WEIGHTED HYBRID LOCALIZATION SCHEME FOR IMPROVED NODE POSITIONING IN WIRELESS SENSOR NETWORKS

Prima Kristalina, Wirawan, Gamantyo Hendrantoro
Department of Electrical Engineering
Institut Teknologi Sepuluh Nopember
Surabaya, Indonesia
Emails: prima@eepis-its.edu; wirawan@its.ac.id; gamantyo@ee.its.ac.id

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Abstract- Localization schemes have a significant role in wireless sensor networks. During random deployment in an untouched area, the nodes have to be capable of self-management to determine their position. Received Signal Strength (RSS) and DV-Hop, are two different schemes that each have environment or hop dependency problem. Hybrid localization scheme, called H-Loc, is a combination of RSS and DV-Hop method. This scheme is proposed to make the selection of distance determination process based on the proximity of nodes position. The weighted least square is proposed as a refining of DV-Hop scheme’s position calculated process. Simulation results show that the proposed scheme has the capability of improving the accuracy of node positioning up to 3.4%.

Index terms: DV-Hop, H-Loc Scheme, localization, weighted least square