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

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Authors
Fabio Peruzzini – fabio.peruzzini@telecomitalia.it
Jean-Francois Bouquier – jeff.bouquier@vodafone.com
Italo Busi – italo.busi@huawei.com
Daniel King – daniel@olddog.co.uk
Daniele Ceccarelli – dceccare@cisco.com

Contributors
Sergio Belotti – sergio.belotti@nokia.com
Gabriele Galimberti – ggalimbe56@gmail.com
Zheng Yanlei – zhengyanlei@chinaunicom.cn
Anton Snitser – asnizar@cisco.com
Washington Costa Pereira Correia – wcorreia@timbrasil.com.br
Michael Scharf – michael.Scharf@hs-esslingen.de
Young Lee – younglee.tx@gmail.com
Paolo Volpato – paolo.volpato@huawei.com
Jeff Tantsura – jefftant.ietf@gmail.com
Brent Foster – brfoster@cisco.com
Oscar Gonzalez de Dios – oscar.gonzalezdedios@telefonica.com
I-D Use Cases

1. Inventory, Service and Topology Discovery
   • Inter-domain link discovery
   • Multi-layer IP Link discovery
   • Inventory discovery
   • TE paths discovery

2. Establishment of L2VPN/L3VPN with TE requirements
   • Optical Path Computation
   • Multi-layer IP Link Setup and Update
   • TE Path Setup and Update

Figure 1 - Reference Scenario
Status

• Updates in version 08
  – Generalized description of SR-TE path discovery, setup and update: applicable to any technology to which IETF TE Tunnel model can be used at the MPI
    • MPLS-TE and SR-TE are just examples of technology-specific augmentations
    • SR-TE covers both SR-MPLS and SRv6
    • BGP-LU inter-domain option (RFC3107) outside the scope
  – Editorial updates

• Issue tracking and current version available on Git
  – https://github.com/FabioPeruzzini/actn-poi/issues
  – Most of them just requires writing text
  – Few requires feedbacks from TEAS WG: see next slides
Open Issue #45 – SRLGs

• The SRLG value does not provide information about the type of risk (e.g., Conduit SRLG, Transponder SRLG, ROADM degree SRLG or ROADM node SRLG)
  – Not an issue for the SRLG disjointness path computation
  – But there are cases where the operator is willing to know the type of SRLG for other management purposes

• The ietf-te YANG model defines named SRLGs
  – Could this construct be used to address the issue?
  – Not clear the definition of the cost associated with a named SRLG

• Proposal: describe this as a gap to be addressed in another document
Open Issue #36 – Optical Transparent Services

• Current draft text assumes that the Optical Network provides Ethernet frame-based service
  – In most of the existing deployments the Optical Network provides Transparent CBR services
• Not sure the description can be generalized to cover both frame-based and transparent services (see next slide)

• Proposal: try to generalize the description, if possible, otherwise describe the transparent services cases
Multi-layer Intra-domain IP Link setup

1) The Optical Tunnel is configured by the MDSC and setup by O-PNC1

2) The Transparent Client Signal is configured by the MDSC and NEs are properly configured by O-PNC1

3) The multi-layer ETH link is either discovered by P-PNC1 or configured by the MDSC

4) The IP link is created by the MDSC but fully configured by P-PNC1

No Ethernet Topology exposed by O-PNC
ACTN POI Next Steps - Overview

ACTN POI (step 1)
- Inventory, Service and Topology Discovery
- Establishment of L2VPN/L3VPN with TE requirements

ACTN POI (step 2a) – service assurance
- Optical Network failures and degradation
- IP/Optical Edge failures

ACTN POI (step 2b) – pluggable
- Pluggable WDM interfaces on routers
- Same scenarios as in step 1

TEAS WG

CCAMP WG
Next Steps for this draft

• Planned updates to the document
  – Update the text to address all the open issues
  – Editorial and terminology clean-up
  – Improve Security section

• Resuming weekly ACTN POI calls after IETF 116
  – Starting from April 4 (slot 2)
  – Working also in parallel on steps 2a and 2b

• Be ready for WG Last Call before IETF 117