Contents

1 Problem Restatement

Searching for a lost plane:

Recall the lost Malaysian flight MH370. Build a generic mathematical model that could assist "searchers" in planning a useful search for a lost plane feared to have crashed in open water such as the Atlantic, Pacific, Indian, Southern, or Arctic Ocean while flying from Point A to Point B. Assume that there are no signals from the downed plane. Your model should recognize that there are many different types of planes for which we might be searching and that there are many different types of search planes, often using different electronics or sensors. Additionally, prepare a 1-2 page non-technical paper for the airlines to use in their press conferences concerning their plan for future searches.

2 Assumptions and Assumption Justifications

About CATEGORY 1

- **The last known state of the lost aircraft is accurate for an interval of 15 minutes to 1 hour**. The old "Log-on Interrogation" standard interval is 1 hour, while current proposals recommend a change to 15 minutes.
- **straightness**. No maneuver from incident to crash. worse case of engine failure gives average of roughly 11 minutes. no time for intentional changes on the large scale.
- **immediate standby**. Search agents are on edge instantaneously.

About CATEGORY 2

- **STATE ASSUMPTION 1**. Add one-two sentences describing and justifying your assumption.
- **ASSUMPTION 2**. Describe/Justify.

- **ASSUMPTION 3**. Describe/Justify.

3 Literature Review

4 Criteria for Optimal Solution

5 Describe Your Method

5.1 Description

5.2 Mathematical Interpretation

5.3 Comparison to Most Interesting Literature Paper

6 Comparison to a Greedy Algorithm

7 Experimental Setup

8 Results

9 Sensitivity to Parameters

10 Strengths and Weaknesses

Strengths:

- **Short bullet point**. Description.
- **Short bullet point**. Description.
- **Short bullet point**. Description.

- **Short bullet point**. Description.
- **Short bullet point**. Description.

Weaknesses:

- **Short bullet point**. Description.
- **Short bullet point**. Description.
- **Short bullet point**. Description.
- **Short bullet point**. Description.
- **Short bullet point**. Description.

11 Conclusion

- **Recommendation 1**. Why the data says so.
- **Recommendation 2**. Why the data says so.
- **Recommendation 3**. Why the data says so.
- **Recommendation 4**. Why the data says so.

References