Guide: Overtaking scenario from real driving data

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After installing SUMO and creating the *UAHDriveSetScenario* folder, then you can type the following command in Command Prompt to switch to the *UAHDriveSetScenario* directory:

```
cd C:\...\UAHDriveSetScenario
```

You can generate the road network used by SUMO by netconvert.
In order to enable overtaking through the opposite direction lane you have to set the netconvert options - -opposites.guess and - -opposites.guess.fix-lengths. Thanks to the first option the opposite edges are identified heuristically.

```
netconvert --osm-files UAHDSScenario.osm --opposites.guess t
--opposites.guess.fix-lengths -o UAHDSScenario.net.xml
```

Then the network file UAHDSScenario.net.xml is generated.

By python's randomtrips.py script you can generate the trips

```
py randomTrips.py -n UAHDSScenario.net.xml -r UAHDSScenario.rou.xml -b 0
-e 66 -p 5 --vclass passenger
```

then run SUMO (or SUMO-GUI to display the scenario)

```
sumo -c UAHDSScenario.sumocfg
```

At the end of the simulation the following files are automatically generated:

- UAHDSScenario.lanechange.xml
- UAHDSScenario.trip_info.xml
- UAHDSScenario.summary.xml

The overtaking (OT) and the overtaking attempts (AOT), summarised in Table 5 of the supplementary material, are recorded in UAHDSScenario.lanechange.xml.