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 Y. Sangeetha ·  Kumar Narayanan

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Abstract

Ad hoc networks which consist of mobile nodes have become essential means of communication and possess more suitable characteristics for collaboration with emerging technologies. Ad hoc networks do not require centralized control mechanism and infrastructure for their functioning. This paper is focused on establishment of routing protocol that includes a novel and reliable routing path selection mechanism based on multiple metrics such as received signal strength, Signal to Interference Plus noise ratio (SINR), Bit error rate (BER), signal intensity, and transition frequency. The proposed path selection mechanism is implemented as a two-stage process where the received transmission paths from the RREP packets are filtered out to select an optimal routing path. During path re-selection after a link failure in the network, the next path for transmission is selected based on the Link Expiration Time from the ordered list of transmission paths discovered during initial route discovery phase. The proposed route selection mechanism is implemented on top of ad hoc on demand multipath distance vector routing (AOMDV). The experiments were focused on simulation of multipath routing protocol along with proposed route selection process based on the above link quality metrics.

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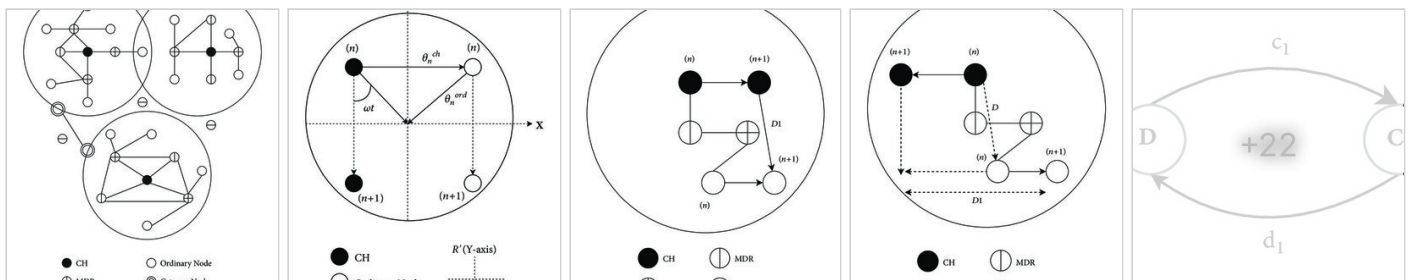
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	≤ 6.25	model	Random Waypoint (pause time)
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		communication range	250 m
	≤ 3.75	PHY and MAC Layer	Wi-Fi IEEE 802.11b, 2.4GHz
		lifetime Δt	5 seconds
		on time T	5 seconds
		transmitted power	18 dBm
		energy supply	50 Joules

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