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Title: Strategies for Enhancing Reliability of Wireless Sensor Networks

Keywords: Wireless Sensor Networks, Reliability, Energy Efficiency, Network Lifetime, Data Compression, Security, Internet of Things, Cryptography

Abstract: Following a thorough review of the literature, it is clear that safe, dependable, and optimal protocols for Wireless Sensor Networks are required. In addition, in the current environment, designing a revolutionary step of creating smart connectivity in existing networks and effective use of network resources (concept of Internet of Things-IoT) is unavoidable. The main findings of this thesis are:

- Developed an energy efficient protocol to improve network lifetime as well as reliability of Wireless Sensor Networks.
- Developed an algorithm for calculating capacity related reliability to forward data from source to multiple sinks of wireless sensor network.
- Developed a strategy for data forwarding over the unreliable media and links for evaluating flow orientated reliability of Wireless Sensor Network.
- Developed a Hybrid Cryptographic algorithm for enhancing security and reliability of data transmission in WSN