MOBILITY
DEPARTMENT

AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY

SIMULATE

Dynamic Crowd Solutions

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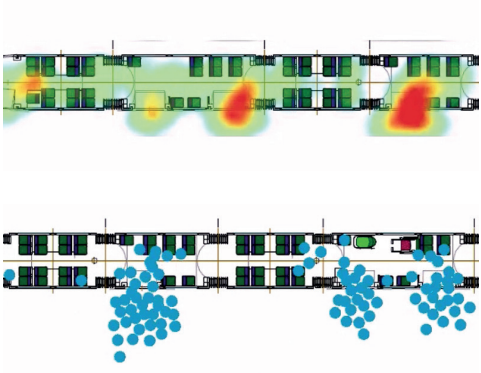
Innovative crowd simulation to analyse complex pedestrian flows

How do people move in infrastructures?
How to optimize pedestrian flows?
Can evacuation be handled safely?

To ensure that the design of public spaces meets human needs, planners and operators require efficient tools for analyzing complex crowd movement. AIT's consulting service SIMULATE addresses the challenges of the analysis and prediction of complex crowd movements in public infrastructures and urban transit vehicles.



HOW IT WORKS

- SIMULATE is a consulting service based on AIT's cutting-edge software solutions for crowd simulation.
- SIMULATE simultaneously evaluates both, aggregated crowd motion of complex systems, such as entire public transport networks, as well as detailed pedestrian flows in specific locations, such as metro stations or urban transit vehicles.
- SIMULATE analyses pedestrian counts, flow rates, main paths and densities on different scales.
- SIMULATE takes into account existing CAD plans, already acquired data and prior knowledge.
- The SIMULATE service is completed by reporting and intuitive 2D/3D visualisation options to present and interpret the results.

APPLICATIONS

- **Validation of architectural plans:** SIMULATE allows to investigate bottlenecks in infrastructures or open areas, to validate architectural plans and capacity planning. Thus it optimizes the efficiency, safety and comfort of existing or planned environments.
- **Evacuation analysis and safety assessment:** SIMULATE permits to quantify walking and evacuation times and to detect bottlenecks in critical situations.
- **Optimisation of vehicle layouts:** SIMULATE provides basic layout analysis, CAD integration, vehicle simulations and evaluation reports with details on key figures such as boarding and alighting times, passenger flows, densities and investigation of critical layout components and interaction risks. The underlying methodology was successfully used e.g. together with Bombardier Transportation Austria GmbH for the Vienna Flexity tram.

BENEFITS

- Optimise efficiency, safety and comfort of existing or planned infrastructures and public transport vehicles
- Quantify walking and evacuation times, crowd densities and capacities
- Visualise the results intuitively for qualitative investigations
- Adaptation to specific needs – ranging from integrating individual pedestrian behavior and requirements to large crowd dynamics
- Scientifically validated and peer reviewed simulation models and methods.
- SIMULATE services also take into account the needs of the transportation disadvantaged, e.g. people with wheelchairs, baby strollers or age-related disabilities.

SIMULATE is ideal for architects, public transport operators, manufacturers of urban transit vehicles and anyone managing large crowds.

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