**Track Model - Defect Report**

**Anh Nguyen**

| **Bug: Block Occupancies Not Working Correctly** | | |
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| **Overview** | Description | Block occupancies were not accurately displayed on the Track Model UI, and incorrect information was sent to the Wayside Controllers. |
| Defect Type | Data Handling Bug |
| Reported By | Anh Nguyen |
| Date Reported | 3/02/24 |
| **Details** | Branch | Ahn\_no\_issues\_please\_god\_please |
| Severity | High |
| Priority | High |
| Complexity | Medium |
| Assigned To | Anh Nguyen |
| Steps to Reproduce | Start the system, simulate train movements, monitor outputs, and record any discrepancies or inaccuracies in data handling. |
| Observed Response | Blocks are being reported as occupied a few ahead of the actual block occupied by the train, causing the train to be displayed as arriving at stations earlier than it actually does. |
| **Conclusion** | Status | Resolved |
| Notes | Velocity from the Train Model is now used in the math to calculate the train's position, making it more accurate for indicating block occupancies. |
| Resolved By | Anh Nguyen |
| Date Resolved | 3/12/24 |

| **Bug: Inconsistent Data Transmission to Train Model** | | |
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| **Overview** | Description | Data such as ticket sales and grade were not transmitted to the Train Model when expected, causing discrepancies in the train's reported versus actual positions and statuses. |
| Defect Type | Integration and Communication Bug |
| Reported By | Anh Nguyen |
| Date Reported | 3/28/24 |
| **Details** | Branch | Ahn\_no\_issues\_please\_god\_please |
| Severity | Medium |
| Priority | Medium |
| Complexity | Medium |
| Assigned To | Anh Nguyen |
| Steps to Reproduce | Monitor the data being transmitted from the Track Model to the Train Model, especially during peak simulation times or when multiple trains are changing blocks simultaneously. |
| Observed Response | The Train Model occasionally shows train positions that lag behind or are ahead of their actual positions as per the Track Model data. |
| **Conclusion** | Status | Resolved |
| Notes | Issue seems to occur more frequently during high system load and when handling rapid sequential updates from the Track Model. |
| Resolved By | Anh Nguyen |
| Data Resolved | 4/23/24 |

| **Bug: Wrong Activation of Track Heaters** | | |
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| **Overview** | Description | The Track Model fails to activate track heaters when environmental temperatures drop below the threshold of 35.06 Farenheit necessary for operation, potentially leading to unsafe track conditions during cold weather. |
| Defect Type | Functionality Bug |
| Reported By | Anh Nguyen |
| Date Reported | 3/24/24 |
| **Details** | Branch | Ahn\_no\_issues\_please\_god\_please |
| Severity | Low |
| Priority | Low |
| Complexity | Low |
| Assigned To | Anh Nguyen |
| Steps to Reproduce | 1. Simulate environmental temperature with temperatures dropping below the activation threshold of 35.06 Fahrenheit. 2. Monitor the status of track heaters. 3. Check if it is being triggered at all. |
| Observed Response | Track heaters remain deactivated at any temperature. |
| **Conclusion** | Status | Resolved |
| Notes | Issues were related to connecting the functionality of the QSpinBox and the output textbox. |
| Resolved By | Anh Nguyen |
| Data Resolved | 3/25/24 |

| **Bug: Boolean Authority Not Updating correctly** | | |
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| **Overview** | Description | Boolean authority is not updating correctly, causing discrepancies in train operations. |
| Defect Type | Software Bug |
| Reported By | Tanvi Verma |
| Date Reported | 4/23/24 |
| **Details** | Branch | Ahn\_no\_issues\_please\_god\_please |
| Severity | High |
| Priority | High |
| Complexity | Low |
| Assigned To | Anh Nguyen |
| Steps to Reproduce | 1. Dispatch the train in a station. 2. Set a light status to Red on a block 3. Observe is train stops |
| Observed Response | Train stops way too late on the track, causing train to crash |
| **Conclusion** | Status | Resolved |
| Notes | The function responsible for updating the boolean authority was not called enough times |
| Resolved By | Anh Nguyen |
| Data Resolved | 4/24/24 |