

## **SECURE HEALTH MONITORING IN WIRELESS SENSOR NETWORKS WITH MOBILITY-SUPPORTING ADAPTIVE AUTHENTICATION SCHEME**

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### **ABSTRACT**

One of the major challenges of the world is the increasing old age population and those who are suffering from diseases. The old age population and the diseased want to live independently and perform tasks on their own. This creates a necessity to monitor them continuously and provide a better quality healthcare service while still they are able to live a normal life. The healthcare provided should be improved with the help of the present day technology for early detection and diagnosis of any abnormal conditions of the patient's health. Wireless Sensor Networks (WSN) promise a low cost environment sensing and data processing capabilities in Healthcare applications. Human physiological features such as heartbeats, temperature and pulse can be monitored from a distant location through wireless sensors that can be implanted in/on the human body. Monitoring patients is one of the main tasks of Healthcare using WSN, even when the patients are on the move. Physiological data of the patient, sensed and gathered are highly sensitive, maintaining its confidentiality is highly essential. Hence, security is a vital research issue in mobile health applications. Solutions and schemes proposed in literature consider the patients to be immobile. Hence, this paper presents a secure, energy efficient and scalable security scheme called Mobility-Supporting Adaptive Authentication Scheme (MAAS). The MAAS scheme ensures that the Healthcare Provider and the Patients access and exchange patients data by authenticating themselves. Also, the scheme prevents unauthorized access to the data by providing confidentiality and integrity. Since the requirement suggests continuous uninterrupted monitoring of patients, but mobility of the patients cause interruption of links. The proposed security scheme also ensures connectivity of the links even when the patients are mobile.

**KEYWORDS:** Security, Authentication, Healthcare, Wireless Sensor Networks