Affordable Transmissions in Wlan's Using Mco Protocol

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Abstract: ***Rising Traffic demands and coverage issues are playing an important role in Wireless networks, in this regard the efficient utilization of channel to access points are becoming a challenging task in uncoordinated WLAN's. In this paper we have developed comprehensive model for to characterize the traffic demands by admission control of network data rates i.e., constant data rate of this network fixed is 25 packets/sec. The proposed model subsumes of the protocol MCO (Multi hop channel optimization) by accounting for control the data rate flows from higher values to lower value with adaptable transmissions. Based on the theoretical analysis and simulation results we proposed a protocol that yields high throughput and low Packet drop in uncoordinated WLAN's. Both the theoretical model and simulation results validated by using ns-2 simulations.***

Keywords: MCO , WLAN's,

1. INTRODUCTION

The WLAN's IEEE 802.11b major applications are hospitals, airports, office, schools, colleges, etc., due to its low cost. Higher rate WLAN provides speed up to 11Mbps in the 2.4GHz which operates in unlicensed infrared band [4]. WLAN Infrastructure includes NAs(Network adaptors), Access points(APs). The following challenges are inferred in WLAN,

The WLAN systems are conveyed by arrange non authority who can't be relied upon to know how to arrange the suitable system to limit obstruction in their system.

In conventional LAN, for example, grounds or undertaking systems, the framework directors can figure the APs position. Be that as it may, if there should be an occurrence of clumsy WLANs APs are put with no arranging.

2. RELATED WORK

The co channel interference is increase with number of uncoordinated WLAN increases. It has totally 14 channels.3-non overlapping, remaining are over lapping. channel assignment is becoming a issue in WLAN. In this MCO protocol Auto configuration of channel Access points collect all information periodically and update for each and every transmission. Based on the traffic information it find the shortest Path.

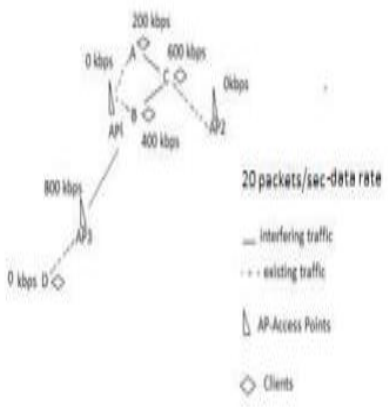

Fig2.1 CACAO's traffic information

Figure2.1 indicates CACAO traffic information. The data rate is fixed with 20packets/sec. Each and every node in this network updates the information before forwarding the Packets.

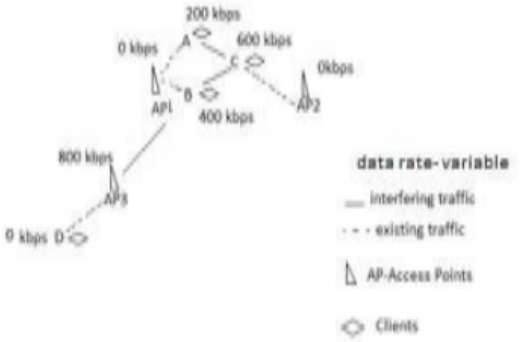

Figure2.2 MCO's protocol traffic information

Figure 2.2 represents the weight calculation of MCO's protocol. The data rate is variable here. Data rate calculation is based upon the updating traffic information from the Access points.

3. PROCESS FLOW OF MCO

The channel assignment is based on two important routines,

1. Initialization routine
2. Optimization routine

During the initialization routine the access points are assigned in non overlapping channels. During the Optimization routine it consists of 3 parts

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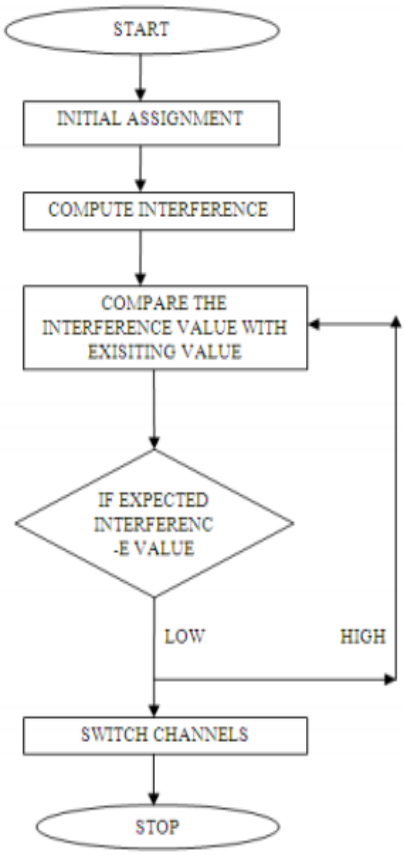


Figure3.1 process flow of MCO's protocol

Associate information ()

In this part the access points collect all the routing information's from the neighbors' and update periodically.

Estimate interference ()

Based on the traffic information the interference is calculated for each path in the network and that interference will be compared with previous path.

Shift path ()

Based on the value of interference for the path the channel will be moved in low interference path with the variable data rate .If the interference is very low the data rate is high in network.

4. PERFORMANCE ANALYSIS WITH SIMULATION RESULTS

For the simulation environment we have set MAC as IEEE802.11 and radio propagation model as shadowing and link data rate as 11Mbps with RTS/CTS as ON..Box bounding size as 500*500and maximum clients for an access points is 3, Transmission power is 0.28dBm and packet size as 512 byte with 3 simulation trials.

Here we have majorly concentrate on improving throughput and reducing packer drop, Packer delivery ratio.

Packet delivery ratio

$$\frac{Total\ number\ of\ data\ packets\ sucessfully\ delivered}{Total\ number\ of\ data\ packets\ sent} \times 100$$

Throughput

Average rate of successful packet delivery for over all channels.

Packer drop

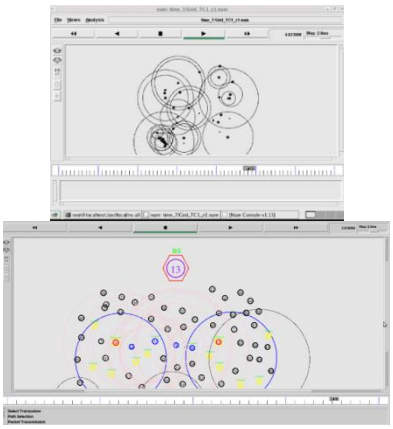
Its calculated ratio of total number of packet dropped with total number of packet sent.

$$\frac{Total\ number\ of\ packet\ dropped}{Totaal\ number\ of\ packet\ sent} \times 100$$

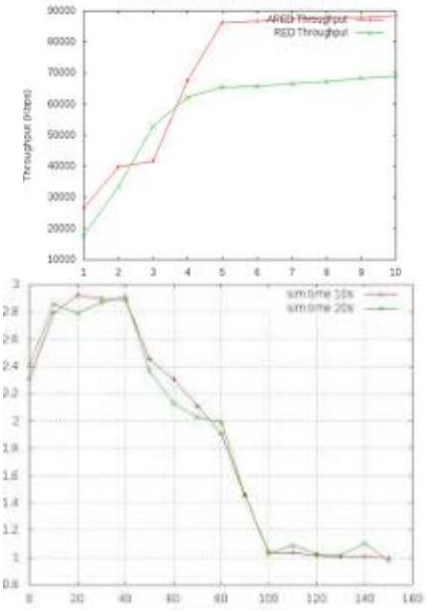
A. SIMULATION RESULTS

Node creation

Calculate interference and switch to low Interference path



Throughput and packet drop



5. CONCLUSION

For affordable transmission its very important to develop automatic and efficient channel assignment algorithms.MCO protocol replaces the interference problem and channel assignment problem which we have identified in earlier protocol. Based on this we can develop efficient WLAN transmission by using this MCO protocol.

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