HOCHSCHULE
RAVENSBURG-WEINGARTEN
UNIVERSITY
OF APPLIED SCIENCES

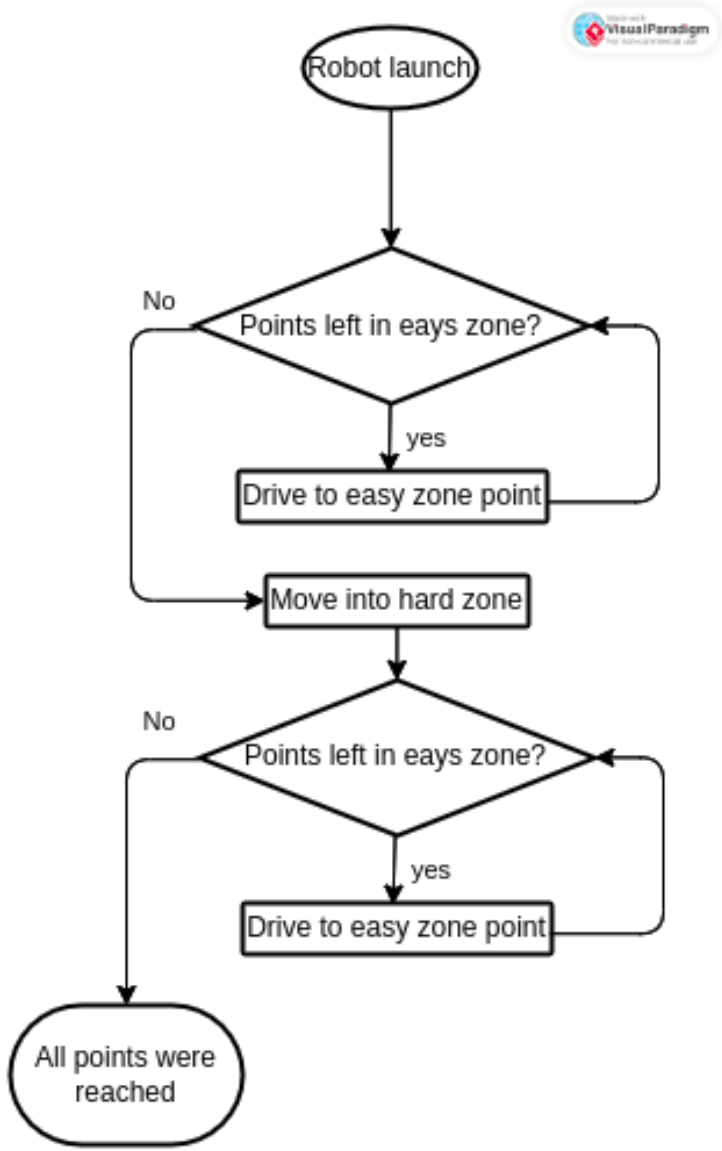
AMR
FINAL PRESENTATION

Fabian Schotte

My ideo for the competition

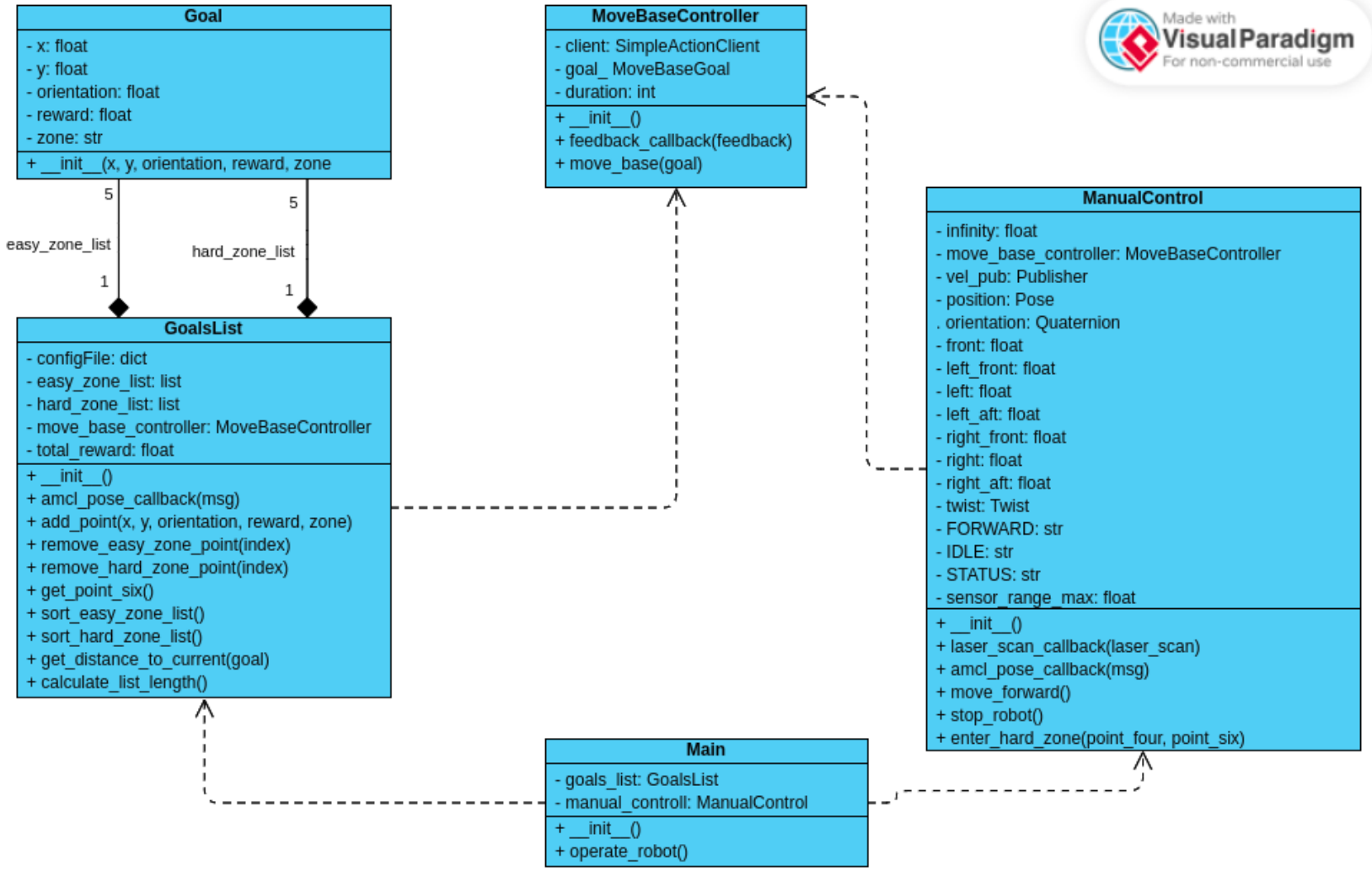
Flow chart of the objectives

1. Move around the easy zone and collect the points
2. Move into the hard zone
3. Move around the hard zone and collect the points



My ideo for the competition

Code structure as an UML



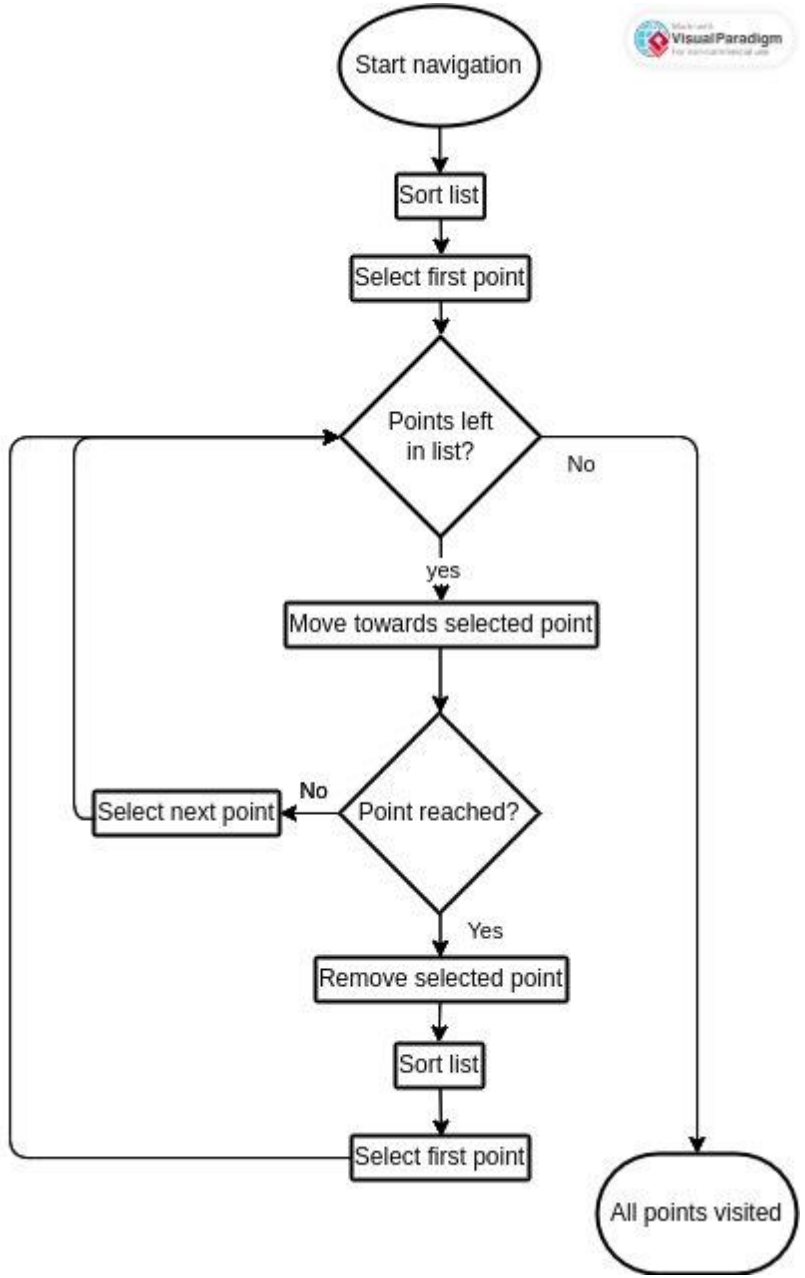
Current situation

- The robot is capable of moving from point to point
- The robot detects objects in its way and moves around them
- If an goal is taken the robot moves to the next goal according to the list
- The robot has problems at the wall opening
  - It does drive towards the opening but does drive through it
  - Possible Problem: The position reading is inaccurate
  - Solution: Replacing the reading by a new accurate one

Problems

Backup strategy for navigating to the goals

- All point list are sorted after the distance to the current position
- The list will be resorted after each successfully reached point
- When an point cannot be reached, the code will continue with the next point
- After the second point is reached, the code will reattempt to reach the first point



Problems
Collision Detection

- Changed the delta value in the config for slam from 0.5 to 0.01 to improve the map accuracy
- If recorded goal position was inaccurate, it was replaced by an new and accurate reading of the goal position
- Possible to increase the allowed distance to other objects because the robots are often too close to each other

Problems

Moving throught the opening in the wall

- The robot moves first towards an point directly in front of the wall opening
- The robot positions itself with the opening
- The robot drives forward until the point is reached
- If an obstacle is in the way the robot will stop to avoid a collision
- After the point is reached, the robot will return the control to the goals_list