Train Controller

User Manual  
Brandon Bock - Revision 1

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# Introduction

The train controller implements the use of a graphical user interface (GUI) to manipulate the module and control the train. The train controller shall basically be able to operate in an automatic mode, however, it will also allow for the manual control of some variables by the Engineer.

# Features

## Next Station Display

The GUI has a field for the display of the upcoming station in the track’s course. This will update automatically based on the train’s location and direction.

## GPS Coordinates

In addition to displaying the next station, the GUI will display the exact coordinates of the train via the train’s built in GPS.

## Train Faults Log

If there is an issue with the train, a log of these issues will be displayed on screen time-stamped and detailed.

## Authority

The authority of the train is displayed in miles within the GUI. This is updated automatically as new authority commands are received.

## Speed Limit

The speed limit of the current segment of track will be displayed in miles per hour within the GUI. This is updated automatically as changes in the speed limit are received.

## Current Speed

The current speed of the train is displayed in miles per hour within the GUI. The speed may be set to auto where the train controller will automatically determine the best speed. The speed may also be manually controlled in the event of an emergency or anytime the engineer may feel necessary. The train controller will not, however, allow the engineer to exceed the speed limit or authority.

## Door Control

The status of the doors (open/closed) on the train is displayed within the GUI. The doors may also be manually controlled in the event of an emergency or anytime the engineer may feel necessary. The traffic light graphic on the left side indicates red when the doors are closed, yellow when set to auto, and green when the doors are open. The door graphic will also change to open or closed depending on the status of the doors.

## Light Control

The status of the lights (on/off) on the train is displayed within the GUI. The lights may also be manually controlled in the event of an emergency or anytime the engineer may feel necessary. The traffic light graphic on the left side indicates red when the lights are off, yellow when set to auto, and green when the lights are on. The light graphic will also change to on or off depending on the status of the lights.