

# A Yang Data Model for L1 Connectivity Service Model (L1CSM)

## draft-fioccola-ccamp-l1csm-yang-00

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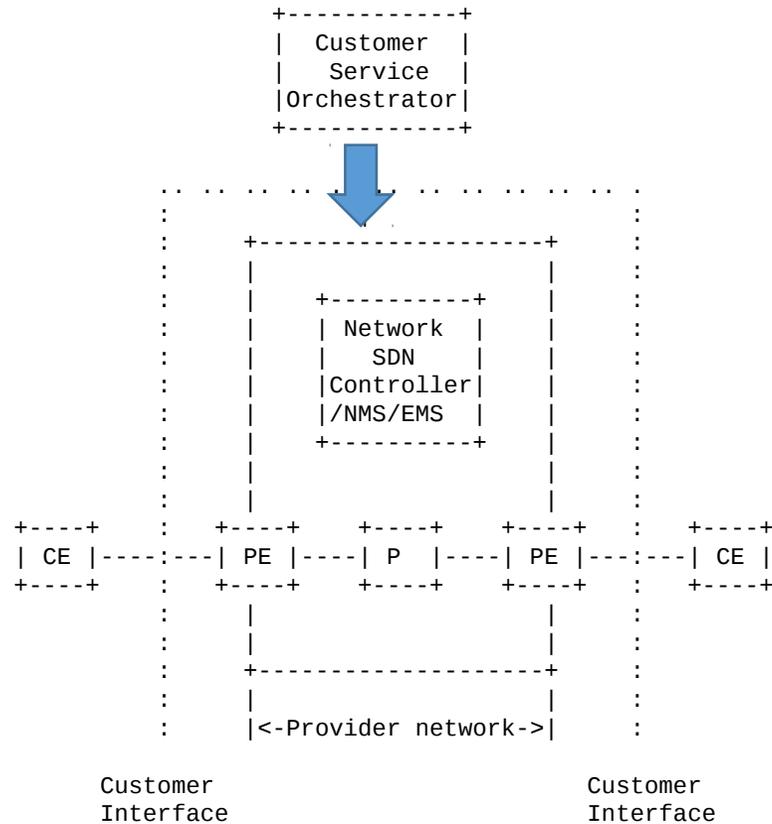
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# Purpose of this draft

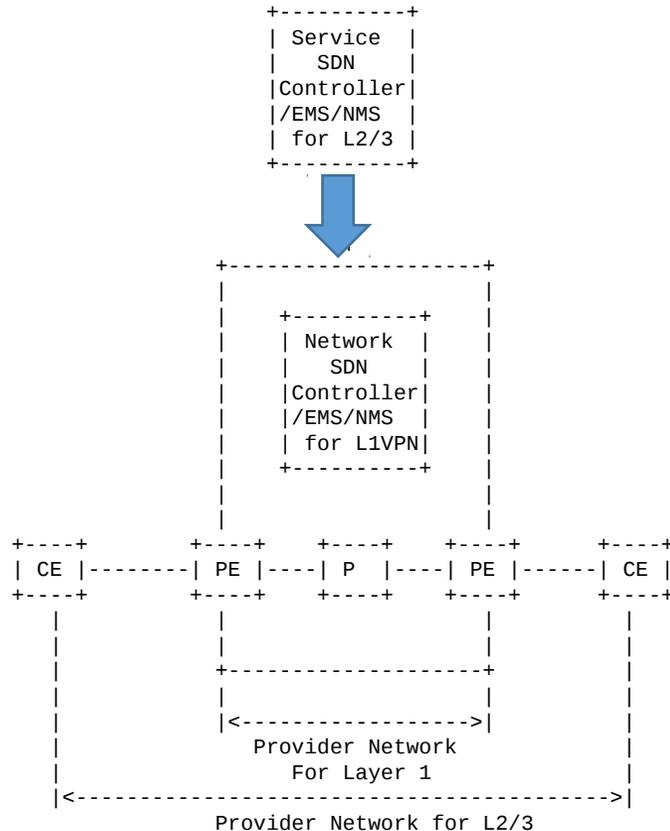
- [RFC4847] provides a framework and service level requirements for Layer 1 Virtual Private Networks (L1VPNs).
- This draft provides a YANG data model for L1VPN Connectivity Service Model (L1CSM) in the context of L1VPN [RFC4847].

# Deployment Scenario 1: L1VPN for External Customer



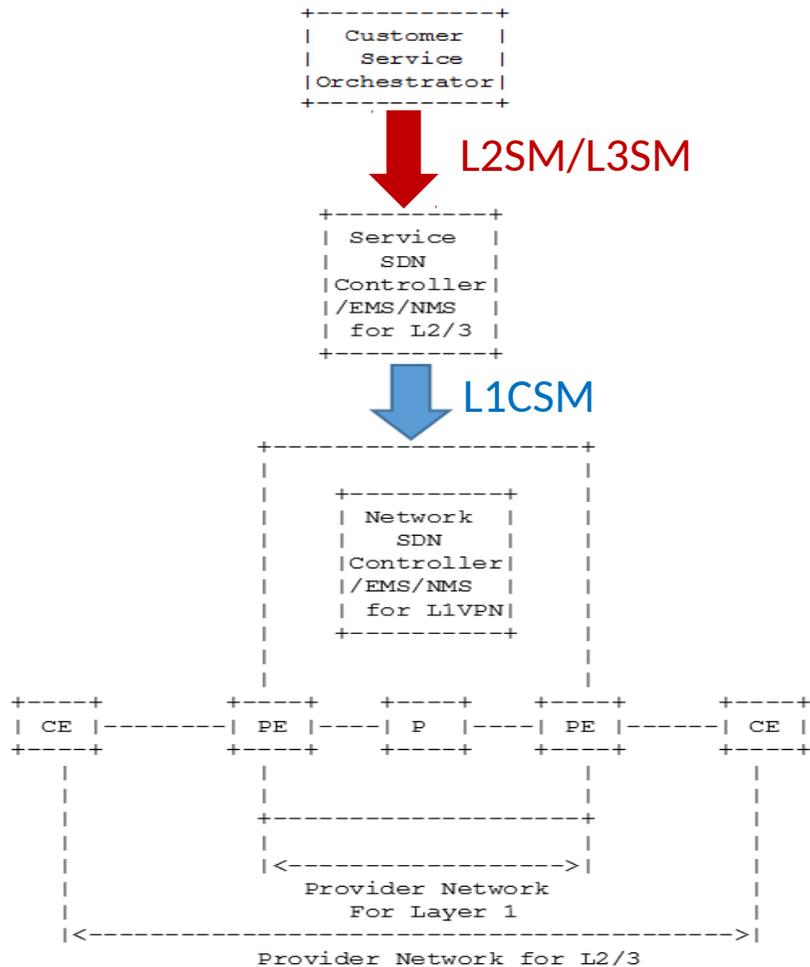
- Deployment scenario of the L1VPN SDN control-based service model for an external customer instantiating L1 point-to-point connectivity to the provider.
- With this scenario, the customer service orchestrator interfaces with the network SDN controller of the provider using Customer Service Model

# Deployment Scenario 2: Multi-Service Backbone for Internal Customers



- Deployment scenario for internal customer (e.g., higher-layer service management department(s)) interfacing the layer 1 transport network department.
- With this scenario, a multi-service backbone is characterized such that each service department of a provider (e.g., L2/3 services) that receives the same provider's L1VPN service provides a different kind of higher-layer service.
- The customer receiving the L1VPN service (i.e., each service department) can offer its own services, whose payloads can be any layer (e.g., ATM, IP, TDM). The layer 1 transport network and each service network belong to the same organization, but may be managed separately.

# L1CSM and L2SM/L3SM



- L2SM and L3SM are Service Models
- L1CSM can be the southbound interface of the Service SDN Controller and can be used in same cases:
  - Multi-Service Backbone for Internal Customers: Only L1 connectivity is required and there is the need of an interface between two departments belonging to the same organization.
  - L1VPN for External Customer (less common for now)

# ietf-l1csm

module: ietf-l1csm

```
+--rw l1cs
  +--rw access
    | +--rw uni-list* [UNI-ID]
    |   +--rw UNI-ID      string
    |   +--rw protocol?   identityref
    |   +--rw coding?     identityref
    |   +--rw optical_interface? identityref
  +--rw service
    +--rw service-list* [subscriber-l1vc-id]
      +--rw subscriber-l1vc-id string
      +--rw service-config
        +--rw subscriber-l1vc-id? string
        +--rw subscriber-l1vc-ep-ingress? -> /l1cs/access/uni-list/UNI-ID
        +--rw subscriber-l1vc-ep-egress? -> /l1cs/access/uni-list/UNI-ID
        +--rw client-protocol? identityref
        +--rw time-start? yang:date-and-time
        +--rw time-interval? int64
        +--rw CoS_Name? string
        +--rw performance-metric? identityref
```

# Summary & Next Steps

- Operators express the need for IETF L1CSM that can serve L1VPN service deployment scenarios for both external customers as well as internal multi-service Layer 1 backbone for L2/3VPN.
- This is in the scope of CCAMP WG:
  - Home of control plane and YANG modeling for L0/L1 technologies
  - L0/L1 technology experts within IETF are here
- IETF L1CSM could also support L1 Connectivity Services which are under definition by MEF
  - MEF draft is not available to IETF community
  - Should we send a liaison to MEF?
- The YANG model captures the basic models for access and service models and provides a good base for WG adoption. ^^