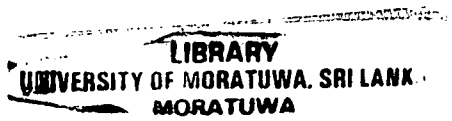


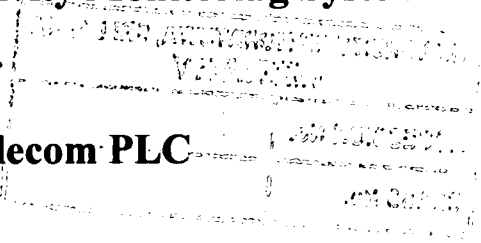
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Web Based Cable Connectivity Monitoring System

for

Sri Lanka Telecom PLC



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Dissertation submitted to the Faculty of Information Technology,
University of Moratuwa, Sri Lanka
for the partial fulfillment of the requirements of the
Post Graduate / Master of Science in Information Technology.
October 2008

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Declaration

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

K. G. Gunasekara

Signature: 

Date: 30/11/2011

Supervised by

Dr. Gamini wijayarathna



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Signature: 

Date: 30/11/2011

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K.G. Gunasekara

07/02/2011

Abstract

Web Based Cable Connectivity Monitoring System was the title of the project chosen to develop for Sri Lanka Telecom PLC in my partial fulfillment of the requirement of the degree of M.sc in Information Technology of the University of Moratuwa.

Sri Lanka Telecom is the owner of the largest copper network in Sri Lanka which spans all over the island. Variety of services such as PSTN Voice Calls, ADSL Broadband Connections, IP-TV connections, Leased Line Connections uses this copper network as the communication media. So it is important to keep a track of this copper network, especially trunk cables which contain large number of wire pairs in order to provide uninterrupted and satisfactory service to subscribers. Currently there is no online monitoring system for this. SLT was seeking for a proper system to monitoring disconnected or damaged cables for last few years because it is so important to identify those disconnected cables as soon as possible and rectify them. Also Sri Lanka Telecom has to take rapid reactions to avoid stealing of these expensive cables.



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Therefore, under this project, monitoring trunk cable disconnections from a remote location by using an embedded system which contains RabbitCore RCM 4010 microprocessor module and SNMP technology was proposed. This unit will send disconnected cable information with its position or segment using SNMP trap messages through Ethernet to SNMP trap detection unit which will be in a central location. And this will acknowledge the authorized persons in few seconds via email. This system also reduces the number of points have to be checked and makes easy to locate the fault. This system will detect, display & record cable disconnections with other features such as fault localization & security.

This will reduce time taken to report cable faults and rectify them which will make a direct impact on customer satisfaction. And also will increase revenue of Sri Lanka Telecom by effectively using manpower.

Table of Contents

Declaration	i
Acknowledgement	ii
Abstract	iii
List of Figures	vii
List of Tables	ix
Abbreviations	x
Chapter 1 - Introduction and Background	1
1.1 Outside Plant (OSP) Network	1
1.1.1 Main Distribution Frame (MDF).....	2
1.1.2 Cabinet.....	3
1.1.3 Distribution Point (DP).....	4
1.1.4 Manhole and Hand hole.....	4
1.2 Background & Motivation	4
1.2.1 Drawbacks of Current System.....	8
1.3 Aim and Objectives.....	8
1.4 Proposed Solution.....	9
1.5 Structure of the Dissertation.....	10
Chapter 2 - Review of Related Applications	11
2.1 Introduction	11
2.2 Issues in Remote Detection and Communication	11
2.2.1 Analyzing the Possibilities of a Communication Media	12
2.3 Commercial Products in Similar Area	14
2.3.1 Comparison of CCMS with other products	15
2.4 Summary	15
Chapter 3 - Technology adapted for the System	16
3.1 Introduction	16
3.2 Method of Selecting Technologies.....	16
3.3 Development of Cable Disconnection Detection Module.....	17
3.3.1 Why SNMP (Simple Network Management Protocol) is selected?.....	17
3.3.2 Why Ethernet is selected?.....	18
3.3.3 Digital Circuit Technologies Used	18
3.4 Development of SNMP Trap Detection Module.....	19
3.4.1 Why Java Programming Language Used?.....	19

3.4.2 Why MySQL selected as Database?.....	22
3.4.3 Why Apache Tomcat selected as Web Server?.....	22
3.5 Summary	22
Chapter 4 - Methodology used for the Solution	23
4.1 Introduction.....	23
4.2 Cable Fault Detection Unit.....	23
4.3 Communication Network	24
4.4 Central Monitoring Server	24
4.5 Users.....	24
4.6 Summary	25
Chapter 5 - Analysis and Design	26
5.1 Introduction.....	26
5.2 Requirement Analysis	26
5.2.1 User Requirements	26
5.2.2 Functional Requirements.....	30
5.2.3 Non Functional Requirements.....	30
5.3 Top Level Architecture of the System	32
5.4 Use Case Diagram of the System.....	34
5.5 Use Case Description	35
5.6 Activity Diagram.....	35
5.7 Sequence Diagram.....	36
5.8 Class Diagram.....	39
5.9 ER Diagram.....	40
5.10 Designing the Circuitry of Cable Fault Detection Unit.....	41
5.11 Summary	42
Chapter 6 - Implementation.....	43
6.1 Introduction.....	43
6.2 Functionality of Overall System	44
6.3 Cable Fault Detection Unit.....	46
6.3.2 Developing the Cable Fault Detection Unit Hardware.....	46
6.3.3 Developing Software for RCM4010 Microcontroller	47
6.4 SNMP Trap Detection Unit.....	51
6.4.1 Functionality and options available in SNMP Trap Detection Unit.....	52
6.4.2 Code structure of SNMP Trap Detection Unit	53
6.5 Testing of the Implemented System.....	58
6.5.1 Test Plan	58
6.5.2 Testing of Hardware	59
6.5.3 Testing of Software	61
6.6 Summary	62

Chapter 7 - Evaluation	63
7.1 Introduction	63
7.2 Evaluation of the Project	63
7.2.1 Evaluation of the SNMP Trap Detection Unit.....	63
7.2.2 Evaluation of the Cable Fault Detection Unit	65
7.3 Summary	67
Chapter 8 - Conclusion and Further work.....	68
8.1 Introduction	68
8.2 Conclusions	68
8.3 Further Work	70
Reference	72
Appendix A - Damocles Model 2404 Web Interface.....	73
Appendix B - Use Case Description.....	74
Appendix C - Activity Diagrams	83
Appendix D - Sequence Diagrams	92
Appendix E - Detail Schematic of Circuit.....	94
Appendix F - GUI Screens of SNMP Trap Detection Unit	96
Appendix G - Class Code Listing	99
Appendix H - Servlet Code Listing.....	100
Appendix I - Questionnaire for SNMP Trap Detection Unit.....	101
Appendix J - Questionnaire for Cable Fault Detection Unit	105

List of Figures

Figure 1.1 - OSP Network	2
Figure 1.2 - MDF Connection View	2
Figure 1.3 - Jumper of MDF	2
Figure 1.4 - Cabinet Connection View	3
Figure 1.5 - A Diagram of Current System	7
Figure 5.1 - Top Level Architecture of the System	33
Figure 5.2 - Use Case Diagram of the System	34
Figure 5.3 - Activity Diagram for Login	36
Figure 5.4 - Sequence Diagram for User Administration	38
Figure 5.5 - Class Diagram	39
Figure 5.6 - ER Diagram	40
Figure 5.7 - Basic parts of Baseboard Circuitry	41
Figure 6.1 - Overall Functionality of Project	44
Figure 6.2 - Top Layer of PCB	46
Figure 6.3 - Bottom Layer of PCB	46
Figure 6.4 - Top Side of Casing	47
Figure 6.5 - Bottom Side of Casing	47
Figure 6.6 - Login Window	54
Figure 6.7 - Node Monitoring Window with alarms	55
Figure 6.8 - Port Monitoring Window	55
Figure 6.9 - Port Detail Window	55
Figure 6.10 - Cable Fault Detection Unit in operation	60
Figure 6.11 - View of receiving SNMP traps using KIWI Syslog-Server	60
Figure 6.12 - Eclipse IDE debug mode	61
Figure 7.1 - Evaluation results of SNMP Trap Detection Unit	65
Figure 7.2 - Evaluation results of Cable Fault Detection Unit	66
Figure A.1 - Web Interface of Damocles model 2404	73
Figure C.1 - Activity Diagram for User Administration	83
Figure C.2 - Activity Diagram for Location Administration	84
Figure C.3 - Activity Diagram for Generate and View Reports	85
Figure C.4 - Activity Diagram for View SNMP Trap Details	86
Figure C.5 - Activity Diagram for Database Maintenance	87
Figure C.6 - Activity Diagram for View Alarm Details	88
Figure C.7 - Activity Diagram for Hear Audible Alarm	89
Figure C.8 - Activity Diagram for Generate SNMP Traps	89
Figure C.9 - Activity Diagram for Send Notification Emails	90
Figure C.10 - Activity Diagram for Listen to SNMP Traps	90
Figure C.11 - Activity Diagram for Logout	91
Figure D.1 - Sequence Diagram for Location Administration	93
Figure E.1 - Protection, Isolation and LED Panel Circuits	94
Figure E.2 - Regulator Circuit	94
Figure E.3 - RabbitCore RCM 4010 Module	95
Figure E.4 - Smoothing Circuit	95
Figure F.1 - Add Location Window	96
Figure F.2 - Add User Window	96

Figure F.3 - Node Monitoring Window with alarms	97
Figure F.4 - SNMP Traps Monitoring Window	97
Figure F.5 – SNMP Trap Report Generating Window	98
Figure F.6 - SNMP Trap Report Output Window	98



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List of Tables

Table 1.1 - Percentages of fault types in SLT network	5
Table 2.1 – CCMS vs. other products comparison table	15
Table 7.1 - Evaluation results of SNMP Trap Detection Unit	64
Table 7.2 - Evaluation results of Cable Fault Detection Unit	66



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Abbreviations

AC	Alternative Current
CCC	Cross Connection Cabinet
CCT	Cross Connection Terminal
DC	Direct Current
DP	Distribution Point
MDF	Main Distribution Frame
MIB	Management Information Base
OH	Overhead
OID	Object ID
OPMC	Outside Plant Maintenance Center
OSP	Outside Plant
OSS	Operational Support System
PIL	Protection, Isolation and LED Panel
RSU	Remote Switching Unit
RTO	Regional Telecommunication Office
RTOM	Regional Telecommunication Office Manager
SLT	Sri Lanka Telecom
SNMP	Simple Network Management Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
UG	Under Ground