Service OAM – Performance Monitoring

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IEEE 1914.1
Next Generation Fronthaul Interface
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Introduction

- ITU-T G.8013/Y.1713 specify mechanisms required to monitor the network and service aspects of the Ethernet layer.
    - IEEE 802.1Q does not define any tools for performance monitoring.

- Service OAM is based on well defined PDUs exchanged between Maintenance Entity Group End Points (MEPs) and Maintenance Entity Group Intermediate Points (MIPs).

- Ethernet OAM requirements are not specified in any current mobile standard (AFAIK).

- Metro Ethernet Forum (MEF) issued an Implementation Agreement (IA) for Mobile Backhaul (January 2016) that includes requirements for Service OAM

Performance Monitoring from other groups

- The CPRI Interface specification includes only basic monitoring tools:
  - "For 8B/10B line coding the RE and the REC shall support detection of 8B/10B code violations. Link failures shall be detected by means of 8B/10B code violations.
  - For 64B/66B line coding the RE and the REC shall support detection of sync header violations. Link failures shall be detected by means of sync header violations."
- MEF defined some more requirements for Mobile Backhaul:
  - "The resiliency performance attributes defined are High Loss Interval (HLI) and Consecutive High Loss Intervals (CHLI) in addition to Availability objective for a given CoS Name. HLI and CHLI can be important to Mobile Operators since short term disruption in the CEN can result in much longer term disruption in the Mobile services."

Performance Monitoring for MFH

An event may occur in any of the marked locations (1-6):
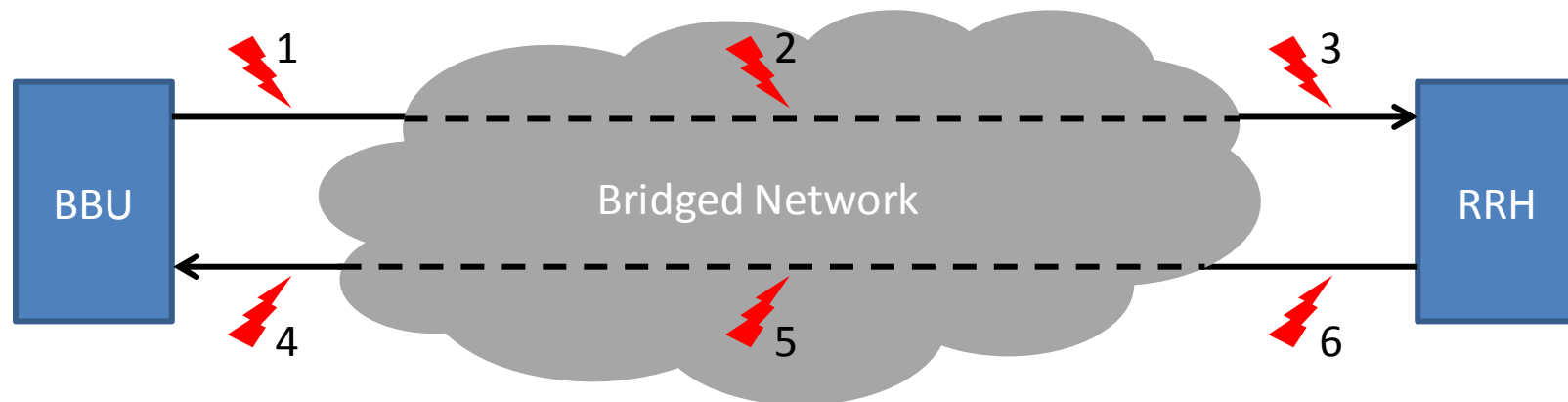
Expected requirements:

– Except from locations 3 and 4 all other event locations may be of interest.
– How is the event detected
– Consequent actions (e.g. Protection)

Performance Monitoring tools

- Line code error monitoring

- RMON

- Frame Loss Measurement (ETH-LM). Used as the basis for availability, HLI and CHLI computation

- Frame Delay Measurement (ETH-DM). Used to compute delay and delay variation.

- Each message payload may include a number of TLVs

- Expected requirements:
  - Required and optional Performance Monitoring tools
  - Shall we limit the rate of these PDUs ? IEEE 802.1Q and ITU-T G.8013/Y.1731 left the rate open with very loose limitations
  - TLV values (if specific required)

Performance Monitoring for NGFI

- As agreed in the last meeting we will define several Classes of Service for the different NGFI signals

- Each of these CoS will be transported by a special connection

- For each one of these connections the standard will have to specify the above mentioned requirements

- Line code violation ? RMON ? ITU-T G.8013 ?

Motion #___

- Agree to add a Performance Monitoring section to the IEEE 1914.1 standard using as a baseline tf1_bruckman_oam_pm_1.

- Mover: Leon Bruckman

- Seconder:

- Yes: ___ No: ___ Abstain: ___ (technical motion needs >= 2/3)