MANET – Design Issues

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Design Issues

- Network Size and Node Density
  - 2 important parameters
  - Network size → Geographical coverage area of the network
  - Node Density → No. Of nodes per unit geographical area
  - Clustering is essential to keep the communication overheads low
- Connectivity
  - Connectivity of a node→ No. Of neighbours it has (ie. Within the transmission range of the node)
  - Connectivity also refers to the link between two nodes.
  - Link capacity → Bandwidth of the link.
  - The no. of neighbours and the capacities of the links to different neighbours vary significantly.

Design Issues

- Topology
  - Denotes the connectivity among various nodes of the network
  - Mobility of nodes affect the network topology
  - Due to mobility , new links are formed and some links are dissolved
  - Nodes can also become inoperative due to discharged batteries, hardware failures which causes change in the topology
- User Traffic
  - A traffic in network can be of various types
  - Bursty Traffic
  - Large packets sent periodically
  - Combination of the above 2 types of traffic

Design Issues

- Operational Environment
  - Urban, Rural and Maritime
  - Node density and mobility values may differ in operational environment
- Energy Constraint
  - Nodes in MANET acts as routers.
  - Therefore all nodes has an extra overhead to perform as a router which consumes more energy.