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Comparative Performance Analysis of QC-MCSC Heuristic with Existing Heuristics over Energy Latency Density Design Space for Wireless Sensor Network

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Abstract-Wireless Sensor Network is a wireless network consisting of spatially distributed autonomous devices using sensors to cooperatively monitor physical or environmental conditions. In most of the cases, replenishment of batteries might be impossible. That's why lifetime of WSN shows a very strong dependency on battery lifetime. So an important issue in sensor networks is power scarcity, which depends on battery size and weight limitations of WSN node. Energy-aware algorithms are designed for extending the lifetime of wireless sensor network. For appropriate data acquisition in WSN, coverage of all targets and connectivity with the base station, both are required. Also for the reliability purpose higher order of coverage and connectivity is required.

[1] Proposed an energy minimization heuristic called Q-Coverage Maximum Connected Set Cover (QC-MCSC). This heuristic schedules the sensor nodes activities that are having Q-coverage and connectivity requirements and thus increase the lifetime of wireless sensor network. QC-MCSC is compared with existing heuristics and a study of comparative performance of QC-MCSC and existing heuristics is done over Energy Latency Density Design Space for Wireless Sensor Network

Keywords:-Wireless Sensor Network, Connected Target Coverage, Network Lifetime, Network Architecture, Cover Set, Coverage, Connectivity, Q-Coverage, Connectivity