

POTENTIAL IMPROVEMENT OF ACCESS MANAGEMENT IN INTERMODAL FREIGHT TRANSPORTATION: A PROOF-OF-CONCEPT OF A BLUETOOTH BEACON SYSTEM

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) and coordinated by SSPA Sweden AB (www.sspa.se). Other project partners are APM Terminals (container terminal in the port of Gothenburg), Volvo Technology, TietoEvry, GDL Transport, Tjörns Bilservice, 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 students will be led by researchers at TME department at Chalmers University of Technology and the department of Business Administration at the University of Gothenburg, and work closely with the other project partners. The aim of the thesis is to investigate how turnaround times for trucks can be automatically measured through a Bluetooth Low Energy (BLE) Beacon system that is installed at APM Terminals. The BLE Beacon system needs also be evaluated by other technologies that can measure turnaround times.

This thesis is conducted preferable with one student from Chalmers and one student from the department of Business Administration at the University of Gothenburg.

Master thesis potential objectives:

- Identify potential technologies in measuring turnaround times automatically
- Compare those technologies with pros and cons
- Collect data in terms of turnaround times from different technologies, such as from the already installed BLE Beacon system, GPS geofencing system and APM Terminals own measurements of turnaround times (and maybe also other of the identified technologies)
- Analyse the measurements in terms of how well the Bluetooth Beacon system can measure turnaround times in comparison with the other identified technologies
- Make proposals how the BLE beacon system can be improved
- Make proposals how the smartphone app, developed to recognise the BLE Beacon signals, can be improved to increase the measurements accuracy

Requirements:

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

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