Non-Invasive Detection of Landmines, Unexploded Ordnances and Improvised Explosive Devices Using Bespoke Unmanned Aerial Vehicles

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Abstract

Finding and removing legacy landmines, Unexploded Ordnances (UXO), and Improvised Explosive Devices (IED) with a team of people or animals is very dangerous and requires a lot of effort and time. A small-scale customised drone was created in this research to automate the processes of cleaning explosive devices. Field tests were conducted to evaluate its performance. The outcomes of the benchmark evaluations and open-air minefields confirm the feasibility of the technologies, procedures, and strategies used in this study to identify landmines/UXO/IDE effectively.

Index Terms— Landmine detection, airborne demining; aerial-supported detection of landmines; UAV-supported detection of landmines, sensor fusion; Unexploded Ordnances (UXO); Improvised Explosive Devices (IED)

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