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IEEE 802.11 DISTRIBUTION SYSTEM

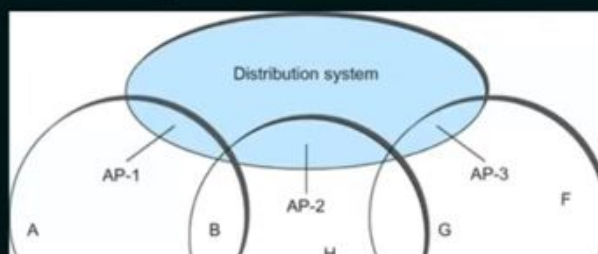
- ★ 802.11 is suitable for an ad-hoc configuration of nodes that may or may not be able to communicate with all other nodes.
- ★ Nodes are free to move around.
- ★ The set of directly reachable nodes may change over time.
- ★ To deal with this mobility and partial connectivity,
 - 802.11 defines additional structures on a set of nodes
 - Instead of all nodes being created equal,
 - some nodes are allowed to roam and some are connected to a wired network infrastructure, they are called Access Points (AP) and they are connected to each other by a so-called **distribution system**.

NESO ACADEMY

09:16

HOW DOES THE NODES SELECT THEIR AP?

- ★ The technique for selecting an AP is called **scanning**.
 - The node sends a Probe frame.
 - All APs within reach reply with a Probe Response frame.
 - The node selects one of the access points and sends that AP an Association Request frame.
 - The AP replies with an Association Response frame.

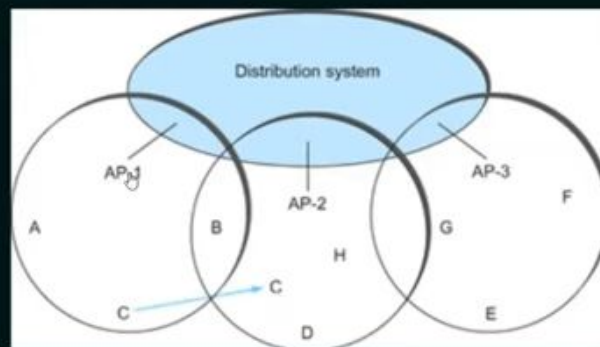




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NODE MOBILITY

- ★ Consider the situation shown in the following figure when node C moves from the cell serviced by AP-1 to the cell serviced by AP-2.
- ★ As it moves, it sends Probe frames, which eventually result in Probe Responses from AP-2.
- ★ At some point, C prefers AP-2 over AP-1, and so it associates itself with that access point. This is called **active scanning** since the node is actively searching for an access point.



14:27

PASSIVE SCANNING

- ★ APs also periodically send a Beacon frame that advertises the capabilities of the access point; these include the transmission rate supported by the AP
 - This is called **passive scanning**.
 - A node can change to this AP based on the Beacon frame simply by sending it an Association Request frame back to the access point.

