Wireless Ad Hoc Network:Behaviour And Cooperation in MANET's

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Abstract⎯**Wireless ad hoc networks consist of mobile nodes communicating over a shared wireless channel.**
The nodes are equipped with wireless transceiver. They don't need any additional infrastructure, such as base station or wired access point, etc. Therefore, each node doesn't only plays the role of an end system, but also acts as a router, thatsends packets to desired nodes.Here we will talk about behaviour and cooperationin MANET's

Keywords⎯ **wireless Ad Hoc Network:Behaviour And Cooperation In MANET's**

I. INTRODUCTION

Wireless Ad-hoc Networks operates without a fixed infrastructure. Multi-hop, mobility, large network size combined with device het-erogeneity and bandwidth and battery power limitations, all these factors make the design of routing protocols a major challenge. Lots of researchers did tremendous work on the Wireless Ad-hoc Routing Protocols. Wireless networks allow hosts to roam without the constraints of wired connections. People can deploy a wire-less network easily and quickly. End users can move around while staying connected to the network.

II. TYPE OF AD HOC NETWORK.

A. *INFRASTRUCTURE-BASED*

Relies on fixed infrastructure,base station or access point are fixed and centralized.
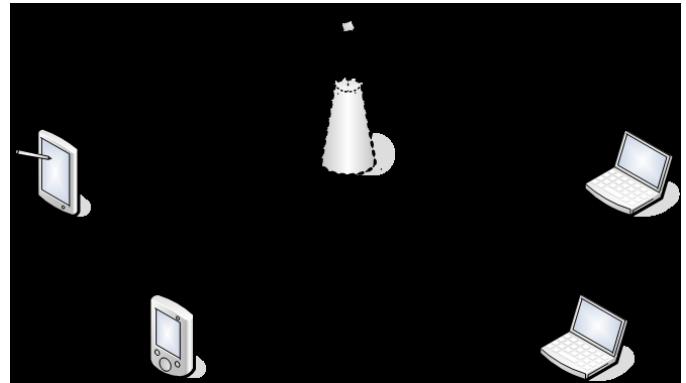Example:WLAN,Cellular Network.

Fig1

B. *INFRASTRUCTURE-LESS*
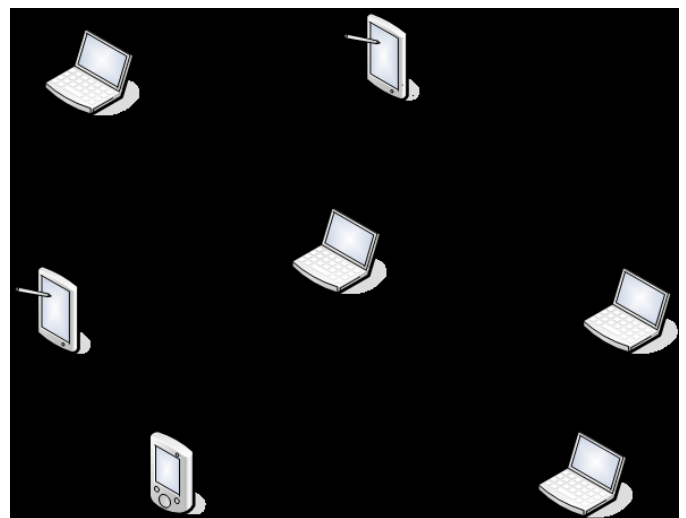
In this network access point are not centralized.

Fig2

C. OVERVIEW OFMOBILE AD HOCNETWORK

Mobile Ad Hoc Networks are different from structured wireless networks, where a user directly communicates with an access point or base station. These networks do not rely on fixed infrastructure

for operation. Mobile ad hoc networks can be defined as self organizing, dynamic topology networks formed by a collection of mobile nodes through radio links. The major characteristics of these networks are that they require minimal configuration, and are quick to deploy. They have a dynamically changing topology and do not rely on centralized access points. The nodes are energy constrained, that is, they are battery powered and they use multi-hop communication (Kumar& Mishra,)
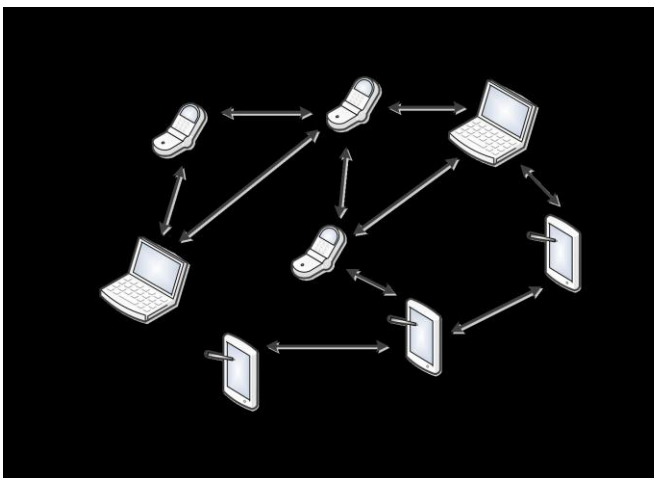

Fig.Mobile Ad Hoc Network (MANET).

- COOPERATION IN MOBILE AD HOCNETWORK
- Nodescommunicatewithothernodes with the help of intermediate nodes.
- The intermediate nodes act as relay.
- Wireless nodes areare energy constrained.
- Nodes may or may not cooperate.
- Two extremities:
  a) TotalCooperation:If all relay request are accepted,nodes will quickly exhaust limited energy.
  b) TotalNonCooperation:Ifnorelayrequestareaccepted,thenetwork through will go down rapidly
  - Issues:
    a. Selfishness,self-interests,etc.
    b. Symbiotic dependence

c. Tradeoff: individual node's lifetime vs. throughput

III. CHARACTERISTICS OF MANET'S.
- Wireless
- Mobile
- Lack of structure
- Heterogeneous
- Autonomous behaviour
- Multi-hop radio relaying
- Distributed operation for security,
- routing and host configuration
- Dynamic network topology
- Energy-constrained
- Mobile and spontaneous behavior
- Intermittent connectivity

IV. SECURITY CHALLENGES IN COOPERATION.
- The cooperation node or the node being cooperated might be victimized
- Open,shared radiomediumbythenodes,which dynamically changepositions
- Nocentralizednetwork management orcertificationauthority.
- Existenceofmaliciousnodes.
- Nodespronedtoattack,infiltration,eavesdropping,interference.
- Nodescanbecaptured,compromised,falserouting information can besentparalizingtheholnetwork

V. CONCLUSION

We have presented simulation results complementing our testbed observations that reinforce the importance of link reliability in MANET operations. Specifically, we have shown that hop based MANET routing protocols perform poorly over transient links, and link fades lead to frequent lost of connections that resemble node mobilit

Whereas ad hoc networkswill become widely used in military contexts in near future, the corporate world has tocontinue the daunting search for profitable commercialapplications and possibilities of the technology. Meanwhile,the academic

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community has adopted the new fieldas a playground to apply their ideas to create something completely new.

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