

EE 570: Location and Navigation

Introduction to Navigation

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- The process of determining a vehicle's "course" by geometry, astronomy, radio signal, or other means.

Often described by Position, Velocity, and Attitude (PVA)

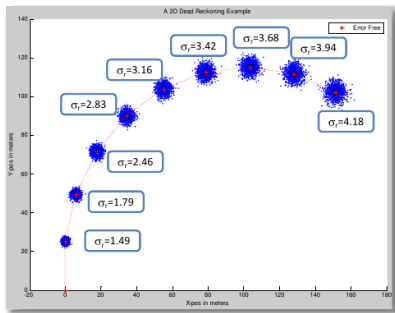
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 - need to initialize and then "integrate" the Δ 's
 - Inertial sensors measure the Δ 's without requiring an external reference

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PVA needed in terms of local datum

DARPA grand challenge

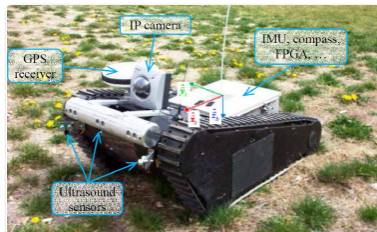


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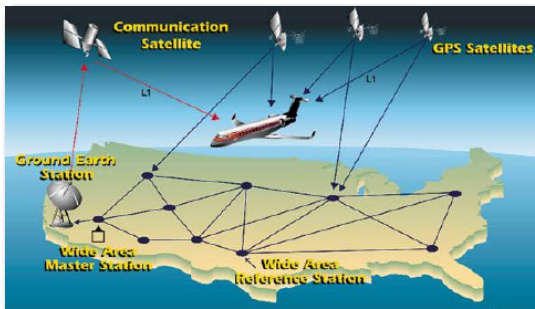
DARPA grand challenge



SOCOM Robot (EE NMT project)



Earth Centered Earth Fixed Coordinate System



Earth Centered Inertial Coordinate System



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- ③ When answering the question “where am I?” the *wrt* must be very clearly defined!!
 - Lead in to the notion of coordinate systems



MEMS Inertial Sensors

