Backhaul Network Performance Monitoring Analysis

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Requirements about Passive Measurement

- In NGMN “Optimized Backhaul Requirements” document, there are several requirements about RAN sharing, which leads to the bandwidth adjustment requirements.
- The NGMN bandwidth requirements point that “In case of RAN Sharing, the eNB/aGW transport modules should priorities the traffic of a certain operator within a certain portion of the overall transport bandwidth. This will enable a fair use of transport resources in the case where the two operators have different strategies”.
- The NGMN connective requirements point that “The NGMN Backhaul solution MUST allow connecting each e-NB to one or several aGW’s (i.e. S1 interface in 3GPP LTE standard) for multi-homing purpose (e.g. S1-flex in 3GPP LTE standard) or multi-operator RAN Sharing reason.”
- In backhaul network, there must be performance monitoring mechanism to check the traffic status in the network, with the status information, eNBs can “priorities the traffic of a certain operator within a certain portion of the overall transport bandwidth” as the NGMN requirements.
Solution from Huawei

IP Performance Monitoring Adaptive Bandwidth Adjustment

1. eNB performs periodic Forward Monitoring

2. sGW replies a Backward Report packet after receiving a FM packet

3. eNB calculates jitter & RTT & packet loss ratio after receiving a BR packet

4. eNB performs periodic logical port bandwidth adjustment according to the mean jitter and the mean packet loss ratio in the interval

IP Performance Monitoring Maintain fairness and differentiation between flow-control services in transport bandwidth variation scenarios
An IP Performance Monitoring cycle

- **eNB** sends a FM packet periodically
- S-GW replies a BR packet after receiving a FM packet
- eNB calculates the IP QoS performance after receiving a S-GW packet
Proposal and question

Proposal:
- Standardize the Passive Measurement negotiation process
- Standardize the Passive measurement metrics

Question:
- If the Passive Measurement standardization work can be done in IPPM working group?
- Is it possible to build another working group which focuses on Passive Measurement?
Thank You

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