# Planning 29-04-2021

Mads and Asger

Parts/objectives we think are important now

- Measurement system
  - Research equipment
  - Decide on / implement interface
  - Present collected data
- Path planning
  - Decide on path planning algorithm/strategy
  - Implementation
- Simulation
  - Set up environment

Suggestions for path planning

1. State machine

- Switches between a global path and a local path based on a threshold.
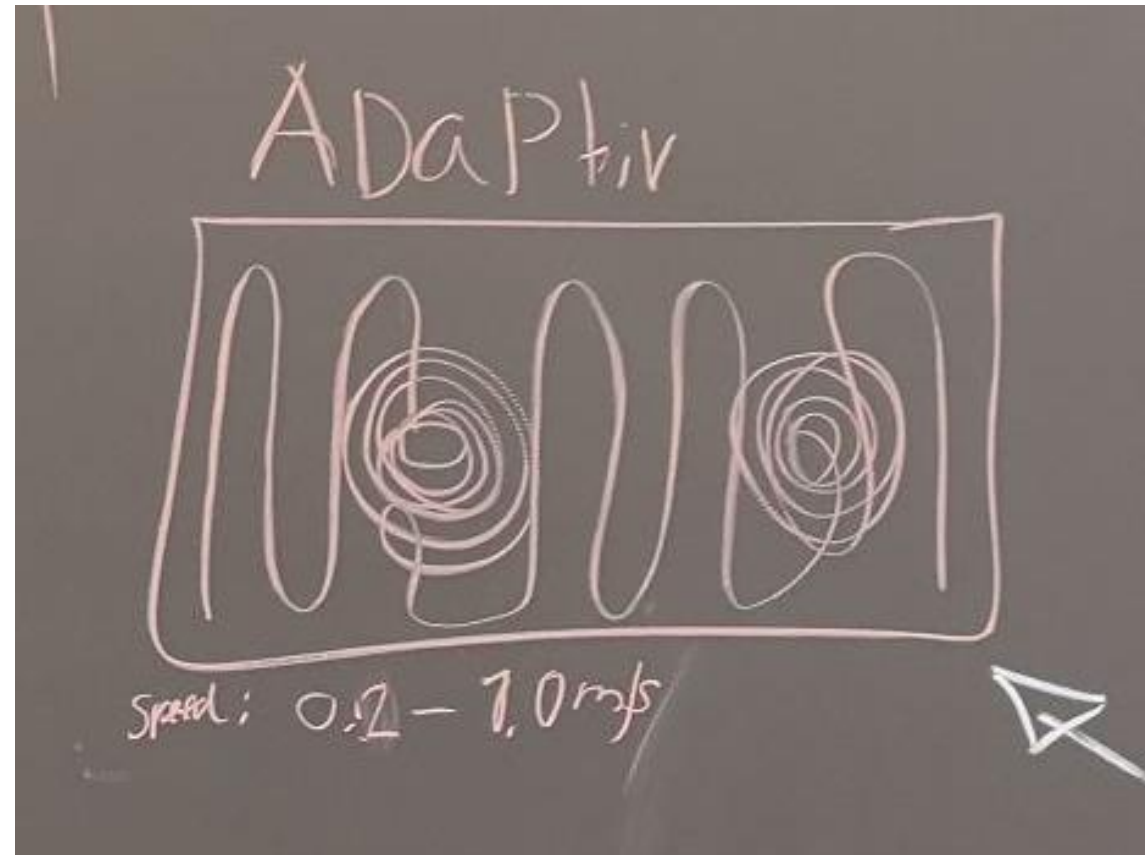
2. Speed controller

- Path is a lawnmover pattern
- Inverse P-controller for speed with an input from the measurement system.
  - In regions of low interest, the robot moves quickly, and takes less measurements
  - In regions of high interest the robot moves slowly and makes more measurements.

3. Certainty grid

- We create a grid of the area, with an equal chance at each grid point
- The robot measures the nearest point with a high interest chance, and updates the surrounding points
  - Increases the chance of interesting things if the measured point had a measurement of interest
  - Decreases the chance of interesting things if nothing was found in the measurement.
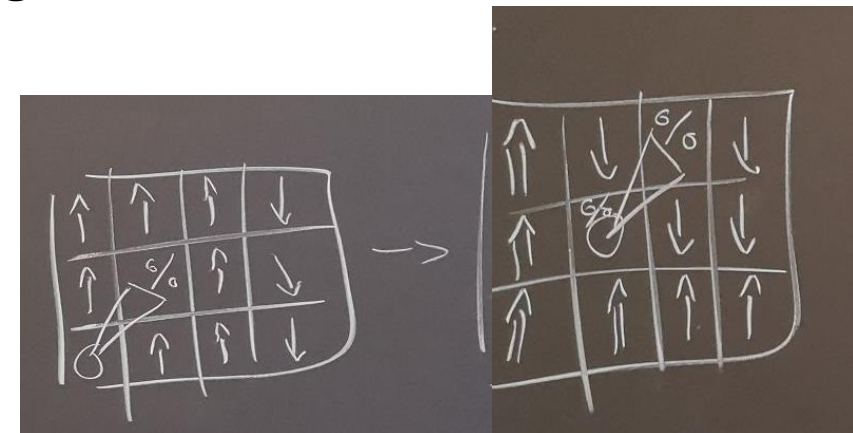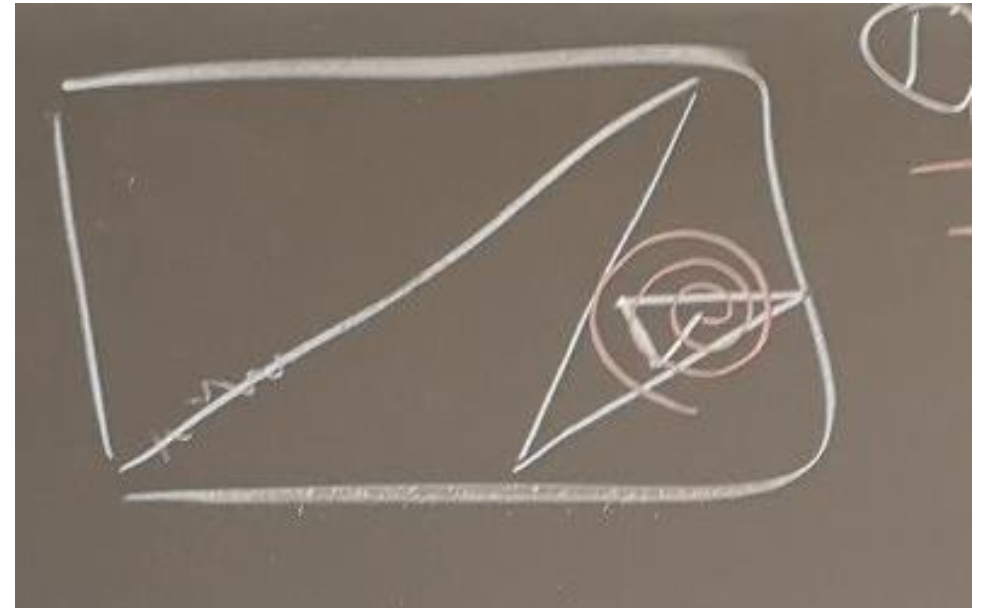
4. Adaptive grid sizes

- You have a grid, visit all points.
  - If a measurement is above a threshold (or something) create a smaller grid in this area.

5. Source searching

- Do searches towards increase of measurement gradiant
- Or, like picture, do halves, and chose left/right based on measurement.

Suggestion

- Do 1 -> Should be easy to implement, gives a result.

Other notes

- Measurement - > For certainty grids, divide camera in 4 parts, and update in those directions