

3rd Field Test Plan

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1 Test One-time Planning

1. Get the boat in the middle of the road and set the navigation goal. The path planner should generate a path with way points.

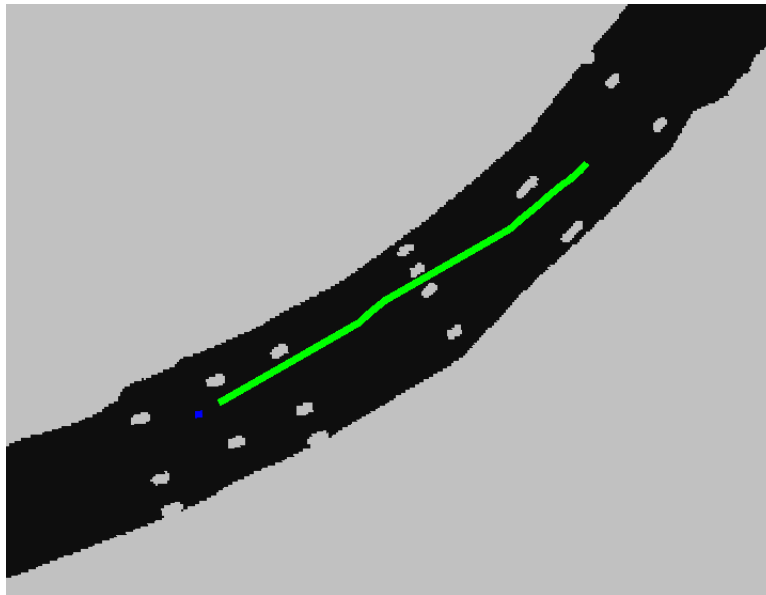


Figure 1: Path Planning

2. Compare the planned path with the real path of the boat, tune motion primitives to make the trajectory of the boat best follow the planned path.
3. Sometimes the path planner will generate a path that is too close to the shore, as figure 2 shows. We need to set the costmap to keep the boat a certain distance away from the shore.
4. Since we added the information of bridge pylons in the occupancy grid map. We'll test if the boat can successfully pass through those bridge pylons, as figure 1 shows.
5. Add fake obstacles in the simulator and see the performance of the path planner. The boat is supposed to generate a path like figure 3.

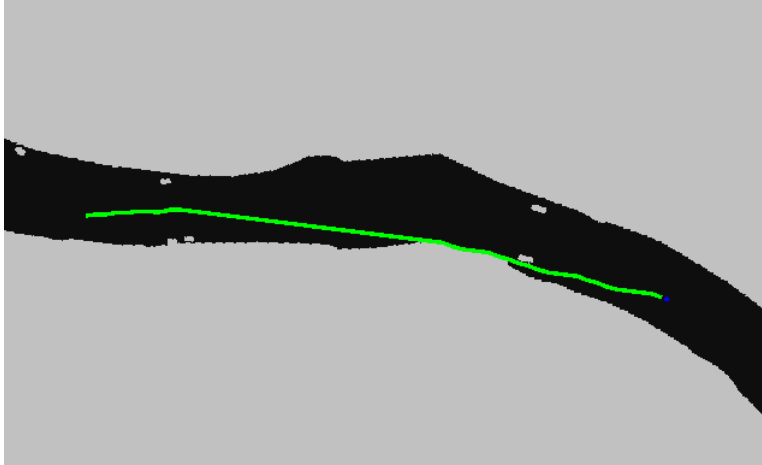


Figure 2: Path Planning

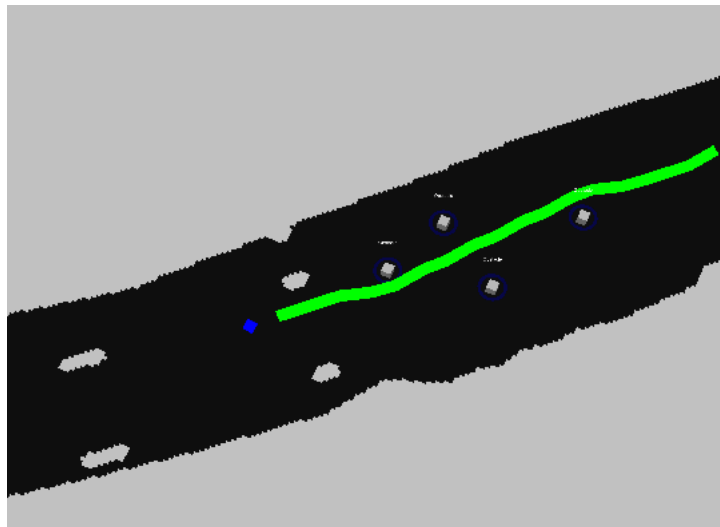


Figure 3: Add fake obstacles

2 Test Continuous Planning

After we finish test one-time planning, we'll test the performance of continuous planning. We'll keep the path planner running so the path will keep updating as the boat moves. We can also try to integrate the radar obstacles with the path planner if everything goes well.