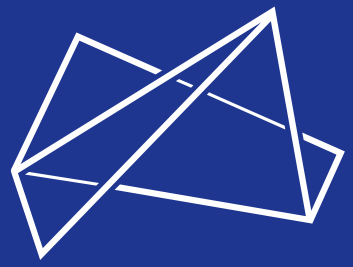

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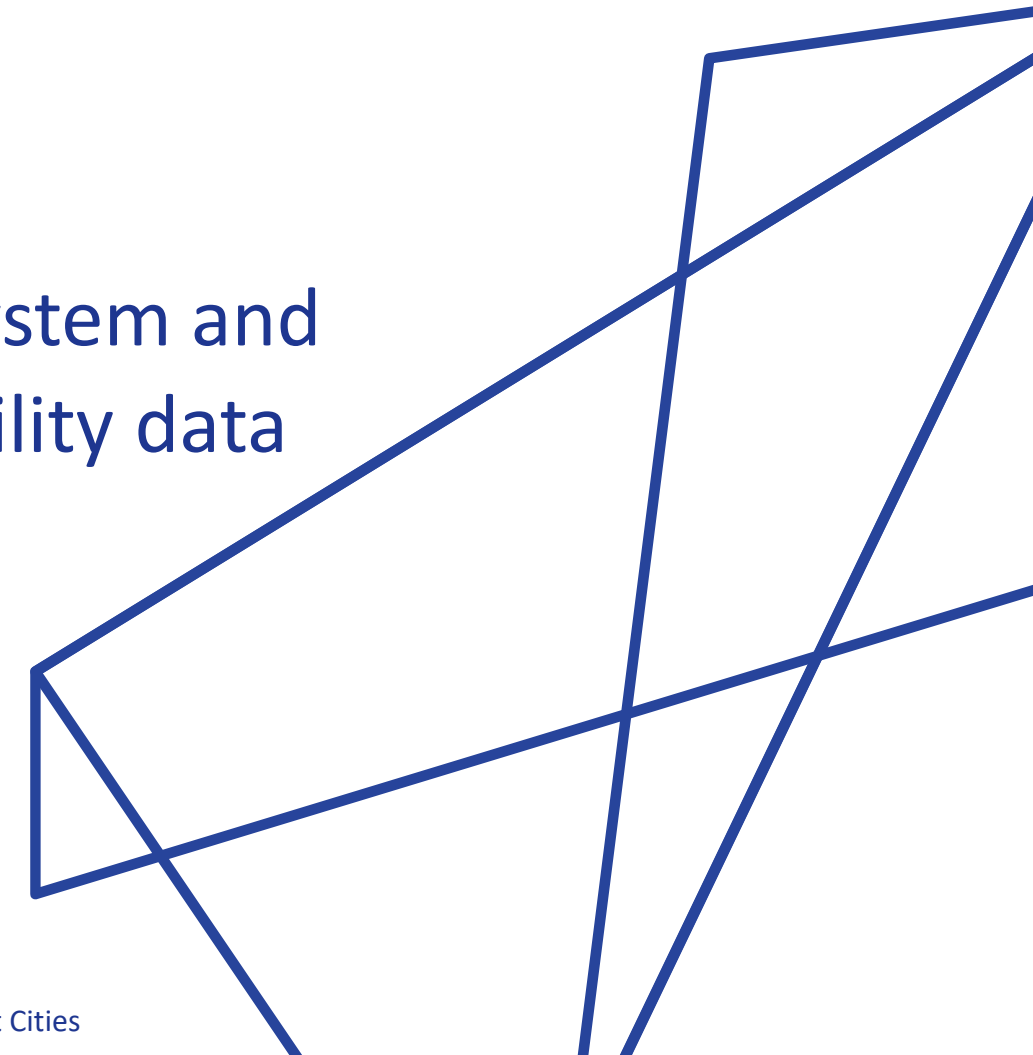
# Mobility Data in Berlin

## Insights from Berlin‘s smart city ecosystem and academic research on privacy of mobility data



Bundesministerium
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# Who are we?

The Technologiestiftung in Berlin

**Open Data, Open Source, Research**

# Technologiestiftung Berlin

- Pushing **innovation** and **digital transformation** in Berlin: culture, public administration, mobility
- Participative approach: tech needs discourse (see Berlin‘s Smart City strategy)
- Bridging administration, civil society and science
- **Open Data**, **Open Source**, **Prototyping**, **Agile**
- Public innovation space: CityLAB Berlin

# What is up in Berlin?

Contentious Mobility and Traffic politics

# Mobility Politics in Berlin

- Characteristics: contentious
- Very active and outspoken civil society and bicycle lobb
- Several years of green-social-democrat-leftist city governments
- Conservative government since the re-election 2023
- City- and district level often-times in conflict

changing cities

# Berlin‘s New Course in Mobility and Traffic

- „Fairness“ – no mode of transport prioritized, citizen‘s choice
- Public transport with record amount of delays and failures
- Up until some years ago: Lack of knowledge on MaaS Ops

**On the other hand:**

- Data-driven Governance and Smart City applications:
  - Dashboard for free floating Scooter sharing services
  - Digital platform for mobility data
  - Multi-modal transport offer Jelbi

BVG Jelbi

# Efforts to Regulate Mobility and Emerging Data

**City/Regional level:**

- Berlin‘s **Mobility Law** from 2017

**Federal level:**

- Passenger Transport Law (reform 2021, +  Mobility Data Regulation)
- Planned Mobility Data Law (first consultations last year)
- Data Strategy and Mobility Data Space

**EU level:**

- Data Act, Data Governance Act, GDPR

# What is Mobility Data?

Types and Degrees of Sensitivity

# Broadly put

*Mobility data is information collected from various sources, such as smartphones, GPS devices, and transportation systems, that provides insights into people's movement patterns and transportation behaviors. It includes data on routes, travel times, modes of transportation, and other related factors. Mobility data is valuable for urban planning, traffic management, transportation optimization, and developing smart city solutions.*

# What Berlin‘s Mobility Data consists of

We do know quite something on traffic!

# Known Evidence on Traffic and Mobility

**Open Data** {

- Automobile traffic / parking data
- Bike count data
- Data on public transport timetables and capacities (live and hist.)
- **In parts open**: Crowdsourcing campaigns (numerous projects, mostly cycling)
- Live data of shared e-scooters and bicycle sharing offers (availability and fleet positions (on Vianova dashboard))
- Periodic large-scale surveys on mobility behavior
- Unknown but improbable: data from data brokers / communications data

## Taking a step back

- We have to define precisely what we are talking about in terms of mobility data.
- There is a lot of information out there. But still, data is inherently partial and skewed.
- Some (A lot) of the data is (can be) personal and potentially sensitive.

# Transdisciplinary Research on Privacy and Mobility Data

Four disciplines to tackle one issue –
Anonymization – successfully?

# The research project freemove - consortium

freemove
Privacy-Centered Urban Mobility Data

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# The research project freemove - angle

- How to solve the tension between unlocking potentials of mobility data for good and protecting privacy of data sources?
- One perspective is not enough – (a minimum of) four apparently neither – participatory approach
- Altering the data, altering the data environments (mix of measures), and at least trying to honestly communicate risks to data subjects

# The research project freemove - doings and results

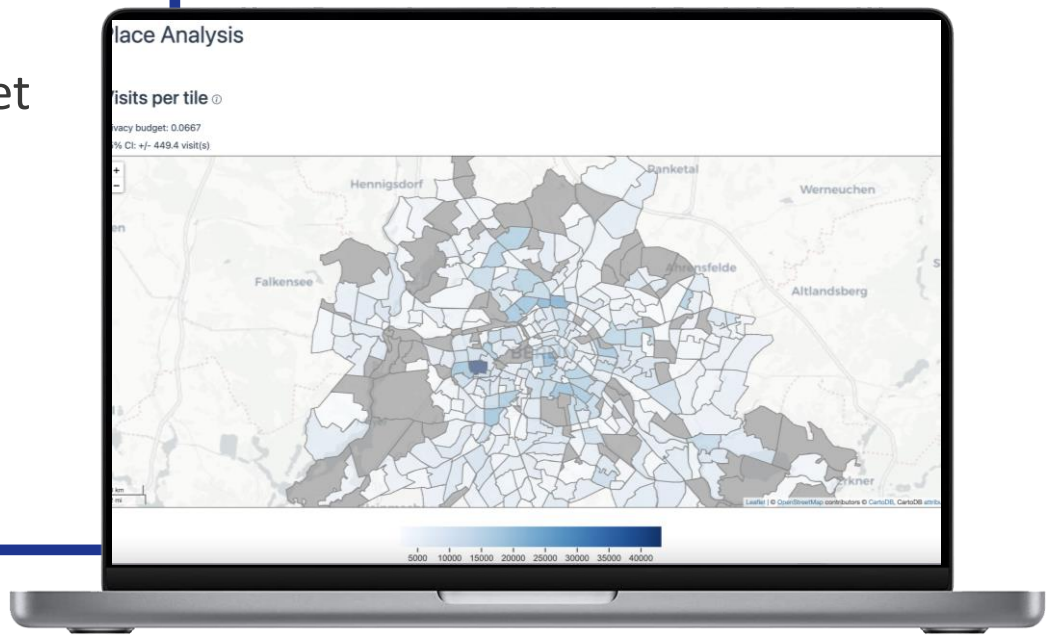
- Evaluating technical anonymization methods – differential privacy and data syntheticization – privacy-utility trade-off balancing
- Studies on explainability of DP and adequate user communication
- Exploring possibilities of certificates for anonymization processes

**Usable Prototypes/Products:**

- Holistic framework for anonymizing mobility data (step-by-step guidelines, coming) – planned easy, turned out immensely complex
- A python package for automated, DP-protected dataset reports

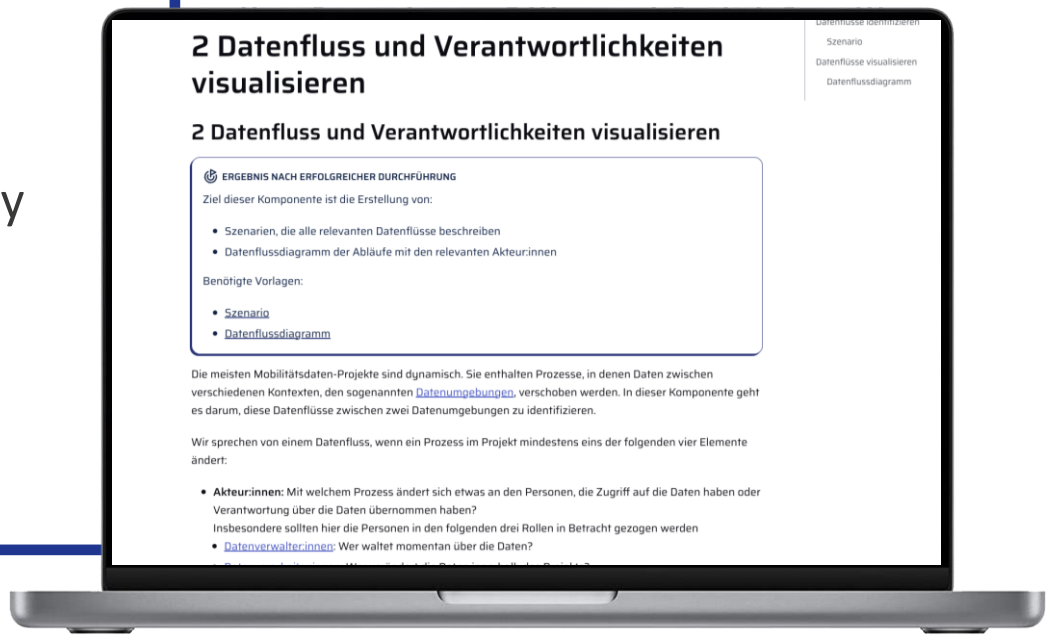
# DP Mobility Report

- Code open source
- PANDAS profiling for human mobility datasets
- Trips, OD characteristics, Places, Time dimension
- Adaptable Tessellation (map grid)
- Optional Differential Privacy Guarantee – privacy budget distributed over different analysis



# Step-By-Step Anonymization Guide

- Code open source
- Hands-on help in human mobility data anonymization
- 10-step-process considering data, its environment and transparent user communication
- To be released throughout the summer accompanied by a publication



# Ending on a Question Mark

Legal clarification, data, sustainable mobility

# Thanks for your attention!

## Further questions? Reach out!

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