Detection of duplicate Nodes and to Check the Efficiency of Protocols.

The infrastructure networks, also known as cellular networks, have fixed and wired gateways. They have fixed base stations, which are connected to other base stations through wires. The transmission range of a base station constitutes a cell. All the mobile nodes lying within this cell connect to and communicate with the nearest base station. A "handoff" occurs as mobile host travels out of one base station and into the range of another. Thus the mobile host is able to continue communication throughout the network.

The infrastructure-less networks, are known as mobile ad-hoc networks (MANET). These networks have no fixed routes. All nodes capable of movement and can be connected dynamically in arbitrary manner. The responsibilities for organizing and controlling the networks are distributed among the terminals themselves. The entire network is mobile, and the individual terminals are allowed to move at will, relative to each other. In this type of networks, some pairs of may not be able to communicate directly with each other and relaying of some massage is required, so that they are delivered to their destination. The nodes of these networks functions as routers, which discover and maintain routes to other nodes in the network. The nodes may be located in or on airplanes, ship, trucks, cars, perhaps even or every small moving objects.

A mobile ad-hoc network is a collection of mobile nodes forming an ad-hoc network without the assistance of any centralized structures. These networks introduced a new art of network establishment and can be well be suited for an environment where either the infrastructure is lost or where deploy an infrastructure is not very cost effective.

There are quite a number of uses for mobile ad-hoc networks. For example, the military can track an enemy tank as it moves through the geographic area covered by the network. Your local community can use an ad-hoc network to detect your car moving through an intersection, checking the speed and direction of the car. In an environmental network, you can find out the temperature, atmospheric pressure, amount of sunlight, and the relative humidity at a number of locations.

The whole life-cycle of ad-hoc networks could be categorized into the first, second, and the third generation ad-hoc networks system. Present ad-hoc network systems are considered the third generation.

The first generation goes back to 1972. at the time, they were called PRNET (Packet Radio Netwroks). In conjunction with ALOHA (Area Location of Hazardous Atmosphere) and CSMA (Carrier Sense Medium Access), approaches for medium access control and a kind of distance-vector routing PRNET were used on a trial basis to provide different networking capabilities in a combat environment.

The second generation of ad-hoc networks emerged in 1980s, when the ad-hoc network systems were further enhanced and implemented as a part of the SURAN (Survivable Adaptive Radio Network) program. This provided a packet switched network to the

mobile battlefields in an environment without infrastructure. This program proved to be beneficial in improving the radios' performance by making them smaller, cheaper and resilient to electronic attacks.

In the 1990s, the concept of commercial ad-hoc networks arrived with notebook computers and other viable communications equipment. At the same time, the idea of a collection of mobile nodes was proposed at several research conferences.

The IEEE 802.11 subcommittee had adopted the term "ad-hoc networks" and the research community has started to look into the possibility of deploying ad-hoc networks in other areas of application.

Meanwhile, work was going on to advance the previously built ad-hoc networks. GloMo (Global Mobile Information System) and the NTDR (Near-Term Digital Radio) are some of the results of these efforts. GloMo was designed to provide an office environment with Ethernet-type multimedia connectivity anywhere and any time in handheld devices.

NTDR is the only "real" non-prototypical ad-hoc network that is in use today. It uses clustering and link-state routing, and is self-organized into a two tier ad-hoc network. Development of different channel access approaches now in the CSMA/CA and TDMA molds, and several other routing and topology control mechanism were some of the other inventions of that time.

Later on in mid-19990s, within the internet engineering task force (IETF), the mobile ad-hoc networking working group was formed to standardize routing protocols for ad-hoc networks. The development of routing within the working group and the larger community resulted in the invention of reactive and proactive routing protocols.

Soon after, the IEEE 802.11 subcommittee standardized a medium access protocol that was based on collision avoidance and tolerated hidden terminals, making it usable for building mobile ad-hoc networks prototypes out of notebooks and 802.11 PCMCIA cards. HYPERLAN and Bluetooth were some other ad-hoc network standards that addressed and benefited ad-hoc networking.

The focus on current research is to standardize different existing schemes for different network controls in a single framework which could be taken as a standard for all the future applications utilizing ad-hoc networks as a networking technology. Wireless devices are getting smaller, cheaper, and more sophisticated, as these devices become more ubiquitous, organizations are looking for inexpensive ways to keep these devices connected. Building an ad-hoc network could make that happen.

In the present work, we have outlined our implementation and deployment experiences with MAD-HOC's AODV and DSDV. This work has provided in sights into the real world deployment of MANETs and highlights issues that require further investigation. These are: handling unreliable/unstable links, minimizing the dependency on topology

specific parameters, mechanisms for handoff and reducing packet loss during handoff, incorporating neighbor discovery and filtering into a neighbor selection sub-layer.

The first issue is a result of the current prevailing MANET protocol development/testing environments, which appear to consist almost entirely of simulation experiments. In implementing two MANET routing protocol, and simulating them, we discovered that the variability of networking conditions in the radio environment was such that the routing protocols did not work as reported in the literature. In this work we have compared these two protocols on the basis of packet delivery and throughput ratio.

In this work, we have implemented novel techniques for detection of duplicate nodes in OLSR networks. The proactive nature of the routing protocol, monitoring the routing control massages of many cases of duplicate nodes in the OSLR networks. This work suggests a novel method for detection of duplicate nodes and ways of rectifying the problem.