

Ultra-Wideband based localization system for intelligent drone cinematography

In this project, the goal is to develop a localization system for quadcopter based on UWB time-of-flight measurements.

Working packages:

- Further developing the firmware of the Loco Positioning System from Bitcraze for iterative anchor self-calibration
- Investigating the impact of antenna orientation on ranging accuracy
- Processing with an Extended Kalman Filter with a) constant-velocity and b) quadcopter model as the process model
- Accuracy comparison with VICON ground-truth measurements

Supplementary:

- Ranging error modeling using Gaussian Processes
- Augmenting UAW-localization with Computer Vision algorithms
- Outdoor flight, possibly orbiting around moving vehicle