Low Cost and Flexible UAV Deployment of Sensors

This paper presents a platform for airborne sensor applications using low-cost, open-source components carried by an easy-to-fly unmanned aircraft vehicle (UAV). The system, available in open-source, is designed for researchers, students and makers for a broad range of exploration and data-collection needs. The main contribution is the extensible architecture for modularized airborne sensor deployment and real-time data visualisation. Our open-source Android application provides data collection, flight path definition and map tools. Total cost of the system is below 800 dollars. The flexibility of the system is illustrated by mapping the location of Bluetooth beacons (iBeacons) on a ground field and by measuring water temperature in a lake.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technology and Innovation Management, Copenhagen Center for Health Technology, Transport DTU, IT University of Copenhagen
Contributors: Sørensen, L. Y., Jacobsen, L. T., Hansen, J. P.
Number of pages: 13
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Sensors
Volume: 17
Issue number: 1
ISSN (Print): 1424-8220
Ratings:
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.23 SJR 0.584 SNIP 1.55
Web of Science (2017): Impact factor 2.475

Web of Science (2017): Indexed yes
Original language: English
Keywords: UAV, Drone, Monitoring, Multisensor, Platform, Software framework, Beacons
Electronic versions:
sensors_17_00154.pdf
DOIs:
10.3390/s17010154

Bibliographical note
This is an open access article distributed under the Creative Commons Attribution License which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. (CC BY 4.0).
Source: FindIt
Source-ID: 2351235399
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review