Yang Data Model for
TE Topologies
draft-ietf-teas-yang-te-topo-13

Github: https://github.com/ietf-mpls-yang/te/blob/master/ietf-te-topology.yang

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Status

- Went through Working Group Last Call.

- Addressed the received review comments.
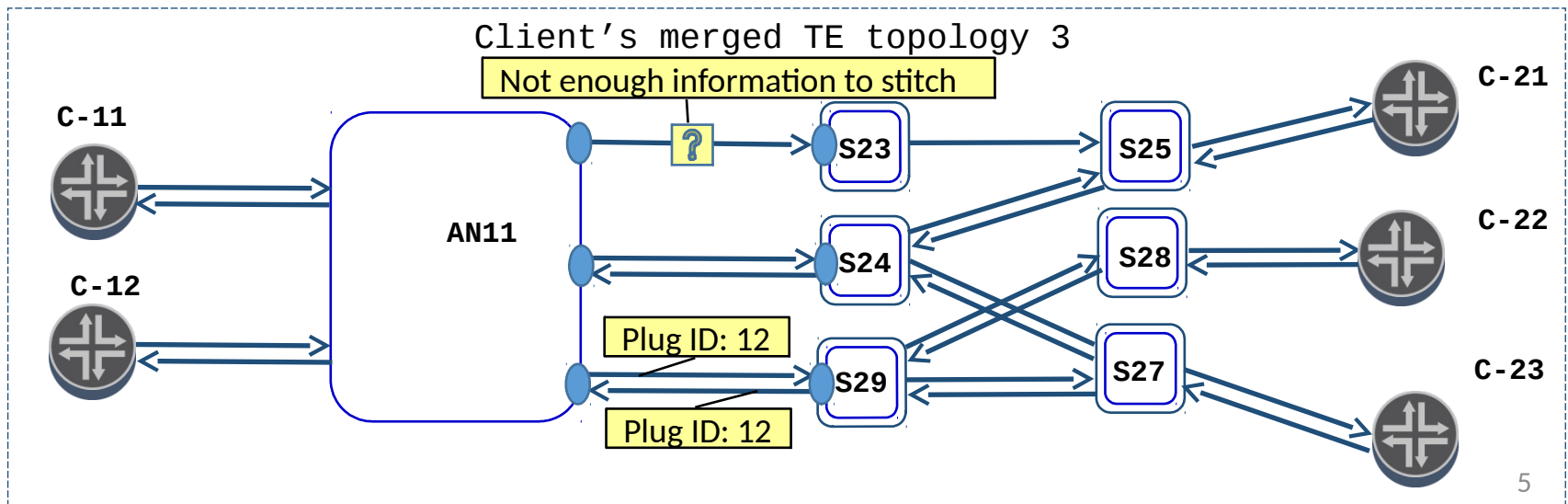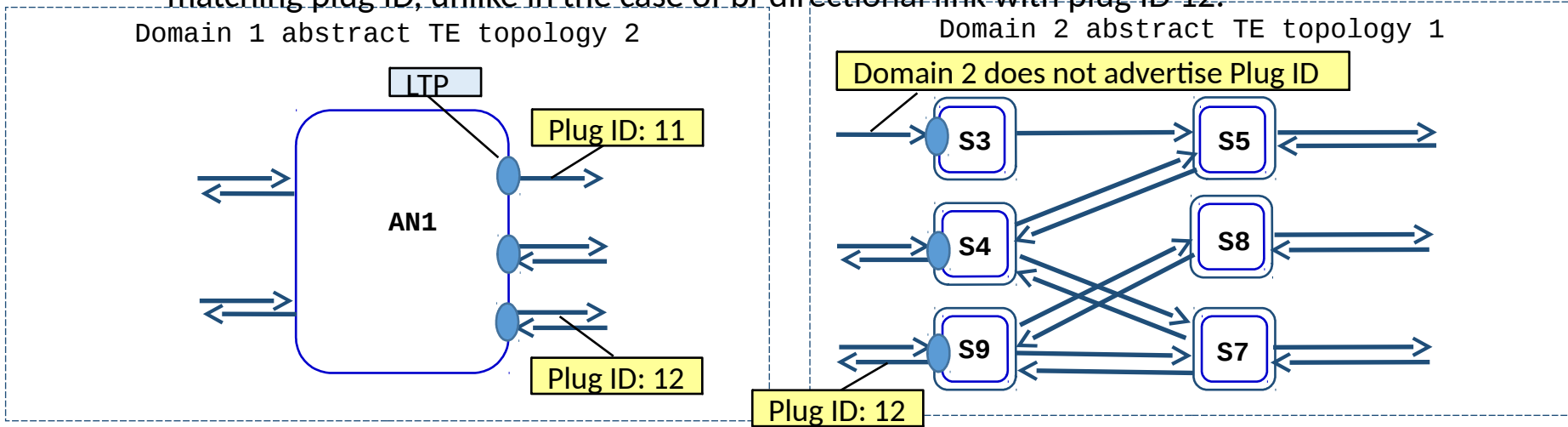
Summary of Changes

- Draft text clarifications.
  - Terminology clarifications.
  - Added references
  - Introduced a new section on augmentation guidance
- Model fixes
  - Inter-domain plug-id
  - Common augmentation attributes

Draft Text Clarifications

- Terminology clarifications
  - Added references to well-known concepts, like multi-layer, ODUk, OCh, etc.

- Incorporated RFC2119 citation in Sec 1.1. Terminology.

- Aligned with the lasted referenced documents, such as RFC7950, draft-ietf-netmod-yang-tree-diagrams, and draft-ietf-netconf-yang-push.

- Moved the complete tree diagram to an appendix
  - Portions of the simplified trees are still used throughout the document.

- Introduced a new section on augmentation guidance
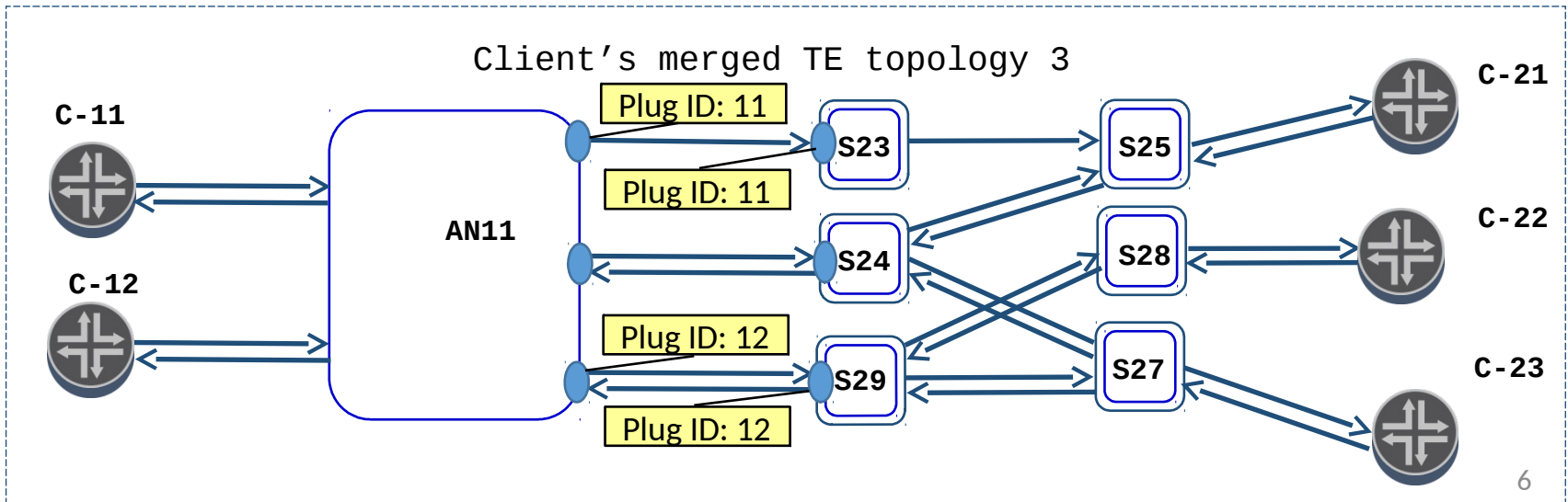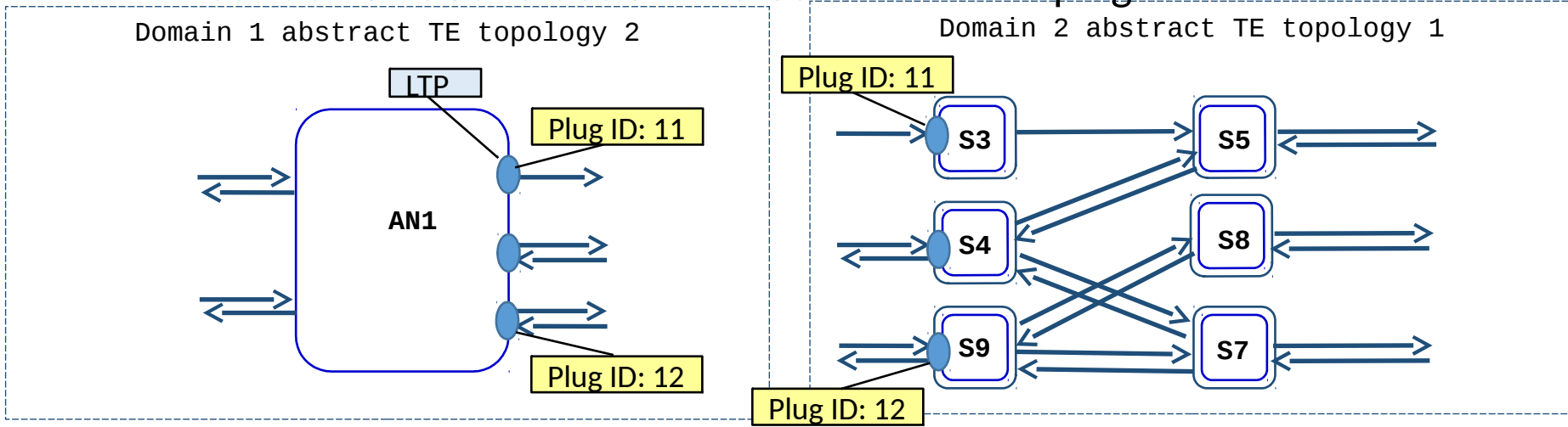 - Reviewed by augmentation model writers.

Topology Abstractions for Inter-domain Topology

- CCAMP Transport NBI Design Team raised an issue for inter-domain link
  - Domain 1 advertises the TE link that contains the plug ID 11, but Domain 2 does not have a link to advertise in the opposite direction and hence has no good way to advertise the matching plug ID, unlike in the case of bi-directional link with plug ID 12.

Domain 1 abstract TE topology 2

Domain 2 abstract TE topology 1

LTP

Plug ID: 11

AN1

Plug ID: 12

Domain 2 does not advertise Plug ID

S3   S5

S4   S8

S9   S7

Plug ID: 12

Client's merged TE topology 3

Not enough information to stitch

C-11

C-12

AN11

?   S23   S25   C-21

S24   S28   C-22

Plug ID: 12

S29   S27   C-23

Plug ID: 12

Topology Abstractions for Inter-domain Topology

- Moved Plug ID from TE Link to LTP (Link Termination Point)

    - Both domains advertise a LTP that contains the plug ID

Domain 1 abstract TE topology 2

LTP

Plug ID: 11

AN1

Plug ID: 12

Domain 2 abstract TE topology 1

Plug ID: 11

S3   S5

S4   S8

S9   S7

Plug ID: 12

Client's merged TE topology 3

C-11

C-12

AN11

Plug ID: 11

Plug ID: 11

S23   S25

Plug ID: 12

S24   S28

Plug ID: 12

S29   S27

C-21

C-22

C-23

Topology Abstractions for Inter-domain Topology

- 2nd issue for inter-domain Plug ID from CCAMP Transport NBI Design Team
  - Request the YANG type of the plug ID to be variable length, because
    - Multiple auto-discovery mechanisms can be used.
    - A variable length type is needed to facilitate these mechanisms to easily have their own ranges.

Model Changes for Inter-domain Topology

- Adjusted the models as following to improve the support for inter-domain plug ID
  - Moved the plug ID from TE link to LTP
  - Changed the type of plug ID to variable length to fit the auto-discovery mechanisms

```
augment /nw:networks/nw:network/nt:link:
  +--rw te!
     +--rw te-link-attributes
     |  +--rw access-type?                te-types:te-link-access-type
     |  +--rw external-domain
     |  |  +--rw network-ref?         leafref
     |  |  +--rw remote-te-node-id?   te-types:te-node-id
     |  |  +--rw remote-te-link-tp-id? te-types:te-tp-id
     |  |  +--rw plug-id?             uint32
     |  +--rw is-abstract?            empty

augment /nw:networks/nw:network/nw:node/nt:termination-point:
  +--rw te-tp-id?   te-types:te-tp-id
  +--rw te!
     +--rw admin-status?              te-types:te-admin-status
     +--rw inter-domain-plug-id?      binary
     +--rw inter-layer-lock-id*       uint32
     +--ro oper-status?               te-types:te-oper-status
```

Common Augmentation Attributes

- Synchronized with model writers who are augmenting this model
  - Putting common attributes to the base model
    - Added two name attributes in this model.
    - Recommended removal of these from augmentations.

```
augment /nw:networks/nw:network:
   +--rw provider-id?      te-types:te-global-id
   +--rw client-id?        te-types:te-global-id
   +--rw te-topology-id?   te-types:te-topology-id
   +--rw te!
      +--rw name?                     string
      +--rw preference?               uint8
      +--rw optimization-criterion?   identityref

augment /nw:networks/nw:network/nw:node:
   +--rw te-node-id?   te-types:te-node-id
   +--rw te!
   |  +--rw domain-id?               uint32
   |  +--rw is-abstract?             Empty
   |  +--rw name?                    inet:domain-name
   |  +--rw name?                    String
   |  +--rw signaling-address*       inet:ip-address
```

Next Steps

- Address any comments once received.
- Proceed for publication.