Milestone 1

Android Based Situational Awareness: Moving Map

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Contents

Changes (based off Git commits)

Date	Description
13 September 2012	Document started
13 September 2012	Wrote Requirements and Questions to ask Raytheon
20 September 2012	Created outline
20 September 2012	Wrote Users/Stakeholders section
23 September 2012	Wrote Key Needs, Alternatives, Risks, Documentation Metrics, and Code Metrics
24 September 2012	Updated Requirements as per Gate 5 visit with Raytheon

1 Introduction

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.

3 Requirements

3.1 Functional

ID	Requirement
FR0	Ability to pan the map by a dragging gesture
FR1	Ability to zoom using double tap, pinch gestures, or using an on-screen button
FR2	Display map tiles that are either stored on the device or provided by a local server
FR3	Display other relevant information stored in a layer
FR4	Georeference the location of the device
FR5	Center on current location by pressing a button
FR6	Choose map type by selecting from a list
FR7	Choose the layers shown by selecting from a list
FR8	Change default settings via a settings menu found in the menu bar
FR9	Display a compass
FR10	Toggle heading/north up by clicking the compass
FR11	Access a help menu via the menu bar
FR12	Add custom points of interest

3.2 Non-functional

ID	Requirement
NR0	Run on Android platforms running at least version 3.0 (Honeycomb)
NR1	Ability to receive GPS data from a local server or the device
NR2	Display properly on either mobile phones or tablets
NR3	Modular code

4 Project Plan

4.1 Schedule

4.2 Risks

ID	Risk
R0	Performance of the system
R1	Finding a feature complete mapping engine
R2	Organizing data in the correct format in a timely manner

5 Metrics

5.1 Project

5.1.1 Documentation

This will encompass the percentage of the code, features, and other material that has been documented
Percent Written:
This will encompass the percentage of the documentation that has been reviewed by Dr. Wollowski and/or JD Hill
Percent Reviewed: 0
This will encompass the percentage of the documentation is in a final state (written, reviewed, and stable).
Percent Complete: 0

5.1.2 Code

This will encompass the percentage of the code, by feature, that has been written
Percent Written: 0
This will encompass the percentage of the code that has passed Code review (both Interal and External)
Percent Reviewed: 0
This will encompass the percentage of the code that has passed testing phase.
Percent Tested: 0
This will encompass the percentage of the code that is in a final reviewed, tested, and stable form.
Percent Complete: 0

5.1.3 Testing

5.2 Process

5.3 Communication

6 Questions

3.1 Should the orientation be north up or heading up or should we include both? If so what should the default be?

3.2 What is the "other relevant information" that will be displayed on the map?

3.3 Will we have to display multiple types of map tiles (i.e. satellite or street)?

3.4 Will we have any control/knowledge in how map tile data is sent to the device (i.e. filetype and format)?

3.5 Can we get sample map data from Raytheon?

3.6 What will be the restrictions on zoom level, since it alters how many tiles need to be stored on the device?

3.7 When/how should the device pull map tile data from the server?

3.8 Does the view follow the user as he/she travels?

3.9 Does the server have connection to the Internet?

3.10 What ways should the device connect to the server?

3.11 Will there be any views aside from the map?

3.12 What happens if the connection is lost?

3.13 What happens when connection is regained?

3.14 How is the connection initially established?

3.15 Should we disable the device from turning off the display?

3.16 What happens during/after a critical error with the device?

3.17 Can this be an open source project, as we may run into GPL licensing issues?

3.18 Who is maintaining code after the project finishes?

3.19 Who is going to be using the system?

3.20 What existing functionality needs to be carried over?