ABSTRACT

Growing population, sedentary lifestyle and spreading epidemics in today’s world have led to a need for ubiquitous healthcare systems. E-healthcare is an active area of research where many innovative solutions have been proposed for easily accessible and always available medical systems. Wireless Body Area Network (WBAN) is one such concept which serves as a health monitoring technology for humans. In a WBAN sensors are attached to various parts of the human body to monitor the health or in general the bodily functions such as heart rate, temperature, blood pressure, etc. of a person. The readings obtained from the patient are transmitted to a medical professional so that the patient will be constantly and remotely monitored. This gives location flexibility for the patient instead of being in a hospital environment or being bound at home. But one of the downsides in adopting WBAN is the security and privacy issues. Medical records are sensitive information and hence for a patient to trust the system, data needs to be sent securely. Moreover, every detail captured by the sensors need to be reliably transmitted to the medical authorities concerned. Another issue is the limited battery power of the sensors. A sensor should not be taxed to do too many computations as that will drastically drain the battery. In this work, a power efficient methodology for secure as well as reliable transmission of patient data to the medical authorities has been proposed. Simulations have been done using NS2 and the results have shown that the proposed methodology is efficient and improves the overall QoS of the system.