A Yang Data Model for WSON Optical Networks

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

Y. Lee, D. Dhody, X. Zhang, A. Guo (Huawei)
V. Lopez (Telefonica)
D. King (U. of Lancaster)
B. Yoon (ETRI)
R. Vilalta (CTTC)
• Updated Link Attributes and added operational-state:

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

augment
  +-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


```text
  +--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


  +--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

Jorge E. López de Vergara (jorge.lopez_vergara@uam.es)
Daniel Perdices (daniel.perdices@estudiante.uam.es)
Víctor López (victor.lopezalvarez@telefonica.com)
Óscar González de Dios (oscar.gonzalezdedios@telefonica.com)
Daniel King (d.king@lancaster.ac.uk)
Young Lee (leeyoung@huawei.com)
Gabriele Galimberti (ggalimbe@cisco.com)
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!