

Indian Institute of Information Technology, Allahabad

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

Course Name: Wireless Communication

EXPERIMENT NO: 4

Objective: To study the contention based MAC (Medium Access Control) layer protocol: Slotted Aloha and analyze the impact of the node density on the packet collision, throughput and average delay.

Materials/ Component Required :

Network Simulator (NetSim)

Procedure for Scenario-1:

1. New → Select Legacy Networks → Slotted Aloha.
2. Make a network of two wireless node and set the source and destination pair accordingly.
3. In the link properties, select path loss only option.
4. Disable the TCP option for the nodes.
5. Set the packet size to be exponential with mean 1500 and the inter-arrival time to be exponential with mean 20000.
6. Set the application type: custom.
7. Run the simulation for 20 seconds.

Scenario 2:

Repeat the same experiment steps now with 4 nodes sending traffic using slotted aloha protocol to a destination terminal.

Scenario 3:

Repeat the same experiment steps now with 6 nodes sending traffic using slotted aloha protocol to a destination terminal.

Analyze the above systems in terms of throughput, number of collisions, and errors. Throughput of the system is given by the sum of the throughput of all the links.

Result: By using NetSim, we have studied and analysis the throughput for MAC layer protocol.