**Software Requirements Specification**

**VeniApps System**

22 April 2015

**Version** 5.0

**Location of electronic version of file**

**Team Group X**

[**https://github.com/rmurray1/veniapp.git**](https://github.com/rmurray1/veniapp.git)

***The Veni VA Checkin System***

Advanced Software Engineering Project

SE 6387.M01



*Anant Kambli*

*Brian MacKay*

*Raleigh Murráy*

*Shahed Shuman*

*Kathryn Whitmire*

# Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Changed By | Description |
| 04-Feb-2015 | 1.0 | RM | Initial Release |
| 05-Feb-2015 | 2.0 | SS | updates |
| 17-Feb-2015 | 3.0 | SS | updates |
| 21-Feb-2015 | 4.0 | RM | updates |
| 14-Apr-2015 | 5.0 | KW | Updates |
|  |  |  |  |

**Table of Contents**

*Revision History 2*

*1. Introduction 5*

*1.1 Purpose 5*

*1.2 Scope 5*

*1.3 Definitions, Acronyms, and Abbreviations. 5*

*1.4 Overview 5*

*2. The Overall Description 5*

*2.1 Product Perspective 6*

*2.1.2 Software Interfaces 6*

*2.2 User Characteristics 6*

*2.3 User Documentation 7*

*3. Hardware Specification 7*

*3.1. Hardware 7*

*4. External Interface Requirements 7*

*4. 1. User Interfaces 7*

*4. 2. Software Interfaces 9*

*5. System Features 10*

*5.1. FIRST RUN EXPERIENCE 10*

*5.1.1. Description 10*

*5.1.2. Action/result 10*

*5.1.3. Functional Requirements 10*

*5.1.4. NFR 10*

*5.2. DOWNLOAD APPOINTMENTS 11*

*5.2.1. Description 11*

*5.2.2. Action/result 11*

*5.2.3. Functional Requirements 11*

*5.2.4. NFR 11*

*5.3. GET DIRECTION TO FACILITY 11*

*5.3.1. Description 11*

*5.3.2. Action/result 11*

*5.3.3. Functional Requirements 12*

*5.3.4. NFR 12*

*5.4. CHECK-IN AT VA FACILITY 12*

*5.4.1. Description 12*

*5.4.2. Action/result 12*

*5.4.3. Functional Requirements 12*

*5.4.4. NFR 12*

*5.5. VERIFY APPOINTMENT STATUS 13*

*5.5.1. Description 13*

*5.5.2. Action/result 13*

*5.5.3. Functional Requirements 13*

*5.5.4. NFR 13*

*6. Other Nonfunctional Requirements Information 14*

*6.1 Performance Requirement 14*

*6.2 Safety Requirement 14*

*6.3 Security Requirement 14*

*6.4 Software Quality Attributes 14*

*Appendix A 15*

# 1. Introduction

# 1.1 Purpose

*The purpose of this Software Requirements Specification (SRS) document is to provide a detailed description of the functionalities of the Veni Check-in system. This document will cover each of the system’s intended features, and offer preliminary examples of the software application’s User Interface (UI). Additionally, this document will also cover hardware, software, and various other technical dependencies.*

# 1.2 Scope

*The Veni System is composed of the following:*

1. *A client-side application which will run on Android*
2. *A server-side application which implements the Veni System business logic and broker communication between the mobile client and Veteran Affairs (VA) Veterans Health Information Systems and Technology (VistA) Electronic Health Record System (EHR)*
3. *The Veni System will allow a Veteran to manage his/her VA appointments via a mobile application and check-in electronically*
4. *The Veni System will leverage open source technologies to reduce the cost of ownership to the VA and lower the complexity to implementation*

# 1.3 Definitions, Acronyms, and Abbreviations.

*Terminology associated with this document is defined in Appendix A. A glossary contains a list of terms and respective definition.*

# 1.4 Overview

*This document addresses the requirements the Veni System will meet upon completion, and is intended for all individuals involved in the design and developments of the Veni system. For a more descriptive look for a developer, please review section 5.*

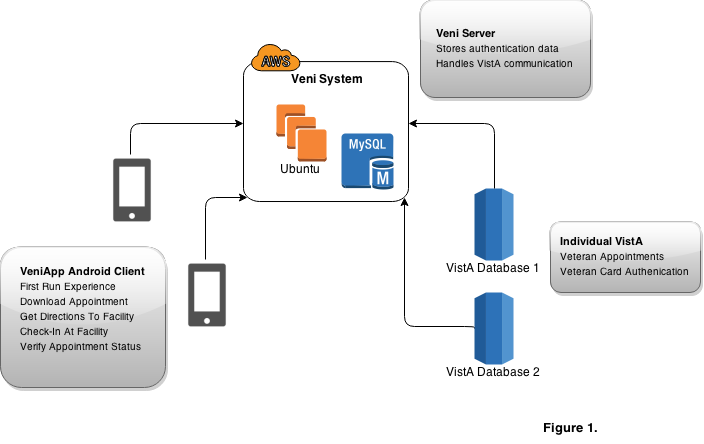
# 2. The Overall Description

*The Veni System consists of a smartphone client and server-side components. Both parts are equally important in the development of the overall system. The server-side components are responsible for accessing the respective VistA System and provide access to data from the veteran’s smartphone. Because of the significant importance of both systems both aspects are detailed in this document.*

# 2.1 Product Perspective

*The product shall support the following:*

* *Sending and receiving VA appointment information to and from a central source*
* *Geo location services for identifying Veterans Affairs Medical Centers (VAMC) locations*

**

# 2.1.2 Software Interfaces

1. *VistA RPCBroker which is a VA specific protocol for accessing the VistA database. Version 1.1 Source:* [*http://www.va.gov/vdl/documents/Infrastructure/Remote\_Proc\_Call\_Broker\_(RPC)/xwb\_1\_1\_dg.pdf*](http://www.va.gov/vdl/documents/Infrastructure/Remote_Proc_Call_Broker_(RPC)/xwb_1_1_dg.pdf)

# 2.2 User Characteristics

*The Veteran will be the main user of the Veni System smartphone application.*

*VA clinical staff in charge of the VA check-in process will be familiar with the smartphone application.*

*VA Office of Information and Technology (OI&T) will be the main administrator of the Veni System server application.*

# 2.3 User Documentation

*The final deliverable will include a software document folder(SDF). The SDF will contain tutorials and user manuals for the Veni System smartphone client and Veni System server application. The deliverable shall be sent to the customer in the form of a zip file. An electronic download will be available to the customer.*

# 3. Hardware Specification

# 3.1. Hardware

1. *Smartphone running the Android Operating System*
2. *Amazon Web Services Cloud Server System to host Veni System Server, System Database and Communication layer.*

# 4. External Interface Requirements

# 4. 1. User Interfaces

*Smartphone Interface*

*4.1.1 Welcome Screen*

|  |  |
| --- | --- |
| * *Initial screen presented to the user* |  |

*4.1.2 Registration Screen*

|  |  |
| --- | --- |
| * *For first-time run experience screen* |  |

*4.1.3 Login Screen*

|  |  |
| --- | --- |
| * *Login screen presented to the user* |  |

# 4. 2. Software Interfaces

*The Veni system will interact with the smartphone calendar service to add appoinements to the user’s calendar.*

*The Veni system will interact with the smartphone location service to provide directions to the clinic location.*

# 5. System Features

# 5.1. FIRST RUN EXPERIENCE

# 5.1.1. Description

*When the Veni System smartphone application is run for the first time, the user is presented with an initial registration/welcome screen. The screen will prompt the user for his/her email address, Veteran ID number, and which VA medical center he/she attends.*

# 5.1.2. Action/result

1. *The veteran starts the Veni App on his/her phone the first time*
2. *The Veni App asks for personal information*
3. *The Veni App establishes the veteran’s credentials*
4. *The Veni App asks for information about which VA health care facilities the veteran frequents*
5. *The veteran is registered for the system*

# 5.1.3. Functional Requirements

*VSU-01: The user must enter a valid email.*

*The user must provide a valid email address. The application will verify that*

*the user’s input is consistent with the format (*[*xxxxx@xxxx.xxxx*](mailto:xxxxx@xxxx.xxxx)*).*

*VSU-02: The Application shall accept VA Benefits card identification to identify a veteran in the VA system*

*VSSC-03: The application shall have capability to exchange appointment registration information with the VA system.*

# 5.1.4. NFR

NFR-01: *User Interface must be readable font size and color selection*

# 5.1.5. Pre-conditions

* *User must be a registered at a participating VA hospital.*
* *User information from the VA Vet identification card can be used to*

*Identify the veteran as a recipient of VA benefits at the participating VA hospital.*

# 5.2. DOWNLOAD APPOINTMENTS

# 5.2.1. Description

*The veteran will be able to download his/her appointments list to the Veni appointment list.*

# 5.2.2. Action/result

1. *The Veni App asks which VA health care facilities the veteran frequents*
2. *The veteran is registered for the system*
3. *The veteran’s appointment list is downloaded to the smartphone*

# 5.2.3. Functional Requirements

*VSSC-04: The application must have capability to authenticate veteran’s identification with the VA system.*

*VSSC-05: The application shall display the received veteran’s appointment list.*

*VSSC-06: The application shall save the veteran’s appointment list in Smartphone calendar.*

# 5.2.4. NFR

NFR-02 *Veni System must follow HIPPA rules to protect user data privacy.*

# 5.3. GET DIRECTION TO FACILITY

# 5.3.1. Description

*The veteran will be able to get direction to his/her appointment facility*

# 5.3.2. Action/result

1. *The Veni App provides the appointment and the direction map link to the VA health care facility the veteran*
2. *The veteran is provided with a map and direction guide to the facility by clicking the ink*

# 5.3.3. Functional Requirements

*VSSC-07: The application shall display the VA facility address where the veteran’s appointment is scheduled*

*VSSC-08: The application shall display the map and direction to the VA facility using Google map API*

# 5.3.4. Pre-condition

* *Veni System app shall have access to smartphone location information.*

# 5.4. CHECK-IN AT VA FACILITY

# 5.4.1. Description

*The veteran will be able to check in to his/her appointment at the VA facility*

# 5.4.2. Action/result

1. *The VeniApp checks the appointment and the VA health care facility proximity.*
2. *The veteran is provided with an option to check in for his/her appointment when the phone is near the facility and the time to appointment check-in is available.*

# 5.4.3. Functional Requirements

*VSSC-09: The application shall display the VA facility address and veteran’s appointment time and provide option to check-in for the scheduled appointment*

*VSSC-10: The application shall display the response of the check-in information from the VA system to the veteran.*

*VSSC-11: The application shall provide information to the veteran to check-in manually at the VA facility if automated check-in process failed for any reason.*

# 5.4.4. Pre-conditions

* *Veni System app shall have access to smartphone location information.*

# 5.5. VERIFY APPOINTMENT STATUS

# 5.5.1. Description

*The veteran will be able to check if his/her appointment at the VA facility is still on schedule or it has been rescheduled.*

# 5.5.2. Action/result

1. *The Veni App checks the appointment at the VA health care facility and provides a feedback regarding the status of the appointment.*
2. *The veteran is provided with an option to download his/her new rescheduled appointment.*
3. *The Veni App provides a confirmation if all the appointments are still on schedule.*

# 5.5.3. Functional Requirements

*VSSC-12: The application shall display the VA facility address and veteran’s appointment time and provide option to check the status for the scheduled appointment*

*VSSC-13: The application shall display the response of the status check information from the VA system to the veteran.*

*VSSC-14: The application shall provide information to the veteran to update his/her calendar with new update of the appointment*

*VSSC-15: The application shall provide a confirmation to the veteran if all the appointments are still on schedule.*

# 5.5.4. NFR

NFR-02 *Veni System must follow HIPPA rules to protect user data privacy.*

# 6. Other Nonfunctional Requirements Information

# 6.1 Performance Requirement

The architecture chosen for the UI has been optimized for android. Changing UI states in the VeniApp requires minimal computation, and transactions should take less than a second between request and response.

# 6.2 Safety Requirement

The Veni System will not affect other applications running on the Android phone.

# 6.3 Security Requirement

The Veni System will ensure PHI data is protected from unauthorized or malicious use in accordance with VA privacy standards. The Veni System will ensure PHI data is correctly transmitted and displayed with proper disclaimers. The VA infrastructure provides all the security checks needed to ensure the veteran is adequately identified.

# 6.4 Software Quality Attributes

Usability

* The VeniApp UI will be designed with usability as the main priority.
* The UI screen states will be designed for ease of use from a veteran’s perspective.

Maintainability

* To ensure maintainability the Veni System development team will be widely conversant in the application environment and programming language, as well as the current software development paradigm emerging for the Open Source Electronic Health Record Agent (OSEHRA).

Extensibility

* The design of the system will allow for future additional features at major version upgrades.

# Appendix A

|  |  |
| --- | --- |
| *UI* | *User Interface* |
| *VA* | ***Veterans Affairs*** |
| *VAMC* | ***Veterans Affairs Medical Centers*** |
| *VistA* | ***Veterans Health Information Systems and Technology*** |
| *EHR* | ***Electronic Health Record System*** |
| *OI&T* | ***Office of Information & Technology*** |
| *API* | ***Application Programming Interface*** |
| *OSEHRA* | ***Open Source Electronic Health Record Alliance*** |