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A Yang Data Model for WSON Tunnel

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Abstract

This document provides a YANG data model for WSON TE tunnel.

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1. Introduction

This document provides a YANG data model for WSON tunnel model. The YANG model described in this document is a WSON technology-specific Yang Tunnel model based on the information model developed in [RFC7446] and the two encoding documents [RFC7581] and [RFC7579] that developed protocol independent encodings based on [RFC7446].

This document augments the generic TE tunnel model [TE-Tunnel].

1.1. Terminology

Refer to [RFC7446] and [RFC7581] for the key terms used in this document.

The following terms are defined in [RFC7950] and are not redefined here:

o client

o server

o augment

o data model

o data node

The following terms are defined in [RFC6241] and are not redefined here:

o configuration data

o state data

The terminology for describing YANG data models is found in [RFC7950].

1.2. Tree diagram

A simplified graphical representation of the data model is used in chapter 2 of this this document. The meaning of the symbols in these diagrams is defined in [RFC8340].

1.3. Prefixes in Data Node Names

In this document, names of data nodes and other data model objects are prefixed using the standard prefix associated with the corresponding YANG imported modules, as shown in Table 1.

Prefix	YANG module	Reference
layer0-types	ietf-layer0-types	[WSON-TOPO]
wson-tunnel	ietf-wson-tunnel	[RFCXXXX]
tepc	ietf-te-path-computation	[TE-PC]
te	ietf-te	[TE-Tunnel]

| otn-types | ietf-otn-types | [OTN-TOPO] |

Table 1: Prefixes and corresponding YANG modules

Note: The RFC Editor will replace XXXX with the number assigned to the RFC once this draft becomes an RFC.

2. YANG Model (Tree Structure)

```
module: ietf-wson-tunnel
  augment /te:te/te:tunnels/te:tunnel:
    +-rw src-client-signal?   identityref
    +-rw dst-client-signal?   identityref
    +-rw fec-type?            identityref
    +-rw termination-type?    identityref
    +-rw bit-stuffing?        boolean
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:te-bandwidth/te:technology:
    +-:(wson)
       +-rw bandwidth-type?   identityref
  augment /te:te/te:tunnels/te:tunnel/te:te-bandwidth/te:technology:
    +-:(wson)
       +-rw bandwidth-type?   identityref
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:te-bandwidth/te:technology:
    +-:(wson)
       +-rw bandwidth-type?   identityref
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:te-bandwidth/te:technology:
    +-:(wson)
       +-rw bandwidth-type?   identityref
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:te-bandwidth/te:technology:
    +-:(wson)
       +-rw bandwidth-type?   identityref
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:explicit-route-objects-always/te:route-object-exclude-
always/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
```

```
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:explicit-route-objects-always/te:route-object-include-
exclude/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:path-in-segment/te:label-restrictions/te:label-restriction:
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:path-in-segment/te:label-restrictions/te:label-
restriction/te:label-start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:path-in-segment/te:label-restrictions/te:label-
restriction/te:label-end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:path-out-segment/te:label-restrictions/te:label-restriction:
```

```
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:path-out-segment/te:label-restrictions/te:label-
restriction/te:label-start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:globals/te:named-path-constraints/te:named-path-
constraint/te:path-out-segment/te:label-restrictions/te:label-
restriction/te:label-end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:optimizations/te:algorithm/te:metric/te:optimization-
metric/te:explicit-route-exclude-objects/te:route-object-exclude-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:optimizations/te:algorithm/te:metric/te:optimization-
metric/te:explicit-route-include-objects/te:route-object-include-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
```

```
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:explicit-route-objects-always/te:route-object-exclude-
always/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:explicit-route-objects-always/te:route-object-include-
exclude/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:path-in-segment/te:label-restrictions/te:label-restriction:
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:path-in-segment/te:label-restrictions/te:label-restriction/te:label-
start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:path-in-segment/te:label-restrictions/te:label-restriction/te:label-
end/te:te-label/te:technology:
```

```
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:path-out-segment/te:label-restrictions/te:label-restriction:
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:path-out-segment/te:label-restrictions/te:label-restriction/te:label-
start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:path-out-segment/te:label-restrictions/te:label-restriction/te:label-
end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:computed-paths-properties/te:computed-path-properties/te:path-
properties/te:path-route-objects/te:path-computed-route-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:lsps/te:lsp/te:lsp-record-route-information/te:lsp-record-route-
information/te:type/te:label/te:label-hop/te:te-label/te:technology:
```

```
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:lsps/te:lsp/te:path-properties/te:path-route-objects/te:path-computed-
route-object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-
path/te:optimizations/te:algorithm/te:metric/te:optimization-
metric/te:explicit-route-exclude-objects/te:route-object-exclude-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-
path/te:optimizations/te:algorithm/te:metric/te:optimization-
metric/te:explicit-route-include-objects/te:route-object-include-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
```

```
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:explicit-route-objects-always/te:route-
object-exclude-always/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:explicit-route-objects-always/te:route-
object-include-exclude/te:type/te:label/te:label-hop/te:te-
label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:path-in-segment/te:label-
restrictions/te:label-restriction:
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:path-in-segment/te:label-
restrictions/te:label-restriction/te:label-start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
```

```
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:path-in-segment/te:label-
restrictions/te:label-restriction/te:label-end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:path-out-segment/te:label-
restrictions/te:label-restriction:
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:path-out-segment/te:label-
restrictions/te:label-restriction/te:label-start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:path-out-segment/te:label-
restrictions/te:label-restriction/te:label-end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:computed-paths-properties/te:computed-
path-properties/te:path-properties/te:path-route-objects/te:path-computed-
route-object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
```

```
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:lsps/te:lsp/te:lsp-record-route-
information/te:lsp-record-route-information/te:type/te:label/te:label-
hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-primary-paths/te:p2p-primary-
path/te:p2p-primary-reverse-path/te:lsps/te:lsp/te:path-properties/te:path-
route-objects/te:path-computed-route-object/te:type/te:label/te:label-
hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:optimizations/te:algorithm/te:metric/te:optimization-
metric/te:explicit-route-exclude-objects/te:route-object-exclude-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?              int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
```

```
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:optimizations/te:algorithm/te:metric/te:optimization-
metric/te:explicit-route-include-objects/te:route-object-include-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?             int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:explicit-route-objects-always/te:route-object-exclude-
always/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?             int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:explicit-route-objects-always/te:route-object-include-
exclude/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw (single-or-super-channel)?
          |     +-:(single)
          |     |  +-rw dwdm-n?             int16
          |     +-:(super)
          |        +-rw subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-rw cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:path-in-segment/te:label-restrictions/te:label-restriction:
    +-rw grid-type?   identityref
```

```
    +-rw priority?    uint8
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:path-in-segment/te:label-restrictions/te:label-restriction/te:label-
start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:path-in-segment/te:label-restrictions/te:label-restriction/te:label-
end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:path-out-segment/te:label-restrictions/te:label-restriction:
    +-rw grid-type?   identityref
    +-rw priority?    uint8
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:path-out-segment/te:label-restrictions/te:label-restriction/te:label-
start/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:path-out-segment/te:label-restrictions/te:label-restriction/te:label-
end/te:te-label/te:technology:
    +-:(wson)
       +-rw (grid-type)?
          +-:(dwdm)
          |  +-rw dwdm-n?   int16
          +-:(cwdm)
             +-rw cwdm-n?   int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:computed-paths-properties/te:computed-path-properties/te:path-
properties/te:path-route-objects/te:path-computed-route-
object/te:type/te:label/te:label-hop/te:te-label/te:technology:
```

```
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:lsps/te:lsp/te:lsp-record-route-information/te:lsp-record-route-
information/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:tunnels/te:tunnel/te:p2p-secondary-paths/te:p2p-secondary-
path/te:lsps/te:lsp/te:path-properties/te:path-route-objects/te:path-computed-
route-object/te:type/te:label/te:label-hop/te:te-label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:te/te:lsps-state/te:lsp/te:lsp-record-route-information/te:lsp-
record-route-information/te:type/te:label/te:label-hop/te:te-
label/te:technology:
    +-:(wson)
       +-ro (grid-type)?
          +-:(dwdm)
          |  +-ro (single-or-super-channel)?
          |     +-:(single)
          |     |  +-ro dwdm-n?              int16
```

```
          |     +-:(super)
          |        +-ro subcarrier-dwdm-n*   int16
          +-:(cwdm)
             +-ro cwdm-n?                    int16
  augment /te:tunnels-rpc/te:input/te:tunnel-info/tepc:path-request:
    +- src-client-signal?       identityref
    +- dst-client-signal?       identityref
    +- fec-type?                identityref
    +- termination-type?        identityref
    +- bit-stuffing?            boolean
    +- wavelength-assignment?   identityref
```

3. TE Tunnel Model for WSON

<CODE BEGINS> file "ietf-wson-tunnel@2019-03-06.yang"

```
module ietf-wson-tunnel {
  yang-version 1.1;

  namespace "urn:ietf:params:xml:ns:yang:ietf-wson-tunnel";
  prefix "wson-tunnel";

  import ietf-te { prefix "te"; }
  import ietf-layer0-types{ prefix "layer0-types"; }
  import ietf-te-path-computation { prefix "tepc"; }
  import ietf-otn-types { prefix "otn-types";}

  organization
    "IETF CCAMP Working Group";

  contact
    "WG Web:   <http://tools.ietf.org/wg/ccamp/>
     WG List:  <mailto:ccamp@ietf.org>

     WG Chair: Daniele Ceccarelli
               <mailto:daniele.ceccarelli@ericsson.com>

     WG Chair: Fatai Zhang
               <mailto:zhangfatai@huawei.com>

     Editor: Young Lee <leeyoung@huawei.com>
     Editor: Aihua Guo <aihuaguo@huawei.com>
```

```
     Editor: Dhruv Dhody <dhruv.ietf@gmail.com>
     Editor: Ricard Vilalta <ricard.vilalta@cttc.es>";
     description
       "This module defines a model for WSON Tunnel Services.";

  revision "2019-03-06" {
    description
      "Updates to version 3";
    reference "version 3";
  }

  /* Groupings. */
  grouping wson-tunnel-attributes {
    description "Parameters for WSON tunnel.";

    leaf src-client-signal {
      type identityref {
        base otn-types:client-signal;
      }
      description
        "Client signal at the source endpoint of
         the tunnel.";
    }

    leaf dst-client-signal {
      type identityref {
        base otn-types:client-signal;
      }
      description
        "Client signal at the destination endpoint of
         the tunnel.";
    }

    leaf fec-type {
      type identityref {
        base layer0-types:fec-type;
      }
      description
        "FEC type.";
    }

    leaf termination-type {
      type identityref {
        base layer0-types:term-type;
      }
```

```
      description
        "Termination type.";
    }

    leaf bit-stuffing {
      type boolean;
      description
        "Bit stuffing enabled/disabled.";
    }
  }

  grouping wson-path-constraints {
    description
      "Global named path constraints configuration
       grouping for WSON tunnel";

    leaf wavelength-assignment {
      type identityref {
        base layer0-types:wavelength-assignment;
      }
      description "Wavelength Allocation Method";
    }
  }

 /*
  * Data nodes
  */

  augment "/te:te/te:tunnels/te:tunnel" {
    description
      "Augment with additional parameters required for WSON tunnel.";
    uses wson-tunnel-attributes;
  }
  /*
   * Augment TE bandwidth
   */

  /* Augment bandwidth of named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/"
        + "te:te-bandwidth/te:technology" {
    description "WSON bandwidth.";
    case wson {
      uses layer0-types:wson-path-bandwidth;
    }
```

```
  }

  /* Augment bandwdith of tunnel */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:te-bandwidth/te:technology" {
    description "WSON bandwidth.";
    case wson {
      uses layer0-types:wson-path-bandwidth;
    }
  }

  /* Augment bandwidth of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:te-bandwidth/te:technology" {
    description "WSON bandwidth.";
    case wson {
      uses layer0-types:wson-path-bandwidth;
    }
  }

  /* Augment bandwidth of reverse primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:te-bandwidth/te:technology" {
    description "WSON bandwidth.";
    case wson {
      uses layer0-types:wson-path-bandwidth;
    }
  }

  /* Augment bandwidht of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:te-bandwidth/te:technology" {
    description "WSON bandwidth.";
    case wson {
      uses layer0-types:wson-path-bandwidth;
    }
  }

  /*
   * Augment TE label.
   */
```

```
  /* Augment label hop of route-object-exclude-always of named-path-
constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:explicit-route-objects-always/"
        + "te:route-object-exclude-always/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-include-exclude of named-path-
constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:explicit-route-objects-always/"
        + "te:route-object-include-exclude/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label restrictions for the path-in-segment of
     named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:path-in-segment/"
        + "te:label-restrictions/te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }

  /* Augment label restrictions start for the path-in-segment
     of named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:path-in-segment/"
        + "te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
```

```
  }

  /* Augment label restrictions end for the path-in-segment of
     named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:path-in-segment/"
        + "te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions for the path-out-segment of
     named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:path-out-segment/"
        + "te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }
  /* Augment label restrictions start for the path-out-segment
     of named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:path-out-segment/"
        + "te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions end for the path-out-segment of
     named-path-constraints */
  augment "/te:te/te:globals/te:named-path-constraints/"
        + "te:named-path-constraint/te:path-out-segment/"
        + "te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
```

```
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label hop of route-exclude of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:optimizations/te:algorithm/te:metric/"
        + "te:optimization-metric/te:explicit-route-exclude-objects/"
        + "te:route-object-exclude-object/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-include of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:optimizations/te:algorithm/te:metric/"
        + "te:optimization-metric/te:explicit-route-include-objects/"
        + "te:route-object-include-object/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-exclude-always of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:explicit-route-objects-always/"
        + "te:route-object-exclude-always/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-include-exclude of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
```

```
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:explicit-route-objects-always/"
        + "te:route-object-include-exclude/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label restrictions for the path-in-segment of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }

  /* Augment label restrictions start for the path-in-segment of primary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions end for the path-in-segment of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions for the path-out-segment of primary path */
```

```
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }

  /* Augment label restrictions start for the path-out-segment of primary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions end for the path-out-segment of primary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label hop of path-route of primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:computed-paths-properties/"
          + "te:computed-path-properties/te:path-properties/"
        + "te:path-route-objects/te:path-computed-route-object/"
        + "te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
```

```
    }
  }

  /* Augment label hop of record-route of primary LSP */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:lsps/te:lsp/te:lsp-record-route-information/"
        + "te:lsp-record-route-information/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of path-route of primary LSP */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:lsps/te:lsp/te:path-properties/"
        + "te:path-route-objects/te:path-computed-route-object/"
        + "te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-exclude of reverse primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:optimizations/te:algorithm/te:metric/"
        + "te:optimization-metric/te:explicit-route-exclude-objects/"
        + "te:route-object-exclude-object/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-include of reverse primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
```

```
        + "te:p2p-primary-reverse-path/"
        + "te:optimizations/te:algorithm/te:metric/"
        + "te:optimization-metric/te:explicit-route-include-objects/"
        + "te:route-object-include-object/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-exclude-always of reverse primary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:explicit-route-objects-always/"
        + "te:route-object-exclude-always/"
        + "te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-include-exclude of reverse primary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:explicit-route-objects-always/"
        + "te:route-object-include-exclude/"
        + "te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label restrictions for the path-in-segment of reverse primary
path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
```

```
        + "te:p2p-primary-reverse-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }

  /* Augment label restrictions start for the path-in-segment of reverse
primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }
  /* Augment label restrictions end for the path-in-segment of reverse primary
path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions for the path-out-segment of reverse primary
path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }
```

```
  /* Augment label restrictions start for the path-out-segment of reverse
primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions end for the path-out-segment of reverse
primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label hop of path-route of reverse primary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-primary-paths/te:p2p-primary-path/"
        + "te:p2p-primary-reverse-path/"
        + "te:computed-paths-properties/"
          + "te:computed-path-properties/te:path-properties/"
        + "te:path-route-objects/te:path-computed-route-object/"
        + "te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of record-route of reverse primary LSP */
  augment "/te:te/te:tunnels/te:tunnel/"
```

```
       + "te:p2p-primary-paths/te:p2p-primary-path/"
       + "te:p2p-primary-reverse-path/"
       + "te:lsps/te:lsp/te:lsp-record-route-information/"
       + "te:lsp-record-route-information/te:type/te:label/"
       + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of path-route of reverse primary LSP */
  augment "/te:te/te:tunnels/te:tunnel/"
       + "te:p2p-primary-paths/te:p2p-primary-path/"
       + "te:p2p-primary-reverse-path/"
       + "te:lsps/te:lsp/te:path-properties/"
       + "te:path-route-objects/te:path-computed-route-object/"
       + "te:type/te:label/"
       + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-exclude of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
       + "te:p2p-secondary-paths/te:p2p-secondary-path/"
       + "te:optimizations/te:algorithm/te:metric/"
       + "te:optimization-metric/te:explicit-route-exclude-objects/"
       + "te:route-object-exclude-object/te:type/te:label/"
       + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-include of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
       + "te:p2p-secondary-paths/te:p2p-secondary-path/"
       + "te:optimizations/te:algorithm/te:metric/"
       + "te:optimization-metric/te:explicit-route-include-objects/"
       + "te:route-object-include-object/te:type/te:label/"
       + "te:label-hop/te:te-label/te:technology" {
```

```
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-exclude-always of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:explicit-route-objects-always/"
        + "te:route-object-exclude-always/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of route-object-include-exclude of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:explicit-route-objects-always/"
        + "te:route-object-include-exclude/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label restrictions for the path-in-segment of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }

  /* Augment label restrictions start for the path-in-segment of secondary
path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
```

```
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions end for the path-in-segment of secondary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:path-in-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions for the path-out-segment of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction" {
    description "WSON label.";
    uses layer0-types:layer0-label-restriction;
  }

  /* Augment label restrictions start for the path-out-segment of secondary
path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-start/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label restrictions end for the path-out-segment of secondary path
*/
  augment "/te:te/te:tunnels/te:tunnel/"
```

```
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:path-out-segment/te:label-restrictions/"
        + "te:label-restriction/te:label-end/"
        + "te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-link-label;
    }
  }

  /* Augment label hop of path-route of secondary path */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:computed-paths-properties/"
          + "te:computed-path-properties/te:path-properties/"
          + "te:path-route-objects/"
        + "te:path-computed-route-object/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of record-route of secondary LSP */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:lsps/te:lsp/te:lsp-record-route-information/"
        + "te:lsp-record-route-information/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of path-route of secondary LSP */
  augment "/te:te/te:tunnels/te:tunnel/"
        + "te:p2p-secondary-paths/te:p2p-secondary-path/"
        + "te:lsps/te:lsp/te:path-properties/"
        + "te:path-route-objects/"
        + "te:path-computed-route-object/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
```

```
      uses layer0-types:wson-path-label;
    }
  }

  /* Augment label hop of record-route of LSP */
  augment "/te:te/te:lsps-state/"
        + "te:lsp/te:lsp-record-route-information/"
        + "te:lsp-record-route-information/te:type/te:label/"
        + "te:label-hop/te:te-label/te:technology" {
    description "WSON label.";
    case wson {
      uses layer0-types:wson-path-label;
    }
  }

  augment "/te:tunnels-rpc/te:input/te:tunnel-info/"
        + "tepc:path-request" {
    description
       "Augment with additional constraints WSON
        tunnel.";
    uses wson-tunnel-attributes;
    uses wson-path-constraints;
  }
}
```

<CODE ENDS>

4. Security Considerations

The configuration, state, and action data defined in this document are designed to be accessed via a management protocol with a secure transport layer, such as NETCONF [RFC6241]. The NETCONF access control model [RFC8341] provides the means to restrict access for particular NETCONF users to a preconfigured subset of all available NETCONF protocol operations and content.

A number of configuration data nodes defined in this document are writable/deletable (i.e., "config true") These data nodes may be considered sensitive or vulnerable in some network environments.

5. IANA Considerations

This document registers the following namespace URIs in the IETF XML registry [RFC3688]:

```
---------------------------------------------------------------------
URI: urn:ietf:params:xml:ns:yang:ietf-wson-tunnel
Registrant Contact: The IESG.
XML: N/A, the requested URI is an XML namespace.
---------------------------------------------------------------------
```

This document registers the following YANG modules in the YANG Module

Names registry [RFC7950]:

```
---------------------------------------------------------------------
name:         ietf-wson-tunnel
namespace:    urn:ietf:params:xml:ns:yang:ietf-wson-tunnel
reference:    RFC XXXX (TDB)
---------------------------------------------------------------------
```

6. Acknowledgments

This document was prepared using 2-Word-v2.0.template.dot.

7. References

7.1. Normative References

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8. Contributors

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