A Yang Data Model for WSON Optical Networks

draft-lee-ccamp-wson-yang-01

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Overview

- This document provides a YANG data model for the routing and wavelength assignment (RWA) process in wavelength switched optical networks (WSONs).
- WSON technology-specific Yang model based on:
  - the information model developed in [RFC7446] and
  - the two encoding drafts [WSON-Encode] and [Gen-Encode]
- Both impairment-aware WSON and flex-grid are not included here.

Main Scope of this draft

- Connectivity Matrix Model
- Resource Pool Model
- Port Wavelength Restriction (to be supplied)
- Wavelength Availability on Links (to be supplied)

WSON-Topology Module

```
module: wson-topology
    +--rw wson-topology
      +--rw wson-topology* [wson-topology-id]
        +--rw wson-topology-id    wson-topology-id
        +--rw name?               string
        +--rw wson-node* [wson-node-id]
          +--rw wson-node-id                wson-node-id
          +--rw wson-interface* [wson-interface-id]
          |  +--rw wson-interface-id    linkset-format
          +--rw wavelength-available-bitmap*   boolean
          +--rw connectivity-matrix* [matrix-id]
          |  +--rw matrix-id          uint8
          |  +--rw device-type?       devicetype
          |  +--rw dir?               directionality
          |  +--rw format             linkset-format
          |  +--rw matrix-interface* [in-port-id]
          |     +--rw in-port-id     wson-interface-ref
          |     +--rw out-port-id    wson-interface-ref
          +--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
```

Next Step

- Sort it out dependencies on the flex-grid and L1 topology drafts
- Possibly augment other modules (e.g., abstract topology model) when they are available.
- Impairment-WSON can be developed based on this module.
- To be adopted by CCAMP WG.