

**DEVELOPMENT OF FIRE EMERGENCY RESPONSE
SYSTEM MOBILE APPLICATION**

THESIS

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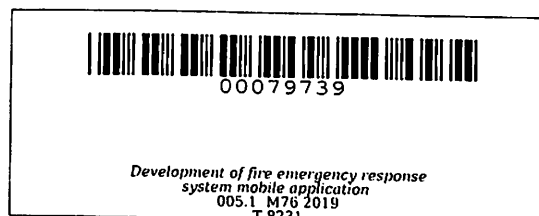
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ABSTRACT

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When fire occurs, any delay of responding fire fighters can make the difference between the rescue of occupants and occurrence of serious injury or death. The critical time between fire containment and flashover are measured in seconds. Fast access to critical information is essential. Tools that help fire fighters pinpoint the emergency call location, assess the potential consequences, and determine the most efficient strategy will minimize property damage and better protect the safety of occupants and fire service personnel.

The objective of this paper was to establish a (Google Maps API based) fire emergency response service mobile application in the 8th district of Cavite where time plays a crucial role. In establishing fire emergency response database, emergency preparedness planning is an important issue that can save people. If planned properly and implemented quickly, it can save hundreds or thousands of human lives and mitigate economic losses in affected areas. However, if planned poorly or not implemented in a timely manner, the consequence could cost human lives (Nguyan, 2006).

A developmental research was used in conducting the study. Moreover, DMADV (Define-Measure-Analyze-Design-Verify) was used as the research method. The primary source of data for the study was gathered from the Bureau of Fire Protection Cavite Provincial Office in Imus, Cavite and the other possible users of the online navigation mobile application. Meanwhile the secondary sources of the study were from books, articles and studies related this topic. Based on the results of the study, it was found out

that several problems existed, this included the communication problems, information management system and time constraint. Under the communication problems, the following were identified: insufficient knowledge about fire station hotline, difficulty in reaching the fire station hotline and inability to call attention of other fire station. In the information management the issues were lack of knowledge about emergency hotline numbers, unreliable information, incomplete information, inconsistent information and unorganized information. Lastly, under the category time constraint were: consumed time in interviewing the informant, difficulty in locating the exact place and unable to estimate time travel.

After identifying the existing problems in the fire emergency response system of BFP, the fire emergency response system mobile application was developed in accordance with the critical points wherein the problem existed mostly. The system was evaluated in terms of ergonomic criteria that promote and provide effectiveness, efficiency, satisfaction, ease of use, functionality, guide, workload, explicit control, adaptability, error management, consistency, significance of codes and compatibility.

For the further improvement of the fire emergency system mobile application, the researchers recommend to: provide additional features that might help more in managing the fire emergency response system; focus in limiting the workload of the website, it might results in faster and easier task performance; every municipality has to ensure that all the information in the system is authentic and reliable; the system can be adapted to be used into other districts to empower their response system.

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INTRODUCTION

When a fire occurs, any delay of responding fire companies can make the difference between the rescue of occupants versus serious injury or death. The critical time between fire containment and flashover can be measured in seconds. Fast access to critical information is essential. Tools that help fire fighters pinpoint the emergency call location, assess the potential consequences, and determine the most efficient strategy will minimize property damage and better protect the safety of occupants and fire service personnel.

Fire protection is one of the primary community services provided by most local governments. In larger cities, fire protection is provided by a full-time, professional fire department. One of the basic activities carried out by these departments is fire prevention.

Nowadays, Urban fire is one of the most common problems not only for developing countries but also for developed countries (Nisanci, 2010). Emergency response service,