



MATSim DRT Scenarios Library

MATSim User Meeting
5 September 2023, Zürich

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VSP TU Berlin

Rundown



MOTIVATION



THE SCENARIOS



LIVE-DEMO

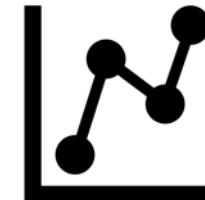
Motivation



Shorter simulation time



Quantitative comparison



Systematic evaluation

The DRT scenarios library



scenarios



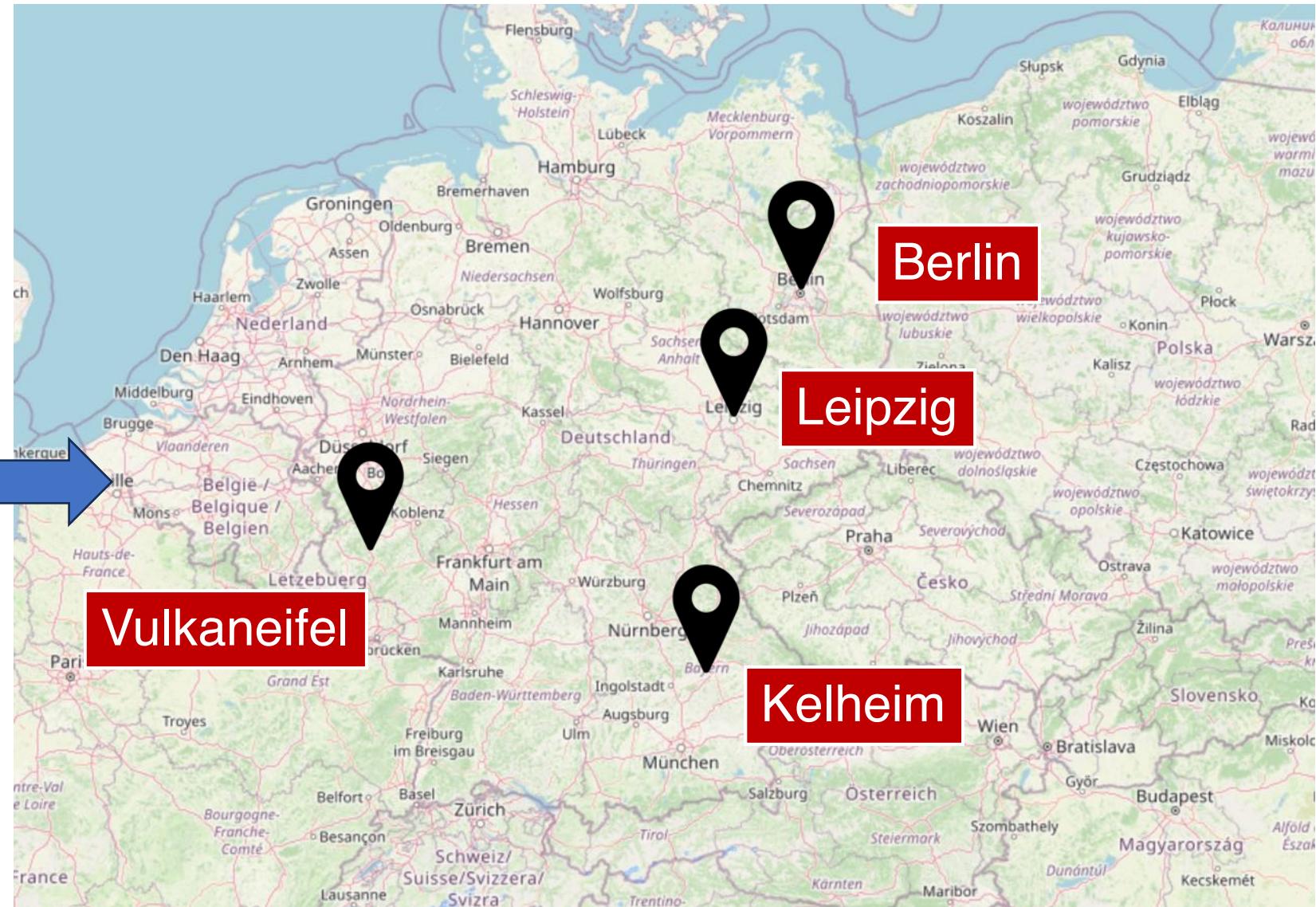
out-of-the-box
use cases



custom use cases

<https://github.com/matsim-vsp/drt-scenario-library>

MATSim Open Scenarios



New York
Taxi data



Open street map



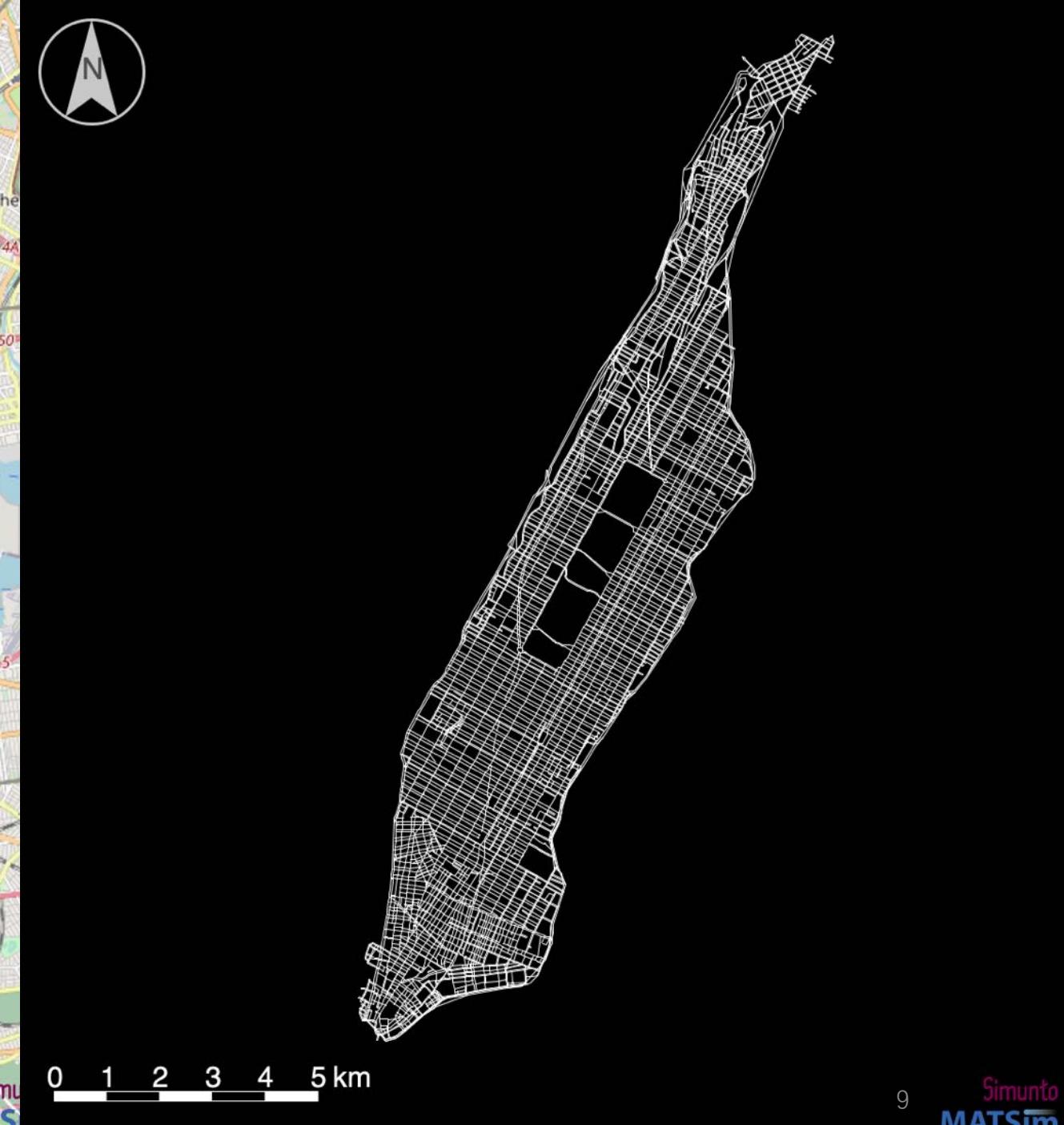
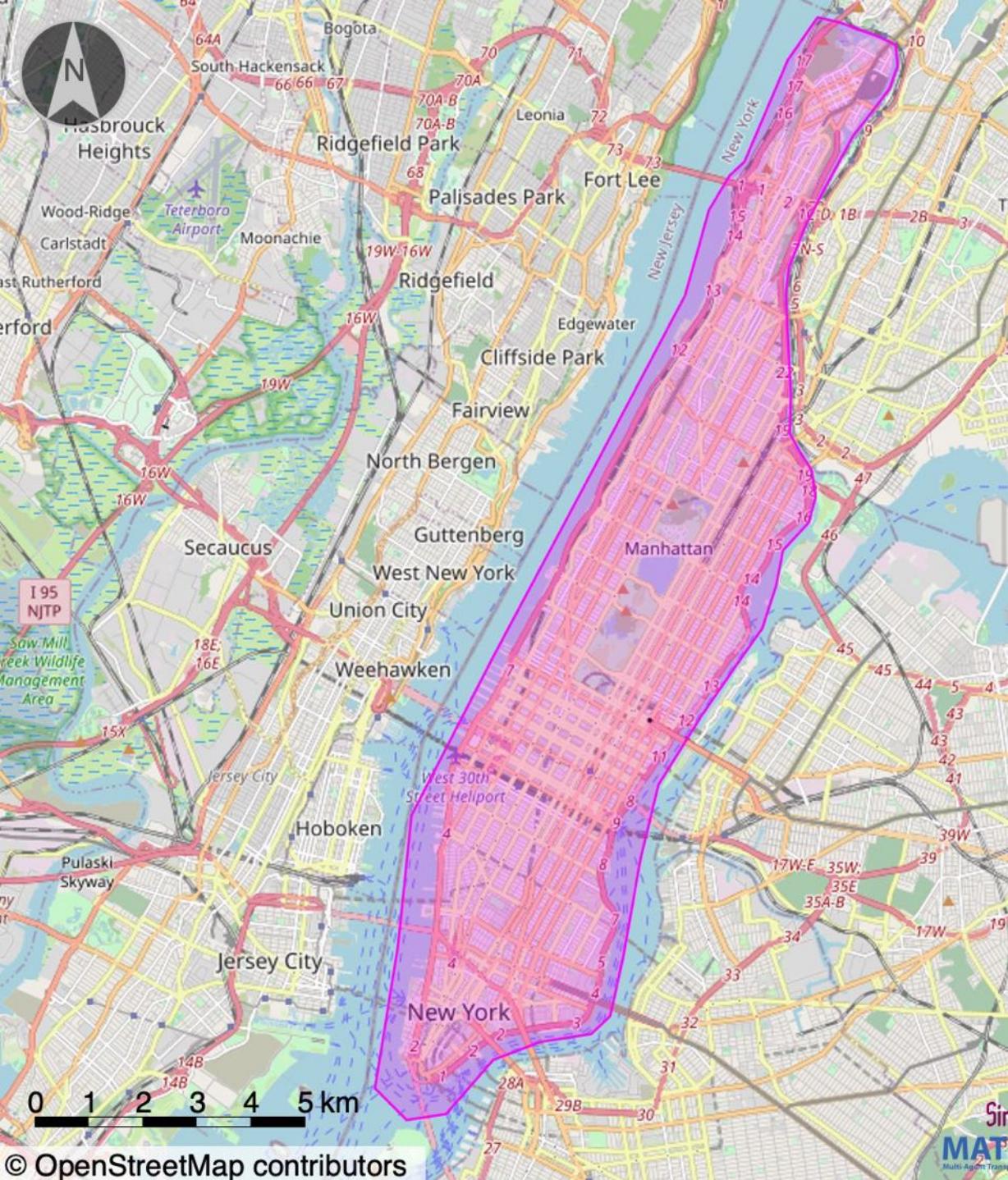
Out-of-the-box use cases

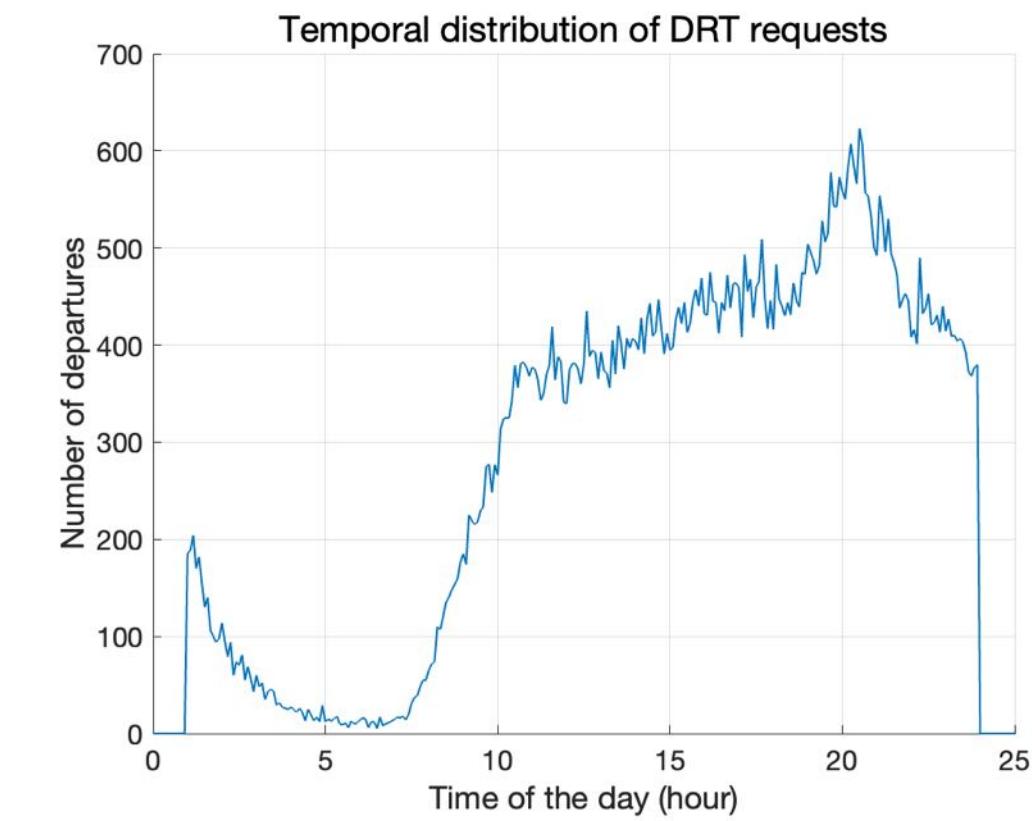
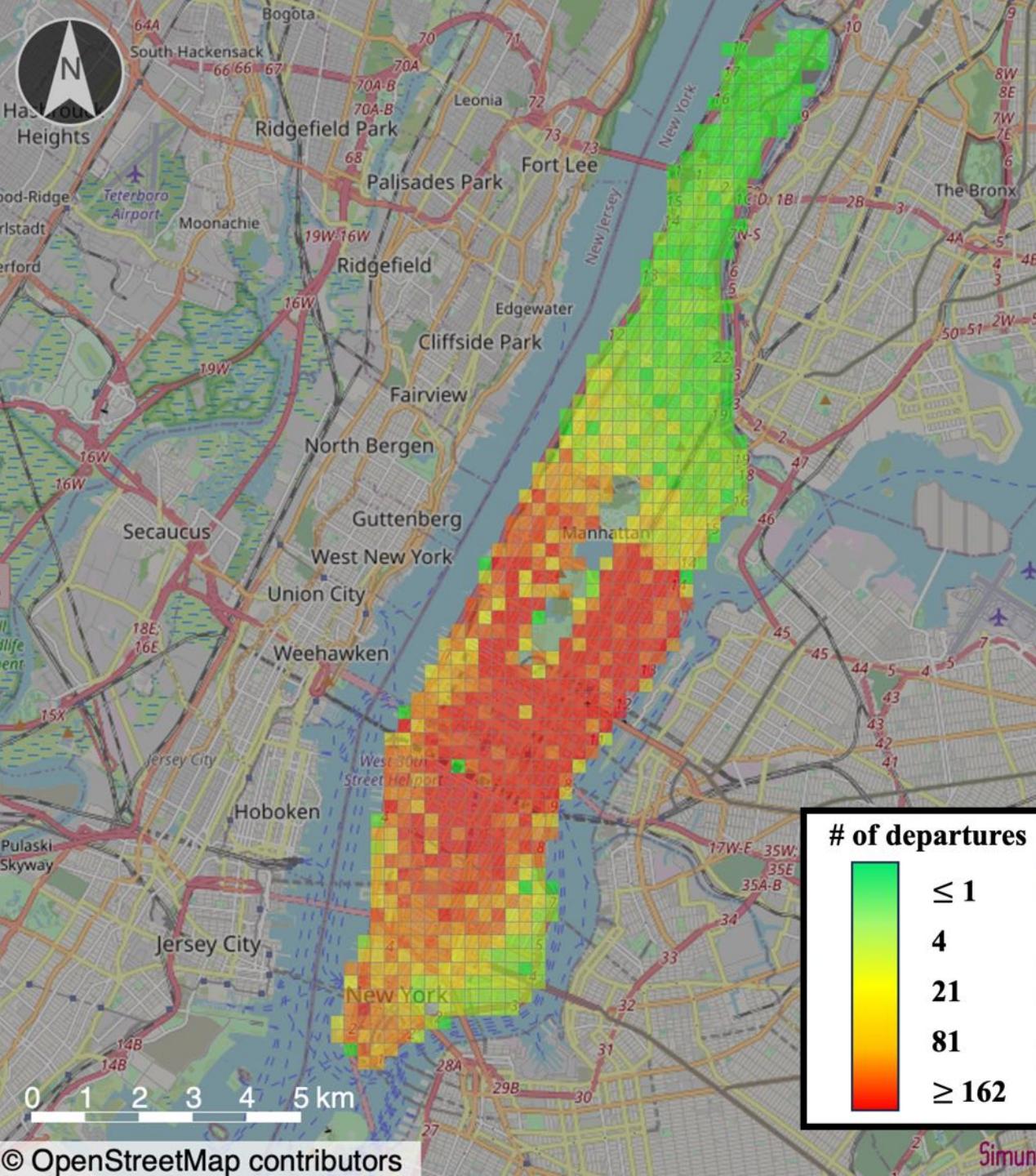
- **Manhattan:** large and dense demands
- **Berlin DRT:** city-wide DRT operation
- **Oranienburg:** first and last mile mobility service
- **Leipzig DRT:** DRT service in the outskirt of the city
- **Kelheim DRT:** DRT service in a small town
- **Vulkaneifel school transport:** DRT for students

Manhattan taxi

- **Large and dense demands**
 - Center of a metropolis
 - Based on real-world taxi data
 - 81238 DRT trips



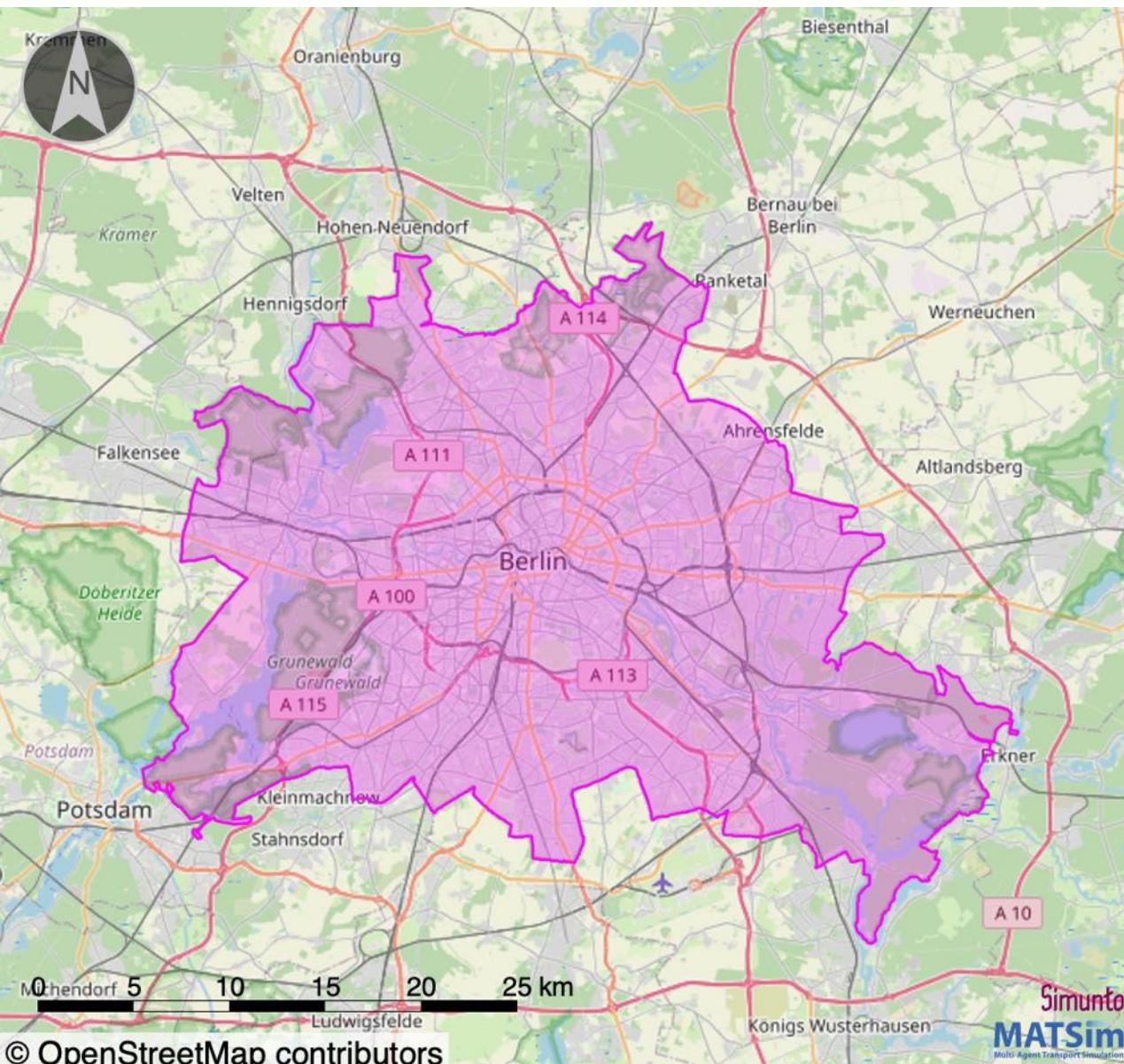


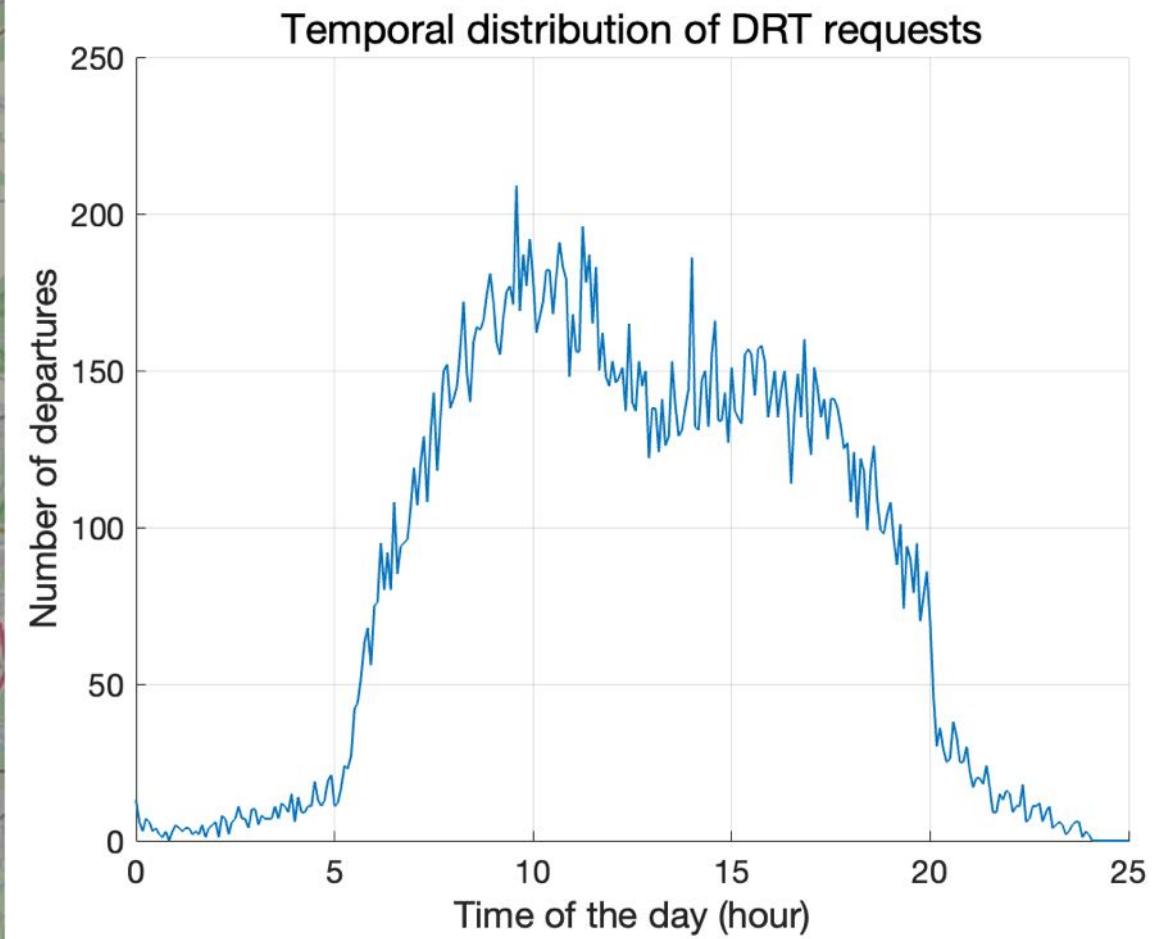
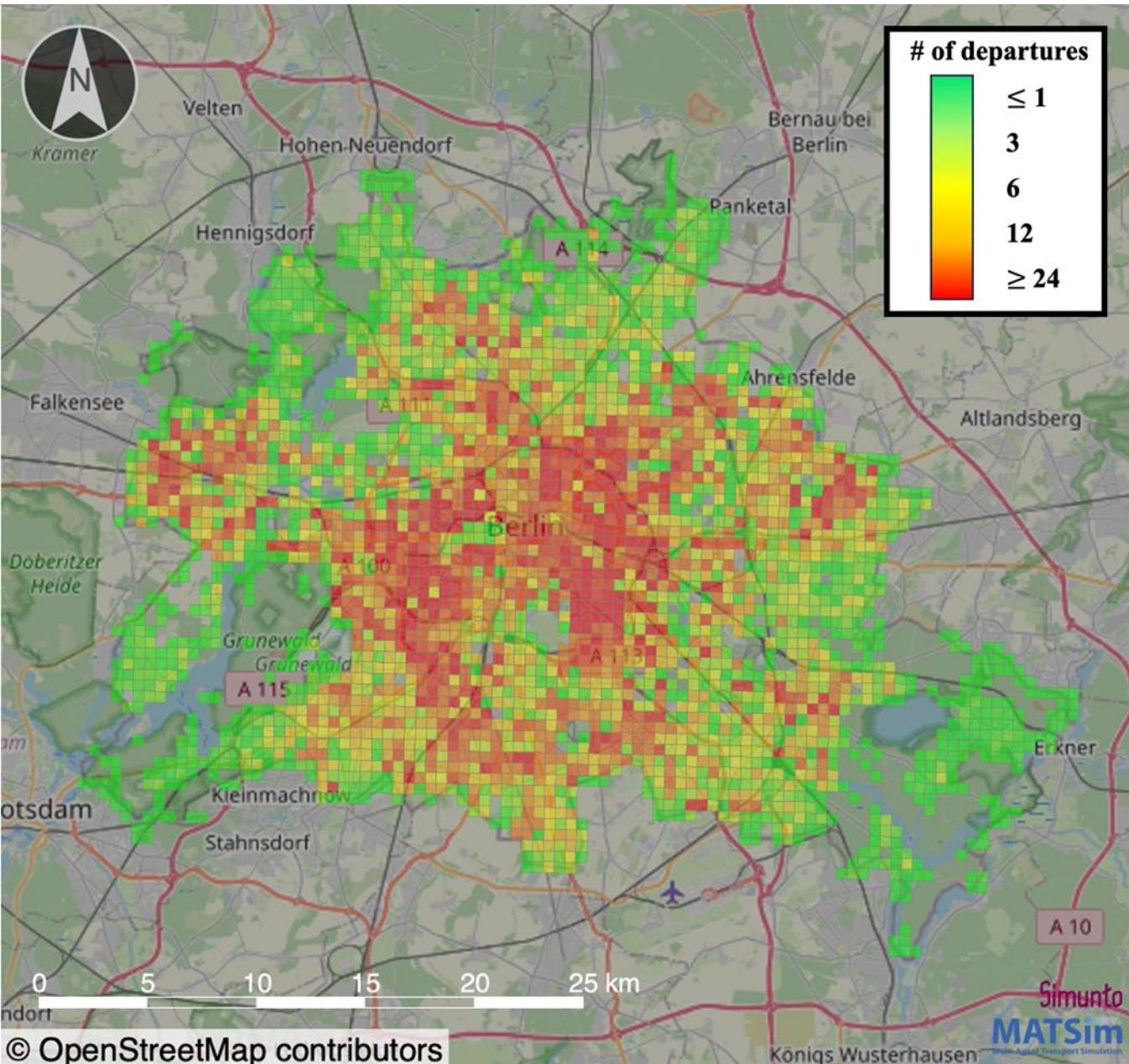


Berlin DRT

- **City-wide DRT service**
 - Large urban scenario
 - Derived from Open Berlin Scenario
 - 24988 DRT trips





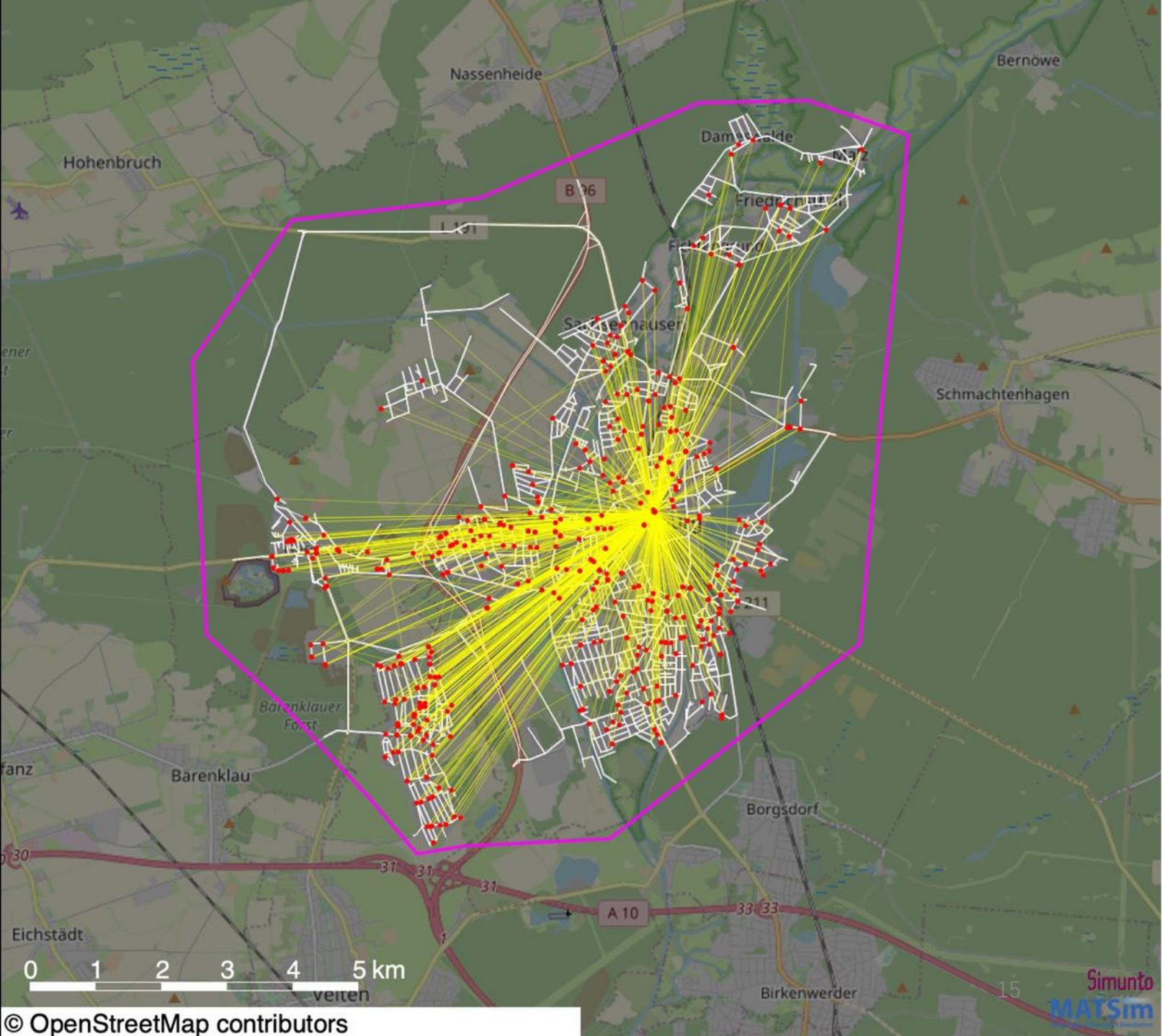
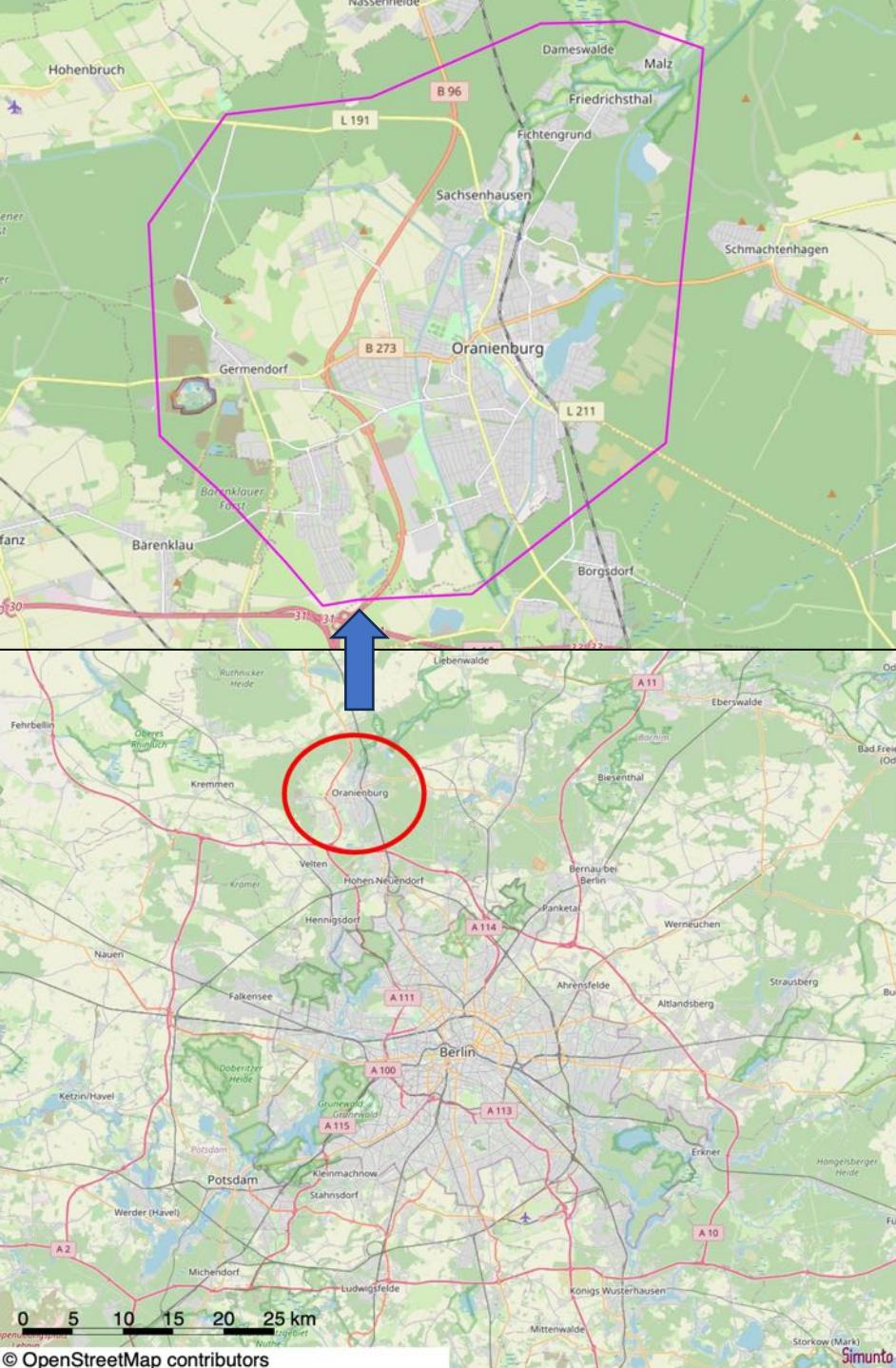


Oranienburg

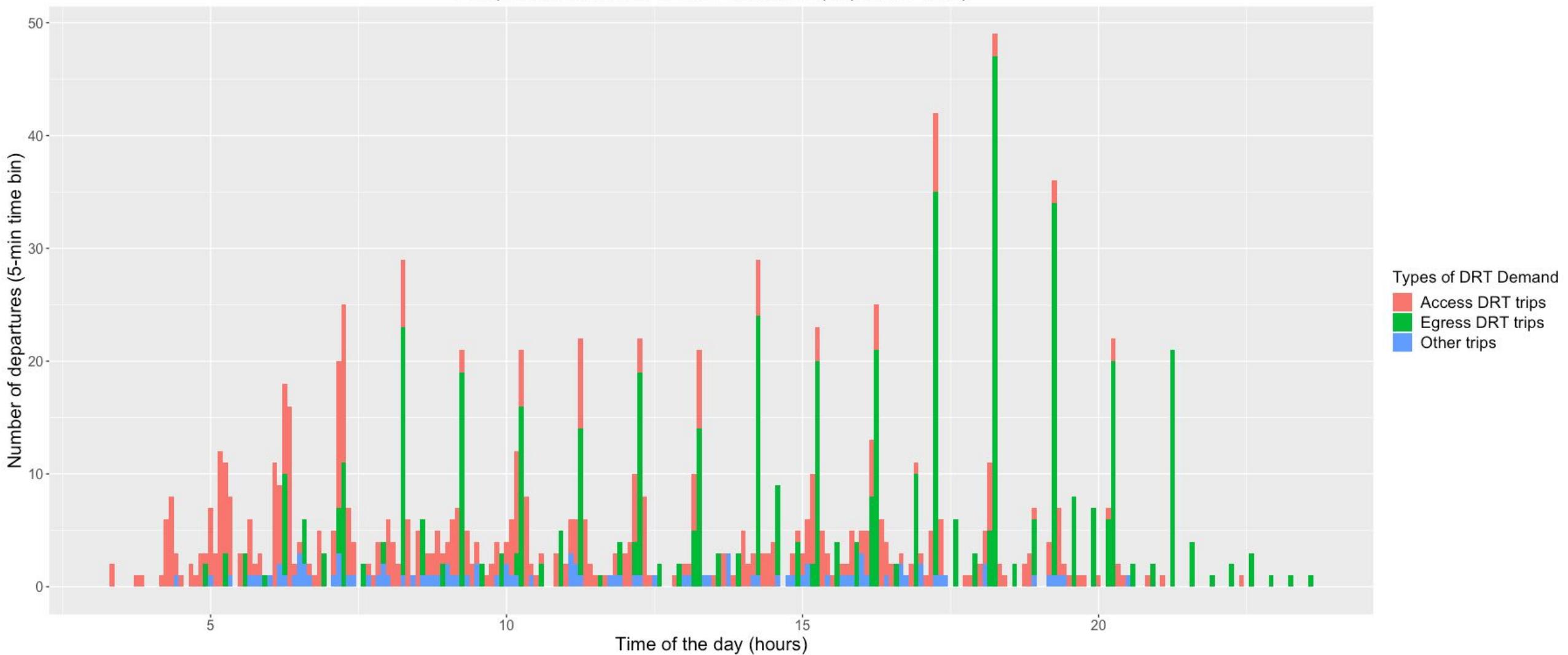
DRT

- **First and last mile mobility service**
 - Many Access and egress trips to/from train station
 - Demands based on timetable of trains
 - 1120 trips





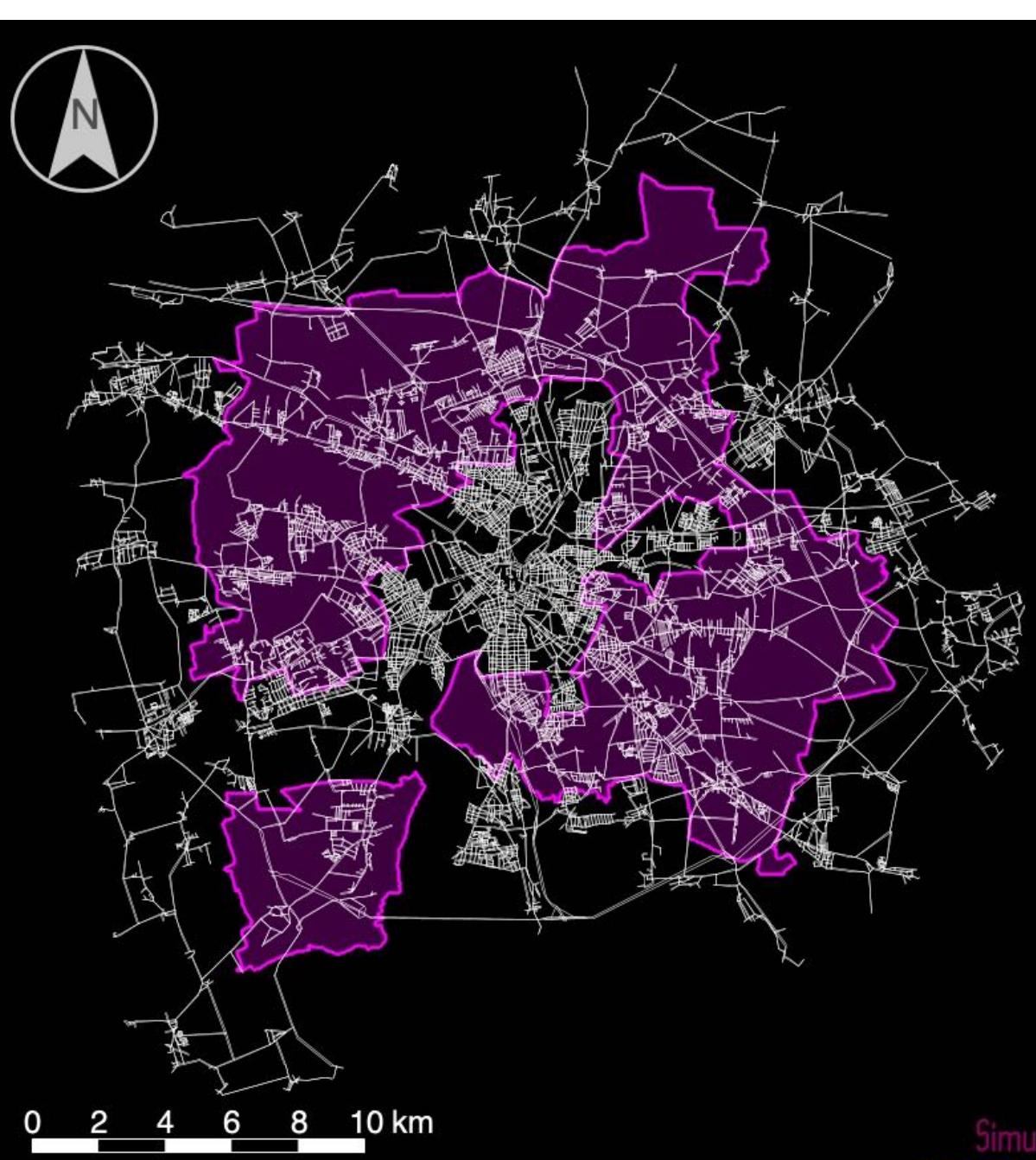
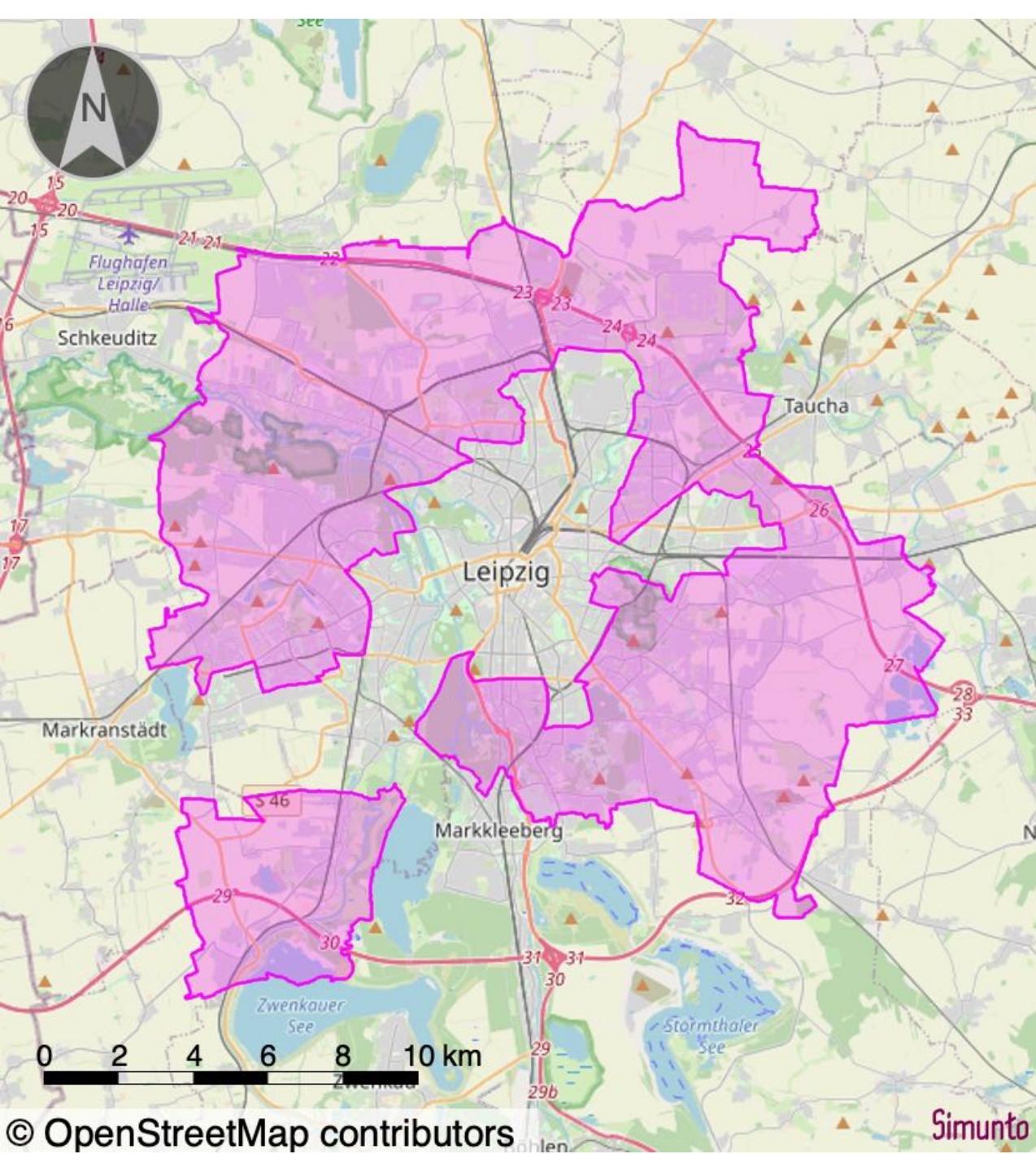
Temporal distribution of DRT demands (departure time)

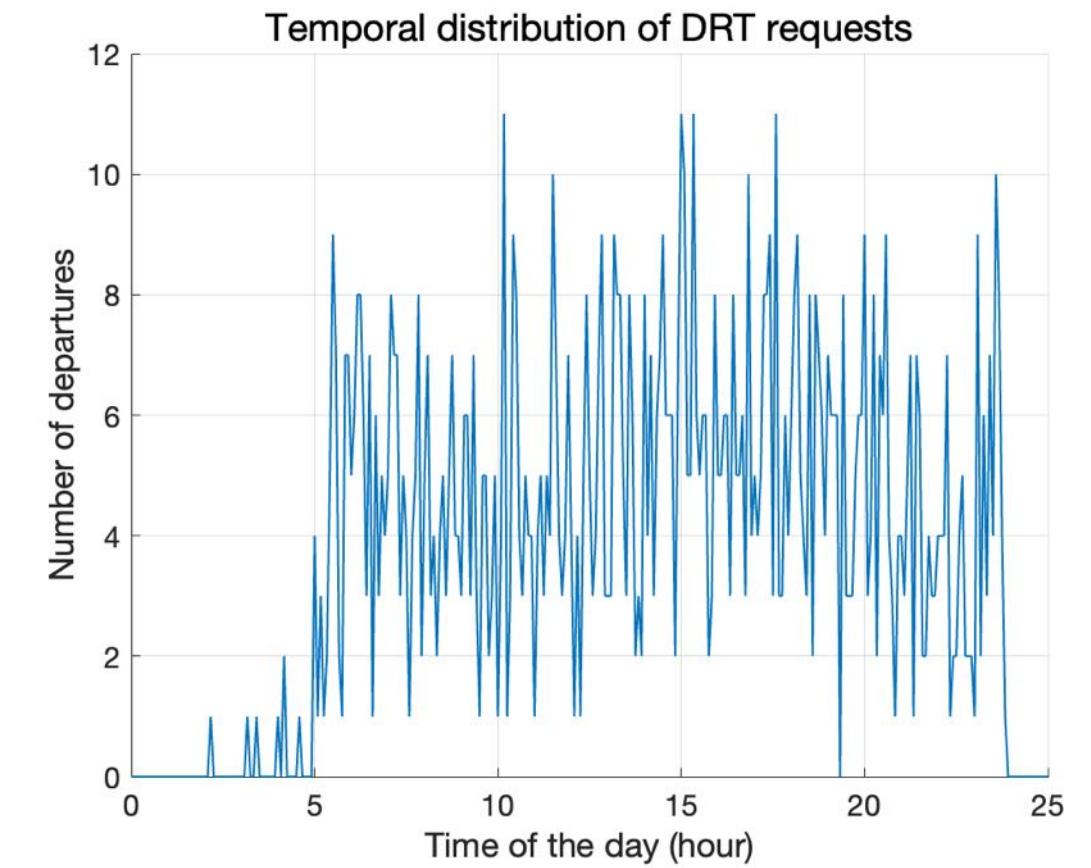
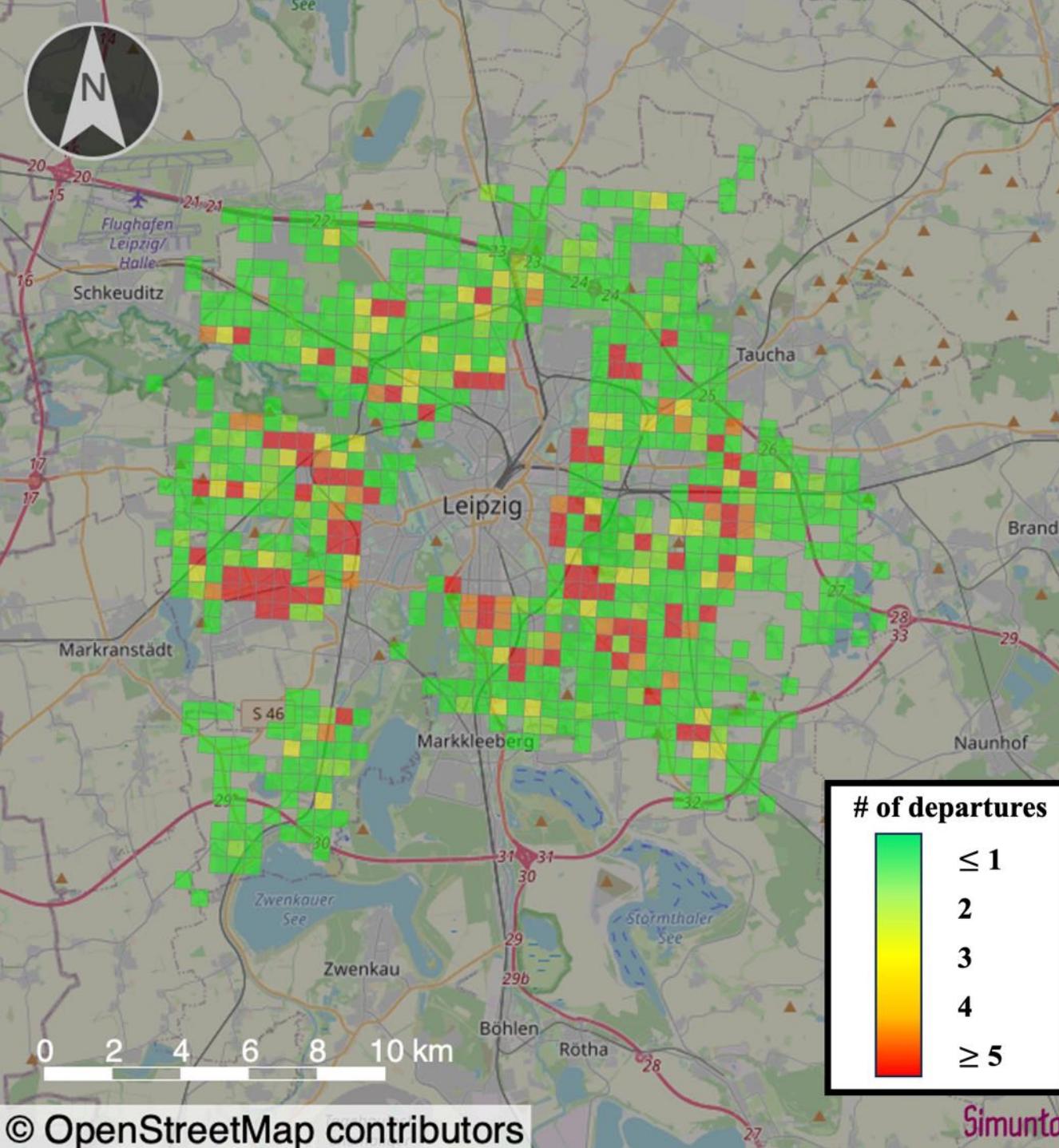


Leipzig DRT

- **DRT operation in the
outskirt of the city**
 - Reinforce the public
transport service
 - Disconnected service
areas
 - 1121 DRT trips



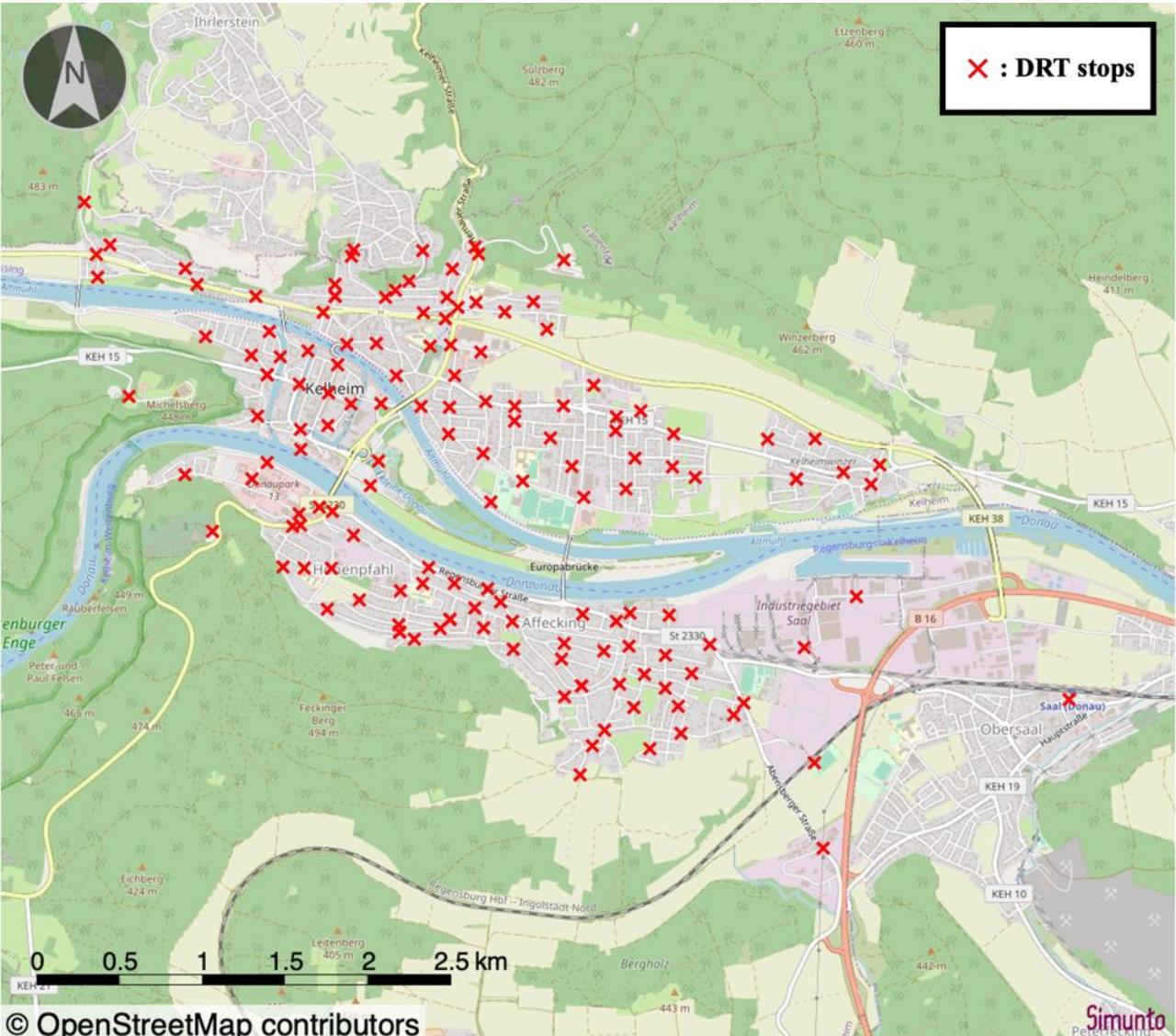


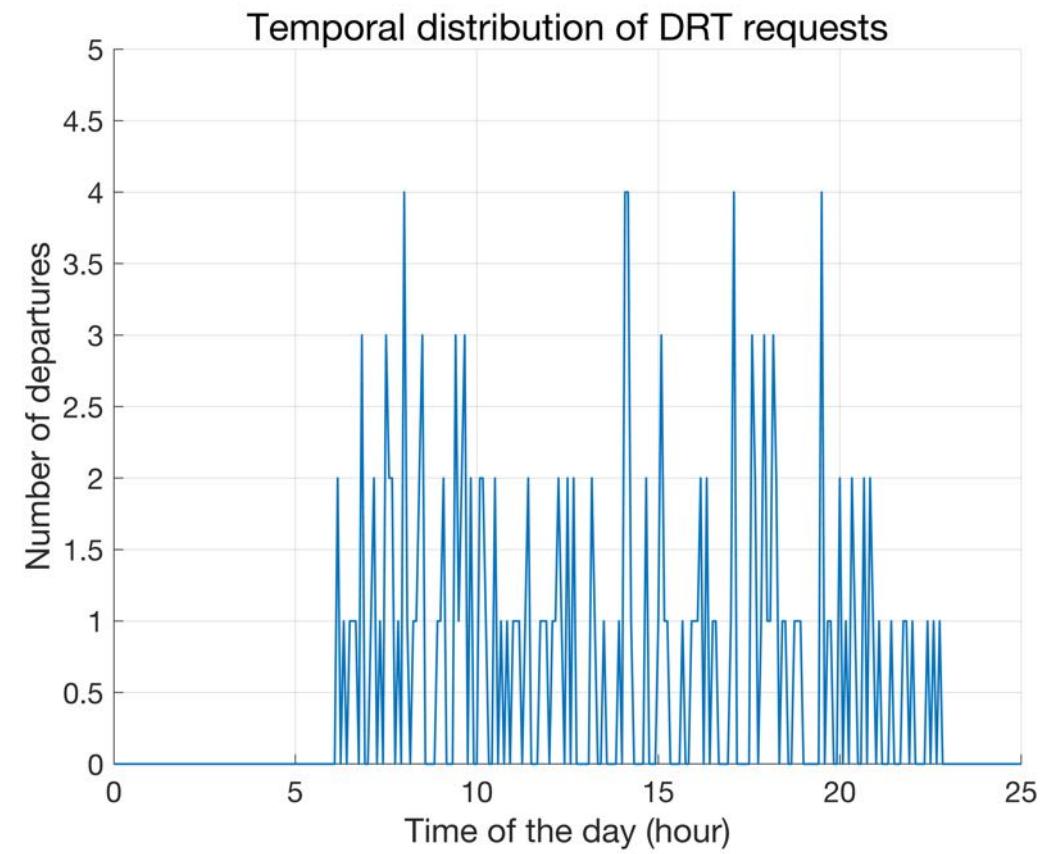
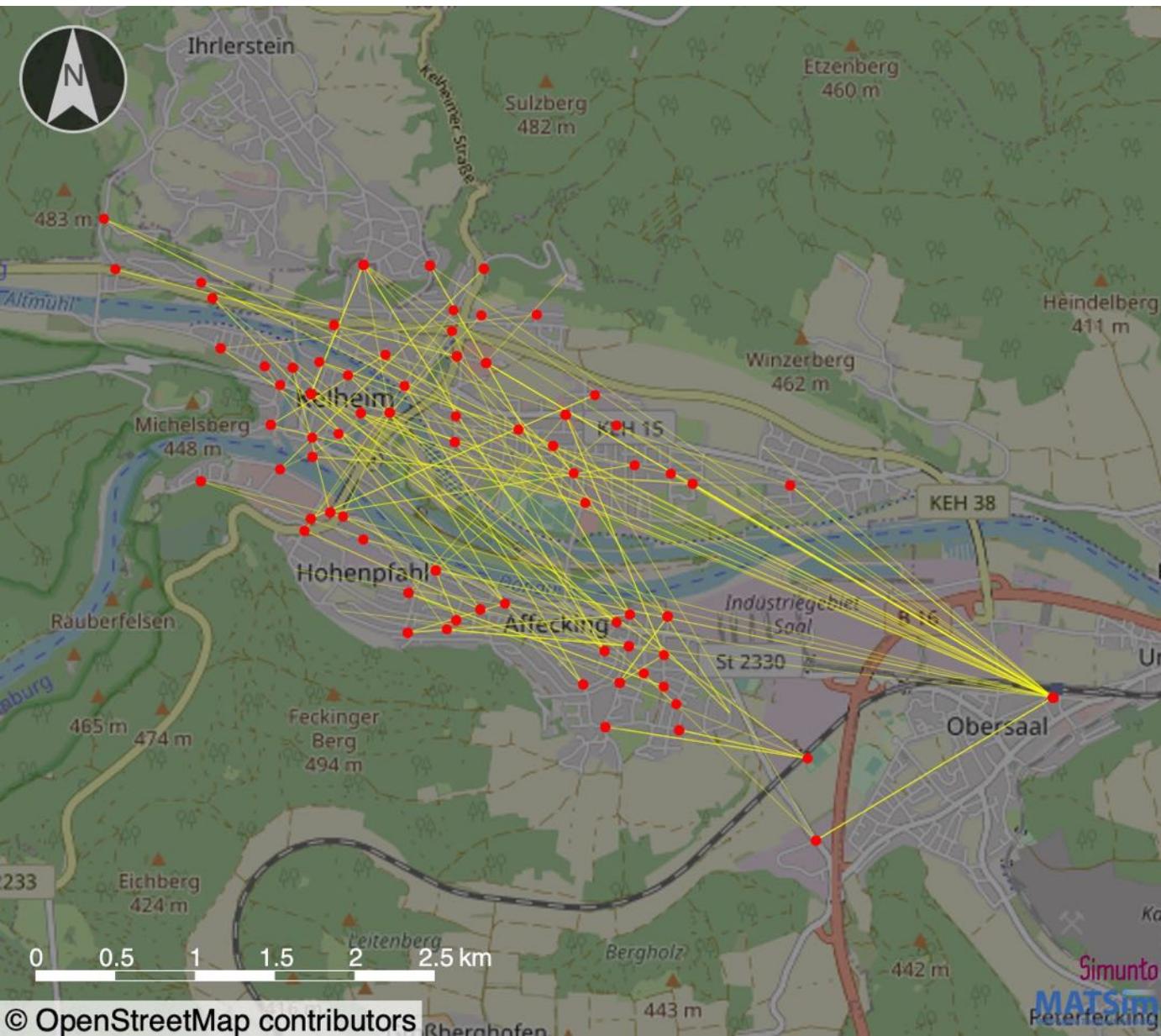


Kelheim DRT

- **DRT service in a small town**
 - Small scale
 - Based on the real-world DRT operation
 - 158 trips



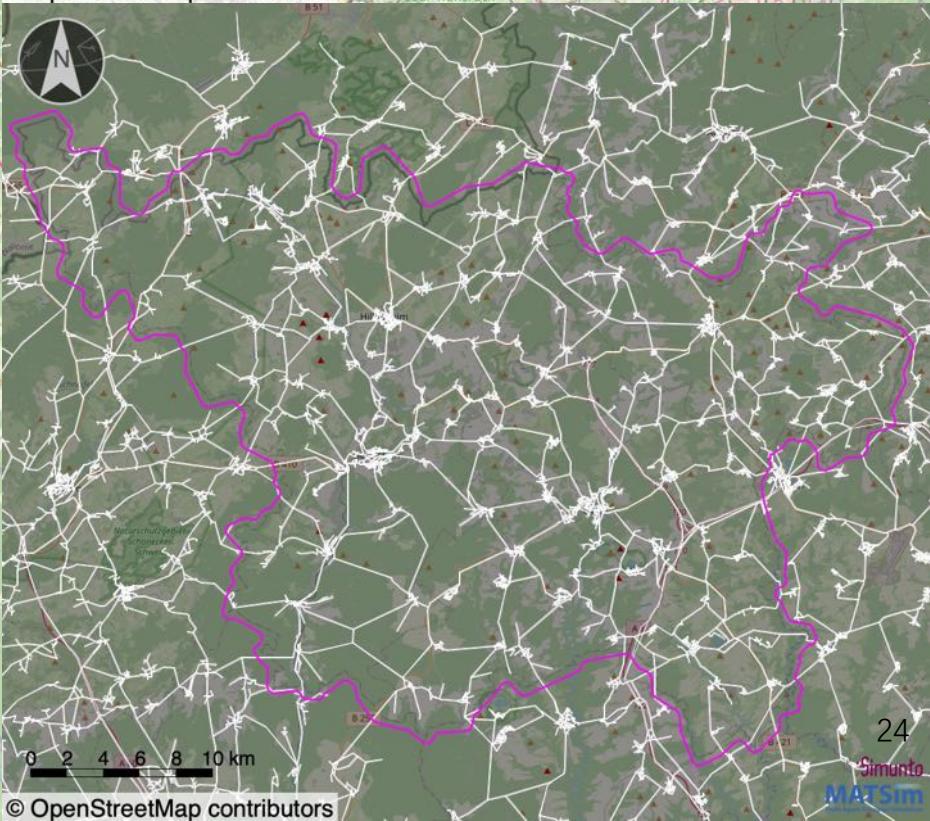
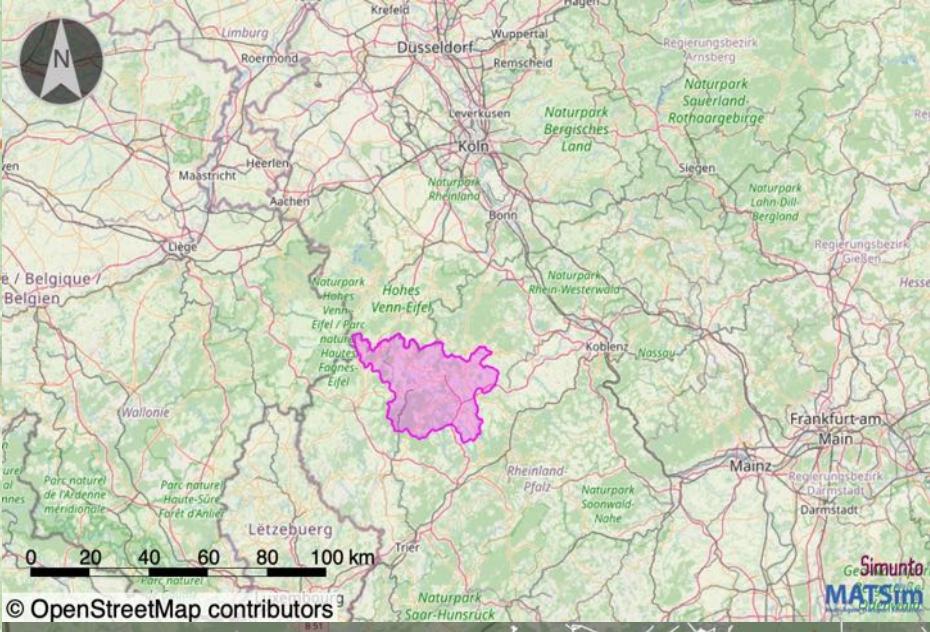
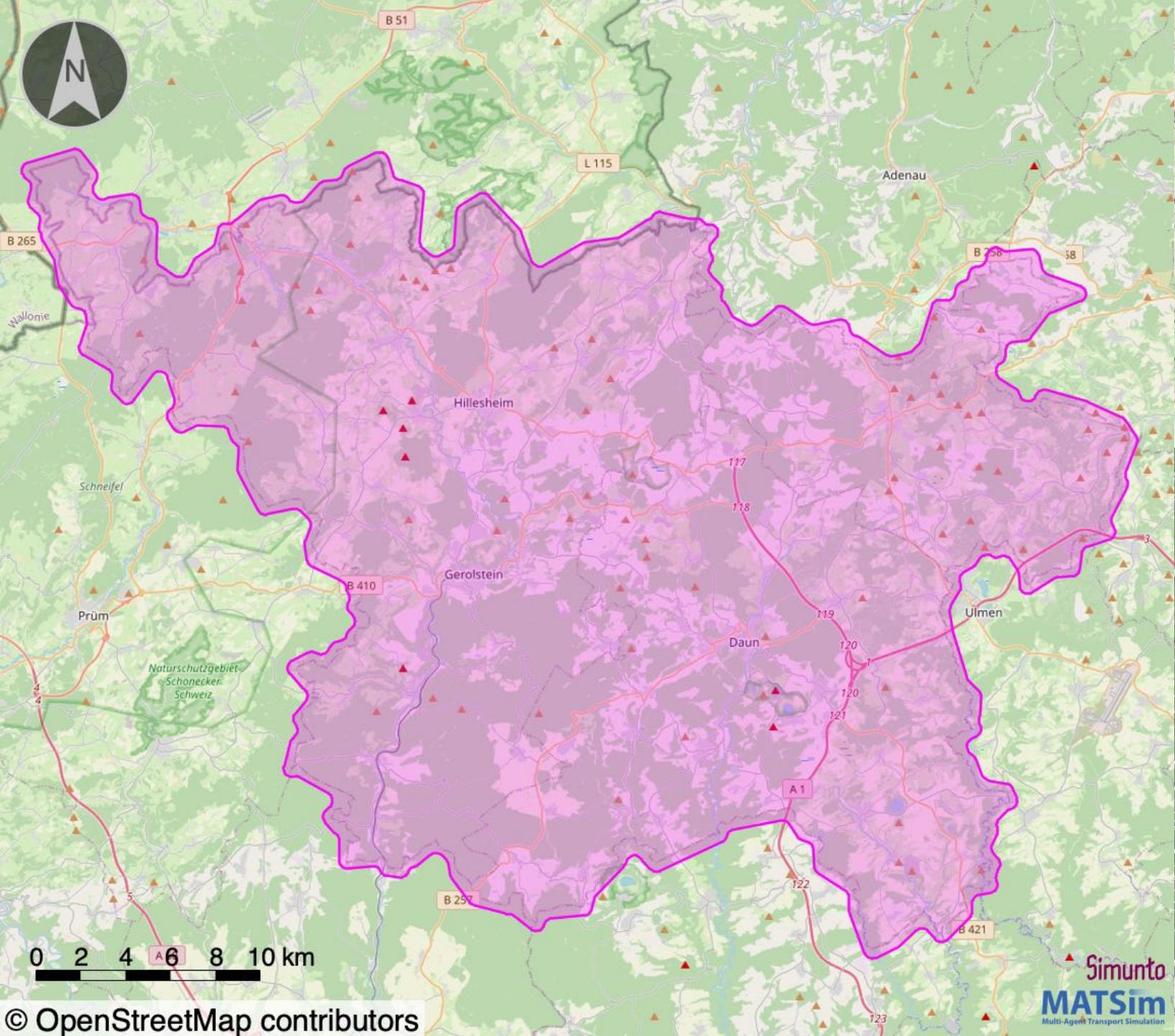


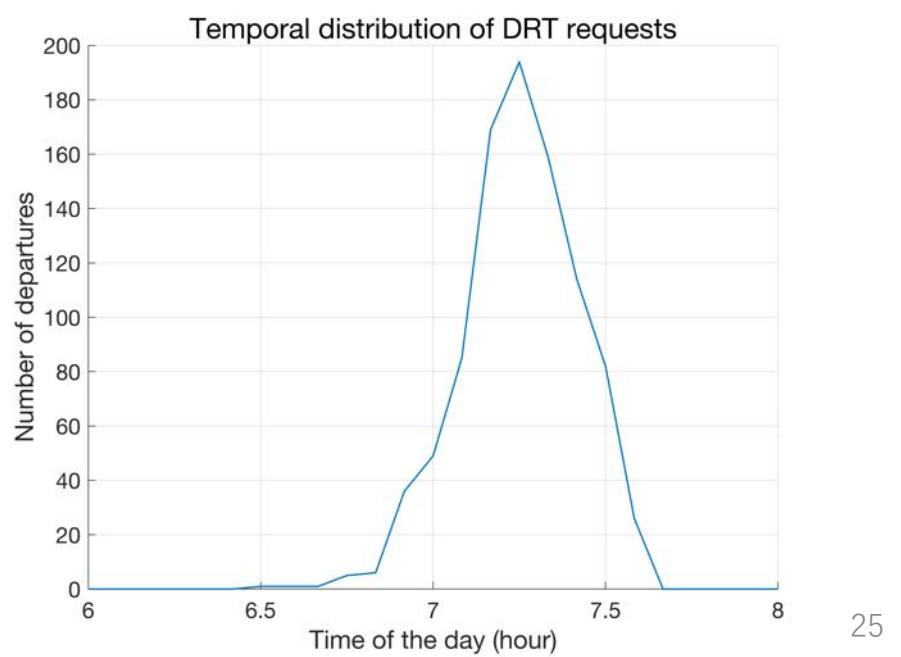
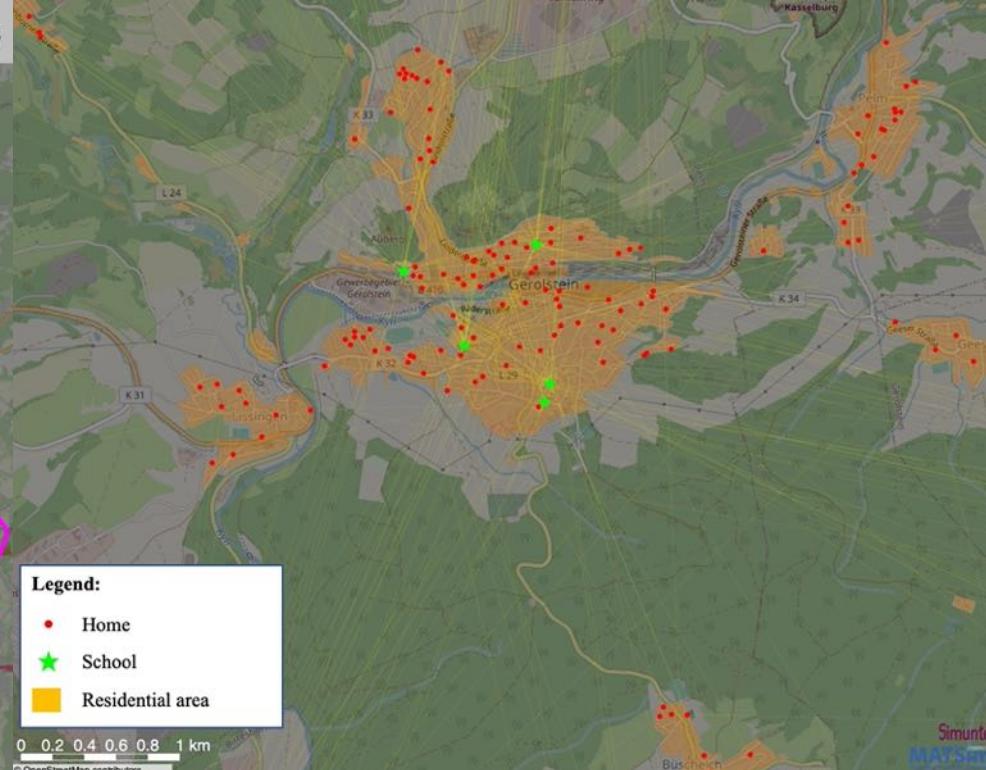
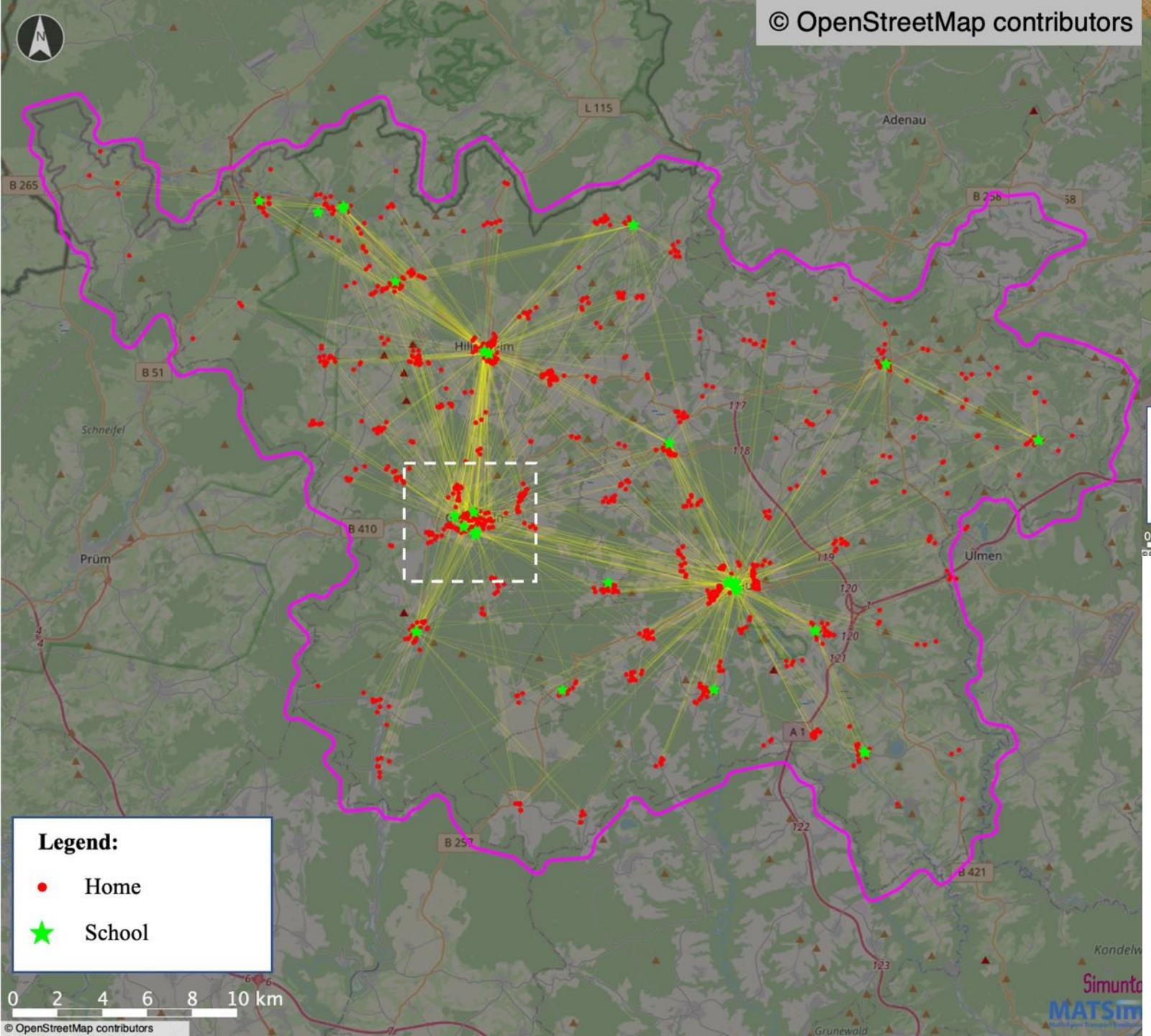


Vulkaneifel school transport

- **DRT for students in a rural area**
 - Special use case for DRT
 - School trips in the morning
 - 928 trips







Create custom use cases

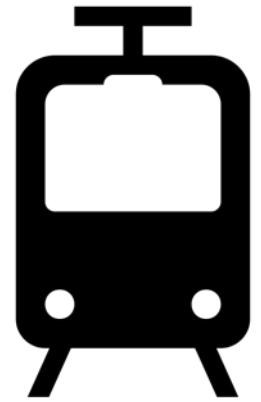
- Users can generate **custom DRT use cases** based on their needs
 - Random sampling
 - Manual sampling
 - MATSim iterations
- Available source scenarios:
 - Berlin
 - Leipzig
 - Kelheim
 - Vulkaneifel
 - Manhattan taxi*



*: Only random sampling is available

Live-Demo

- 1. Run a use case
- 2. Generate a custom scenario



Thank you very much!

<https://github.com/matsim-vsp/drt-scenario-library>