/ **university of groningen** / faculty of mathematics and natural sciences / computing science

MSc Internship or "onderzoekstage"– Description of project

To be filled in by the student and the supervisor(s) at the beginning of the MSc. internship or "onderzoekstage".

Student name and signature: Guntur Dharma Putra
Student number: 2829193
Date: April 13th 2016

Supervisor and signature: Prof. Dr. ir. Marco Aiello

Second supervisor and signature: Dr. Alexander Lazovik

Daily supervisor and signature: Azkario Rizky Pratama

Number of Credits (EC): 60

Description of internship/research:

The research is titled energy consumption comparison between HTTP and Bluetooth communication for data transmission.

Energy efficiency is one of the key drivers of smart building design. There are many ways to conserve energy. One of them is about how to transfer data inside the smart building. In this research, we will focus on transferring raw data to the server, either by using Wi-Fi or Bluetooth. Bluetooth is chosen because it may potentially use less energy compared to Wi-Fi. To prove that, the existing deployment scenario from Azkario will be used, specifically, the mobile phone to server communication. Some variables will be taken into consideration, e.g., time interval, data format, and communication distance. More new variables are possible to be added later on.

The result of this research will be useful for the future design of the context awareness design in the smart buildings.

Planning of internship/research:

The research will be carried out in 10 consecutive weeks starting from the third week of April. The research steps will be divided into three main steps, which are literature review, development and revision, and report writing. In the middle of this research, a midterm evaluation will be performed to check the progress of the research. In the end, a report will be written to document all the research findings of this work.

This table below depicts the planning of this research internship.

	April				May				June			
Planning	1	2	3	4	1	2	3	4	1	2	3	4
Literature review		■	■									
Prototype design and development			■	■	■	■	■					
Midterm evaluation					■							
Collecting data							■	■	■			
Revision									■	■	■	
Report writing											■	■