Things to discuss:

- Planning a meeting with tutor
- Software problems? (git)
- Discussing work done at home
- Brainstorm about next steps of the project
- Planning for the next weeks

RPC’s and functions for PICO’s escape room challenge:

Requirements:

- PICO has to cross the finish line within 5 minutes.
- PICO should avoid the walls (in the room and in the corridor).
- PICO needs to be robust, so he should produce good results independent of initial orientation, location and imperfections in the room.

Preferences:

- The software written by us should not be overly complicated (easy to set up) and well-structured.
- PICO should find the exit and move here as fast as possible.

Constraints:

- The translational velocity of PICO should be no more than 0.5 m/s.
- The angular velocity of PICO should be no more than 1.2 rad/s.

Functions that the robot should fulfill:

PICO has to find the location of the exit

- Build a map of the escape room and its walls using sensor data.
  - Try to localize the gap in the rectangular shape and drive towards it.
- Find the exit without building a map by using sensor data.
  - Drive to a wall, keep driving clockwise and turn left if possible
  - Smarter algorithm?

PICO has to drive towards the exit with its actuators

- Find the fastest trajectory to reach the exit with the right orientation.
  - Use walls in the corridor to determine the correct orientation

PICO should move through the corridor while staying away from the boundaries.

- Turn left if right wall is closer, turn right if left wall is closer
- Use potential field to remain in the center of the corridor

Example of flowchart we need to come up with depending on our design choices: