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MOBILE AD-HOC AND SENSOR NETWORK

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Abstract
The Mobile Adhoc Network refers to a multi hop packet based wireless network which is a combination of a set of mobile nodes that can communicated and moved at the same time , without using any kind of fixed wired infrastructure. MANET is a self organizing and adaptive network that can be formed and deformed on-the-fly without the need of any centralized administration.
A "mobile ad hoc network" (MANET) is an autonomous system of mobile routers connected by wireless links and that's union form an arbitrary graph. The routers move randomly and organize themselves arbitrarily; thus, the networks wireless topology may change unpredictably and rapidly. Such a network may operate in a standalone fashion, or may be connected to the larger Internet.
The wireless links are quite susceptible to time varying statistical behavior caused by many factors which including the physics of the propagation medium, inner city fading characteristics, shadowing, and potential power control, induced effects that need addressing even in pseudo-static scenarios.

Key Words: *Clustering, Inter-Domain mobility, Macro Mobility, MANET, Mobile- IP, Packets, Traffic Sensor.*

I. Introduction

The phrase ad-hoc originates from Latin, which means "for this or for this only". Mobile ad-hoc networks are the temporary networks which can be deployed anyplace and anytime without the need of a pre-existing infrastructure. One of the fundamental purposes of any network formation is to exchange information between two parties. Basically, in mobile ad-hoc networks, nodes have to rely on each other in order to forward data packets from one to the other node in the network.
An ad-hoc network can be deployed in remote geographical locations and requires minimum setup and administration costs. However, communication in an ad-hoc network between different hosts that are not directly linked is an issue not only for search and rescue operations, but also for educational and business purposes.
An ad-hoc network can be classified into two main types: mobile ad-hoc network and mobile ad-hoc sensors network. Unlike typical sensor networks, which communicate directly with the centralized controller, a mobile ad-hoc sensor network follows a broader sequence of operational scenarios, thus demanding a less complex setup procedure. A mobile ad-hoc sensor or hybrid ad-hoc network consists of a number of sensor spreads in a geographical area. Each sensor is capable of mobile communication and has some level of intelligence to process signals and to transmit data.

II. Mobile Ad hoc and Sensor Network

A mobile ad-hoc network (MANET) is a self-configuring infrastructure less network of mobile devices connected by wireless links. Each device in a MANET is free to move independently in any direction, and will therefore change its links to other devices frequently. Each must forward traffic unrelated to its own use, and therefore be a router. The primary challenge in building a MANET is equipping each device to continuously maintain the information required to properly route traffic. Such networks may operate by themselves or may be connected to the larger Internet. MANETs are a kind of wireless ad hoc networks that usually has a routable networking environment on top of a Link Layer ad hoc network.
A wireless sensor network (WSN) consists of spatially distributed autonomous sensors to *monitor* physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants and to cooperatively pass their data through the network to a main location. The more modern networks are bi-directional, also enabling *control* of sensor activity. The development of wireless sensor networks was motivated by military applications such as battlefield surveillance; today such networks are used in many industrial and consumer applications, such as industrial process monitoring and control, machine health monitoring, and so on.