Chapter 6


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ABSTRACT

Remote medical health management is the most attractive research field in the domain of WSN. Wireless body area network (WBAN) produces constant, unbroken observation of the patient. Basically, WBAN acts as the appliance of internet of things (IoT) which offers an opportunity to a medical examiner to supervise chronic disease. Dissimilar protocols, guidelines, policies have been developed and developing in the last decade. In WBAN, minute power sensor nodes deployed toward capturing unusual essential signs of patients at home, hospitals in support of analysis purpose and furthermore advise suitable procedures. The main goal of this chapter is to introduce a complete and advanced understanding of WBANs, energy savings methods, human activity monitoring procedures, challenges and research issues, applications, and a comprehensive literature survey.

DOI: 10.4018/978-1-7998-0261-7.ch006
INTRODUCTION

Wireless Body Area Networks (WBANs) is a combination of Wireless sensor nodes (WSNs) which capable of placed outside or inside the body of the patient/individual person and that in results shows observed or monitored functionalities along with adjoining conditions of the human body. The expansion and management of Wireless body area networks (WBAN) come into reality when the enlargement of wireless sensor networks (WSN) reach some level, hence WBAN recognized as sub-field in WSNs. Advanced development in wireless technology, Micro Electro Mechanical Systems (MEMS), Information Connection Technology (ICT) makes powerful healthcare category to compose effectively and efficiently furthermore endow with a variety of solutions and well-being services. WSNs come into view as a powerful as well as low cost platform for linking the physical world en route to the digital world. As a result of set-up at huge amount of tinny expensive sensor nodes in the observation area, we can check the adjacent atmosphere through systematically assembled sensed data which broadcast back to sink (Base station) in a wireless or wired configuration (Chris Otto et al., 2006; Chinmay et al., 2016; Kamta et al., 2019; Chinmay et al., 2013; Bhanu et al., 2018).

Day-by-day increase in population demanding speedy advances in healthcare costs. Healthcare system is progressive in the course of a revolution, in which unbroken regulation of inhabitant is achievable devoid-of hospitalization. Continuous innovations in sense mechanisms, nano-technologies, embedded systems, miniaturization, and wireless conversation technologies formulates that it is feasible to build a well-dressed system to examine actions of human being endlessly. E-health administration can go with Wireless Body Area Networks (WBAN) which shows empowering innovation, scientific knowledge, machinery performance, technology and attractiveness gaining day-by-day for the reason of its benefits. Sensors utilized to assemble sensitive, essential medical associated information/statistics of a patient moreover it can also applicable in sports to examine players’ potentiality and strength. Wireless body area networks offer a guarantee to remodel health monitoring. In opposition, researchers/designers of such healthcare systems face a number of difficult tasks as they need to deal with incompatible requirements size, operating systems, exactness, and trustworthiness (Chris Otto et al., 2006; Chinmay et al., 2016; Kamta et al., 2019; Chinmay et al., 2013; Bhanu et al., 2018; Chinmay et al., 2013).

Internet of Things (IoT) is a combination of devices, actuators, and sensor nodes supervised in a distributed, comprehensive and omnipresent way. IoT exists in multiple applications, services in addition to the healthcare sector is not at all away from IoT rebellion (Jose-Luis et al., 2018). Along these lines, telemedicine plays the main role for expansion and improvement of IoT technologies in healthcare. Sensors which can easy way of use and remote monitoring are state-of-the-art of applications for IoT technologies. Remote monitoring distributed systems presented in universal level described in two types of architecture. One type is distributed system architecture provides storing behavior, biometric and context variable from profit-making sensors into appliances like a computer, Smartphone, and computers from there on producing complete exhaustive reports to support health-related decision making (Lin et al., 2004; Meneu T et al., 2011). The second type is automatically distributed system architectures broadcast captured data with the help of wireless technology, Wi-Fi, Bluetooth and ZigBee transmissions (Meneu T et al., 2011; Chris Otto et al., 2006). As the result of recent advancement in wireless communication technology, low power micro electro mechanical systems, miniaturization, and network technology now we have new enable and production called wireless sensor networks which proficient of autonomously monitoring and scheming surroundings (Chris Otto et al., 2006; Chinmay et al., 2016; Kamta et al., 2019).