

Internship/Bachelor thesis: Flight control of a high speed Quadcopter



Job description

The scope of the project is the development of the flight control algorithms for a drone designed for a speed world record for drones. The aerodynamic design was done in a student project at the MCI Innsbruck manufactured from experts in Carbon manufacturing (Sitar). The drone is already flying straight and hovering, but the commercial flight control is not optimized for the configuration. A student of mine and professional drone racing pilot (Walter Kirsch, see RedBull “Innovator” #4: “Games of Drones”) will support testing and development of the motor control based on Galliumnitrid power devices. Some basic wind tunnel experiments will be done at MCI Innsbruck.

Task:

- Setup a mathematical model of the configuration
- Evaluation of different control algorithms using Matlab/Simulink
- Evaluation of flight test data using Matlab/Simulink
- Support the testing and setup to tune the drone for highspeed
- Optional: Support wind tunnel measurements
- Break the world speed record for Quadcopters ;-)

The methodology will be similar to the Seminar “Flight-Robotics” (Prof. Walter Fichter, Dr. Alexander Joos, DI Michael Frangenberg). If you are interested please contact one of them, or directly Siegfried.Krainer@infineon.com