User’s Manual - Track Model

Author: Sarah Bunke

**Introduction:**

The Track Model interface displays a visual representation of the track transit system. Through the graphical interface, the user will have the functionality to create and modify different components of the track. In addition, the user will be able to modify the variables associated with those components.

**Overview:**

The Track Model GUI image displays the rails, signals, switches, stations, and railway crossings. The GUI has three status indicators that change to red when any of the failure modes occur otherwise they remain green. In addition, when a status indicator turns red, its corresponding ‘fix’ button will enable so that the user can then correct the issue. The ‘Input Track’ button allows the user to input an Excel file with the date to build the track. The data should be made up of blocks with attributes corresponding to minimum and maximum speed, grade, elevation, allowable direction of travel, and size. Each block should also specify if it is a branch, railway crossing, or station. The ‘Delete Track’ button deletes the existing track. The ‘Query Block Id’ button brings up the ‘Query Block ID’ window and prompts for a block id. It then displays the statistics about that specific block in addition to allowing the user to update the block’s size.

**Variables and Actions:**

Broken Rail: Status indicator corresponding to Broken Rail failure mode. It will turn red when a rail breaks and remain red until the track is fixed.

Track Circuit Failure: Status indicator corresponding to Broken Track Detection Circuit failure mode. It will turn red when the track detection circuit breaks and will remain red until fixed.

Power Failure: Status indicator corresponding to Power Failure mode. It will turn red when there is a problem with the power running through the track and will remain red until fixed.

Fix Broken Rail: Will be enabled if the Broken Rail status indicator goes red. When the rail is fixed, button is clicked to allow track controller to re-open that block.

Fix Detection Circuit: Will be enabled if the Track Circuit Failure status indicator goes red. When the circuit is fixed, button is clicked to allow track controller to re-open that block.

Fix Power: Will be enabled if the Power Failure status indicator goes red. When the power issue is resolved, button is clicked to allow track controller to re-open that block.

Input Track: Will open a prompt for a file name. File must be an Excel CSV file including all block attributes. Once a track exists, the button will be disabled.

Delete Track: Will open an alert box to ensure that you want to delete existing track. Will only be enabled if a track currently exists.

Query Block Id: Will open the Query Block ID window. It will ask for a block id and when the submit button is clicked, it will display the statistics of the block. At the button of the window will be a change size button that, when clicked, will allow the user to input a new block size.