



Sony Ericsson

## Master Thesis: Smart Location Tags

### Introduction

The goal of this master thesis work is to build an initial prototype of a completely new product concept within Sony Ericsson Mobile Communications. The concept enables location services (using Smart Tags) for personal items like your bicycle, car, bag and keys.

Location tracking of this new class of items enables a wide range of new use cases which may become very important to end users.

### Objectives

#### Build a prototype as “proof of concept”

The work includes all software needed to implement the complete concept. No hardware development will be necessary. The scope of the prototype may be adapted for one or two students and can be adjusted depending on special interests.

The prototype comprises the following items:

- Development of an end user Android application (in Java) to support one or several use cases. In addition to the GUI application a background service must be implemented to perform continuous background tasks.
- Definition of a low level communication protocol and firmware development (in C) using ANT+ wireless technology.
- Development of supporting cloud service. The cloud service may be excluded to fit the project.

### Measurements

In addition to the prototype development some measurements and analysis are required to supplement as “proof of concept”.

- Analyze the usability of implemented use-cases and suggest improvements.
- Measure important performance properties like; maximum wireless distance, current consumption and reliability. Propose improvements for final implementation.

### Location

The work will be conducted at:

Sony Ericsson Mobile Communications, Mobilvägen 4 (Glasgow building)

### Compensation

A regular fee for master thesis work within Sony Ericsson will be paid.

### Time

Start: autumn 2011

Duration: 20 weeks

### Contact

LTH: Jonas Skeppstedt, [jonas.skeppstedt@cs.lth.se](mailto:jonas.skeppstedt@cs.lth.se), 0767-888124

Sony Ericsson: Peter Ljung, [peter.ljung@sonyericsson.com](mailto:peter.ljung@sonyericsson.com), 0705-574257