

Simunto provides MATSim training to interested groups. The goal of Simunto's MATSim training is to enable participants to build, run and validate a simple MATSim model and for the participants to know how to enhance the model from there depending on their research focus.

## Course Content

A MATSim training typically takes four days. The first three days cover MATSim basics, while the last day is specific to the group's needs.

The course starts with providing a conceptual understanding of MATSim, followed with a detailed look at the required data sets to build a model. While building a simple MATSim scenario, the participants learn how to create a network, a population with plans (demand), and will also learn about public transport in MATSim. A detailed look at replanning and scoring and how to configure these along with a hands-on experience on how to work with MATSim events for analyzing simulations is also part of the first three days.

The fourth day provides the possibility to look at additional topics relevant to the participants, or to look at certain topics in more depth. In past trainings, such topics covered DRT, emissions, freight, or custom agents in the simulation.

Be aware that MATSim requires writing and executing Java source code. Basic knowhow in a scripting or programming language is required to follow the course.

**MATSim Model (Scenario Data)**

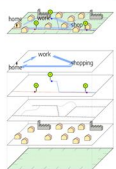
A MATSim Model consists of several input files that specify the region, infrastructure, agents, and behaviour.

Minimally needed input:

- Configuration: config.xml
- Network: network.xml
- Demand (Agents): population.xml

Additional input, depending on required functionality:

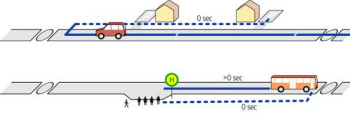
- Facilities: facilities.xml
- Public Transport: transitSchedule.xml, transitVehicles.xml
- Lanes, Signal Systems: lanes.xml, signals.xml
- Counts comparison: counts.xml
- ...



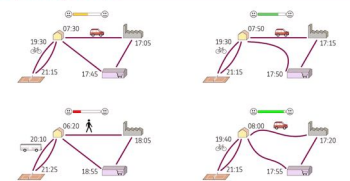
**QSim and the Network**

Links are Queues. We can only interact with Queues at the start or the end. In QSim, all interactions take place near the end of the link (at the "to-node").

- Cars can depart or arrive only at the end of a link
- Public Transport stops can only be served when the transit vehicle is at the end of a link.



**Replanning: Example**



## Typical Course Schedule

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Day 1	Day 2	Day 3	Day 4
<ul style="list-style-type: none"><li>• Introduction to MATSim</li><li>• Setup</li><li>• First Simulation</li><li>• MATSim Model</li><li>• Network</li></ul>	<ul style="list-style-type: none"><li>• MATSim Controller</li><li>• Population</li><li>• Replanning</li><li>• Scoring</li></ul>	<ul style="list-style-type: none"><li>• Public Transport</li><li>• Events, Event-Handlers</li><li>• Analysis &amp; Calibration</li></ul>	<ul style="list-style-type: none"><li>• Group-specific topics of interest</li></ul>

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The above schedule serves as a basis for a specific course and can be adapted based on the groups prior knowledge and experience. Each day consists of four 90-minutes blocks. Some blocks are more lecture-like, while other blocks are more exercise-like.

## Costs

The cost for a MATSim training is EUR 1600 per day<sup>1</sup> for the whole group. A typical 4-day training would thus be EUR 6400. Universities and other publicly funded research institutes are eligible for a 10% discount. The cost covers the training days including any time to prepare the training, as well as a Via license for each participant valid for 1 month.

A course can take place online/remote or on premise at the client. In the latter case, the client is responsible for providing a room and the necessary infrastructure (projector, power, Wi-Fi). Travel and accommodation expenses will be added to the costs and depend on the location where the training is hold.

The number of participants should not exceed 8, otherwise individual support during exercises can no longer be guaranteed, reducing the positive experience of the participants.

## Your Teacher

The training is given by Dr. Marcel Rieser, an expert on and long-standing contributor to MATSim. He started working on MATSim in 2006 at the Technical University of Berlin, where he also received a PhD for his work on extending MATSim with a fully integrated public transport simulation. He co-founded Senozon in 2010, where he developed the leading MATSim analysis software VIA. In 2018, Marcel founded Simunto to focus on supporting MATSim users world-wide. He continues to develop Via, while also developing additional helpful tools to work with MATSim like Tramola. In the past few years, Marcel has helped MATSim users around the world to get started with MATSim, to build models and to improve their scenarios. He still contributes to MATSim on a regular basis, often focusing on stability and performance improvements.



<sup>1</sup> Prices are subject to change. All prices excl. VAT.