

## ***Abstract: A Study on Localization Algorithm using RSSI Based on DV-HOP Algorithm between Sensor Node***

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### **Abstract**

The recent development of ubiquitous environments has led to active studies regarding wireless sensor networks. This has made studies into the localization of sensor nodes, which are frequently used over wide areas for long periods of time, become quite important and popular. These methods recognize locations based on local area network communication by installing wireless communication modules into mobile devices, such as remotely controlled robots, cleaning robots, and guard robots, as sensor nodes, and configuring these reference nodes so that they enable location recognition. In this paper, an RDV-HOP algorithm that improves upon the DV-HOP algorithm is presented that better estimates the self-location of a sensor node. The RDV-HOP algorithm employs the RSSI distance measuring method in addition to the DV-HOP algorithm. A simulation of the RDV-HOP algorithm has been performed by applying various environments to a model. The best performance improvement regarding location errors occurred when the effective sensor distance was within a range of 40~80m. The proposed RDV-HOP algorithm decreases the distance error by a maximum of 121.89% when compared to the DV-HOP algorithm.

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