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ECE 402 - wireless Adhoc and Sensor Networks

Unit - I Introduction.

→ Introduction to Adhoc-wireless network

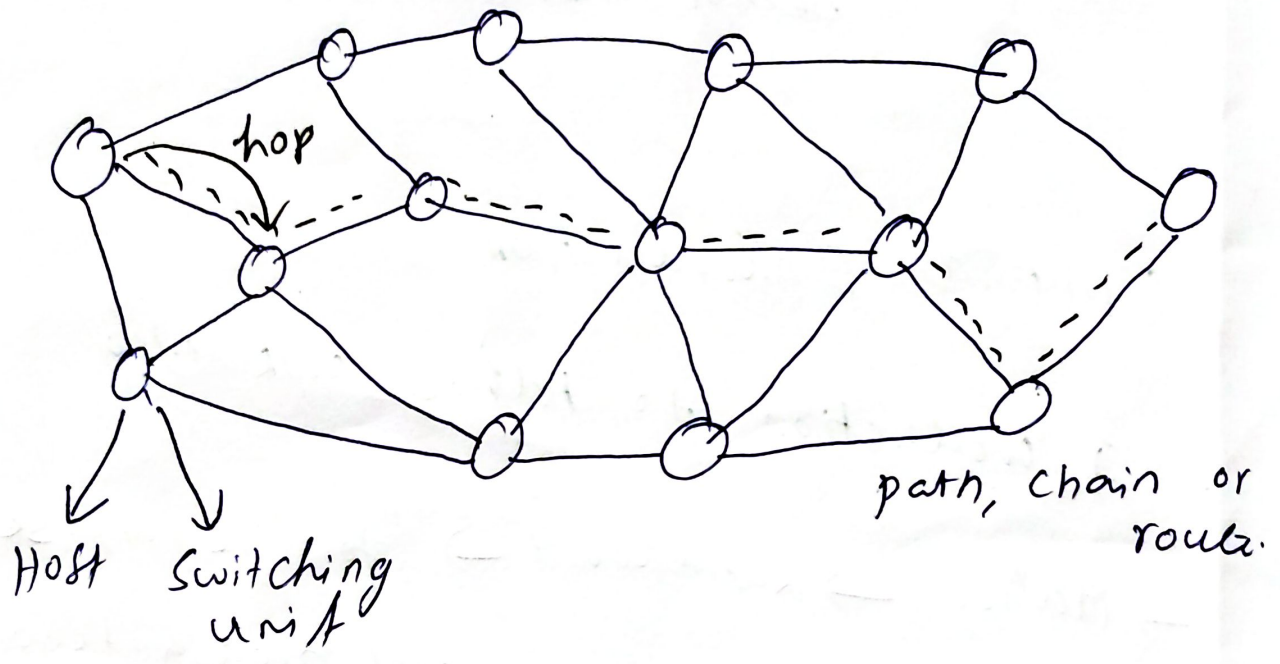
→ "Adhoc" → Latin word → "for the purpose only"

→ Adhoc networks are small area networks, especially designed with wireless / temporary connection to the different computer assisted nodes.

→ A wireless adhoc-network (WANET) is a type of local area network (LAN) that is built spontaneously to enable two or more wireless devices to be connected to each other without requiring a central device, such as a router or access point.

→ When Wi-Fi networks are in adhoc-mode, each device in the network forwards data to the others.

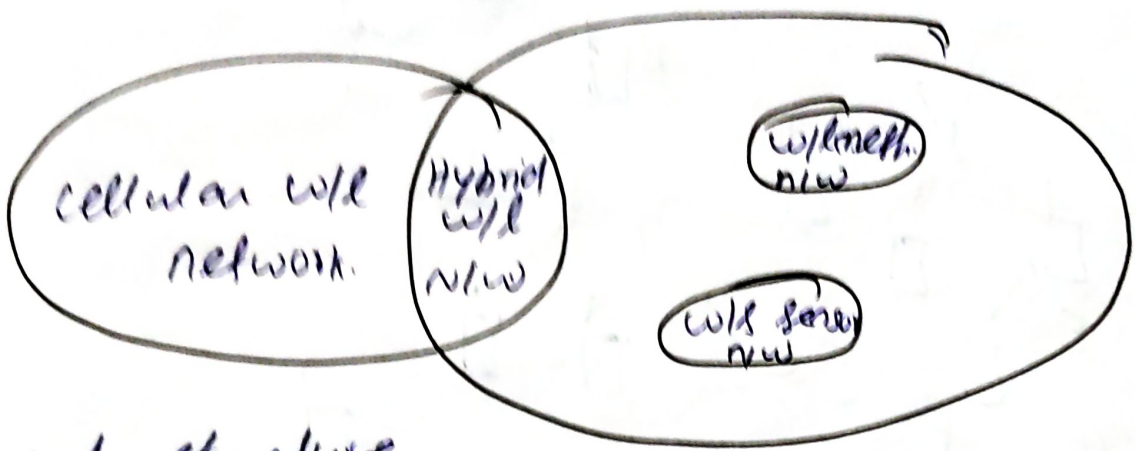
Fig (i) Multi-hop wireless Adhoc-network



→ In WANET, collection of devices (or nodes) is responsible for new operations, such as routing, security, addressing and key mgmt.

→ Fig (i) defined as a collection of nodes that communicate with each other wireless by using radio signal with a shared common channel.

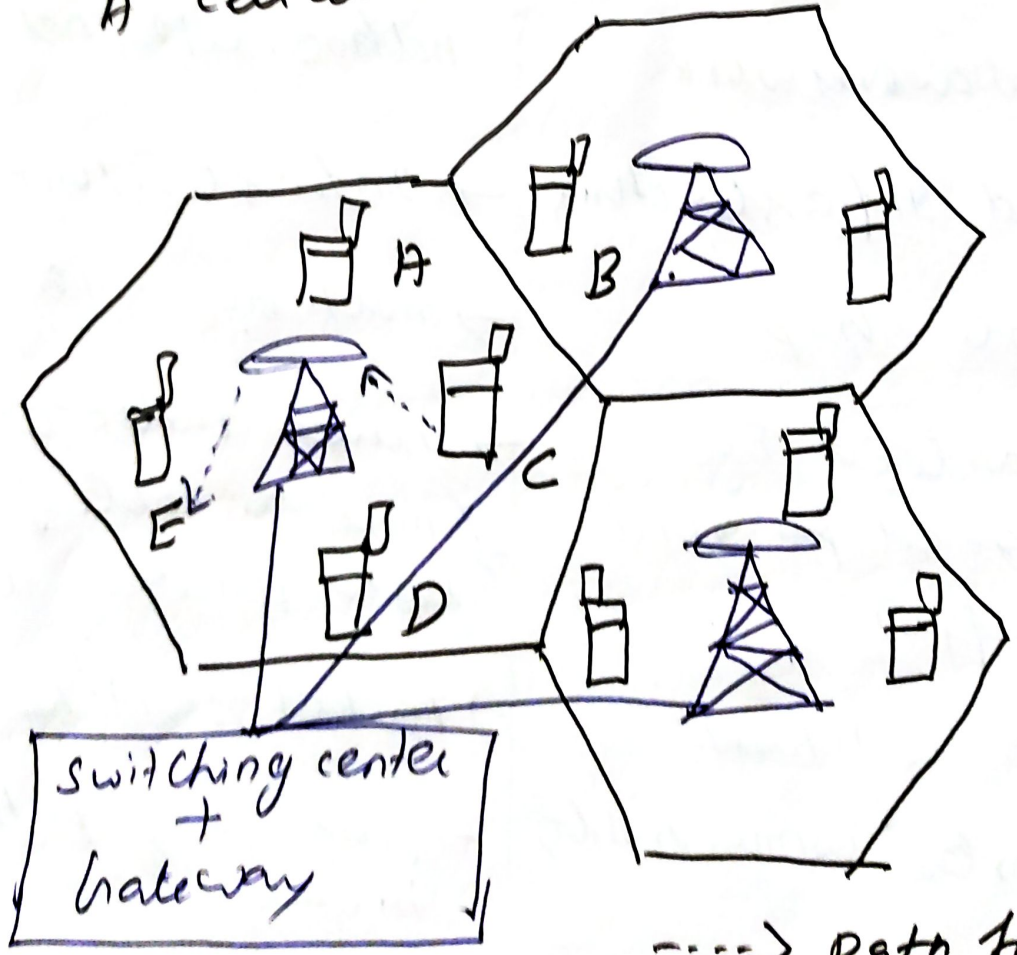
cellular and adhoc wll network.



Infrastructure
Dependent
(single hop wll n/w)

Adhoc wll n/w
(multi hop wll) n/w

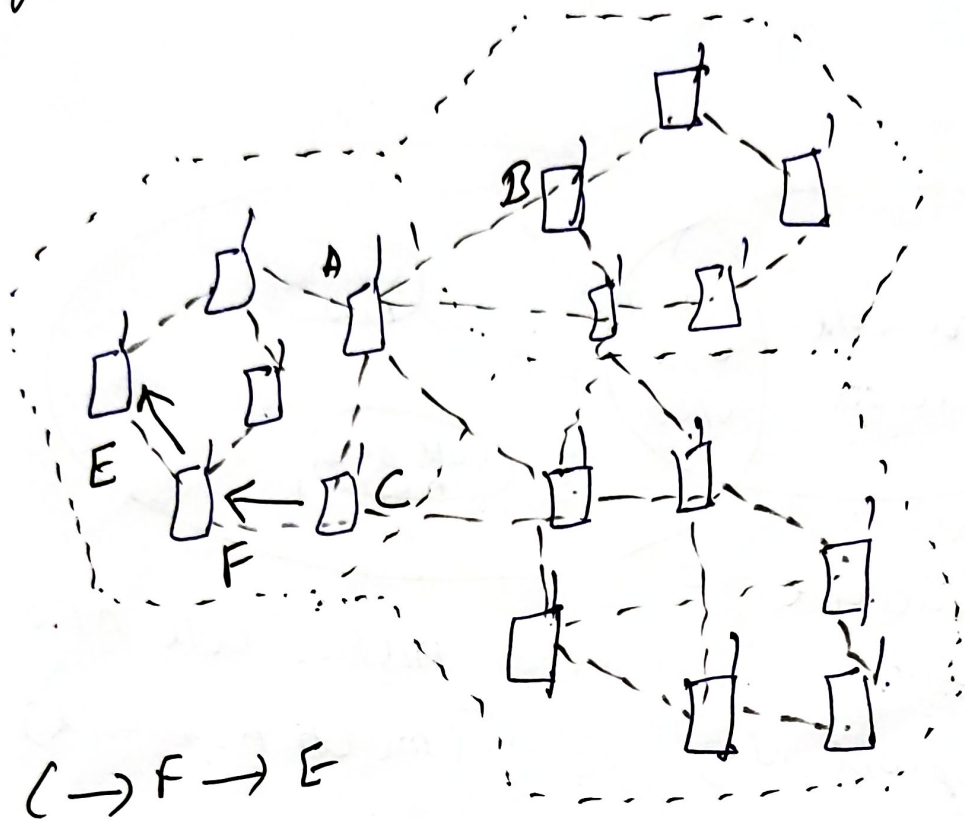
A cellular network.



mobile node

Base Station
-----> path from C to E.

Fig 4) An Adhoc wireless network.



Cellular Network.

- > Fixed Infrastructure
- > Single-hop
- > Guaranteed BW
(designed for voice traffic)
- > circuit switched
- > seamless connectivity

Adhoc wireless network.

- > Infrastructure less.
- > multi hop wireless network
- > Shared radio channel
(more suitable for best-effort data traffic.)
- > packet switched.
- > frequency path breaks

③

→ High cost

→ Time synchronization is easier.

→ Quick and cost-effective.

→ Time synchronization is difficult.