Multi Robot Indoor System

Cwioro, Guenther
Kohout, Peter

The focus of our project is to provide a framework for multi robot systems to exchange information about their environment that they can learn from each other. This happens via wireless connections, without any given infrastructure. With this ability our robots are able to work as a team, and coordinate their tasks. This makes the whole system faster, in comparison to one single robot exploring a building. The system does not need any existing network infrastructure, so it will be able to work everywhere where the robots are able to move. Every robot can transfer information to other robots, either directly or via other robots which act as relays. In this way the robots establish an ad hoc network in which the information flows completely free. In theory your network can contain thousands of robots, but in reality it depends on the computing power of every robot. Every robot is able to create a 2D map of its environment. Our framework allows the robots to exchange these maps. Then every robot merges the information from the other robots into his map. The benefit is that only one robot has to move to a place, but all other know the same about this place.

Awards Won: