# **TABLE OF CONTENTS**

CHAPTER		TITLE	PAGE
	DECLARATION		ii
	DED	DICATION	iii
	ACK	KNOWLEDGEMENT	iv
	ABS	RACT	v
	ABS	TRAK	vi
	TABLE OF CONTENTS		vii
	LIST	Γ OF FIGURES	xi
	LIST	Γ OF ABBREVIATIONS	xii
	LIST	T OF APPENDICES	xiii
1	INTRODUCTION		
	1.1	Overview	1
	1.2	Background of the Problem	2
	1.3	Statement of the Problem	3
	1.4	Project Aim	5
	1.5	Project Objective	5
	1.6	Project Scope	6
2	LITERATURE REVIEW		
	2.1	Introduction	8
	2.2	Secure Framework Definition	8
	2.3	Crime Prevention Concept	10

2.4	Overvi	iew of CCTV System	10
	2.4.1	The Camera	10
	2.4.2	The Monitor	11
	2.4.3	Simple CCTV Systems	12
2.5	The Co	CTV System and Security Concept	13
	2.5.1	The Mechanism of Crime Reduction	14
2.6	Theory	and Method in Evaluating the Effects of	17
	CCTV	•	
	2.6.1	The CCTV System Impact on Car	17
		Crime	
2.7	How C	CCTV Aims to Prevent Crime?	21
	2.7.1	Reduced Fear of Crime	24
	2.7.2	Aid to Police Investigations	25
	2.7.3	Provision of Medical Assistance	25
	2.7.4	Place Management	26
	2.7.5	Information Gathering	26
	2.7.6	Diffusion of Benefits	27
2.8	CCTV	Technologies: Automatic Number Plate	27
	Recog	nition (ANPR)	
	2.8.1	Components	28
	2.8.2	Technology	29
	2.8.3	Algorithms	29
2.9	CCTV	Technologies: Facial Recognition System	30
	2.9.1	Notable Users and Deployments	31
	2.9.2	Additional Uses	31
2.10 Ir	ntegrate	d Transport Information System (ITIS)	32
	2.10.1	How ITIS Works?	33
	2.10.2	ITIS Benefits	35
2.11	Summ	arv	36

3	MET	HODOLOGY	
	3.1	Introduction	37
	3.2	Overview of Methodology	37
		3.2.1 Scope of Interviews	39
		3.2.2 Scope of Questionnaires	40
		3.2.3 Basic Components of Framework	40
	3.3	Project Requirements	41
	3.4	Summary	41
4	ANA	LYSIS AND FINDINGS	
	4.1	Introduction	42
	4.2	Type of Questionnaires and Respondents	43
		4.2.1 General Survey Questionnaire	43
		4.2.2 Site Specific Questionnaire	45
	4.3	Result of Interviews	46
	4.4	Findings	48
	4.5	Summary	51
5	PRO	POSED SECURE FRAMEWORK	
	5.1	Introduction	52
	5.2	Operational Requirements	52
	5.3	Key Implementation Issues	54
	5.4	General Specification of CCTV Systems	56
	5.5	Decision Guidelines	57
	5.6	Performance Standards for CCTV System	59
	5.7	System Design	60
	5.8	Using Video Recordings as Evidence	61
	5.9	Importance of CCTV Operators	62
		5.9.1 Expectations of Capability	64
		5.9.2 Operator's Aptitude	65
	5.10	Targeting and Camera Use	65
		5.10.1 The Key Rules of CCTV Surveillance	66
		5.10.2 Categories of Observer Task	66

		5.10.3 The Functions of the Observers	67
		5.10.4 Dangers in Observation	69
		5.10.5 Human Behaviour Issues	70
	5.11	Summary	70
6	CON	CLUSIONS	
	6.1	Introduction	71
	6.2	Conclusions	71
	6.3	Contributions	73
	6.4	Future Research	74
	REFI	ERENCES	75
	Appendices		76-86

## LIST OF FIGURES

FIGURE NO	TITLE	PAGE
2.1	Camera and Lens	11
2.2	CCTV Monitor	11
2.3	A Basic Line Powered CCTV System	12
2.4	A Four-Camera Line Powered CCTV System	13
2.5	A Typical CCTV System Components and Observer Inputs and Outputs	16
2.6	Mechanism, Context and Outcome Pattern	17
2.7	View from Traffic Management Centre (TMC)	33
2.8	The ITIS Information Process	34
3.1	The Research Methodology	39

### LIST OF ABBREVIATIONS

### **ABBREVIATIONS**

#### **MEANINGS**

AID Automatic Incident Detection

ANPR Automatic Number Plate Recognition

ATIS Advanced Traveller Information System

ATM Auto Teller Machine

ATMS Advanced Traffic Management System

AVLS Automatic Vehicle Location System

CCTV Close Circuit Television

DBKL Dewan Bandaraya Kuala Lumpur

FBI Federal Bureau of Investigation

IPK KL Ibu Pejabat Kontinjen Polis Kuala Lumpur

IT IS Integrated Traffic Information System

MSC Multimedia Super Corridor

OCR Optical Character Recognition

OSA Official Secret Act

PC Personal Computer

PDRM Polis Diraja Malaysia

SOP Standard Operating Procedure

TMC Traffic Management Centre

UK United Kingdom

US United States of America

VMS Variable Message Signs

MPV Mobile Patrol Vehicle

PTZ Pan, Tilt and Zoom

## LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	General Survey Questionnaire	76
В	Site Specific Questionnaire	80
C	Chart of Public Responses	84