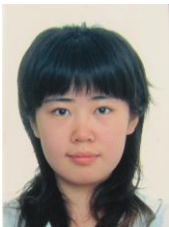


NSNCR: a Non-Source Non-Certain Routing Strategy for Ad Hoc Networks

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Abstract—In order to suit high mobility and limited resources of ad hoc networks, a new hybrid route strategy named Non-Source Non-Certain Routing (NSNCR) is proposed. This paper designs a multi-path judgment method for handling request message in route discovery process. A next hop selecting mechanism used for forwarding packets is proposed, and the mechanism is based on series of collective concepts like forward-list and neighbor table. NSNCR could provide increased stability and reliability of routes for its flexible choice of uncertain route, instead of the fixed route in traditional protocols. Moreover, the strategy can decrease the network congestion and balance the network energy since next hop selecting mechanism takes current surroundings like node degree, congestion, energy, relative mobility into consideration. Simulations are conducted to evaluate the performance comparison of NSNCR with Dynamic Source Routing (DSR) and Ad hoc On-demand Multipath Distance Vector (AOMDV) using ns-2 network simulator. The results show that NSNCR is efficient to decrease the drop packet ratio and average end-to-end delay under high load and mobility conditions.

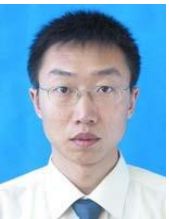
Keyword—Ad hoc networks, NSNCR, competition utility function, multi-path



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