

SHWOZ



Railway Train System Simulation

Track Controller

Test Plan

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1. Introduction

Purpose

The purpose of this document is to describe and detail out the test plan for the track controller of the Railway Transit System Simulation.

Project References

- I. IEEE-1016 Software Design Description
- II. IEEE Test Plan Outline
- III. System Design Document for Train Controller
- IV. SRS Document for the Railway Train System Simulation from SHWOZ

Abbreviations

Authority – The distance the train is allowed to travel.

Block – A section of the track

CTC – Centralize Traffic Control

GUI – Graphical User Interface

MVC – Model View Controller Architecture Pattern

2. Features To Be Tested

The following is a list of the features to be focused on during the testing of the system.

Key Features	Reference to the SRS
Relay Train Authority	3.2.4.1
Relay Train Speed Limits	3.2.4.1
Sending Track Changing Signals	3.2.4.4
Detection of Broken Rails	3.2.4.5
Relay Information Regarding State of Track	3.2.4.2
Send Crossbar Signals	3.2.4.3

3. Approach

Unit, Module and System Testing will be performed within the Track Controller System. The tests will check for completeness and consistency of the system with the SRS document.

Unit test will cover all public and private methods. Different types of data will be sent to test the functions to see if the functions are valid or not and have the appropriate tolerance level. To make sure the system will behave correctly, the unit tests will be run automatically. All the tests must pass in order for the component implementation to become official within the System.

Module Testing will be used to test all use cases for the Track Controller use cases (See SRS and Software Design of Track Controller). Since the tests are only intended to test the Track Controller Module, a GUI was specifically made for the

Track Controller module. The tests will be completed from a black box testing standpoint. In black box testing only the inputs and outputs of a system are of concern. The System outputs will be displayed on the GUI for the tests, so that we may compare correct them with system outputs and make sure the system is behaving correctly.

System testing will be applied once the module is integrated into the system with the other modules. The tests for system testing will also follow the black box testing model. As with the unit tests, the system outputs will be displayed on the GUI. We will then compare the system output values with correct output values to make sure the system is behaving correctly.

4. Item Pass/Fail Criteria

All the unit tests and module tests are required to pass. The system may have one or two major defects, and the severity shall be assessed and determined by the team of developers. The final decision will be made based on resources within the time schedule and the defects themselves.

5. Responsibility

The entire developer team will be responsible for the verification and validation of the system acceptance testing. The Track Controller module developer will be responsible for the unit testing and module testing of the Track Controller. The entire project team will participate in the review of the system and in the detailing of designs as well as reviews of any change requests that may occur.