



Quadrocopter based formation flying Testbed

Bachelor/Practical

Impact:

Implement a camera based Testbed for single and multi vehicle (formation) control approaches

- A camera records position of a quadrocopters
- Based on markers on quadrocopters their height and position can be measured
- Use this information to control the quadrocopters altitude

Tasks:

- Implement controller for Hight & X-/Y- Position control as a Python-ROS-Node
- ROS Node that extracts Quadrocopter pose from camera image
- Create ROS-Node that records camera information and publishes it
- Implement quadrocopter model in V-REP
- Create Interface between MATLAB(Simulink) and ROS
- Connect V-REP and Ros

Prior knowledge:

- ▶ Basics programming skills in Python/C++ , Matlab/Simulink
- ▶ Knowledge in ROS and VRep is of help but not required
- ▶ Basic knowledge in Control

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