



Crowdsourcing von Automobilen Sensordaten
für Smarter Cities

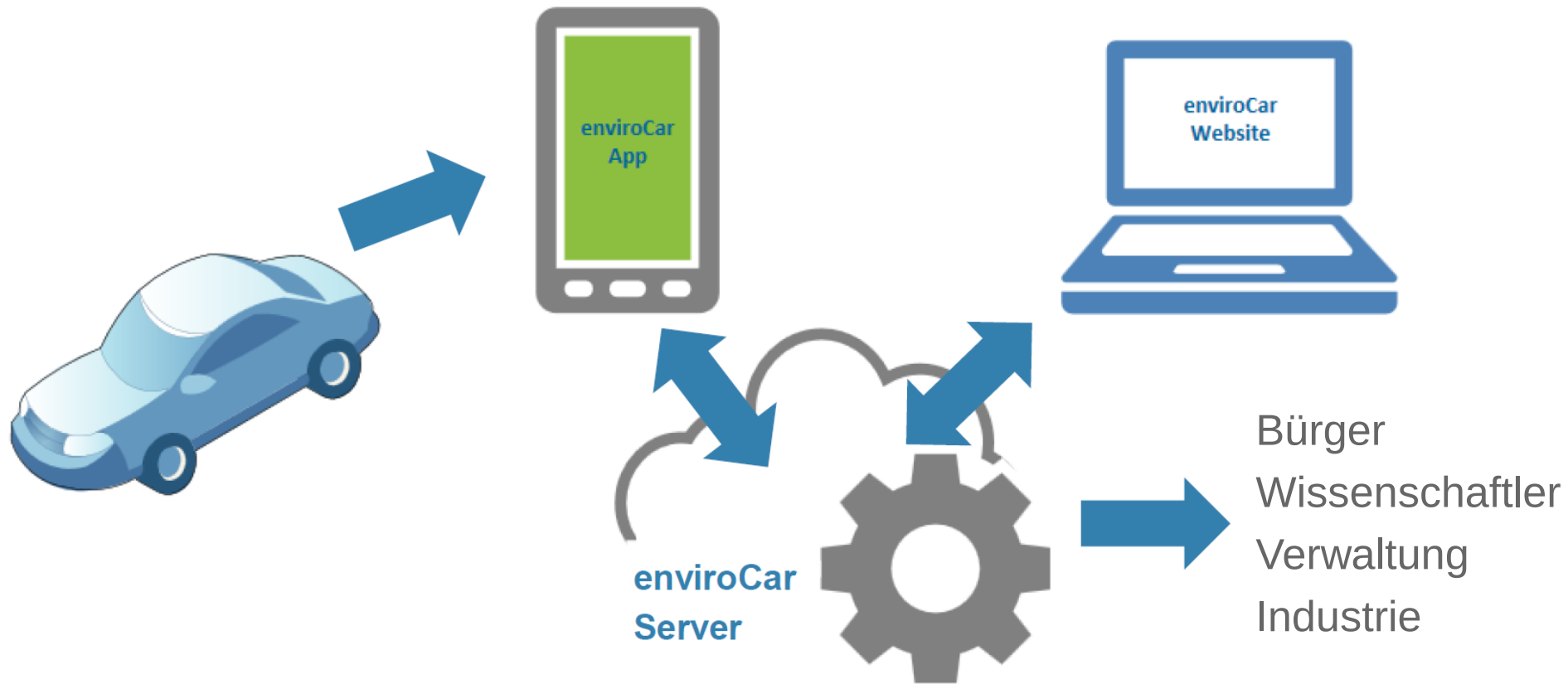
Dr. Arne Bröring
@ INTERGEO, 8. Oktober 2013

52°North GmbH

- Offenes F&E Netzwerk
- **Angewandte Forschung** im Bereich der Geoinformatik:
 - Sensor Web & Citizen Science
 - Geodatenprozessierung im Web
 - Semantik & Linked Open Data
 - GeoAR – Augmented Reality
- Ergebnisse werden als **Open Source** Software publiziert



enviroCar – Konzept



OBD-2 Adapter & Apps

<http://torque-bhp.com/>



enviroCar – Ziel: Smart Cities

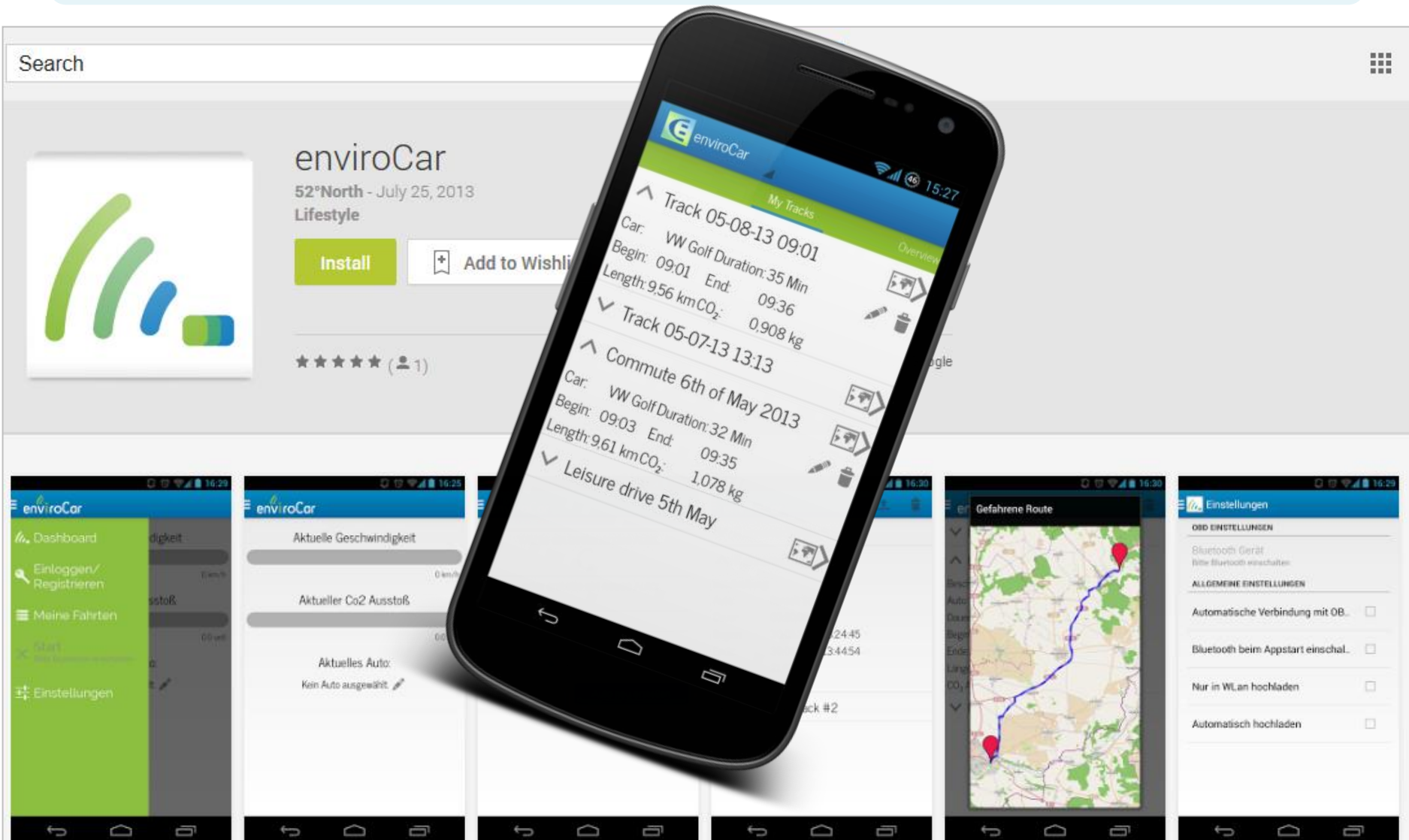
- Grüne Städte..
- Intelligente Städte..
- Städte von morgen ..



enviroCar – Fragestellungen

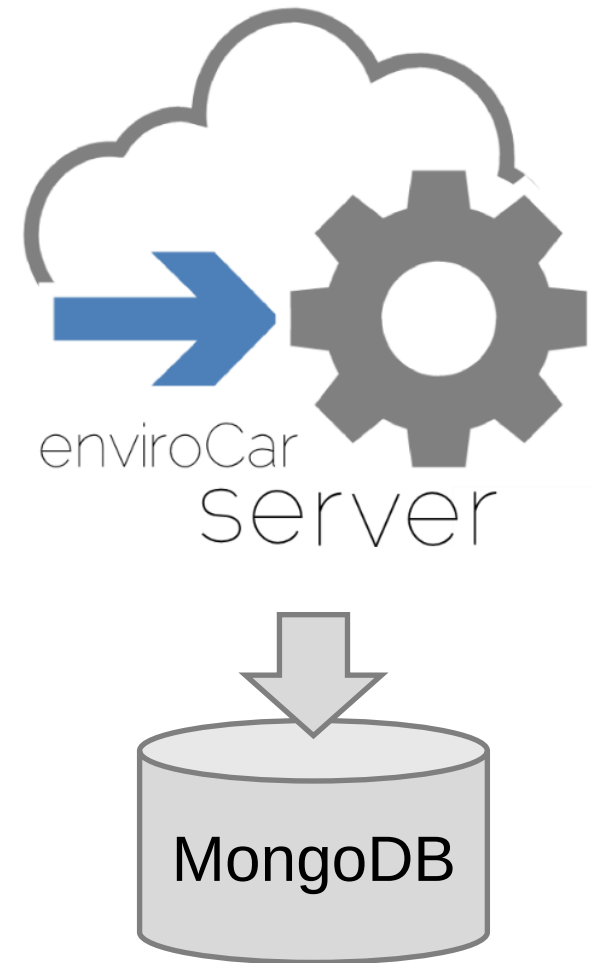
- Wie ist die **räumliche Verteilung** des Kraftstoffverbrauch in der Stadt?
- Was bewirkt die **Reduzierung des Tempolimits** von 70 auf 50 km/h?
- Wie wirken **Fahrbahnschwellen / Tempolimits** im auf den Kraftstoffverbrauch oder Lärmemission?
- Sind die **Ampelschaltungen** auf Straße X optimal?
- Welchen Einfluss hat Ihr **Fahrstil** auf die **CO2 Emission**?
- Wie lässt sich Ihr **Emissionsprofil** mit dem von anderen Fahrern oder einer Gruppe von Fahrern **vergleichen**?

enviroCar – App



enviroCar – Server

- Offener Zugriff auf Daten
- Optimiert für den flexiblen Zugriff durch Dritte
- REST API, z.B.:
 - /rest/tracks
 - /rest/tracks/:trackid
 - /rest/users/:username
 - /rest/users/:username/tracks
 - ...



enviroCar – WebSite



Interactive Maps

Get the [interactive map](#) showing the aggregated measurements of the enviroCar routes and see where you contributed to the information products!

You can also check out our [speed-map](#). We calculated the differences between the maximum speed (based on OpenStreetMap) and the averaged speed (measured via enviroCar), which allows us to analyze, if the traffic flows as planned.

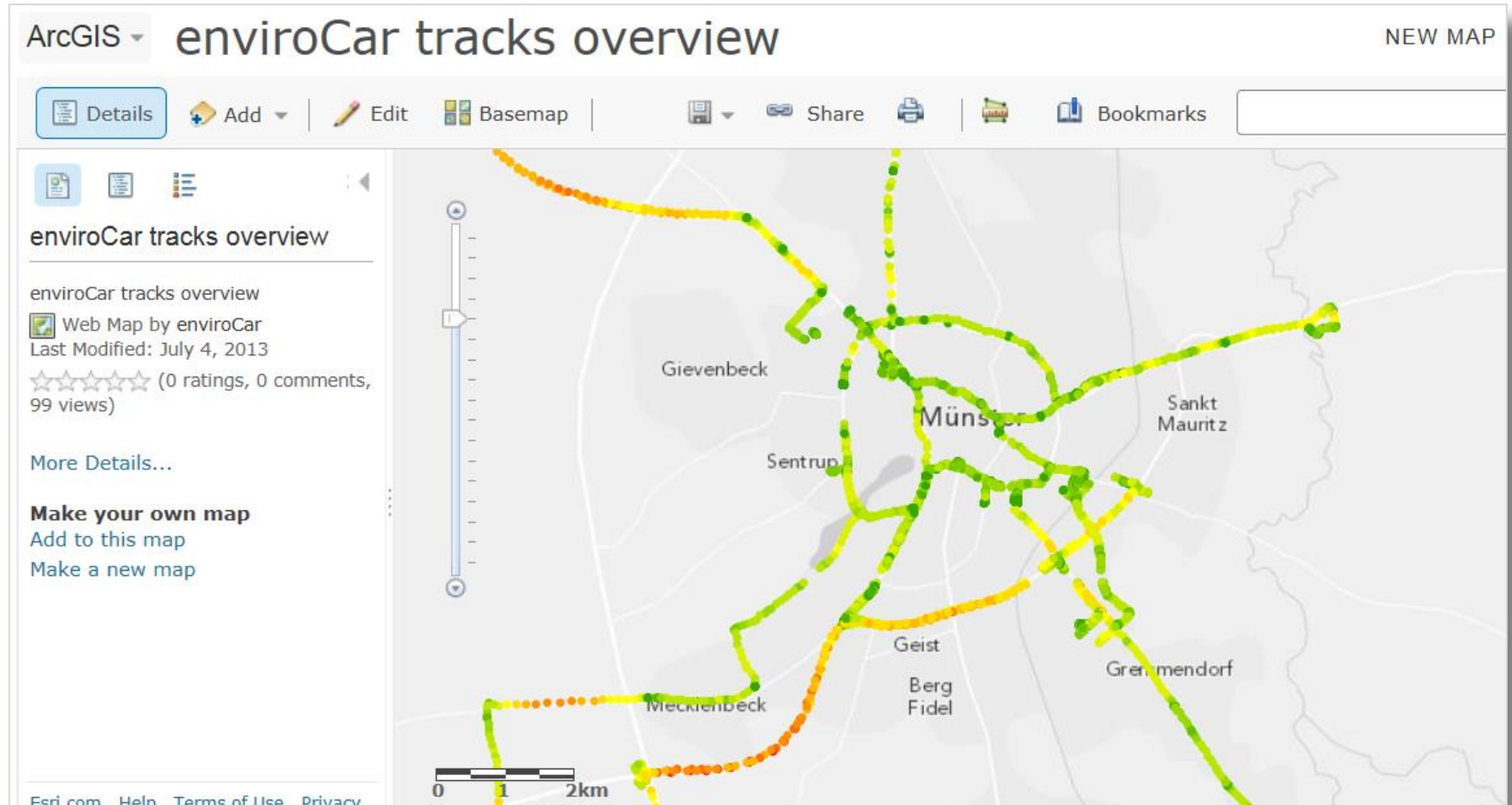
(It may take a while until your uploaded route has been integrated into the map.)

Data Analysis

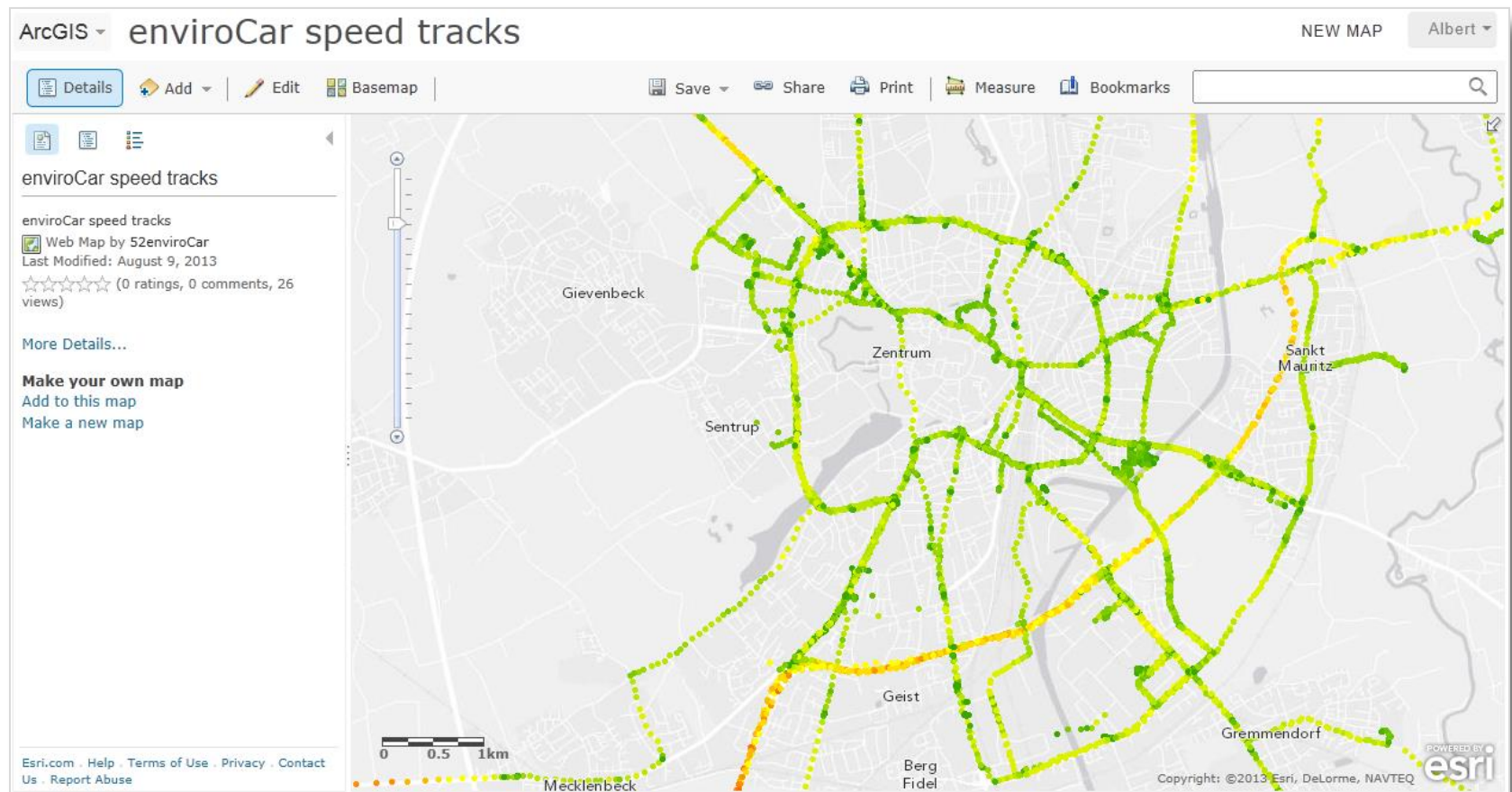
Overview measurement points



enviroCar Tracks (7/2013)



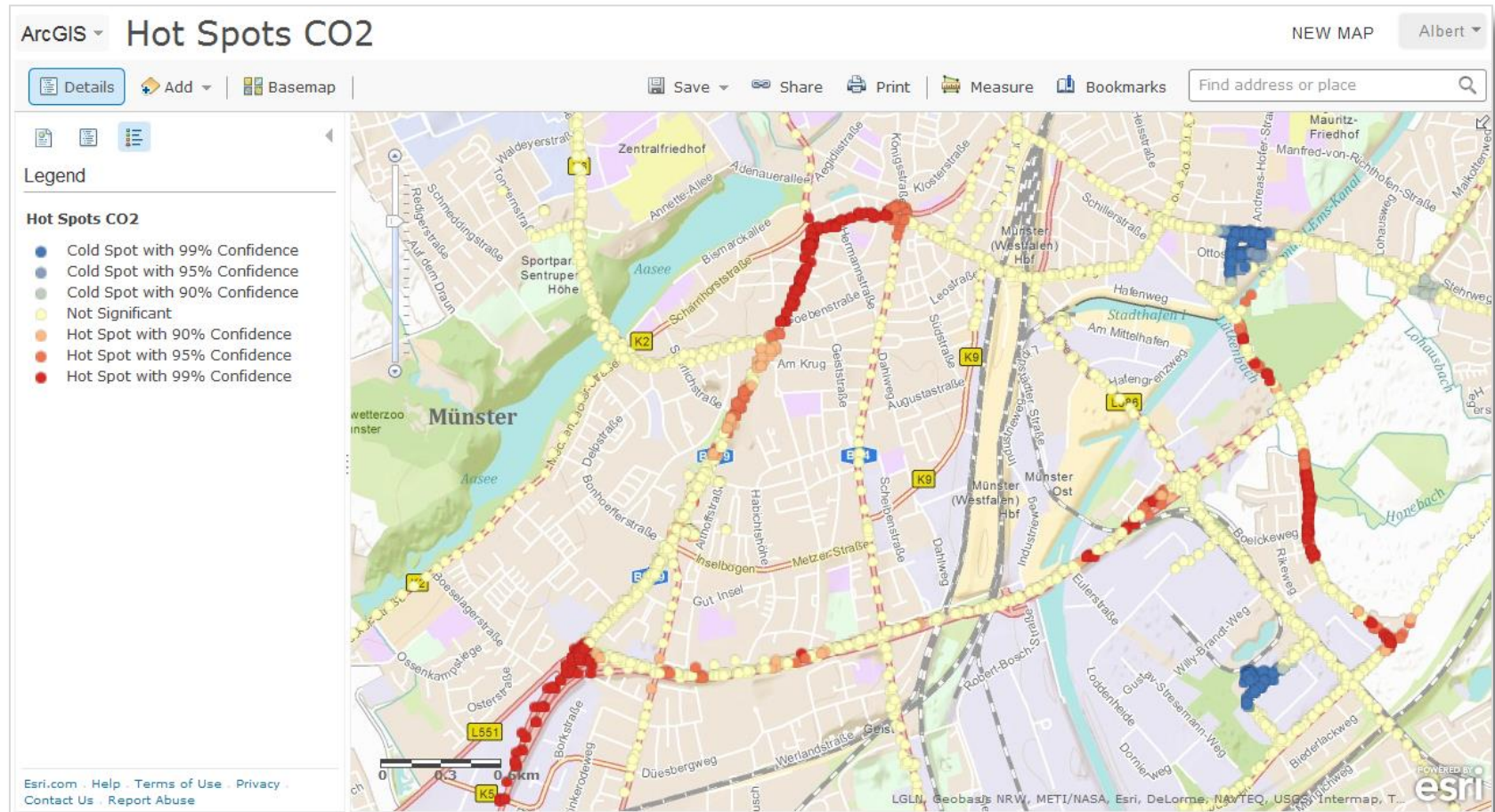
enviroCar Tracks (8/2013)



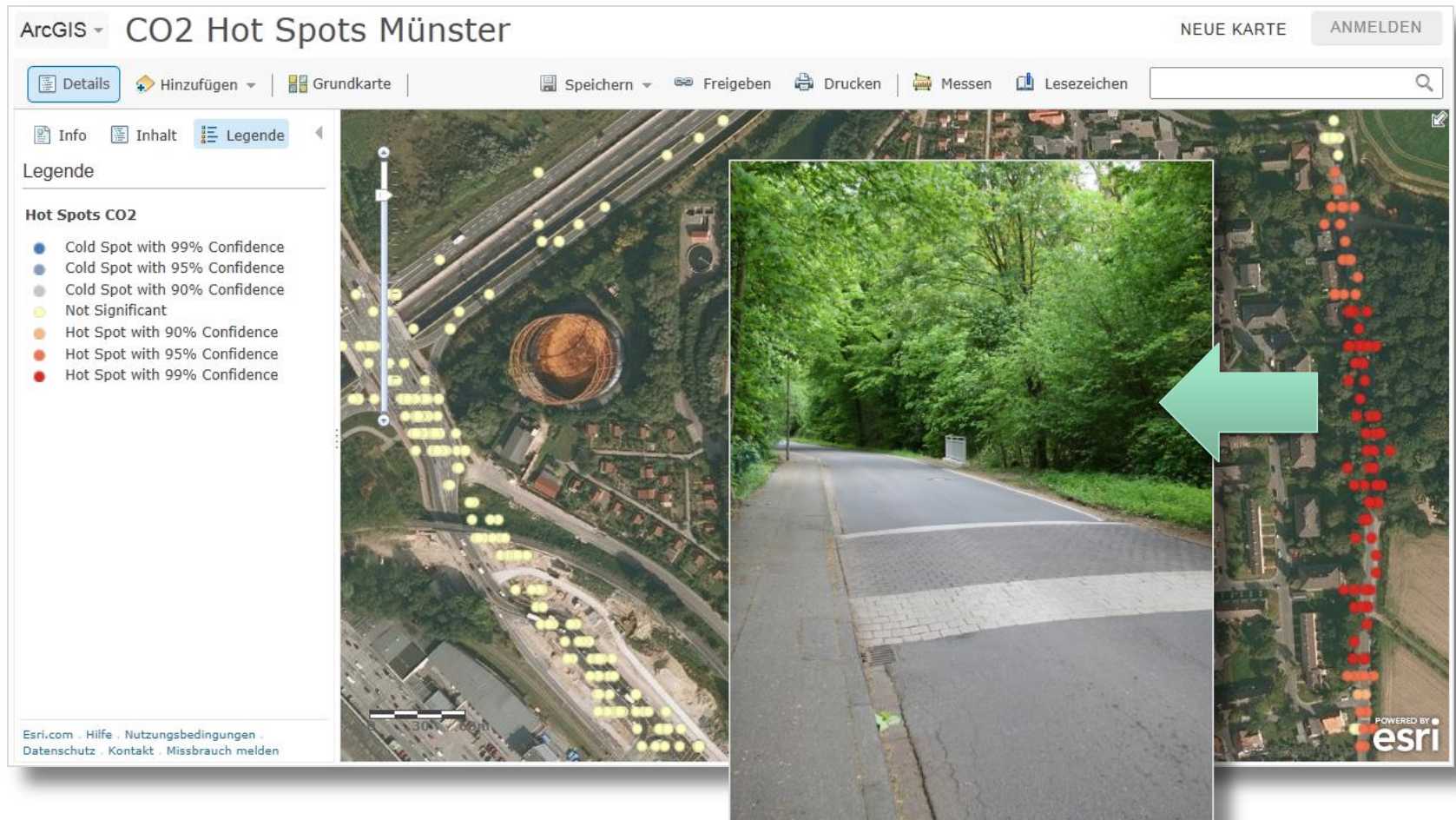
enviroCar Tracks (8/2013)



CO2 Hot Spot Analysis in Münster



CO2 Hot Spot due to Street Bumpers!



enviroCar @ GitHub

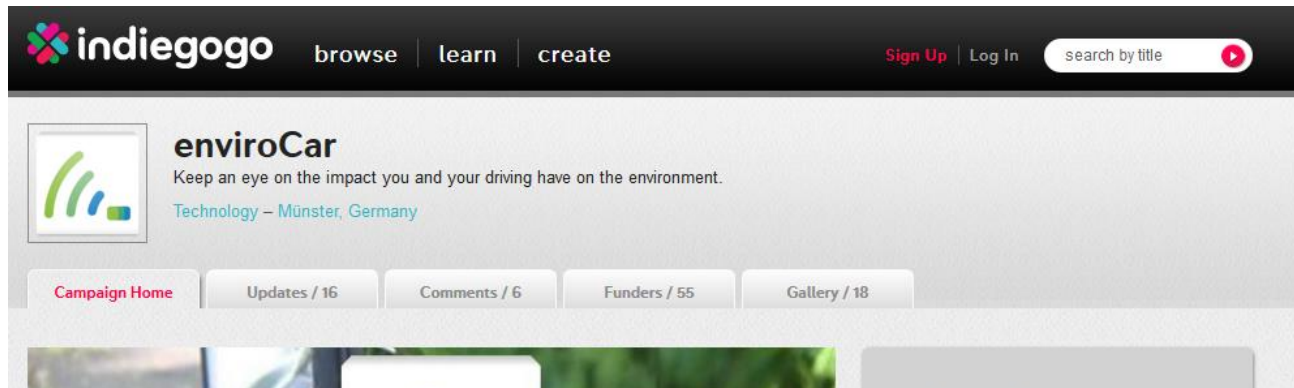
- <https://github.com/enviroCar>

The screenshot shows the GitHub interface with a search bar containing 'envirocar'. The search results list four repositories:

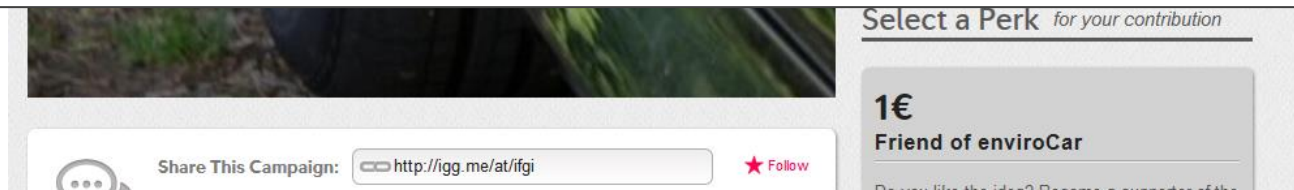
Repository	Language	Stars	Forks
enviroCar/enviroCar-server Server of the enviroCar project Last updated 20 hours ago	Java	5	5
enviroCar/enviroCar-marketing Marketing of the enviroCar project Last updated 20 hours ago		0	0
enviroCar/enviroCar-www Website of the enviroCar project Last updated 14 hours ago	JavaScript	6	1
enviroCar/enviroCar-app	Java	1	1

On the left sidebar, the 'Repositories' filter is selected, showing 5 results. Other filters include 'Code' (447), 'Issues' (13), and 'Users' (1). The 'Languages' section shows 'Java' with 2 repositories and 'JavaScript' with 1 repository. At the bottom of the sidebar, there are links for 'Advanced Search' and 'Cheat Sheet'.

Crowdfunding Campaign



Thanks to all Supporters!
Please Get Involved!





Website: **<http://envirocar.org>**

Twitter: **[@enviroCar_org](https://twitter.com/enviroCar_org)**

Questions?

Thank you!



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