Optimal Scheduling for Interference Mitigation by Range Information

ABSTRACT

- The multiple access scheduling decides how the channel is shared among the nodes in the network. Typically scheduling algorithms aims at increasing the channel utilization and thereby throughput of the network.
- This paper describes several algorithms for generating an optimal schedule in terms of channel utilization for multiple access by utilizing range information in a fully connected network. We also provide detailed analysis for the proposed algorithms performance in terms of their complexity, convergence, and effect of nonidealities in the network.

CONT…

- The performance of the proposed schemes are compared with non-aided methods to quantify the benefits of using the range information in the communication. The proposed methods have several favorable properties for the scalable systems.
- We show that the proposed techniques yields better channel utilization and throughput as the number of nodes in the network increases. We provide simulation results in support of this claim. The proposed methods indicate that the throughput can be increased on average by 3 – 10 times for typical network configurations.

EXISTING SYSTEM

An optimization problem, the solution for which is non-convex and computational complexity scales exponentially with the increase in the number of nodes. The are several works in UWA networks, where this problem is addressed, particularly for accomplishing tasks such as self localization.

PROPOSED SYSTEM

The main aim of the paper is to propose methods that optimize the multiple access schedule by exploiting the spatial temporal aspect of the channel.

The main contributions of this paper are as summarized below.

- We introduce three novel methods, which exploit the range information for efficient communication for the broadcast problem discussed.
- We analyze these methods in terms of computational complexity
- We discuss the performance analysis of these methods for different topologies and contrast them with standard

HARDWARE REQUIREMENTS

- Processor - Pentium-IV
- Speed - 1.1 Ghz
- RAM - 256MB(min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

SOFTWARE REQUIREMENTS

- Tool - Network Simulator-2
- Operating system - LINUX
- Front end - OTCL (Object Oriented Tool Command Language)

REFERENCES

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