REMOTE PATIENT MONITORING SYSTEM USING WLAN-ENABLED MOBILE PHONES IN TIKRIT EDUCATIONAL HOSPITAL

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ABSTRACT

This study aims to provide an applicable simulation on implementing a Remote Patients Monitoring System Via WLAN to improve the existed system in the Educational Hospital of Tikrit, Iraq, and gives the hospital staff the ability to access the vital information of the patients who are in emergency cases through the internet by using WLAN-enabled mobiles. In this study, the process of patient diagnosis will be shown in order to enable remote access of the data stored and updated in the Medical Monitoring Center under critical environments which surrounding the territory of the city. In addition to that, there will be a justification of choosing WLAN among the other technologies.

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LIST OF ABBREVIATIONS

AP	Access Point
API	Application Program Interface
ASF	Apache Software Foundation
BAN	Body Area Network
BP	Blood Pressure
BT	Body Temperature
DBMS	Data Base Management System
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
DSN	Digital Sensor Network
ECG	electrocardiogram
ECR	Electronic Care Recorder
EHR	Electronic Heath Record
FTP	File Transfer Protocol
GNP	Gross National Product
GPRS	General packet radio service
GSM	Genera Service for Mobile
GUI	Graphical User Interface
GL	Glucose level
HF	Heart Fail
HIS	Hospital Information System
HIT	Hospital Information Technology
HR	Health Record
HRV	Heart Rate Variability
HD	Hard Disc
ISDN	Integrated Services Digital Network
IT	Information Technology
JSP	Java Server Page
MA	Medical Assistants
MAC	Media Access Control
MFP	Mobile Flash Player
MMC	Medical Monitoring Center
OS	Operating System
OZWC	Optimal Zonal Wavelet-base ECG data Compression
PC	Personal Computer
PDA	Personal Digital Assistants
PER	Patient Electronic Record
PHR	Patient Heath Record

PMS	Patient Monitoring System
RPMS	Remote Patient Monitoring System
SE	Software Engineering
SDLC	Software Development Life Cycle
UML	Unified Modeling Language
UMTS	Universal Mobile Telecommunications System
VPN	Virtual Private Network
WAP	Wireless Access Point
WDSN	Wireless Distributed Sensor Network
WLAN	Wireless Local Area Network
WML	Wireless Markup Language
WSN	Wireless Sensor Network
XML	Extensible Markup Language
3G	Third Generation

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Recently, an advancement of Information Technology (IT) enables computers and mobiles via networks to play a vital role in the modern medical care and patient monitoring systems. The use of these technologies in the medical field brings new era of medicine. One of the most important technologies is the mobile phones technologies such as the new generations of Wireless Local Area Network (WLAN)-enabled mobile phones that support these mobiles to work and perform like most of the computers.

Some of the most notable technologies applied in this field are General Packet Radio Service (GPRS) and Third Generation (3G) network which helped drastically to shape the new forms of telemedicine systems. That system can allow physicians to get the accessibility to asses patient vital signs. Furthermore, the telemedicine defined by (Kogure et al. , 2005) as the essentially use of both IT and telecommunication for providing health services or supporting health service provision over a distance.

The terms of telemedicine has been mentioned early in 1990s. Many researchers have discussed and dealt with these technologies such as Pavlopoulos (Pavlopoulos et al. , 1998). Moreover, (Varady et al. , 2002) believes that the patient monitors are the most important diagnostic devices in the Critical Care Units (CCUs) of hospitals, providing continuous display and interpretation of the patient's vital functions. The developers of these systems are increasingly verify and modify the manners of dealing with health

The contents of the thesis is for internal user only

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