

## Master's Thesis

# Comparing LTE Direct and IEEE 802.11p

The technologies LTE Direct and IEEE 802.11p can both be used to exchange messages without a base station. This Direct feature makes them interesting for applications in vehicular networking, Abstractly speaking, such applications especially regarding safety applications. 802.11p allow to inform other drivers about your vehicle and use this information to prevent otherwise unavoidable car collisions. So far there has been no simulation study investigating their performance in a comparable scenario. By using the Veins LTE simulation framework, which provides an implementation of LTE Direct as well as IEEE 802.11p, it is possible to compare them both using different metrics. It is especially possible to perform simulations in the exact same scenarios to make the results comparable.

 LTE Direct IEEE 802.11p

### ■ Goals of the thesis

In this thesis, the student should perform a study investigating the performance of LTE Direct and IEEE 802.11p.

- Get familiar with LTE Direct, 802.11p, and their respective implementations.
- Select various statistics which in the end should allow to form a conclusion which technology to use.
- Design and implement multiple scenarios which allow to investigate the chosen statistics.

### ■ Keywords

Vehicular Networking, Network Simulation, C++