Recent advances of data compression in wireless sensor network

ABSTRACT

Wireless Sensor Networks (WSNs) have emerged as one of the most promising wireless communication systems supporting wide variety of applications ranging from military tasks, healthcare, disaster prediction and indoor positioning. The low complexity and cost of the nodes result in constraints such as computational power, communication bandwidth and battery power. Energy consumption is one of the most critical to WSN. In WSN communication, data transmission is considered the largest contributor to total energy exhaustion and apparently, it is influenced by the size of the data. Favorably, data compression can be used to reduce the amount of data that requires to be transmitted and hence prolongs sensor's lifetime. In this study, we survey various approaches, issues and challenges to WSN efficiency related to data compression discuss the effect of the data size on the sensor efficiency and how data compression algorithms can be used to address small size data transmission. Finally, recent approaches are reviewed with highlighting of advantages and disadvantages of each solution.

Keyword: Wireless sensor networks; Various; Efficiency; Solution; Disaster; Approach