**Initial Report**

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**Description of the Project:**

The purpose of this project is to implement a multi-robot navigation strategy in two kinds of environments. First of all, we have a cluttered environment i.e. a group of robots starts from one side of the “world” and has to navigate through a maze with obstacles to reach the other side of the “world”. The group of robots should be able to navigate around said obstacles and regroup. In a second scenario, we have two groups of robots and each start at opposite ends of the “world.” They both have to cross the board thus avoiding each other.

The navigation strategy will have to be implemented in simulation using Webots and in real experiments with real E-pucks robots. We will use several performance metrics to assess the efficiency of our strategy.

**Preliminary Results:**

At this point, we only worked in simulation.

Scenario 1:

Our navigation strategy in the first scenario works rather well: our group of robots stays clustered and manages to navigate through various configurations of obstacle placement to reach the other side of the board. We found that there is a slight deviation of the cluster’s direction and we need to fix this.

Scenario 2:

**Tasks to do:**

* Improve scenario 1’s performance
* Fix various issues in scenario 2
* Adapt our strategy to real experiments