System Defect Reports

for

Pittsburgh Train Automation System

Prepared by Alexander McMoil, Cameron Kirsch, Kyle Kessler, Justin Pacella, Yuheng Lin, and Yun Dong

Aurora, Inc.

12/14/2023

1 Introduction

This document describes each defect reported by our team during the development process. This section contains a very brief overview of the document and a few definitions and conventions for our defect reports.

The types of defects we report are bugs, improvement requests, and documentation requests. Bugs are problems with the existing code that cause problems in the UI or affect the functionality of the system. Improvement requests are for inadequate or nonexistent features. Documentation requests are for inadequate in-file or out-of-file documentation.

The severity of a defect refers to how it affects our system. A high severity defect blocks critical functions for individual modules and/or the full system. A low severity defect might involve a UI issue, such as an incorrect unit conversion. A defect's priority indicates the order in which the defect should be handled. Handling a defect may involve fixing it or reporting it without fixing it. The complexity of a defect approximates how long the defect will take to resolve.

2 Defect Template

Title				
Overview	Description			
	Link			
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓	✓	✓
	Reported By			
	Date Reported			
Details	Version/branch			
	Severity	Low/Medium/High		
	Priority	Low/Medium/High		
	Complexity	Low/Medium/High		
	Assignee			
	Steps to Reproduce			
	Expected Response			
	Observed Response			
Conclusion	Status	Resolved/unresolved		
	Notes			
	Resolved By			
	Date Resolved			

3 Defects

Wayside PLC Bug #207				
Overview	Description	Wayside Controller throws error when loading PLC for node 1		
	Link	GitHub Issue 207		
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓		
	Reported By	Alex McMoil		
	Date Reported	12/9/2023		
Details	Version/branch	ALM470-Alex-McMoil		
	Severity	Medium		
	Priority	Medium		
	Complexity	Low		
	Assigned To	Justin Pacella		
	Steps to Reproduce	1. Launch the program by running main.py		
	Expected Response	Program should launch normally		
	Observed Response	Program does not launch due to user-thrown exception		
Conclusion	Status	Resolved and Closed		
	Notes	Changed the occupancy count in node_1.plc from 39 to 40		
	Resolved By	Justin Pacella		
	Date Resolved	12/11/2023		

Multiple Train Speed Simulation Bug #225				
Overview	Description	When running two trains on the green line using manual speeds, the second train moves significantly slower despite having the same speed		
	Link	GitHub Issue 225		
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓		
	Reported By	Justin Pacella		
	Date Reported	12/12/2023		
Details	Version/branch	JTP75-patch-1		
	Severity	Medium		
	Priority	High		
	Complexity	High		
	Assignee	Kyle Kessler, Yuheng Lin, Yun Dong		
	Steps to Reproduce	1. Dispatch two trains from the CTC Office UI 2. For each train, enable manual mode and set the throttle to max speed		
	Expected Response	Trains loop around the green line at the same speed		
	Observed Response	Train 2 has a drastically reduced velocity viewed on the Track Model UI		

Conclusion	Status	Unresolved
	Notes	
	Resolved By	
	Date Resolved	

Incorrect Track Model Speed Limits #220				
Overview	Description	Track Model UI displays incorrect speed limits for all blocks		
	Link	GitHub Issue 220		
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓		
	Reported By	Justin Pacella		
	Date Reported	12/12/2023		
Details	Version/branch	KYK37-Kyle-Kessler		
	Severity	Low		
	Priority	Low		
	Complexity	Low		
	Assignee	Kyle Kessler		
	Steps to Reproduce	1. View speed limit of block 83 on track model UI		
	Expected Response	43mph		
	Observed Response	31mph		
Conclusion	Status	Resolved		
	Notes	Fixed a reversed unit conversion issue for kph to mph		
	Resolved By	Kyle Kessler		
	Date Resolved	12/12/2023		

Train Model UI E-Brake Not Functioning #217				
Overview	Description	The Train Model UI emergency brake button is not functional		
	Link	GitHub Issue 217		
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓		
	Reported By	Yuheng Lin		
	Date Reported	12/11/2023		
Details	Version/branch	YUL311-Yuheng-Lin		
	Severity	Medium		
	Priority	High		
	Complexity	Low		
	Assignee	Yuheng Lin		
	Steps to Reproduce	1. Use the CTC Office to dispatch a train on the green line		

		2. Attempt to trigger the emergency brake from the Train Model UI
	Expected Response	Emergency brake engages and train slows to a halt
	Observed Response	Emergency brake is not engaged, and train continues moving
Conclusion	Status	Resolved
	Notes	Fixed by connecting the UI button
	Resolved By	Yuheng Lin
	Date Resolved	12/11/2023

Suggested Speed causes Premature Train Stops #216				
Overview	Description	The CTC Office sets the suggested speed to zero before a station, causing the train to stop too suddenly		
	Link	GitHub Issue 216		
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓		
	Reported By	Justin Pacella		
	Date Reported	12/12/2023		
Details	Version/branch	JTP75-patch-1		
	Severity	High		
	Priority	High		
	Complexity	Low		
	Assignee	Alex McMoil		
	Steps to Reproduce	1. Dispatch a train to Dormont station		
	Expected Response	The train stops at Dormont station		
	Observed Response	The train stops one block before Dormont station		
Conclusion	Status	Resolved		
	Notes	Removed zero suggested values from CTC Office logic		
	Resolved By	Alex McMoil		
	Date Resolved	12/11/2023		

CTC and Wayside need Yard Return Mode #215				
Overview	Description	The CTC Office and Wayside Controller do not have yard return mode implemented, meaning trains cannot return to the yard.		
	Link	GitHub Issue 215		
	Defect Type	**Bug**	**Improvement**	**Docs**
			✓	
	Reported By	Justin Pacella		
	Date Reported	12/11/2023		
Details	Version/branch	JTP75-patch-1		
	Severity	Medium		
	Priority	High		
	Complexity	Medium		
	Assignee	Alex McMoil & Justin Pacella		
	Steps to Reproduce	N/A		
	Expected Response	N/A		
	Observed Response	N/A		
Conclusion	Status	Unresolved		
	Notes			
	Resolved By			
	Date Resolved			

Train Controller UI has no Power Limit #214				
Overview	Description	The Train Controller UI power display is not bounded		
	Link	GitHub Issue 214		
	Defect Type	**Bug**	**Improvement**	**Docs**
			✓	
	Reported By	Yuheng Lin		
	Date Reported	12/11/2023		
Details	Version/branch	YUH311-Yuheng-Lin		
	Severity	Low		
	Priority	Low		
	Complexity	Low		
	Assignee	Yun Dong		
	Steps to Reproduce	N/A		
	Expected Response	N/A		
	Observed Response	N/A		
Conclusion	Status	Resolved		
	Notes	Added power limit to Train Controller backend		
	Resolved By	Yun Dong		

	Date Resolved	12/12/2023		
Red Line Beacon				
Overview	Description	The red lines' are not fully when pulling into the train controller for decoding.		
	Link			
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓	✓	✓
	Reported By			
	Date Reported			
Details	Version/branch			
	Severity	Low/Medium/High		
	Priority	Low/Medium/High		
	Complexity	Low/Medium/High		
	Assignee			
	Steps to Reproduce			
	Expected Response			
	Observed Response			
Conclusion	Status	Resolved/unresolved		
	Notes			
	Resolved By			
	Date Resolved			

Ticket Sales				
Overview	Description	Ticket sales is not being sent to Train Model by Track Model.		
	Link			
	Defect Type	**Bug**	**Improvement**	**Docs**
		✓		
	Reported By	Yuheng Lin		
	Date Reported	12/14/2023		
Details	Version/branch	YUH311-YUHENG		
	Severity	High		
	Priority	High		
	Complexity	Medium		
	Assignee	Kyle		
	Steps to Reproduce	Dispatch train and open Train Model and Track Model UI		
	Expected Response	Ticket sales on Track Model UI go to zero after sending it and passenger count increases in Train Model UI		
	Observed Response	Ticket sales does not go to zero on Track Model UI and passenger count does not increase on Train Model UI		
Conclusion	Status	Unresolved		
	Notes			

	Resolved By	
	Date Resolved	