

Coordinate System

Global Frame

The global frame is such that the x,y origin is at the pinger, and z=0 is at the surface. Positive z is up. Yaw is relative to magnetic north. Pitch and Roll are relative to the gravity vector.

Axes

- X+ - front of the sub
- Y+ - left of the sub
- Z+ - above the sub

Rotations

- Yaw+ - Counterclockwise around Z+ axis (this is opposite of magnetic) (Yaw **Left** positive)
- Roll+ - Counterclockwise around X+ axis (Roll **Right** is positive)
- Pitch+ - Counterclockwise around Y+ axis (Pitch **Down** is positive)

TF Frames

- world - Global frame defined above
- cobalt - The frame defining the sub's orientation relative to the world frame based upon the localization node output.
- cobalt_sim - The frame defining the sub's orientation relative to the world frame based upon Gazebo's output.

TF Graph

A visual representation of the TF tree will be placed here in future.

From:

<https://robosub-old.eecs.wsu.edu/wiki/> - **Palouse RoboSub Technical Documentation**

Permanent link:

https://robosub-old.eecs.wsu.edu/wiki/cs/coord_system/start



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