SHWOZ

Railway Train System Simulation

Track Controller

Software Quality Assurance Plan

March 24, 2014

By Derrick Ward

PREFACE

This document is a template of a Software Quality Assurance (SQA) Plan using the guidelines provided in the Institute of Electrical and Electronics Engineers (IEEE), IEEE Standard for Software Quality Assurance Plans, and IEEE Std., IEEE Guide for Software Quality Assurance Planning.

Change Control Page

The following information is being used to control and track modifications made to this document.

1) Revision Date: mm/dd/yy
   Author:
   Section(s):
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Title Page

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1. Software Quality Assurance Description

1.1 Software Quality Assurance Roles and Responsibilities

The following chart defines the SQA roles and responsibilities of the members of the project team and their function at stage exit.

Note: Due to fluctuations, if a particular person is unable to fulfill his/her responsibilities, it will be the responsibility of another group member to assume the responsibilities.

Role	Name	SQA Responsibility	Stage Exit Function
QA Manager	Derrick Ward	Manage the Quality Assurance Function	Approve (delegate among other group members)
System Owner	Derrick Ward	Helps define product quality expectations.	Approve (delegate among other group members)
Project Manager	Derrick Ward	Ensures implementation of quality activities. Coordinates resolution of issues.	Approve (delegate among other group members)

1.2 Required Skills

The Project Manager must be able to review iterations of the Project Plan and lifecycle work products to determine adherence to industry standard as modified and documents in the SRS.

2. Audits and Reviews

2.1 In-Stage Audits and Reviews

Quality Assurance for this project will include at least one audit of all current draft deliverables and selected work products in each stage of development. The reviews will assure that the established system development and project management process are being followed effectively, and exposures and risks to the current Project Schedule and Plan are identified and addressed.

In-stage reviews, will be performed by the Quality Assurance Manager.

Below are the stages for an in-stage review:

I. Schedule the Assessment
II. Receive Deliverables to be Assessed
III. Conduct the Assessment
IV. Prepare Findings of Risk to Project Plan and List Recommendations

An issue will be logged if there is a problem without and with a visible plan for resolution. Once the list of issues is compiled, the project manager will review the compilation and determine if any additional information will eliminate the issue.

The Project Manager will provide an assessment of risk to the project schedule. Risk categories are as follows:

Low- Potential or existing problems must be addressed to avoid an impact to current project schedule.

Medium- Problems exists that have a high probability of impacting the current project schedule or other dependencies.

High- Serious problems exist (without any plan to resolve) that have a high probability of impacting user acceptance, the current project schedule, and or other dependencies.

2.2 Stage Exit Reviews

A Stage Exit Review is process for determining if the designated individual is approved to continue with the project and move on to the next stage of development. The deliverables and work products are assured and approved/denied in the in-stage review

described previously. The stage exit review indicates that all issues and concerns have been closed or have an acceptable plan for resolution.

3. Verification and Validation Requirements

3.1 Verification

The following activities will be performed as part of the verification requirements:

- Produce a traceability matrix tracing all SRS requirements back to system objectives and forward to software design elements.
- Evaluate SRS requirements and relationships for correctness, consistency, completeness, accuracy, readability, and testability.
- Assess how well the SRS satisfies the system objectives.
- Assess the criticality of requirements to identify key performance or critical areas of software.

3.2 Validation

The following activities will be performed as part of requirements validation:

- Plane acceptance testing, including criteria for:
  - Compliance with all SRS requirements
  - Adequacy of User Manual Documentation
  - Performance at boundaries and under stress conditions
- Plan documentation of test tasks and results.
- Execute the Acceptance Test Plan.
- Document acceptance test results.

4. Software Quality Assurance Milestones

Stage	Deliverables	QA Activity
Planning	-Project Schedule	-Review processes
Preparation	-SRS Document	-Review Processes
Software Design	-System Design and Sub-system Design -System Testing Plan -Sub-system Testing Plan	-Review Processes -Trace Design Components to Requirements -Trace Requirements to Design Requirements
Programming and Integration	-System Executable Software -Sub-system Executable Software	-Review Processes
System Testing and Acceptance	-Test Results -System Documentation	-Review Processes