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How to determine the units used in odom_combined and Twist on Turtlebot Kobuki?

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| turtlebot | kobuki | twist | odom_combined |

I am attempting to figure out how the measurements received from the rostopic, odom_combined (geometry_msgs/PoseWithCovarianceStamped) relate to real world units. For example, when I input the following command: `rostopic echo odom_combined`. I received the following output

```
pose:
  pose:
    position:
      x: -0.9762
      y: -2.1532
      z: 0.0
    orientation:
      x: 0.0
      y: 0.0
      z: -0.6230
      w: 0.7821
```

I think that orientation is in radians, but I cannot figure out the units of position. I moved the turtlebot from x: -0.9762 to x: 0.9762, but, when I measured the actual distanced moved, I got 12 feet 7 inches.

I am also trying to figure out the units of twist. I think that orientation in twist is in radians per second, but I do not know what units position is in.

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asked Apr 8 '13
James 412
5 ●1 ●2 ●4

updated Apr 8 '13
bit-pirate 🇰🇷
1987 ●22 ●46 ●53
http://inno.yujinrobot...

G+

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4 Most units used inside ROS are SI units (http://en.wikipedia.org/wiki/International_System_of_Units). Although you can't rely on it, that's usually a good assumption. Have a look at the message descriptions. Sometimes you find useful information there.

So, in your case position/translation is measured in meters and rotation in radians. If you see a rotation description with x, y, z, w, than that's a quaternion.

If your measurement data (e.g. odom) doesn't align with your real world measurements, than your software and/or hardware introduces these errors. For example, the Create's/TurtleBot 1's odometry is very unreliable.

Hope this helps!

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answered Apr 8 '13
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