

A YANG model to manage the optical parameters for in a WDM network

draft-galimbe-ccamp-iv-yang-00

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Motivation

- At the current state of the art the optical circuits in a DWDM network are calculated and checked by Distributed Control planes (GMLS) or centralized Control Planes (SDN) applying proprietary optical algorithms.
- SDN controllers are now requested by most of Operators supporting strong requirements like:
 - Multilayer capabilities
 - Multivendor capabilities
- In case of multivendor capability a controller needs to know what are the underlying network parameters and how to check the optical feasibility.
- A common agreed optical parameter Yang Model set is then needed

Document Scope

- This memo defines a Yang model that translate the information model to support Impairment-Aware (IA) Routing and Wavelength Assignment (RWA) functionality.
- The information model is defined in draft-ietf-ccamp-wson-iv-info and draft-martinelli-ccamp-wson-iv-encode.
- This document defines proper encoding and extend to the models defined in draft-lee-ccamp-wson-yang to support Impairment-Aware (IA) Routing and Wavelength Assignment (RWA) functions
- The Yang model defined in this memo can be used for Optical Parameters monitoring and/or configuration of the multivendor Endpoints and ROADMs

Main models summary

```
augment /if:interfaces/if:interface:
  +--rw optical-transport
  |   +--rw attenuator-value?      attenuator-t
  |   +--rw offset?                decimal64
  |   +--rw channel-power-ref?    decimal64
  |   +--rw tilt-calibration?     tilt-t
  +--rw channel-t
  |   +--rw grid?                  uint32
  |   +--rw channel-spacing?      uint32
  |   +--rw identifier?           uint32
  |   +--rw n?                    int32
  +--rw channel-n-m
  |   +--rw grid?                  uint32
  |   +--rw channel-spacing?      uint32
  |   +--rw n?                    int32
  |   +--rw m?                    Uint32
```

But this is a partial tree associated to the interface.

Need to identify where the other optical models will be tied.

```
grouping noise {
  leaf noise {
    type decimal64 {
      fraction-digits 2;
    }
    units "dB";
    description "Noise feasibility - reference ITU-T G.680
      OSNR added to the signal by the OMS. The noise in intended
      per channel and is independent of the number of active
      channels in OMS";
  }
  description "Noise feasibility";
}
grouping noise-sigma {
  leaf noise-sigma {
    type decimal64 {
      fraction-digits 2;
    }
    units "dB";
    description "Noise Sigma feasibility - accuracy of the
      OSNR added to
      the signal by the OMS";
  }
  description "Noise Sigma feasibility";
}
```

Work in progress

- Identify the right schema / tree for the optical parameters.
- Sanitize and agree the most general optical parameters
- Identify how to handle / model proprietary parameters
- Get the feedbacks / consensus / collaboration from ccampers
- Collaborate to complement / merge / extend existing drafts