

## **Importance of Sound Wave and GIS during Disaster or Emergency**

Rajendra N. Gaikwad<sup>(1)</sup>, M. P. Oza<sup>(1)</sup>

<sup>1</sup>Space Applications Centre, Ahmedabad, India

Email: rajisrok@gmail.com

**Abstract:** Various research Centre's and Universities are well equipped with high-computing devices and secured with fire safety equipment. This paper describes how amalgamation of fire alarm signals i.e., sound waves and Geographical Information System (GIS) is useful in locating origin of alarm signal and communicating it to the identified disaster/emergency management teams. Sound signals from fire hooter are captured using in-built sound recorder of a computing device and processed using R Script / Library at source. The processing of sound wave signal generated at disaster site is then analyzed and transferred to the web / disaster recovery (DR) server with location. An alert is generated with spatial data & maps at server or DR site and transmitted through web services for necessary follow up. Decision makers will be able to identify the exact computer system responsible for alert. This information is useful for deciding further course of action. The captured sound signals in data Centre is precious and have other important implications for safety and security of premises. The method developed is a fully automated way and avoids any human interaction.

**Keywords:** Sound wave, GIS, emergency, processing

