Partial routes in pedestrian simulation

Partial routes are a well-known term for vehicle simulation users. They are used to simplify modelling.

In pedestrian simulation partial routes have a similar use. However as there are several partial route variants, completely new modelling possibilities are available.

VISSIM 5.30 currently provides three kinds of partial routes:

- Static partial routes
- Time-related partial routes
- Partial routes for service point selection

Static partial routes

With static partial routes, the route choice probabilities or route choice shares within a time interval are constant and are not dependent on dynamic parameters. This results in two types of application:

- A group of pedestrians is split into a part of the route by a static partial routing decision.
- Pedestrians are assigned to a certain partial route depending on their position.
  Several partial routing decisions which are assigned to only one partial route are involved here: whoever walks in a flow to the right will be lead even further to the right, whoever walks left, even further to the left.

Time-related partial routes

With time-related partial route decisions, the route choice decision probabilities depend on the travelling times of the pedestrian who was last to complete one of the partial routes. In this way, in terms of the first application of static partial routes, it is possible to react to changing conditions to a certain extent.

Partial routes for service point selection

This variation enables modelling of pedestrian shares for service points:

- Parallel available service points of basically unlimited length (e.g. supermarket tills)
- Modelling of parallel working service points with short partial queues and a main queue (e.g. security checks or immigration at airports)