# I2RS Service Topology

Draft-hares-i2rs-service-topo-dm-05

# I2RS Service Topology Model

- Why discuss today?
  - Completes the generic topology model
  - I2RS Service Model Aligns with L3SM?
  - Recent Design Team draft yang model
    - draft-hares-i2rs-service-topo-03.xml
- Question – is this model ready to adopt

# I2RS Service Model

```
module: i2rs-service-topologies
   augment /nw:network/nw:network-types:
     +--rw service-topologies-types
    augment /nw:network:
     +--rw service-topology-attributes
        +--rw name?   string
        +--rw composite-flag identity-ref
        +--rw c-service-topo-id nw:network-id
        +--rw c-service-id-number uint32;
        +--rw c-node-count  uint32
       +--rw composite-flag_status identity-ref
        +--rw supports-td-attributes
```

Config set of flags:
L3VPN, L2VPN, EVPN,
Seamless MPLS, Etree

Network topology ID
(generic topologies)

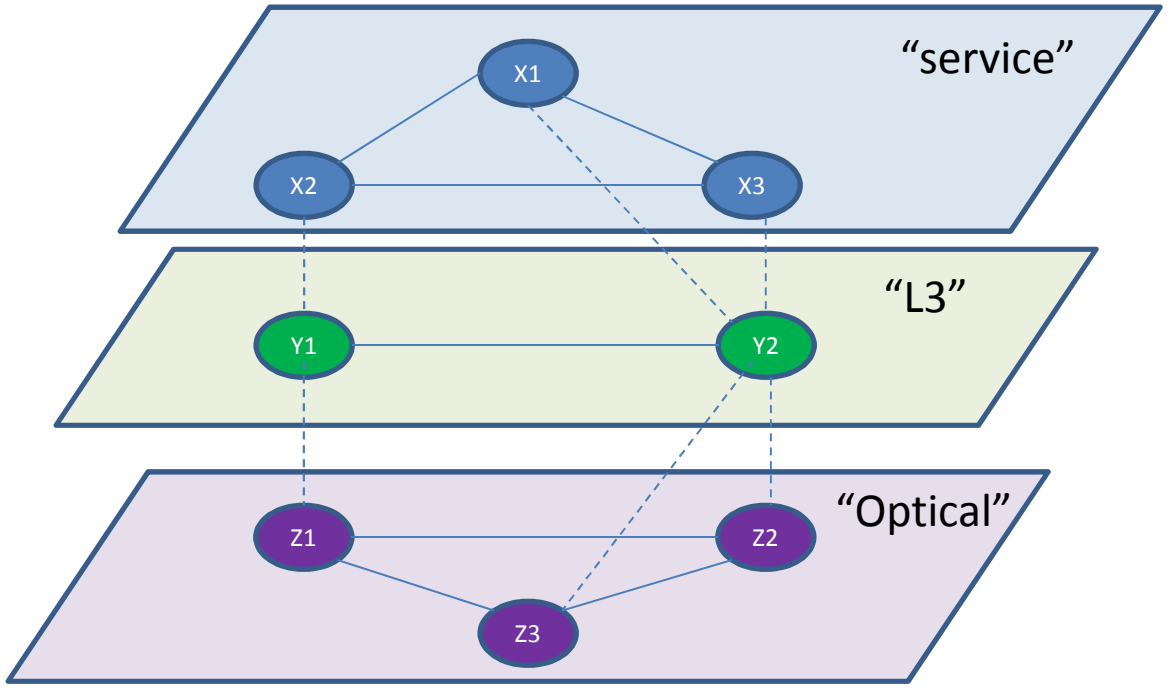
Sequential number
rather than id in all
layers of topologies

Node
cnt

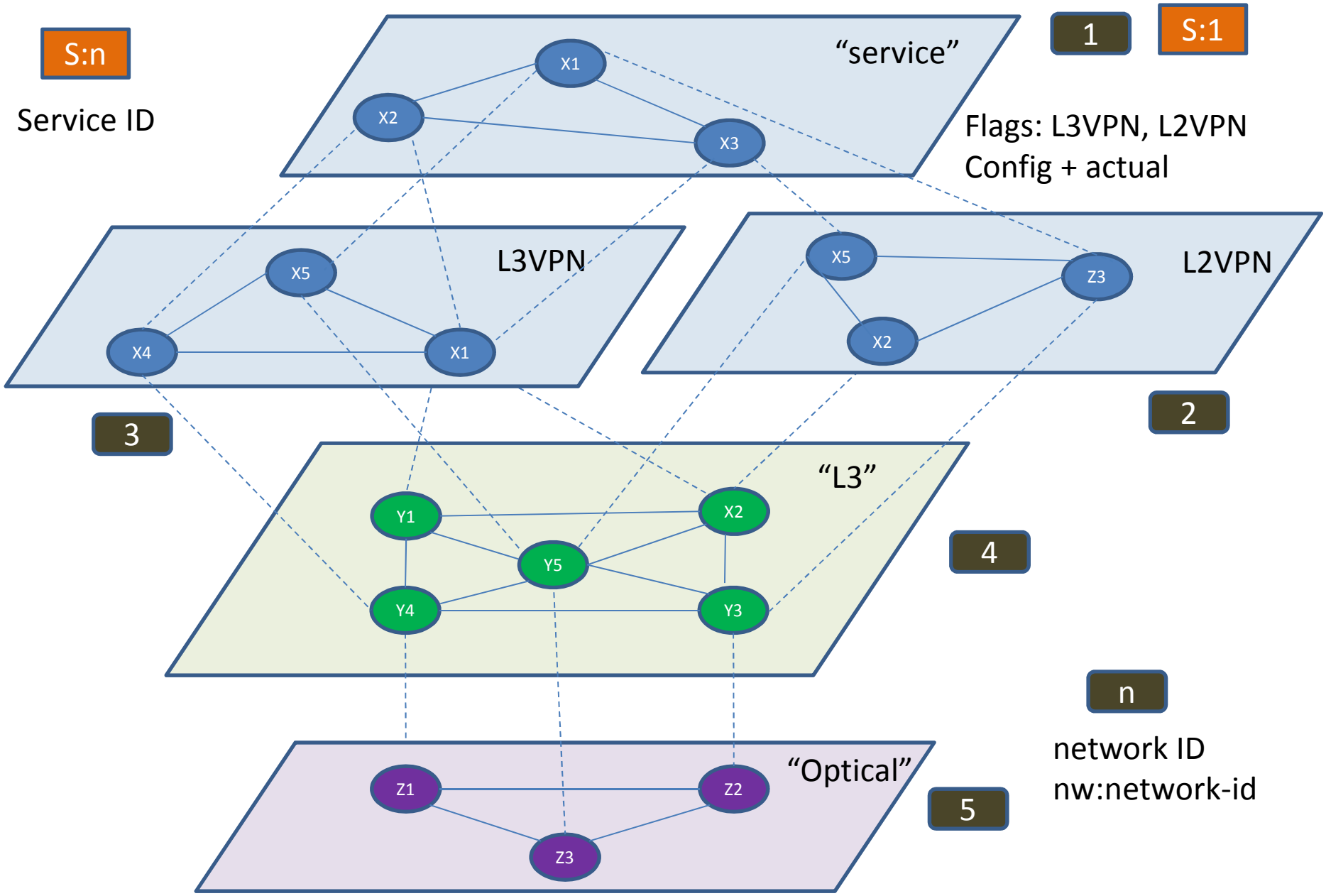
Supports
Top-down attributes
(E.g. L3SM)

Actual set of flags
L3VPN with L2vpn

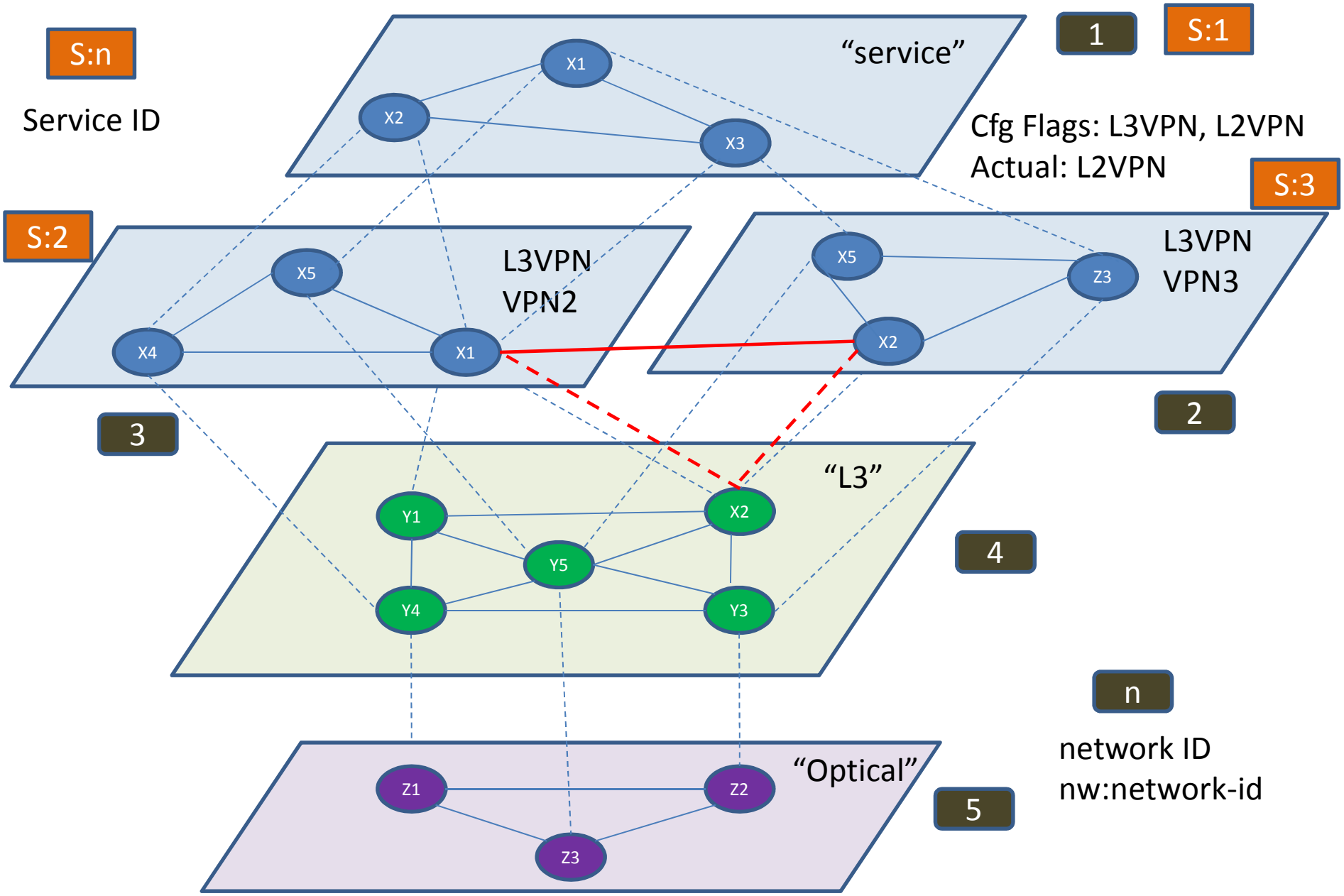
# I2RS Generic Model



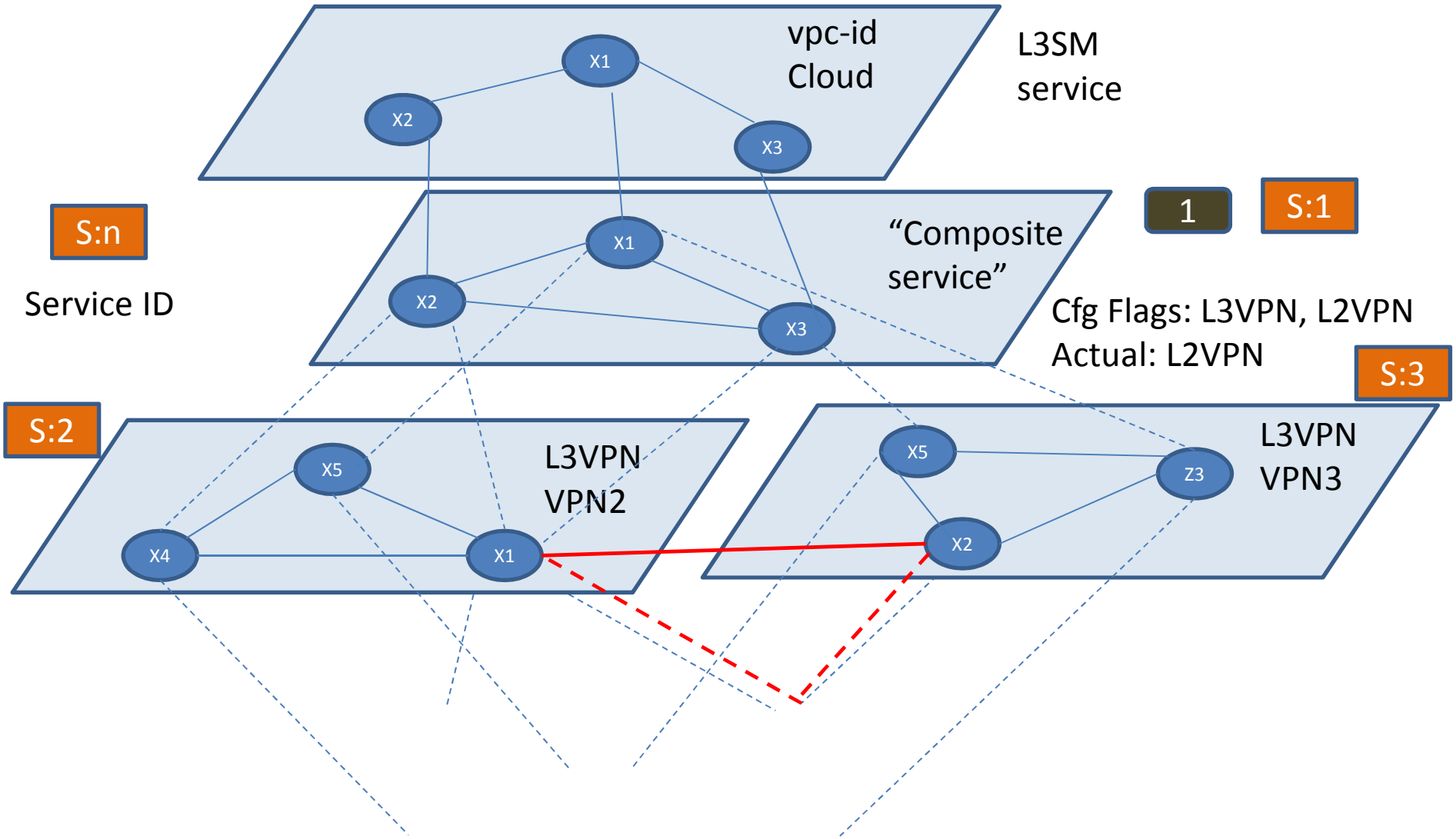
# Different Service Topologies



# Different Service Topologies

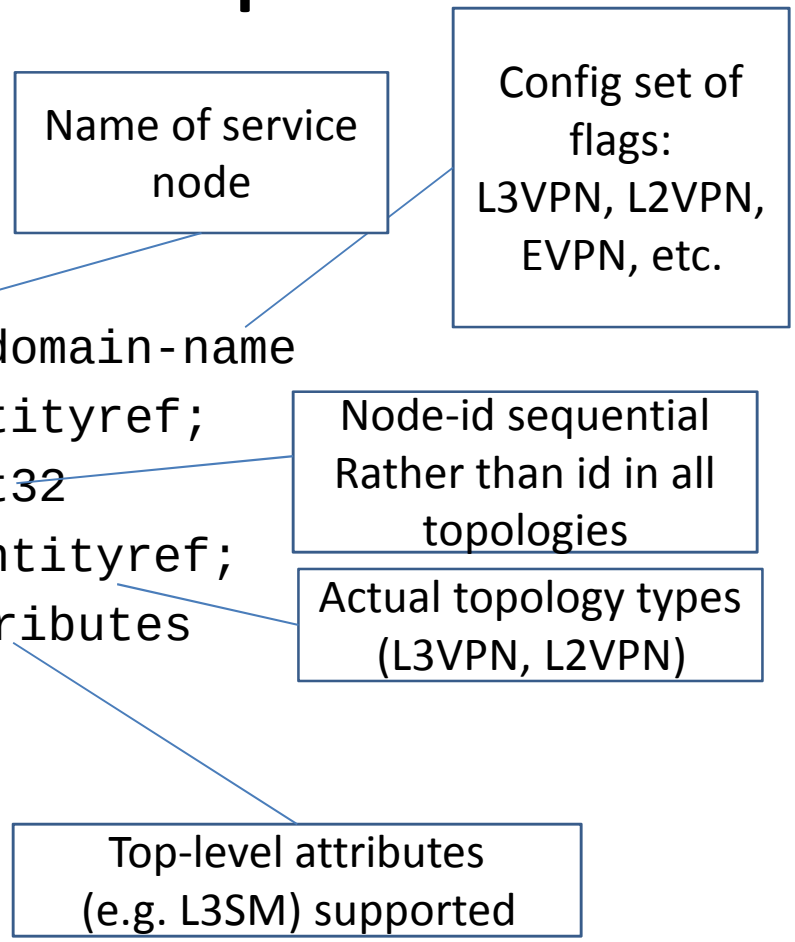


# Different Service Topologies



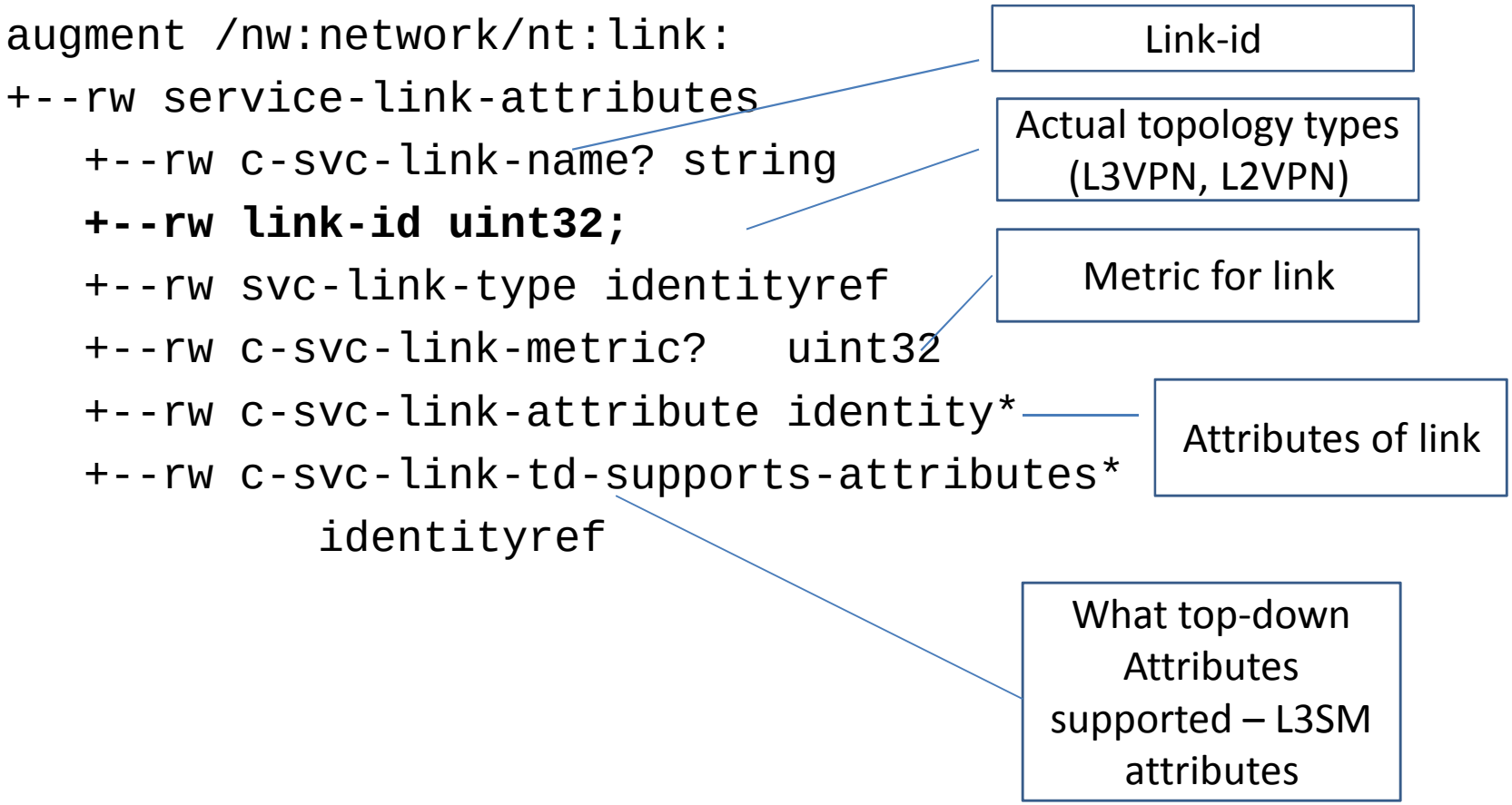
# Network Structure replicates

```
module: i2rs-service-topologies..
 augment /nw:network/nw:node
 +--rw node-service-attributes
    +--rw c-svc-node-name? inet:domain-name
    +--rw c-svc-node-flag*  identityref;
    +--rw c-service-node-id  uint32
    +--rw c-node-svc_status* identityref;
    +--rw c-node-supports-td-attributes
```



# Replicated in Link and Termination-Point attributes

```
augment /nw:network/nt:link:
+--rw service-link-attributes
   +--rw c-svc-link-name? string
   +--rw link-id uint32;
   +--rw svc-link-type identityref
   +--rw c-svc-link-metric?   uint32
   +--rw c-svc-link-attribute identity*
   +--rw c-svc-link-td-supports-attributes*
            identityref
```



# Replicated in Link and Termination-Point attributes

```
/nw:network/nw:node/nt:termination-point:
  +--rw service-termination-point-attributes
     +--rw tp-svc-id
     +--rw (supporting-termination-point)[sv-tp-type]
        +--:(svc-tp-type-service)
        |  +--rw service-network-id  leafref
        |  +--rw service-node-id     leafref
        |  +--rw service-tp-id       leafref
        +--:(sv-tp-type-inet)           // IP
        |  +--rw ip-address   inet:ip-address
        +--:(svc-tp-type-unnum)        // Unnumbered
           +--rw unnumbered-id?   uint32
```

Should [sv-tp-type] be required and
IP and Unnumbered be optional?

# Comparison with L3SM

- Top level L3SM
  - VPN services
    - Cloud access, multicast, mpls, transport
  - Sites
    - Templates, start/stop service, location, site diversity, management, VPN policy, maximum routes, security, service (In/Out BW, QoS), routing protocols site access
  - Site templates
- I2RS Service Topology
  - Bottom up
  - Created from yang topologies L2VPN, L3VPN

# Discussion Questions

- Any technical Problems preventing adoption?
  - Where does Service-Function chaining fit in this model?
  - Where Source-Based network topologies Networks fit?
  - Where do NV03 network topologies fit?
- Is this a good starting point?