



CALL FOR PAPERS

The uses of unmanned aerial vehicles have evolved from their military origin to many large-scale civilian applications in recent decades. The UAVs have been effectively used to carry various advanced payloads including stereotypic camera and infrared sensors to synthetic aperture radar to realize different types of missions such as aerial surveillance, infrastructure inspection, hazardous areas monitoring, and crop classification and mapping.

A recent progress in the supporting technologies has enabled the development of semiautonomous to fully autonomous UAV at an affordable cost. This includes the availability of compact, lightweight, low-cost motion detecting sensors essential to the flight control system and compact lightweight computing power for autonomous flight control. The affordability of the basic technologies has fueled widespread applications of autonomous UAVs ranging from lab scale for research purposes to industry level with substantial market base, with a wide range of requirements in terms of operational capabilities and user experience. They can easily collect high value visual and other sensory data for such domains as security, agriculture, cinematography, and infrastructure inspection. They can operate autonomously on GPS position information or move relatively to the environment through relative localization and mapping. Large variants can travel over continents while smaller version can be launched from any surface and work within line of sight.

This special issue will concentrate on the rapidly expanding area of unmanned aerial vehicles (UAVs) and on the emerging challenges relating to their rapid proliferation into new industries. We are seeking publications in the form of original research articles as well as review papers addressing UAV related issues.

Potential topics include, but are not limited to:

- ▶ New vehicle designs and payloads
- ▶ Modeling and control
- ▶ Onboard computing algorithm
- ▶ Autonomous operations
- ▶ Perception and vision-based navigation
- ▶ Indoor operation and SLAM
- ▶ Tracking and precision outdoor control
- ▶ Wind disturbance rejections
- ▶ Certification and safety consideration
- ▶ Multivehicle deployments
- ▶ Human-robot interactions
- ▶ Biologically inspired designs
- ▶ UAV-based remote sensing
- ▶ Drone ethics

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