

YANG Models for OTN Client Signals

CCAMP WG, IETF100, Singapore

[draft-zheng-ccamp-otn-client-signal-yang-01](#)

[draft-zheng-ccamp-client-topo-yang-01](#)

[draft-zheng-ccamp-client-tunnel-yang-01](#)

Authors:

[Haomian Zheng \(zhenghaomian@huawei.com\)](mailto:zhenghaomian@huawei.com)

[Aihua Guo \(aihuaguo@huawei.com\)](mailto:aihuaguo@huawei.com)

[Italo Busi \(Italo.Busi@huawei.com\)](mailto:Italo.Busi@huawei.com)

[Yunbin Xu \(xuyunbin@ritt.cn\)](mailto:xuyunbin@ritt.cn)

[Yang Zhao \(zhaoyangy@chinamobile.com\)](mailto:zhaoyangy@chinamobile.com)

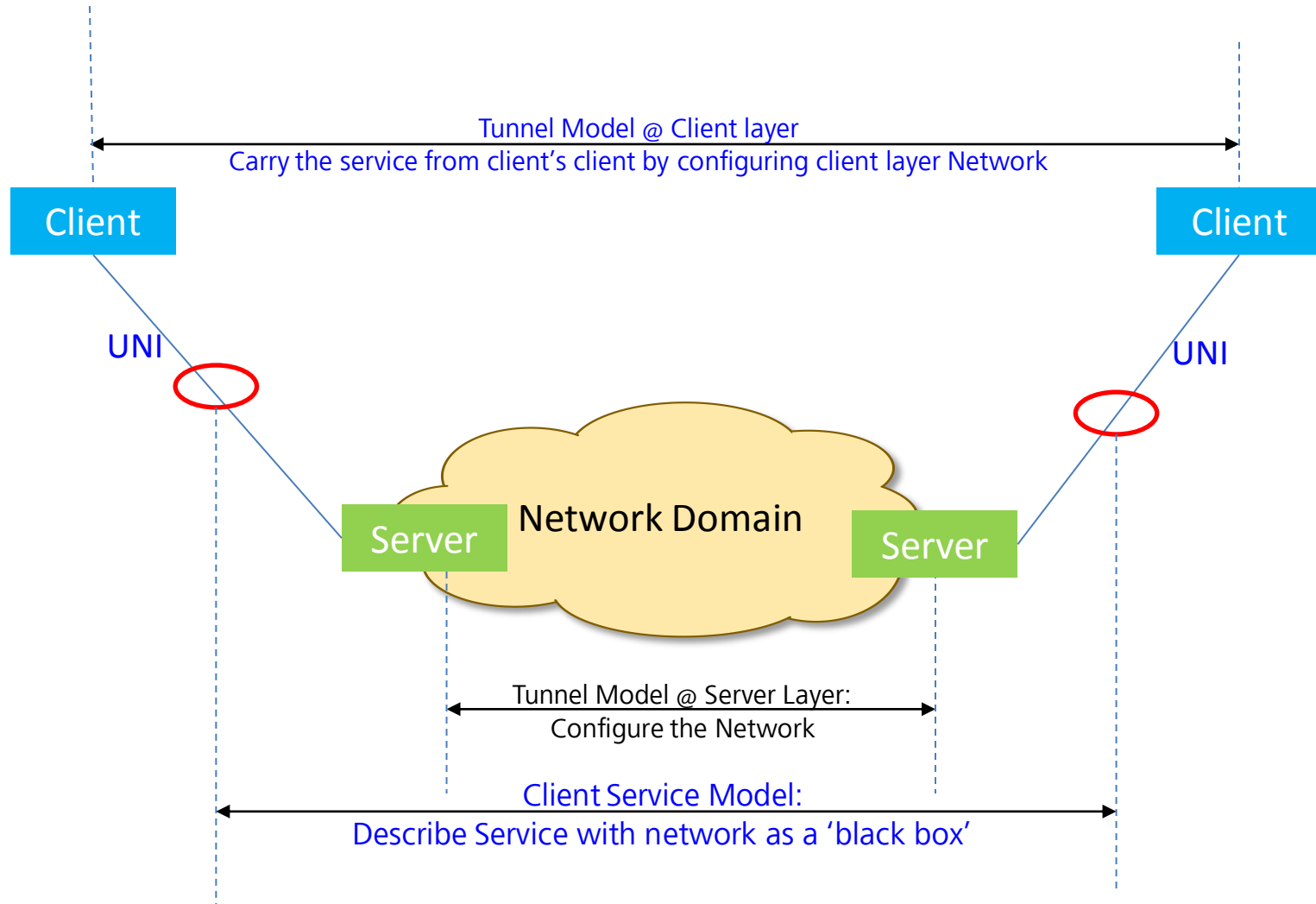
[Xufeng Liu \(Xufeng_Liu@jabil.com\)](mailto:Xufeng_Liu@jabil.com)

[Giuseppe Fioccola \(giuseppe.fioccola@telecomitalia.it\)](mailto:giuseppe.fioccola@telecomitalia.it)

Contributors:

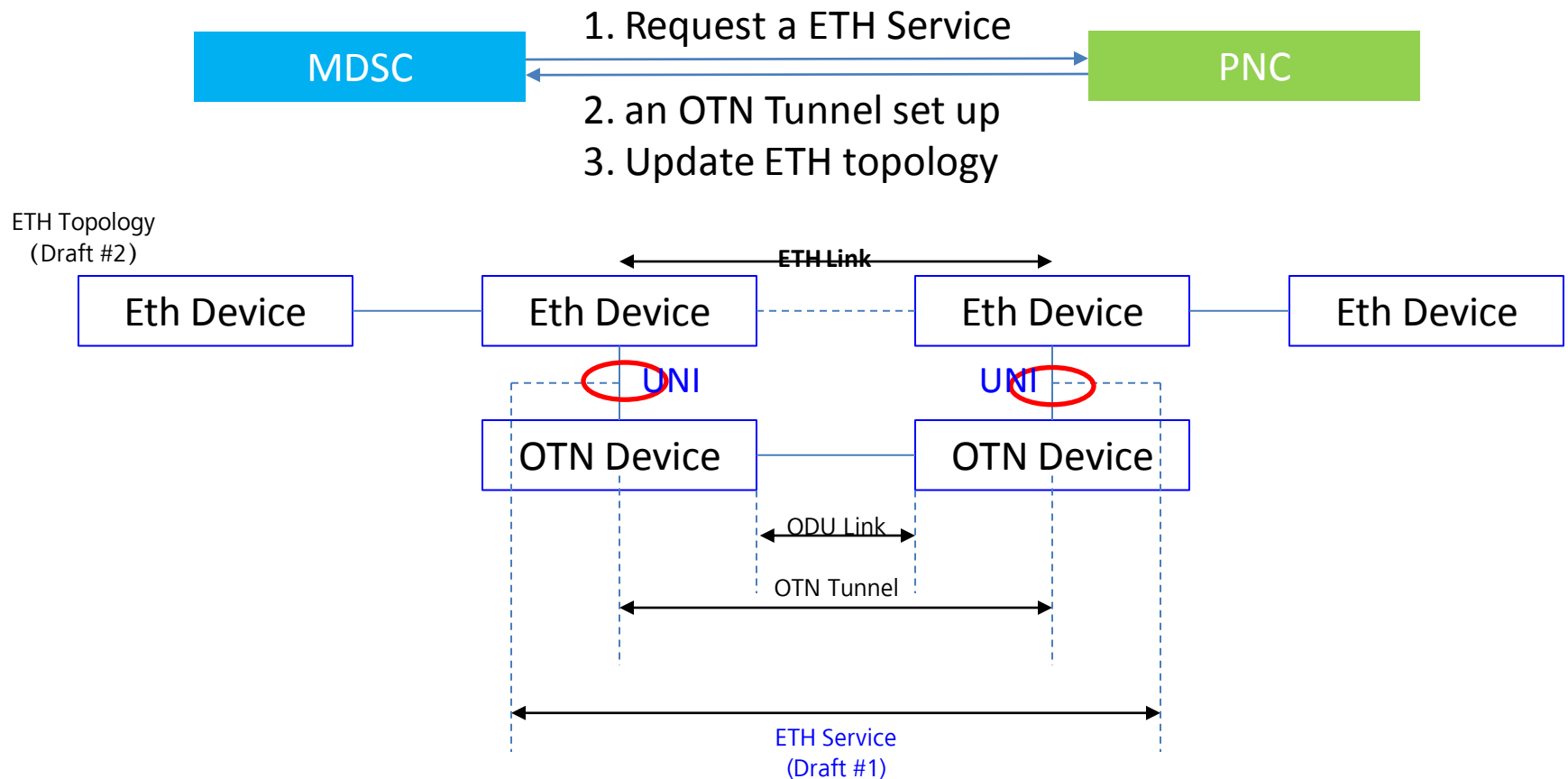
Yanlei Zheng, Zhe Liu, Zheyu Fan, Sergio Belotti, Yingxi Yao

Where Do different models sit?



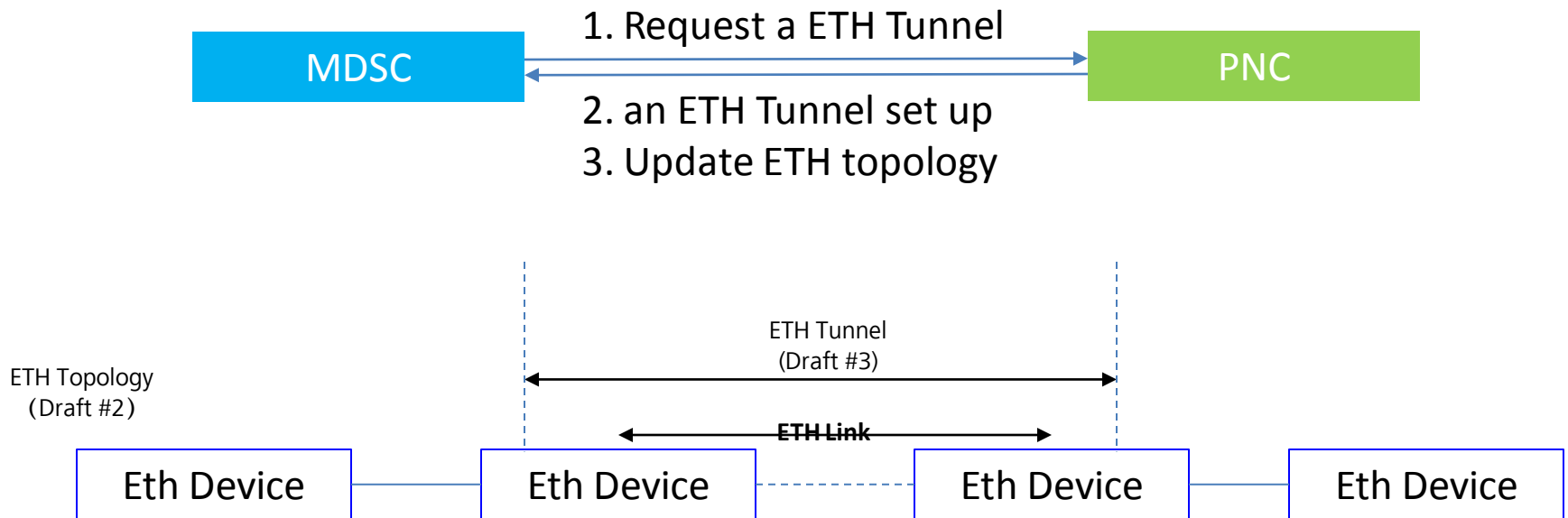
Client Service is different from Tunnel: Server tunnel is used to carry Client service

Controller Interactions (1)



- Request of ETH service will drive the set up of OTN Tunnel.
- Once the 'virtual link' on client layer appears, there should be corresponding Topology change;
 - Will augment the generic TE topo model;

Controller Interactions (2)



- Iteratively, client layer can also request for tunnel set up;
 - Ethernet Tunnel model is used to support the request ;

Potential Client Service Types

Service Type	Client Signal Type	Model
SDH service	STM-N (N=1,4,16,64,256)	Client service model
SONET	OC-N (N=3,12,48,192,768)	Client service model
ETH	FE,GE,10GE WAN/LAN,40GE,100GE	ETH service model
SAN storage	ESCON,FICON,FICON4G,FICON8G,FC100,FC200,FC400,FC800,FC1200	Client service model
Video/Others	DVB-ASI,SDI,HD-SDI, HD-SDIRBR, 3G-SDI, 3G-SDIRBR	Client service model

YANG Tree – Client Service Model

```
module: ietf-eth-tran-service
  +--rw etht-svc
    +--rw globals
      | +--rw etht-svc-bandwidth-profiles* [bandwidth-profile-name]
      |   +--rw bandwidth-profile-name      string
      |   +--rw bandwidth-profile-type?    etht-types:bandwidth-profile-type
      |   +--rw CIR?                        uint64
      |   +--rw CBS?                        uint64
      |   +--rw EIR?                        uint64
      |   +--rw EBS?                        uint64
      |   +--rw color-aware?               boolean
      |   +--rw coupling-flag?             boolean
    +--rw etht-svc-instances* [etht-svc-name]
      +--rw etht-svc-name    -> ../config/etht-svc-name
      +--rw config
        | +--rw etht-svc-name?          string
        | +--rw access-provider-id?    te-types:te-global-id
        | +--rw access-client-id?      te-types:te-global-id
        | +--rw access-topology-id?    te-types:te-topology-id
        | +--rw admin-status?          identityref
        | +--rw etht-svc-access-ports* [access-port-id]
        | | +--rw access-port-id        uint16
        | | +--rw access-node-id?       te-types:te-node-id
        | | +--rw access-ltp-id?        te-types:te-tp-id
        | | +--rw service-classification-type? identityref
```

Mainly for requesting client service by specifying service attributes;

YANG Tree – Ethernet topology

```
module: ietf-eth-te-topology
  augment /nd:networks/nd:network/nd:network-types/tet:te-topology:
    +--rw eth-tran-topology!
  augment /nd:networks/nd:network:
    +--rw name? string
  augment /nd:networks/nd:network/nd:node:
    +--rw name? string
    +--rw node-mac-address? yang:mac-address
  augment /nd:networks/nd:network/lnk:link/tet:te/tet:config:
    +--rw max-bandwidth? uint64
    +--rw available-bandwidth? uint64
    +--rw available-vlan-range? eth-types:vid-range-type
  augment /nd:networks/nd:network/lnk:link/tet:te/tet:state:
    +--ro max-bandwidth? uint64
    +--ro available-bandwidth? uint64
    +--ro available-vlan-range? eth-types:vid-range-type
  augment /nd:networks/nd:network/nd:node/lnk:termination-point:
    +--rw config
    | +--rw ltp-mac-address? yang:mac-address
    | +--rw port-vlan-id? eth-types:vlanid
    | +--rw access-link-bandwidth-profiles
    |   +--rw bandwidth-profile-name? string
    |   +--rw bandwidth-profile-type? eth-types:bandwidth-profile-type
    |   +--rw CIR? uint64
    |   +--rw CBS? uint64
    |   +--rw EIR? uint64
    |   +--rw EBS? uint64
    |   +--rw color-aware? boolean
    |   +--rw coupling-flag? boolean
```

Update the client (ETH as an example) layer topology by augmenting TE-topo.

YANG Tree – Ethernet Tunnel

```
module: ietf-eth-te-tunnel
  augment /te:te/te:tunnels/te:tunnel/te:config:
    +--rw src-eth-tunnel-endpoint
    |   +--rw vlanid?      etht-types:vlanid
    |   +--rw tag-type?   etht-types:eth-tag-type
    +--rw dst-eth-tunnel-endpoint
    |   +--rw vlanid?      etht-types:vlanid
    |   +--rw tag-type?   etht-types:eth-tag-type
    +--rw bandwidth-profile
        +--rw bandwidth-profile-name?  string
        +--rw bandwidth-profile-type?  etht-types:bandwidth-profile-type
        +--rw CIR?                      uint64
        +--rw CBS?                      uint64
        +--rw EIR?                      uint64
        +--rw EBS?                      uint64
        +--rw color-aware?              boolean
        +--rw coupling-flag?           boolean
```

Tunnel model will be needed once there is tunnel in client layer (ETH as an example) request.

Open Issues

- Only Ethernet Service Included
 - Other client signals to be added;
- Align with other YANG models in I2RS/Netmod drafts and IEEE 802.1
- Not sure if different client models have a common or generic part, as a base model;
- NMDA-Compliance

Next Step

- Confirm: this work is useful;
- Work together with T-NBI design team, fit into the use cases;