Real and synthetically generated, highly detailed maps for testing.
How do reality-based and scenario-derived roads get into the simulation?

**Track generation**
For the reproduction of all possible motorway construction types, a parameter-based, automated generation is used. Motorway cross-section definitions serve as reference and can be adapted individually regarding road course and road infrastructure.

*Result:* Creation of all test-relevant motorway sections for the simulation.

**Track surveying**
Kinematic and highly-detailed acquisition of an extensive motorway ring as real-data base. Representation of a widespread object catalogue in analogy to automated test track generation.

*Result:* Large-scale HD map based on real geodata for application in simulation and field tests.

**Geodata-Server**
Serving of auto-generated and surveyed test tracks in OpenDRIVE via REST services. Surveyed data is provided through OGC-standardized interfaces with spatial query capabilities.
Surveying of different motorway sections as real-data base for additional safeguarding of simulations based on auto-generated data.

**Reference track surveying**
Kinematic multi-sensor surveying of the road topography and the road infrastructure.

Acquisition of a wide-ranged test area for covering of different road characteristics. For application in simulation and field tests.

**Data processing**
- Pass-point-based processing of the trajectories result in high *relative and absolute* coordinate precision.
- Annotation of the pre-processed data regarding road lanes, marks, signals, etc., according to an extensive object catalogue.

Surveyed motorway ring with road infrastructure: A6, A9, A8, A5 (clockwise). Total track length of approx. 700 km per driving direction.

Exemplary visualization of a highway intersection after the surveying and data processing into the output format OpenDRIVE.