JagTrak

Quality Assurance Plan

Version <2.0>

JagTrack
  Version: <2.0>
Quality Assurance Plan Date: <25/04/12>
QA1

Revision History

Date	Version	Description	Author
<25/04/12>	<2.0>	Quality Assurance Documentation for Elaboration Phase.	Christopher Camp and Ray Bigelow

Table of Contents

Quality Assurance Plan

1.   Introduction

The quality assurance plan will provide documentation on expected performance of teams and final product. The Quality Assurance Plan (or QAP) will span the entirety of the project process and will be involved in most all artifacts.

1.1   Purpose

The specific purpose of the QAP is to realize the most efficient means in which the project is to be completed. Standards will be determined and integrated into the project and recorded in the QAP for

JagTrack
  Version: <2.0>
Quality Assurance Plan Date: <25/04/12>
QA1

future reference. When new standards or better means of production is realized the QAP will adapt to incorporate the new information in the project process.

1.2   Scope

This QAP scope spans the entire process of the JagTrak development. From inception to delivery this QAP will be involved in every facet, providing a benchmark of efficiency to keep the project in line.

1.3   Definitions, Acronyms, and Abbreviations

DeP - Deployment Plan
JagTrak - Current project under development
QAP - Quality Assurance Plan
ReMP - Requirements Management Plan
RMP - Risk Management Plan
SHR - Stakeholder Requests
SRP - Software Requirements Plan
SDP - Software Development Plan
USA - University of South Alabama

For further terms see Glossary.

1.4   References

- *Documentation Plan - 3/05/12 - USA JagTrack*

- *Test Plan - version 1.0 - 26/04/12 - USA JagTrack*

- *Software Development Plan - version 1.1- 24/04/12 - USA JagTrack*

- *Problem Resolution Plan - 3/05/12- USA JagTrack*

- *Configuration Management Plan - 3/05/12- USA JagTrack*

- *Risk Management Plan - 3/05/12- USA JagTrack*

- *Software Requirements Plan (SRP)- version 1.1 - 3/05/12- USA JagTrack*

- *Stakeholder Requests (SHR)- version 1.0 - 07/03/12 - USA JagTrack*

- *Deployment Plan (DeP) - version 1.0 - 26/04/12*

1.5   Overview

This QAP will describe the standards and means of which quality control will be maintained throughout the JagTrak development process. Following this section will be the quality objectives followed by Management organization, documentation, guidelines, metrics for measure, review, testing procedure, problem resolution, tools and techniques, configuration management, quality records, training and risk management in that order.

1.   Quality Objectives

Current quality objectives as specified in the Software Requirements Plan (see above) are for the JagTrak system to track when a JagTran vehicle has left a specific stop and when the next shall arrive. Accuracy is dependent on database, sensor, and GPS accuracy.

In addition to the above quality objective, for the Elaboration phase a new objective will be added. The individual parts of the JagTrack system should work effectively together. The hand-held device application should interact with both the physical systems and the database-pc system with a short delay (preferably a one second response time) and little to no packet loss.

2.   Management

1.6   Organization

Organization of the Quality Assurance team is overseen by the JagTrak project leaders Robert Fornoff and Hayden Chudy. Quality Assurance team leader is Christopher Camp with the subsequent team member Ray Bigelow.

1.7   Tasks and Responsibilities

The Quality Assurance team will delegate tasks to each member accordingly to overview the steps and functions of the project. These tasks are as follows:

- *Process Review and Audit*
- *Requirements Review*
- *Product Review and Audit*
- *Overall Project Reviews*

3.   Documentation

- *Software Development Plan (SDP)*
- *Test Plan*
- *Iteration Plans*
- *Software Requirements Specification (SRS)*
- *Configuration Management Plan*
- *Glossary*
- *Stakeholder Requests*
- *Supplementary Specifications*
- *Requirements Management Plan (ReMP)*

4.   Standards and Guidelines

[This section references any standards and guidelines that will be used on the project, and addresses how compliance with these standards and guidelines will be determined. The relevant artifacts are enclosed by reference. The suggested set for the Rational Unified Process is:

- *Business Model should be of the standards of the University of South Alabama.*
- *User interface should provide ease of access for all users with concern as to the technological proficiency of every user.*
- *The current Use Case should cover the interaction between the user and the system as well as the "happy path" outcome.*
- *Design and implementation should follow by the customer's requirements and the initial specification set at the beginning of the inception iteration.*

- *The software should be coded in a format that initially will be used on an Android platform, but have adaptability to change as needed for multiple platforms (i.e. Windows, Linux, Mac)*

- *Testing for the current phase should determine ease of use, quality of product, and compare the project to the customer's requirements and specifications.*

- *All code should be documented for ease of the next team. If code is not self-identifying, documentation should be provided with the code to explain what the code is doing. This includes code for the mobile application, database application and PC application.*

- *References to all coding material used during the coding process should be documented and stored electronically or physically for the next iteration team to have ease of access to.*

5. Metrics

Metrics for testing the above standards (see section 5. Standards and Guidelines) will be as follows:
- *Direct comparison with other independent systems involved with the University of South Alabama, using both the system as a reference and following by specific guidelines set out by the university.*

- *A random test group, which will range from people who are technologically savvy to the other end of the spectrum, will be utilized to measure the ease of use of the current interface. Based on the results of the test group the interface will be modified to find the best usability.*

- *Use cases will be reviewed by the customer and by the team leaders based on previous use cases and measured by its content and transparency.*

- *The design and implementation metric will be customer review. Based on customer feed-back the design may change throughout the development process until the stage of deployment.*

- *Software code will be reviewed by the Risk Management Team, Quality Assurance Team, Customer, and Project Leader. The code must be adaptable for all major operating systems it may be released to.*

6. Review and Audit Plan

- *Development Review*
  A detailed development review will be executed just before and just after the Elaboration on   3 May 2012. An ongoing development review is conducted through the development process.   Modification, if needed will be made known of by the project lead and implemented by the   development teams.

- *Requirements Review*
  The requirements review will be held throughout the process, particularly at every customer   meeting and at the Elaboration release. Any changes in the requirements may be suggested by the   customer, project lead, or Risk Management leader. Depending on where the requirements   changes are needed will determine which team will implement the changes.

- *Process Review*
  Process review will be continuous throughout the development process from inception to   deployment. It will be conducted by the project lead.

- *Product Review*

The product will be inspected just before the Elaboration release by the project lead. Any changes   needed will be done before the Elaboration release. After the Elaboration release the product will   be reviewed and audited by the customer and any changes directed by the customer will be   implemented in the next phase.

7.   Evaluation and Test

Refer to sec. 4.4.5 of Software Development Plan.

8.   Problem Resolution and Corrective Action

Refer to Problem Solution Plan.

9.   Tools, Techniques, and Methodologies

Customer reviews
Domain process modeling as defined by the RUP model process.
Use Case modeling as defined by the RUP model process.
Use Case Realization Plan as defined by the RUP model process.
Group study on user interface.
Code development review for multiple platforms.

10.   Configuration Management

Refer to Configuration Management Plan

11.   Quality Records

Each review/audit will be documented and delivered to the project lead, customer and team leaders. They must be maintained throughout the development process and will be referred to at each iteration until they are determined obsolete.

12.   Training

Any and all training for the project team will take place in the classroom.

Training includes but is not limited to:
Familiarity of GitHub (documentation storage and transfer protocol)
Understanding of the RUP artifacts and the requirements of each.
Documentation of code through JavaDocs application.
Presentation to customer

13.   Risk Management

Refer to Risk Management Plan