

# Design of A Minimal Control Traffic Overhead Topology Discovery and Data Forwarding Protocol for SDWSNS

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## Abstract

Efficient Topology discovery and maintenance are the most critical requirements of Software Defined Wireless Sensor Networks (SDWSN). Existing SDWSN protocols for discovering the underlying network topology put more constraints on the already limited wireless sensor node resources. Previously, an extensive literature survey was conducted and this fact was established. In this paper, a novel minimal control overhead topology discovery and data forwarding protocol is proposed and detailed. The proposed protocol requires some changes to the topology discovery protocol implemented in SDN WISE to improve its performance. The proposed protocol has been implemented in the IT-SDN framework for evaluation. The results show reduced control packet overhead and improved energy consumption compared to the existing protocol. Besides, the implementation shows an increase of 20% data packet delivery rate over the protocol in SDN WISE.

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Design of minimal TDNDFP-Engineering Report.docx available at <https://authorea.com/users/303544/articles/434879-design-of-a-minimal-control-traffic-overhead-topology-discovery-and-data-forwarding-protocol-for-sdwsns>