AD HOC NETWORKS ARE CONSTRUCTED BY MOBILE NODES WITH WIRELESS CONNECTIONS THAT IS A WIRELESS NETWORK WITHOUT INFRASTRUCTURE OR CENTRALIZED MANAGEMENT. MAINLY, IT PROVIDES LIMITLESS USERS WITH THE ABILITY TO CONSTRUCT WIRELESS NETWORKS AT ANY TIME. EVERY NODE HAS ROUTING CAPABILITIES, WITH THE ABILITY TO DISCOVER AND MAINTAIN ROUTING INFORMATION. SINCE THE NETWORKS TOPOLOGY MAY BE CHANGED BY THE MOBILE NODES, SELECTING AN APPROPRIATE ROUTING PROTOCOL IS CRUCIAL TO FIND A COMMUNICATIONS ROUTE FOR THE MOBILE NODE. THUS, ROUTING PROTOCOLS TAKE ON AN IMPORTANT ROLE. MANY RESEARCHERS HAVE DEVOTED TO DEVELOP ROUTING PROTOCOLS IN AD HOC NETWORKS WITH LIMITED BANDWIDTH, AMONG WHICH CONSIDERATIONS OF BACKUP ROUTES AND MULTIPLE ROUTES HAVE BEEN PROPOSED. BUT ALL OF METHODS ARE FOCUSED ON THE MOVEMENT OF INTERMEDIATE NODES. THE MOVEMENT OF SOURCE OR DESTINATION NODES ARE NOT ADDRESSED. THIS THESIS FOCUSES ON IMPROVING THE PERFORMANCE OF ROUTING PROTOCOLS, USING THE POPULAR AD HOC ON-DEMAND DISTANCE VECTOR (AODV) AS THE FOUNDATION. IT TAKES INTO CONSIDERATION THE MOVEMENTS OF THE SOURCE OR DESTINATION NODES AND PRESENT AN EFFICIENT METHOD OF ROUTE MAINTENANCE. WITHOUT INCREASING THE CONTROL OVERHEAD, OUR APPROACH CAN INCREASE THE DELIVERY RATE OF DATA PACKETS. THE EXPERIMENTAL RESULTS SHOW THAT OUR METHOD IS EFFECTIVE FOR MAINTAINING THE NETWORK CONNECTION.

Keywords: ROUTING PROTOCOL, BACKUP ROUTE, MULTIPLE ROUTE, AD HOC WIRELESS NETWORKS, PATH MAINTENANCE.

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