The Selection of the Nearest Anchor Using Received Signal Strength Indication (RSSI)

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Abstract : The localization information is crucial for the operation of WSN. There are principally two types of localization algorithms. The Range-based localization algorithm has strict requirements on hardware; thus, it is expensive to be implemented in practice. The Range-free localization algorithm reduces the hardware cost. However, it can only achieve high accuracy in ideal scenarios. In this paper, we locate unknown nodes by incorporating the advantages of these two types of methods. The proposed algorithm makes the unknown nodes select the nearest anchor using the Received Signal Strength Indicator (RSSI) and choose two other anchors which are the most accurate to achieve the estimated location. Our algorithm improves the localization accuracy compared with previous algorithms, which has been demonstrated by the simulating results.