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HW4 Report

My search heuristic is rather simplistic, especially compared to the ones discussed in the Waharte paper. I simply take in the corner coordinates, compute the distance of the longest vertical edge, and split the area up into sectors: one for each UAV in the program. Then, each UAV begins traveling horizontally from one longitude border to another, and at each border, it decreases its latitude by 5 meters. This way, any of the UAVs would be certain to pass within 3m of the black box on one side or the other.

The Waharte analysis ventures to use search algorithms that look less like brute force. I found it interesting that they attempted to compute search paths based on potential. In the greedy algorithm and potential heuristic, they attempted to model how "good" a location seemed for the drone to search. So, locations with obstacles or mathematically unlikely locations were searched last. However, I wonder if that's a reasonable assumption to make under the parameters of a search and rescue mission. Getting lost seems like it could reasonably be a random event that happens despite obstacles for drones or other geographic unpleasantries. In fact, maybe challenging geographies are the reason for a search and rescue mission in the first place. Intentionally excluding such factors seems misplaced. I also like that in the Waharte study they had drones updating one another's global awareness when they came into transmission range. This reminded me of the airplane collision avoidance system from last week, and seems like a really efficient way to prevent duplicate work being by the UAVs.