## Task Breakdown: Track Controller

# Track Controller

## PLC

**Description:** The PLC is the main logic component of the Track controller; it will determine how track function is changed during runtime. It will need to be reprogrammable before startup of the system and therefore will need to have its own custom syntax. Each wayside controller will need a unique PLC code.

### Preset Boolean Logic for A Wayside controller

Description: A “PLC code” that is prebaked into a wayside controller, allows for quick proof of concept prototype.

Time: 5 hours

### Setting up PLC File Syntax

Description: Will need to come up with a way to write PLC code as a file.

Time: 2 hours

### PLC File Reader/Compiler

Description: Code that can take in a PLC code file, interprets it, and save it in a form that can be used by the system.

Time: 15 hours

### PLC Code Real Time Interpreter

Description: The program that will take the track data and CTC route as input, put it through the PLC’s Boolean logic and create an output

Time: 30

### PLC to Track and CTC

Description: Within the PLC there needs to be a way to output new commands to the track and keep the CTC updated

Time: 10 hours

## Background Processes

### Track Reader

Description: Track reader will be a way to read the track model and interpret it before that data is sent to the PLC

Time: 12 hours

### Communication within the module

Description: The module will consist of multiple smaller classes, good communication between them will be necessary

Time: 12 hours

## GUI

Description: The track controller’s graphical user interface

### Get the Components to Work

Description: Will need to get the components to do what they need to do

Time: 10hrs

### Real Time Updates

Description: Need to make sure that the GUI updates in real time with changes to other parts of the system

Time: 6hrs

## Debugging

Description: Getting everything to work correctly within this system and in the global system

Time: 40 hours

## Total time

Time: 144 hours