

I2RS Service Topology

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 service-topo-id nw:network-id
      +--rw service-id-number uint32;
      +--rw node-count uint32
      +--rw composite-flag_status identity-ref
```

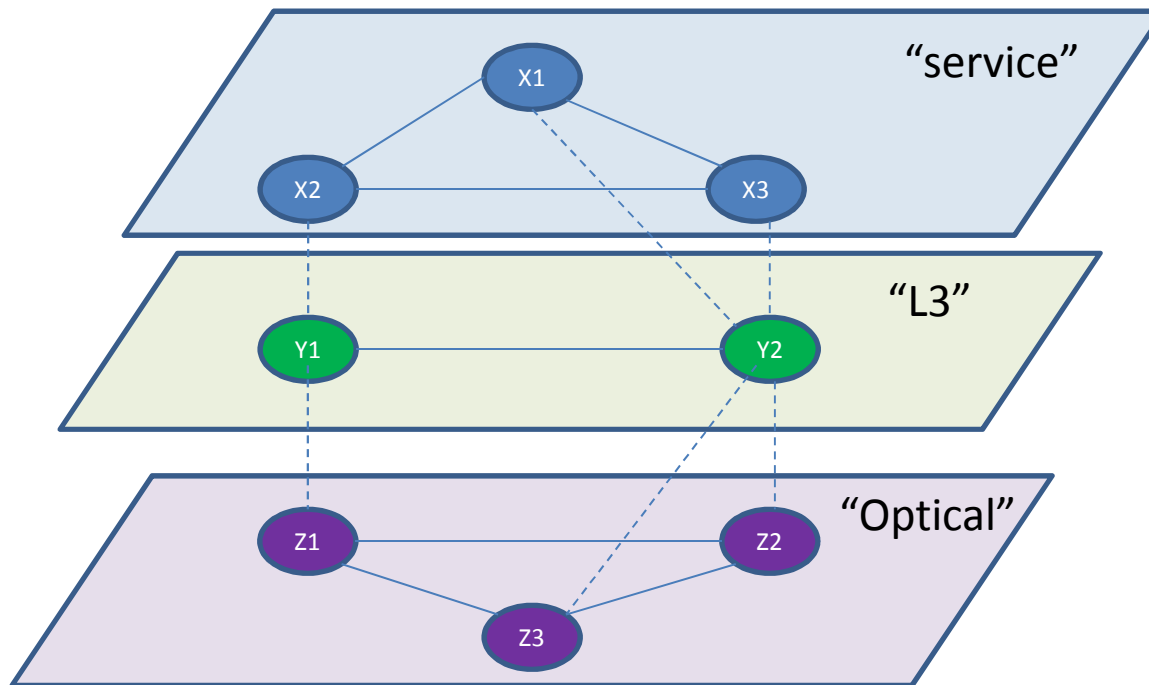
Config set of flags:
L3VPN, L2VPN, EVPN,
Seamless MPLS, Etree

Network topology ID
(generic topologies)

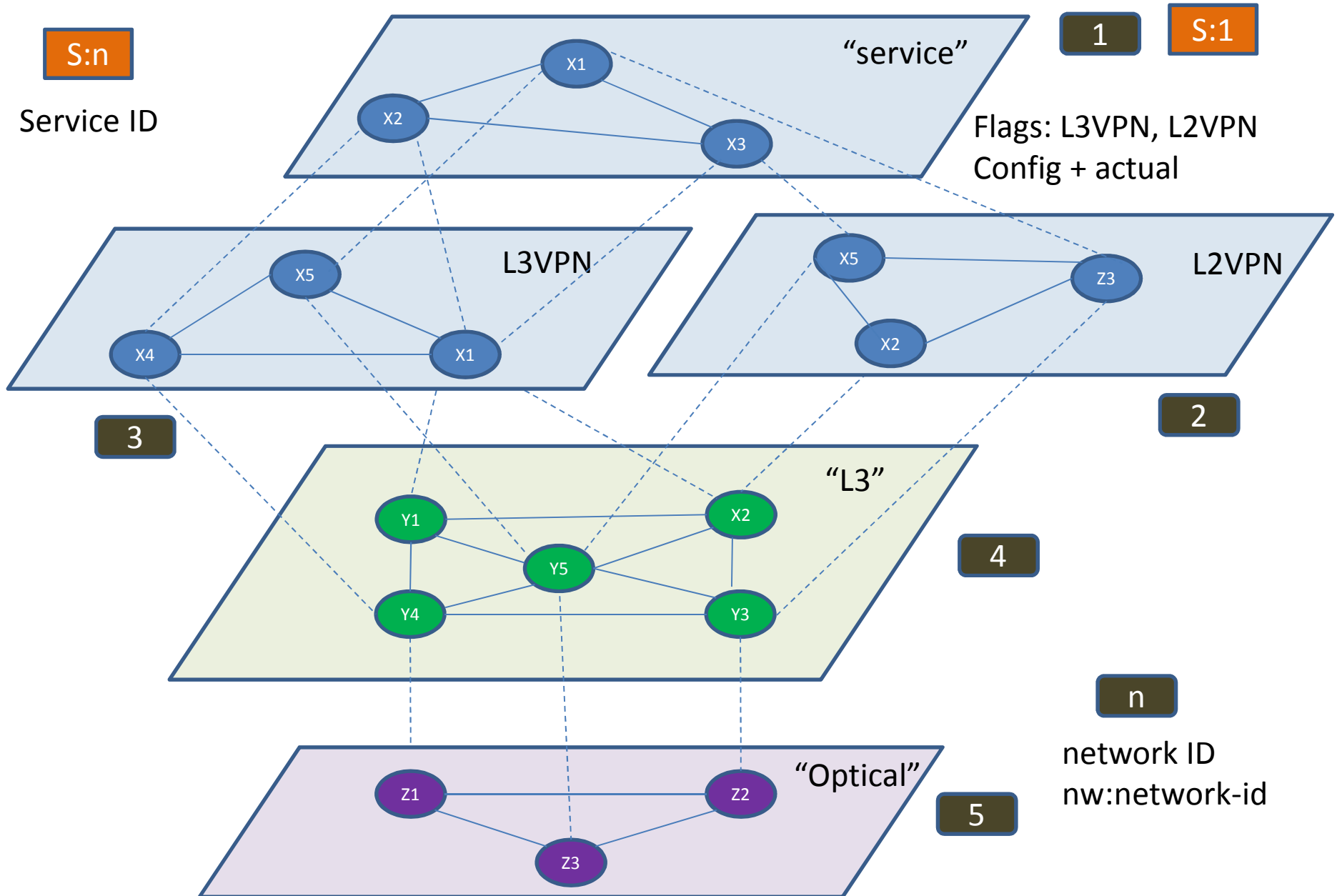
ID for topology

Actual set of flags
L3VPN with L2vpn

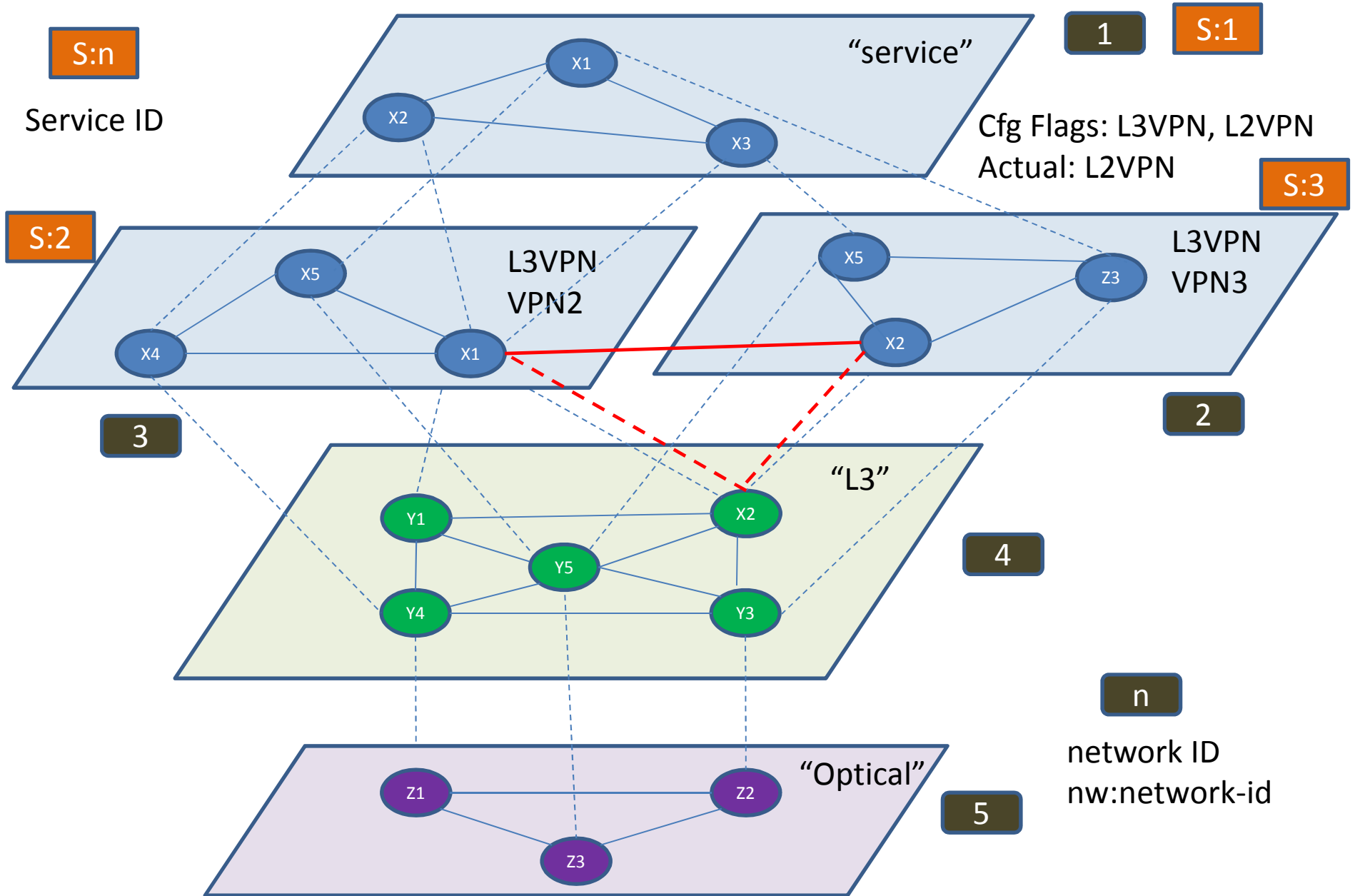
I2RS Generic Model



Different Service Topologies



Different Service Topologies



Network Structure replicates

```
module: i2rs-service-topologies....  
augment /nw:network/nw:node  
+--rw node-service-attributes  
  +--rw name? inet:domain-name  
  +--rw composite_flag* identityref;  
  +--rw service-node-id uint32  
  +--r0(?) node-svc_status* identityref;
```

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

Node-id

Actual topology types
(L3VPN, L2VPN)

Replicated in Link and Termination-Point attributes

```
augment /nw:network/nt:link:  
+--rw service-link-attributes  
  +--rw name? string  
  +--rw link-id uint32;  
  +--rw svc-link-type identityref  
  +--rw metric? uint32 augment
```

Link-id

Actual topology types
(L3VPN, L2VPN)

Metric for link

```
/nw:network/nw:node/nt:termination-point:
```

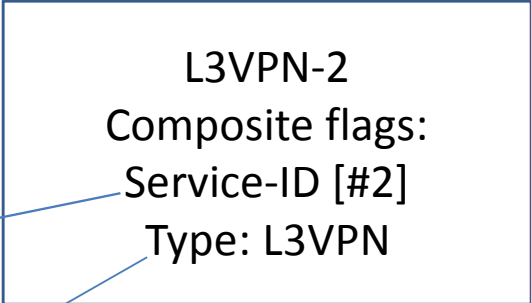
```
+--rw service-termination-point-attributes  
  +--rw tp-svc-id  
  +--rw (supporting-termination-point)[sv-tp-type]  
    +--:(svc-tp-type-service) //service  
      | +--rw service-network-id leafref  
      | +--rw service-node-id leafref  
      | +--rw service-tp-id leafref  
    +--:(sv-tp-type-inet)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

TP-id

Types of TP
+ identifiers

Nodes in Network

```
augment "/nw:networks/nw:network/nw:node" {
  leaf name {
    type inet:domain-name;
    description "service name.";
  }
  list composite_flag {
    key "service-node-id";
    leaf service-node-id{
      type uint32;
      description "service node id.";
    }
    leaf node-svc-type{
      type string;
      description "node service type.";
    }
    leaf-list next-hop{
      type uint32;
      description "next hop id.";
    }
    description
      "the list of composite flag.";
  }
  description "augments node list";
}
```



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

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?