

Enhanced Mobile Ad-Hoc Network Detection and Localization System (EMANDLS)

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Abstract

The Enhanced Mobile Ad-Hoc Network Detection and Localization System (EMANDLS) is a new technology that improves the reliability and efficiency of detecting and locating nodes in Mobile Ad-Hoc Network (MANETs). It combines advanced algorithms with machine learning to overcome the challenge of node becoming unreachable while cutting down the network overhead and making better use of resources. While cutting down on network overhead and making better use of resources it combines advanced algorithms with machine learning to overcome the challenge of nodes becoming unreachable. For simplicity, a basic classification method like k-means clustering is used to group the nodes. The current status is simulated randomly for demonstration. This paper explains the main features of EMANDLS, how it works, and the benefits it brings over traditional methods for node detection in MANETs. The setup covers a 100x100 area with grid lines. There are 10 nodes, and each time step involves 100 steps, with 5% of nodes being unreachable at each step. The movement of each node is randomized to mimic real-world mobility.

Keywords

MANET (mobile ad-hoc network), EMANDLS (Enhanced Mobile Ad-Hoc Network Detection and Localization System), predictive analytics, hybrid localization techniques.

