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OPTIMIZING THE DELAY IN MULTIHOP WIRELESS NETWORK USING NETWORK CODING AND SUCCESSIVE INTERFERENCE CANCELLATION

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ABSTRACT: The wireless communication based on packet delay problem to overcome issue to introducing the two new service there are network coding and successive interference cancellation. NC and SICs have been better achievement of the wireless communication. The previous work indicate maximum thresh out but does not deal with QOS prescription so high packet delay occurring. This may point to high delays in nodes due to the raise of intrusion to shorten the intrusion we combine NC with SIC technique. The objective of this work is average of packet delay in a TDMA-based MWN that is combine NC and SIC techniques for a given traffic demand matrix.

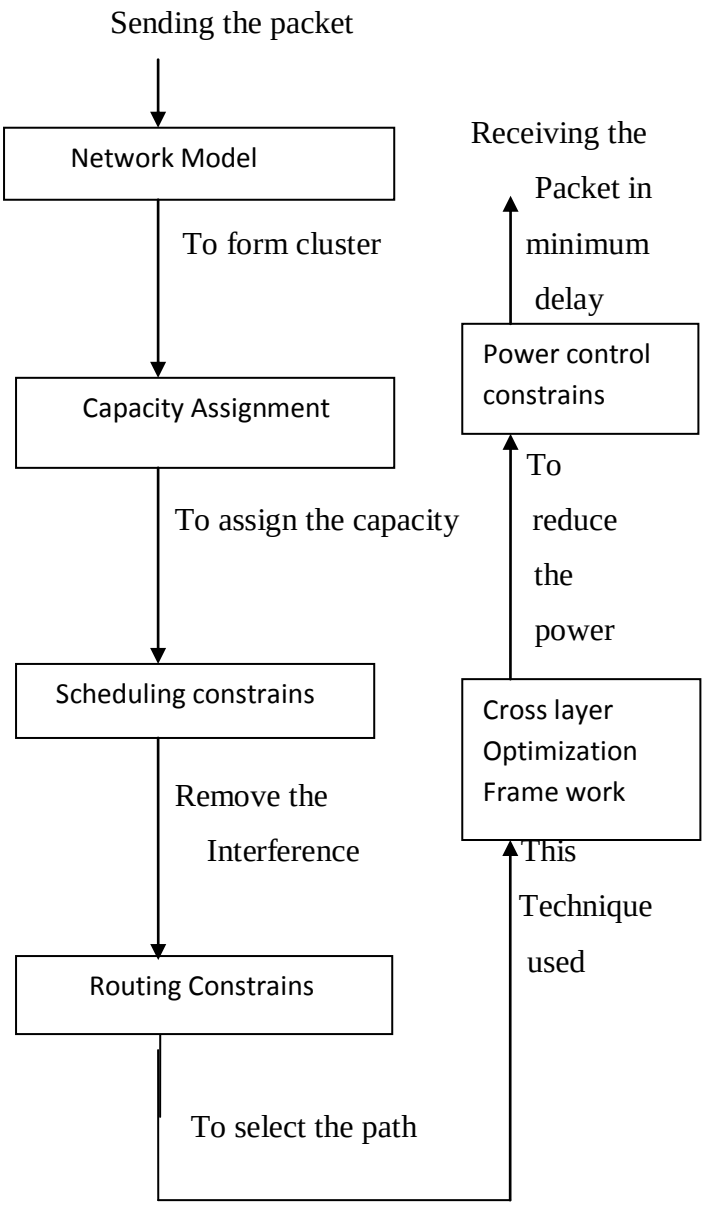
Index Terms- Time division Multiple Access, Network Coding, successive interference Cancellation, intrusion

I. INTRODUCTION

A wireless communication is the transfer of information between two or more points that are not connected by an electrical conductor .the transmitting or receiving voice and data using electromagnetic waves in open source. The information from sender to receiver is carried over a well defined channel. Each channel has a fixed frequency bandwidth and capacity(bit rate).different channels can be used to transmit information is parallel and

independently. The wireless service and introduction of new services are increasing the demand for wireless communication techniques use bandwidth more efficiently. These SIC and NC techniques are improve the performance of communication network[1].these two techniques has gained much popularity for improving performance of higher layer in MWNS[3].the performance of OG(offline Generation) and CG(column generation) methods with each other.

ARCHITECTURE:



II. PROBLEM STATEMENT

The problem of suspension minimization multi hop wireless network with NC and SIC as MINLP. Due to the non linearity of the objective function the problem only solvable for small sized network by the state of art then we present a heuristic procedure that delay developmental package iteratively. At each step of the iteration the procedure attempts shorten the package suspension by decreasing the maximum link utilization in the network .the procedure requires finding the minimum scheduling length under progressively link utilization, which is in the format of MILP the solution of this problem description of independent non-interference set of links in the network, which have a computational complexity that rises rapidly with network size.

III. RELATED WORK

The previous work on maximum of a delay of MWNS .particularly work with NC mainly focus on addressed the problem of determining the maximum throughput[2].The capacity allocation problem in MWNS with NC that optimize the average packet delay[3]. These work considering joint utilization of NC and SIC under spatial TDMA is a channel access methods for shared medium network single into different timeslots. This approach has drawback it doesn't deal with QOS requirements of the user. QOS stands for the Quality of services the capacity of a network to provide better services to selected network traffic over various technologies. High packet delay in same paths. A multipath transmission schemes have been proposed. The existing work has minimum packet delay. The benefit of the intersection NC for increasing the throughput and developed .cope consider the increase the network throughput. A maximum of two packets together at a time. the first model limits the number of reception to the second model limits the number of receptions to [4].Finally SIC techniques such as analog NC and ziazag decoding[5].

IV. EXISTING WORK

The optimization of MWNs, particularly with NC, has mainly addressed the problem of determining the maximum throughput. This approach has a drawback, it does not deal with QOS requirements of the users. When the throughput is maximized the traffic of a link may approach to its capacity, which may result in high packet delays in some paths in the network

V. PROPOSED WORK

The potential benefits of inter-session NC and SIC in MWNs result in significant performance improvement of average packet delay in the network. When NC is used, the coding is done over packets from different sessions or flows at a node in which the flows cross each other. To fully exploit NC, the routing of the flows should be close to each other. This may lead to high delays in nodes due to the increase of interference to reduce the interference we combine NC with SIC technique. Our goal is to provide a model that fully exploits the benefits of concurrent transmissions and receptions.

A. NETWORK MODEL

TDMA based MWNS is represented by a connectivity graph g(n,l).where v is a set of vertices denoting the node.l denoting the unicast(without NC and SIC) link.packets to each node is according to a Poisson process, which may be destined to different nodes. The packets between each source-destination node pair will form a flow in the network. Packets of a flow may have to travel multiple hops between source and destination.

B. CAPACITY ASSIGNMENT

The capacity assignment to the links for a given traffic demand matrix such that the average packet delay in the network is minimized. It assign the capacity for the each node. TDMA is a channel access method for shared medium network. It allows a several user to share the same frequency channel by dividing the network signal into different time slots to the link.

C. SCHEDULING CONSTRAINTS

Scheduling constraints are primary and secondary interference in the network. The scheduling constraints in unicast communications (without NC and SIC) and then generalize it to the case of broadcast communications (with NC) and finally present the case that NC and SIC are jointly used in the network

D. ROUTING CONSTRAINTS

The unicast communication(without NC and SLC)all packets are transmitted as a native packet and Multi provider router is not allowed at nodes. linear constraints are primary(unicast communications) and secondary interference. that a node can transmit or receive at most a single packet during a slot and it cannot transmit and receive simultaneously during the same slot.

E. CROSS LAYER OPTIMIZATION FRAMEWORK

The optimal delay in TDMA-based MWNs, which employ both NC and SIC techniques. This optimization will determine the TDMA schedule that minimizes the average packet delay in the network that jointly applies NC and SIC techniques. schedule will determine slot assignment in the frame. a node may be encoded into different coding structures. coding structures that result in minimum packet delay.

F. POWER CONTROL CONSTRAINTS

The SIC opportunities increase by properly adjusting the transmission power of nodes. Here, we study the power adjustment in a way that the routing conditions remain the same. Note that these constraints become non-linear when the transmission power of nodes is not constant. Hence, we define new variables to make these constraints linear.

VI. PERFORMANCE

This project performance is the sending the packet in target place to receiving the packet in minimum delay. So power is reduce. It is better performance in compare the previous project.

VII. CONCLUSION

The ultimate aim of this project is to minimize the packet delay in using the NC and SIC technique is jointly utilizing. This project is mainly used to reduce the power control for the system. we have characterized the impact of cooperative relaying on the performance of Exceed wireless networks. Finally to reduce the packet delay of the wireless network.

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