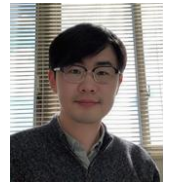


OTA Evaluation of Bio Sensor for High Reliable Medical ICT Communication

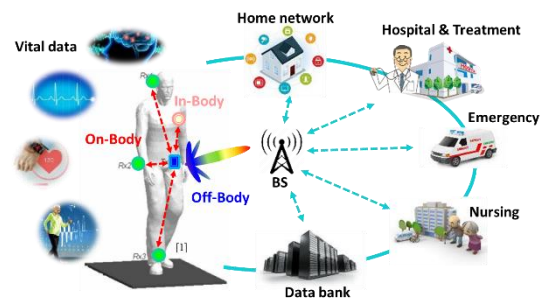
Faculty of Engineering and Design, Kagawa University, Assistant Professor, Kun Li

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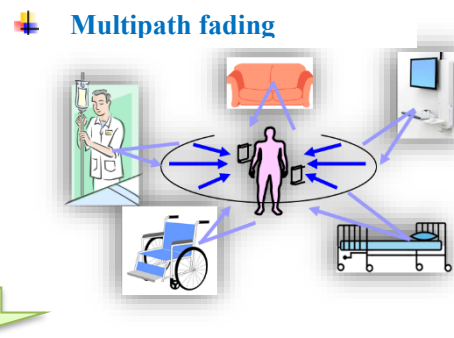
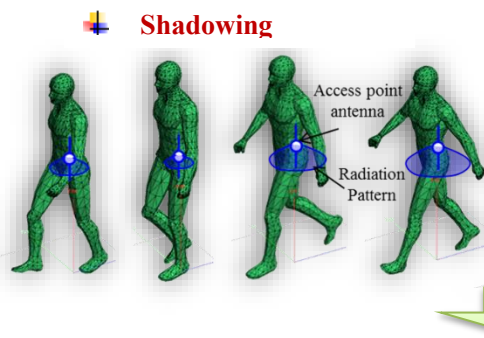
High reliable medical ICT wireless communication

- The rapid increase of national medical expenses has become a major social issue, and there is a need for a system that utilizes ICT to support individual health and medical care in human society.
- Wireless Body Area Network (WBAN) System
 - Acquisition of vital data from wireless bio sensor
 - Health management and home medical care
 - Control of medical expenses for the elderly



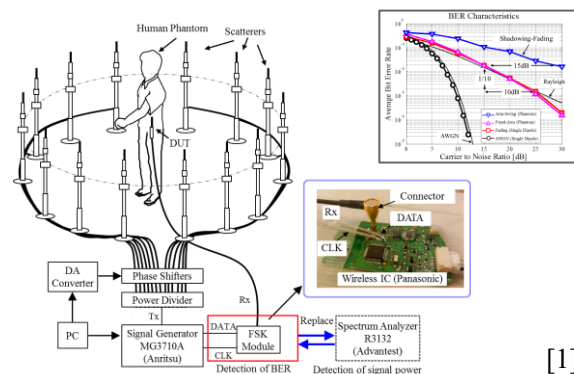
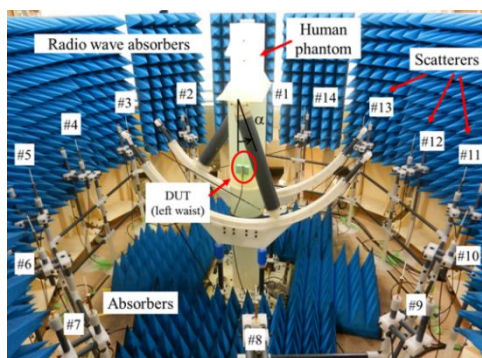
Development of wearable bio sensor for WBAN system

1. **Human body effects:** Absorption and shadowing of electromagnetic waves (dynamic characteristics)
2. **Environmental impact:** Reflection of radio waves by scatterers (multipath propagation characteristics)



Wireless performance evaluation considering shadowing/multipath effects (Signal bit error rate)

- Development of OTA (Over-The-Air Testing) evaluation device that can generate fading environment
- Development of BER (Bit-Error-Rate) test procedure considering human and environmental impact



[1] [2]

主要な参考文献

- [1] K. Li, K. Honda, and K. Ogawa, "Dual-Discrete Processing for Bit-Error-Rate OTA Testing in Shadowing-Fading BAN Channel", IEEE Antennas and Wireless Propagation Letters, vol. 16, pp. 1200-1204, Nov. 2016.
- [2] K. Li, K. Honda, and K. Ogawa, "Rice Channel Realization for BAN Over-The-Air Testing Using a Fading Emulator with an Arm-Swinging Dynamic Phantom", IEICE Transactions on Communications, Vol. E98-B, No. 4, pp. 543-553, Apr. 2015.