

Mobile-Assisted Localization for Wireless Sensor Networks

Critique

1. The scheme presented requires multiple RF signals be sent between the mobile node and stationary node, but does not consider the energy overhead of performing such a large number of transmissions.
2. Deploying a mobile node will only work in an easily navigable environment. But a network deployed in an environment with many physical obstacles (forest, volcano, underwater) will prevent a mobile node from navigating it.
3. The paper assumes that the location of the mobile node is not known. However, it seems reasonable that the mobile node *does* know its location; if not its initial position than at least the intermediary distances from one mobile location to another. In fact it is unlikely the mobile node *doesn't* know its distance traveled, especially since the node must navigate from one point to another. We can greatly improve localization if make this assumption.
4. The movement strategy of the mobile nodes is not thoroughly considered. While the authors make it clear that the same stationary node won't be visited more than once, this doesn't imply that the mobile will not pass through the same region multiple times.
5. The paper needs more discussion/illustration on how the information collected from the MAL strategy is combined with the information gathered from the AFL localization algorithm. In particular, it is not clear how much location information it gathered by MAL.
6. The paper does offer a very innovative approach to localization, by having a moving node help in gathering distance measurements. We may want to think of other localization algorithms, or in general, other sensor networks protocols, that can be helped (improved) with the use of a movable device. Sensor nodes are normally constrained because they are in fixed position.