

# Supporting Natural Disaster Management Utilizing Timely Information

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One of the key challenges in disaster response is to ensure that up-to-date information reaches government agencies and first-responders before they make critical decisions. This includes timely information about available resources, access to roads and disaster areas, and required disaster response operations. Therefore, it is necessary to utilize appropriate data sources and technologies to provide timely information for disaster management. This research aims to address the role of integrating sensor-datasets (e.g., meteorological sensors, traffic sensors, etc.) produced across agencies in Australia for their daily business as a source of real-time data to facilitate disaster response.

## Introduction

Having access to timely information is a fundamental requirement for decision-making in a disaster management and particularly in disaster response. Currently, considerable amount of timely spatial information plausible for natural disaster response is often collected from different types of sensors operating under the management of different agencies for their daily businesses. This information can be integrated in a higher level in which related sensor datasets captured from different agencies is connected and real time processed to develop a unified emergency map. Existing approaches for integrating sensors information for disaster management are mostly theoretical and limited in their scope and scale. Also, their approaches seems to be a solution to overcome the issues arises with sensors deployment, information communication, and interoperability issues so that the integration at sensor datasets and processing level has not

yet succinctly addressed. Hence, based on the given introduction, the problem identified in this research is as follow:

## Research Problem

Currently, there is no comprehensive data model for integrating and processing sensor multi-datasets produced across different agencies in order to support natural disaster response.

## Research Methodology

To achieve the aim of the research, development of a sensor multi-datasets data model and prototype system for real-time processing of interagency sensors information in a unified platform will be considered as the main objectives of this research. In order to respond to these objectives and test the hypothesis of the research, a case study (flood response) will be conducted in Victoria, a state in Australia. Figure 1 shows the general methodology in order to achieve the objectives of this research.

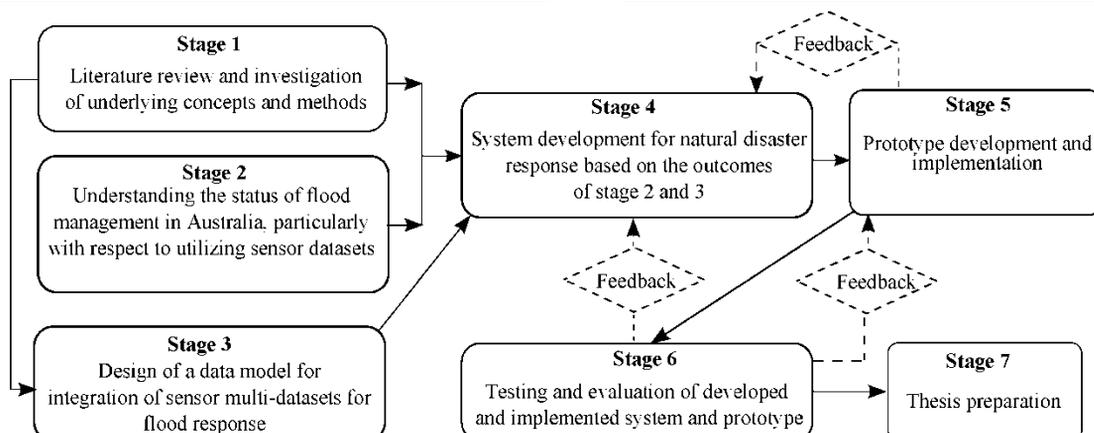


Figure1: general research methodology