River Publishers Series in Communications and Networking

Wireless Sensor Networks: QoS Perspective

Editors:

Vivek Deshpande, Technical University of Sofia, Bulgaria and Vishwakarma Institute of Technology, India

Vladimir Poulkov, Technical University of Sofia, Bulgaria

Description:

Currently, Cyber Physical Systems (CPS) and/or IoT play predominant roles in the cloud communication domain. The main aspects of these types of systems are Wireless Sensor Networks, Cloud and Communication Networks. The data which needs to be disseminated from multiple sources to the destination base station, or sink, is of vital significance. There are many problems which can occur when data is conveyed to the sink. The sink is connected to the cloud via a communication network. The congestion, reliability, delay, fairness, etc. are all of main concern. These can be treated as Quality of Service parameters that govern the performance of the CPS. Above all, energy consumption is the main constrain for WSN node. It is extremely difficult to obtain good QoS by keeping energy consumption low. Even the response of one of QoS parameter depends on the many other QoS parameters.

Care must be taken on all QoS parameters in order to improve the performance of the wireless sensor networks. This Quality of Services may improve the application base of the CPS. With the QoS parameters the data dissemination along with energy optimization is affected. The performance of the WSN needs to be regularly checked against the QoS metrics for different data inputs. This may contain the periodic- or non-periodic data, event based data, transient or busty data.

Topics discussed in book: Emphasis is given on QoS parameters and their improvement in Network Delay, Throughput, Packet Delivery Ratio (PDR), Packet Loss Ratio (PLR), Energy Consumption, Congestion Control, Reliability, Fairness, Delay, Jitter

Keywords: Quality of Service, Wireless Sensor Networks, Network Performance, Heterogeneous networks, wireless networks, ad hoc networks, Internet of Things, Industry 4.0