

draft-dhody-teas-ietf-network-slice-mapping-02

# IETF NETWORK SLICE SERVICE MAPPING YANG MODEL

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# BACKGROUND

## SERVICE MAPPING

- draft-ietf-teas-te-service-mapping-yang-12 defines a common yang model "ietf-te-service-mapping-types" with a mapping template as well as a common grouping.
- Further, the service model for L3SM, L2SM and L1CSM are augmented with TE mapping details to VN/Topology/Tunnel etc
- Also, the network model for L3NM and L2NM are augmented with underlay TE mappings
- This draft does not handle the IETF network slice service!

# MOTIVATION

## IETF NETWORK SLICE MAPPING

- There exist a need for mapping the IETF network slice to the realization technique used in the network.
- A mapping of the IETF Network Slice with the Network Resource Partition (NRP).
- A mapping of the IETF Network Slice with the VPN network models - LxNM. This mapping can be populated at the time of IETF network service realization. This mapping information is internal and used for monitoring and diagnostics purposes. Optionally, a mapping to the NRP can also be populated.

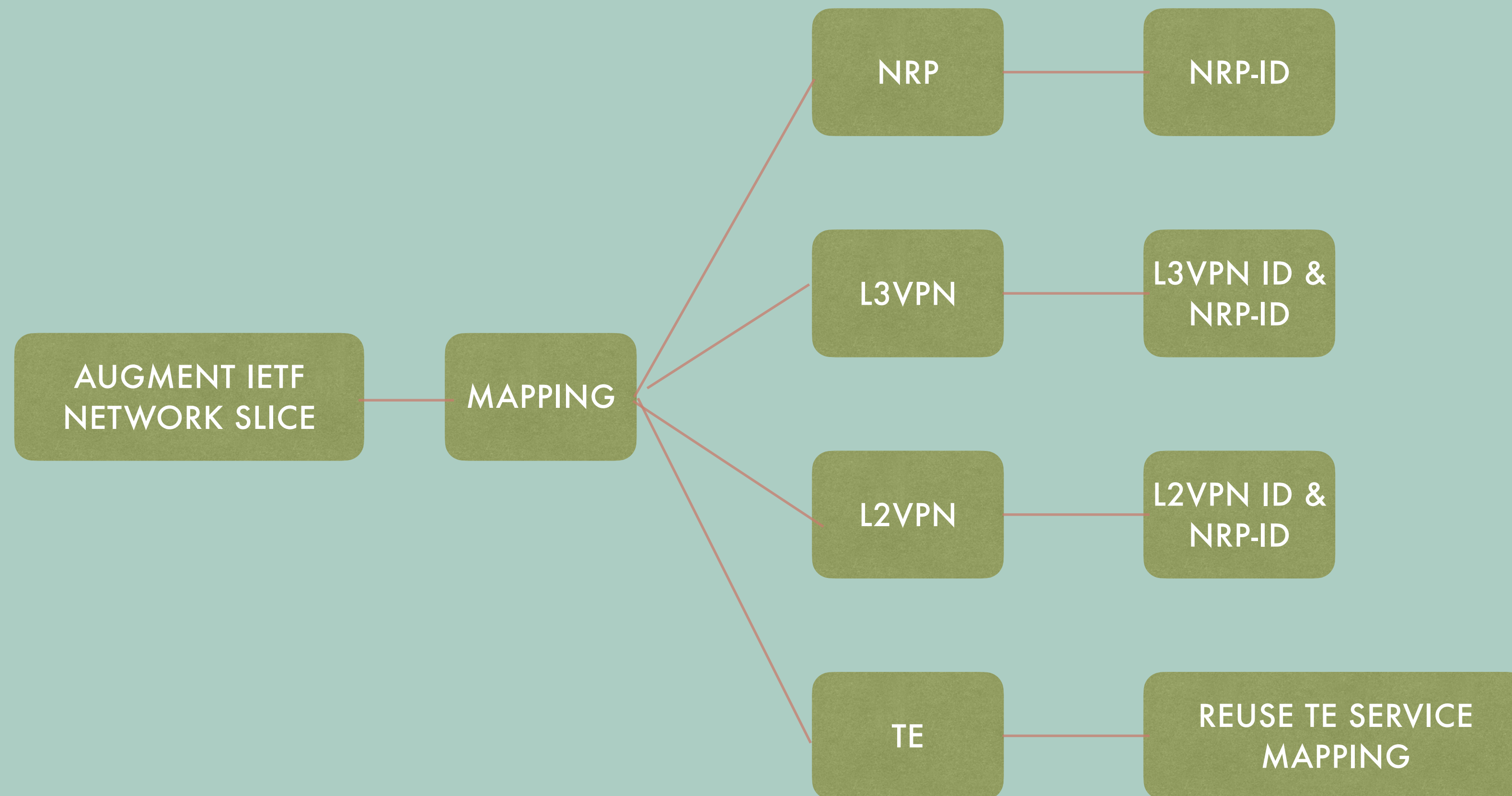
# MOTIVATION

## IETF NETWORK SLICE MAPPING

- A mapping of the IETF Network Slice with the underlying TE resources directly.
  - The TE resources could be in a form of VN, a set of TE tunnels, TE abstract topology etc.
  - This mapping can be populated by the network at the time of realization of the IETF network slice service.
  - It is also possible to configure the mapping provided one is aware of NRP/VN/tunnels.
  - This mapping mode is used only when the consumer of the model is aware of VN or TE.
  - Otherwise, this mapping information is internal and used for monitoring and diagnostics purposes.
- Possibility to request the creation of a new VN/Tunnel to be bound to the IETF network slice.
- Indication to share the VN/Tunnel sharing (with or without modification) for the IETF network slice.
- Support for configuration of underlying TE properties (as opposed to existing VN or tunnels).

# YANG STRUCTURE

## IETF NETWORK SLICE MAPPING



# YANG TREE

## IETF NETWORK SLICE MAPPING

- Mapping of IETF Network Slice Service to
  - NRP
  - L3VPN
  - L2VPN
  - TE
    - VN, Topo, Tunnel ...

```

module: ietf-network-slice-mapping

augment /ietf-ns:network-slices/ietf-ns:network-slice:
  +--rw mapping!
    +--rw ns-mapping
      +--rw map-to? identityref
      +--rw (map)?
        +--:(nrp)
          +--rw nrp-id?
            -> /nw:networks/network/nrp:nrp/nrp-id
        +--:(l3vpn)
          +--rw l3vpn-id? leafref
          +--rw l3vpn-nrp-id?
            -> /nw:networks/network/nrp:nrp/nrp-id
        +--:(l2vpn)
          +--rw l2vpn-id? leafref
          +--rw l2vpn-nrp-id?
            -> /nw:networks/network/nrp:nrp/nrp-id
        +--:(te)
          +--rw type? identityref
          +--rw te-policy
            +--rw path-affinities-values
              +--rw path-affinities-value* [usage]
              ...
            +--rw path-affinity-names
              +--rw path-affinity-name* [usage]
              ...
            +--rw protection-type? identityref
            +--rw availability-type? identityref
          +--rw (te)?
            +--:(vn)
              +--rw vn*
                -> /vn:virtual-network/vn/vn-id
            +--:(te-topo)
              +--rw te-topology-identifier
              | ...
              +--rw abstract-node?
                -> /nw:networks/network/node/node-id
            +--:(te-tunnel)
              +--rw te-tunnel* te:tunnel-ref
              +--rw sr-policy*
                [headend color-ref endpoint-ref]
                {sr-policy}?
              ...
          +--rw template-ref? leafref
            {template}?

```



# OPEN ISSUES & NEXT STEPS

## IETF NETWORK SLICE MAPPING

- Is there a need/use-case to map IETF Network slice Connection Group and/or Connectivity Construct as well?
- Is there a need/use-case to map IETF Network slice Service Demarcation Points (SDPs)?
- Is there a need to indicate "map-type" (new, share) for NRP and VPNs?
- Add Examples in the appendix





**THANKS!**