Improving a Bluetooth beacon system in the container terminal in Gothenburg to evaluate effective access management

**Background:**
This master thesis will be connected to the project “DREAMIT 2.0 – Effective access management” funded by Vinnova and Logistik- och transportstiftelsen (LTS). The project is led by Consenso Engineering ([www.consenso.se](http://www.consenso.se)) and coordinated by SSPA Sweden AB ([www.sspa.se](http://www.sspa.se)). Other project partners are APM Terminals (container terminal in the port of Gothenburg), Volvo Technology, TietoEvry, GDL Transport, Tjörns Bilservice, the Business Administration at the University of Gothenburg and Vänerexpressen. The purpose of the project is to investigate how effective access management can reduce turnaround times for trucks and trains in seaport terminals through an automated exchange of relevant information. The purpose of the master thesis is to improve the Bluetooth beacon system that is installed in the container terminal in the port of Gothenburg. The system is installed to measure total truck turnaround times (TTTTs) in more detail compared to the information system of the terminal container. However, the installed BLE beacon system suffers under low productivity and need to be improved. By improving the Bluetooth beacon system, effective access management can be evaluated by analysing TTTTs in detail.

The students will be led by researchers at TME department at Chalmers University of Technology and Consenso Engineering, and work closely with the other project partners. The students will have the possibilities to visit and observe real-life truck and train flows in the container terminal in the port of Gothenburg.

**Master thesis potential objectives:**
- Identify the problems that decrease the productivity of the Bluetooth beacon system
- Purpose possible solutions to the problems
- Together with the project partner TietoEvry, the solutions will be implemented and tested.
- Evaluate the Bluetooth beacon system with the newly implemented and tested solutions and compare it to the information system of the container terminal.
- Evaluate TTTTs (that are captured by the Bluetooth beacon system) in the empty container inspection located outside the container terminal.

**Requirements:**
- Knowledge in Logistics
- Knowledge in seaport areas is preferable
- Knowledge in Bluetooth, Beacons, GPS, and Geofencing is preferable

For more information, please contact Gunnar Stefansson at [gunnar.stefansson@chalmers.se](mailto:gunnar.stefansson@chalmers.se) or Stefan Jacobsson at [stefan.jacobsson@consenso.se](mailto:stefan.jacobsson@consenso.se).