Abstract:

The BROGO algorithm has been recently presented for Leader Election in Wireless Sensor and IoT Networks, where after finding a spanning tree of a network, each leaf will route a message through its branch to the root in order to determine the leader in that branch. The root will then elect the global leader among the received branch leaders. The main drawback of this algorithm is a possible failure of the root node before the beginning of the election process. In this paper, we propose a revised version of the BROGO algorithm in which the non-faulty node with the smallest identifier is considered as a root. This can be done using the Wait-Before-Starting (WBS) concept, which guarantees a maximum of reliability and quality of service. The obtained results show that this process has no impact on the initial energy consumption generated by the BROGO algorithm.