A survey on instantaneous data transmission in Wireless Sensor Networks for Healthcare Monitoring

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Abstract

Real time health monitoring using WSN of imbed and wearable sensors is visualized as a continual monitoring solution of bedridden outpatient with motility. This paper aims to implement an instantaneous patient monitoring framework, which is proficient in collecting, transmitting and monitoring patient's perceptual conditions. In present Health monitoring frameworks, the patients are supervised by medical professionals using various equipment's which are hardwired to nearby bedside monitors or PCs, and essentially this equipment's are substantial and consequently it keeps patients confine to bed. The drawbacks of these frameworks may affect the patient's mobility during monitoring the vital signs. Our proposed real time health monitoring framework can detect patient's health conditions like pulse rate, body temperature and electrocardiograph using different bio sensors, the collected data will be processed using ARM7LPC2148 and the processed data is efficiently transferred wirelessly to LabVIEW software via ZigBee. In case of abnormalities, the SMS will be sent to doctor's/care givers using GSM. In addition, the proposed framework uses ZigBee technology since it is low cost and achieves low power usage to maximize the network lifetime, accelerate and expand transmission protocols and also battery life is significantly improved. This framework will help patients to recover easily and also provides enhanced medical care to patients at a low cost. Furthermore, the framework provides profitable benefits for virtually monitoring individuals living away from the remote areas, old individuals, heart patients and can be used for COVID-19 patients in home and hospitals thereby improving medical administrations.

Full Text

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Figures

Figure 1

Structure of Real-time Healthcare monitoring using Wireless sensor networks

Figure 2

ZigBee Module

Figure 3

ARM7LPC2148 Board

Figure 4

GSM module

Figure 5

Pulse Sensor

Figure 6

LM35 temperature Sensor

Figure 7

Electrocardiograph probes