Operations, Administration and Maintenance (OAM) features for RAW

draft-ietf-raw-oam-support-04

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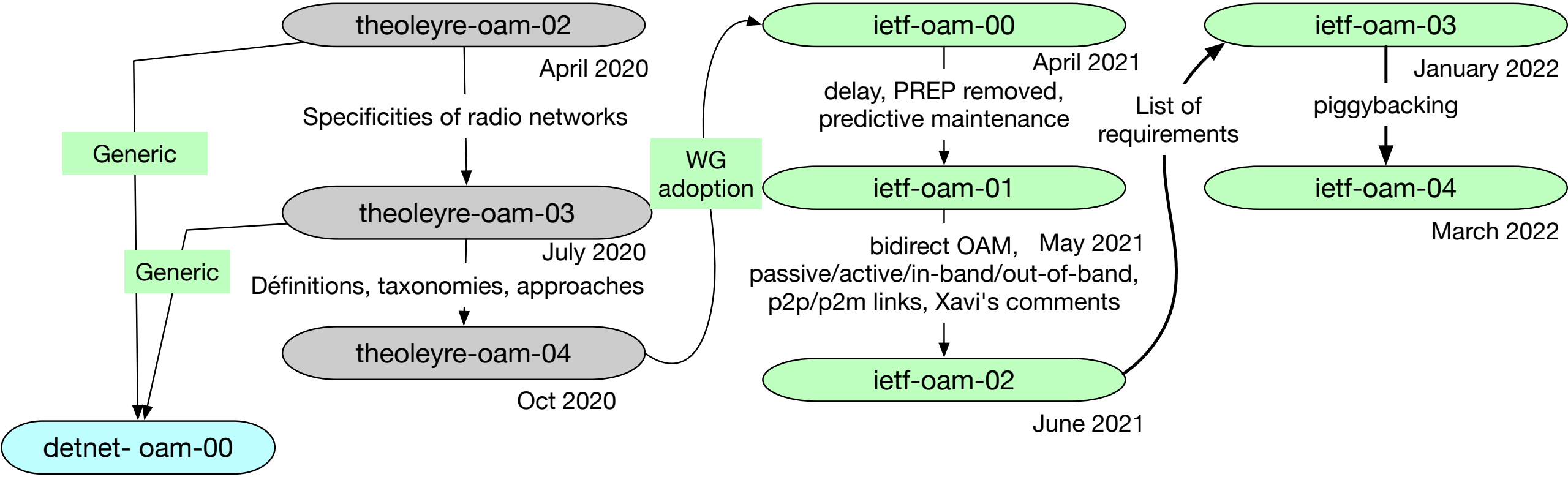
Updates



https://github.com/raw-wg/raw-oam/blob/master/README.md

Update - Recommendations

- Novel section listing the recommendations

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6.  Requirements

   This section lists requirements for OAM in a RAW domain:

   1.  Each Test and Monitoring Endpoint device MUST expose a list of
       available metrics per track.  It MUST at least provide the end-
       to-end Packet Delivery Ratio, end-to-end latency, and Maximum
       Consecutive Failures (MCF).

   2.  PREOF functions MUST guarantee order preservation in the
       (sub)track.

   3.  OAM nodes MUST provide aggregated statistics to reduce the volume
       of traffic for measurements.  They MAY send a compressed
       distribution of measurements, or MIN / MAX values over a time
       interval.

   4.  Monitoring Endpoints SHOULD support route tracing with hybrid OAM
       techniques.
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Update - piggybacking

- Piggybacking = Insert additional information in an existing packet
  - Additional (control) headers
  - Packets back-to-back (if < MTU)

- Wireless Networks = Cost for medium access (per packet)
  - Scheduled access = max duration (timeslot)
  - Small packets → waste of bandwidth
    - Piggybacking → control information « for free »

Classification

Besides, Active OAM may also use piggybacking techniques: the OAM packet may be piggybacked in a frame if the MTU is sufficient. Indeed, increasing the number of transmissions in radio netwrks may impact very negatively the performance of radio networks, particularly for scheduled access, with fixed timeslot durations. Thus, OAM packets may be buffered until another frame has sufficient space, and has to be transmitted to the same neighbor. In conclusion, active OAM packets may be out-of-band or in-band.

- Active OAM
  - test packets (= probes)
- Passive OAM
  - Use data packets information
- Hybrid OAM
  - OAM (control) information
    - Control packets to the source with e.g., counter values
    - Or Control fields in data packets (piggybacking)

- Active / Hybrid OAM and piggybacking are ***orthogonal*** concepts
  - A test packet may
    - Be transmitted alone (through dedicated resources)
    - Enqueued and piggybacked into a data frame (through the data plane)

Next Step

- Draft now stable
- Your comments, suggestions, questions always welcome and greatly appreciated
- WGLC?

Thank you!