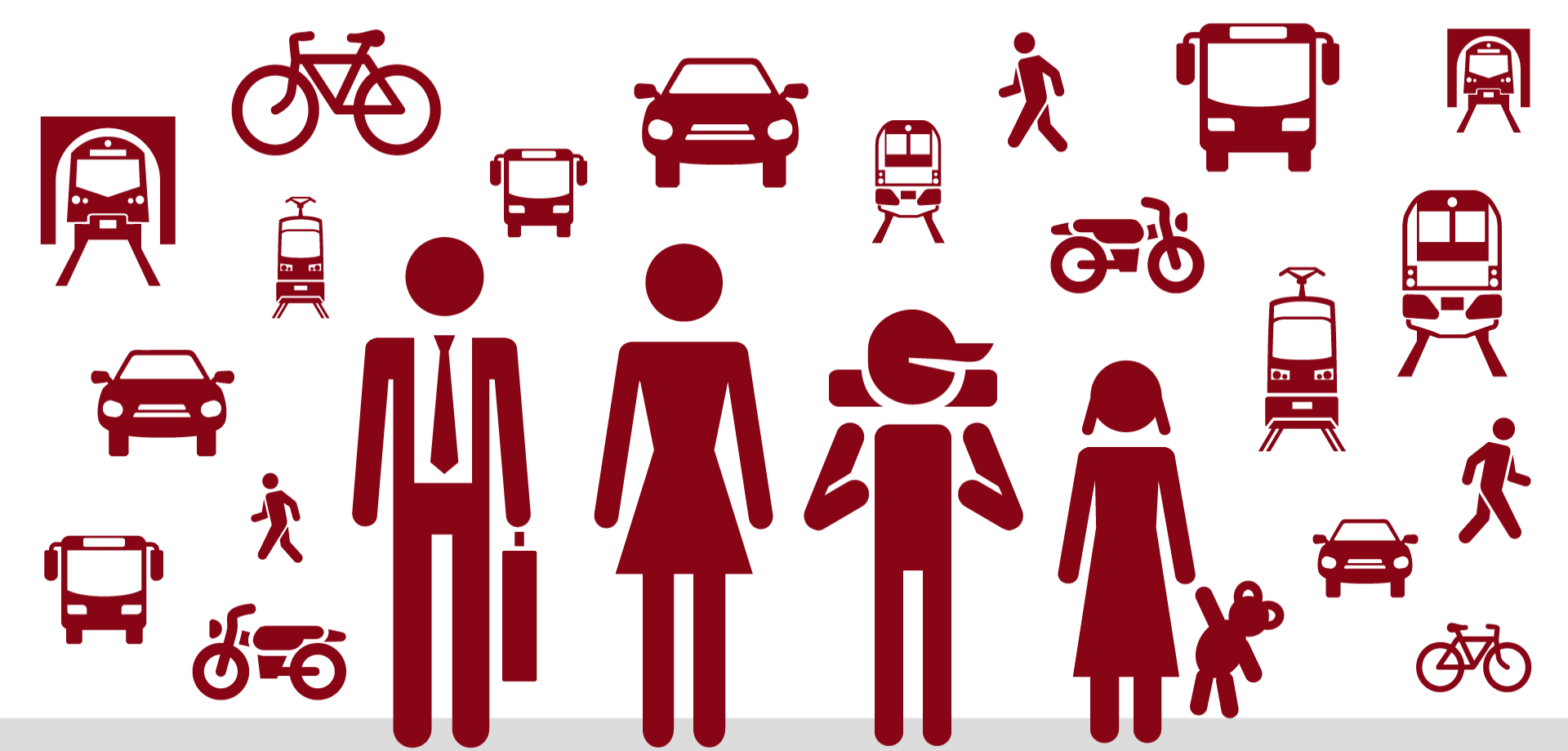
AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY

ENABLING MOBILITY AS A SERVICE

AIT Austrian Institute of Technology

Volker ALBERTS, Center for Mobility Systems



MaaS puts users at the core of transport services, offering them tailor-made mobility solutions based on their individual needs.

IMAGINE…

…FROM PASSENGER‘S PERSPECTIVE

- **No need** to take care about **buying a ticket**
- No need to take care about operators and **fares**
- Just use the given transport infrastructure **when- and however you want**

IMAGINE…

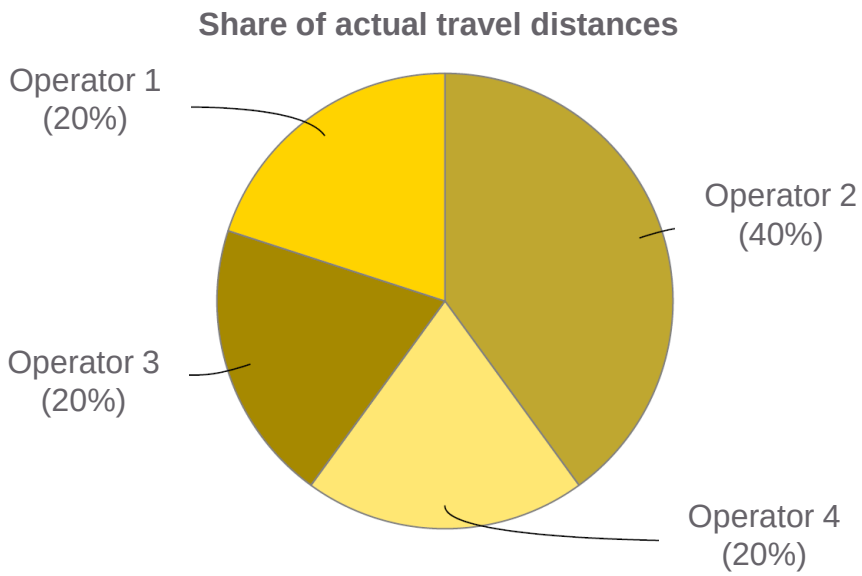
…FROM OPERATOR‘S PERSPECTIVE

- Providing a **fully integrated Be-in / Be-out** ticketing system with smartphones
- **No** additional hardware infrastructure **investments and maintenance costs**

IMAGINE…

…FROM OPERATOR‘S PERSPECTIVE

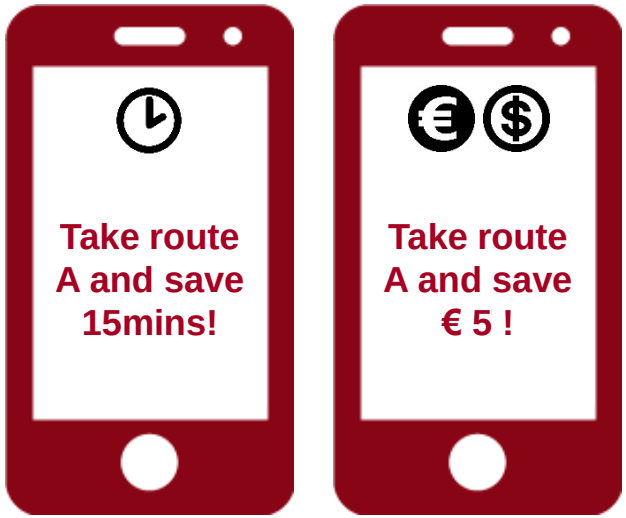
- Obtaining **market shares** between operators within transport associations
- Without the need for costly passenger counting and surveys



IMAGINE…

…FROM OPERATOR‘S PERSPECTIVE

- **Improving system efficiency** by soft steering of passenger flows
- Without increasing local supply



BUT HOW?

TMI Travel Mode Identification

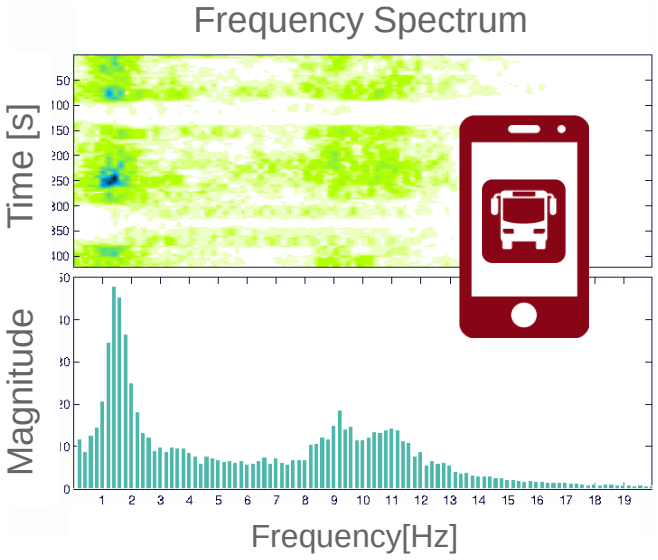
TMI TECHNOLOGY

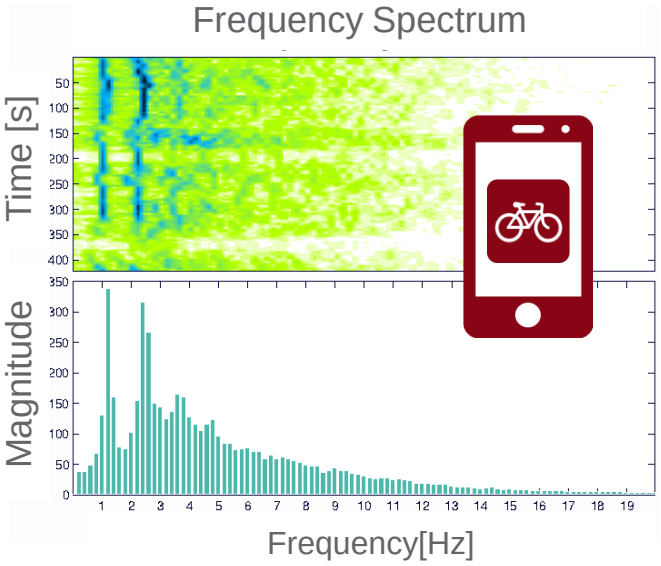
CAPTURING MULTI-MODAL TRAVEL BEHAVIOUR

Software library automatically collects route data and classifies eight different travel modes

TMI TECHNOLOGY

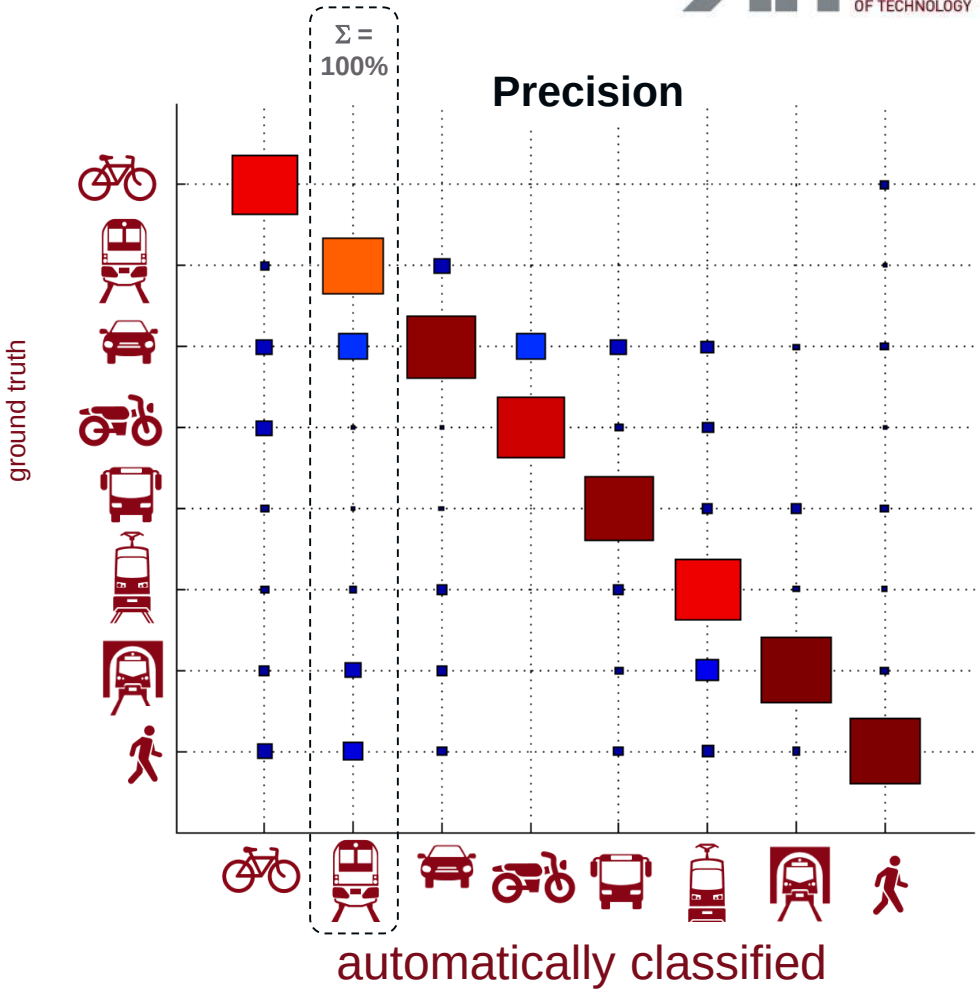
CAPTURING MULTI-MODAL TRAVEL BEHAVIOUR





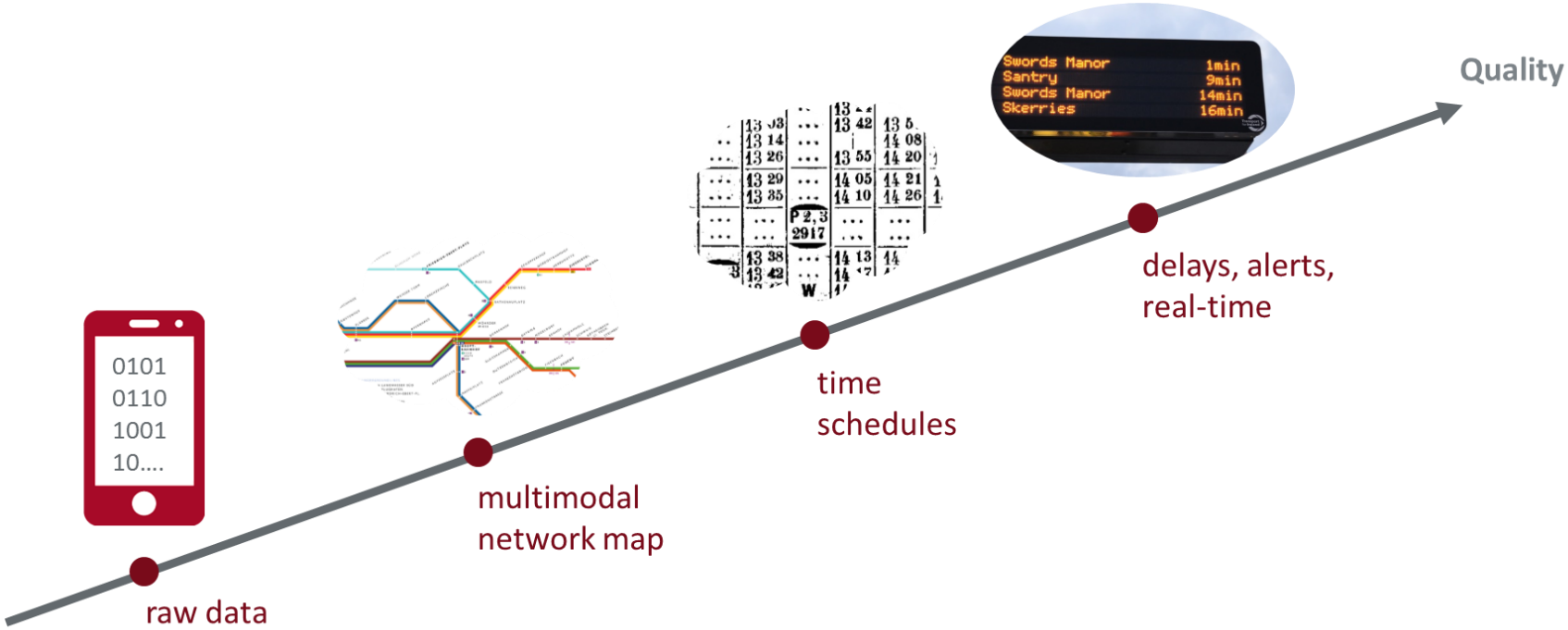
Over 10 years of R&D experience in smartphone-based machine learning techniques

TMI TECHNOLOGY



Quality proved with >350 hours of trip data
including over 1000 trip segments

TMI TECHNOLOGY



Quality of Travel Mode Identification (TMI)

TMI TECHNOLOGY

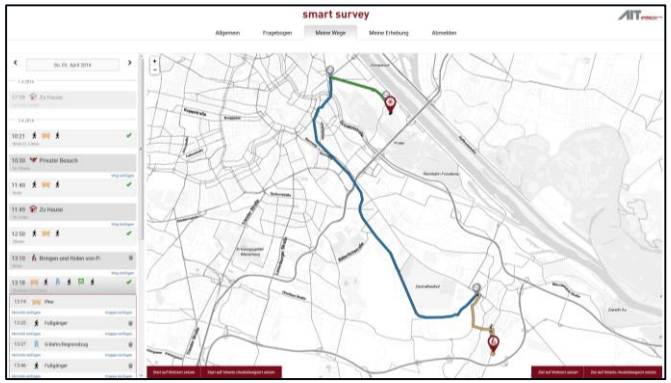
MOBILITY SURVEYS

SMARTSURVEY developed by AIT

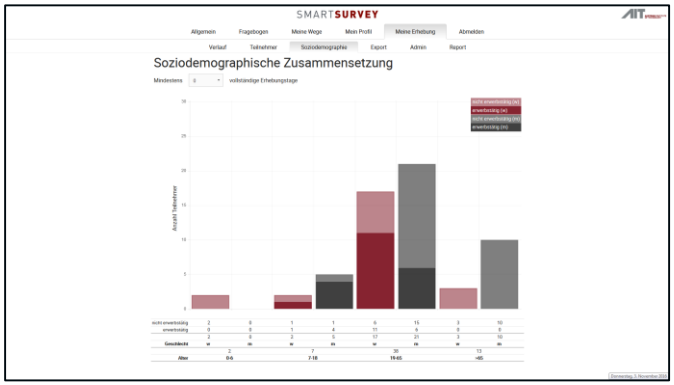
Easy and accurate mobility surveys with smartphones.

A service for cities, communities, traffic planners and mobility researchers

Smartphone App for continuously collecting raw data in a battery friendly mode without user interaction (respondent)



Web App for viewing, editing, deleting and confirming individual trip information and providing additional survey data (respondent)



Web App for conducting the survey by providing statistics and exports to standard traffic planning tools (conducting party)

LEARNINGS REGARDING

…continuous monitoring of car-sharing users

- ✓ In the case of the efficiency measurement of car-sharing systems, the core questions can be answered:
  - Are public transports substituted by car-sharing? At what times and on which connections? Is this substitution relevant to the local transport provider?
  - How does traffic change in the long term? Is a private car abolished or the purchase of a private?

…longitudinal survey of public transport users as the basis for eTicketing models

- ✓ In order to develop new tariff models, it is necessary to measure the individual driving behavior with public means of transport including the use of further mobility offers (for example, car-sharing) over a period as long as possible. On the basis of such usage profiles, the effect of possible billing parameters (for example distance, day type, time, transport, relation, demographic features) could then be simulated.

…pedestrian traffic planning

- ✓ On the basis of such a type of observation, geographic information systems can be used to carry out a weak point analysis of the footpath system:
  - At which crossroads, particularly a lot of people lose a lot of time?
  - How do footpath to and from the PT-stops or changeover times stay in relation to the direct travel time by public transport? Where are particularly long walks? Can these be shortened (for example, "abbreviations", pedestrian crossings, bus stops, lines)?

ENABLING MOBILITY AS A SERVICE…

…for passengers…

- ✓ by getting rid of tickets
- ✓ by losing the need to take care about operators and fares
- ✓ by enabling them to just use the given transport infrastructure when- and however you want
- ✓ by not stressing them with intervention
- ✓ …

…for transport operators…

- ✓ by opening up various fields of application
  - ✓ Multimodal mobility surveys for transport planning
  - ✓ Smart Be-in / Be-out solution
  - ✓ Obtaining market shares
  - ✓ Steering of passenger flows
  - ✓ Travel time computation (in real-time)
- ✓ By getting rid of hardware infrastructure (e.g. beacons)
- ✓ …

TMI APPLICATIONS

YOUR INNOVATIVE & INTEGRATED SOLUTION

AIT‘s TMI software solution is designed for mobile application developers, public transport operators and system integrators.

TMI IN ACTION

Austrian pilot study in June 2017 with 500 test persons in Styria and Carinthia investigates on

- **realizing an Austrian wide mobility survey**
- **realizing fully integrated Be-in / Be-out**
  ticketing with Smartphones
- obtaining **market shares** between operators
  within transport associations

- **Vienna, Austria** - Empirical investigation on multimodality in Vienna 2016, 4 months, 7.871 trips, >22.000 trips stages, 25.000 km, 2.700h travel time
- **Tbilisi, Georgia** – Smart Urban Transport Planning And Management, mobility survey Mai-June 2017
- Various pilot studies in **Switzerland**, **Germany** and Austria

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THANK YOU!

Volker ALBERTS, 28.06.2017