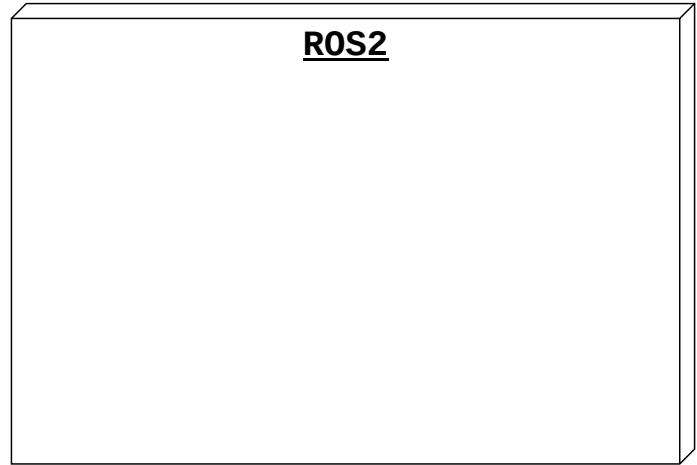
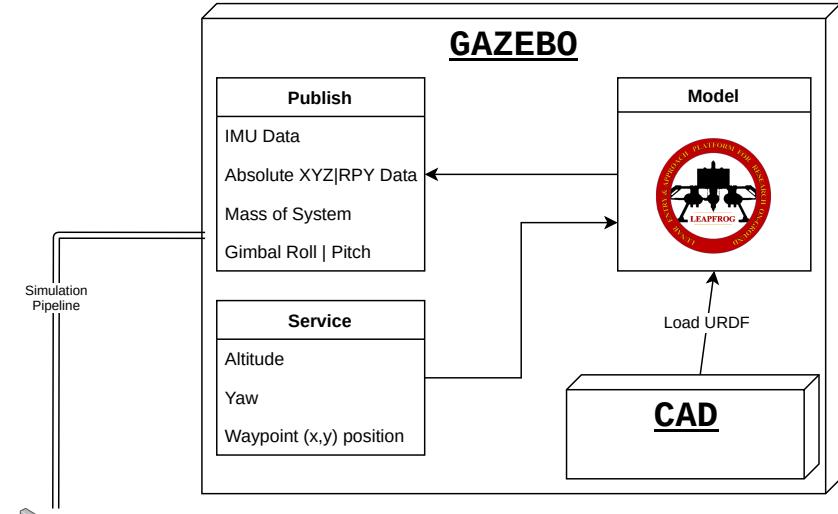


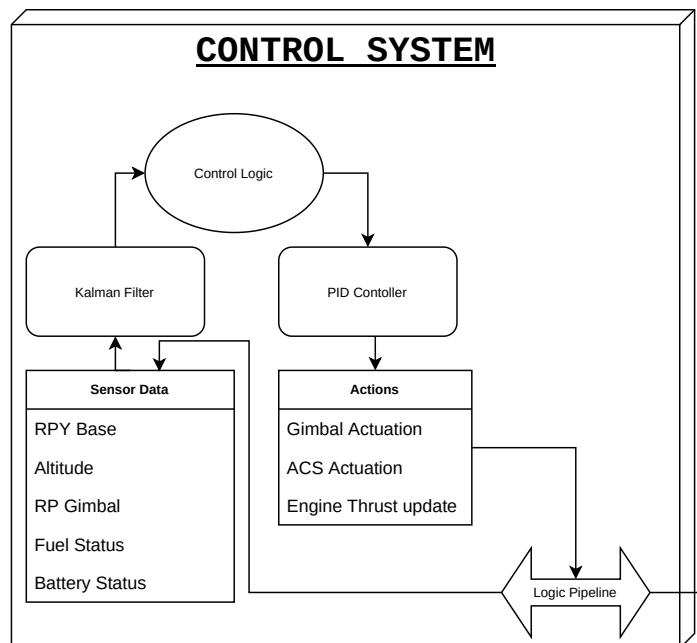
## ROS2



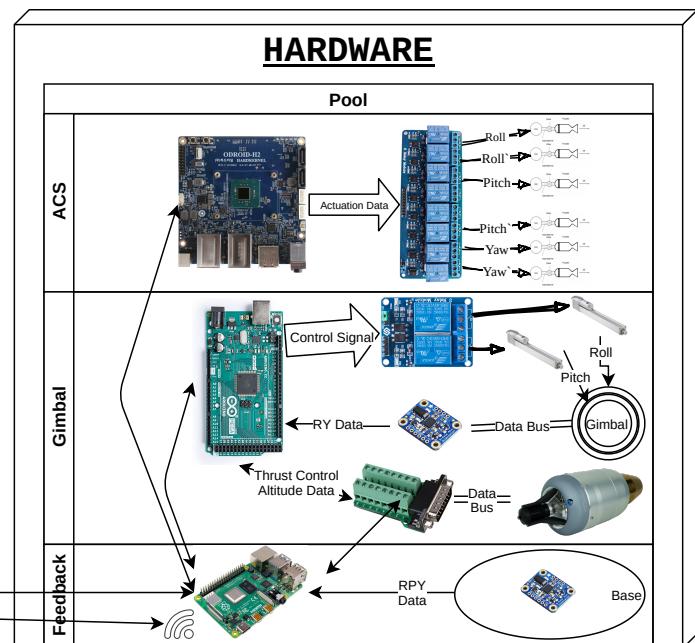
## GAZEBO

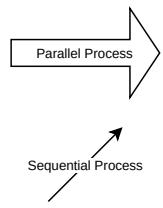


## CONTROL SYSTEM



## HARDWARE





# Goal Gimbal

# Goal ACS

# Goal Engine

Provide TVC to the system

Keep base parallel to ground  
-> +/- 10° tilt base to provide more maneuverability.

Maintain altitude

Relative position and orientation estimation

Waypoint

G-IMU Data

Pipeline

B-IMU Data

ACS Tank pressure

Sensors

Altitude

Geo fencing Operating Range

Gimbal Roll Pitch Operating Range

Within Range?

Calculate Error in position

Calculate Roll | Pitch Angle

Valid Gimbal Angles?

Calculate RP Error

Panic

Clamp

Panic Criteria

Is Base Parallel?

Panic

Excessive Roll | Pitch

???

Tank Pressure

Warning

Calculate RP Error

Calculate thrust time

PID Controller

Altitude valid?

Panic

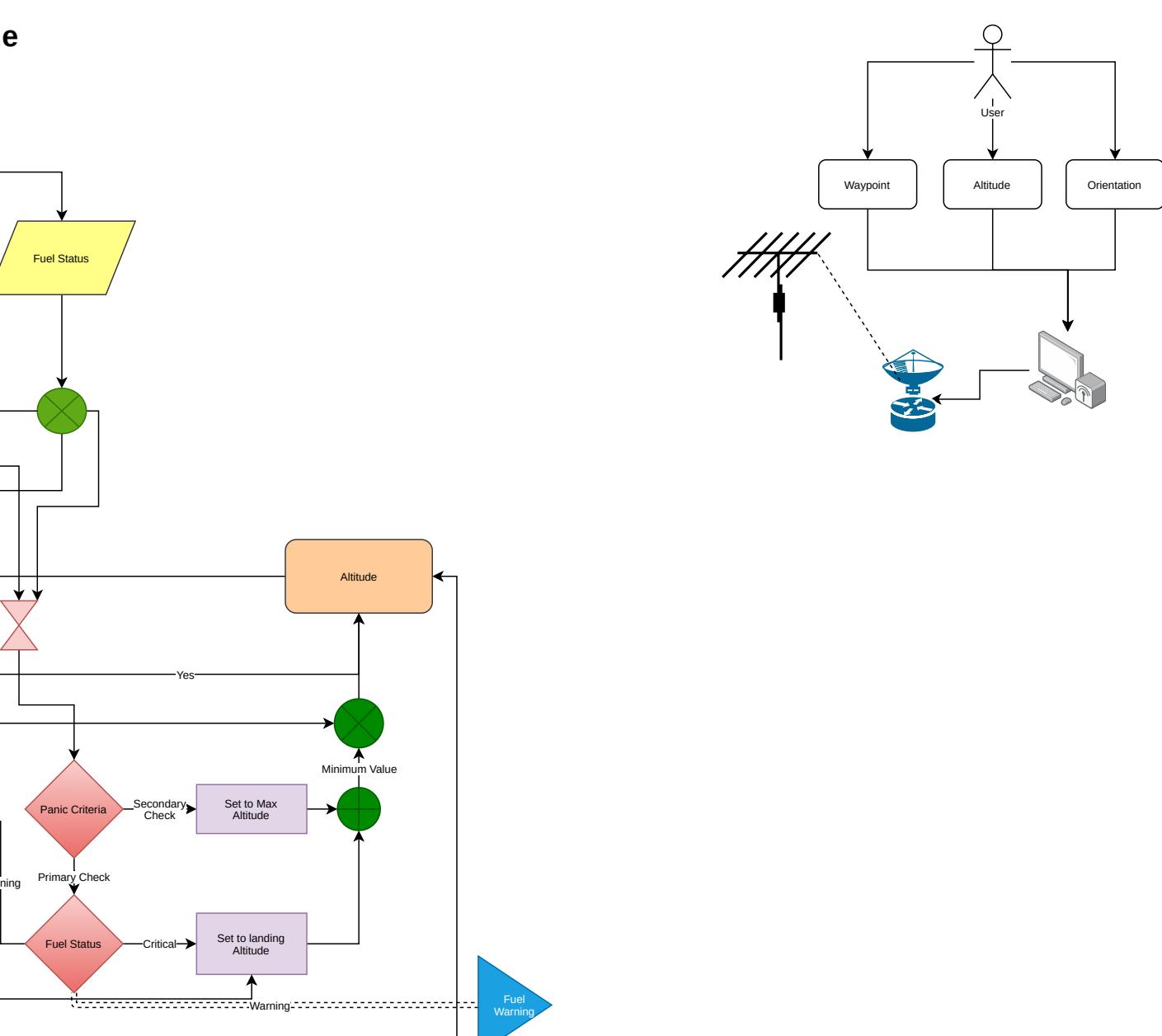
No

Calculate Error

Warning

Critical

Start



## Queries

1. PID of position and PID of gimbal RP, how will they behave?
  - a. Parent-child?
  - b. Sibling conflict?

