

A Yang Data Model for WSON Optical Networks

draft-ietf-ccamp-wson-yang-04.txt

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- Updated Link Attributes and added operational-state:

augment

```
/nd:networks/nd:network/lnk:link/tet:te/tet:config/tet:te-link-attributes:
```

+--rw channel-max?	int32
+--rw default-frequency?	decimal64
+--rw channel-spacing?	decimal64
+--rw wavelength-available-bitmap*	binary

augment

```
/nd:networks/nd:network/lnk:link/tet:te/tet:state/tet:te-link-attributes:
```

+--ro channel-max?	int32
+--ro default-frequency?	decimal64
+--ro channel-spacing?	decimal64
+--ro wavelength-available-bitmap*	binary

Updates from the previous version

- Updated Node Attributes

augment /nd:networks/nd:network/nd:node/tet:te/tet:config/tet:te-node-attributes:

```
+--rw wson-node
|  +--rw device-type?   devicetype
|  +--rw dir?           directionality
|  +--rw interfaces* [name]
|      +--rw name       string
|      +--rw port-number? uint32
|      +--rw input-port? boolean
|      +--rw output-port? boolean
|      +--rw description? string
+--rw resource-pool* [resource-pool-id]
    +--rw resource-pool-id   uint32
    +--rw pool-state?       boolean
    +--rw matrix-interface* [in-port-id]
        +--rw in-port-id    wson-interface-ref
        +--rw out-port-id?  wson-interface-ref
```

Updates from the previous version

- Added Operational-State for the Node Attributes

augment /nd:networks/nd:network/nd:node/tet:te/tet:state/tet:te-node-attributes:

```
+--ro wson-node
|  +--ro device-type?   devicetype
|  +--ro dir?           directionality
|  +--ro interfaces* [name]
|      +--ro name        string
|      +--ro port-number? uint32
|      +--ro input-port?  boolean
|      +--ro output-port? boolean
|      +--ro description? string
+--ro resource-pool* [resource-pool-id]
    +--ro resource-pool-id   uint32
    +--ro pool-state?        boolean
    +--ro matrix-interface* [in-port-id]
        +--ro in-port-id     wson-interface-ref
        +--ro out-port-id?   wson-interface-ref
```

Current Status & Next Steps

- Need to align with the latest updates from [TE-Topo] draft if any.

YANG data model for Flexi-Grid Optical Networks

draft-vergara-ccamp-flexigrid-yang-04

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Motivation

- Existing YANG models are either technology-agnostic or technology-specific
 - draft-ietf-i2rs-yang-network-topo and draft-ietf-teas-yang-te-topo are generic: they have to be extended for each specific technology
 - draft-ietf-ccamp-wson-yang is specific for WSON technology, extending draft-ietf-teas-yang-te-topo
- We propose a YANG model related to a Flexi-Grid Traffic Engineering Database
 - Based on the ideas presented at RFC 7698: “Framework and Requirements for GMPLS-Based Control of Flexi-Grid Dense Wavelength Division Multiplexing (DWDM) Networks”
 - It also extends from existing generic YANG models

Main changes from prior version

- Still two sub-models
 - Flexi-grid-TED
 - Now flexi-grid-transponder and flexi-grid-sliceable-transponder extend TE Tunnel Termination Point (TTP) from draft-ietf-yang-te-topo.
 - Media-channel
 - Now reference types are taken from draft-ietf-yang-te-topo.
 - It keeps almost the same as previous versions, as it takes the information from the Flexi-grid-TED, which is the one that mostly changes.
 - Both models are now implemented in YANG 1.1.
 - The model changes have been validated with different tools: pyang, confdc and yanglint.

Future work

- Two goals:
 - Augment the media-channel from the TE-tunnel model.
 - Evaluate using application-code instead of explicit list of modulations.
 - Define a single operational-mode attribute for the optical channel in transponders instead of a complete list of attributes. This is similar to the OpenConfig approach.
 - Split current draft in two: one for the TED and another one for the media-channel.
 - Ask for WG adoption on the TED part.

Comments?
Thanks!