

Data Aggregation in Software-Defined Wireless Sensor Networks: A Review

Abu-Mahfouz, Adnan M
Council for Scientific and Industrial Research
Pretoria, 0001, South Africa
Email: AAbuMahfouz@csir.co.za

Abstract

Wireless Sensor Networks (WSN) have made a substantial impact in our lives by allowing us to communicate, monitor certain environments thus enabling us to build systems such as software-defined wireless sensor networks (SDWSN) which are expected to contribute a lot on the design of many applications in future. Software-defined wireless sensor networks decouple the control plane and data plane. The control plane serves as the brain of the system while the data plane performs functions such as data aggregation, packet generation and transmission in the programmable nodes. Flow aggregation allows a limited number of flow entries to be reduced while maximizing utilities. It also improves the energy consumptions, security, overall throughput performance and network lifetime. Therefore, this paper investigates data aggregation in network technologies such as WSN and SDN and proposes flow aggregation for control packets in software-defined wireless sensor networks.