HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

## **DIPLOMA PROJECT**

## MULTIMEDIA MESSAGING SERVICE (MMS) APPLIED IN TELEMEDICINE

E.1341

**GEORGIOU ARGYROULA 3E1** 

JUNE 2004

# MULTIMEDIA MESSAGING SERVICE (MMS) APPLIED IN TELEMEDICINE

## **BY ARGYRO GEORGIOU**

Project Report Submitted to the Department Of Electrical Engineering Of the Higher Technical Institute Nicosia , Cyprus In partial fulfilment of the requirements For the diploma of

## **TECHNICAL ENGINEER**



ELECTRICAL ENGINEERING

## MULTIMEDIA MESSAGING SERVICE (MMS) APPLIED IN TELEMEDICINE

#### **Objectives:**

- 1. To investigate the various applications of telemedicine systems worldwide.
- 2. To investigate the application of telemedicine in Cyprus.
- 3. To study the new service of Multimedia Messaging (MMS).
- 4. To investigate the application of MMS in existing telemedicine systems.

## **CONTENTS**

OBJECTIVES	3
ACKNOWLEDGMENTS	8
INTRODUCTION	9
PART ONE	10-31
Multimedia Message Service (MMS)	
Multimedia Message Service (MMS)	11
How does MMS work?	11
Meeting New Market Demands	14
The Business Challenge	14
The Solution Overview	17
Who The Solution Will Benefit	18
User Experience	21
MMS content	23
A new standard for tomorrow, ready for today	25
MMS architecture and elements	27
PART TWO	32-44
Wireless Technologies	
wireless	33
Applications	33
Wireless Local Area Networks	36
Broadband Wireless	37
Bluetooth	38
Important Issues for Wireless	38
Wireless Technologies	40

and services

<u>PART 3</u>	45-55
A New And Emerging Wireless Technology	
2 G And 2.5 G	46
Wireless Network Migration from 2G to 3G Technology	49
Third Generation	51
Fourth Generation	54
<u>PART FOUR</u>	55-69
Telemedicine	
Telemedicine Technologies	56
Telecommunication	57
Satellite Products	58
Medical Devices	59
Teleconferencing Equipment	60
Telemedicine Benefits for Healthcare	60
Issues and concerns about telemedicine	61
PART FIVE	70-81
Healthcare Telematic Applications in	
Cyprus	
Introduction	71
A Medical Device for Emergency	73
Telemedicine: the Ambulance and	
Emergency-112 Projects	

EROS: Evaluation of the Risk of Stroke	75
by Telemedicine	
<b>TELEGYN: Diagnostic Telepathology</b>	76
	70
Network - Application in	
Gynaecological Cancer	
<b>DITIS: Collaborative Virtual Medical</b>	78
Team for Home Healthcare of Cancer	
Patients	
HEALTHNET: Health Telematics	79
Training Network	
Other Activities	80
	00
<u>PART SIX</u>	82-89
Wireless Telemedicine	
Wireless Telemedicine	83
What is a wireless LAN?	84
The Wireless Hospital	85
Telemedicine Overview	85
Telemedicine 101	85
VitalCom: Enterprise Monitoring for	85
the e-Hospital	
Hybrid Signal Processing Technologies	86
for next Generation wireless	
telemedicine systems	
Wireless Rx	86
Patient Monitoring - Product	86
Information	
Telemedicine Saves	87

<u>PART SEVEN</u>	90-107
DIGITAL IMAGING	
Data Management Preamble	91
Introduction And Definition	92
Goals	92
Qualifications and Responsibilities of	94
Personnel	
Equipment Specifications	96
A Digital Library of X-Ray Imaging in	101
Emergency Orthopaedics	
Introduction	101
Wireless Orthopedics System	103
Digital library and image processing	104
Results	106
Conclusion	108
References	109
Appendix 1	110

### **ACNOLEDGEMENT**

I would like to thank my project supervisor Mr Sotos Voskarides for the help and guidance for my project. He gave me a lot of support.

Also I would like to thank my family who support me at the whole period of study in HTI.

#### **INTRODUCTION**

Starting this project the end-ultimate is to study a new technology in telecommunication the MMS Technology about its technology its concept that is working on and the use of it in Cyprus.

The next subject will be the wireless technologies and the different applications in wireless, the important issues for wireless and the wireless technologies that are in use and finally the Bluetooth application.

Studying all these subjects it is time to explore the main issue of the project which is telemedicine. Issues and concerns about telemedicine and the technologies that make telemedicine possible are the chapters that concern us.

Further more we will take a brief tour on the wireless telemedicine and in addition the wireless hospital.