

# A YANG Data Model for Layer 0 Types

draft-ietf-ccamp-rfc9093-bis-00

## Co-authors (frontpage):

- Dieter Beller (Nokia)
- Sergio Belotti (Nokia)
- V. Lopez (Nokia)
- Haomian Zheng (Huawei)
- Italo Busi (Huawei)
- Esther Le Rouzic (Orange)
- Y.Lee (Samsung)
- A. Guo (Futurewei)

## Contributors

- Gabriele Galimberti (Cisco)
- D. Dhody (Huawei)
- B.Y. Yoon (ETRI)
- R. Vilalta (CTTC)
- Enrico Griseri (Nokia)

# Status of the new document

- This document obsoletes RFC9093, encompassing the content of RFC9093 with the content of [draft-ietf-ccamp-layer0-types-ext-01](#)
- Github <https://github.com/ietf-ccamp-wg/ietf-ccamp-layer0-types-ext>
- Addressing the comments received at IETF 112 (see [minute](#))
- Last PR#36 to restructure the document draft-ietf-ccamp-layer0-types-ext to become RFC9093-bis
- Added L0 technology-specific constraints Issue [#35](#)
  - added gsnr-margin : from gsnr-margin and OSNR-min from transceiver spec it is possible to estimate a receiving OSNR
  - Added estimated-gsnr as as output of path computation to report the computed gsnr of the path

# Added L0 technology specific constraints

```
grouping l0-path-constraints {
  description
    "Common attribute for Layer 0 path constraints
to be used by
  Layer 0 computation.";
  leaf gsnr-margin {
    type snr {
      range 0..max;
    }
    default 0;
    description
      "An additional margin to be added to the OSNR-
min of the transceiver when checking the estimated
received Generalized SNR (GSNR).";
  }
}
```

```
grouping l0-path-properties {
  description
    "Common attribute for reporting the Layer 0 computed
path
  properties.";
  leaf estimated-gsnr {
    type snr;
    config false;
    description
      "The estimate received GSNR for the computed path.";
  }
}
```

# Added more line-coding identities

- Added more line-coding identities issue #[32](https://github.com/ietf-ccamp-wg/draft-ietf-ccamp-optical-impairment-topology-yang/issues/100) linked to <https://github.com/ietf-ccamp-wg/draft-ietf-ccamp-optical-impairment-topology-yang/issues/100>
  - Added new leaf “bitrate” in grouping common-explicit-mode to indicate the “gross bitrate e.g. 100G ,200G,300G etc. of optical tributary signal
  - Still exploiting to “line-coding-bitrate” leaf, standard reference, when more that line rate (e.g. modulation) format is required

```
grouping common-explicit-mode {
  description "Attributes capabilities related to
  explicit mode of an optical transceiver";
  leaf line-coding-bitrate {
    type identityref {
      base line-coding;
    }
    config false;
    description
      "Bit rate/line coding of the optical tributary signal.";
    reference
      "ITU-T G.698.2 section 7.1.2";
  }
  leaf bitrate {
    type uint16;
    units "Gbit/sec";
    config false;
    description
      "The gross bitrate (e.g., 100, 200) of the optical tributary
      signal."; }
}
```

# Support resolution of issue#[99](#) of optical impairments

- Added the following typedef:
  - snr-or-null
  - decimal-2-digits
  - decimal-2-digits-or-null
  - power-in-db
  - power-in-db-or-null
  - power-in-dbm
  - power-in-dbm-or-null
- Updated types with union with type empty when applicable

# Next Steps

- Reconcile in the introduction the introduction coming from RFC9093 with the one from layer0-types-ext
- Complete the Appendix A with the changes from RFC 9093
- Fixing the remaining issues

# backup

