Developing a Surveillance Management System for the Military Intelligence

By

H.W.W. Ranasinghe

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DECLARATION

The work described in this thesis was carried out by me under the supervision of Mr. C.L.K. Nawarathna and Mr. Prabath J. Malavige and report on this has not been submitted in whole or in part to any University or any other institution for another Degree/Diploma.

20 March 2016 ..... Wanny .....

Date HWW Ranasinghe

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Content

Declaration		ii
Acknowledgement		iii
Content		iv- vii
List of Tables		viii
List of Figures		ix - x
Abstract		xi - xii
Abbreviations		xiii - xiv
Chapter One – Introduction		**1 – 7**
1.1	Introduction	1
1.2	Research Problem	3
1.3	Significance of the study	4
1.4	Objectives	4
1.5	Study area	5
1.6	Study Framework	6
1.7	Conclusion	7
Chapter Two - literature Review		**8 - 22**
2.1	Introduction	8
2.2	Information Systems	8
2.2.1	Importance of information systems	9
2.3	Military Information systems in the world	10
2.3.1	Military Information systems in the United Kingdom	10
2.3.2	Military Information systems in the USA	10
2.3.3	Military Information systems in the France	13
2.3.4	Military Information systems in the Germany	14
2.3.5	Military Information systems in India	15
2.3.6	Military Information systems in NATO	17
2.4	Web GIS	17
2.5	Information Security	19

2.6	Interoperability	20
2.7	Communication	20
2.8	Quality of an Intelligence Product	21
2.9	Navicat for MySQL	21
2.10	Conclusion	22
Chapter Three - Methodology		**23 - 45**
3.1	Introduction	23
3.2	Methodology flowchart	23
3.3	Development of architecture	25
3.4	Study sample	27
3.5	Questionnaire survey	28
3.5.1	Experience in the army	29
3.5.2	Involvement of humanitarian operation	29
3.5.3	Involvement for surveillance operations in last 5 years	30
3.5.4	Usage of computer based information system for surveillance management operations	30
3.5.5	Requirement to continuation of surveillance operations	30
3.5.6	Satisfaction of present surveillance management system	31
3.5.7	Requirement of computer based surveillance management system	32
3.5.8	Important personal details of rehabilitated Ex LTTE cadre	32
3.6	Data Collection	34
3.6.1	Land use of the study area	34
3.6.2	Road Network of the study area	35
3.6.3	Water bodies of the study area	36
3.6.4	Ex-Combatants in the study area	37
3.7	Development of the system	39
3.7.1	Development of login page	41
3.7.2	Development of data entering page	42
3.7.3	Development of data base	42
3.7.4	Loading of the Google Earth to application	43

3.7.5 Development of output results page 43
3.8 Data Entering 44
3.9 Conclusion 44

Chapter Four - Results and Analysis **46 - 65**
4.1 Introduction 46
4.2 Overview of the Surveillance Management System 46
4.3 Analysis of Spatial data 50
4.3.1 Organizations of the Ex-Combatants 50
4.3.2 Age of the Ex-Combatants 51
4.3.3 Religion of the Ex-Combatants 53
4.3.4 Employment of the Ex-Combatants 54
4.3.5 Rehabilitation Status of the Ex-Combatants 55
4.3.6 Categorization of the Ex-Combatants 56
4.4 Analysis of the user review 59
4.4.1 Familiarity of SMS 60
4.4.2 Satisfaction of details include in SMS 60
4.4.3 Satisfaction about layout of SMS 61
4.4.4 Comparison of manual system and SMS 62
4.4.5 Capability of the Other Ranks to operate the SMS 62
4.4.6 Possibility of introducing SMS to army camps around the country 63
4.4.7 Satisfaction of Security of the system 64
4.5 Conclusion 64

Chapter Five - conclusion **66 - 70**
5.1 Introduction 66
5.2 Development of the SMS 66
5.3 Achievement of Objectives 67
5.4 Discussion 68
5.5 Recommendation 69
5.6 Further work 69

5.7 Conclusion 70

References **71 - 73**

Appendixes i - vii

List of Tables

3.1	Rank structure of the study sample	28
3.2	Organizations of the Ex- Combatants	38
4.1	Age groups of the Ex-Combatants	51
4.2	Religions of the Ex-Combatants	53
4.3	Employment of the Ex-Combatants	55

List of Figures

1.1	The study area	5
3.1	Methodology flow chart	24
3.2	The architecture of the login page	25
3.3	The architecture of the data entry page	26
3.4	The architecture of the search page	26
3.5	The architecture of the view data page	27
3.6	Experience of the study sample	29
3.7	Requirement of surveillance operations	31
3.8	Satisfaction of present surveillance system	31
3.9	Requirement of computer based system	32
3.10	Distribution of land use in the study area	35
3.11	Distribution of road network in the study area	36
3.12	Water Bodies in the study area	37
3.13	Organizations of the Ex-Combatants	38
3.14	Location of Ex-Combatants in the study area	39
3.15	Basic structure of the system	40
3.16	HTML coding's of the login page	41
3.17	Connecting code of Java Script with PHP codes	42
3.18	Code use for creating users in the database	43
3.19	Code use for connect Google Earth for the application	43
3.20	Sample of the MySQL database	44
4.1	The interface of the login page	47
4.2	The interface of the data entering page	48
4.3	The interface of the search data page	48
4.4	The interface of view data page	49
4.5	The interface of inquires page	49
4.6	Location of Ex-Combatants according to former organization	50
4.7	Age of the Ex-Combatants	52
4.8	Age of the Ex-Combatants (chart)	52

4.9	Religions of the Ex-Combatants	53
4.10	Employment of the Ex-Combatants	54
4.11	Rehabilitation status of the Ex-Combatants	56
4.12	Categorization of the Ex-Combatants	57
4.13	House locations of the Ex-Combatants with roads	58
4.14	IDW of the Ex-Combatants	59
4.15	Familiarity about SMS system	60
4.16	Satisfaction about details include in SMS	61
4.17	Satisfaction about layout of SMS	61
4.18	Comparison of manual system and the SMS	62
4.19	Capability of the Other Ranks to operate the SMS	63
4.20	Possibility of introducing SMS to army camps	63
4.21	Satisfaction level of the security of the system	64

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ABSTRACT

At present Sri Lanka Army doesn't have a computer based surveillance management system for the usage of day today surveillance operations. Therefore surveillance troops on the ground always depend on the manual file registry system. The details in the manual surveillance information system also not updated periodically due to difficulties of handling information in a systematic order. On the other hand huge manpower required for maintain the existing system which contains with paper documents in manual registries. Hence development of an advanced information system is an essential requirement for achieve the aims of the army in an efficient manner. Both the operational commanders in operational headquarters and the ground troops who are involving in ground operations get the benefit from the Surveillance Management System.

The researcher selected the Puttuvettuvan Grama Niladari Division in Thunukkai Divisional Secretariat Division in the Mulleitivu district as the study area due to the diversity of Ex-Combatants. The study sample includes 110 Ex-Combatants who were the members of different kind of organizations. The spatial distribution patterns of the Ex-Combatants were analyzed and identified in the research.

Developing of this system includes the theories of Geographic Information System (GIS), Global Positioning System (GPS) and Web GIS applications. SMS has developed using PHP, MySQL, (XML), JAVA Scripts with AJAX, HTML and CSS. It consists of a comprehensive web application which allows the users to manage their surveillance management operations. The system facilitates the users who are involving in surveillance management process, to get required essential information at any location all around the country. It was used a set of algorithms and web tools for automating attribute data. Finally the research produces a user friendly Web GIS application. Surveillance

troops could save their time, organize their day to day operations in an effective manner and able to maintain a proper database of the Ex-Combatants by using Surveillance Management System. The user friendly interfaces allow developers to visualize the power of displaying information without having complex designs. The study not only focus to develop a system but also it discusses the pros and cons of the system.

Key Words: GIS, GPS, Web GIS, Surveillance Management System.

ABBREVIATIONS

AJAX	-	Asynchronous JavaScript and XML
AOI	-	Area of Interest
BTF	-	British Tamil Forum
C4I	-	Computerized Command, Control, Communications and Intelligence
C4ISR	-	Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
CSS	-	Cascading Style Sheet
DII	-	Defence Information Infrastructure
EPDP	-	Eelam People's Democratic Party
FCSBS	-	Future Combat Systems - Battle Command software
GIS	-	Geographic Information System
GTF	-	Global Tamil Forum
GPS	-	Global Positioning System
GND	-	Grama Niladari Division
GIG	-	Global Information Grid
HTML	-	Hypertext Markup Language
INGO	-	International Non-Government Organizations
INT	-	Intelligent
IRNSS	-	Indian Regional Naval Satellite System
IT	-	Information Technology
LOG	-	Logistics
LTTE	-	Liberation Tigers of Tamil Eelam
MOD	-	Ministry of Defence
NATO	-	North Atlantic Treaty Organization
NGO	-	Non-Government Organizations
NIC	-	National Identity Card
PDA	-	Personal Digital Assistant
PHP	-	Hypertext Preprocessor
PLOTE	-	People's Liberation Organization of Tamil Eelam

POW	-	Prisoners of War
RS	-	Remote Sensing
SMS	-	Surveillance Management System
SDDCTEA	-	Surface Deployment and Distribution Command Transportation Engineering Agency
TELO	-	Tamil Eelam Liberation Organization
TGTE	-	Transnational Government of Tamil Eelam
IRRIS	-	Intelligent Road Rail Information Server
UAC	-	User Account Control
UDA	-	Urban Development Authority
UK	-	United Kingdom
USA	-	United States of America
WAN	-	Wide Area Network
WINT	-	Warfighter Information Network Tactical
WWW	-	World Wide Web
XML	-	Extensible Markup Language
VOIP	-	Voice Over Internet Protocol

Chapter One
INTRODUCTION

1.1 Introduction

Armed forces of the faced a lot of difficulties during the past three decades due to the civil war with the most dangerous terrorist organization in the world. The Liberation Tigers of Tamil Eelam (LTTE) is regarded as the most ruthless and dangerous of the Sri Lankan Tamil combative groups. Due to its military successes, strategies, call for national self-determination and constructive Tamil Nationalist platform the LTTE was supported by major sections of the Tamil community (Wilson, 2002).

Thousands of innocent civilian lives lost due to the brutal war. Amnesty International quoted UN figures to say that a total of 39,883 people had been displaced in the north and east adding that a total of 314,378 people were displaced by the conflict (Dilip, 2006). Amnesty international also accused the LTTE of breaking the international law by using civilians as buffers against the army. A researcher for the organization stated that there were cases where militants had forced people to stay in rebel-held areas to hamper army operations (BBC, 2008). The United Nations reported more than 20,000 civilians were killed in this recent war (CNN, 2009). It is a great achievement to defeat terrorism in the name of the peace and essential to maintain it in the country for the better future of the nation.

Though the LTTE was militarily defeated there are so many extreme organizations such as Transnational Government of Tamil Eelam (TGTE), British Tamil Forum (BTF) and Global Tamil Forum (GTF) are trying to unstable the country's situation. Hence military organizations in the country should have to continue their alertness same as the earlier. In this aspect it is very clear that intelligence organizations in the country should have to play an important role.

With the development of technology warfare today is of that information age and is largely dependent on Information Technology (IT) (Maddumage, 2011). Hence, using of