enviroCar –
A Citizen Science Platform for Sustainable Traffic

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Mobilty

8th GeoIT Wherecamp Conference – 24 October 2018 - Berlin
Mobilty & Environment

Science

Government

Citizens

Industry
Citizen Science

„Citizen’s Participation in Scientific Research“


Research Questions
Related Work
Build Theories
Select Methods
Experiments, Observations, Measurements
Analysis, Interpretation
Discurs, Dissemination

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

- **Collect**
- **Analyze**
- **Share**

- an Android App for collecting car sensor data
- a data store for managing & sharing enviroCar data
- tools for analyzing and visualizing enviroCar tracks
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
enviroCar Dashboard

You compared to the enviroCar community

Speed

70.9

51.5

5.3

5.28

3.59

You

Consumption

CO2 emissions

Your weekday distribution

You 70.9 km/h

Consumption (l/h)

CO2 emissions (g/km)

Your speed zones

faster than 130 km/h

between 90 and 130 km/h

slower than 60 km/h

unknown

805 Members

16,508 Tracks

5,374,247 Measurements

52north exploring horizons

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Track Insights
enviroCar Applications

CO2 Hotspot Analysis
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, CO2 emissions.

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**

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
Thanks for your attention!

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