

# Wireless Sensor Networks

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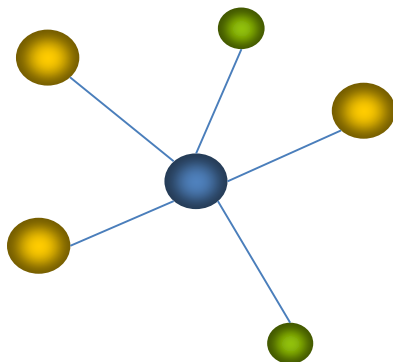


# **PAN Formation in IEEE 802.15.4 Networks**

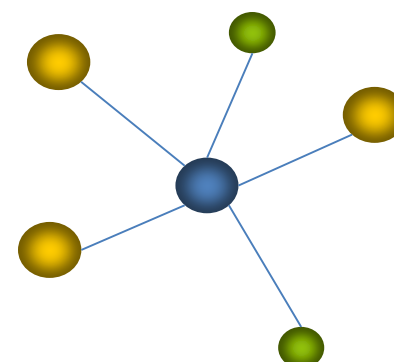
## PAN Formation

- Each PAN works in a given channel, selected by the PAN Coordinator.
- The Coordinator selects the least interfered channel.
- Interference among the different PANs and other networks (e.g., Wi-Fi, Bluetooth), are minimised.

**PAN 1**  
Channel 11



**PAN 2**  
Channel 14



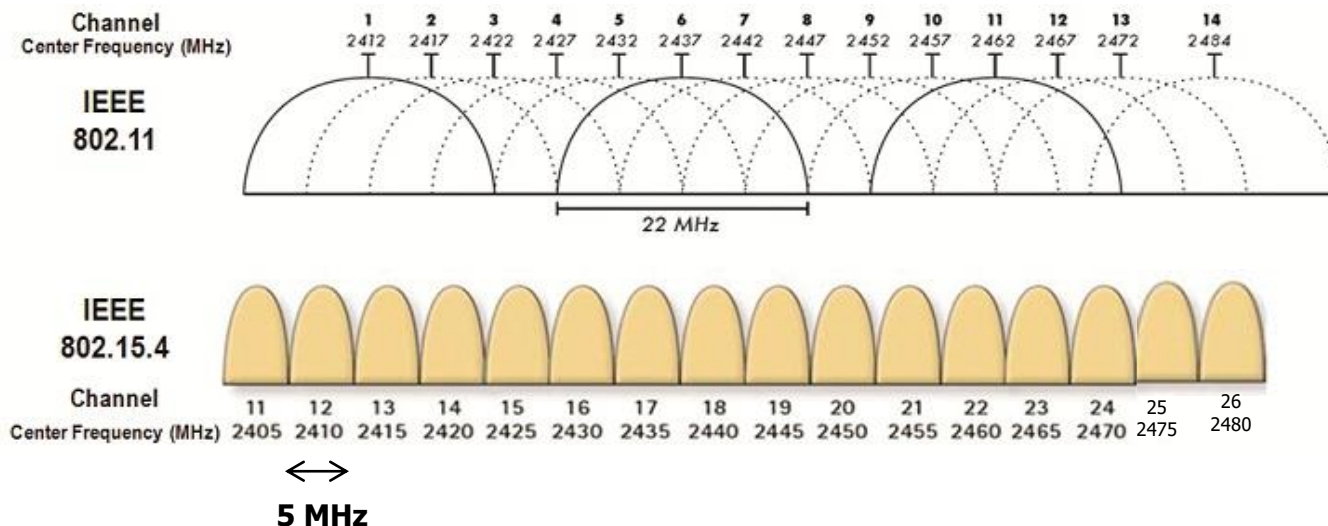


## Channel Scanning

- **Energy Detection Scan** → allows a FFD to obtain a measure of the peak of power in each requested channel
- **Active Scan** → allows a device to locate any coordinator transmitting beacons. A *beacon request command* is transmitted in each of the scanned channel
- **Passive Scan** → allows a device to locate any coordinator transmitting beacons. No *beacon request command* issued

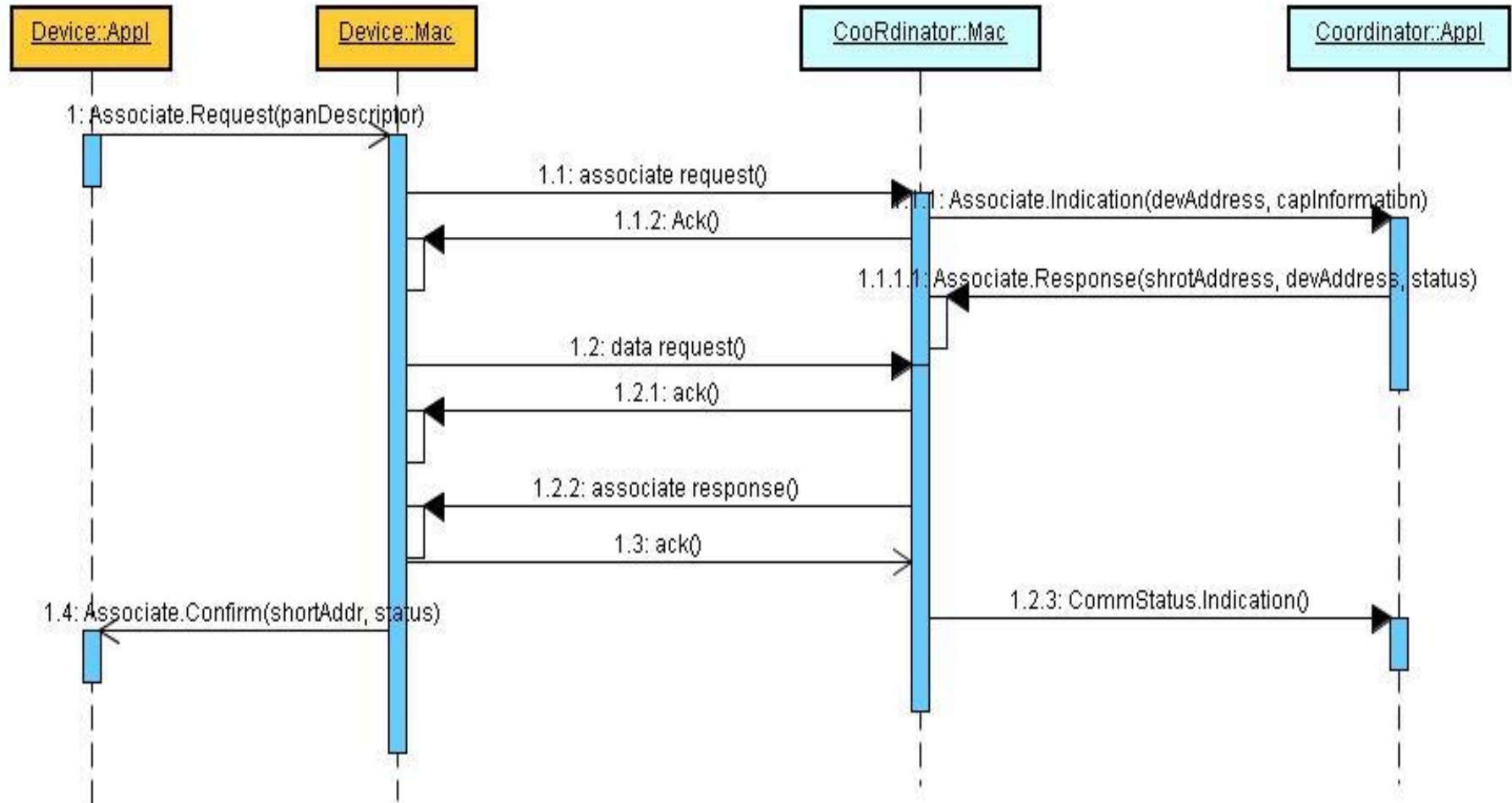
## Why ED Scan is important?

Wi-Fi – 802.15.4 Channels





## Nodes Association



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