Track Model Use Cases

Use Case: Update Track Configuration

1. User clicks the Update Track button
2. User selects file to upload
3. Track Model loads track configuration

Use Case: Demo Mode Create Train

1. User enters line and starting blocks and clicks the Make Train button on the TrackGui
2. TrackGui creates new Train object

Use Case: Detect Occupancy

1. Train object calculates its position using the velocity it receives from the Train Model
2. Once the train has traveled the length of a block it enters the next block
3. Old Block is no longer occupied
4. New Block is set to occupied

Use Case: Send Occupancy

1. Detect Occupancy is carried out
2. Track Model reports occupancy to the Wayside

Use Case: Transmit Commanded Speed and Authority

1. Wayside sends commanded speed and authority to track model
2. Track Model transmits speed and authority to the Train

Use Case: Add Force Majeure Input: Broken Rail

1. User types the block number they want the force majeure to act on in the Block Affected text field in the Force Majeure Input Section
2. User presses Broken Rail Button
3. Track Model adds Broken Rail conditions to the selected block

Use Case: Add Force Majeure Input: Track Circuit Failure

1. User types the block number they want the force majeure to act on in the Block Affected text field in the Force Majeure Input Section
2. User presses Track Circuit Failure Button
3. Track Model adds Track Circuit Failure conditions to the selected block

Use Case: Add Force Majeure Input: Power Failure

1. User types the block number they want the force majeure to act on in the Block Affected text field in the Force Majeure Input Section
2. User presses Power Failure Button
3. Track Model adds Power Failure conditions to the selected block

Use Case: Remove Force Majeure Input

1. User types the block number they want to remove Force Majeure from in the Block Affected text field in the Force Majeure Input Section
2. User clicks the Remove All button
3. System removes force majeure affects from the selected block

Use Case: User Input Change Light Color

1. User types the block number of the block they wish to change in the Block to Edit text field in the Wayside Inputs Section
2. User selects the light color they want from the drop down
3. User presses the Confirm Input button
4. UI directs selected block to change the color
5. Block changes light to the user specified color

Use Case: Wayside Input Change Light Color

1. Wayside sends the color change to the block
2. Block updates the color of the light

Use Case: User Input Flip Switch

1. User types the block number of the block they wish to change in the Block to Edit text field in the Wayside Inputs Section
2. User clicks the Flip Switch Check Box
3. User presses Confirm Input
4. UI directs selected block to flip the switch
5. Block flips Switch

Use Case: Wayside Input Flip Switch

* 1. Wayside sends command to flip switch
  2. Track Model flips switch

Use Case: View Track Section Data

1. User selects the line and section they wish to see from the drop-down boxes in the Line & Section Display section
2. User presses the Show Track button
3. UI displays the data for the blocks in the selected section

Use Case: Set Beacon Data

1. User types out the 32 bits of data they wish the beacon to transmit in the Beacon Data: text field in the Set Beacon Data section
2. User types the block number the beacon they wish to set is on
3. User presses Set Beacon
4. The entered bits are stored in the beacon to be transmitted to the trains

Use Case: Transmit Beacon Data

1. Train enters block
2. Block transmits the beacon data to the train

Use Case: Send Ticket Counts

1. User selects the station they wish to report ticket numbers for from the drop-down box in the Send Ticket Counts section
2. User types in the number of tickets for that station in the Ticket Count text field
3. User presses Confirm Input
4. The entered ticket count is added to the current total tickets for that station and reported to the CTC

Use Case: View Output to Train

1. User selects the train they would like to see the data for from the drop-down list of currently active trains in the Output to Trains section
2. UI displays the data being sent to that train