SRS

Software **R**equirements **S**pecification

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1. Introduction

The introduction will be implying information about the purpose, project scope, intended usage, definition, acronyms, and abbreviations.

1.1 Purpose

The purpose of this Software Requirements Specification is to describe the general outline this project, which is for automation service based on 'Process Analysis between electromagnetic wave measuring device and computer'. This service is designed and developed by students of the Department of Mobile Systems Engineering, Dankook University as an intern in UL Korea, Ltd. This document will be introducing the overall description, system features, nonfunctional requirements.

1.2 Project Scope

The scope of development of this project is as follows.

(Function 1) Metadata creation and management through SAR measurement support device and computer interworking

(Function 2) Enter metadata for a specific form

(Function 3) Metadata level management by user

(Function 4) User-friendly interface

Our project is aimed at not only just giving automation service but also coordinating device-computer link. By using our application, metadata from the device can be controlled easily by computer according to the user's intention to use

1.3 Definition & Acronyms and Abbreviations

SRS	Software Requirement Specification
Metadata	Metadata is data about data.

	- In other words, it's information that's used to describe the data that's contained in something like a web page, document, or file. - - Another way to think of metadata is as a short explanation or summary of what the data is.
SAR	Specific Absorption Rate - SAR refers to the absorption rate of electromagnetic energy absorbed by the human body when the human body is exposed to RF electromagnetic fields. - SAR limit is set to protect users from potential hazards from RF exposure.
Automation	It is the technology by which a process or procedure is performed with minimal human assistance.

2. Overall Description

This section provides information about the overall description of our project. It describes product perspectives, functions of our product, operation environment, design and implementation constraints, assumptions and dependencies.

2.1 Product Functions (Functions our Program)

This project performs the following functions step by step.

(1) Extract metadata from the SAR measurement device.

- The metadata is sorted according to Bandwidth, Mode, Channel, etc.

(2) Select the .csv file path you want to enter and the .xlsl file path you want to create data on.

- Also, select only one type of power value to input (Maximum, Hotspot, Reduced)
- Choose which frequency band

(3) Press the "ok" button to save the data in the .csv file to a specific format, which is an .xlsl file.

(4) If you want to quit the program, press the ‘quit’ button.

2.2 Operating Environment

Application

- Atom
- Language: Python

2.3 Design and Implementation Constraints

Restricted computer configuration

Computers in the Chamber where the device is installed have a very limited installation environment. To avoid problems than cannot be installed, we will make a program in one file(.exe), even though the execution speed of this would be take long time about 5 seconds.

Small amount of data due to security constraints

Each company must maintain security for its products. If we don't draw a security agreement, we can't access the raw data. Therefore, we will only get some of the total measurement data and debug it. If not, users who can access the data will check if it works well, and feedback to us.

2.4 Assumptions and Dependencies

Assumptions

We are assuming that program execution works correctly when it works with SAR measurement support devices.

Dependencies

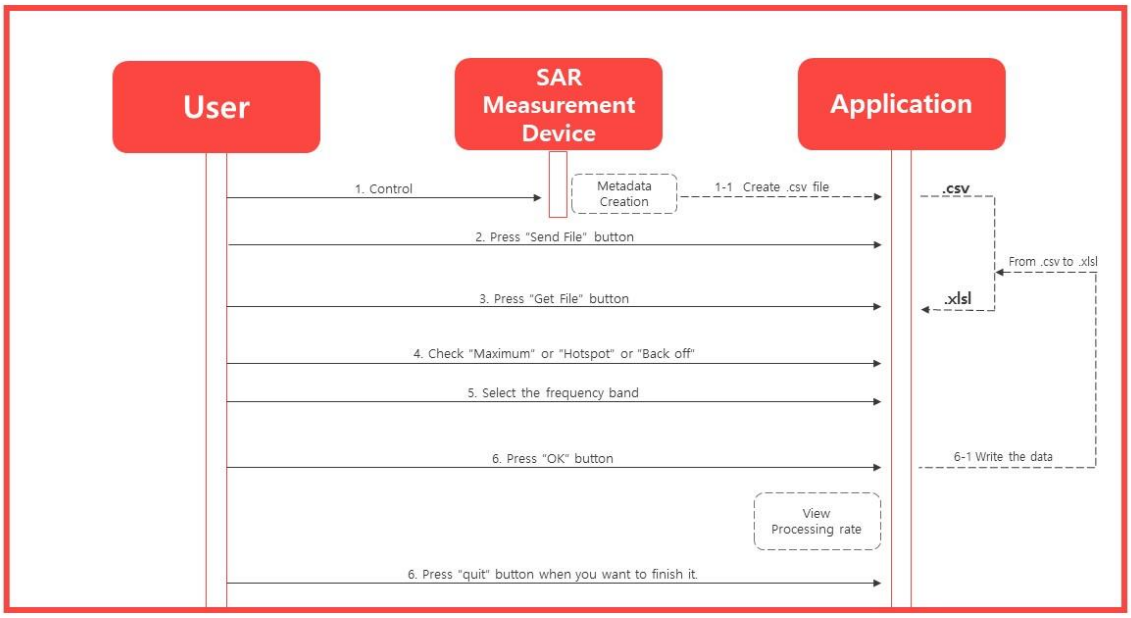
User & Application: when users use an application, they should select the type of power and frequency band to match the metadata they want to enter. Otherwise, the input data will not be recorded in the correct position or any values will be entered.

2.5 User Characteristics

Users (all employees of the UL Korea SAR team) should know the standard and method of measuring maximum, hotspot and back-off power values. They will be able to sort the metadata and write them on the specific form by using the program.

3. System Features

3.1 User Interface Diagram



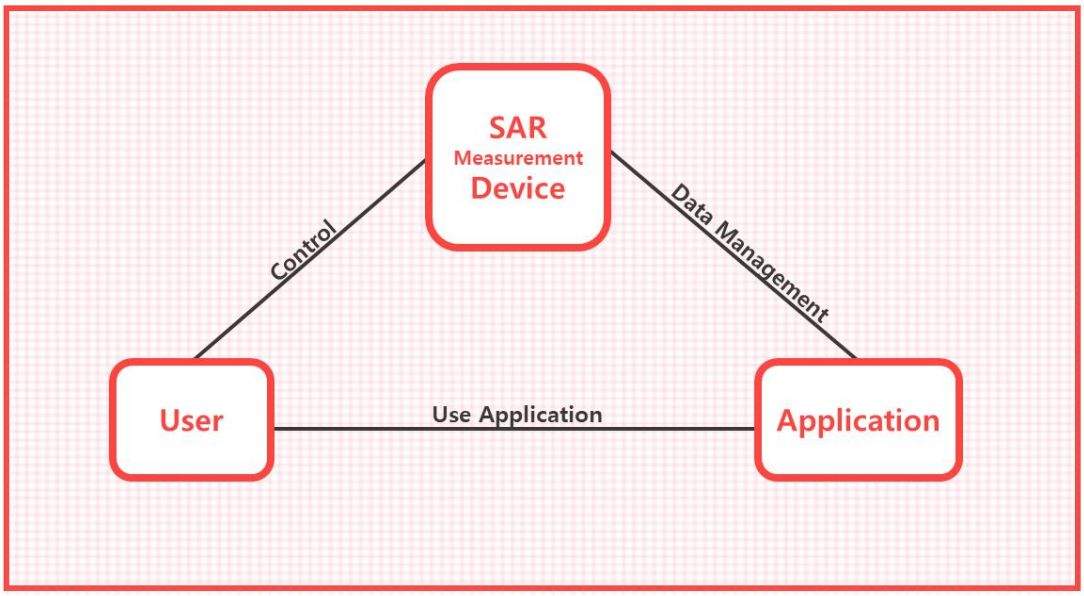
3.2 Hardware Interfaces

It depends on the use environment. (i.e. DASY6)

3.3 Software Interfaces

- Atom is our main software interface. This Editor provides various packages. Users develop and upload add-ons (packages), and those who need them can simply download and install them.

3.4 Use Case Diagram



4. Functional Requirements

4.1 Normal User

When some staff wants to use our application, the user would need to know the relevant power specifications they want to measure.

4.2 Common Functions

Data Management

FR01: When a SAR measurement support device which is connected to computer extracts metadata, it is written on .csv file.

Use Application

FR02: The users must select 4 conditions. (paths about input and output files, power types, frequency band)

FR03: After FR02, the users have to press "OK" button to save metadata from .csv file in a specific .xlsl form.

FR04: The users should not open the output file while sending data to the output path.

FR05: The users can see if the program is finished by the processing figures shown.

5. Non-functional Requirements

5.1 Performance Requirements

NFR01: The application should have an interface with buttons in order to move on.

NFR02: The application should perform all the functions that is required.

NFR03: Before using the application, the users have to measure power values of each type(maximum, hotspot, back-off).

5.2 Security Requirements

NFR04: The method of connecting the measuring device and the computer must be kept confidential within the company.

6. Conclusions

As this SRS report is about writing the outline of the project, we have written an introduction, overall description, system features, functional requirements, non-functional requirements. The goal of our project can be divided into two. One is to link between the device and computer and the other is to significantly reduce working hours compared to the present. As we have never attempted to deal with raw data and devices used in actual work, we are expecting difficulties while finishing this project. Nonetheless, we still plan to provide a successful automation service.