

Different Wireless Data Transfer Techniques & Review

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Abstract: This paper basically highlight a wireless data transfer that have been proposed from past few years on data communication. Red Tecton is a technology that enables communication between people and object in close area. Research on data transfer has widely covered application such as serial communication, security purpose, marketing applications, inscription of data transfer, real time operation base and many more. RedTacton uses the minute electric field generated by human body as medium for transmitting the data. In this paper we evaluate the different wireless data transfer technique .

Keywords – human area network, Red Tecton, Wireless Communication, Wireless medium to transfer data, short range data transfer, Electric field sensing

I. Introduction

Human area networking (HAN) is an emerging trend in the field of communication. Red tacton is a technology that uses human body as a medium for transfer of data.[1]

This paper proposes a frequency selective baseband transmission (FSBT) for HBC. FSBT requires no RF/IF components or overhearing in sleep mode as a service based on Touch-And-Play (TAP).[2]

This paper presents an on-off keying (OOK) human body communication (HBC) transceiver design method for wireless body-area network (WBAN). The HBC channel in shield chamber by adopting floating ground experiment setup is analyzed and the optimal carrier frequency of 30 MHz is chosen.[3]

This paper presents a new human body communication (HBC) technique that employs magnetic resonance for data transfer in wireless body-area networks (BANs).[4]

A transmission path is formed automatically when a person comes into contact with a device and communications between mobile terminals begin. This concept will reduce load on other communication channels by introducing new communication mode.[5]

It is a new personal areas network technology which uses weak electric fields on the surface of the human body, as a safe data transmission path, at speeds up to 10 Mbps.[6]

It is completely distinct from wireless and infrared technologies as it uses the minute electric field emitted on the surface of the human body[7]

Human Area Networking technology which was introduced by Nippon telegraph and Telephone Corporation (NTT's) that uses the human body surface is a high speed and safe network transmission path.[8]

Data communication through human body is a combination of hardware and software protocol. Wireless body area networks around the human body are expected to play an important role in various areas of applications such as in the monitoring of health, sharing of personal information, security authentication and medical information systems.

Human body can be represented with an electrical circuit because tissues are made of cells and human body consists of cells. In human body, there is presence of iron, calcium etc. which are conductive in nature so as the current is passed through the body so the signal also can be transmitted through the body. This paper describes the model of human networking technology that enables communication by touching. Data from circuitry of one device is transferred to metal pad and via body it is transmitted another device.

Human society is entering an era of modern computing, when networks are smoothly interconnected.

RedTacton is a technology that uses the surface of the human body as a high speed and safe network transmission path. So in this paper we are explaining the unique new functional features and enormous potential of RedTacton as a human area networking technology .

II. Red Tacton

- **What is red tacton ?**

It Human society is entering an era of omnipresent computing, when networks are seamlessly interconnected and information is always accessible at our fingertips. The practical implementation of omnipresent services requires three levels of connectivity:

- *Wide Area Networks (WAN), typically via the Internet, to remotely connect all types of servers and terminals;
- *Local Area Networks (LAN), typically via Ethernet or WiFi connectivity among all the information and communication appliances in offices and homes;
- *Human Area Networks (HAN) for connectivity to personal information, media and communication appliances within the much smaller sphere of ordinary daily activities-- the last one meter. NTT's RedTacton is a break-through technology that, for the first time, enables reliable high-speed HAN.

- **Why it is called red tacton?**

Because with this technology, communication starts by touching (Touch), leading to various actions (Act on) and the colour red to convey the meaning of warmth in communication. Combining these phrases led to the name, "RedTacton". Meaning Of RedTacton: TACTON:- "touch-act-on" Meaning "action triggered by touching". RED:-It is an auspicious colour according to Japanese culture.

III. Methodology

A Micro-controllerchip and vascular recognition technique. This method uses thenear-infrared light, reflected or transmitted images of blood vessels of a hand or finger are derived and used for personal recognition. The person using the tacton has to scan his vascular pattern. Image processing is done. This image processing is done by the microcontroller. The microcontroller compares the input image and the reference image available inthe memory. If many images are to be stored for commercial purposes then a DSP processor is used for extending thememory. If the image pattern s match then data flow takesplace through the human skin. If the images do not match abuzzer beeps as an alert and data transfer is denied. This proves to be the safest and reliable transfer of data.[1] frequency selective baseband transmission (FSBT) for HBC.FSBT requires no RF/IF components or overhearing in sleepmode as a service based on Touch-And-Play (TAP). The proposed HBC system supports high reliability, low power consumption, and low cost through FSBT. This achieved a bit error rate of 10^{-6} at 2 Mbps without forward error correction.[2]

Traditionally, wireless technologies are proposed as a basis for WBAN, These technologies include Bluetooth and ZigBee ,which are typically operated in the 2.4GHz ISM band .However, the long distance communication range of Bluetooth and ZigBee can easily cause overlay between each WBAN , meanwhile, the high power consumptions of Bluetooth and low data rate of ZigBee make them not very suitable for WBAN applications[3].

To improve the path loss of HBC systems, and therefore reduce the power consumption of communication, this paper proposes a magnetic resonant coupling scheme as an alternative physical layer for HBC systems.[4]

A transmission path is formed automatically when a person comes into contact with a device and communications between mobile terminals begin. This concept will reduce load on other communication channels by introducing new communication mode.[5]

Using a new super-sensitive photonic electric field sensor, Red Tacton can achieve duplex communication over the human body at a maximum speed of 10 mbps. The Red Tacton transmitter induces a weak electric field on the surface of the body.[6]

The chips which will be embedded in various devices contain transmitter and receiver built to send and accept data in digital format. In this paper we consider about red tacton, its working principle, different applications and future development of red tacton.[7]

Human Area Networking technology which was introduced by Nippon telegraph and Telephone Corporation (NTT's) that uses the human body surface is a high speed and safe network transmission path. RedTacton is a Break-through technology that enables reliable high-speed HAN for the first time. In the past, infrared Communications (IrDA), Bluetooth, radio frequency ID systems (RFID),and other technologies have been Proposed to solve the "last meter" connectivity problem.[8]

TABLES

Author Name	Description	Method	Published Year
S.govindraajan	This paper presents <i>Human</i> area networking (HAN) is an emerging trend in the field of communication. Red tacton is a technology that uses human body as a medium for transfer of data.	The MRT (eMbedded Red Tacton) uses a Micro-controller chip and vascular recognition technique. This method uses the near-infrared light, reflected or transmitted images of blood vessels of a hand or finger are derived and used for personal recognition.	2009
H.park	This paper proposes a frequency selective baseband transmission (FSBT) for HBC.	FSBT requires no RF/IF components or overhearing in sleep mode as a service based on Touch-And-Play (TAP). The proposed HBC system supports high reliability, low power consumption, and low cost through FSBT.	2010
T.leng	This paper presents an on-off keying (OOK) human body communication (HBC) transceiver design method for wireless body-area network (WBAN).	Traditionally, wireless technologies are proposed as a basis for WBAN, These technologies include Bluetooth and ZigBee, which are typically operated in the 2.4GHz ISM band . However, the long distance communication range of Bluetooth and ZigBee can easily cause overlay between eachWBAN.	2011
J.park	This paper presents a new human body communication (HBC) technique that employs magnetic resonance for data transfer in wireless body-area networks	To improve the path loss of HBC systems, and therefore reduce the power consumption of communication, this paper proposes a magnetic resonant coupling scheme as an alternative physical layer for HBC systems.	2015
C. solanki	This paper demonstrates a design and implementation of Human Area Network technology that enables communication through human contact.	A transmission path is formed automatically when a person comes into contact with a device and communications between mobile terminals begin. This concept will reduce load on other communication channels by introducing new communication mode.	2016
R. antil	In this paper an overview of recent research into body coupled communications is given.	Using a new super-sensitive photonic electric field sensor, Red Tacton can achieve duplex communication over the human body at a maximum speed of 10 mbps.	2013
G.singh	In this paper chips which will be embedded in various devices contain transmitter and receiver built to send and accept data in digital format.	The naturally occurring electric field induced on the surface of the human body dissipates into the earth.	2011
G. gopi	In this paper we are explaining the unique new functional features and enormous potential of RedTacton as a Human Area Networking technology.	Human Area Networking technology which was introduced by Nippon telegraph and Telephone Corporation (NTT's) that uses the human body surface is a high speed and safe network transmission path.	2013

IV. Conclusion

In this paper, The performance of Red Tacton is better as compared to other technologies. It is best to connect network within short distances. There is no any type of problem of hackers as ourbody itself is the transmission media. Red Tacton is providing very high speed of 10 Mbps within short distances .Red Tacton use in applications such as wireless headset, medical application, security applications ,and wireless transmission by applying different actions.

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