User Mode: Driver Mode

|  |  |
| --- | --- |
| Actors | Driver |
| Description | The Driver Identifies themself to the interface, allowing adjustments in speed to be entered  The System no longer allows adjustments to Kp and Ki to be entered |
| Data | All current input states will be passed  User variable will be updated |
| Stimulus | User toggle button pressed by the Driver |
| Response | “Mode: Driver” displayed |
| Comments | N/A |

User Mode: Engineer Mode

|  |  |
| --- | --- |
| Actors | Engineer |
| Description | The Engineer Identifies themself to the interface, allowing adjustments in speed to be entered  The System no longer allows adjustments to Speed to be entered |
| Data | All current input states will be passed  User variable will be updated |
| Stimulus | User toggle button pressed by the Driver |
| Response | “Mode: Engineer” displayed |
| Comments | N/A |

User Tasks: Match Command and Current Speed

|  |  |
| --- | --- |
| Actors | Driver, Train Model |
| Description | The Train Model sends the intended Speed of travel to the Driver, at which point he should adjust the Current speed to reflect said Command Speed while in Manual Mode  While in Automatic Mode, the Command Speed should be input as the Speed input that the Driver would normally control  When Speed is 0, station arrival is assumed, and announcement is made |
| Data | The Speed value will be adjusted  The Error values will change to reflect the speed change  The Power values will be recalculated based off these new error values |
| Stimulus | Speed input buttons, input Command Speed from Train Model |
| Response | “Speed: ##” displayed, Power value updated and sent to the Train Model |
| Comments | Only available in Driver Mode |

User Tasks: Address Passenger Comfort

|  |  |
| --- | --- |
| Actors | Driver |
| Description | The Driver is able to adjust the internal car temperature for the passengers |
| Data | Temperature value |
| Stimulus | Temperature input buttons |
| Response | “Temperature: ##” displayed  Send to Train Model |
| Comments | Engineer has option to perform this action, but assumed that the driver would be doing so |

User Tasks: Basic Safety

|  |  |
| --- | --- |
| Actors | Driver, Train Model |
| Description | Driver is able to adjust the on/off inputs for basic train needs   * Tunnel Lights on or off * Left Door on or off * Right Door on or off * Automatic Control on or off * Hand Brake on or off |
| Data | All current input states for non-integer inputs will be passed |
| Stimulus | Any toggle button: Lights, Left Door, Right Door, Mode Selection, Hand Brake |
| Response | The updated state displayed  i.e. “Left Door: Open”  Send new states to train model |
| Comments | Engineer is also able to activate these, but assumed Driver would be doing so  Automatic/Manual not reported to Train Model |

User Tasks: Emergency Safety

|  |  |
| --- | --- |
| Actors | Driver, Train Model |
| Description | Driver is able to adjust the on/off inputs for basic train needs   * Emergency Brake on or off |
| Data | All current input states for non-integer inputs will be passed |
| Stimulus | Emergency Brake button |
| Response | The updated state  i.e. “Emergency Brake: On”  send updated state to train model |
| Comments | Engineer is also able to activate these, but assumed Driver would be doing so  If Speed is 0, and E-Brake is on, the station will not be assumed to have been arrived at |

User Tasks: Adjust Power Calculations

|  |  |
| --- | --- |
| Actors | Engineer, Train Model |
| Description | Engineer is able to input new Kp or Ki values if power calculation is not correctly matching the command speed |
| Data | Kp value  Ki value |
| Stimulus | Kp input buttons  Ki input buttons |
| Response | The updated state displayed  i.e. “Kp: ##”  Power calculation sent to Train Model |
| Comments | If Driver mode is select, these inputs will not be allowed or accepted |