

# Bluetooth Tracking Report

feb9/2-9-test3-uwv.csv

February 19, 2025

## 1 1D b1d\_distance

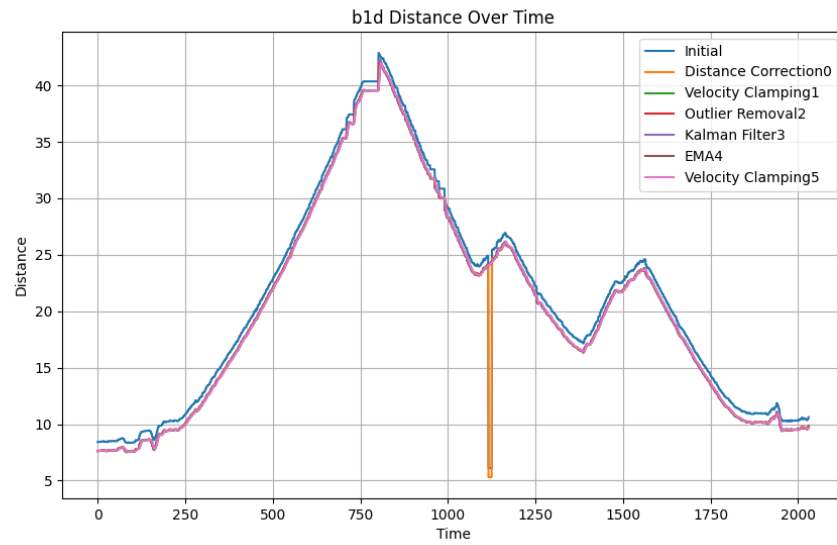


Figure 1: b1d Distance Over Time

## 2 1D b2d\_distance

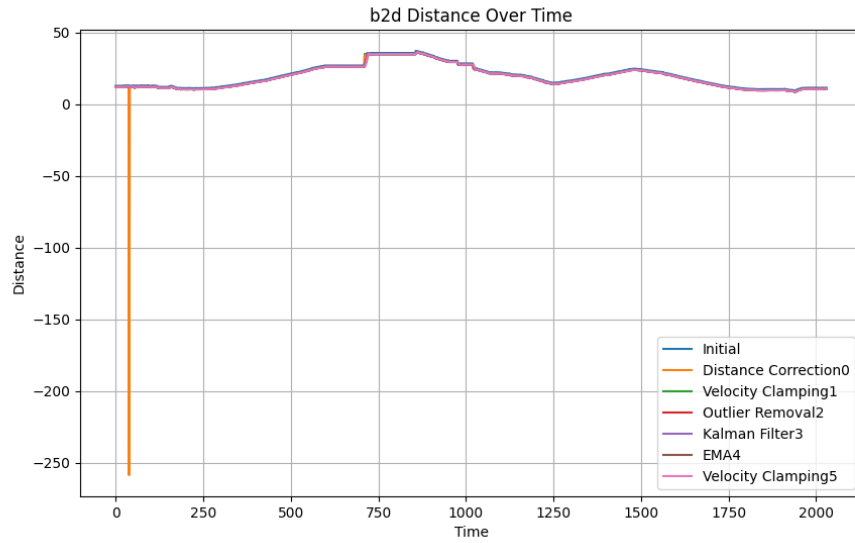


Figure 2: b2d Distance Over Time

### 3 1D b3d\_distance

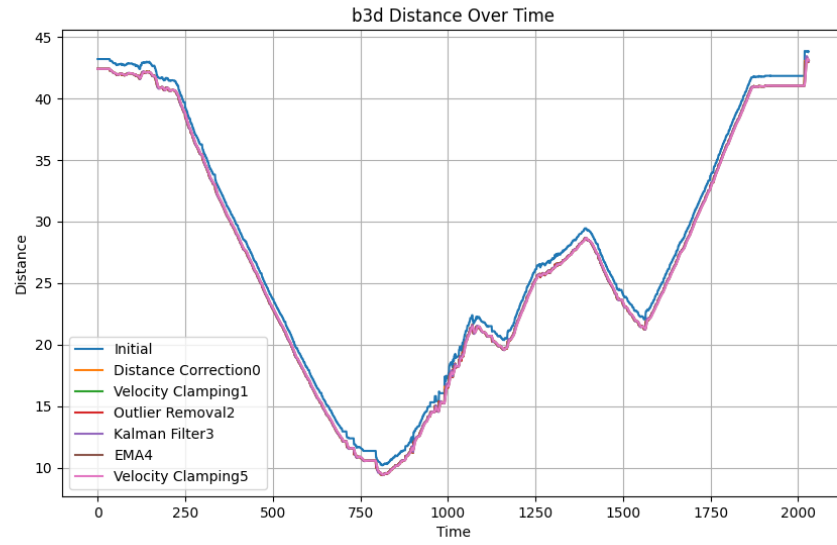


Figure 3: b3d Distance Over Time

## 4 1D b4d\_distance

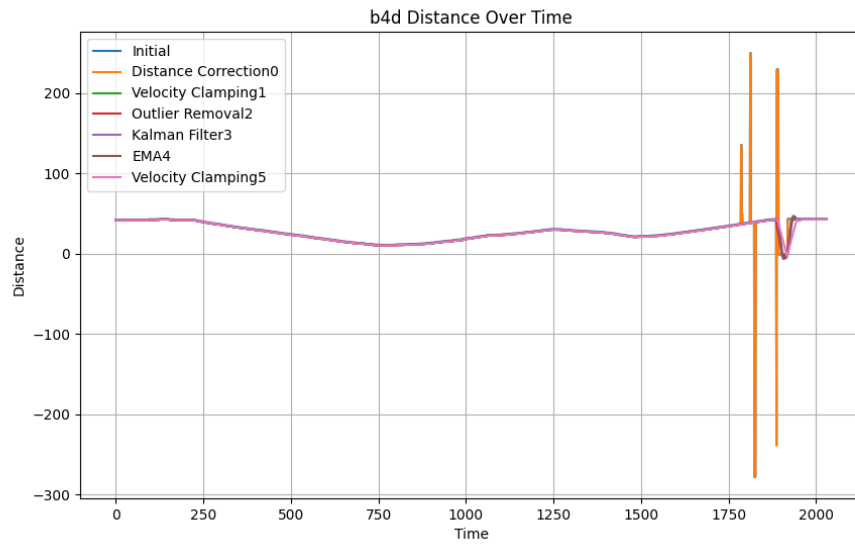


Figure 4: b4d Distance Over Time

## 5 Initial - Ground Truth Comp.

Anchor 1: MAE=1.371 m, RMSE=1.464 m

Anchor 2: MAE=0.879 m, RMSE=1.587 m

Anchor 3: MAE=1.240 m, RMSE=2.685 m

Anchor 4: MAE=2.447 m, RMSE=4.288 m

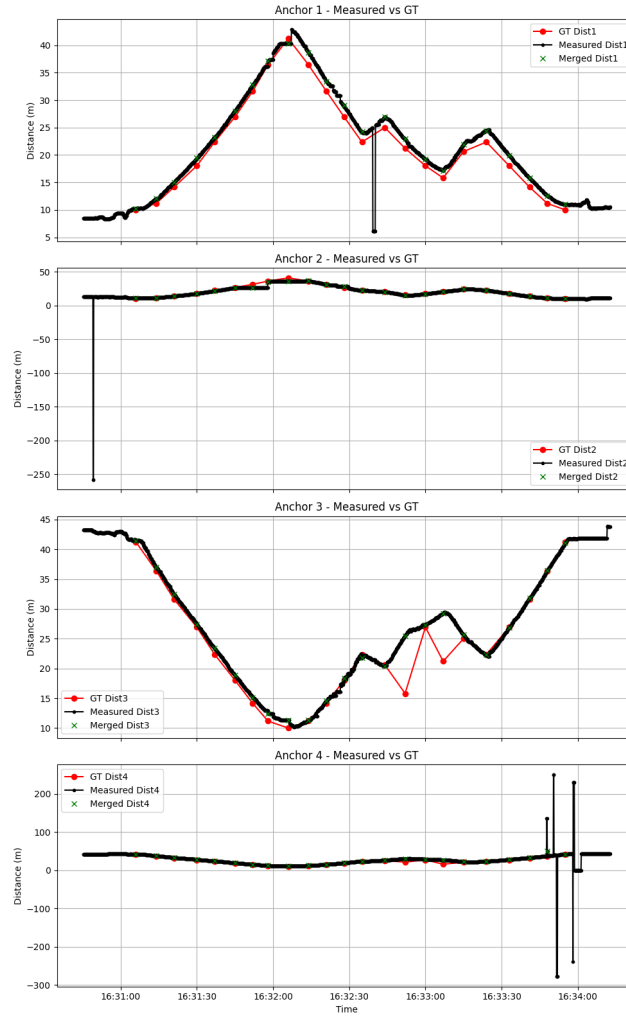


Figure 5: Initial Measured vs GT Distance

## 6 Distance Correction0 - Ground Truth Comp.

Anchor 1: MAE=0.694 m, RMSE=0.842 m

Anchor 2: MAE=1.363 m, RMSE=1.965 m

Anchor 3: MAE=1.184 m, RMSE=2.452 m

Anchor 4: MAE=1.690 m, RMSE=3.887 m

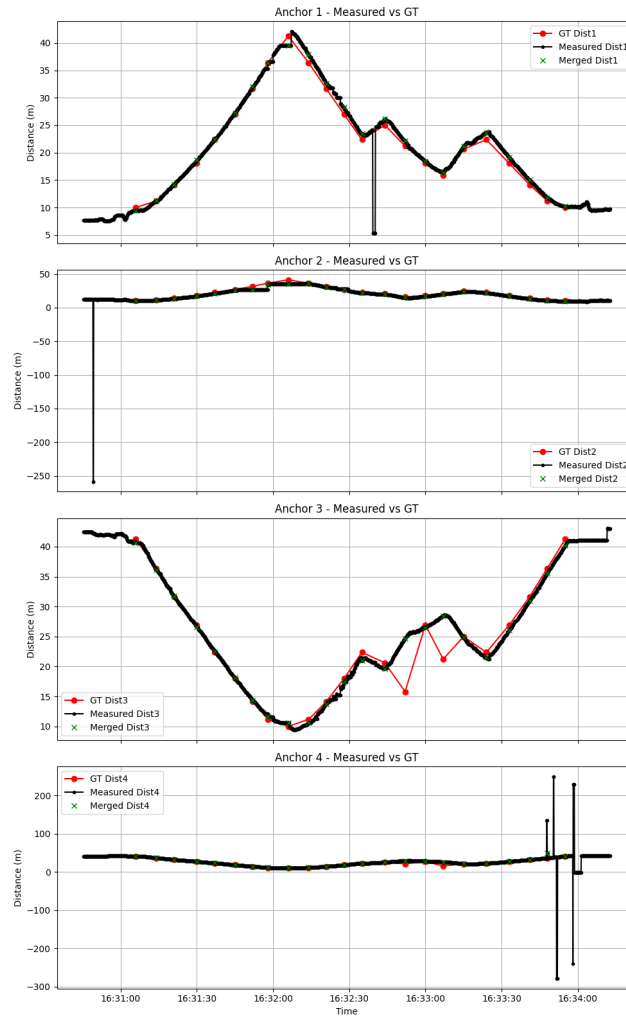


Figure 6: Distance Correction0 Measured vs GT Distance

## 7 Velocity Clamping1 - Ground Truth Comp.

Anchor 1: MAE=0.694 m, RMSE=0.842 m

Anchor 2: MAE=1.636 m, RMSE=2.590 m

Anchor 3: MAE=1.184 m, RMSE=2.452 m

Anchor 4: MAE=1.134 m, RMSE=2.796 m

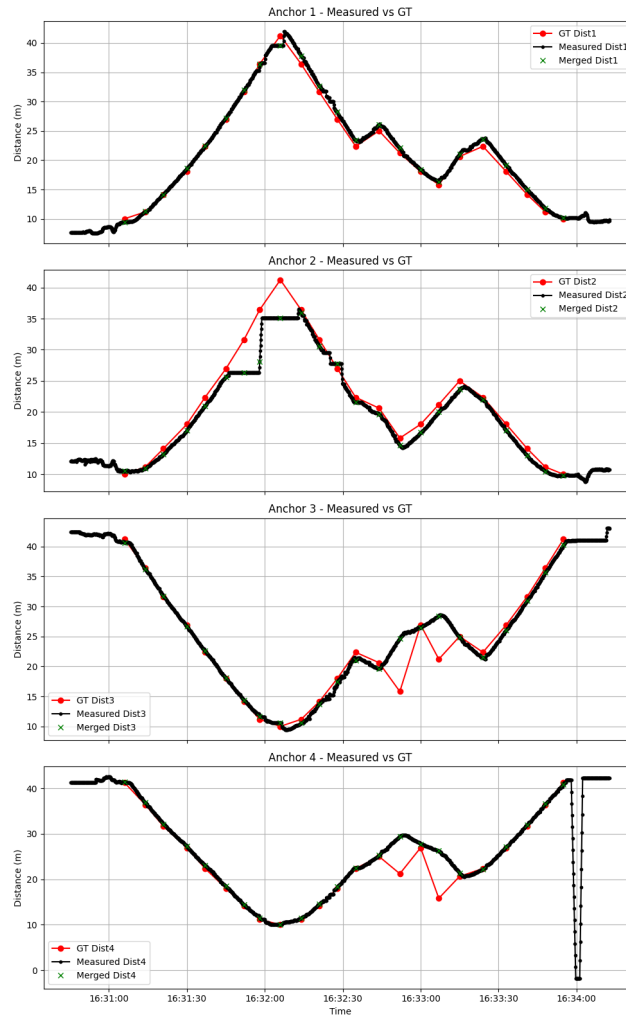


Figure 7: Velocity Clamping1 Measured vs GT Distance



## 8 Outlier Removal2 - Ground Truth Comp.

Anchor 1: MAE=0.694 m, RMSE=0.842 m

Anchor 2: MAE=1.636 m, RMSE=2.590 m

Anchor 3: MAE=1.184 m, RMSE=2.452 m

Anchor 4: MAE=1.134 m, RMSE=2.796 m

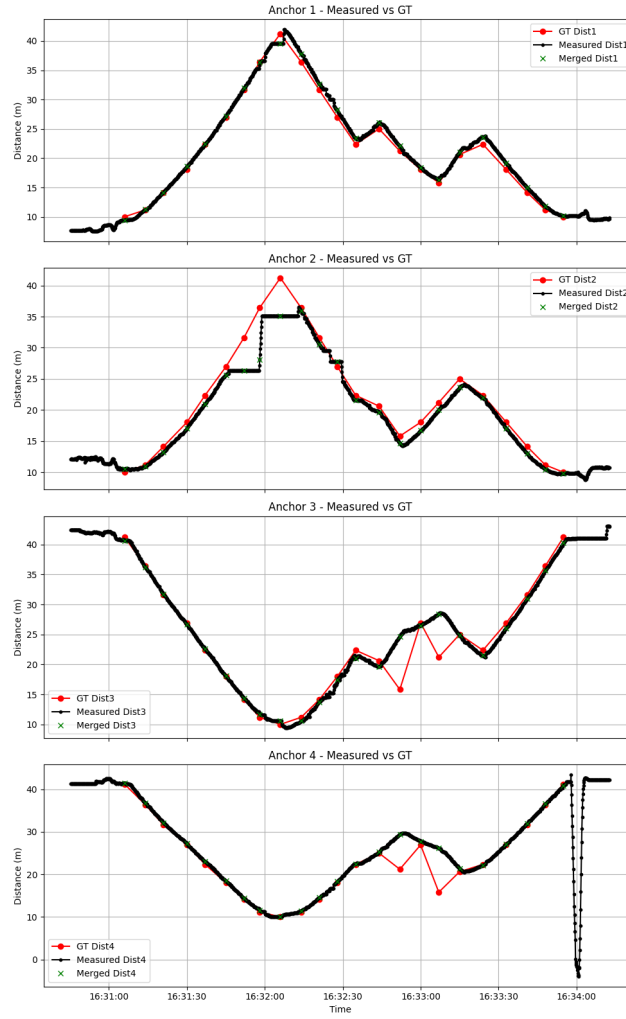


Figure 8: Outlier Removal2 Measured vs GT Distance

## 9 Kalman Filter3 - Ground Truth Comp.

Anchor 1: MAE=0.712 m, RMSE=0.848 m

Anchor 2: MAE=1.674 m, RMSE=2.684 m

Anchor 3: MAE=1.203 m, RMSE=2.460 m

Anchor 4: MAE=1.141 m, RMSE=2.800 m

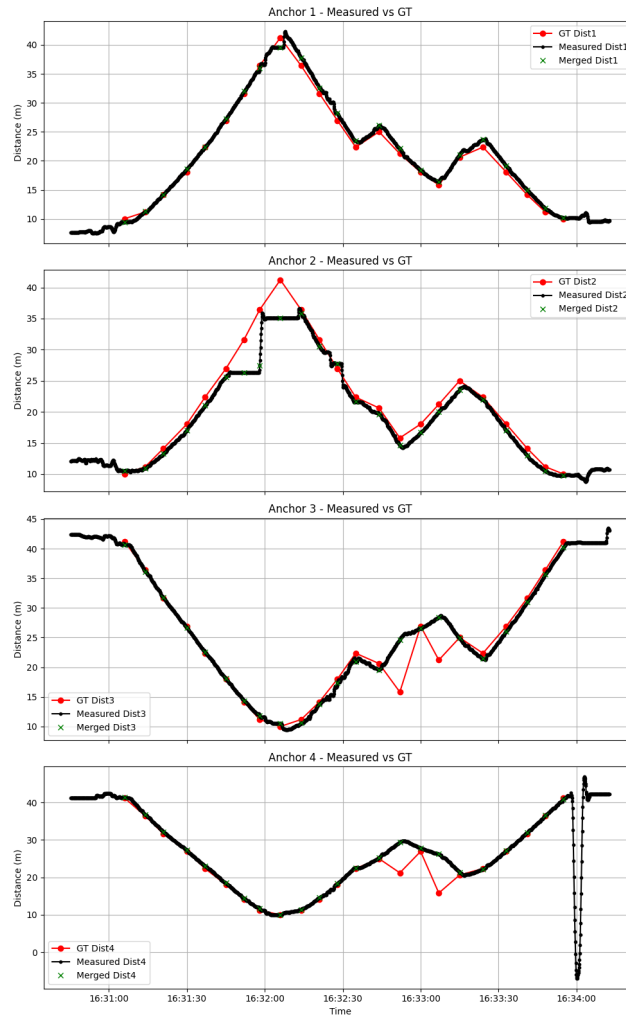


Figure 9: Kalman Filter3 Measured vs GT Distance

## 10 EMA4 - Ground Truth Comp.

Anchor 1: MAE=0.734 m, RMSE=0.884 m

Anchor 2: MAE=1.699 m, RMSE=2.785 m

Anchor 3: MAE=1.241 m, RMSE=2.448 m

Anchor 4: MAE=1.162 m, RMSE=2.799 m

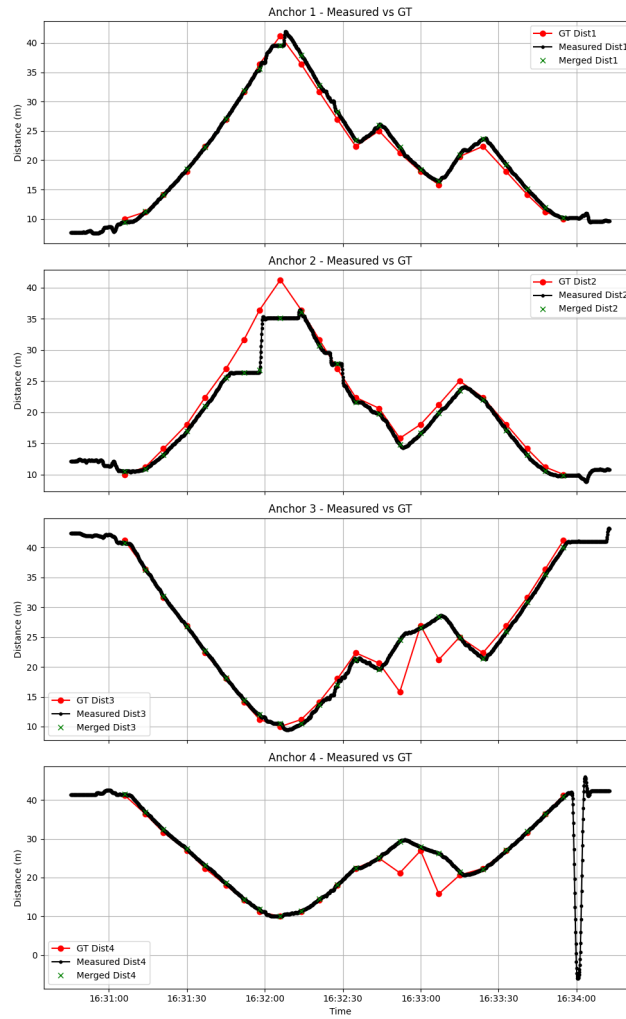


Figure 10: EMA4 Measured vs GT Distance

## 11 Velocity Clamping5 - Ground Truth Comp.

Anchor 1: MAE=0.734 m, RMSE=0.884 m

Anchor 2: MAE=1.699 m, RMSE=2.785 m

Anchor 3: MAE=1.241 m, RMSE=2.448 m

Anchor 4: MAE=1.162 m, RMSE=2.799 m

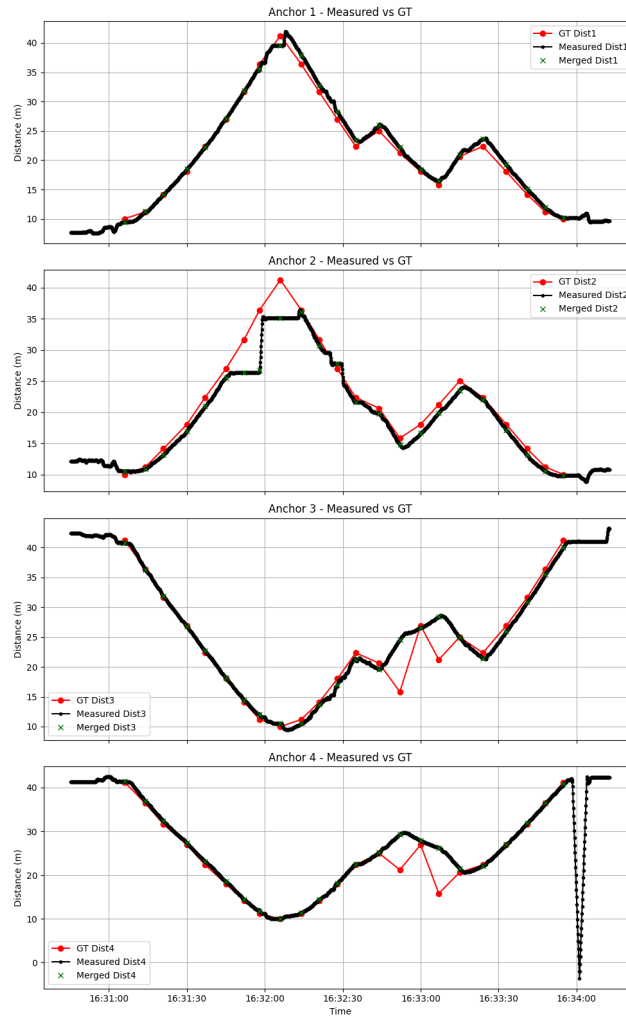


Figure 11: Velocity Clamping5 Measured vs GT Distance

## 12 Ground Truth

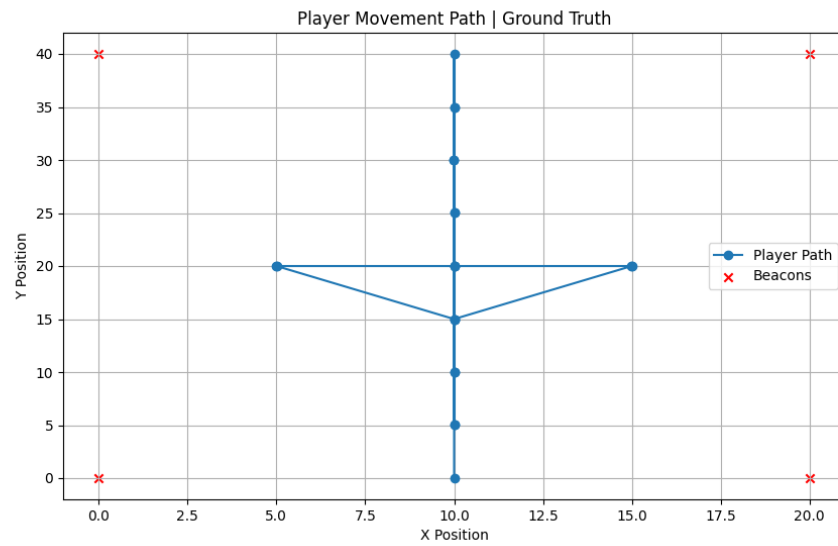


Figure 12: Ground Truth Player Movement Path

## 13 Initial

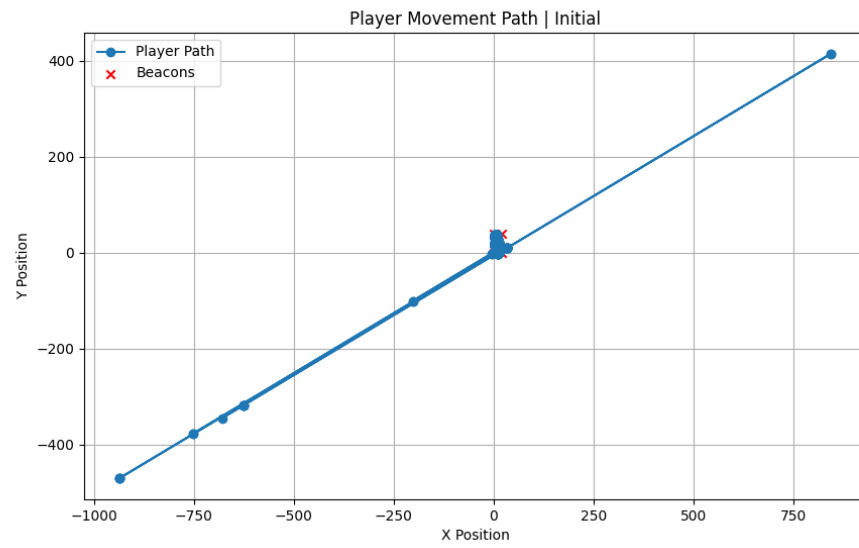


Figure 13: Player Movement Path

## 14 Distance Correction0

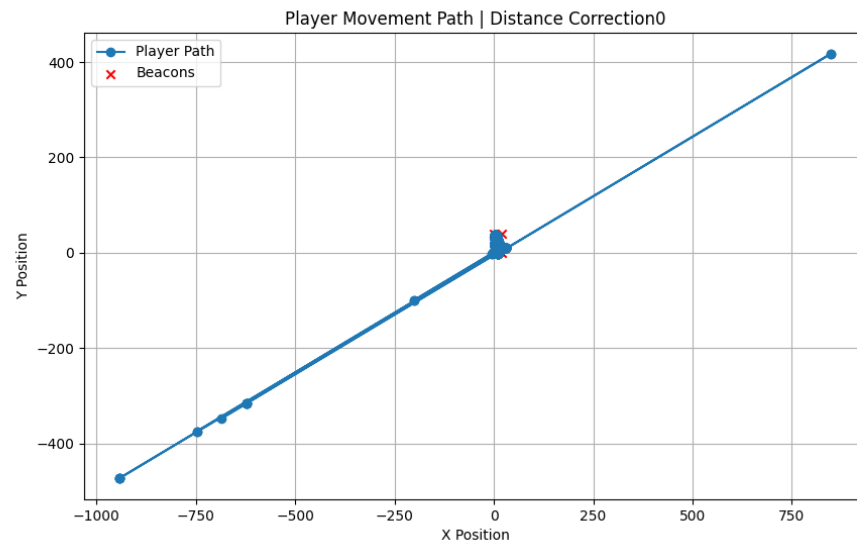


Figure 14: Player Movement Path

## 15 Velocity Clamping1

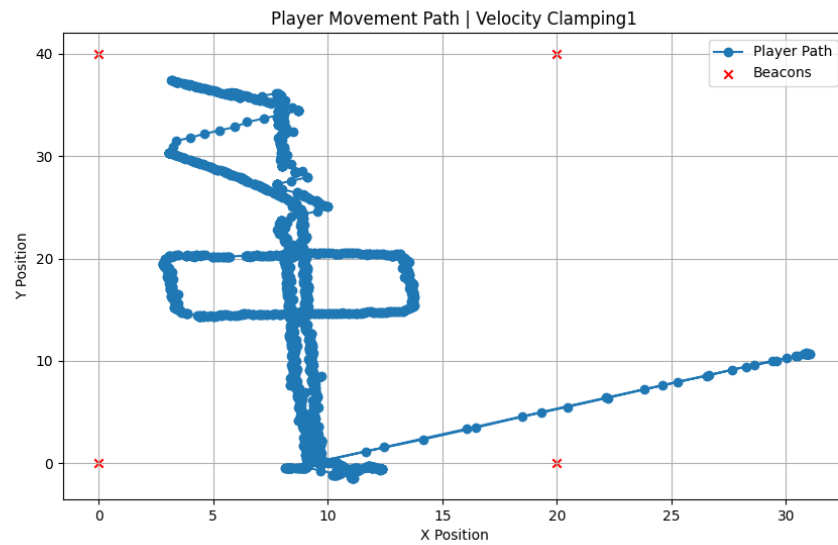


Figure 15: Player Movement Path



## 16 Outlier Removal2

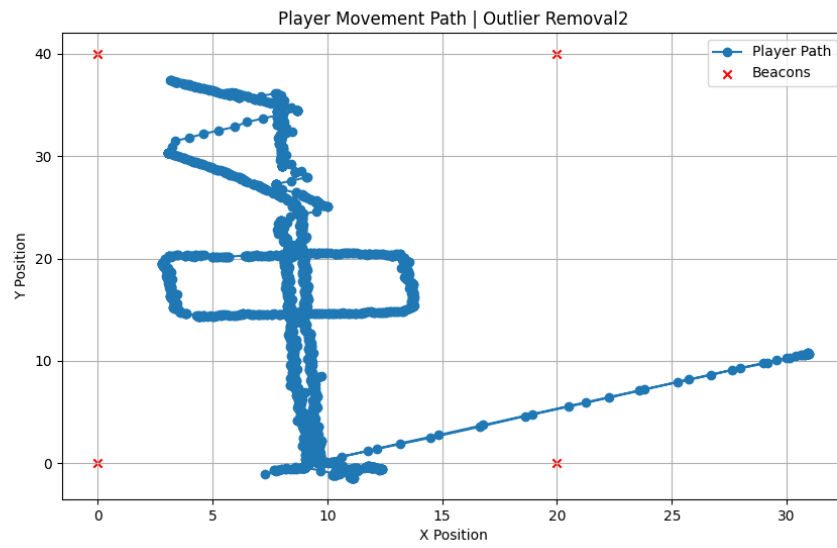


Figure 16: Player Movement Path

## 17 Kalman Filter3

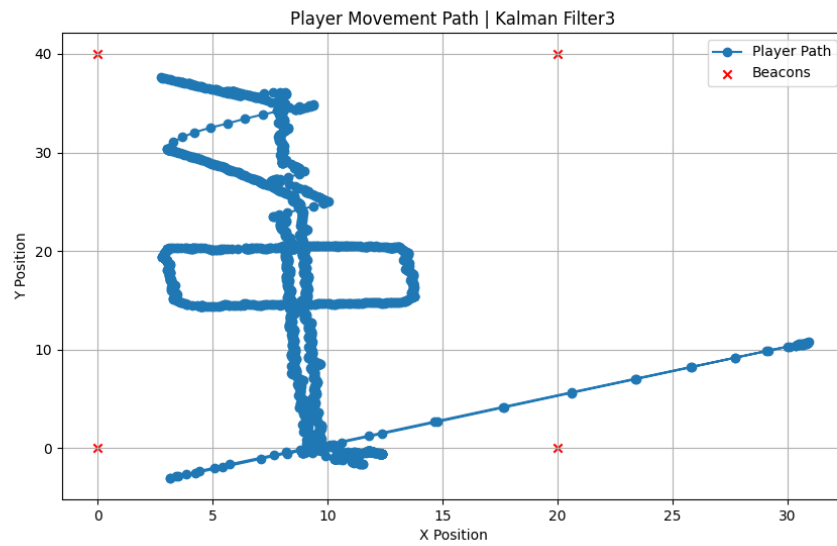


Figure 17: Player Movement Path

## 18 EMA4

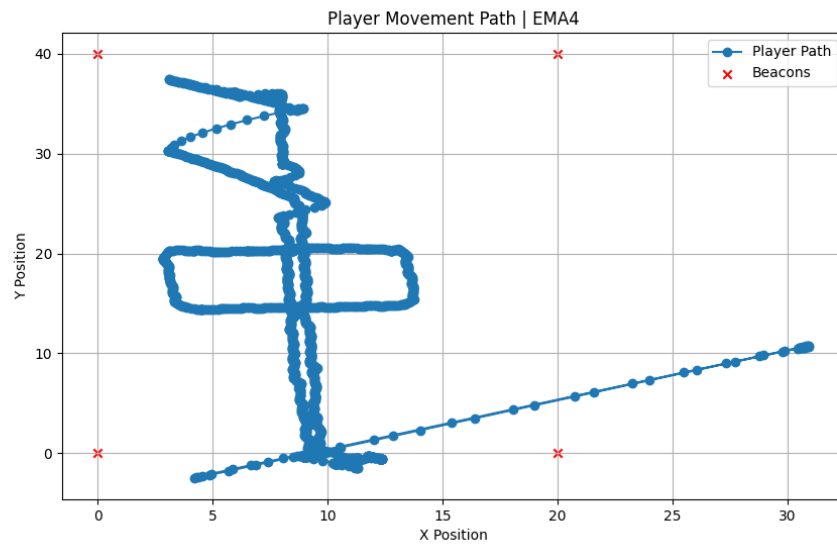


Figure 18: Player Movement Path

## 19 Velocity Clamping5

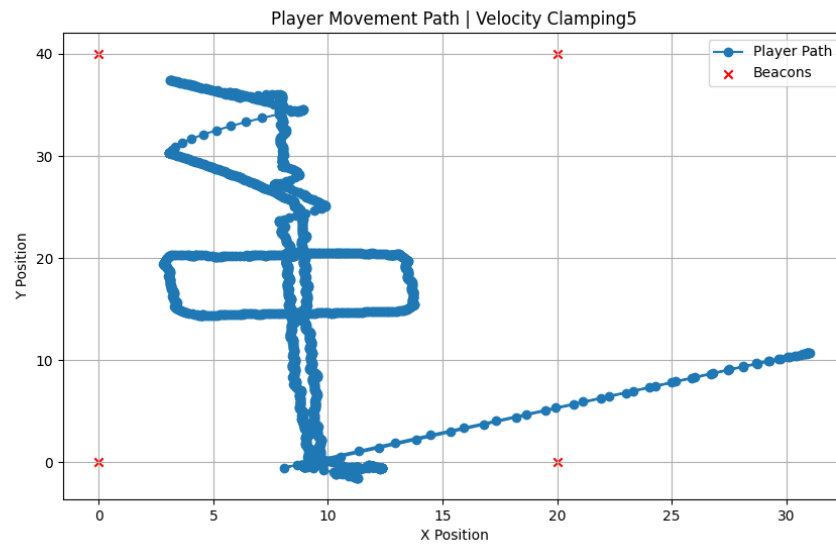


Figure 19: Player Movement Path