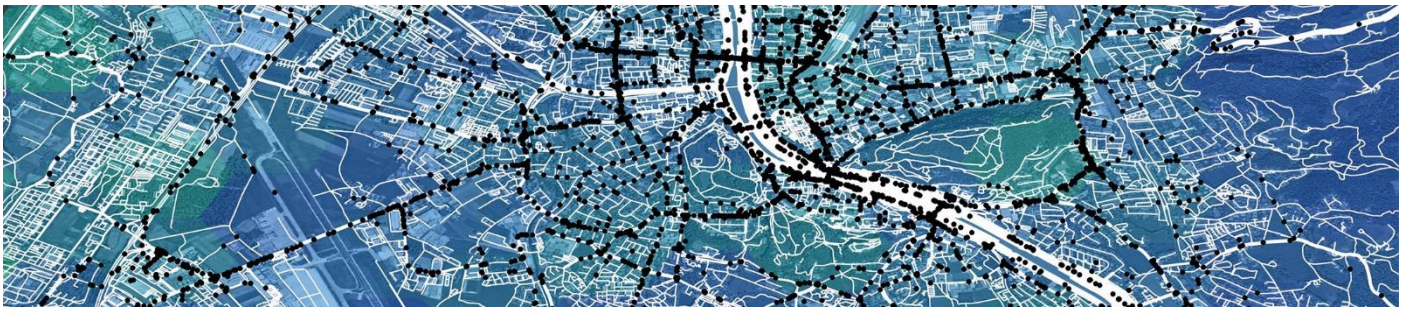

SINUS – Sensor Integration for Urban Risk Prediction

Project duration:
11. 2019 - 04. 2022

Involved staff:
Loidl Martin, Zagel Bernhard, Stutz Petra, Wendel Robin, Werner Christian

Project Lead:
Martin Loidl (Z_GIS)

Contact:
mobilitylab@sbg.ac.at

Role Z_GIS:
Project partner

Website:
https://mobilitylab.zgis.at/portfolio/sinus

Funding | contracting agency: BMK „IKT der Zukunft – 7. Ausschreibung“ (FFG Projekt No. 874070)

Initial situation:

Vulnerable road users (VRUs) are threatened by a proportionally higher safety risk. In order to protect VRUs more efficiently, risk models at a high spatial and temporal resolution are required. So far, potentials and limitations of the combined use of wearable sensors and urban data ecosystems for training a predictive machine-learning model for safety risks in urban environments have not been sufficiently investigated. Insights in this context could be used in a wide variety of ICT-supported application scenarios, such as transportation management, public safety planning, crowd management, health monitoring, digital mobility services or planning.

Project goals:

- Integration of data from heterogeneous sources.
- Risk modelling based on machine learning algorithms.
- Increased safety of vulnerable road users.

Expected results:

- Concept for creating semantic interoperability of physiological, mobile sensor data with heterogeneous data sources of urban data ecosystems.
- Transferable framework for setting up sensor networks for the integration in urban data ecosystems.
- Predictive model of spatio-temporal occurrences and distributions of safety risks for vulnerable road users in urban road networks.

Contribution Z_GIS:

- Data acquisition, modelling and analyses.
- Modelling traffic flows of pedestrians and cyclists.

Project partners: TraffiCon – Traffic Consultants GmbH (Projektleitung), Das Virtuelle Fahrzeug Forschungsgesellschaft mbH, Know-Center GmbH, Spatial Services GmbH