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Secure Networking and Authentication using Inter Human Body Communication

Human body communication (HBC) provides significantly more energy-efficient and secure data transfer between wearable devices by utilizing the body as a broadband channel, offering a robust alternative to wireless body area networks (WBAN).

Miniaturization of unit computing, following five decades of transistor scaling through Moore's Law, has allowed for wearable electronic devices, which typically interconnect using wireless body area network (WBAN). The size of computing chips has decreased and made wearable electronics more appealing and feasible. Wireless body area networks (WBAN) interconnect these wearable electronics to each other; however, WBANs are energy-inefficient and have limited security under tight energy constraints.

Researchers from Purdue University have developed interference-robust, reliable, human body communication (HBC), an alternate, energy-efficient communication technique between on-body wearable devices by using the human body as a conducting medium. HBC is significantly more secure than WBAN as the information is contained within the human body and is not hackable unless the person is physically touched. This technology allows orders of magnitude better energy-efficiency given the body acts like a broadband channel, allowing low power NRZ signaling.

Advantages:

-Energy-efficient

-Secure networks

-Uses dynamic human-human or human-machine intentional contacts to transfer information securely

Potential Applications:

-Social networking

-Security authorization

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Further information

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-Remote health monitoring

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