System Requirements

Iteration III

Ted Sundström

Florian Schiedt

Team 5

1 Introduction

1.1 Purpose

The purpose of this document is to enunciate the functional and non-functional requirements related to the system as a whole.

1.2 Project Description

Within the company *Softwerk AB* a constant supply of coffee is needed to ensure maximal work efficiency. To be able to keep a steady flow of this liquid energy, a coffee machine control system will be created to manage the brewing of coffee remotely as well as manage interaction between the coffee machine and the user.

1.3 Scope

The scope of this document is kept within the frames of the requirements that concerns the system in one way or another. Real-world requirements is kept at a minimum. All information and data is gathered from meetings with the customer, as well as a project description provided by the same.

2 System-Wide Functional Requirements

- Reporting: The status of the coffee machine must be given in a human readable format.
- Interacting: The system must provide means to interact with the coffee machine in order to start and stop the machine.
- Automatic Start: The system may start automatically if the user is within a specified distance from the machine.
- User Management: Users must have an account, and those accounts must be managed by an administrator.
- Statistics: Users must be able to, in a human readable format, view statistics of how often, by whom, and when the coffee machine is in use.
- Manual Override: The system should be able to be manually overridden to let the user circumvent the automatic system.

3 System Qualities

3.1 Usability

- Any employee of Softwerk AB must be able to operate the system, regardless of profession.
- The statistics should be displayed in such a way that the customer finds it is easy to understand.

3.2 Reliability

- The system must accessible at all times.
- After the startup of the hardware, the system must be ready to use without any user intervention.

3.3 Performance

- The system must be able to handle at least as many users at once as there are employees at Softwerk.
- The startup time of the system should be less than two minutes.
- Any request from the user should be completed within 10 seconds.

3.4 Supportability

- The system must be able to run on the Operating Systems that the company requests.
- The system must be able to run on the Web Browsers that the company requests.

4 System Interfaces

4.1 User Interfaces

- The system should provide support for three different interfaces. All three interfaces should provide the same functionality.
  - One web interface to use in browsers.
  - One interface to use on Android 4.x smartphones.
  - One interface to use on Android 5.x smartphones.
- The web interface should have a responsive design regarding CSS Media Queries.
- The following elements should be graphically represented in the user interface:
  - The statistics.
  - The status of the coffee machine.
  - Optionally also a video stream of the coffee machine.

4.2 Interfaces to External Systems or Devices

4.2.1 Hardware Interfaces

- The system must have a semiconductor relay to switch the state of any hardware connected to it.
- The system should have a physical state-switch override button.

4.2.2 Communications Interfaces

- The system needs to be able to communicate with other systems either through a Local Area Network or trough a World Area Network.

5 System Constraints

- The system will be run on a Raspberry Pi Model B which has the following constraints:
  - It is a ARM platform, meaning that the compiled software might not work on a x86 platform.
  - It has 512mb of memory, which might have an impact on response times and overall stability of the system.

6 System Documentation

- The system should be delivered with a user manual which must fulfill the following requirements:
  - All parts of the document must be written in such a way that the customer will be able to follow them.
  - It must have a guide on how to install the system.
  - It must have a instruction manual on how to operate the system.