

Applicability of ACTN to Packet Optical Integration (POI)

[draft-ietf-teas-actn-poi-applicability-01](#)

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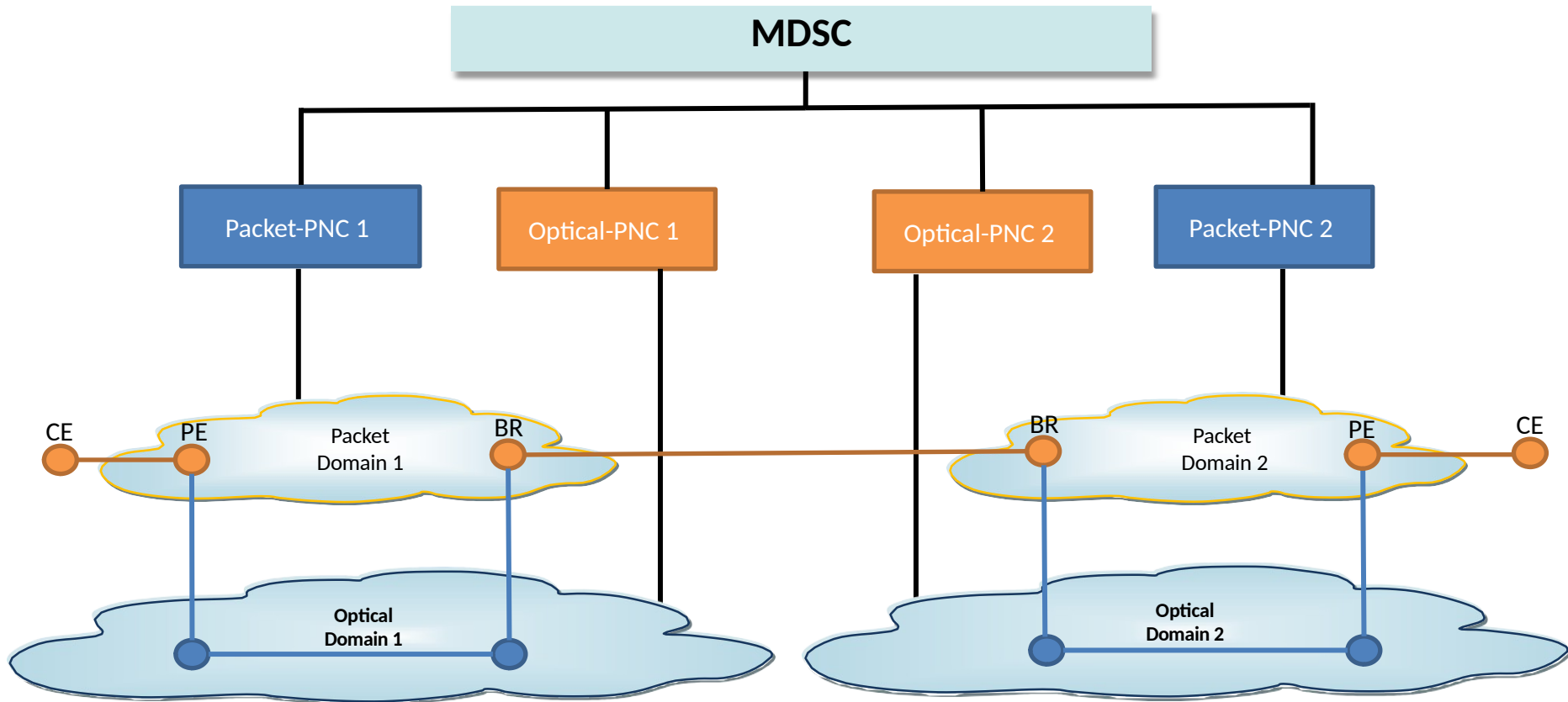
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The Motivation for this Work

- The document provides key use cases for Packet Optical Integration (POI), described both from the point of view of the optical and packet layer, reflecting operator intentions
 - Thanks to contributions from Telecom Italia, Vodafone and TIM Brazil
 - Thanks to contributions from several vendors
- We identified the IETF protocols and data models that may be used for ACTN-based infrastructure to control of POI networks, specially:
 - the MDSC (Multi-Domain Service Coordinator) and
 - underlying Packet and Optical Domain Controllers (P-PNC and O-PNC)
- The intention of the work was to understand the current level of standardization and, highlight gaps, if any:
 - Are the procedural steps clear?
 - If not, what is missing?
 - Are the existing data models suitable?
 - If not, what is missing?
 - Any management issues?
 - Deployment, operational and security

Document Reference Topology



Current state of the Document

- Provides procedure and method for
 - discovering existing links and IP tunnels
 - populating topology
 - inter-domain link discovery
- Documents the YANG models and options used for the reference topology and scenarios
 - common YANG models used
 - models used at the Optical MPis
 - models at the Packets MPis
- Documents procedure for Service Coordination for Multi-layer Networks
 - network and service orchestration and components
 - example usage of the L2NM, L3NM and VN, YANG models

Multi-layer and Multi-domain Service Scenarios

Scenario 1: Network and Service Topology Discovery

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|-------|---|
| 4.1 | Network and Service Topology Discovery |
| 4.1.1 | Inter-domain Link Discovery |
| 4.1.2 | IP Link Setup Procedure <ul style="list-style-type: none">• This topic is ongoing, need to decide where it will sit in the document. |

Scenario 2: L2VPN and L3VPN Establishment

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|-------|--|
| 4.2 | Packet Service Setup <ul style="list-style-type: none">• This includes L2VPN and L3 VPN establishment as the idea is to define a L2VPN/L3VPN with some TE constraint (e.g. Latency, SRLGs) for MDSC to coordinate both IP and OP PNCs to fulfil the TE constraints. |
| 4.2.1 | Packet VPN Model Usage and PNC Coordination <ul style="list-style-type: none">• To be added shortly. |

Next steps for the Document

- Issue tracking and current version available on Git
 - Currently we are tracking 10 open issues - <https://github.com/FabioPeruzzini/actn-poi>
- Several sections are being developed, hot topics/issues include
 - Issue #4 MDSC Initiated IP Link Setup
 - Partially addressed
 - Issue #15 Provisioning of LAG (for increasing bandwidth)
 - A complex issue and further discussion required.
 - Issue #16 Discovery and Inventory Management
 - Discussing suitable/likely methods for population and maintenance.
 - Issue #23 Level of isolation (hard & soft)
 - Synch with TEAS outcome on the topic of isolation.
 - Issue #27 Inclusion of text on the applicability of the PCE to inter-layer path computation
 - Thanks Dhruv, text currently being reviewed.
 - Issue #29 UNI-TOPO vs CLIENT-TOPO
 - Based on the recent discussions around L2NM/L3NM in OPSAWG
- Need to discuss Operational and Security in more detail
 - Applicability of management and telemetry methods and relevant models.
 - Developing security and trust considerations.