

## 30 credits - Defining and Measuring Situation Awareness in Commercial Truck and Bus Driving

### **Background:**

Though several definitions of Situation Awareness (SA) exist, a more common definition refers to SA as involving Perception, Understanding, and Prediction of upcoming events. SA is a critical component of safe and efficient vehicle control. Additionally, in conjunction with the move to towards advanced ADAS system (e.g. higher levels of vehicle automation), a sufficient level of situation awareness is necessary for safe and efficient vehicle supervision.

### **Target:**

The students will conduct a Situation Awareness Requirements Analysis for commercial truck driving (one student), as well as for commercial bus driving (second student). During this process, the students will be required to critically assess the analysis methods. On the basis of the SA requirements, the students will define how to measure SA in driving simulator.

The key outcomes of these theses are:

1. Define the SA requirements for Truck Driving
2. Define the SA requirements for Bus Driving
3. Deliver a critique of the SA Requirements Analysis method and provide recommendations for how the method can be adapted to suit the unique requirements of the automotive industry
4. Define SA measurement methods for Truck Driving in a truck simulator
5. Define SA measurement methods for Bus Driving in a bus simulator

### **Assignment:**

The students will join the Simulation and Evaluation Team (embedded within the Driver Vehicle Interaction Group). The role of the S&E Team is to evaluate the products developed by the Driver Vehicle Interaction Group (and other groups within Scania). In most cases, evaluation involves the use of one of the S&E Team's simulators. The students will be required to consult frequently with commercial drivers.

### **Education:**

This 30 credit thesis is suitable for two students with a good knowledge of human factors and cognitive engineering.

The thesis is performed at Scania CV AB in Södertälje. Scania offers financial compensation and, if necessary, help with housing.

### **Number of students:**

2

### **Start Date:**

Feb/March 2017

### **Estimated time needed:**

20 weeks

### **Contact persons and supervisors:**

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