

RedTacton: New Human Area Networking Technology that Uses Humans as Transmission Paths

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Ubiquitous services are characterized by their ability to connect to networks at any time, from anywhere, by anyone and for any purpose. To make these services simple enough for anyone to use, it is important that these connections can be established naturally without the user's awareness. In our view, this necessitates the implementation of a "human area network" (HAN), which extends as far as an outstretched arm and thus covers a smaller region than wide area and local area networks. Using cables to connect computers together can be a complicated and inconvenient task. On the other hand, it has been pointed out that interception of radio waves can compromise the security of wireless technology. NTT Laboratories have therefore been developing RedTacton*1 technology, which allows HANs to be implemented by using the surface of the human body as a propagation path. With this technology, communication between computers is initiated automatically by forming transmission paths when people come into contact with other things. In this way, people can connect to networks without experiencing any degree of complexity simply by performing natural actions such as touching, sitting or stepping on other objects.

So far we have made a prototype system, and by subjecting this system to verification trials, public exhibitions and the like, we have broken new ground in the application of RedTacton technology. Thus, by reasoning that home and office security are ideal initial fields of application for this technology, we have made progress in the development of custom LSI chips, card-type transmitters, and receivers that can be embedded in parts of the environment such as inside floors and doors. Using our own protocol, we are able to transmit data at 230 kbit/s between a card-type transmitter and an embedded receiver, and the embedded receiver can be connected to a host computer over an Ethernet or serial interface.

Now that these achievements have been publicized and the technology has been exhibited, NTT Electronics Corporation will finish the product development and will begin selling sample products in May 2008. In the future, with a view to incorporating this technology into mobile phones, PCs and PDAs*2, we intend to make a concerted effort to develop this technology to make it operate faster, consume less power and implement bidirectional communication.

*1 RedTacton: Our name for this technology consists of two parts. "Tacton" is a contraction of "Touch" and "Act on", which describes how communication is started with the act of touching (Touch), and leads to various different actions (Act on). The color "Red" is added to signify warmth in communication.

*2 PDA: Personal Digital Assistant

RedTacton is a registered trademark of Nippon Telegraph and Telephone Corporation.

Communication principles and device examples

