A Ubiquitous RFID based Telemedicine System for Elderly Patients with Alzheimer's

Abstract. By 2020, it is predicted that chronic diseases to be account for almost three quarters of all deaths. This aging problem contributes greatly to chronic diseases like Alzheimer's. The major implications of Alzheimer are patient safety and care. The aim of this paper is to develop a Telemedicine system, based on Internet of Things (IoT) technology, for monitoring elderly individuals suffering from Alzheimer's. We describe a working prototype that is able to capture vital signs and deliver the desired data remotely for elderly staying at home, using wearable ECG wireless sensor. In addition, an Active wearable Radio Frequency Identification (RFID) wristband, with IR room locators are used to monitor the whereabouts of the elderly at room level along with an Android APP tool. This prototype was successfully tested on a number of patients at King Fahd University of Petroleum and Minerals (KFUPM) Medical Centre in Saudi Arabia.

Keywords: Telemedicine; RTLS; Electrocardiogram; IOT, RFID.