Abstract

Smart Antennas provide angle-of-arrival information, which can be used for localization and efficient routing of information in wireless sensor networks (WSN). The method of designing a communications link between different nodes of a Wireless Sensor Networks (WSNs) by electronically steering the beam using smart antenna is presented. A brief design details and beam pattern measurements of a prototype smart antenna array operating in 2.4 GHz band is
evaluated which is highly directional & capable of beamforming and provide benefits such as the extended communication ranges, spatial reuse of the spectrum, and reduced interference patterns, enabling higher network performance compared to omnidirectional antennas. The proposed method is studied on searching Node of a WSN, as well as receiving node of a WSN. The searching WSN has the task of transmitting a search beam in order to find adjacent WSNs. This system is simulated to determine the direction of arrival from the nodes of WSN and deriving the location information from the signal, using the direction or arrival (DOA) estimation technique.

References

- Ruchi Mittal, Kiranpreet Kaur, Magandep Kaur, "Improvement in Capacity and Signal Strength using LMS Algorithm," International Journal of Computer Applications

Index Terms

Computer Science

Wireless Communication

Keywords

Smart Antenna  Adaptive Processor  Doa Estimation  Music Algorithm  Aoa  Ber  Improvement