

S-MAC

Sleep MAC is a CONTENTION BASED MAC protocol that tries to reduce energy waste accepting a reduction in terms of performance with a periodic **listen** and **sleep** cycle (to also overcome the IDLE listening)

Each node goes into a **PERIODIC SLEEP** in which the radio is turned off and set a timer to **WAKE UP** and listen to other nodes.

All the nodes have their own **SCHEDULE**, but neighboring nodes are **SYNCHRONIZED** to have a common schedule. How? With **SYNC** packets and a schedule table.

NOTE → In a large net there is NO GUARANTEE that all nodes follow the same schedule (node on border → 2)

To avoid collisions this protocol uses **RTS/CTS** and performs **carrier sense** before transmit packets.

✓ SMAC consumes much less energy than 802.11 like protocols

✓ IDLE LISTENING rarely happened

✗ Redundant data

Flat Routing Protocol

3 main categories:

1) **PROACTIVE PROTOCOLS** → Always tries to maintain its routing data update whether or not there is currently need to deliver packets

- Respond to any changes in network topology

✓ Very fast ✗ High Consumption

- DSDV: Destination Sequence Distant Vector

2) **REACTIVE PROTOCOLS** → The route is determined only if it is needed.

✓ Less overhead ✗ Slower than proactive

Different types of reactive protocols:

- **FLOODING** → copies of incoming packets are sent by every link (except the one who send)
Delivery packet is guaranteed, but duplicated messages are sent.

- **GOSSIPING** → nodes send incoming packets to a randomly selected neighbour.
Very slow propagation

- **Dynamic Source Routing** → Each data packet contain the complete route of node it will traverse with 2 mechanism: ROUTE DISCOVERY and ROUTE MAINTENANCE
- **Ad Hoc On Demand Distance Routing** → Some idea of DSR but nodes maintain ROUTING TABLES instead of source routing

3) **HYBRID PROTOCOLS**

GEOGRAPHIC ROUTING

Protocol that chose the next hop based on a geographic location

STRATEGY → Send to the neighbour who makes the greatest progress towards the destination

✓ Save more energy

X Problem of DEAD-END