Tartu bus network planning with data driven approach

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Positium
What is Positium?

Private company developing methodology and technological platform for processing mobile big data for human mobility analyses and statistical indicators

A spin-off company of University of Tartu (Estonia)
Bus network needs an overlook
Aga juba siis - mäletan - äratas öudust Tartu ühistranspordisüsteem. Olen juba peaaegu 30 aastat tartlane ja alles viimastel aastatel, kui seda süsteemi inimmõistusele lähedale on hakatud tooma, olen sagedamini bussiga sõitma hakanud, selmet 3 - 5 km vahemaid jala käia.
New developments
Tartu public transportation plan
Cities with 100,000 inhabitants

- Large cities do large surveys and individual choice models.
- Mid-sized cities can do data oriented analysis and light modeling.
Data driven approach
Smart card data
Mobile positioning data

Locations of mobile devices in time and space stored by Mobile Network Operators (MNOs)
Passive mobile positioning

Anonymous track of human mobility in space and time
Measuring people’s activity space in a city district

Working day, 14-16:00
Employed (green) and residents (red)
De facto population

Visitors
Temporary residents
Permanent residents
Other data layers

- General Transit Feed Specification (GTFS) data
- Land use data
- Service locations
- Existing surveys
- Planning data
- Qualitative data from focus groups and questionnaire
Demand modelling → Data Driven approach → Near real-time analysis → Real-time transportation system