Security Enhancement for Access Control Mechanism in Real-time Wireless Sensor Network

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Abstract— **A wireless sensor network (WSN) based real-time application, both physical nodes (i.e., unguarded nodes) as well as open communication channels are accessible to the adversaries. Such channel openness and unguardedness of the WSN nodes may lead to various attacks to the application. Therefore an access control mechanism is essential for such WSNs that are deployed in the hostile environments. In this regards, recently, two practical access control protocols (PACPs) are being proposed for WSNs. The authors claimed that their proposed protocols are suitable for practical implementation and are secure against most of the known attacks. Unfortunately, PACPs have inherent security weaknesses and difficulty in real-time implementation. In this paper, we identify few security pitfalls. In addition, a new node addition phase is impractical in the real world deployment. In order to overcome the PACPs issues, we also proposed an enhanced practical access control protocol that provides more security features at low computation and communication costs.**

*(Keywords— **Access control protocol, authentication, key establishment, wireless sensor networks**

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