Design of Multiple Routing for Simulcast

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Abstract

In ad hoc networks, the neighbors of a transmitter often experience very different propagation and channel conditions, and therefore these neighbors will differ in their ability to recover information from a transmitted message.

In this paper, the properties of a multiple routing scheme in ad hoc networks, based on a simulcast transmission that allocates randomly unequal transmission rates on multiple links according to the simulcast capabilities, are investigated.

Index Terms: Link, Multiple Routing, Network Model, Simulcast

I. INTRODUCTION

Multiple routing strategies to achieve high performance in wireless ad hoc networks have gained a lot of attention recently[1,2]. We explored adaptive multi-path routing for a large volume of data packets, which performs preemptive route re-discoveries before route errors occur while transmitting a large volume of data by computing the link stability in consideration of signal strength, link distance, and node velocity in a dynamic environment. Jian and Lin [3] classified multiple routes into various sets.

II. Network Model

The example networks that we consider, shown in Fig. 1, have source (S) and destination (D) radios connected by two routes with the same number of hops but different simulcast capabilities.
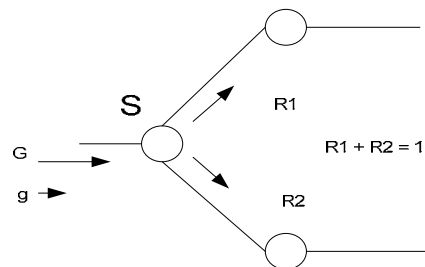

Fig. 1. Packet transmission from source radio to randomly selected route based on the simulcast capability Block Diagram of Device Manager

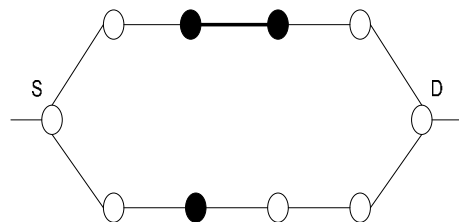The three network topologies that we consider are shown in Figs. 2

Fig. 2. Topology 1 for unequal random route selection based on the simulcast capability

III. CONCLUSION

In this paper, we investigated the simulcast capability to be exploited in ad hoc networks in the aspect of the network layer. By assigning unequal transmission rates on multiple routes according to the simulcast capabilities, which can be determined by the number of more-capable radios and links on a route, the simulcast performance apparently increases.

In the future, implement to our design. Then we will do implements and feedback.

ACKNOWLEDGMENTS

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