Abstract

Robot soccer systems have evolved around the years due to the development of different advancement in communication technologies. In this paper Zigbee based wireless communication technique is used to control large number of mobile robots. The major challenge for such a Communication system developed is to avoid interference with other systems. The data bits transmitted in a network should not be captured by receivers in the other network. The
Zigbee Mesh networking for a swarm of Mobile Robots

System response to the messages must be fast i.e. the latency involved in the network must be reduced. Power requirement of the entire system must be very low. Moreover entire system must be user friendly and cost effective. Developments of such a system with multiple functionalities are presented in this paper. Secure network with network key is implemented using Zigbee. The transmitter and receiver units can be powered using battery of approximately 9V. Moreover the battery life of the system can be improved by using Zigbee sleep modes. The range as well as the indoor communication is improved using the mesh network created in this paper. Large no of mobile robots in the network can be controller using single device. Different zigbee functionalities like security, interference, delay are analyzed in this paper. The mobile wireless sensor mote is designed by the fusion of zigbee and mobile robots.

Reference

- Cutler, Tim. “Implementing Zigbee wireless mesh networking” Jul 1, 2005, Electronic design group

Index Terms

Computer Science Wireless
Zigbee Mesh networking for a swarm of Mobile Robots

Key words

robosoccer  zigbee
mobile robots  wireless