Human Dimensions

The human dimension, as well as the human perspective, need to play an important role in the public traffic arena. AIT dedicates itself to documenting and researching this aspect with a wide range of projects, presenting them at TRA 2018.

IMPACT

IMPACT is an instrument to re-design mobility systems in a more efficient way. It analyses the effects of various measures on traffic systems with the aim of being able to utilise them more effectively in the future. With IMPACT, AIT offers an important contribution to designing comprehensive traffic systems. Group-specific data (socio-demographical data, socio-economic data, and social milieus) are collected in order to use them for analysing the impact of planned traffic or transport measures on the behaviour of people from different social milieus. Within the scope of IMPACT assessments, all those factors are examined in more detail which will bring about changes in traffic (e.g. pricing, management of parking spaces, new public transport lines, road construction, autonomous driving, etc.). The findings are then implemented into simulation environments and models in order to be able to deduce from these a wide range of scenarios. Next, these scenarios are analysed and used as bases for setting up suitable measures. IMPACT is an analytical tool which puts human beings with all their interests and habits into the centre of attention.

SIMULATE

With SIMULATE, AIT follows the goal of ensuring more safety, security, comfort, and efficiency for flows of people in the urban space. For the area of mobility and transport, this project is deployed e.g. for re-designing buses, trains, stops and stations, providing important and safety-relevant insights.
Passenger flows can be simulated in a virtual environment, by means of software tools and based on decades of research work. Using 2D and 3D animations, organisational or construction measures are simulated, taking into account measured data of the real existing infrastructure. This serves for determining e.g. main routes and potential bottlenecks.

EXPERIENCE

The project EXPERIENCE also ties in with optimising infrastructure design, e.g. at train stations or means of transport. Via virtual reality, very diverse scenarios can be simulated. In these virtual test environments, close to reality and populated as they are, natural movements can be included, as can environmental sounds, pedestrian flows, signage, or loudspeaker announcements. During a simulation, a test person has to fulfil any number of different tasks in the testing environment. All the time, data like line of sight, movement, reaction, as well as individual behavioral patterns, are closely documented. Analysing these data gives insight into disruptive factors in architecture and provides valuable findings for improving and optimising infrastructural design. This virtual world is being created via visual computing technologies and the most recent pedestrian simulations. It provides solutions for a host of different questions and needs in the interest of fair, safe and secure mobility on equal terms in the urban environment.

Bike'N'Play is another AIT project in the area of mobility which aims at convincing players by means of persuasive games to take up a more active mobility behaviour, e.g. by using one's bicycle more often. Bike'N'Play provides concrete recommendations and game demonstrations, thus promoting active mobility.

The two projects OPTIMUM and PERRON offer new approaches for routing and navigation systems for walkways, thus offering a contribution to a person's active mobility behaviour. In OPTIMUM, solutions for personalising route proposals are being developed. The PERRON research project examines selected parameters for classifying route characteristics (e.g. traffic density, noise, lighting, greenery, etc.) and their relevance for the quality criteria of safety and security, attractiveness, comfort, and time savings.