



Assignment

Research & development of the high power servo for providing torque to the retraction system of the Sky Anchor

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Timespan: 01-02-2016 till 01-07-2016

Host Company: MonkeyWings B.V

Internship supervisor: TBD

Assignment supervisors: Bram Sanders / Lucien Fesselet

Introduction and problem definition

UAVs (unmanned aerial vehicles), more commonly known as drones, are a piece of marvel. Any quadcopter enthusiast will back this statement. The true beauty lies with the degree of freedom it can provide. No current technology can replicate the potential it holds. However, drones could be a danger: relatively heavy and fast moving equipment with rapidly spinning elements.

This is where MonkeyWings comes into the picture. Our philosophy is simple: integrating cutting edge technologies to provide our clients with the highest quality, safe, aerial footage solutions.

The team is currently busy developing a new filming platform which utilizes technology from drones whilst tethering it via a cable, hence minimizing risk significantly.

In order to keep control of the tethering, the current system utilises a combination of a motor, gears and a pneumatic clutch/brake system. Although theoretically promising, after consultancy with motor specialists Zilvertron, the use of a high power servo could be an elegant solution.

However, MonkeyWings staff is limited and both paths cannot be pursued.

Assignment

Determine the feasibility of using a high torque servo as a winch and produce a functioning prototype.

Project steps

In order to complete the assignment, these steps can be used as guideline.

1. Study the current used system,
2. Make a project plan,
3. Research the high power servo,
4. Communication with Zilvertron regarding possible solutions,
5. Carrying out tests with relevant systems,
6. Trade-off & select most suitable,
7. Prototype design, manufacture & testing
8. Report findings to MonkeyWings.



Documentation

- Minutes of the weekly meeting with supervisor,
- Minutes of the meetings with MonkeyWings,
- Project plan,
- Graduation report confirm the school guidelines. In which the followed process needs to be clear,
- Extensive description of the detailed design. in which all the technical aspects of the system needs to be clear,
- Validation of the detailed design,
- Presentation in the form of an A? poster and a PowerPoint presentation,

When the assignment is finished, all the files, mails, documentation, and literature related to this assignment will be handed over to Inholland Composites Laboratory and MonkeyWings in an orderly matter.

Delft, 22-01-2017

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