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FAKULTÄT FÜR INFORMATIK UND ELEKTROTECHNIK

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Universität Rostock
Fakultät für Informatik
und Elektrotechnik
Institut für Angewandte
Mikroelektronik und Datentechnik

Masterprojekt / Specialization Module

Design and Enhancement of a Standard to Save Inertial Sensor Data and Meta Data

Many researcher record, use and process the data from inertial sensor for a multitude of projects. Most of the time, the data is saved in Comma Separated Values files (CSV files). These files are human readable and easy to write and parse in any programming language. However, data recorded by one person cannot easily used by another person because crucial information for the data, like type of sensor, range of the values, number of axis etc. are not available.
The task of this project is to familiarize with our current approach for a sensor data format and enhance it to be usable for the whole institute. This includes the format of the data itself and Meta data like the sensor type, sampling frequency, annotations and so on, which can be written in xml, json or other.
To prove the concept of the developed sensor data format, you would have to write a program that is able to save the data in said format and another small program reading the data and displaying it in a plot with the help of the provided Meta data.

The following tasks have to be performed:

- Read and understand the current concepts for common sensor data formats
- Talk with the colleagues of the IMD to find out what information is needed in the data format
- Enhance and finalize the current concept to work for (almost) all projects
- Implement two proof of concept applications to 1. Write and 2. Read and display the sensor data saved in the developed format

Required skills:

- Experience with Inertial Sensors and their physical characteristics
- Programming skills e.g. in Python to save, read and plot the sensor data

Supervisor:

- M.Sc. Daniel Gis
- M.Sc. Nils Büscher