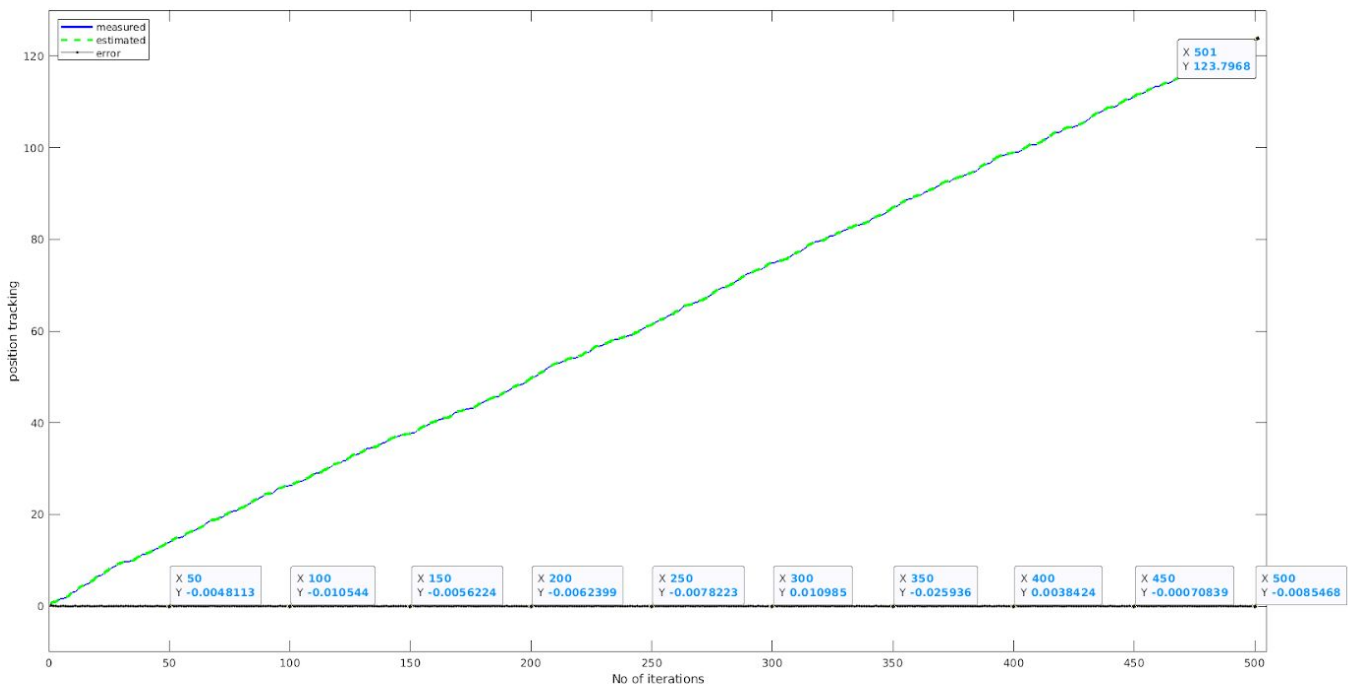


# Description of the solution set

The solution set contains the code file “*assignment2\_kalman.m*” and the corresponding curve is plotted in “*kalman\_results.png*”. Since the Kalman filter is able to estimate the measured positions to almost perfect accuracy, the error signal is very close to zero and the estimated curves and the observations curve are almost perfectly aligned. The estimated positions of the truck have been plotted for the time interval from  $t = 1$  to  $501$  at a gap of 1 second.

In the plot, the legend refers to the following:

- 1) **measured**: the observations curve that plots the recorded measurements for the position of the truck at an interval of 1 second.
- 2) **estimated**: the estimated curve that plots the Kalman estimates for the position of the truck at an interval of 1-second
- 3) **error**: the error curve that is obtained by plotting the difference between the measured position and the position estimated by the Kalman filter for the truck in question.



In the curves shown above, the error curve is marked at an interval of 50 iterations. The **estimated position of the truck at  $t = 501$**  is also shown in the figure as required by the question.

The final conclusion from these results is that the Kalman filter is able to estimate the positions of the truck with marvellous accuracy.