Quadracopter project
Report phase 1

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1 Summary

Phase 1 aims att getting started with the development process. Thus most of the goals aims at setting up a proper system so that future phases can focus on programming and control.

Project

- Setup Git (done)

- Specify long term goals (done)

Hardware

- Specify hardware

- Assemble hardware

- Calibrate hardware

- Create test of hardware

- Approved testing

- Documentation on preformance and possible future adjustments

Development environment

- Setup target

- Setup host

- Setup proper procedure host -¿ target

- Verify proper behaviour

Software

- Agile development...

- Automate calibration of hardware

2 Project

2.1 Setup Git

A public repository is setup on git hub. To clone the repo use the following https clone url:
Git is intentionally not setup on the target machine, as the repository will contain several

> https://github.com/malmbergoe/Quad.git

irrelevant files for the target. Instead the target will be up to date by using an crossbuilding
toolchain on the host.

2.2 Specify long term goals

Long term goals in this context is to figure out what the intended use of the quadracopter
my be, as this affects the choice of hardware etc. The following list defines some desired
features/capabilities

1. Being able to fly horizontaly through door openings

2. Being able to manouver with an external load of 2 kg

3. Fast wireless communication

4. Possibility to extend unit with a robotic arm

5. Possibility to extend unit with autonomous navigation and manouverability

6. Awesome looks

7. Speaker

8. Possibility to extend unit with computer vision

9. Operating on embedded linux

10. Usb port

11. Reasonable air time

12. Easy to exchange battery pack

This list is not final, but is intended to give a general direction when choosing hardware etc.

3 Hardware

3.1 Specify hardware

3.2 Assemble hardware

3.3 Calibrate hardware

3.4 Create test of hardware

3.5 Approved testing

3.6 Documentation on performance and possible future adjustments

4 Development environment

4.1 Setup target

4.2 Setup host

4.3 Setup proper procedure host -¿ target

4.4 Verify proper behaviour

5 Software

5.1 Agile development...

5.2 Automate calibration of hardware

6 Conclusions and future work