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Optimization of Individual Travel Behavior through Customized Mobility Services and their Effects on Travel Demand and Transportation Systems

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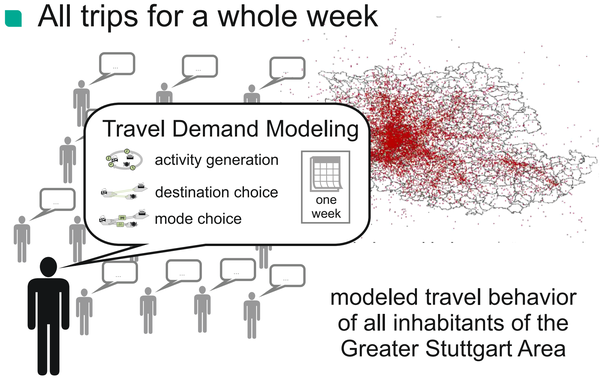
mobiTopp

- Microscopic travel demand model
- All trips for a whole week



modeled travel behavior of all inhabitants of the Greater Stuttgart Area

actiTopp - Week Activity Schedules

- Utility-based approach

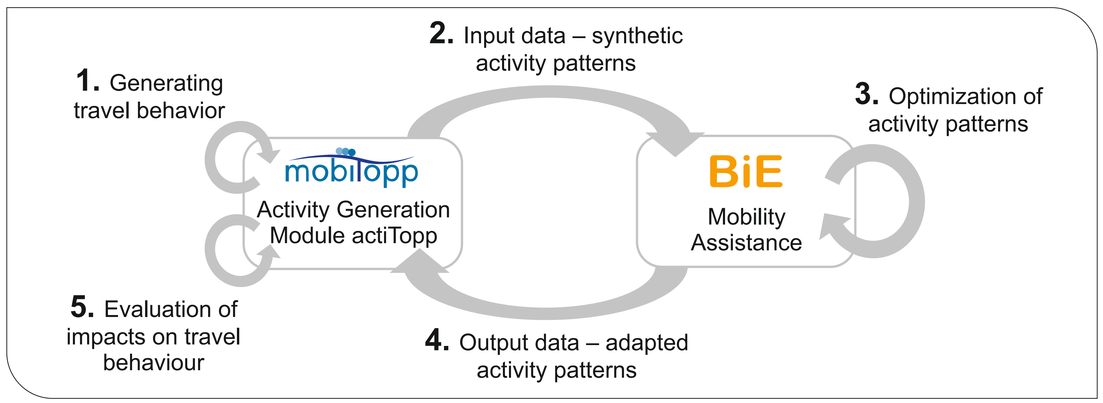
person (once per week)
- # working days / # education days
- time budgets for activity types
- usual main tour start time

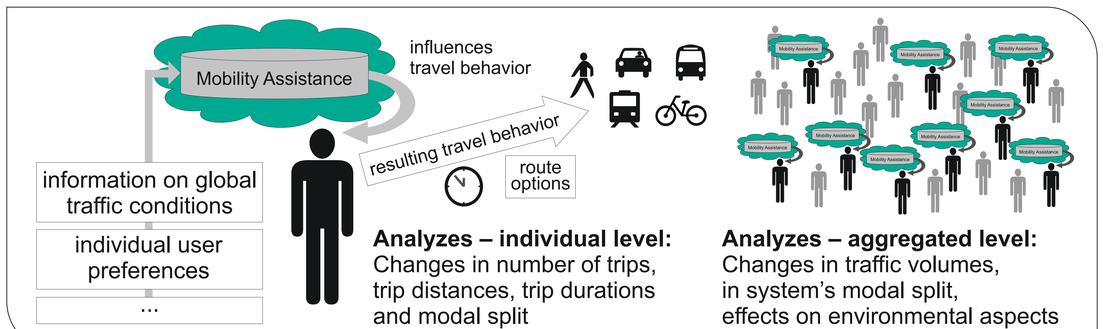
day (once per day)
- maint tour activity type
- # tours before, after main tour

tour (once per tour)
- main activity type
- # activities before, after main activity
- start time

activity (once per activity)
- activity type
- activity duration

Today, users can choose between a large variety of different mobility services and options. To reduce the complexity of these services, customized solutions to support the users are needed. Therefore, we developed of a mobility assistance system. The assistance gathers information from timetables and real time information systems in public transportation, is connected to mobility services like car sharing, knows the users schedule and only presents relevant information for the ongoing situation. It supports the user's travel behavior by providing information on mode, route or alternative starting times of trips. According to the user's preferences, the assistance may adapt and reorganize the user's weekly activity schedule. To evaluate the impact on travel behavior caused by the mobility assistance, we use the travel demand model mobiTopp. We develop a new module in the model to generate activity patterns. That enables us to get more insights into travel behavior and to evaluate the changes occurred by the usage of the mobility assistance on personal level as well as on network level.





Mobility Assistance Prototype

- Microservice-based architecture
- App- and web-based user interface
- Individual user preferences
- Flexible calendar optimization

Example

Notification
Triggered by different events:
- Incoming date inquiries
- Traffic information
- Periodically scheduled

Trip Planning
- Rescheduling of appointments
- Calculation of new inter-modal trips with regard to individual user preferences

Visualization
- Visualization of proposed trips and trip adjustments
- Trip adjustment and editing capabilities