Interdisciplinary Project (IDP)

Pedestrian Simulator Extension: support passive moving objects of arbitrary shapes

Crowd simulation is a valuable tool for evaluating the safety of buildings in case of an emergency in order to determine evacuation times and identifying bottlenecks. For workplaces or high-rise buildings, such simulations are regularly carried out in the planning phase. But what about hospitals? It is extremely important to do evacuation drills on the one hand (which is not always easy), but also to know exactly how the evacuation process can work best. The aim of this IDP is to extend an existing software crowd:it with passive, movable objects such as hospital beds which are then moved by agents. But this is not the only use case: In train stations or at airports there are persons with luggage, which should also be modelled.

crowd:it is a java-based software for crowd simulation. The underlying model is an agent-based, 2.5D model that is capable of simulating evacuation scenarios as well as process planning and capacity analysis. More info on the software can be found here (https://www.accu-rate.de/en/software-crowd-it-en/). It consists of a simulation kernel that should be extended by passively moving objects (Java 8). The build-in 2D-GUI (JavaFX, Java Swing) should be extended to be able to visualize these new moving object types.
Requirements

- Basic experience in Java
- Motivation to design an application to provide good user experience

Interested?
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