

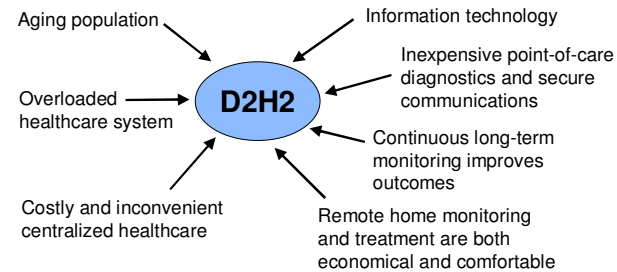
'IT Security for e-Health' Workshop: 4th Sept 2009

Cognitive RFID Network (CORN) for Wireless Patient Healthcare University of Greenwich, UK

The Challenge or problem

Wireless Patient Healthcare

Forces Leading to Distributed Diagnosis & Home Healthcare (D2H2)



pushing

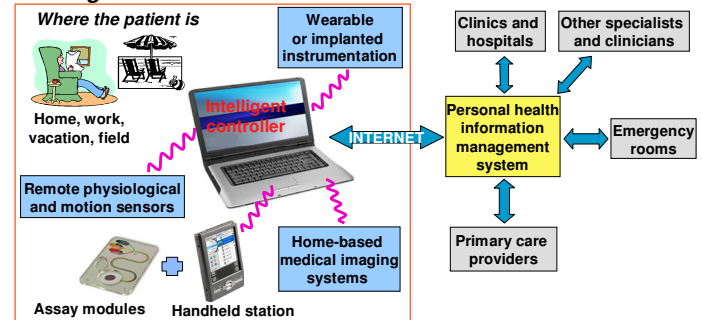
pulling

Data Management & Network Security system

The proposed wireless healthcare management system is expected to require a sophisticated system for patient data management, safe storage & transfer of data and electronic & wireless network security.

Primary interests

Long-term Strategy: Development of All Essential Components Leading to D2H2

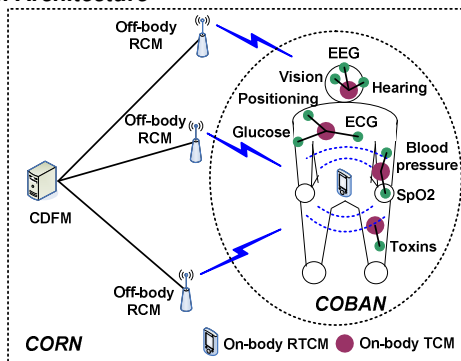


Current Focus: CORN for Wireless Patient Healthcare

Integration of three cutting-edge research fields: (i) cognitive radar network (CRN) for smart sensing, (ii) radio frequency identification (RFID) for target identification, and (iii) cooperative body area network (COBAN) for patient monitoring, which enable CORN to facilitate efficient data acquisition from wearable medical sensors and harmonious information delivery to care-providers. This project involves the **University of Greenwich**, Imperial College London, and King's College London as the partner institutes.

The Approach to address the Challenges

System Architecture



The system is formed by four main modules:

- On-body tag communication modules (TCM)
- On-body reader-tag communication module (RTCM)
- Off-body reader communication modules (RCM)
- Central data fusion module (CDFM)

Medical specialists periodically send queries to the network through the "CDFM" that controls the "off-body RCM", which in turn stimulate the *tag component* of the "on-body RTCM". Subsequently, the *reader component* of the "on-body RTCM" interrogates the "on-body TCM" and then collects medical information based on patients' responses. The data are then fed back to the medical specialists via the same data flow path in a reversed manner.

- ✓ **Immediate and automated exchange of information with remote healthcare sites**
- ✓ **Early diagnosis, intervention, and treatment**

Goals in attending workshop

- ❖ To build and grow the University of Greenwich "e-Health Special Interest Group"
- ❖ To seek for potential knowledge-transfer partnerships
- ❖ To be updated with other state-of-the-art e-health technologies and related IT security solutions
- ❖ To network with potential partners for future collaborative R&D consortiums
- ❖ To become part of any forums, Special Interest Groups, Sandpits leveraging to collaborative funding bids in the near future



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