



Development of Acoustic Signal Object Localization Natural Disaster Relief Drone for Low Visibility Environment.

File Number : SRG/2022/001461

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Submission Date : 01-Mar-2022

PROPOSAL DETAILS

(SRG/2022/001461)

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Technical Details :

Scheme :	Start-up Research Grant		
Research Area :	Mechanical Engineering (Engineering Sciences)		
Duration :	24 Months	Contact No :	+918583039077
Date of Birth :	20-Apr-1988		
Nationality :	INDIAN	Total Cost (INR) :	27,99,317

Project Summary :

This project is on the development of acoustic signal object localization natural disaster relief drones for low visibility environments and the development of robust signal processing techniques to achieve the localization of trapped people in natural disasters. After the development of a robust localization signal processing technique, a significant number of experimental trials need to be performed to validate the developed model in both free field and reverberant environments. After that, microprocessor-based SONAR will be developed and the results will be validated with high accuracy and high precision instruments results. This research results will take place an important role in identifying the trapped people. A workshop is also planned under this project to share the experience and knowledge gained from this project. The permanent equipment will be used for subsequent projects in the vast area of machinery condition monitoring, Vibration analysis.

Objectives :

- Development of robust algorithm to sound source identification and localization in the Free field environment and noisy and reverberant environment.
- Development of Acoustic Signal Object Localization Natural Disaster Relief Drone

Keywords :

Sonar, Rescue Drones, Acoustic Signal Processing, Reverberation and high noise, Low visible

Expected Output and Outcome of the proposal :

(i) Technology for localization of free field environment and reverberant environments. (ii) Instrumentation issues in acoustic measurements with active and passive sonar. And a robust methodology to localize the sound source. (iii) Development of microprocessor-based SONAR system. (iv) A one-day workshop will be conducted to enrich the technicality of students and researchers. (v) A detailed final report with details of experimentation was done, acoustic signal processing, and any other issues which may come out in the course of execution of the project.
