

Multi Target Localization with Sensor Networks

From Theory to Application; An Implementation on Software Defined Radio

Research Area

Localization and tracking, Sensor Networks

Keywords

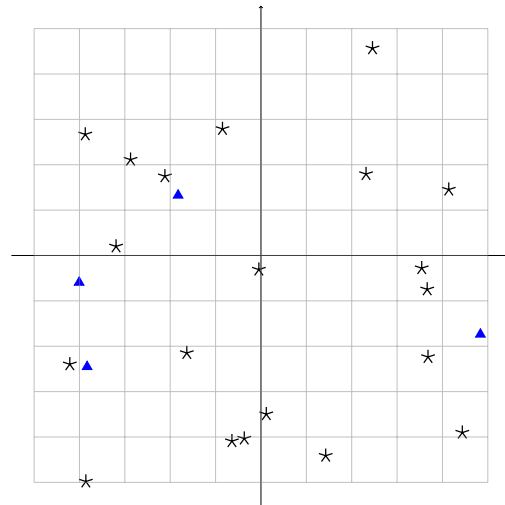
multi-target localization, radio measurement, software defined radio

Description

This thesis deals with practical aspect of the area of target localization, primarily based on software defined radio implementation. It involves radio measurements and implementation of localization algorithms. In case of interest, there is also the possibility of theoretical investigation of the localization algorithms.

Goal

The goal is to localize several targets in an outdoor/indoor scenario based on real life signal measurement. The main achievement will be an implementation of the whole scenario on a distributed hardware platform based on software defined radio.



Network with K sensors ($*$) and N targets (\blacktriangle)

Requirements

To conduct this thesis successfully, one needs

- basic knowledge in communication systems
- fair competency in C++ and/or Python
- standard competency in MATLAB
- great interest in applying theory to practice
- basic knowledge in optimization theory is beneficial

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