



Path Computation Based on Precision Availability Metrics

draft-contreras-pce-pam-00

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Motivation

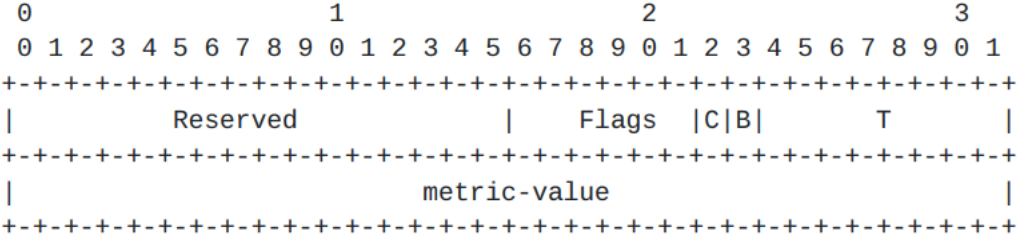
- Some communication services present performance requirements expressed as Service Level Objectives (SLO)
 - E.g., RFC XXXX Network Slice [I-D.ietf-teas-ietf-network-slices] or deterministic [RFC5878] [RFC8655] services
- IPPM WG is defining Performance Availability Metrics (PAM) for defining and monitoring SLOs [I-D.ietf-ippm-pam]
- PCE can compute or select paths based on metrics that can represent a bound or maximum
 - The path metric must be less than or equal such value
 - The path metric observed represents the current behavior
- For services with SLOs is convenient to evaluate the path behavior along the time

PAM metrics

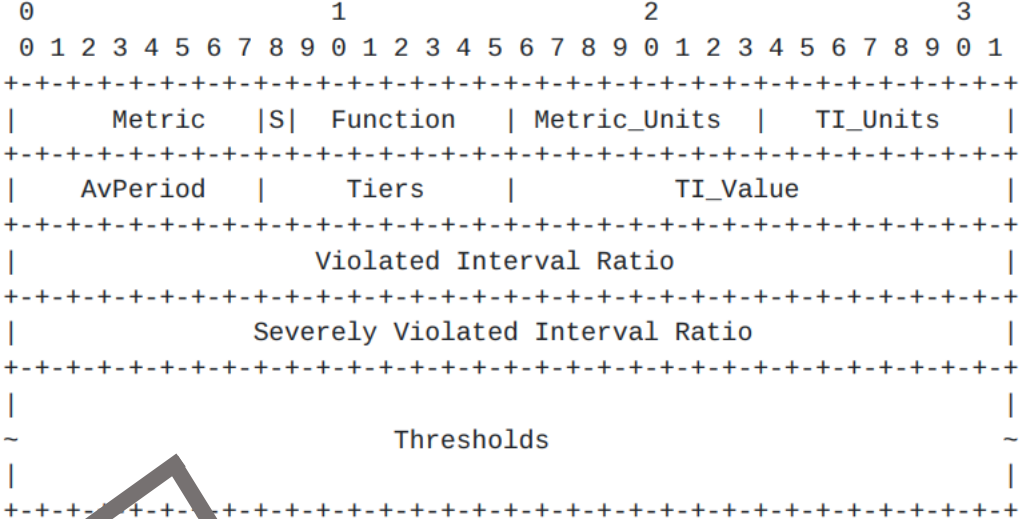
- **Violated Interval (VI)** is a time interval during which at least one of the performance parameters presents degradation respect to a predefined optimal level threshold.
 - **Severe Violated Interval (VI)** is a time interval during which at least one of the performance parameters presents degradation respect to a predefined critical level threshold.
- **Violated Interval Ratio (VIR)** is defined as the ratio of the summed numbers of VIs and SVIs to the total number of time unit intervals along a predefined availability period.
 - **Severely Violated Interval Ratio (SVIR)** is defined as the ratio of SVIs to the total number of time unit intervals along a predefined availability period.

Extension

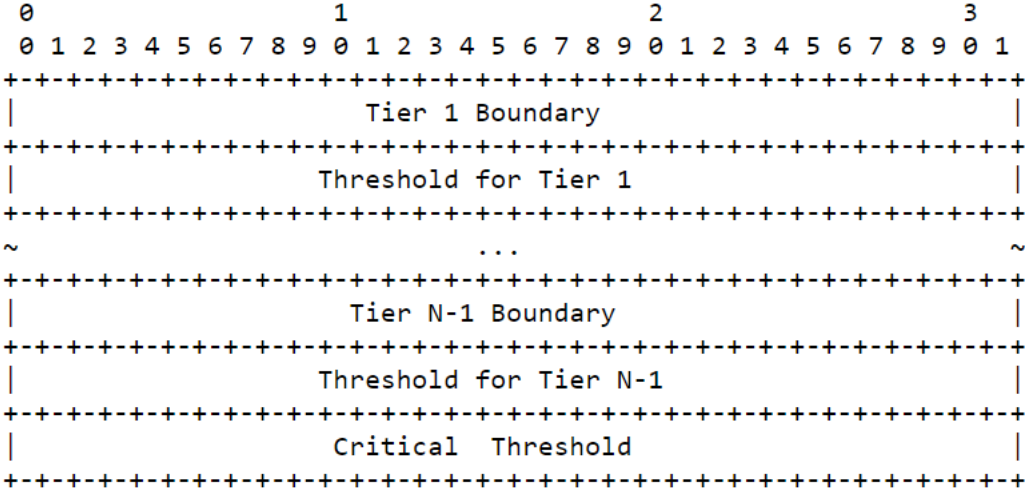
METRIC Object as per RFC5440



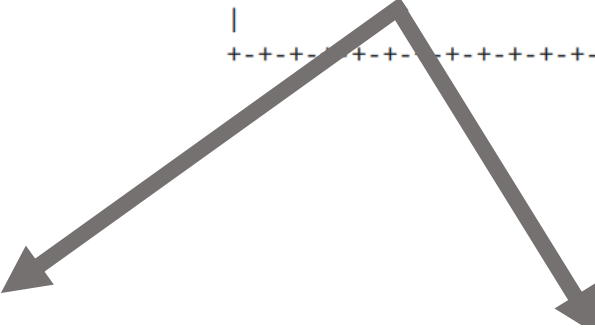
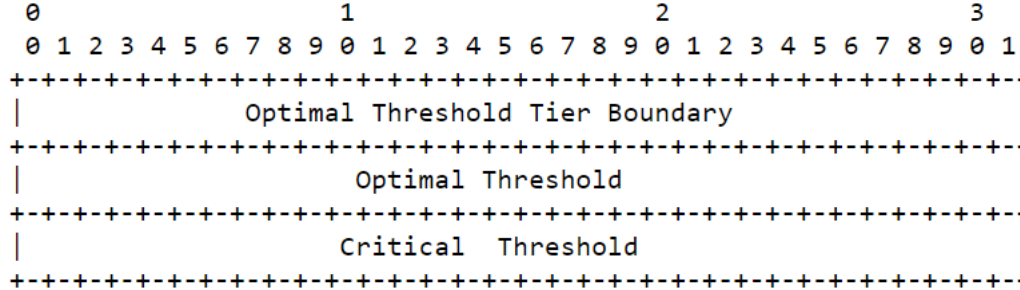
METRIC Object extension
(for T == PAM type)



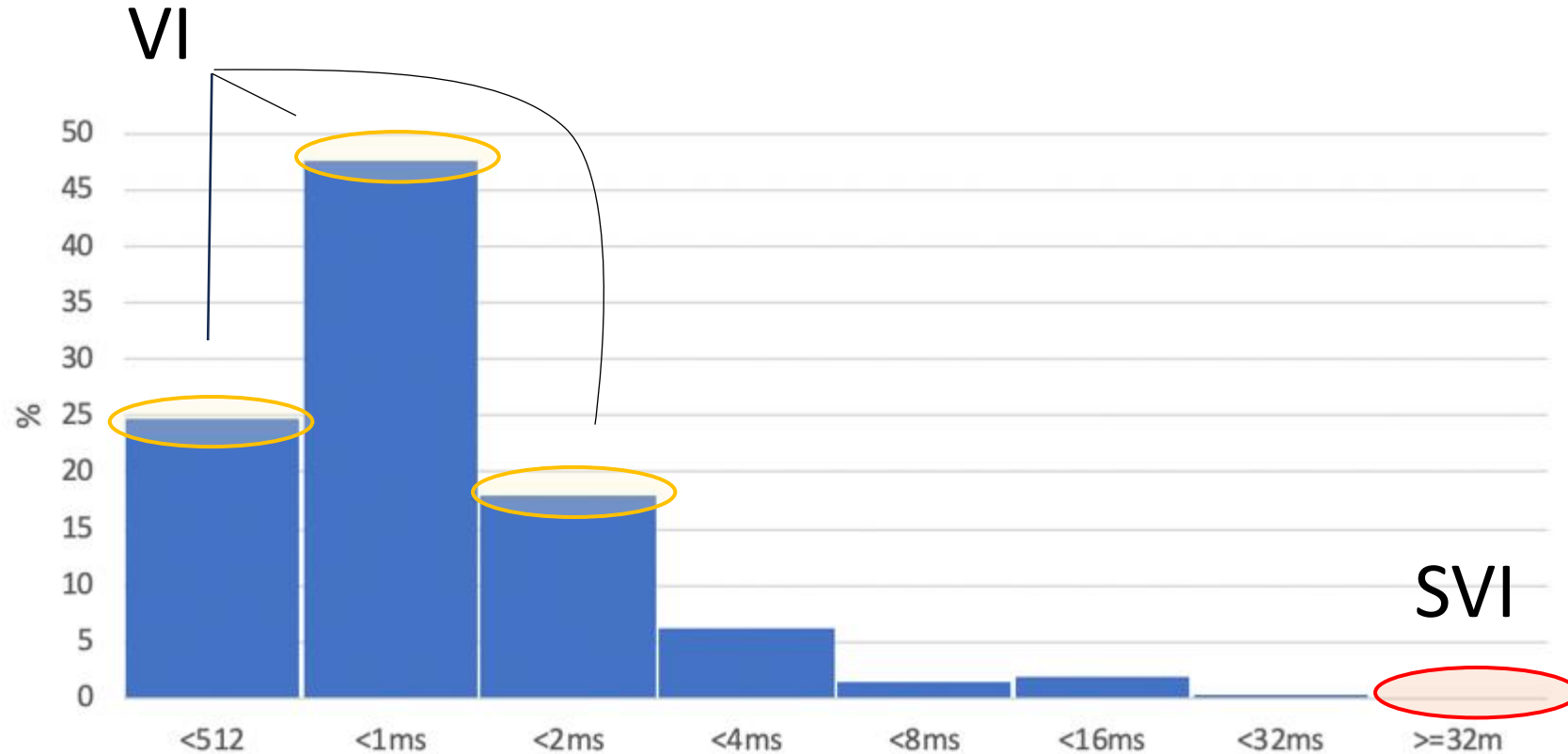
PAM metric assessed against a multi-tiered SLO, presenting different thresholds per tier



PAM metric assessed against an optimal (for VI) and a critical (for SVI) thresholds



Statistical distribution (e.g., histogram)



Next steps

- -01 released during IETF week for fixing missing information
- Collect feedback from the WG
- Prepare new version for IETF 119