Software Requirements Specification Document for S.V.I.L.

(Smart Vehicle Indication & Locking/Unlocking)

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Revision History

Name	Date	Reason For Changes	Version
Kush Rana	March 6, 2019	Software Requirements Specification from S.V.I.L 1.4.2	1

1. Introduction

1.1 Purpose

As the requirement in current vehicle industries of smart systems, this is small approach towards making things easier for user to communicate to vehicle.

Based on current scenario of electrical vehicles, industries are turning towards the smartness or consider it as awareness.

Purpose is just to help industries and user to grow with speed.

1.2 Scope

The application allows users to:

- Stay connected to his vehicle
- Updated him of vehicle conditions
- Lock/unlock vehicle at anytime from anywhere
- And it's all on his mobile inside app and also message box

1.3 Product perspective

1.3.1 System interfaces

The application runs in the Android Mobile (Smart Phone)

1.3.2 User interfaces

The application GUI provides menus, toolbars, buttons, panes, containers, grids allowing for easy control.

1.3.3 Hardware interfaces

The application need android mobile with RAM 512MB and more.

Also storage 4GB and more.

1.3.4 Software interfaces

The Application uses Android interface 5.X.X and higher.

1.3.4 Communications interfaces

It uses internet access from Android.

1.3.5 Memory constraints

The Application uses Small amount of memory to fetch Information from messages.

1.3.6 Operations

The Application performs Operation like message reading, Send Messages, uses internet to fetch data from database and from hardware component.

1.4 Product functions

Product functions are summarized in Section *2. User Stories of NEEDS* document.

1.5 Limitations

Limitation is Network but growing country like india is reaching complete 4G and furthermore it already started 5G implementation means Network problem will be overcome.

1.6 Assumptions and dependencies

First and for most dependency is of this product is network and not to forgot about system requirements.

1.7 Definitions

Custom Attribute: Additional requirement property capturing additional requirements properties such as requirements source, status, priority, verification method.
Document: A structured requirements specification capturing textual requirements for a given product or service.

Link: A directed association between related requirements allowing to analyze requirements coverage, gaps and impact of changes.

Link Type: Property of traceability links allowing to analyze links with different semantic independently, e.g., satisfaction and verification links.

1.8 Acronyms and abbreviations

CSV: Comma Separated Values

DNF: Disjunctive Normal Form

ID: Identifier

GUI: Graphical User Interface

HTML: Hypertext Markup Language

SRS: Software Requirements Specification

2. Requirements

2.1 External interfaces

Google Firebase database is currently but can improve in future.

2.2 Functions

2.2.1 File Operations

2.2.1.1 Create Document

The application created report of current indication based on readings of hardware Components.

2.2.1.2 Open File

File can be open in application and if needed then also can open in normal text reader.

2.2.1.3 Save Local File

The application automatically save data in file and also have options in menu to save data manually.

2.2.1.4 Document Template

The application shall allow users to create a document template file from the opened document.

Document templates shall store structure of document sections and definition and values of requirement attributes.

The application shall allow users to create a new document from a chosen document template file preserving the structure of document sections and the definition and values of requirement attributes.

2.2.1.5 Import

The application shall allow users to import a Test document preserving structure of document sections and paragraphs.

The application shall allow users to import a MS Excel table of requirements preserving section headings, levels, unformatted text description of requirements and values of custom attributes.

2.2.1.6 Export

The application shall allow users to export the displayed document view to TEXT.

The application shall allow users to export requirements to CSV.

2.2.2 Document View

2.2.2.1 Table of Contents

The application shall display the table of contents containing section headings organized according to their document tree hierarchy.

When user clicks on a document section in the table of contents then the application shall focus the section in the requirements table.

It also shows Reading in graphical structure based on document data.

2.2.2.2 Requirements Table

The application shall display the document in a requirements table containing the following columns: *Reading Date*, *Reading itself*, *Links* and a column for each custom requirement attribute.

The application shall allow users to change width of each requirements table column.

2.2.2.3 Detailed Information

The application shall allow users to Login and Logout.

While the custom is Signed in He/she can access to their vehicle. Then they can see their details about the fuel in vehicle and can lock/unlock their vehicle

2.2.2.4 Attachments

As terms of attachments the product has two parts, software and hardware. Software part has contained Android Application and Program which is in hardware to communicates to Application.

Hardware part has attachment that is called PI Camera.

2.2.2.5 Auto Save

The application shall automatically persist all document changes and restore them when it is restarted.

When user closes the documents, the application shall clear all persisted document data.

2.2.3 History of Changes

When a user changes a requirement the application shall record the current date and time and the author of the change.

The application shall display all changes of the selected requirement ordered by date and time.

2.2.4 Reporting

The application shall allow users to print the displayed requirements table.

The application shall allow users to create a PDF containing the displayed requirements table.

2.3 Usability requirements

2.4 Performance requirements

2.4.1 Startup Time

The application should display the opened document within 10s after it is started.

2.4.2 Smooth Scrolling

While a user scrolls the requirements table, the application should not display scrolling jerks longer than 200ms.

2.4.3 Document Size

The application shall allow users to open documents up to 10000 objects and 100 file attachments with total size up to 100MB.

2.5 Logical database requirements

The application shall encrypt the persistent application data.

2.6 Software system attributes

The application shall run in any Android Phone/Smart Phone.

3. Verification

Verification tests are specified in *[DEMO-TESTS]* document.

4. Supporting information

It supports almost every Android Version apart from less than Jellybean (4.x.x).

5. References

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