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An RFID based telehealth system for localizing elderly with Alzheimer's

Wasim Raad*

*King Fahd university, Saudi Arabia

Chronic diseases are becoming one of the world's leading causes of death and disability. According to World Health Organization the elderly population is expected to become 1.2 billion in 2025. This aging problem contributes greatly to chronic diseases like Alzheimer, Elderly suffering from Alzheimer gradually lose their abilities to live normally and might wander aimlessly. The major implications of Alzheimer are patient safety and care. Recent advances in information and communication technologies, in addition to emerging technologies such as the Internet of things (IOT) & RFID have created unprecedented opportunities for overcoming this. The aim of this paper is to develop a Tele-health system, based on IoT technology, for monitoring elderly individuals suffering from Alzheimer's. This paper describes a working prototype that is able to capture the vital signs and deliver the desired data care remotely for elderly patients staying at home, using wearable ECG wireless sensor. In addition to that, an Active wearable RFID wristband, in addition to IR room locators are used to monitor the whereabouts of the elderly at room level. This prototype is successfully tested on a number of patients at the King Fahd University of Petroleum and Minerals (KFUPM) Medical Centre in Saudi Arabia. A feasibility study of implementing Telehealth at the KFUPM medical centre in the form of a questionnaire survey has been achieved for the purpose of identifying the feasibility of implementing telehealth from the practitioners' viewpoint. The results show the readiness of the majority of physicians to use telehealth in the future.

Biography

Dr. Raad joined King Fahd University Petroleum Minerals, computer Eng Dept 1986, where he worked as a lecturer and researcher in the field of Digital Signal Processing & RFID. He obtained recently a US patent on RFID. Dr Raad Obtained his Phd from University Bradford UK 2005 in embedded systems area, and was involved recently in a funded project in Telemedicine for Elderly people with chronic diseases. Dr raad also gave a number of talks on telemedicine in international conferences. Dr Raad has more than 25 conference & journal publication in his field.

mwraad@hotmail.com

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