

A YANG model to manage the optical interface parameters for an external transponder in a WDM network

[draft-dharini-ccamp-dwdm-if-param-yang-01](#)

<https://tools.ietf.org/html/draft-galimbe-ccamp-iv-yang-02>

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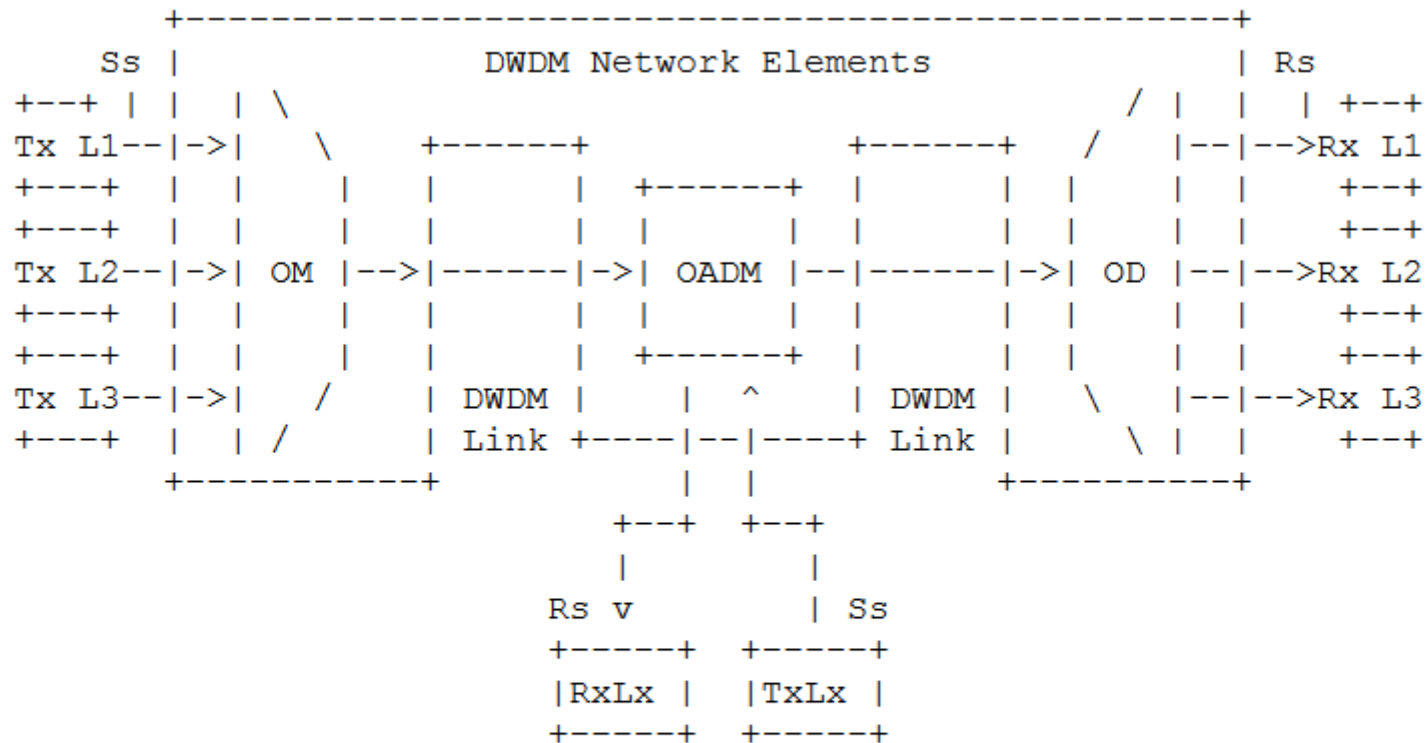
Juniper Networks

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Document History

- IETF 90: First Draft presented to netmod WG
- IETF 91: Align yang model with SNMP draft
- IETF 92: incorporate Yang doctor's suggestions
- IETF 93: Alignment with discussions at IETF 92
- IETF 94: replaced draft-dharini-netmod-g-698-2-yang-04 by
draft-dharini-netmod-g-698-2-yang for a more generic approach
- IETF 95: switched to draft-dharini-netmod-dwdm-if-yang, reducing
dependency from progress in non-IETF standard bodies
- IETF 96: deciding to go for experimental, given the lack of standards
- IETF 96: presented draft-galimbe-ccamp-iv-yang, for Optical Parameters
- IETF 97: Experimental draft in conjunction with a problem statement
- IETF 98: Introducing mode parameters

External Transponder Model



Ss = reference point at the DWDM network element tributary output
 Rs = reference point at the DWDM network element tributary input
 Lx = Lambda x
 OM = Optical Mux
 OD = Optical Demux
 OADM = Optical Add Drop Mux

Motivation & Problem statement

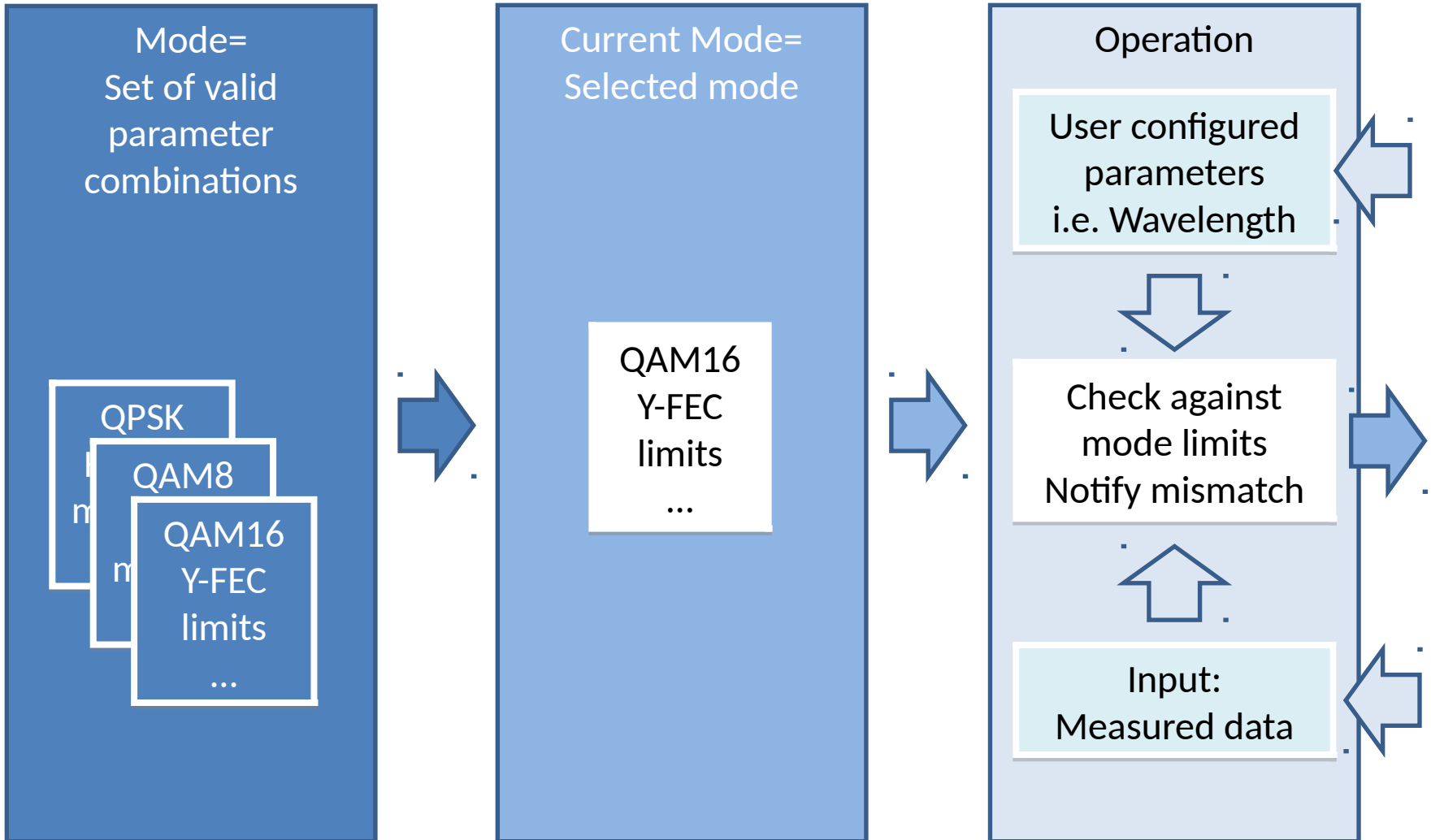
Problem:

- Coherent transceivers not covered by standards today → draft status is experimental
- Supporting several combinations of parameters with interdependency between each other
- Current YANG models do not support the planning aspect allowing to select the best parameter combination
- Yang models definition according to existing draft like: draft-ietf-ccamp-wson-iv-info, draft-martinelli-ccamp-wson-iv-encode and RFC6566

Motivation:

- Provide a consistent way to plan and operate wavelength Interfaces with netconf/yang
- More about the problem and motivation can be found in: [draft-many-coherent-dwdm-if-control-01](#)

Introduction into operation modes



```

+--ro if-supported-mode
  +--ro number-of-modes-supported?  uint32
  +--ro mode-list* [mode-id]
    +--ro mode-id                  string
    +--ro min-central-frequency?   uint32
    +--ro max-central-frequency?   uint32
    +--ro min-input-power?         dbm-t
    +--ro max-input-power?         dbm-t
    +--ro min-output-power?        dbm-t
    +--ro max-output-power?        dbm-t
    +--ro osnr-margin?             int32

```

Mode=
Set of valid
parameter combinations

```

module: ietf-ext-xponder-wdm-if
augment /if:interfaces/if:interface:
  +--rw optIfOChRsSs
    +--rw if-current-mode
      +--ro mode-id?               string
      +--ro min-central-frequency? uint32
      +--ro max-central-frequency? uint32
      +--ro min-input-power?       dbm-t
      +--ro max-input-power?       dbm-t
      +--ro min-output-power?      dbm-t
      +--ro max-output-power?      dbm-t

```

Current Mode=
Selected mode

```

+--rw current-opt-if-och-mode-params
  +--rw mode-id?          string
  +--ro osnr-margin?     int32
  +--ro q-margin?        int32
  +--rw central-frequency? uint32
  +--rw output-power?    int32
  +--ro input-power?     int32

```

```

}
typedef opt-if-och-tca-types {
  type enumeration {
    enum min-tx-power-tca {
      description " The min tx power tca";
    }
    enum max-tx-power-tca {
      description " The min tx power tca";
    }
  }
}

```



Operation

Status

- Yang Module draft-dharini-ccamp-dwdm-if-param-yang-01.txt defined as an extension to ietf interfaces.
- Yang module <https://tools.ietf.org/html/draft-galimbe-ccamp-iv-yang-02> removed some parameters already present in the if-param-yang draft, cosmetic and typo modification
- Dropped intention to align with G.698.1. Details see [draft-many-coherent-dwdm-if-control-01](#)
- Changes since IETF97
 - Introduced the notion of potential and actual mode supported by transceivers
 - Introduced boundary conditions for proper functioning of the module
 - Adding threshold crossing notifications
 - Fixed typos

Next Steps

- Keep alignment with related effort in CCAMP
- Keep focus on operational aspects