
STUDY THE FUNCTIONING OF RED TACTON REDTACTON TECHNOLOGY IN HUMAN COMMUNICATION

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Abstract

Red Tacton technology is an electronic future where information can be open at whatever point and wherever required at our finger tips. A portion of the communication gear that is required to give this prompt access to information will be joined into our clothing. Just as a brisk take a gander at the present wristwatch spares an excursion to the closest clock; a look at tomorrow's wristwatch will supplant finding a terminal to check email. RedTacton is another Human Area Networking technology which was presented by Nippon telegraph and Telephone Corporation (NTT's) that utilizes the human body surface is a rapid and safe network transmission way. RedTacton is a Break-through technology that empowers solid rapid HAN for the first time.

1. INTRODUCTION

Previously, infrared Communications (IrDA), Bluetooth, radio frequency ID frameworks (RFID), and different technologies have been proposed to tackle the "last meter" network issue. In any case, those technologies each have different essential specialized impediments that compel their use, for example, the sharp tumble off in transmission speed in Multi-client situations delivering network blockage. Today individuals can impart whenever, anyplace, and with anybody over a phone network. In addition, the Internet gives individuals a chance to download massive amounts of information from remotely found servers to their home PCs. Basically, these two technologies empower communications between terminals situated at a separation from one another. In the meantime, a wide range of electronic devices including personal digital assistants (PDAs), stash computer games, and digital cameras are getting

to be littler; so individuals can bear or even wear different personal information and communication machines amid their ordinary activities. In any case, easy to understand pervasive administrations include something beyond networking between remotely found terminals. Communication between electronic devices on the human body (wearable PCs) and ones inserted in our ordinary surroundings, so this has driven broad innovative work on humanarea networks. Wired associations between electronic devices in human area networks are bulky and can without much of a stretch end up ensnared. Short-run wireless communication frameworks, for example, Bluetooth and wireless local area networks (IEEE 802.11b and so on.) have a few issues.

2. RED TACTON

Red Tacton is another Human Area Networking technology that utilizes the surface of the human

body as a protected, fast network transmission path. It is from wireless and infrared technologies as it utilizes the moment electric field radiated on the surface of the human body. A transmission path is framed now a piece of the human body experiences a Red Tacton handset. Communication is conceivable utilizing anybody surfaces, for example, the hands, fingers, arms, feet, face, legs or middle. Red Tacton works through shoes and apparel too. At the point when the physical contact gets isolated, the communication is finished. Utilizing Red Tacton empowered devices; music from a digital sound player in your pocket would go through your apparel and shoot over your body to

headphones in your ears. Rather than fiddling around with a link to associate your digital camera to your PC, you could exchange pictures just by contacting the PC while the camera is around your neck.

What's more, since information can go starting with one body then onto the next, you could likewise trade electronic business cards by shaking hands, exchange music records by moving up close, or swap phone numbers just by kissing. Contact and activity give Tacton, and word Red warm shading – to stress warm and friendly communications. This technology was created by Japanese Company Nippon Telegraph and Telephone Corporation.

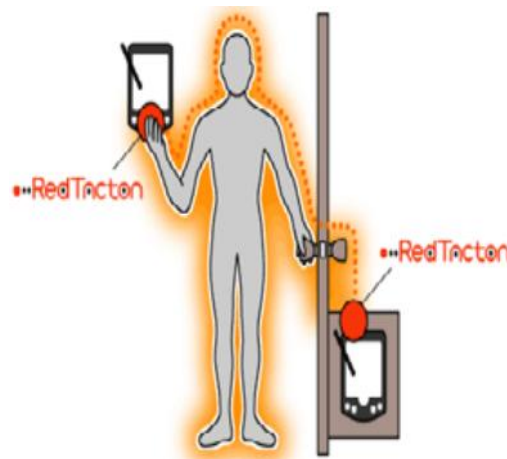


Figure 1: Red Tacton

Red Tacton Transceiver

The signal from the interface is sent to the data sense circuit and the transmitter circuit. The data sense circuit senses the signal and if the data is present it sends control signal to the transmitter which activates the transmitter circuit. The

transmitter circuit varies the electric field on the surface of our body. This change in the electric field is detected by the electro-optic sensor. The output of the electro optic sensor is given to the detector circuit, which in turn given to the interface of the receiving red tacton device.

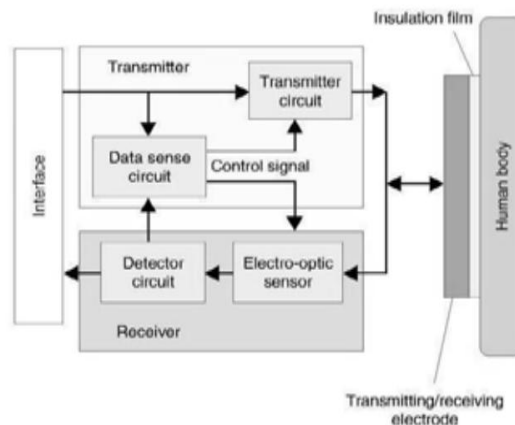


Figure 2: Block diagram of RT Transceiver

RedTacton enables the principal practical Human Area Network between body-centered electronic devices and PCs or other network devices implanted in the earth using another age of UI dependent on normal human activities, for example, contacting, holding, sitting, strolling, or venturing on the spot. Utilizing RedTacton-empowered devices, music from a digital sound player in your pocket would go through your attire and shoot over your body to headphones in your ears. Here, the human body goes about as a transmission medium supporting IEEE 802.3 half-duplex communication at 10Mbit/s. The idea of intrabody communication, which utilizes the moment electric field spread by the human body to transmit information, was first proposed by IBM. The communication instrument has in this way been assessed and announced by a few research bunches far and wide. In any case, each one of those revealed technologies had two impediments:

1. The operating range through the body was limited to a few tens of centimeters and
2. The top communication speed was only 40kbit/s. These limitations arise from

the use of an electrical sensor for the receiver. An electrical sensor requires two lines (a signal line and a ground line), whereas in intrabody communication there is essentially only one signal line, i.e., the body itself, which leads to an unbalanced transmission line, so the signal is not transmitted correctly

NTT has had excellent success with an electro-optic sensor combining an electro-optic crystal with laser light and recently reported an application of this sensor for measuring high-frequency electronic devices.

3. COMPARISON WITH OTHER NETWORK TECHNOLOGIES

At present, RedTacton is outfitting to contend with Bluetooth, Zigbee, IrDA (infrared data affiliation), UWB (ultra-wide band), and different wireless communication shapes. These contending technologies are distinctive in that they utilize radio frequency or light to transmit data short separations. They likewise will in general work at slower speeds that RedTacton which, as referenced previously, utilizes the

body's electrical field to transmit at high speed. Furthermore, since RedTacton requires contact and has a low potential for impedance, it is significantly more secure than the opposition. NTT, the engineer of RedTacton, has as of late attempted and popularize the technology. As detailed, the technology is as of now being promoted as an approach to transform a human into a swipe card. Rather than conveying access cards or wearing a wireless device, individuals would wear their RedTacton device and contact the entryways or file organizers or different items which would get the security leeway from the device.

It would be more secure than customary swipe cards, keys, or wireless signals. Before, Bluetooth, infrared communications (IrDA), radio frequency ID frameworks (RFID), and different technologies have been proposed to fathom the "last meter" availability problem. In any case, they each have different principal specialized confinements that oblige their use, for example, the abrupt tumble off in transmission speed in multi-client conditions creating network clog. The usage of omnipresent network administrations requires three dimensions of availability: Wide Area Networks (WAN), normally by means of the Internet, Local Area Networks (LAN), commonly through Ethernet or Wi-Fi availability and Human Area Networks (HAN), for availability to personal information, media and communication apparatuses inside a lot littler circle of standard every day activities– the last one meter.

Wired associations between electronic devices in human area networks are unwieldy and can without much of a stretch end up snared. Short-go wireless communication frameworks, for

example, Bluetooth and wireless local area networks (IEEE 802.11b and so forth.) have a few problems. Throughput is reduced by parcel impacts in swarmed spaces, for example, meeting rooms and theaters loaded up with individuals and communication isn't anchor since signals can be intercepted. The standard disadvantage of infrared communications (IrDA) is the tight directionality of shafts between terminals required for the framework to be viable.

4. REDTACTON TECHNOLOGY

This detailed article on Red Tacton technology is developed by our team for students as a Seminar topic for their academic needs. We have referenced various research papers, reports and other documentations for developing this article. We have discussed about various infrared and Bluetooth wireless technologies in our recent posts. But the technology has been advanced that these technologies have been overrated. Now, researchers are trying to develop a new path for transmission of signals called Human Area Networking. As the name indicates, such a technology will have the human body surface to transmit and receive signals at very high speeds. Now we are going to discuss such a technology, which is currently under development, called RedTacton Technology. According to science studies, we know that our body is creating minute electric charges all the time. This electric field thus created is used for RedTacton technology to transmit and receive [duplex communication] the signals. Thus, this method is completely different from other signal transmitting technologies like wireless and infrared. Thus, like LAN and WAN, a new network protocol

called HAN Human Area Network, is being configured.

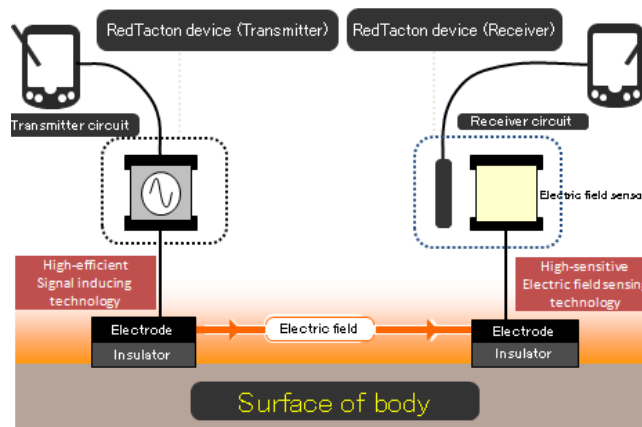


Figure 3: RedTacton Work

5. HOW DOES REDTACTON WORK

RedTacton utilizes the moment electric field discharged on the surface of the human body. It is totally unmistakable from wireless and infrared. A transmission path is shaped now a piece of the human body interacts with a RedTacton transceiver. Physically isolating finishes, the contact and the communication begin when terminals conveyed by the client or installed in devices are connected in different mixes as indicated by the client's characteristic, physical developments. Getting data is increasingly entangled on the grounds that the quality of the electric field included is so low. RedTacton gets around this utilizing a procedure called electric field photonics: A laser is gone through an electro-optic crystal, which diverts light distinctively as per the quality of the field crosswise over it. These diversions are measured and changed over once more into electrical signals to recover the transmitted data. Communication is conceivable utilizing anybody surfaces; it tends to be the hands,

fingers, arms, feet, confront legs. RedTacton works through shoes and apparel also.

Feature of RedTacton

- Communication is highly secure and practically immune from eavesdropping as radio waves are not emitted.
- No need to bring out and activate the device consciously; communication is enabled by ordinary natural actions such as touching or stepping
- New Behavior Patterns: Various conductors and dielectrics can be used as RedTacton communication media, and this has the potential to create new behavior patterns.
- Security Applications: Automatic user authentication and log-in with just a touch.
- One to One Services: Enable one-to-one services tailored to the user's situation and tastes.

- Intuitive Operations: Natural movements and actions are the trigger. There's no "operation" any more. Just intuitive human interaction.
- Device Personalization: Digital lifestyle can be instantly personalized with just a touch.

6. IMPLEMENTATION OF COMMUNICATION USING THE RED TACTON

Data which is to be transfer is gotten utilizing a photonic electric field sensor which joins an

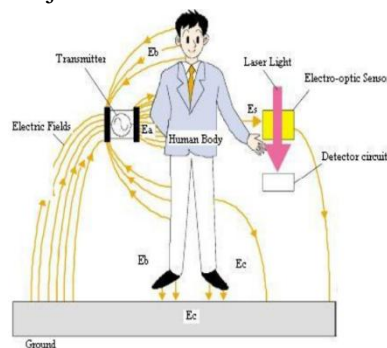


Figure 4: Operating principle of RedTacton

7. CONCLUSION

RedTacton can be used as an alternative to present day networking technologies which are limited by traffic congestion and data loss. Thus the future of networking finds a competent technology that can take networking to greater heights which is unimaginable. The Future proposal in this field of networking is that we can embed Artificial Intelligence and Neural Networking concepts which take RedTacton a step further. Thus, Human Area Networking sets a wide horizon for upcoming data transfer technologies. A more compact communication module would allow a greater variety of card terminal types, including smart keys,

electrooptic crystal signal and a laser light to identify changes in the moment electric field signal. The normally happening electric field creates on the surface of the human body disseminates into the ground. In this manner, this electric field is swoon and shaky signal. The photonic electric field sensor created by NTT produces feeble electric fields which are measured by identifying changes in the optical properties of an electro-optic crystal signal with a laser bar as appeared in figure 4.

wristwatches, and cell phones. Diversification into medical care giving and treatment, payment settlement, and other such services in addition to security applications will probably require greater functional flexibility using rewritable firmware.

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