Zurich University
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Mobile Data Acquisition

Diplomierende
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The industrial partner operate with construction vehicles. These vehicles, which make use of bypass and signalization on the public roads, are mobile all over Switzerland. For this reason, a data collection has been implemented to retrieve the location as well as other operating data of the construction vehicle via the Internet.
The aim of this bachelor thesis was to develop a system that transmits the exact position of a vehicle and other sensor data to a webserver. The position, the date as well as the time were retrieved via Global Positioning System (GPS). In addition to the position further sensor data such as the temperature and the humidity were also measured. Moreover, orientation of the vehicle was measured by an electronic compass and an accelerometer detected whether the construction vehicle was involved in an accident. The collected data were transmitted to a server via Global System for Mobile (GSM).
The whole project was divided into modular segments, such as GSM module, GPS module and sensors. The individual components were evaluated systematically in advance. Subsequently, an evaluation board could be found with the necessary components. In the end, the software for the individual project segments was created and immediately tested.
The results showed that the developed system works on the evaluation board. Due to time constraints the webserver could not be configured. Thus the transmitted data can only be viewed on the system in a debug time window and not on a server itself.
In summary, the feasibility of this system was tested and approved. Nevertheless, the system is not operational in its present form. On one hand, because no web server could be configured and on the other hand the final hardware is missing.

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