five_mobile_restricted Turtlebot 1 Report

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```
## Warning in t1_gazebo$x_position - t1_discrete$x_position: longer object
## length is not a multiple of shorter object length

## Warning in t1_gazebo$y_position - t1_discrete$y_position: longer object
## length is not a multiple of shorter object length

## Warning in t1_gazebo$x_position - t1_continuous$x_position: longer object
## length is not a multiple of shorter object length

## Warning in t1_gazebo$y_position - t1_continuous$y_position: longer object
## length is not a multiple of shorter object length
```

This is a summary of the data from the five_mobile_restricted experiment, Turtlebot #1.

The runtime of this experiment was 0 hours, 52 minutes, and 50.6 seconds.

The total number of external pose measurements recieved by the robot during this time was 97407 which means poses were received at an average of 30.7219454 poses per second.

Shown below is the summary of each filter's error for both x and y coordinates, and also the error in total distance.

```
summary(t1_continuous$x_error)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -2.21900 -0.02626  0.06412  0.04427  0.11650  0.12200
```

```
summary(t1_continuous$y_error)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -0.06217  0.01043  0.05031  0.03533  0.05350  4.88000
```

```
summary(t1_continuous$dist_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.00000 0.05020 0.09391 0.09059 0.12790 5.36100
```

```
summary(t1_discrete$x_error)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -1.87100  0.06244  0.46050  0.32790  0.46600  0.65370
```

```
summary(t1_discrete$y_error)
```

```
##     Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## -0.0436  0.2946  0.2981  0.3131  0.4220  5.1250
```

```
summary(t1_discrete$dist_error)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.5235  0.5516  0.4864  0.5544  5.4560
```