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Abstract

Normally, aero photography using UAV uses about 430MHz bandwidth RF (radio frequency) modem and navigates and remotely controls through the connection between UAV and ground control system. When using the exhausting method, it has communication range of 1-2km with frequent cross line and since wireless communication sends information using radio wave as a carrier, it has 10mW of signal strength limitation which gave restraints on life my distance communication.

The purpose of research is to use communication technologies such as LTE (long-term evolution) of smart camera, Bluetooth, Wi-Fi and other communication modules and cameras that can transfer data to design and develop automatic shooting system that acquires images to UAV at the necessary locations. We conclude that the Photogrammetric UAV system using Smart Camera can not only film images with just one smart camera but also connects UAV system and ground control system together and also able to obtain real-time 3D location information and 3D position information using UAV system, GPS, a gyroscope, an accelerometer, and magnetic measuring sensor which will allow us to use real-time position of the UAV and correction work through non-datum aero triangulation.

Academic Discipline and Sub-Disciplines : Photogrammetric; UAV; Smart Camera; Open Source

Keywords : Photogrammetric; UAV; Smart Camera; Open Source