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Developed Authentication Method for Wireless Sensor Networks Based on Lightweight Protocol

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Abstract—Wireless Sensor Networks (WSNs) can be the most important solution for several problems, particularly in emergency cases. Software engineering security for WSN can confirm four goals including confidentiality, integrity, authentication, and availability. In this paper, an authentication method for WSN is proposed based on lightweight authentication and key management protocol as well as concepts of software engineering. Moreover, the interleaving process is added to the adopted protocol to improve the security side. The proposed method uses a Kath hashing in addition to salt and hash: the MD5 algorithm. This is to provide an allowance for the authentication of the added node to join the network. The proposed method is tested over different case studies and the obtained results show the superior performance for it in terms of processing the added nodes.

Index Terms— Security WSN, Authentication Method, lightweight authentication and key management protocol.

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