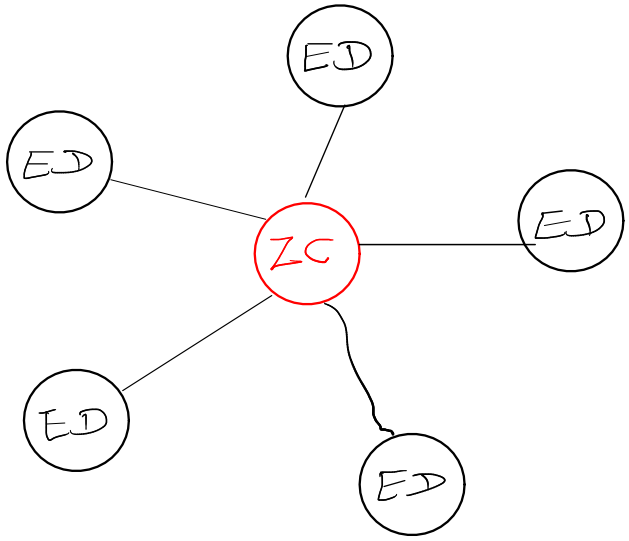
Types of devices in Zigbee architecture

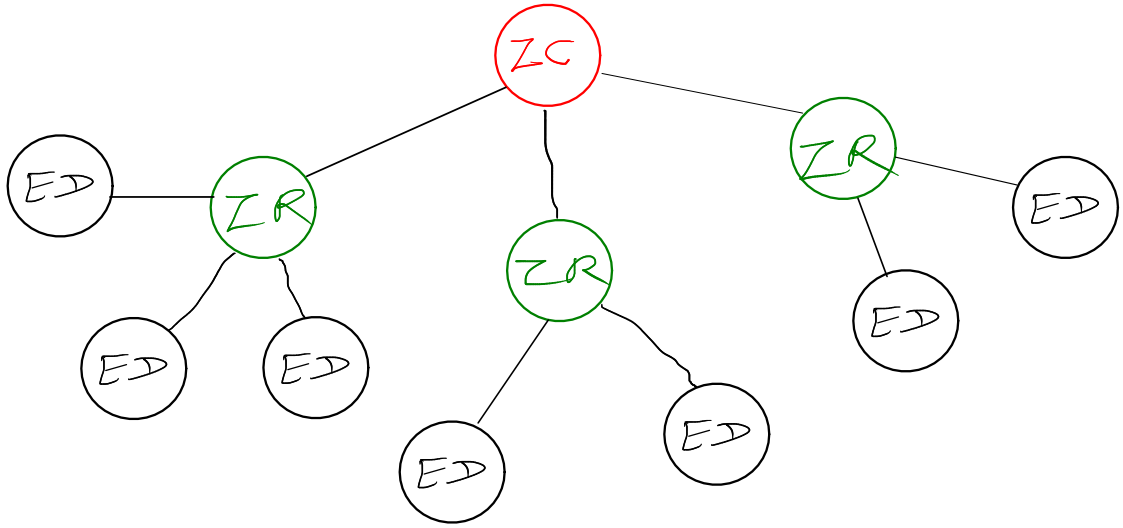
1. Zigbee Coordinator (ZC)
   - compulsory
   - assign unique addresses to each device in network
   - select the channel (less noise) for communication
   - communication with external network
2. Zigbee Router (ZR)
   - to increase number of devices routers are added into network
   - routers are connected to ZC
   - routers route/redirect the signal toward destination
3. Zigbee End Device (ZED)
   - low power device which has only ability to communicate with only its parent
   - to reduce power consumption ZED can sleep

Zigbee Network Topologies

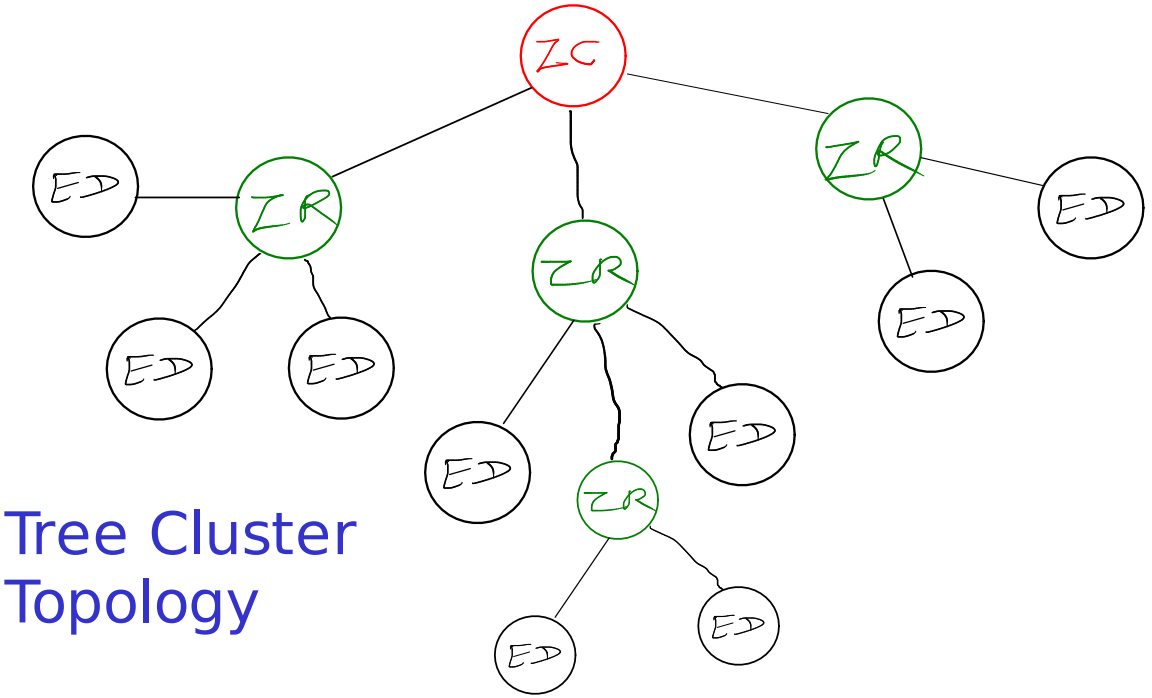
1. Star topogoy



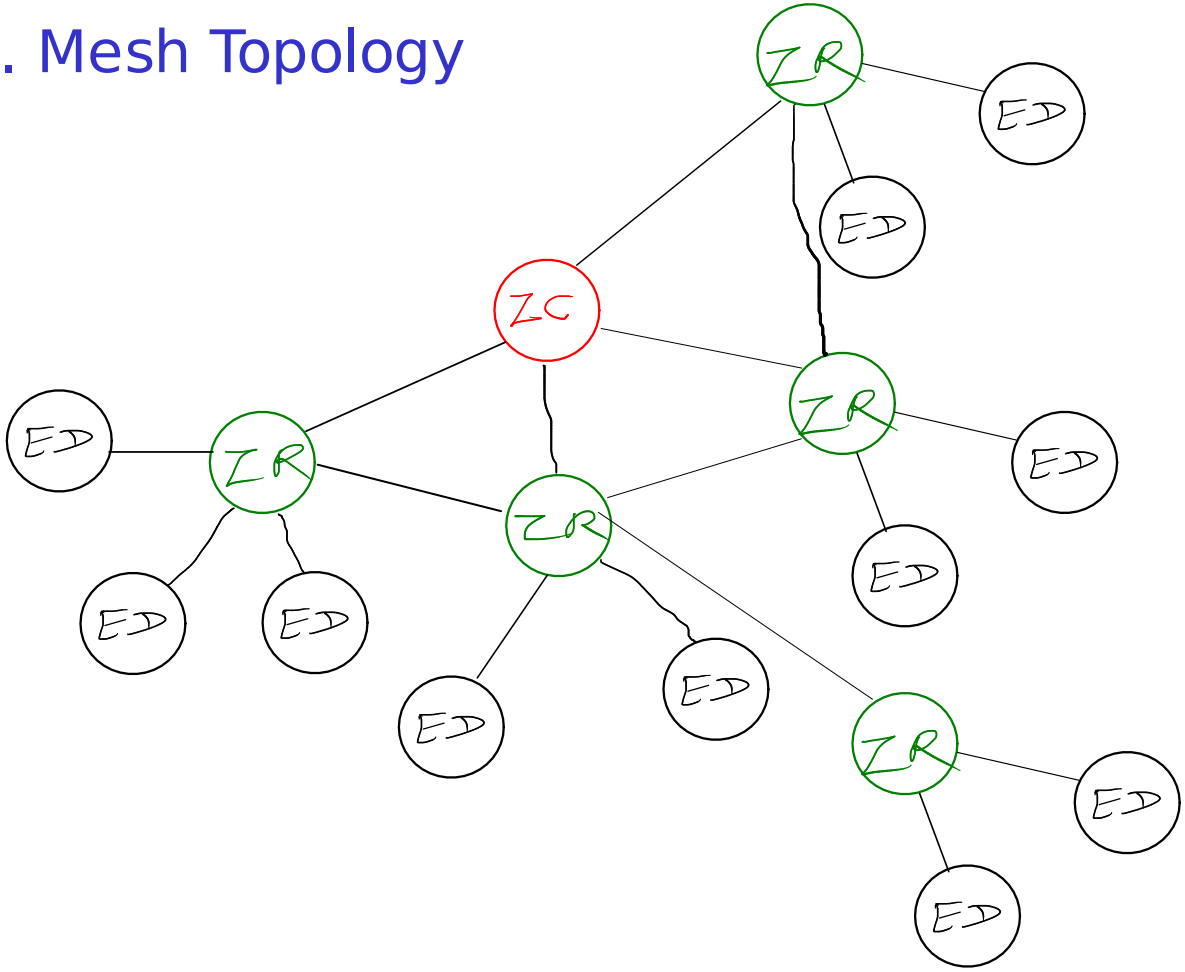
2. Tree Topology



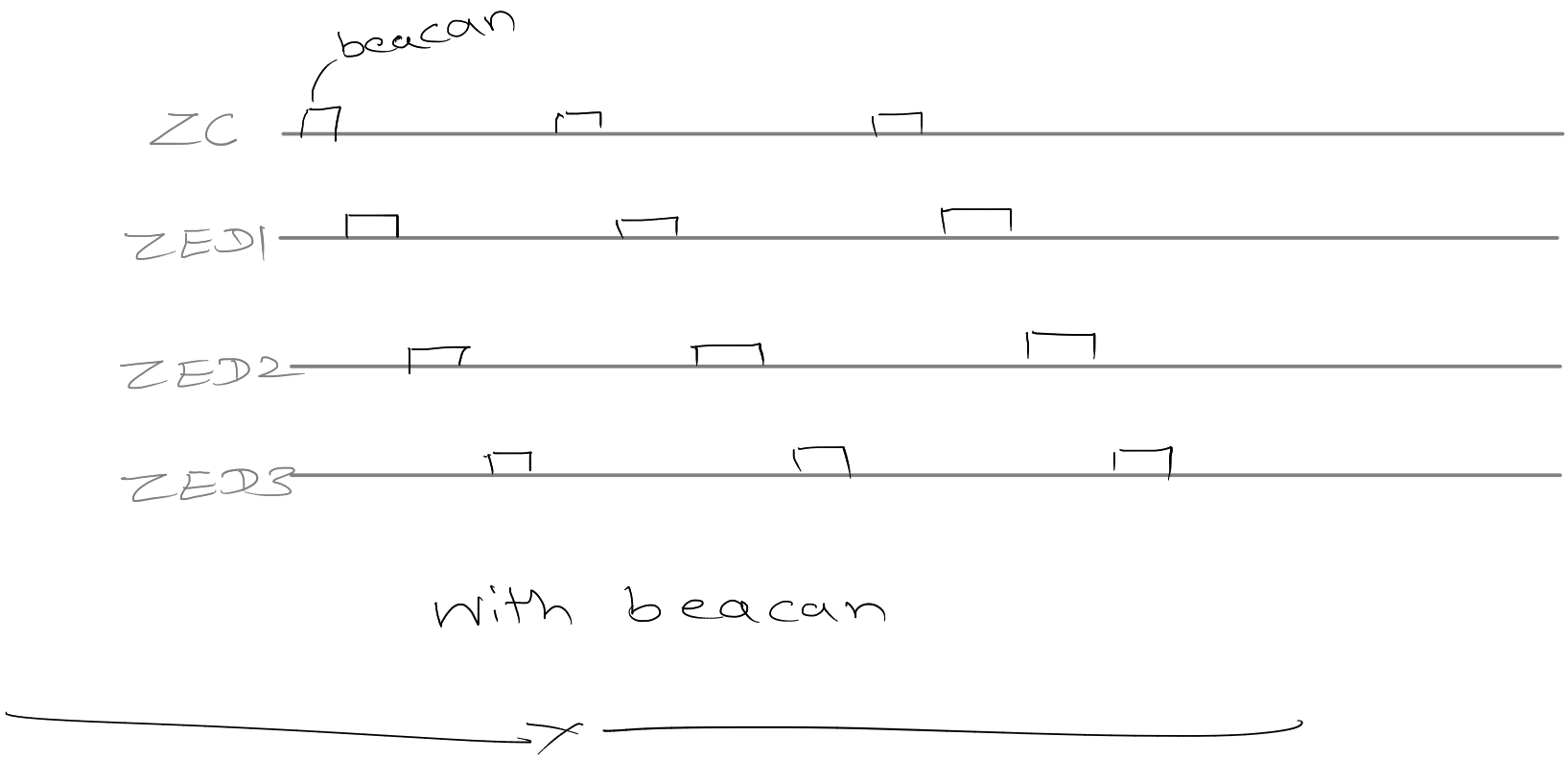
Tree Cluster Topology



3. Mesh Topology



- Rhobust
- self healing



with beacan

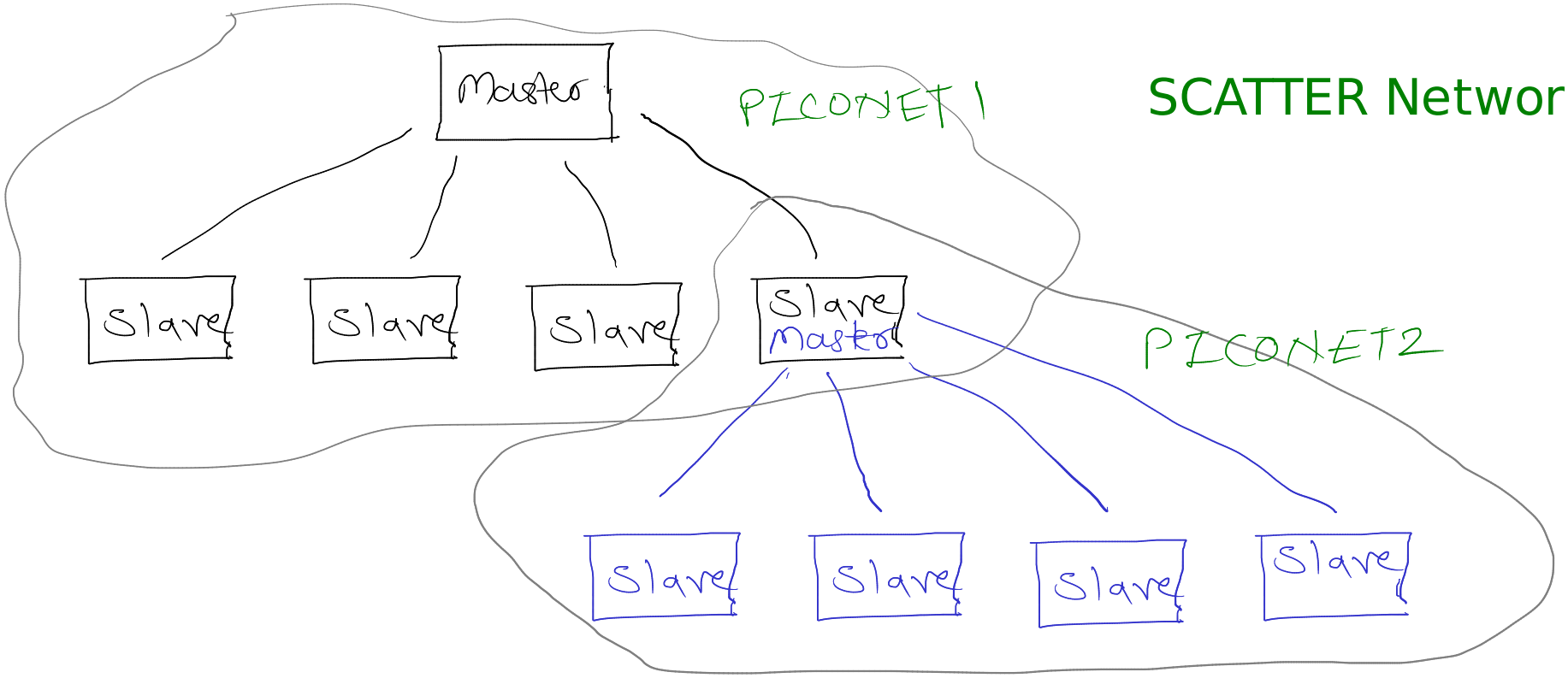
CSMA/CA

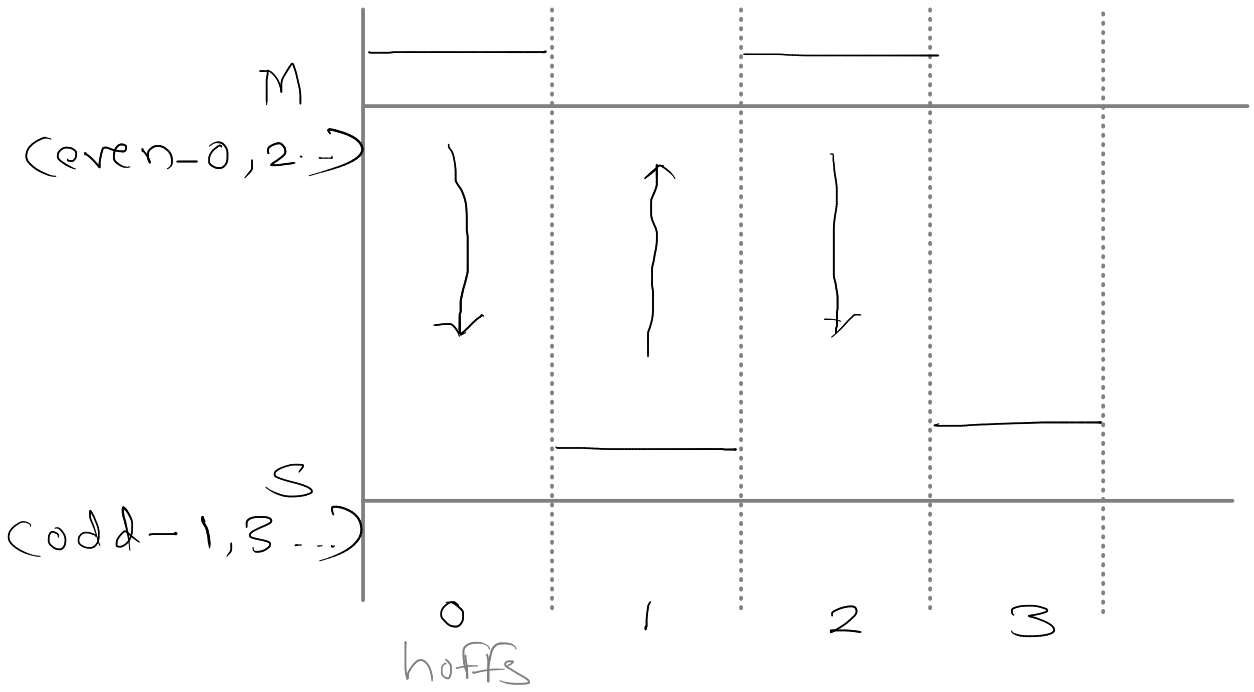
without beacan

Bluetooth

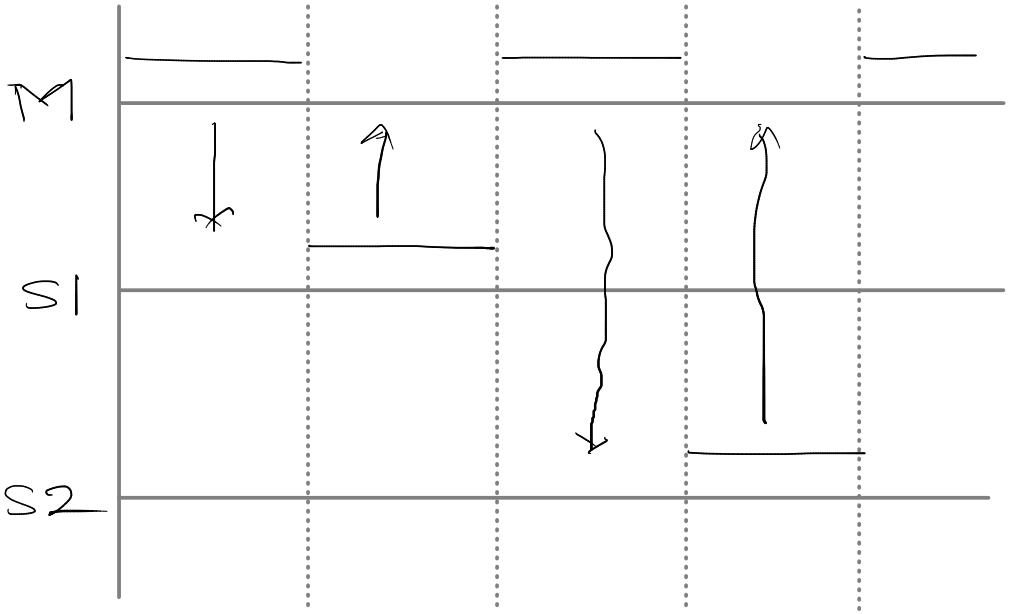
PICONET - network of devices using bluetooth
- 0 to 65535 devices can be in single network
- 0 to 255 devices can paired at a time
- Max 7 devices can take part into communication at time

- Every PICONET has 1 master and 7 slaves
- slaves only listen to master
- one slave can not communicate with another slave directly
- slave in one PICONET can act as a master in another PICONET
- any slave can not be master in two PICONET





Single communication



Multiple Communication

Bluetooth Protocol Stack