Applicability of Abstraction and Control of Traffic Engineered Networks (ACTN) to Packet Optical Integration (POI) Service Assurance

draft-poidt-teas-actn-poi-assurance-**05**

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Draft Scope

- Based on RFC8453 (Abstraction and Control of TE Networks, ACTN)
- Expands I-D.ietf-teas-actn-poi-applicability (Applicability of ACTN to Packet Optical Integration, POI) to analyze and discuss service assurance in the context of a multi-layer, multi-domain network
  - Service assurance was left out from POI due to the breadth of the requested analysis
- In scope of the draft:
  - Multi-layer, multi-domain fault and performance management
  - Multi-layer, multi-domain recovery scenarios
  - IP to Optical connectivity based on gray interfaces.

Draft History

- Version -00 (Mar 2023): base text
- Version -01 (Sep 2023): introduced discussion on resiliency cases (sec. 7)
- Version -02 (Mar 2024): completion of resiliency scenarios (sec. 7)
- Version -03 (Jul 2024): multi-layer fault management (sec. 5 and relevant subsections)
- Version -04 (Oct 2024): first edit of multi-layer performance management (current sec. 6.1) and relevant failures
- Version -05 (Feb 2025): completed performance measurement (added sec. 6.2 on IP multi-domain), expanded discussion on cross-layer link failures (sec. 7.3), clarified scope of the overall analysis (see next).

Closed Issues(*)

- #12 – Failure scenarios
  - Sec. 5 is now stable (no additional cases added). Interaction between the O-PNC and the MDSC is fully aligned with I-D.ietf-teas-actn-poi-applicability
  - The network alarm correlation in the optical network is managed by the O-PNC (and optical nodes) that provides the MDSC with the set of information necessary to correlate the event/alarm without having the O-PNC disclosing too many details
- #11 – Benefits of a spare router port
  - Added text from Daniel to explain the concept of using N+1 port protection on a router (sec. 7.3)
- #3 – Performance monitoring for IP domains
  - Added sec. 6.2. If the IP layer detects a non-conformant SLA value associated with a VPN service, the P-PNC provides information to the MDSC (e.g. the IP tunnel carrying the VPN service), which may take reactive measures
  - Case dealing with **IP end-to-end** performance measurement. Current methods [RFC7799] are not constrained by network topology, e.g. the number of IP domains, but in practice they are enabled in controlled domains [RFC8799]
  - As a result, the applicability is often limited to a single IP domain.

(*) https://github.com/italobusi/draft-poidt-teas-actn-poi-assurance/issues?q=is%3Aissue%20state%3Aclosed

Fault/Performance Gap Analysis

- The discussion on the issues listed in the previous slide helped to clarify the scope of sec. 4 (YANG Data Models for the MPIs)
- The target is to identify the YANG models relevant for service assurance and identify any gaps
  - The development of new or updated YANG models is outside the scope of this draft and could be done, if needed, in new drafts
- The scope of sec. 4 remains quite extensive, we would appreciate the support of the WG to identify the relevant YANG models.
  - The current list includes a few RFCs/drafts, it would be interesting to have a feedback on whether more models can be considered.

Next Steps

- The co-authors/contributors had extensive discussions on the issues previously discussed
  - As a result, the text of the draft has been improved and refined.
- The status of the draft make the co-authors believe it is ready for WG adoption
  - The support by TEAS could benefit the completion of the remaining section on the YANG models
- As usual, any comments are welcome.
- Thanks to all who will provide support and feedback.

Thank you