**TOPOLOGY CONTROL IN MOBILE AD HOC**

**NETWORKS WITH COOPERATIVE COMMUNICATIONS**

**Aim:**

Cooperative communication has received tremendous interest for wireless networks. Most existing works on cooperative communications are focused on link-level physical layer issues. Consequently, the impacts of cooperative communications on network-level upper layer issues, such as topology control, routing and network capacity, and the proposed topology control scheme can substantially improve the network capacity in MANETs with cooperative communications.

**Existing System:**

Most existing works are focused on link-level physical layer issues, such as outage probability and outage capacity. Consequently, the impacts of cooperative communications on network-level upper layer issues, such as topology control, routing and network capacity, are largely ignored. Indeed, most of current works on wireless networks attempt to create, adapt, and manage a network on a maze of point-to-point non-cooperative wireless links. Such architectures can be seen as complex networks of simple links.

**Disadvantages:**

1. Low Network Capacity.
2. Communications are focused on physical layer issues, such as decreasing outage probability and increasing outage capacity, which are only link-wide metrics.

**Proposed System:**

We propose a Capacity-Optimized Cooperative (COCO) topology control scheme to improve the network capacity in MANETs by jointly considering both upper layer network capacity and physical layer cooperative communications. Through simulations, we show that physical layer cooperative communications have significant impacts on the network capacity, and the proposed topology control scheme can substantially improve the network capacity in MANETs with cooperative communications.

**Advantages:**

1. Improve the network capacity in MANETs.

2. Dynamic traffic pattern and dynamic network without a fixed infrastructure.

3. There are a source, a destination and several relay nodes.

4. Cooperation can benefit not only the physical layer, but the whole network in many different aspects.

**Modules:**

**1. Transmission in MANETs**

**2. Network Constraints**

**3. Relaying Strategies**

**4. Cooperative Communications**

**5. Multi-hop Transmission**

**HARDWARE & SOFTWARE REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

**System :** Pentium IV 2.4 GHz.

**Hard Disk :**  40 GB.

**Floppy Drive:** 1.44 Mb.

**Monitor :**  15 VGA Color.

**Mouse :** Logitech.

**Ram :** 512 MB.

**SOFTWARE REQUIREMENTS:**

**Operating system :** Windows XP Professional.

**Coding Language : C#.Net**

**Front End : Microsoft Visual Studio 2010**

**Back End : Sql Server**