Performance evaluation of TDMA Vs 802.11(CSMA)

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Presentation Structure

- Introduction and Background information
- Implementation of the Project
- NS-2 Simulation and Simulation Result
- Future Work, Conclusion and Q&A
Introduction and Background

- **TDMA:**
  
  Time division multiple access (TDMA) is a probabilistic Media Access Control (MAC) protocol in which is a channel access method for shared medium network.
CSMA:

Carrier Sense Multiple Access (CSMA) is also a probabilistic media Access Control (MAC) in which a node verifies the absence of other traffic before transmitting on a shared transmission medium.
Implementation

• Create 4 nodes
• Assign node0 is sender, and node1 is receiver; node1&2 is transporters
• Sending
  – packetSize 48 &4800
  – Rate 6 kb
  – Start at 10s later
  – Every 10 s sent one packet
Implementation (Cont)

- using awk to filter out the useful data
  - When a packet is sent from node0, and when node1 receive the same packet
  - Receiving time - sending time = delay
- use xgraph to plot two delay into one graph
Simulation of result(nam)
Simulation with packet size 48
Simulation with packet size 4800
Conclusion

• Small amount of data
  – TDMA: Stable, Large delay
  – CSMA: Stable, Small delay

• Large amount of data
  – TDMA: Stable, Larger delay
  – CSMA: unstable, smaller delay
Conclusion (Cont)

• Comparing:
  – Huge amount of data transfer required
  – Both CSMA and TDMA have large delay
  – TDMA is much more stable
  – Therefore, TDMA is BETTER
Future Work

• Make the simulation more accurate
  – More packets sizes can be simulated
  – New graph, delay vs. size of packets graph, can be drawn

• Make a better protocol
  – TDMA and CSMA can be combined to a new protocol
  – In small amount of data, the new protocol performs as CSMA
  – In huge amount of data, the new protocol performs as TDMA
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