



## **ROUTING PROTOCOL WITH SCALABILITY, ENERGY EFFICIENCY AND RELIABILITY IN WSN**

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**ABSTRACT**—The world around us will soon be interconnected as a pervasive network of intelligent devices. Through this, people will be able to get online and have almost continuous access to their preferred services. WSN (Wireless Sensor Networks) is the emerging technology expected to prevail in the pervasive computing environment of the future. Geographic routing protocol is an attractive localized routing scheme for wireless sensor networks because of its directional routing properties and scalability. Sensor nodes are highly energy-constrained. Also, sensor nodes can be deployed in a hostile condition. This is the reason why we have to consider not only the energy but also the wireless link condition. In this paper, we propose a geographic routing scheme considering the wireless link condition. If wireless link condition is not considered, the node which is at the end distance of the transitional region where packets can be received with errors can be selected as the next hop. This draws out retransmissions because of received packet errors. In addition, because of these retransmissions, additional energy is consumed. This proposed scheme guarantees that reliable data transmission is made and consumed energy is minimized. For this, we first determined the distance  $d_{op}$ . That is, in this scheme, sensor nodes send packets to the neighbor closest at the place which is  $d_{op}$  distance from the source to the sink. Also, method handling communication voids and loop avoidance is proposed. Through simulation, we validate that this proposed scheme is more efficient in terms of performance than general geographic routing, which selects the neighbor closest to the sink in the connected region or in the transmission range as the next hop.