Abstract

Vehicular Ad-hoc network (VANET) is a collection of vehicular nodes forming a temporary network without the aid of any centralized administration or infrastructure. VANETs have no stable topology due to its dynamic nature of nodes. So, reliable and efficient routing is one of the main challenges in VANETs. Therefore, so many routing algorithms and protocols have been enhanced and developed for accomplishing this task. Therefore, it's very tough to determine which protocol performs best in different network scenarios. This paper present Improved Multicast AODV (IMAODV) routing protocol with limited source routing that ensures giving on-time, reliable and accurate data in V2V communication as compare to Improved AODV (IAODV). In result analysis, performance of the proposed IMAODV protocol is compared with AODV, IAODV and MAODV protocol in terms of Average End-to-End Delay (Avg. E-to-E Delay), Packet Loss Ratio (PLR), Packet Delivery Ratio (PDR) and Normalized Routing Load (NRL). Simulation analysis results show that IMAODV protocol performs better than IAODV protocol in VANETs.
- Alberto Gordillo Muñoz &quot;Multicast over Vehicle Ad Hoc Networks&quot;.
- Zhong Mingyang, Fu Yunting and Jia Xinqiang, &quot;MAODV multicast routing protocol based on node mobility prediction&quot; E -Business and E -Government (ICEE), 2011 International Conference on 6-8, pp-1-4, May. 2011.
- Xu Li, Naren Gaowa and Mingqiang Yang, &quot;Improved MAODV link repair technique for group team communication in MANET&quot; Wireless Communications and Mobile Computing Conference (IWCMC), Page(s): 1023 – 1028, 2013.
- Xu Li, Tianjiao Liu, Ying Liu and Yan Tang, &quot;Optimized multicast routing algorithm based on tree structure in MANETs&quot; IEEE-Communications, pp. 90 – 99, Feb 2014.
- Weiliang Li and Jianjun Hao, &quot;Research on the improvement of multicast Ad Hoc On-demand Distance Vector in MANETS&quot; Computer and Automation Engineering (ICCAE), pp. 702-705, 2010.
- Pavan Pichka, H. santhi, Dr. N. Jaisankar, Devi Priya, &quot;A Comprehensive Study of Existing Multicast Routing Protocols Used In Mobile Ad Hoc Networks&quot; International Journal of Engineering Science and Technology (IJEAT), Vol. 4 No. 05 May 2012, ISSN : 0975-5462.
- Chen-Hsiang Feng, Yuqun Zhang, Ilker Demirkol, Wendi B. Heinzelman, &quot;Stateless Multicast Protocol for Ad Hoc Networks&quot; IEEE transactions on mobile computing, vol. 11, no. 2, February 2012.
- Tanu Preet Singh, Neha, Vikrant Das &quot;Multicast routing protocols in MANET&quot;.
- Abedi, O., R. Berangi, and M. A. Azgomi. Improving route stability and overhead on AODV routing protocol and make it usable for VANET. in Distributed Computing Systems Workshops, 2009. ICDCS Workshops; 09. 29th IEEE International Conference on. 2009: IEEE.

**Index Terms**

Computer Science

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**Keywords**

VANET  AODV  IMAODV  MATLAB