YANG Models for MPLS-TP

TEAS WG, IETF104, Prague, Czech

draft-busizheng-teas-mpls-tp-yang-00
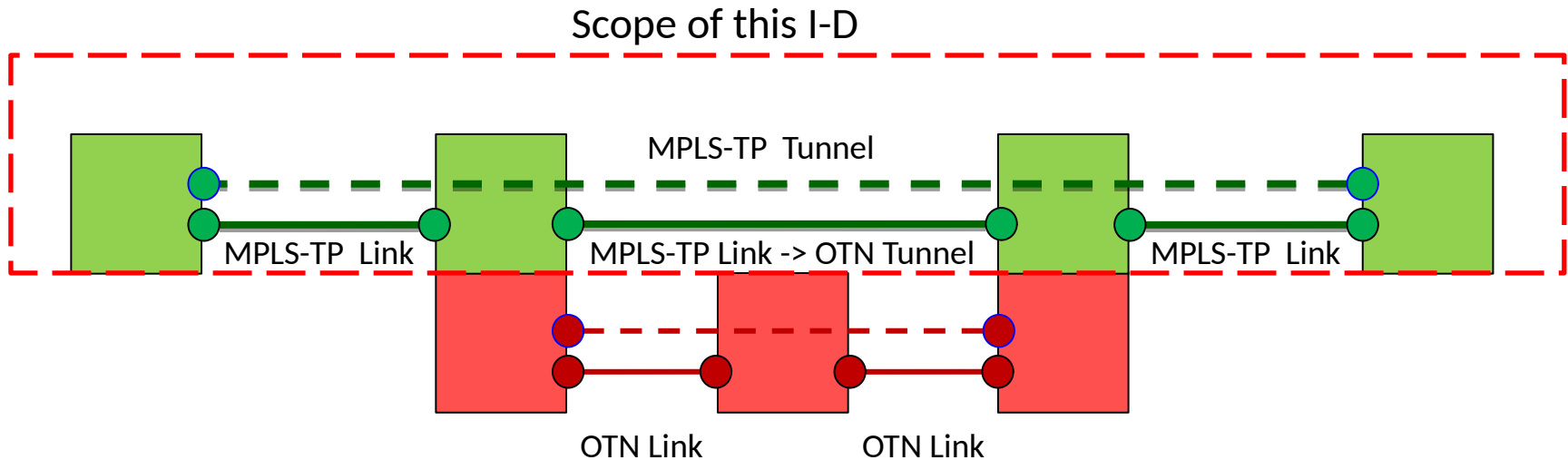
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Problem Statement

- ## MPLS-TP Topology Discovery and Tunnel Setup
  - OTN and MPLS-TP multi-layer network

Scope of this I-D

MPLS-TP Tunnel

MPLS-TP Link

MPLS-TP Link -> OTN Tunnel

MPLS-TP Link

OTN Link

OTN Link

Approach

- MPLS-TP is a profile of MPLS with TE features [RFC5921]
  - Augment TE Topology and Tunnel models
  - <u>Minimum set </u>of attributes not (yet) available in MPLS-TE models (gap analysis)
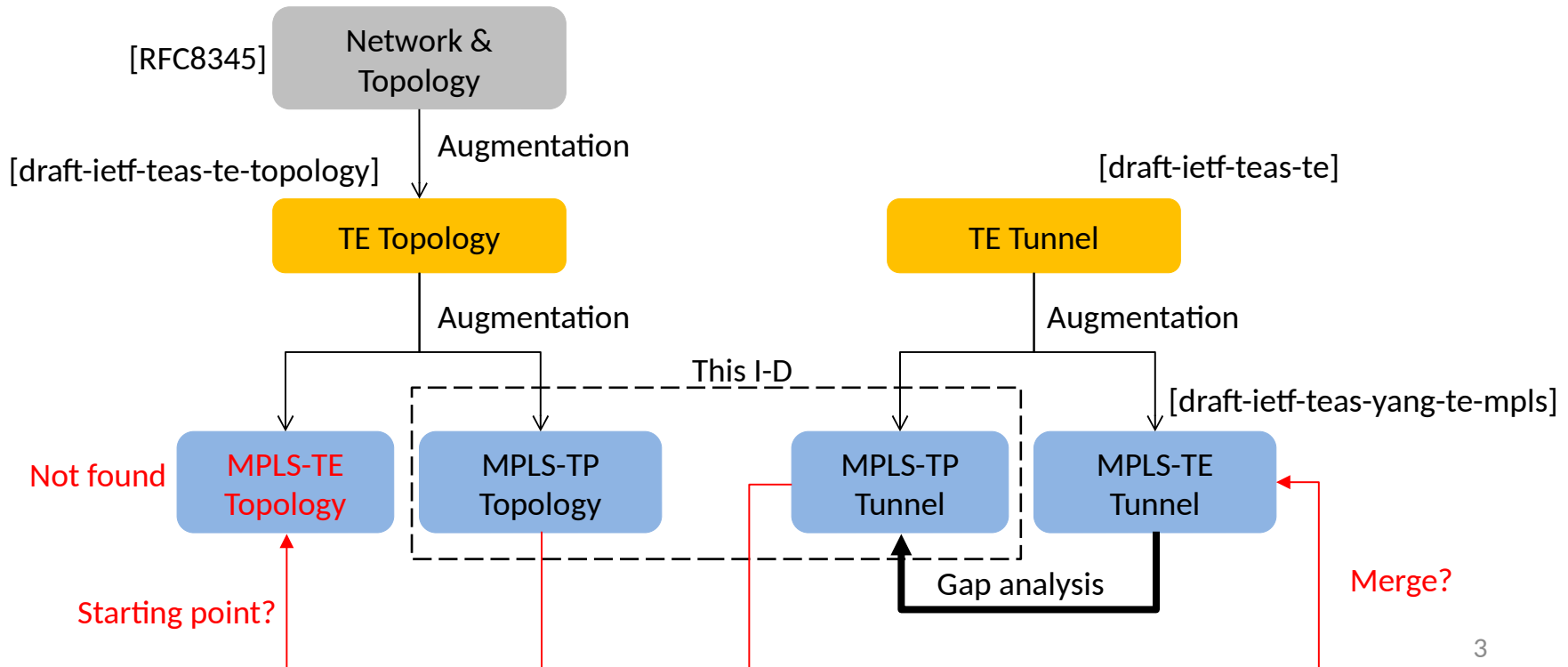
MPLS-TP Topology

- No need to augment `te-label:`
  - Single-domain Tunnels with label allocation done by the NEs

- Augment `te-bandwidth:`
  - For `max-link-bandwidth, max-resv-link-bandwidth` and `unreserved-bandwidth` of TE Link:
    ```
    +--:(mpls-tp)
       +--rw mpls-tp-bandwidth?    uint64
    ```
  - For `max-lsp-bandwidth` of TE Link and TTP:
    ```
    +--:(mpls-tp)
       +--rw bandwidth-profile-name?    string
       +--rw bandwidth-profile-type?    identityref
       +--rw CIR?                       uint64
       +--rw EIR?                       uint64
       +--rw CBS?                       uint64
       +--rw EBS?                       uint64
    ```

MPLS-TP Tunnel

- Augment `te-label:`
  - For `label-hop` of `computed-paths-properties` of primary and secondary paths and LSPs

```
          +--:(mpls-tp)
             +--ro mpls-label?   rt-types:mpls-label
```

- Augment `te-bandwidth:`
  - For `bandwidth` of TE Tunnel:

```
          +--:(mpls-tp)
             +--rw bandwidth-profile-name?   string
             +--rw bandwidth-profile-type?   identityref
             +--rw CIR?                       uint64
             +--rw EIR?                       uint64
             +--rw CBS?                       uint64
             +--rw EBS?                       uint64
```

Merging with MPLS-TE Models

- Bidirectional LSPs
  - All MPLS-TP bidirectional LSPs flavours are supported by generic TE tunnel (to be confirmed)
- Equal Cost Multi-Path (ECMP)
  - Path computation for MPLS-TP LSPs should select only links not performing ECMP
- Penultimate Hop Popping (PHP)
  - Path computation for MPLS-TP LSPs should select only links on the last TE node that allows disabling PHP
- Generic Alert Label (GAL)
  - Path computation for MPLS-TP LSPs should select only links which are capable to process the GAL
- Others?

Open Issues & Next Step

- Agree relationship with MPLS-TE models
  - Merged or Separated models?

- Address Open Issues (section 6)