



# Data Transfer through Human Body Using “Red Taction”

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**ABSTRACT:** Nowadays people can easily keep track of their health and fitness with human-assistive wearable technology .In every individual's life, today health care market has become one of the important issues. New technologies and various instruments are been developed to improve the monitoring systems. Diagnosis and treatment are majorly dependent on monitoring information. We are presents a new concept of communication method called as Body-to-body communication in biomedical field.

**KEYWORDS:** Red Taction, WBAN, Effective Communication.

## I.INTRODUCTION

Human body is used as a medium of transmission of data. The use of this technology in medical monitoring systems eliminates the complexity of existing technologies that involves cables, wires for transmission of data. Applications of wireless body area networks (WBANs) are extended from remote health care to military, sports, disaster relief, etc. With the network scale expanding, nodes increasing, and links complicated, a WBAN evolves to a body-to-body network. Along with the development, energy saving and data security problems are highlighted. Existing systems uses cables and wires to measure health related parameters like temperature, blood pressure, heart rate, etc. this makes the patient very uncomfortable and immovable. This especially increases the complexity in case of long term emergency and risk patients. WBAN is proposed based on the requirement of remote medical treatment, implanted sensors in a body or wearable sensors on a body can monitor physiological states, such as heart rate, pulse rate, body temperature, blood pressure, electrocardiogram (ECG) and electroencephalogram (EEG). Thus the proposed methodology of using human body enhances the security of transmitted signals as compared to the other wireless technologies.

## II.EXISTING AND PROPOSED SYSTEM

In the Existing systems are uses cables and wires to measure health related parameters like temperature, blood pressure, heart rate, etc. this makes the patient very uncomfortable and immovable. Due to this especially increases the complexity in case of long term emergency and risk patients. Along with the development, energy saving and data security problems are highlighted. In this system monitoring of patient by using cables and wires due to this patient feel uncomfortable and risky too.

In this proposed system wearable sensor is implemented in a body, it can monitor physiological states. In the transmitter unit, sensors like Heart rate sensor and Temperature measure the physical condition of patient and also send the collected data to the Microcontroller and after that through UART to Red Taction. In a monitoring unit patient body condition and all the necessary data will be displayed in LCD. The microcontroller which send all the data to hospitals or medical centers through UART and Red Taction. Each WBAN consists of an android mobile node collecting live data from on-body Shimmer. Sensors record and transmit their data to monitoring devices. Eventually, the data is



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transferred from one central link sensor to a hospital access point and can be analyzed on personal monitoring devices or stored in the patient's electronic record. Doctors can diagnose a possible appearing disease using the data remotely, and then propose a treatment plan, which can facilitate the patients and save medical resources.

### **III. RED Taction**

RedTaction has three main functional features:

**Touch** - Touching, gripping, sitting, walking, stepping and other human movements can be the triggers for unlocking or locking, starting or stopping equipment, or obtaining data.

**Broadband and Interactive - Duplex**, interactive communication is possible at a maximum speed of 10Mbit/s. Because the transmission path is on the surface of the body, transmission speed does not deteriorate in congested areas where many people are communicating at the same time.

**Any media** - In addition to the human body, various conductors and dielectrics can be used as transmission media. Conductors and dielectrics may also be used in combination.

**Comparison with other network technologies**

The focus on ubiquitous service has brought about the shortening of distances in communication. RedTaction is positioned as the last 1m solution to ultimate close-range communication. Wireless communication creates connections when signals arrive, allowing for easy connections because connectors are unnecessary. However, seen from another aspect, the arriving signals can be intercepted, so security becomes an issue. Wired communication transmits data between two connection points, so interception is difficult and security can be considered to be high. However, connectors and cables are a nuisance. Taking the above points in account, RedTaction is situated directly between wireless and wired communication.

It is better than wireless LAN as signals don't weaken and where as blue-tooth the communication is more secured and is possible only between two devices.

### **IV. WBAN**

In modern technology wireless communication provides a lot of possibilities to be able to share its information to each other at anytime and anywhere. Intelligent mobile communication network and WLAN, Wi-Fi are applied to various sectors such as education; health care service and industry in order to provide people a convenient way to communicate with each other. As the demand of ubiquitous network is increased, the devices for home, office and other information devices that can communicate wireless in short range have been getting more attention. The standard and technique development of ubiquitous network has rapidly put itself into the world market. Wireless Body Area Network (WBAN) is becoming a special application of such technique. WBAN differs with other wireless sensor networks (WSN) with some significant points. First difference between a WBAN and WSN is mobility. In WBAN user can move with sensor nodes with same mobility pattern whereas WSN is generally used to be stationary. Energy consumption is much less in WBAN than other WSNs arrangement. In addition WBAN sensor devices are found cheaper than WSNs. For reliability, node complexity and density, WBAN nodes are however traditional. WSNs do not tackle specific requirements associated with the interaction between the network and the human body. There are several wireless technologies such as Low power Wi-Fi, Bluetooth, ZigBee and IEEE 802.15.6. In this paper we have discussed about the general architecture of WBAN, adopted technologies and its possible applications in different areas.

### **V. FUNCTIONAL DESCRIPTION**

This user module has two interfaces one is receiver and transmitter end, where transmitter end to be carried by the soldier or stitched to soldier shirt. While soldier has stack in any mishap or injured due to some gas attack or any physical attack happens the Morse code will be generated from the transmitted end by the Red taction device to the receiver end, where receiver end will receive the actual axis and problem of the soldier.



This system also consists of gas sensor which detects the harmful gases which causes illness to the soldier. There will be a alert message when the soldier conference any physical attack the axis will be shared to the monitor and thermister sensor which detects the body temperature of the soldier.

## **VI.CONCLUSION**

Many areas can benefit from this technology. Initially, RedTacton could target security, the medical field, and the device communication field. The medical field would benefit in many ways. For example, implanted devices could use the technology to transmit information regarding their performance to doctors, patients wearing the device could quickly and securely transmit their medical history, and medicine containers could have chips embedded in them that when touched could send an alarm to the user, if the user's device is programmed to know that an allergy to the medicine exists. Device communication is where RedTacton would compete with Bluetooth. Since RedTacton is more secure than Bluetooth, it would excel at connecting cell phones to headsets and transmitting data from one person's PDA to another's. As mentioned before, RedTacton is already positioning itself to become a 'human swipe card' and become the ultimate security device. One potential application that will be explored in depth is gun control.

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