Project Documentation

Android Based Situational Awareness: Moving Map

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Contents

Changes

Date	Description
September 13, 2012	Document started
September 13, 2012	Wrote Requirements and Questions to ask Raytheon
September 20, 2012	Created outline
September 20, 2012	Wrote Users/Stakeholders section
September 23, 2012	Wrote Key Needs, Alternatives, Risks, Documentation Metrics, and Code Metrics
September 24, 2012	Updated Requirements as per Gate 5 visit with Raytheon
October 8, 2012	Revised Requirements, added Assumptions and Opportunities, and updated Risks
October 15, 2012	Added Introduction and made Requirements into shall statements

1 Introduction

This document details all documentation associated with this project. It includes the problem statement, requirements, project plan, and metrics.

2 Problem Statement

2.1 User/Stakeholder Descriptions

2.1.1 Users

Soldier, Police Officers, and other Ground Personnel
The users of our program are seeking to maintain their situational awareness in locations which may not have connectivity to the Internet. Many of them use voice guided situational awareness technology, but in light of advances in mobile devices, they could receive this information in a visual manner.

2.1.2 Stakeholders

Raytheon
Raytheon's customers are mainly military organizations, many of which are using Raytheon's current situational awareness technologies. Raytheon is looking to update these technologies to keep their position as a leading provider of military systems.

JD Hill
JD is the client who proposed this solution. He is a major proponent of using mobile devices in a military application.

Doug Duesseau
Doug is the acting Technical Lead for this project.

Development Team
The development team on this project are graduating seniors who wish to learn more about the software development process and interaction with a client. They are very interested in learning more about developing on the Android platform.

2.2 Key Needs

ID	Need
N0	View map of surrounding area
N1	View points of interest on the map
N2	View current location on the map
N3	Map must not require internet access
N4	Map must be Android based
N5	Application must work on any size android device

2.3 Current Solution

2.4 Alternatives

All considered solutions to the proposed system require Internet access.

2.5 Proposed Solution

3 Requirements

3.1 Functional

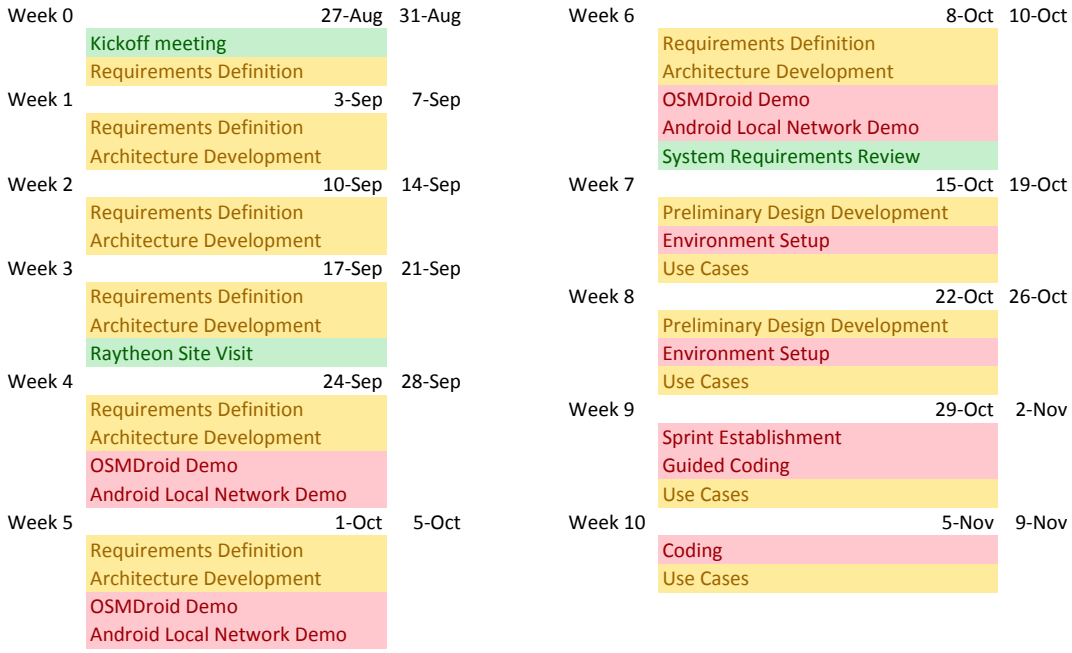
ID	Requirement	Priority
FR0	The system shall let the user pan the map by a dragging gesture	Objective
FR1	The system shall let the user zoom using an on-screen button	Threshold
FR2	The system shall let the user zoom using pinch gestures	Objective
FR3	The system shall let the user zoom using double tap	Objective
FR4	The system shall display map tiles that are either stored on the device or provided by a local server	Threshold
FR5	The system shall display other relevant information stored in a layer	Objective
FR6	The system shall georeference the location of the device	Threshold
FR7	The system shall let the user center on current location by pressing a button	Objective
FR8	The system shall let the user choose the map type by selecting from a list	Objective
FR9	The system shall let the user choose the layers shown by selecting from a list	Objective
FR10	The system shall let the user change default settings via a settings menu found in the menu bar	Threshold
FR11	The system shall display a compass	Threshold
FR12	The system shall let the user toggle heading/north up by clicking the compass	Threshold
FR13	The system shall let the user access a help menu via the menu bar	Objective
FR14	The system shall let the user add custom points of interest	Objective

3.2 Non-functional

ID	Requirement
NR0	The system shall run on Android platforms running at least version 3.0 (Honeycomb)
NR1	The system shall receive GPS data from a local server or the device
NR2	The system shall display properly on either mobile phones or tablets
NR3	The system shall use modular code

4 Project Plan

4.1 Schedule



4.2 Assumptions

ID	Assumption
A0	There exists an open source mapping engine for Android devices
A1	The mapping engine does not require an internet connection to run
A2	Android devices can connect to a local server

4.3 Risks

ID	Risk
R0	Performance of the system
R1	Organizing data in the correct format in a timely manner

4.4 Opportunities

ID	Opportunity
O0	Finding a feature complete mapping engine

5 Metrics

5.1 Project

5.1.1 Documentation

The progress of the documentation will be tracked by breaking it down into three parts: the percent written and ready for review, the percent that has been reviewed, and the percent that is ready for delivery. The initial portion will encompass the percentage of the requirements, features, and other material that have been documented according to our currently known goals. A portion of the documentation will be considered in the reviewed stage once Dr. Wollowski and/or JD Hill have provided feedback and approval. Once a section of the documentation is in its final state (written, reviewed, and stable), it will be considered complete.

Percent Written: 0
Percent Reviewed: 0
Percent Complete: 0

5.1.2 Code

During the coding phase of this project, progress will be tracked by the features scheduled during an iteration and the number of features completed. Code will belong to one of five phases unwritten, written, peer reviewed, tested, or complete. Once code has been written and passes the required unit tests, it will undergo a peer review to check for good coding practices, clarity, and errors. After a peer review the functionality will then be required to pass integration tests. Once it has passed system integration, it will be considered complete and will be merged into the main branch of code.

Percent Written: 0
Percent Reviewed: 0
Percent Tested: 0
Percent Complete: 0

5.1.3 Testing

For the final phase of the project, progress will be measured by how many tests are passing. The tests that the software will be subjected to will be more thorough than the tests required for code to join the main branch. Most tests will be automated, but there will also be human factor tests.

Percent Passing: 0

5.2 Process

The process that the project is following will be measured by due dates met versus missed due dates.

Milestone Dates Kept: 0

5.3 Communication

Communication will be measured by how well the team feels that their needs are being heard and being taken care of, along with efficiency of meetings.

Team Confidence: 0
Meetings: 0

6 Questions

6.1