Track Model Testing

Unit Testing:

Load New Track and Display Track Section Validation Test

1. In the Track Model gui click the Update Track button
2. Select a correctly formatted .csv file
3. Select a line and section to display in the Line & Section display section
4. Click Show Track and verify all displayed data is correct

Load New Track Verification Test: Improperly formatted file

1. In the Track Model gui click the Update Track button
2. Select an improperly formatted .csv file
3. Verify that the system shows an error message and allows the user to select another file

Wayside Input Validation Test

1. Enter a valid block number for a block with a switch in the Block To Edit text field of the Wayside Inputs section
2. From the Light Color drop down menu select a light color that is different from the current light color of that block
3. Click the Flip Switch checkbox
4. Click the Confirm Input button
5. Display the section the block is in
6. Verify the light color changed to the specified color and the switch moved from its original position

Wayside Input Verification Test 1: Enter invalid block number

1. Enter an invalid block number in the Block To Edit text field of the Wayside Inputs section
2. From the Light Color drop down menu select a light color that is different from the current light color of that block
3. Click the Flip Switch checkbox
4. Click the Confirm Input button
5. An error message should appear saying the block does not exist and nothing should be changed, normal operation should continue

Wayside Input Verification Test 2: keep same light color

1. Enter a valid block number in the Block To Edit text field of the Wayside Inputs section
2. From the Light Color drop down menu select a light color that is the same as the current light color of that block
3. Click the Confirm Input button
4. No error message should appear and the light should remain the same color, normal operation should continue

Wayside Input Verification Test 3: Switching a block without a switch

1. Enter a valid block number for a block without a switch in the Block To Edit text field of the Wayside Inputs section
2. Click the Flip Switch checkbox
3. Click the Confirm Input button
4. An error message should appear saying the block does not have a switch normal operation should continue

Detect Occupancy and set Train Authority Validation Test

1. Create Train
2. Verify that the train’s starting block is shown in the Output to Wayside section
3. Select the created train and set its authority and speed to any positive value and click Confirm Input
4. Verify that after some time the train moves to the next block by the current block being removed from the Output to Wayside section and the next block being added

Calculate Train Position Validation Test

1. In demo mode create Train at a block with a known distance
2. Set the train’s speed to 10 mph
3. Time how long it takes the train to move to the next block
4. Verify that the train took the proper amount of time to traverse the block

Force Majeure Set Broken Rail Validation Test

1. Enter a valid block number in the Block Affected Field
2. Click Broken Rail
3. Verify the entered block is now shown as being occupied

Force Majeure Set Track Circuit Fail Validation Test

1. Enter a valid block number in the Block Affected Field
2. Click Track Circuit Fail
3. Verify the entered block is now shown as being occupied

Force Majeure Set Power Fail Validation Test

1. Enter a valid block number in the Block Affected Field
2. Click Power Fail
3. Verify the entered block is now shown as being unoccupied with a null light color

Force Majeure Remove All Validation Test

1. Enter a valid block number in the Block Affected Field
2. Click Remove All
3. Verify the entered block is now behaving normally

Set Beacon Data Validation Test

1. Enter beacon data for a valid block with a beacon
2. Verify a train moving over it receives the correct data

All Drop Down Menu Verification Test

1. Click Confirm Input(or other submit button) without selecting from the drop down
2. Verify program gives an error message and continues normal operation