# Operations, Administration and Maintenance (OAM) features for RAW

draft-theoleyre-raw-oam-support-03

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Radio networks are specific: link concept

- RAW → Mix of wired and wireless segments

1. Link concept
   - Wired Network = all the devices can send/receive a packet (full clique)
   - Wireless "*link*" ➜ large Packet Error Rate
     - ➜ Probabilistic graphs
     - Radio characteristics, External interference, etc.
   - Implication
     - Link quality (Packet Delivery Ratio)
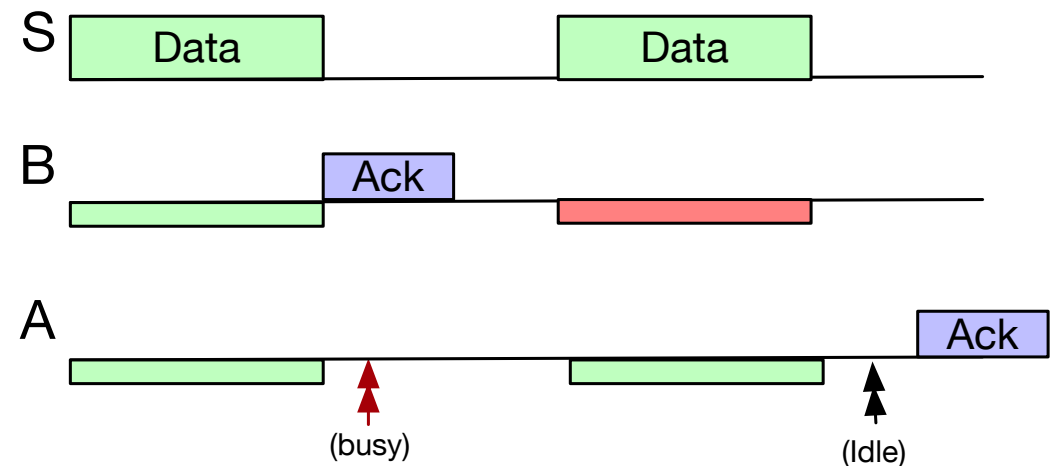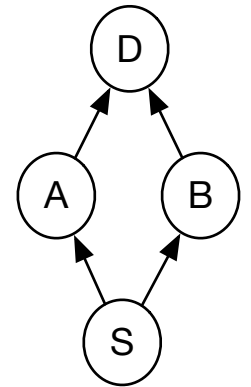   - Time-variant characteristics
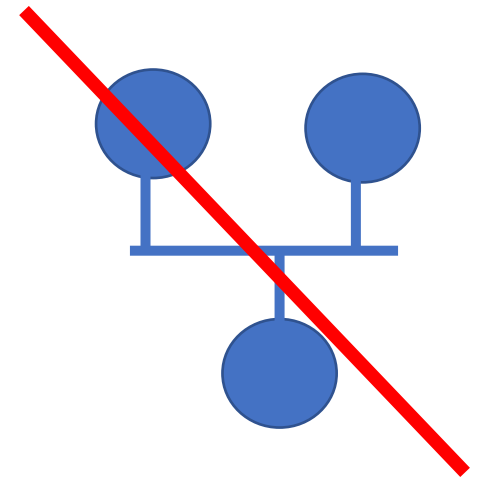
Radio networks are specific: broadcast tx

2. Shared Medium

- Low fairness (e.g., capture effect)

+ one single tx for multiple receivers

- Collisions or interference

➔ Opportunistic Layer 2-forwarding
  - Several receivers scheduled at the same time
- Implication
  - All links are not interchangeable (routing)
  - Joint scheduling & routing

Operation - Challenges

- Information collection: Radio bandwidth is very low
  - Piggybacking, aggregation, event-based, flag/fields

- Connectivity verification
  - Resources in common for different flows
  - Interference for **some** cells

- Route tracing (e.g., traceroute)
 - Exhaustive exploration challenging in multipath
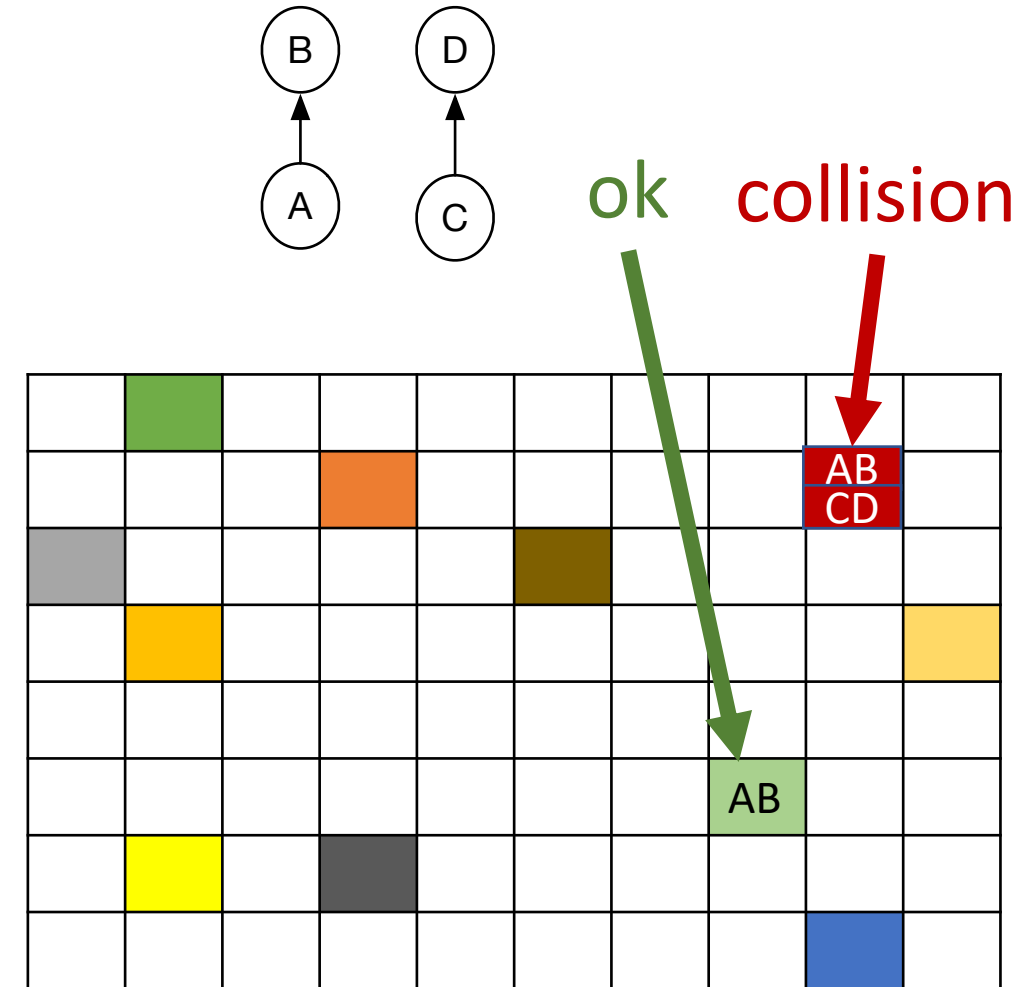
Administration

- Wireless Metrics
  - Packet Delivery Ratio
  - RSSI
  - Per flow, per channel, per device

- Worst-case metrics
  - Max burst of packet losses ➔ Cumulative impact on the delay

Management

- Links are lossy
  - Also for control packets
  - While still being consistent

- Replication / elimination
  - Overhearing should be exploited
    (broadcast transmissions)

- Dynamic reservation
  - Time-variant characteristics
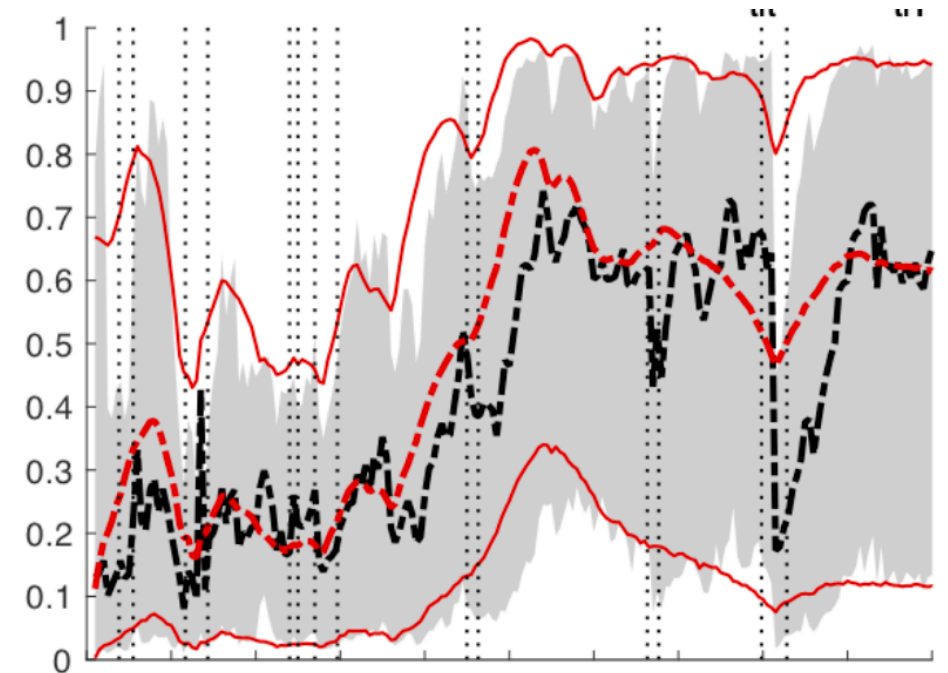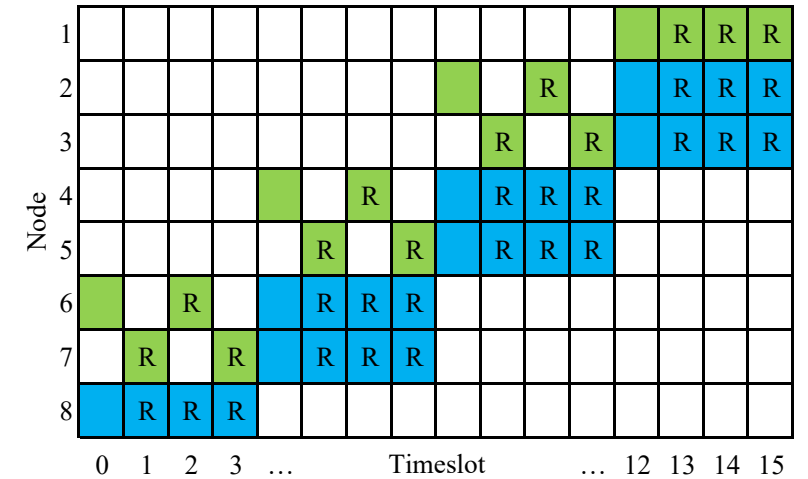
Next Step

- WG adoption?
- Your comments, suggestions, questions always welcome and greatly appreciated

- Thank you!