

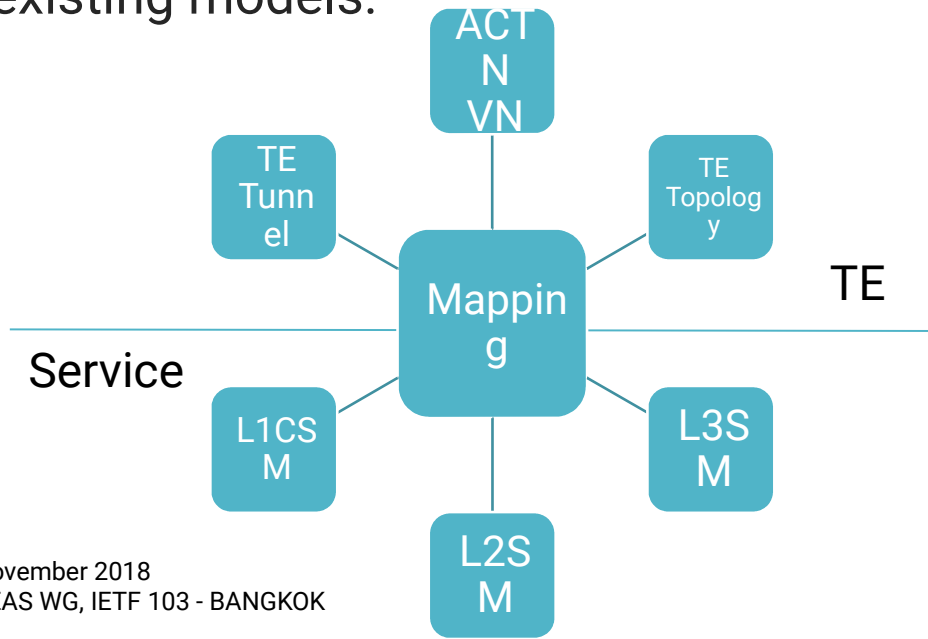
Traffic Engineering and Service Mapping Yang Model

draft-lee-teas-te-service-mapping-yang-12

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Issues discussed since IETF 101

- An independent yang model for TE & Service Mapping v/s an augmentation of service yang model
- Single mapping model to map any service to various levels in TE (VN/Topo/Tunnel)
- Multiple models for each type of service – augmentation of L1/2/3 SM models.
- The resolution was to augment LxSM models; the merit of this resolution is to re-use existing models.



L3SM

TE Mapping
• ACTN VN
• TE Topology
• TE Tunnel

L2SM

TE Mapping
• ACTN VN
• TE Topology
• TE Tunnel

L1CSM

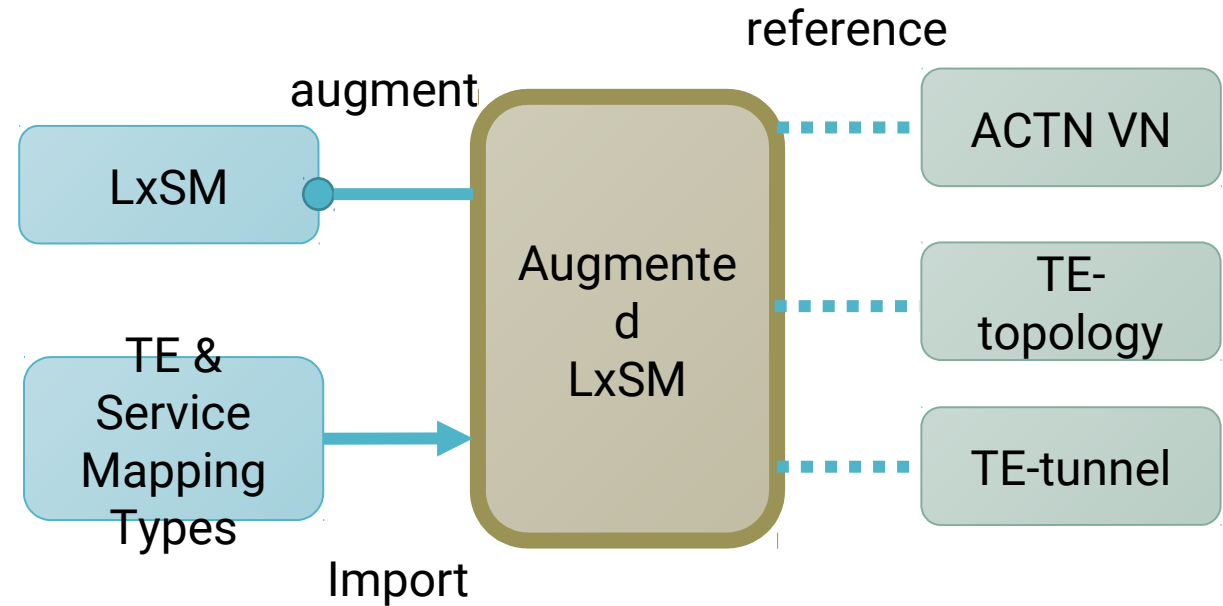
TE Mapping
• ACTN VN
• TE Topology
• TE Tunnel

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TE-Service Mapping Model Update

(1)

- The role of TE-service Mapping model is to create a mapping relationship between -
 - Services – L3SM, L2SM, L1CSM, etc.
 - TE topo, TE tunnel model and the ACTN VN Model
- This TE-service mapping model is needed to bind L3VPN, L2VPN, L1CSM specific service model with underlying TE-specific parameters.
- This binding will facilitate a seamless service operation with underlay-TE network visibility and control.



TE-Service Mapping Model Update (2)

Reorganized Map Type (for VN/Tunnel selection policy)

New VN/Tunnel Binding

- Customer could request a VPN service with a new VN/Tunnel not shared with other existing services.
 - **Hard Isolation with deterministic characteristics**
 - **Hard Isolation**
 - **Soft Isolation**

VN/Tunnel Sharing

- Customer could request a VPN where the tunnels can be shared with other existing VPNs.

VN/Tunnel Modify

- This mode allows the modification of the properties of the existing VN/tunnel (e.g., bandwidth) when VN/Tunnel Selection Mode is applied.

TE-Service Mapping Model Update (3)

- Introduced “Availability” for customer to indicate the level of availability.
 - 99.9999 %
 - 99.999 %
 - 99.99 %
 - 99.9 %
 - 99 %
- This needs to be translated into network level policies - protection/reroute policies associated with VN/Tunnels.

Yang Model: ietf-l3sm-te-service-mapping

```
module: ietf-l3sm-te-service-mapping
  augment /l3vpn-svc:l3vpn-svc/l3vpn-svc:vpn-services/l3vpn-svc:vpn-service:
    +-rw te-service-mapping!
  augment /l3vpn-svc:l3vpn-svc/l3vpn-svc:vpn-services/l3vpn-svc:vpn-service:
    +-rw te-mapping
      +-rw map-type?          identityref
      +-rw availability-type? identityref
      +-rw (te)?
        +-(actn-vn)
          | +-rw actn-vn-ref?  -> /vn:actn/vn/vn-list/vn-id
        +-(te-topo)
          | +-rw vn-topology-id? te-types:te-topology-id
          | +-rw abstract-node?  -> /nw:networks/network/node/node-id
        +-(te-tunnel)
          +-rw te-tunnel-list*  te:tunnel-ref
  augment /l3vpn-svc:l3vpn-svc/l3vpn-svc:sites/l3vpn-svc:site/l3vpn-svc:site-
  network-accesses/l3vpn-svc:site-network-access:
    +-rw (te)?
      +-(actn-vn)
        | +-rw actn-vn-ref?  -> /vn:actn/ap/access-point-list/access-point-id
      +-(te)
        +-rw ltp?           te-types:te-tp-id
```

Yang Model: ietf-l2sm-te-service-mapping

```
module: ietf-l2sm-te-service-mapping
augment /l2vpn-svc:l2vpn-svc/l2vpn-svc:vpn-services/l2vpn-svc:vpn-service:
  +-rw te-service-mapping!
augment /l2vpn-svc:l2vpn-svc/l2vpn-svc:vpn-services/l2vpn-svc:vpn-service:
  +-rw te-mapping
    +-rw map-type?          identityref
    +-rw availability-type? identityref
    +-rw (te)?
      +-(actn-vn)
      | +-rw actn-vn-ref?    -> /vn:actn/vn/vn-list/vn-id
      +-(te-topo)
      | +-rw vn-topology-id? te-types:te-topology-id
      | +-rw abstract-node?  -> /nw:networks/network/node/node-id
      +-(te-tunnel)
      +-rw te-tunnel-list*   te:tunnel-ref
augment /l2vpn-svc:l2vpn-svc/l2vpn-svc:sites/l2vpn-svc:site/l2vpn-svc:site-network-
accesses/l2vpn-svc:site-network-access:
  +-rw (te)?
    +-(actn-vn)
    | +-rw actn-vn-ref?    -> /vn:actn/ap/access-point-list/access-point-id
    +-(te)
    +-rw ltp?              te-types:te-tp-id
```

Yang Model: ietf-l1csm-te-service-mapping

```
module: ietf-l1csm-te-service-mapping
  augment /l1:l1-connectivity/l1:services/l1:service:
    +-rw te-service-mapping!
  augment /l1:l1-connectivity/l1:services/l1:service:
    +-rw te-mapping
      +-rw map-type?          identityref
      +-rw availability-type? identityref
      +-rw (te)?
        +-(actn-vn)
          | +-rw actn-vn-ref?  -> /vn:actn/vn/vn-list/vn-id
        +-(te-topo)
          | +-rw vn-topology-id? te-types:te-topology-id
          | +-rw abstract-node?  -> /nw:networks/network/node/node-id
        +-(te-tunnel)
          +-rw te-tunnel-list*  te:tunnel-ref
  augment /l1:l1-connectivity/l1:services/l1:service/l1:endpoint-1:
    +-rw (te)?
      +-(actn-vn)
        | +-rw actn-vn-ref?  -> /vn:actn/ap/access-point-list/access-point-id
      +-(te)
        +-rw ltp?            te-types:te-tp-id
  augment /l1:l1-connectivity/l1:services/l1:service/l1:endpoint-2:
    +-rw (te)?
      +-(actn-vn)
        | +-rw actn-vn-ref?  -> /vn:actn/ap/access-point-list/access-point-id
      +-(te)
        +-rw ltp?            te-types:te-tp-id
```


Next Step

- The authors believe that this draft is a good base for WG adoption.

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Thanks.