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Towards DJI Phantom 4 Realistic Simulation with Gimbal and RC Controller in ROS/Gazebo Environment

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Abstract

© 2017 IEEE. Quadrotor UAVs like DJI Phantom 4 have been successfully used in research and commercial applications in recent years. Although there has been significant progress in the design of control algorithms, testing of UAVs involve risk of damage to the expensive aircraft. To manage this issues systems for the simulation of quadrotor UAVs are available in Gazebo simulator. However existing simulations are simplified and doesn't represent commercially available UAVs completely. As a main option to achieve stability of video feed is the use of a gimbal we improve existing simulation package with DJI Phantom specific gimbal. We also added RC transmitter to provide realistic control to simulated UAV.

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Keywords

DJI Phantom 4, Gazebo, gimbal modelling, RC control, ROS, simulation, UAV

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