The PID.cpp file has the PID control. The PID::Init() initialises the P, I, D errors and coefficients. The void PID::UpdateError() get the cross track error (CTE) and updates the P, I & D errors. The PID::Twiddle() function is called before the PID::UpdateError() and the coefficients are updated using the Twiddle algorithm from Sebastian. The steering value / total error is calculated and set from the PID::TotalError().

The coefficients were initially set to the values:

```
double Kp_set = 0.131;

double Ki_set = 0.00011;

double Kd_set = 1.31;
```

These values happened after testing but they are updates on each step later using the Twiddle algorithm with tolerance of 5. The tolerance value was also set after testing different values in the simulator.

Explanation of the P, I & D components:

1) The P, proportional component, is used to for correction of the CTE. The bigger the CTE the bigger the steering has to be.

2) The D, differential component, is used to to reduce the overshoots the system has using only the P component.

3) Finally, sometimes obstacles can disturb the car. This can introduce offsets to the PD filter route. The I component can fix these offsets.