**Abstract**

Correct localization in Wireless Sensor Networks (WSNs) is basic toward several applications. In general it becomes very difficult in huge scale 3D WSNs because of irregular topology since it consists of holes in the path, of the network. Node Weight Swallow Swarm Optimization Convex Node Segmentation (NWS2CNS) is introduced recently for solving 3D WSN accurate localization. However in NWS2CNS algorithm is not easy to recreate a global map by means of the relative coordinates subsequent to the network segmentation. So a number of advanced algorithms are needed to recreate the global map establishment. An Advanced Chamfer Distance Based Multidimensional Scaling (ACDMDS) algorithm is proposed in this paper in order to recognize relative localization designed for every approximate convex. The shortest hop count among two arbitrary neighboring nodes in the complete 3D WSN is able to achieve via the Floyd algorithm, and each and every one of these hop count distances is saved in a chamfer distance matrix. Chamfer distance is also additionally calculated to arbitrary neighboring nodes. After that spatial convex node detection algorithm and sub-optimal convex node algorithm have been also carryout individually. Simulation results demonstrate that the proposed ACDMDS technique be able to successfully segment a 3D WSN and considerably increase the localization results when compared to other existing methods. Simulation results are evaluated via the metrics like Localization Error Ratio (LER), Localized Node Proportion (LNP), Bad Node Proportion (BNP) and Network Coverage Ratio (NCR).