

**AGENT-BASED REPORTING FOR FLOOD EMERGENCY
OPERATION CENTER**

**A thesis submitted to the Faculty of Information Technology in partial
fulfillment of the requirements for the degree**

Master of Science (Intelligent System)

Universiti Utara Malaysia

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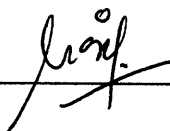
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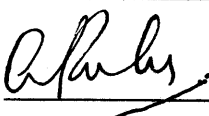
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ABSTRACT

(BAHASA MELAYU)

Pusat Kawalan Operasi Banjir (PKOB) merupakan sebuah badan gerakan yang terdiri daripada pelbagai organisasi. PKOB diwujudkan untuk menangani masalah fenomena banjir. Acapkali, berlaku beberapa masalah dalam pengurusan banjir. Dalam fasa perolehan pengetahuan, masalah pertindanan data dalam laporan dan ketidakseragaman format laporan antara organisasi telah dikenalpasti melalui kaedah temubual dan penyemakan semula dokumen yang berkaitan. Kajian ini meliputi penerokaan aplikasi penggunaan agen sebagai satu jalan penyelesaian masalah kepada masalah pelaporan banjir PKOB. Satu prototaip telah dibangunkan menggunakan bahasa pengaturcaraan berasaskan web. *Active Server Pages* (ASP) digabungkan dengan pangkalan data MsAccess dalam membangunkan satu sistem pelaporan secara automatik berasaskan agen. Prototaip ini dibangunkan bertujuan untuk menyeragamkan semua format laporan antara organisasi dan secara langsung menyediakan perkhidmatan kawalan dan capaian bagi kawasan berdekatan mahupun jauh.

ABSTRACT

(ENGLISH)

Flood Emergency Operation Centre (EOC) caters for multi-organization function. Currently, problems exist in flood reporting system during emergency condition such as duplications and non-standardized reporting format among agencies involved. Through knowledge acquisition, these problems and requirements were identified based on conducted interviews and document reviews. This study explores an agent application as a solution for flood EOC reporting. A prototype was developed using the web-based programming languages, Active Server Page (ASP) linked with MsAccess database for an auto-generating reporting agent-based system. The purpose of this prototype is to standardize the flood-reporting format that can be monitored locally or from remote location.

ACKNOWLEDGEMENTS

Alhamdulillah and a very thankful to the Almighty for his continuous blessing all through this period time of study.

An appreciate thanks to the Kedah Flood Emergency Operation Center Committee; especially Kedah Fire Brigade and Rescue Department, Kedah Civil Defense Department, Kedah Royal Malaysia Police Department, Kedah Society and Welfare Department, Kedah National Security Division and Kedah Department of Irrigation and Drainage for their cooperation and allowing this study to be carried out. Thanks for the honest support through all the interviews and brilliant opinions.

A special thanks and deepest gratitude to my supervisors, Mrs. Norita binti Md. Norwawi and Prof. Dr. Ku Ruhana Ku Mahamud, for the great support and valuable knowledge in guiding me through this study.

And a deepest appreciation and thank to my beloved family and friends who have been supported and understanding throughout this study. Thanks all for the undeniable appreciation and continuous support in the course of this study.

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LIST OF ABBREVIATIONS

Acronym	Meaning
ASP	Active Server Pages
CDD	Civil Defense Development
DFD	Data Flow Diagram
DID	Drainage and Irrigation Department
DO	District Officer
EOC	Emergency Operation Centre
ERD	Entity Relationship Diagram
FBRD	Fire Brigade and Rescue Department
FOC	Flood Operation Centre
IIS	Internet Information Services
NSC	National Security Council
NSD	National Security Division
PWD	Power Work Department
PWS	Personal Web Server
RMPD	Royal Malaysia Police Department
SWD	Society and Welfare Department
WFD	Weather Forecast Department

Chapter 1

Introduction

An emergency situation is a complex and dynamic environment whereby the situation is always changing, uncertain and unpredictable (Norwawi et al., 2002). Flood is an inevitable natural phenomenon disaster which will cause emergency situation. Flood emergency may imply that an urgent rescue and rapid response is necessary, and the immediate safety and care of the people affected would be the prime objective of the local authority (Roberts, 1994). Activities in flood emergency management involve preparedness, mitigation, response, recovery and learning. It is a coordinated effort involving local, state and federal government organizations such as Drainage and Irrigation Department, Power Work Department, Army, Police, Media, medical services and also voluntary bodies. It involves many people from various jurisdictional level and organizations from local, state and federal government including voluntary organizations.

According to Roberts (1994), flood Emergency Operation Center (EOC) is set up to handle emergency situation which requires mass rescue in order to save lives and reduces further damages to properties. In Malaysia, flood EOC is managed manually through a multi-organizational team which follows the standard operation procedure (SOP) for disaster management produce by the Prime Ministry Department called National Security Council (NSC) Directive No.20 or known as '*Arahan MKN 20*'.

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