Fall Validation Experiments: Team B | AutoPirates

Perception

Step ID	Step Description	Success Criteria	Conditions
PE.1	Start RGB video of field test	This is our ground truth	Location: NSH Demonstration on laptop (Simulation), Projector required
PE.2	Simultaneously replay and visualize saved raw radar data in ROS	We can see plots of the radar image	
PE.3	Show filtered data	Draw bounding box around the obstacles	
PE.4	Demonstrate obstacle detection	Draw bounding box around the obstacles	
PE.5	Show detected objects from radar image while showing recorded video	The radar should detect obstacles that are in the video, at least the boats	

Path Planning and Simulator

Step ID	Step Description	Success Criteria	Conditions
PL.1	Interfacing with IMU/GPS	Display logged data from IMU/GPS which we would be collecting during a field test	Location: NSH Demonstration on laptop (Simulation), Projector required
PL.2	Generate Environment Map	Display occupancy grid map for 2 miles with filled blocks depicting obstacles (For one of the rivers of Pittsburgh)	
PL.3	Demonstrate Path Planning	Boat successfully navigates from Point A to Point B in simulator which are 1 mile apart	
PL.4	Demonstrate obstacle detection	Boat successfully avoids obstacles in simulator in the above task. Obstacles are static and are simulated through occupancy grip map	

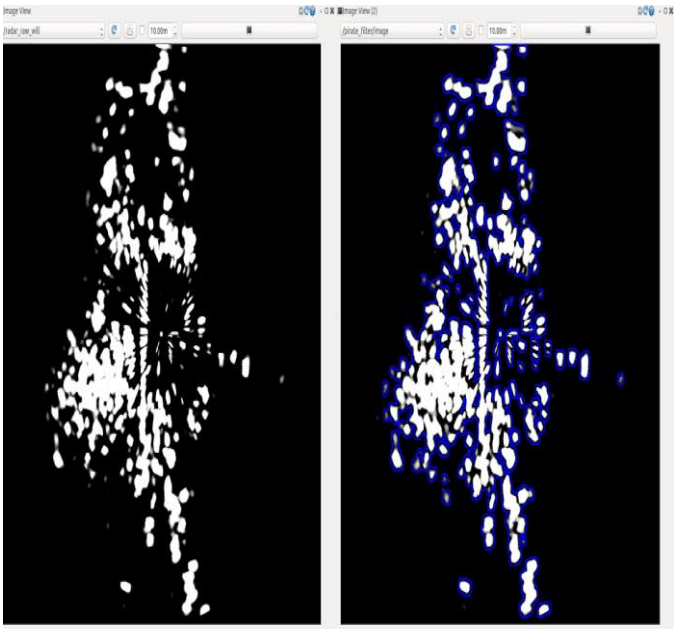

Figure 1: In **perception,** we would be showing obstacles marked on real radar data. (More filtered and clear version as compared to above images)

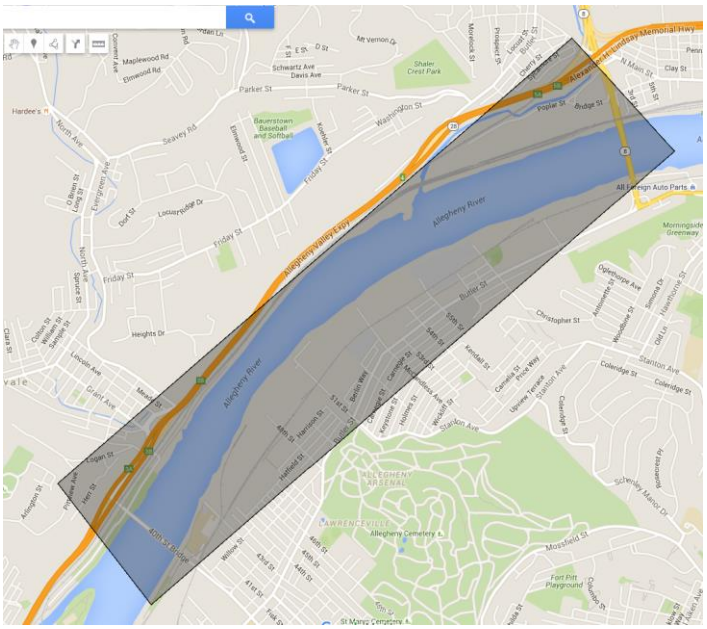

Figure2: In **path planning**, we would convert a stretch of the river like in figure to OGM and display the planned path