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Authors:

Ch. V. Raghavendran

G. Naga Satish

P. Suresh Varma

I. R. Krishnam Raju

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Abstract

Connected Dominating Sets (CDS) are very useful in improving the routing for Mobile Ad Hoc

Networks (MANETs). A CDS will act as a virtual backbone for communication in the ad hoc networks. Due to the importance of the CDS in routing, formation and selection of the CDS will have significant impact on routing and performance of the network. In the literature number of metrics was proposed to select and form a CDS in a network. In this paper, we studied and analyzed algorithms to construct CDS based on different metrics. The algorithms examined include Minimum Velocity-based CDS (MinV-CDS), Maximum Density CDS (MaxD-CDS), Node ID-based CDS (ID-CDS), Node Stability Index-based (NSI-CDS) and Strong-Neighborhood based CDS (SN-CDS). The performance metrics for the CDS are its Node size, Edge size, Lifetime, Hop count per path, Diameter and Energy index.

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Index Terms

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Keywords

Connected Dominating Sets Mobile Ad Hoc Networks Routing Stability Density
Strong Neighborhood