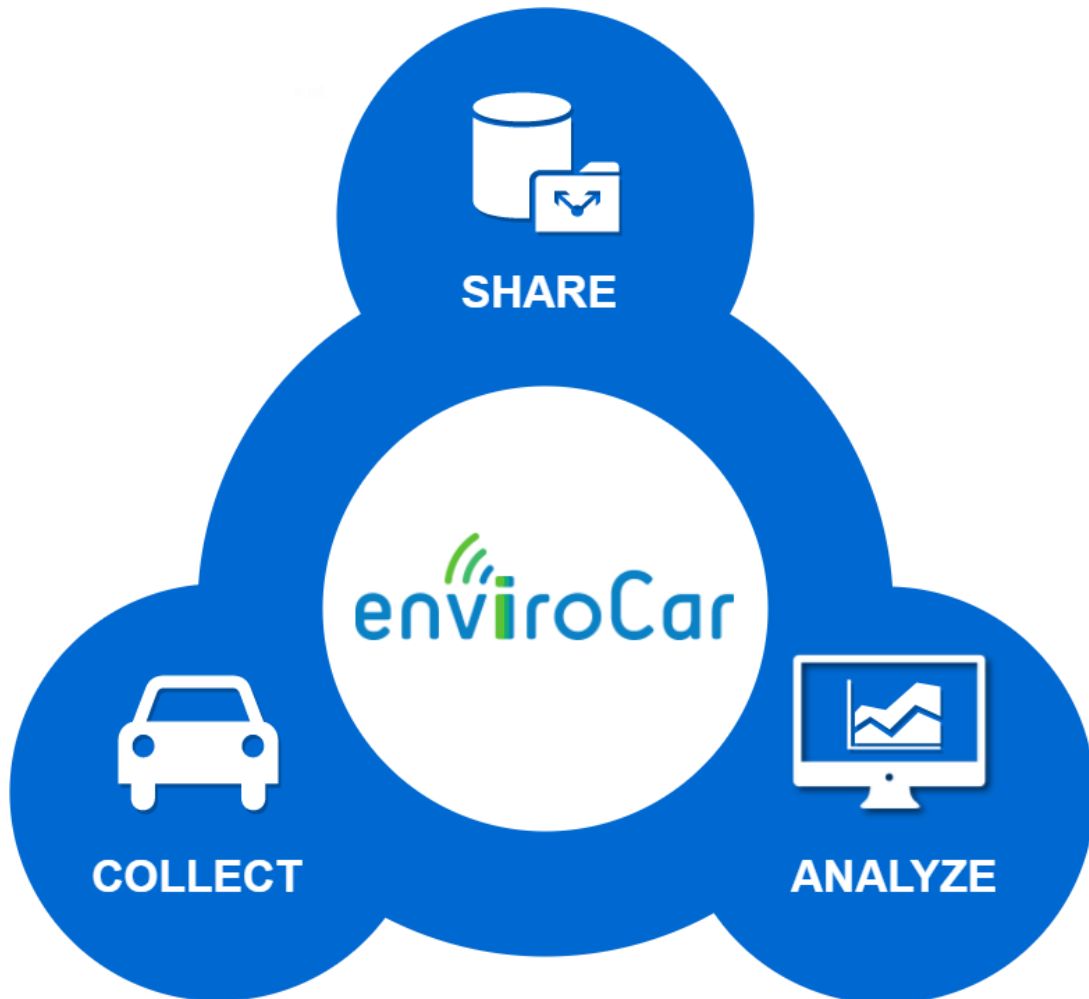
an Android App for collecting car sensor data

a data store for managing & sharing enviroCar data

tools for analyzing and visualizing enviroCar tracks
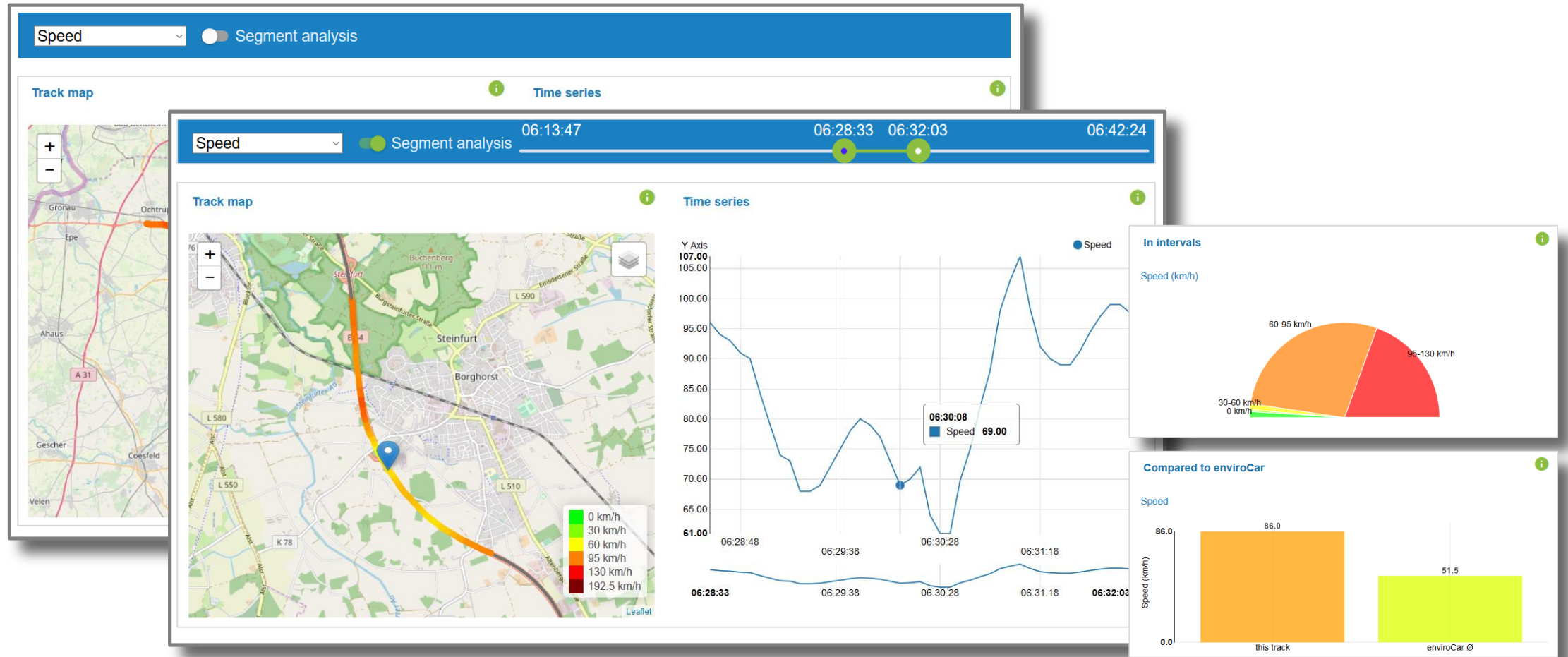
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enviroCar App

- Connects to the car via OBD II and Bluetooth

- Adds mobile device's sensor data (GPS, ..)

- Estimates fuel consumption and CO2 emissions

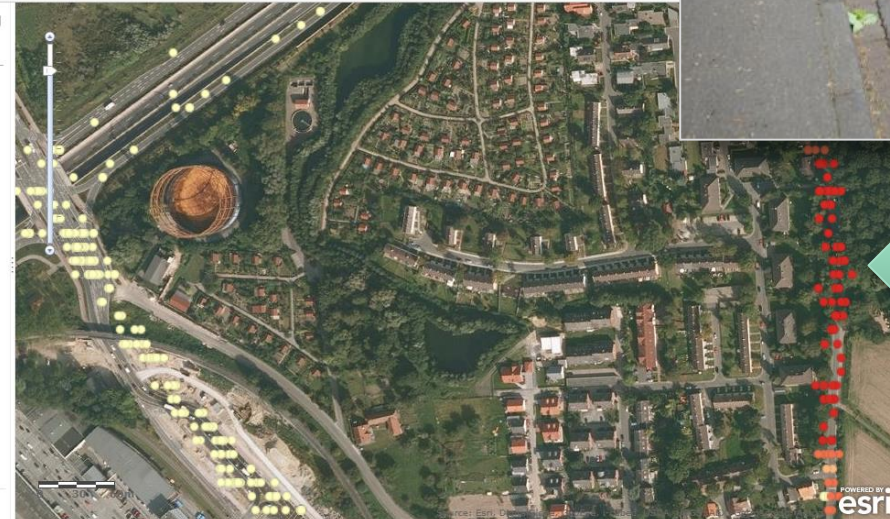- Provides first track statistics

- Supports data publishing

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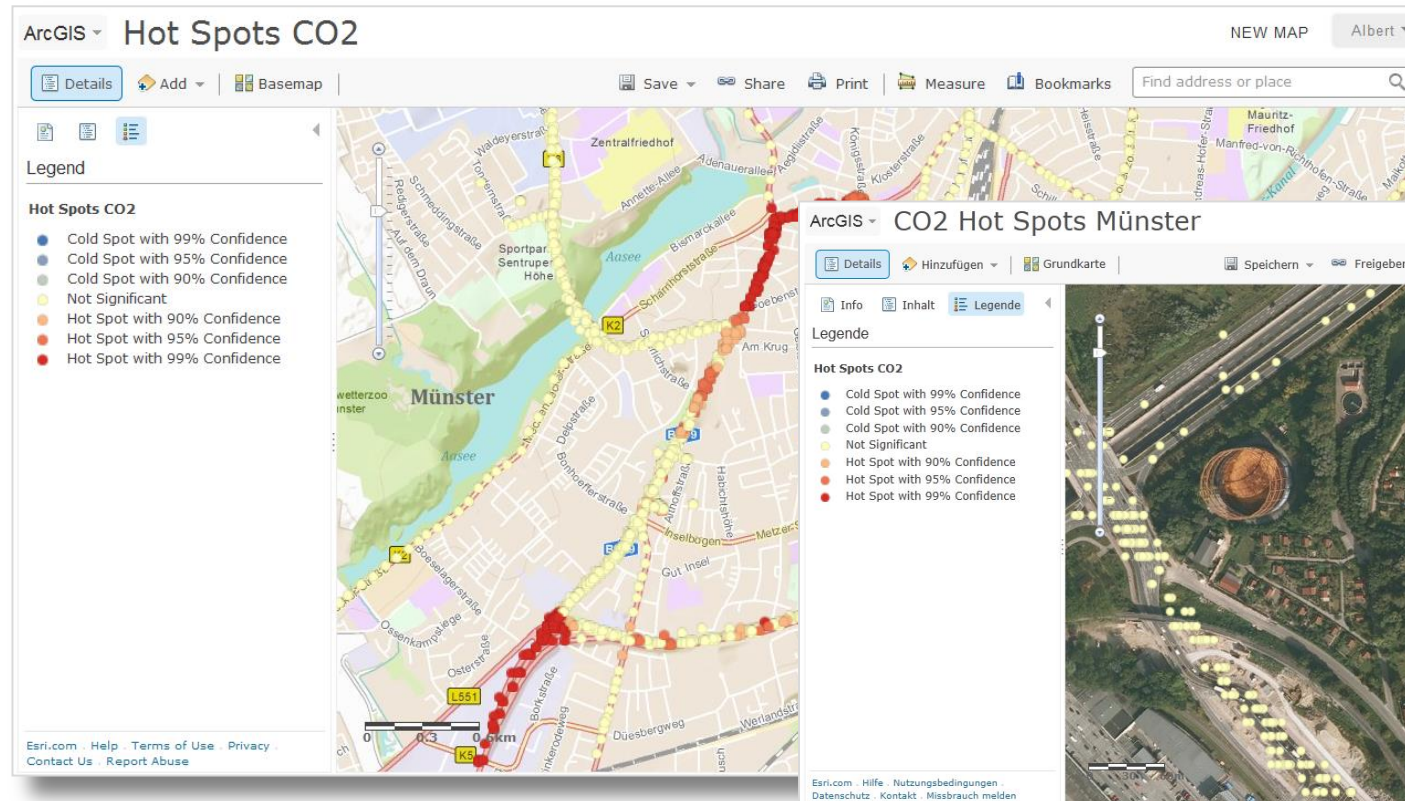exploring horizons
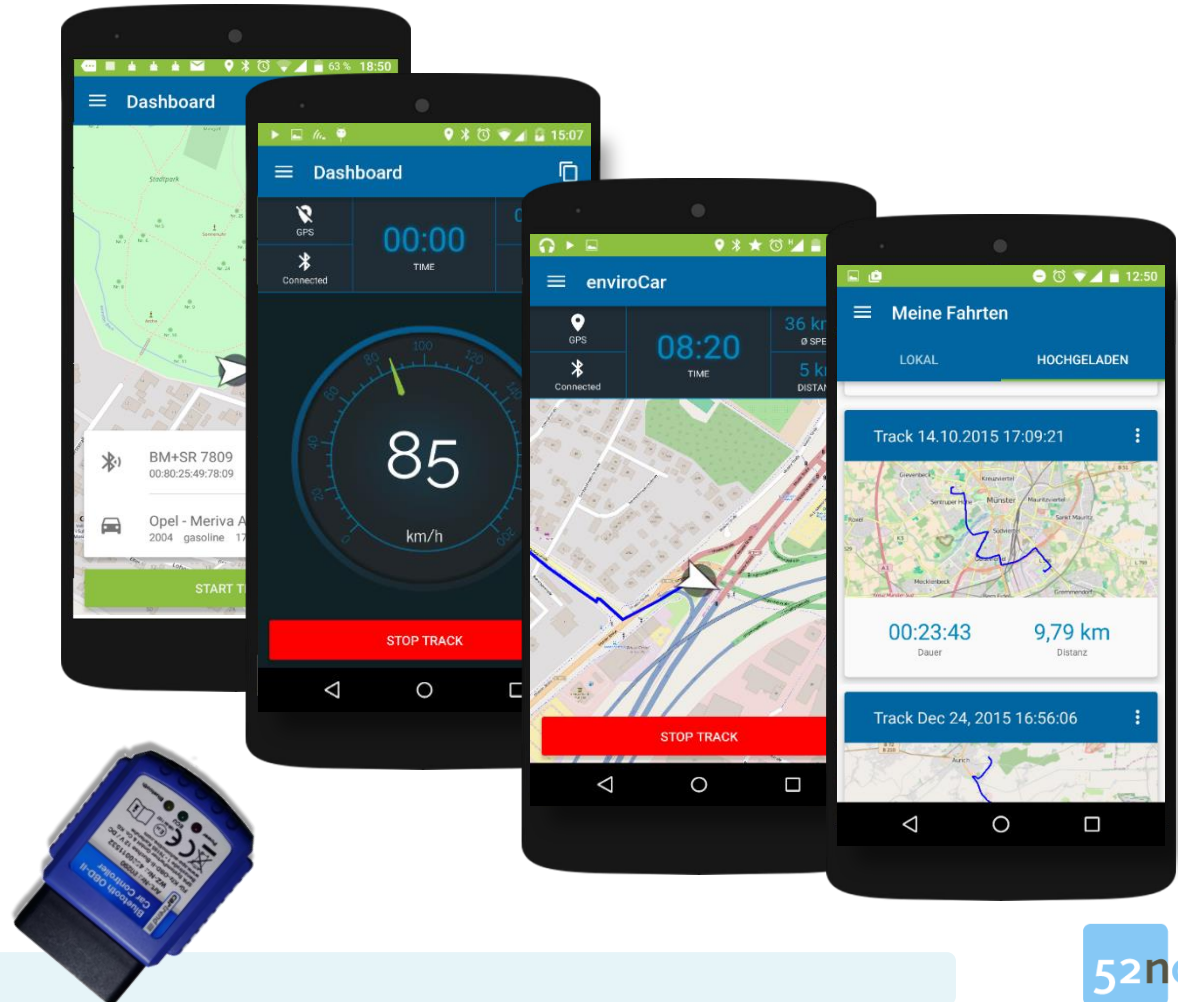
enviroCar Dashboard

Track Insights

enviroCar Applications

CO2 Hotspot Analysis

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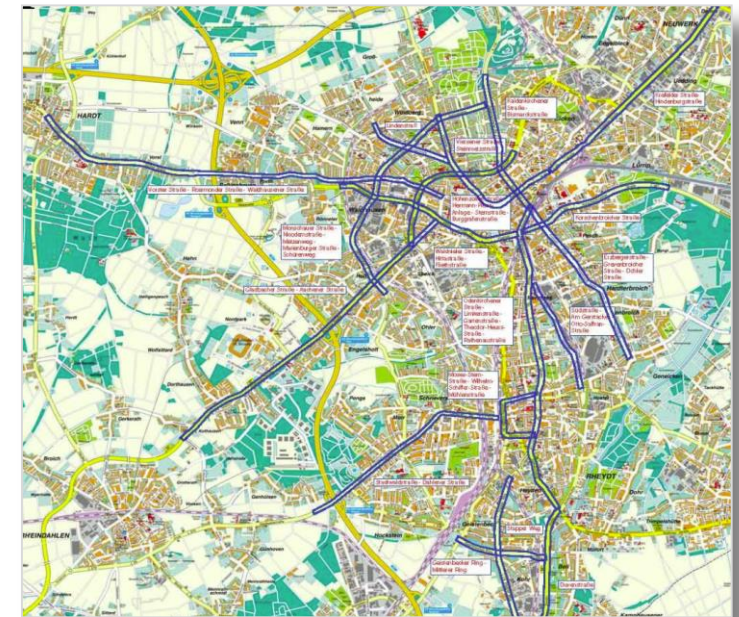
Evaluating Traffic Flows in Mönchengladbach

- Organized by the City of Mönchengladbach

- Supported by traffic engineers – TSC, Essen

- Campaign 2016 with about 150-180 citizens participating; additional data collections and data analysis done in 2018

- Focused on 14 routes in the city center

- Analysis of road segments regarding velocity, travel time, number of stops, CO_2 emissions..

https://www.moenchengladbach.de/en/rathaus/buergerinfo-a-z/planen-bauen-mobilitaet-umwelt-dezernat-vi/fachbereich-strassenbau-und-verkehrstechnik-66/projekt-gruene-welle/

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Evaluating Traffic Flows in Mönchengladbach

- Results
  - Many deviations from expected patterns
  - Defect induction loops detected
  - Need for additional or re-located traffic sensors identified
  - Need to adjust certain traffic lights to changed traffic flow characteristics detected
  - Very positive feedback from citizens

- Some of the recommended developments have already been implemented

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CITRAM Project – 2018-2021

- New methods and technologies for traffic quality assessment and driver assistance systems
  - Traffic Quality Assessment aaS
  - Advanced citizen participation
  - Advancing algorithms for hot-spot analysis and map matching
  - Support of electric vehicles
  - Assisting drivers when approaching traffic lights
  - Adding a real-time information layer to enviroCar
  - Data dissemination via MDM Mobility Data Marketplace
  - Field tests in several cities

funded by:

Thanks for your attention!

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**enviroCar
Partner**

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