

## **FM4017 Project**

**Title:** Test system for testing the Nordic Way Interchange over existing cellular network

**USN supervisor:** Hans-Petter Halvorsen

**External Partner:** Statens Vegvesen / Norwegian Public Road Administration (NPRA)

**Task Background:** The road vehicles of today are trending towards becoming more and more cooperative, connected and automated. To be able to achieve this, the vehicles need to rely on more than sensors installed in the vehicle. A key component in the vehicle of the future is communication from vehicle to vehicle (V2V) and vehicle to infrastructure (V2I). The V2I services can typically be "Geo fence", "Road Works Warning", "Traffic Ahead Warning". As a road operator and road traffic authority, Statens vegvesen needs to start planning for implementing these services, and as a part of this, Statens Vegvesen participates in the NordicWay3 project. This project is a collaboration between Finland, Sweden, Denmark and Norway, and is partly financed by the Innovation and Networks Executive Agency (INEA) through the Connecting Europe Facility (CEF) program.

As a basis for some of these services, there is a need for a backend system that performs the exchange of this information, as visualized in Figure 1. In the earlier NordicWay projects, a prototype of the interchange has been developed and used by the pilots in the projects. This interchange will now be further developed in NordicWay3 and be brought closer to production and pilots in the NordicWay project will use the interchange for testing. In order to test this interchange before the pilots are put into action, a mobile test device for testing the interchange over cellular network from a car is wanted. This test device will be used later in the NordicWay3 project for testing of which services can be relevant to deliver over the interchange.

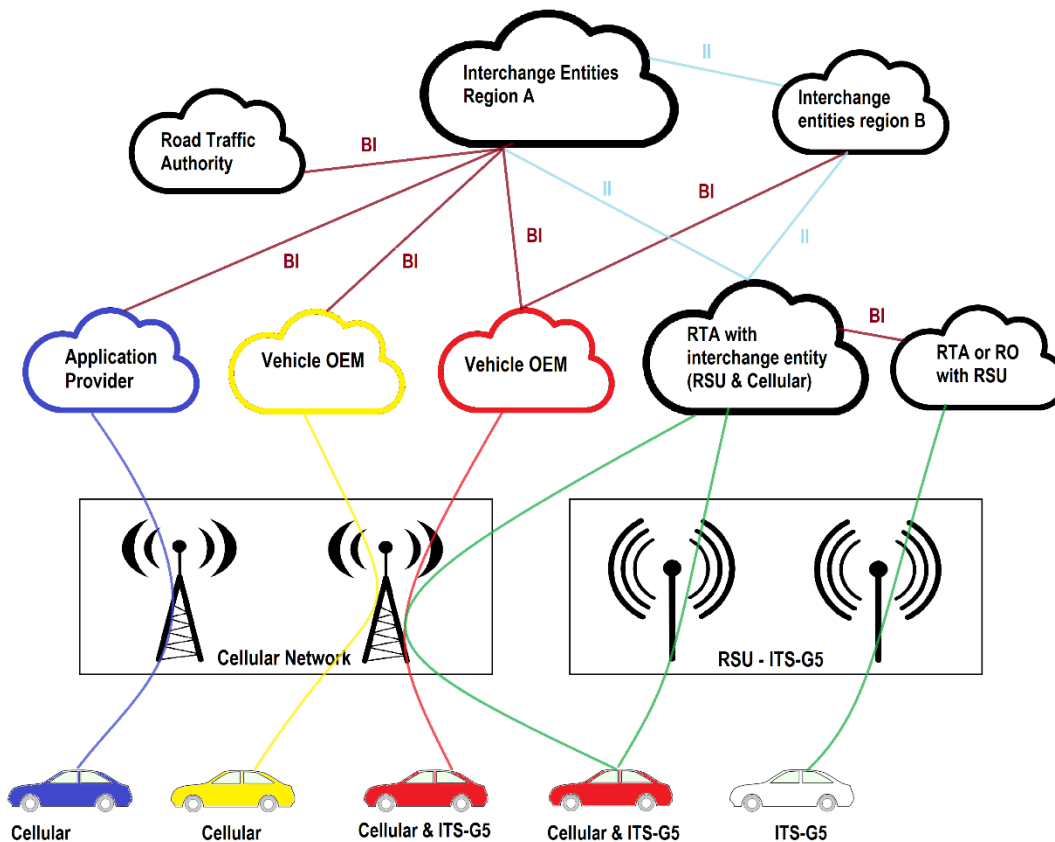


Figure 1 Communication between cars and backend

### **Suggested Project Activities:**

- Find suitable equipment for this test system
- Connect the system to the interchange
- Make a plan for testing the system
- Perform some simple tests to verify the functionality

**Student category:** This project is reserved for Alexander Svindseth (IIA student employed at Statens vegvesen)

### **Practical Arrangement:**

Statens vegvesen will give access to interchange and needed equipment for the device.

Statens vegvesens supervisor will be Senior Principal Engineer Ph.d Tomas Levin

Statens vegvesen will be responsible for providing a sensor for the project that will grade the work in collaboration with the supervisor from USN.

The resulting report should be public available.

**Signatures:**

Supervisor (date and signature):

Student (write clearly in all capitalized letters):

Student (date and signature):