Sphere System

Control System

Logitech Controller

entry/

Initialize a Connection with a Controller

do/

- Get Values from 2 Joysticks of the controller
- Translate values to Target_Motor_Speed and Servo_Angle

Pendulum Servo

entry/

• Initialize GPIO and PWM pins of RPi 5

do/

- Get servo_angle
- Write angle(Servo Angle)

Continuous Servo

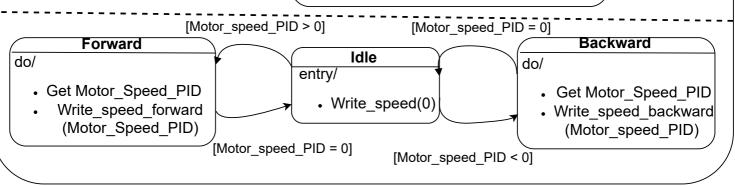
do/

entry/

· Initialize Smart Servo Driver

PID Control

- Get Target_Motor_Speed and IMU data
- Calculate Pitch
- calculate Motor_Speed_PID using PID controller



Mapping System

Livox ROS2 Driver

entry/

 Initialize a Connection with Livox Mid 360

do/

publish Points and internal IMU data

SLAM Algorithm

do/

- Get imu data and points
- Publish Cloud Registered Point, Odomotory, path, pose, etc

ROS2 Bag

do/

 Record Published Topics from SLAM Algorithm and IMU