

**Project Title:** Efficient Data Transfer Protocol for Mobile Ad Hoc Networks  
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**Abstract:**

A new protocol, named Proxy-Assisted Routing for Efficient Transmission (PART), that uses a cross layer approach is proposed to route packets to a destination efficiently in Mobile Ad Hoc Networks (MANETs). PART limits the number of control packets with the aid of proxy nodes, adapts to route failures and avoids congestion quickly by broadcasting routing information within a predefined zone. It utilizes the address information of the Medium Access Control (MAC) layer to transmit unicast control messages and limit the broadcast zone. Only mobile nodes that are in this zone are allowed to broadcast routing information to reduce the control overhead and packet collision. In order to ensure the reliability of TCP, a proxy node acknowledgement (PACK) is introduced to check the correctness of data packets and informing the source node of missing packets by sending an acknowledgement to the source node in advance. Among the contributions of this research are to limit the broadcast region by using a proxy node, to repair broken routes between source-proxy and proxy-destination nodes, and the use of local acknowledgement from a proxy to a source to ensure the reliability and correctness of TCP packets.