World Academy of Science, Engineering and Technology
International Journal of Aerospace and Mechanical Engineering
Vol:17, No:05, 2023

Study and Calibration of Autonomous UAV Systems with Thermal Sensing Allowing Screening of Environmental Concerns

Authors : Raahil Sheikh, Abhishek Maurya, Priya Gujjar, Himanshu Dwivedi, Prathamesh Minde

Abstract : UAVs have been an initial member of our environment since it's the first used by Austrian warfare in Venice. At that stage, they were just pilotless balloons equipped with bombs to be dropped on enemy territory. Over time, technological advancements allowed UAVs to be controlled remotely or autonomously. This study shall mainly focus on the intensification of pre-existing manual drones equipping them with a variety of sensors and making them autonomous, and capable, and purposing them for a variety of roles, including thermal sensing, data collection, tracking creatures, forest fires, volcano detection, hydrothermal studies, urban heat, Island measurement, and other environmental research. The system can also be used for reconnaissance, research, 3D mapping, and search and rescue missions. This study mainly focuses on automating tedious tasks and reducing human errors as much as possible, reducing deployment time, and increasing the overall efficiency, efficacy, and reliability of the UAVs. Creation of a comprehensive Ground Control System UI (GCS) enabling less trained professionals to be able to use the UAV with maximum potency. With the inclusion of such an autonomous system, artificially intelligent paths and environmental gusts and concerns can be avoided.

Keywords : UAV, drone, autonomous system, thermal imaging
Conference Title : ICUAVPT 2023 : International Conference on Unmanned Aerial Vehicle Propulsion Technologies
Conference Location : Sydney, Australia
Conference Dates : May 11-12, 2023