

4SC020 – Embedded Motion Control

Minutes for 2019-06-12

Goal

Finish the software and make it ready to use for the hospital challenge.

Issues

- shiftMap() does not work correctly when entering emergency mode
- Door finding algorithm might not always be as robust as desired
 - Sometimes wrong door is found
 - Sometimes door is found by cabinet
 - Should not be detected anymore
- Removing obstacles from map does not work properly
 - No obstacles are removed, until a certain angle is achieved, and then all is removed
- Map corners are not yet automatically processed
- No localization based on LRF data, only ODOM
- Certain cabinet orientations make PICO turn away from the cabinet
 - Probably atan2 issues

To Do

- [DONE] Merge branches into master
 - mapFit
 - Matching algorithm is not necessary
- [DONE] Check verbal PICO output
 - PICO should say what he's doing as often as relevant
 - Moving to cabinet number
 - I have found cabinet number
 - I am doing things at cabinet number
 - Planning path to cabinet number
- [PRIO3] Rewrite software to use one single coordinate system
 - Causes trouble in multiple other functions
- [PRIO1] Add localization update when at cabinet, so in state cabStopped (Martijn)
 - Use LRF for high accuracy
- [PRIO1] Fix bugs in shiftMap() (Ruben/Jeroen)
 - Incorrect operation when in emergency or stuck states
- [PRIO1] Fix bugs in obstacle removing (?)
 - No removing until certain angle is detected
- [PRIO3] Add additional user input if multiple algorithms are possible
 - Unsure whether necessary
- [PRIO2] Add cabinet detection to localization algorithm (?)
 - Two simultaneous methods for localizing
- [PRIO1] Fix makePlan atan2
- [PRIO2] Add proper avoidance when emergency state is reached
- [PRIO2] Add cabTurn functionality
- [PRIO2] Pause in cabStop state

Finalization

- Peer Review
 - Merging
- Wiki
 - Tests (Bram)
 - Localization (Jeroen)
 - Original idea
 - Backup plan
 - Updates at cabinets
 - Planning (Ruben)
 - Obstacle recognition (Martijn)
 - Obstacle avoidance (Bram)
 - Global movement (Ruben)
 - Local movement (Marcel)
 - Code
 - Suggest your own snippets
 - State Machine (Bram)
 - Software Architecture (Bram)
 - Conclusion (Martijn)