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A

Dissertation

On

“Wireless Sensor Network Security Mechanism”

Submitted in Partial fulfillment of the requirement
For the award of Degree of

MASTER OF TECHNOLOGY
IN
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SUBMITTED BY

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UNDER THE GUIDANCE OF

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CERTIFICATE

This is to certify that the work contained in this dissertation entitled "**Wireless Sensor Network Security Mechanism**" submitted in the partial fulfillment, for the award for the degree of M.Tech in Computer Science Engineering at **DELHI TECHNOLOGICAL UNIVERSITY** by **AVANT PANWAR, Roll No. 2K11/CSE/03** is carried out by him under my supervision. This matter embodied in this project work has not been submitted earlier for the award of any degree or diploma in any university/institution to the best of our knowledge and belief.

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Abstract

The salient features of WSN like use of wireless radio communication, collaborative nature and deployment in the open environment exposes it to many security threats. Since WSN has tight limitations on the power consumption, transmission and computation the complex cryptographic algorithms can’t be used to provide the security. Key management in WSN is the fundamental line of defense for a secure communication and thus it is very important. The use of single key for secure communication is not a good idea as if the node gets compromised all the key material will be extracted by the adversary which poses a great threat to the network. Moreover uses of traditional public key cryptography schemes are not suited to the WSN due to the tight constraints on the power, computation and transmission.

In this thesis we propose a new framework for enhanced Secure Key management for hierarchical WSN which enhances the security of the network. In our proposed work the base station computes all the keys required for both inter and intra cluster communications. Cluster is further isolated into small geographical areas on the basis of hop count from the cluster head. The sensor nodes in the network join the cluster on the basis of the distance (hop counts) from the cluster head which localizes the path key things and reduces the overhead.

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Dissemination

1. Avant Panwar, Manoj Kumar and Sajendra Kumar “New Framework for Enhanced Secure Key Management in Hierarchical Wireless Sensor Network” in International Journal of Computer Applications (IJCA) July 2013 Edition. Accepted for Publication(Paper Reference ID: pxc3889730)

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