IETF Internet Draft
Proposed status: Standards Track
Expires: Sept. 30, 2006

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March 2006

Extensions to the OSPF Management Information Base in support of GMPLS
draft-otani-ccamp-gmpls-ospf-mib-02.txt

Status of this Memo

Abstract

This memo defines the Management Information Base (MIB) objects in order to manage OSPF routing information with extension in support of Multi-protocol label switching (MPLS) as well as Generalized MPLS (GMPLS) for use with network management protocols.

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1. Introduction

The OSPF MIB is defined as [OSPFMIB] and is being extended by [OSPFMIB UPDATE]. On the other side, MPLS/GMPLS based traffic engineering has so far extended OSPF routing protocol with TE functionality [GMPLSrouting, RFC3630]. To manage such MPLS/GMPLS networks effectively, OSPF information associated with MPLS/GMPLS TE parameters is preferred for the network management, however, there is no definition of MPLS/GMPLS TE information in the existing OSPF MIB.

This memo defines the Management Information Base (MIB) objects for managing OSPF extension in support of MPLS/GMPLS for use with network management protocols.

This MIB module should be used in conjunction with OSPF MIB as well as other MIBs defined in [RFC3812, RFC3813, GMPLSLSRMIB, GMPLSTEMIB] for the management of MPLS/GMPLS based traffic engineering information.

2. Terminology

2.1 Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC-2119 [RFC2119].

2.2 Terminology

Definitions of key terms for MPLS OAM and GMPLS are found in [MPLS-OAM, RFC3945] and the reader is assumed to be familiar with those definitions which are not repeated here.

2.3 Acronyms

```
  GMPLS:  Generalized Multi-Protocol Label Switching
    LDP:  Label Distribution Protocol
    LSP:  Label Switching Path
    LSR:  Label Switching Router
    MIB:  Management Information Base
    OAM:  Operations and Management
   OA&M:  Operations, Administration and Maintenance.
   OSPF:  Open Shortest Path First
   RSVP:  Resource reSerVation Protocol
     TE:  Traffic Engineering
    PSC:  Packet switch capable
    LSC:  Lambda switch capable
    FSC:  Fiber switch capable
    TDM:  Time Division Multiplexing
   SRLG:  Shared risk link group
    LSA:  Link state advertisement
```


3. Motivations

The existing OSPF, MPLS and GMPLS MIBs do not provide for the management of all of the extensions to the OSPF protocol. To manage GMPLS routing attributes, MIB objects to indicate such GMPLS OSPF-TE attributes is significant.

4. Brief description of MIB Objects

The objects described in this section support the management of attributes described in [GMPLSrouting] and [GMPLSOSPF] for OSPF-TE with GMPLS extensions as well as in [RFC3630] for OSPF-TE.

4.1 ospfTeLsdbTable

The ospfTeLsdbTable is basically used to indicate multiple sub-TLVs information in opaque LSA which have been supported by [OSPF-TE]. However, this table does not contain the information of Local/Remote interface IP address, Interface Switching Capcability Descriptor and Shared Risk Link Group information within the sub-TLVs for the Link-TLV.

4.2 ospfTeLocalIntIpAddrTable

The ospfTeLocalIntIpAddrTable is identical to the Local interface IP address information in a sub-TLV for the Link-TLV. This is independently defined, because the Interface IP Address sub-TLV may appear more than once within the same Link-TLV.

4.3 ospfTeRemoteIntIpAddrTable

The ospfTeRemoteIntIpAddrTable is identical to the Remote interface IP address information in a sub-TLV of the Link-TLV. This is also independently utilized, because one or more local interface IP address sub TLVs may exist in the same Link-TLV.

4.4 ospfTeSwCapTable

The ospfTeSwCapTable represents Interface Switching Capability Descriptor information. This is independently defined due to the possibility of multiple appearances of the sub TLV within the same Link-TLV.

4.5 ospfTeSrlgTable

The ospfTeSrlgTable contains the Sub-TLV information of Shared Risk Link Group (SRLG) information. This is separately defined, because more than one sub TLVs may appear in the same Link-TLV.

5. OSPF-TE MIB Definitions with GMPLS extensions


```
OSPF-TE-DRAFT00-MIB DEFINITIONS ::= BEGIN

IMPORTS
   MODULE-IDENTITY, OBJECT-TYPE, Integer32, Unsigned32
     FROM SNMPv2-SMI                          --[RFC2578]
   MODULE-COMPLIANCE, OBJECT-GROUP
     FROM SNMPv2-CONF                         --[RFC2580]
   InetAddressType, InetAddress
```

```
     FROM INET-ADDRESS-MIB
   transmission
     FROM SNMPv2-SMI                              --[RFC2578]
   ospfLsdbLsid, ospfRouterId
     FROM OSPF-MIB;                               --[OSPFMIB UPDATE]

ospfTeMIB MODULE-IDENTITY
   LAST-UPDATED "200510240000Z"  -- 04 July 2005 00:00:00 GMT
   ORGANIZATION "IETF CCAMP Working Group."
   CONTACT-INFO
      "          Tomohiro Otani
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                 Thomas D. Nadeau
                 tnadeau@cisco.com

                 Kenji Kumaki
                 ke-kumaki@kddi.com

                 Comments and discussion to ccamp@ietf.org"
   DESCRIPTION
        "This MIB contains managed object definitions for
         extensions to the OSPF MIB in support of Traffic
         Engienering (TE).

        Copyright (C) The Internet Society (2006).  This
        version of this MIB module is part of RFCXXX; see
        the RFC itself for full legal notices."
  -- Revision history.
   REVISION
      "200506041200Z"  -- 04 July 2005 12:00:00 GMT
   DESCRIPTION
     "Initial version. Published as RFC xxxx." -- RFC-editor pls fill
     in xxx"
   ::= { transmission 9988 } -- assigned by IANA, see section 7.1 for
                             -- details

-- Textual Conventions.

-- Top level components of this MIB.

ospfTeNotifications OBJECT IDENTIFIER ::= { ospfTeMIB 0 }
ospfTeObjects       OBJECT IDENTIFIER ::= { ospfTeMIB 1 }
```



```
ospfTeScalars       OBJECT IDENTIFIER ::= { ospfTeObjects 1 }
ospfTeTables        OBJECT IDENTIFIER ::= { ospfTeObjects 2 }
```

```
ospfTeConformance   OBJECT IDENTIFIER ::= { ospfTeMIB 2 }

-- MIB Definitions

--
-- Scalar Objects
--


--
--  OSPF TE LSDB Table
--

ospfTeLsdbTable OBJECT-TYPE
SYNTAX       SEQUENCE OF OspfTeLsdbEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
     "This table indicates multiple sub-TLVs information in opaque
LSA which have been supported by [OSPF-TE].  "
::= { ospfTeTables 1 }

ospfTeLsdbEntry OBJECT-TYPE
   SYNTAX       OspfTeLsdbEntry
   MAX-ACCESS   not-accessible
   STATUS       current
   DESCRIPTION
   "This entry contains each sub-TLVs information commonly utilized
in both MPLS and GMPLS"
   INDEX { ospfLsdbLsid, ospflsdbRouterId }
::= { ospfTeLsdbTable 1 }

OspfTeLsdbEntry ::= SEQUENCE {
   ospfTeLinkType                  INTEGER,
   ospfTeLinkIdAddr                InetAddress,
   ospfTeLinkIdAddrType            InetAddressType,
   ospfTeMetric                    Integer32,
   ospfTeMaxBandwidth              Unsigned32,
   ospfTeMaxReservableBandwidth    Unsigned32,
   ospfTeUnreservedBandwidthPri0   Unsigned32,
   ospfTeUnreservedBandwidthPri1   Unsigned32,
   ospfTeUnreservedBandwidthPri2   Unsigned32,
   ospfTeUnreservedBandwidthPri3   Unsigned32,
   ospfTeUnreservedBandwidthPri4   Unsigned32,
   ospfTeUnreservedBandwidthPri5   Unsigned32,
   ospfTeUnreservedBandwidthPri6   Unsigned32,
   ospfTeUnreservedBandwidthPri7   Unsigned32,
   ospfTeAdministrativeGroup       Integer32,
   ospfTeLocalId                   Integer32,
   ospfTeRemoteId                  Integer32,
   ospfTeLinkProtectionType        INTEGER,
```

```
}
```



```
ospfTeLinkType OBJECT-TYPE
    SYNTAX    INTEGER {
                        pointToPoint (1),
                        multiAccess (2)
                      }
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the type of the link such as point-to-point
or multi-access"
::= { ospfTeLsdbEntry 1 }

ospfTeLinkIdAddr OBJECT-TYPE
    SYNTAX       InetAddress
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
            "This indicates the Router ID of the neighbor in the case
of point-to-point links.  This also indicates the interface address
of the designated router in the case of multi-access links."
::= { ospfTeLsdbEntry 2 }

ospfTeLinkIdAddrType OBJECT-TYPE
    SYNTAX       InetAddressType
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
            "This object indicates the type of TE link ID address."
::= { ospfTeLsdbEntry 3 }

ospfTeMetric OBJECT-TYPE
    SYNTAX       Integer32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the traffic engineering metric value of the
TE link."
::= { ospfTeLsdbEntry 4 }

ospfTeMaxBandwidth OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the maximum bandwidth that
```

```
   can be used on this link in this direction"
::= { ospfTeLsdbEntry 5 }

ospfTeMaxReservableBandwidth OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```



```
        "This indicates the maximum bandwidth that may be reserved on
this link in this direction"
::= { ospfTeLsdbEntry 6 }

ospfTeUnreservedBandwidthPri0 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 0"
::= { ospfTeLsdbEntry 7 }

ospfTeUnreservedBandwidthPri1 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 1"
::= { ospfTeLsdbEntry 8 }

ospfTeUnreservedBandwidthPri2 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 2"
::= { ospfTeLsdbEntry 9 }

ospfTeUnreservedBandwidthPri3 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 3"
::= { ospfTeLsdbEntry 10 }
```

```
ospfTeUnreservedBandwidthPri4 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 4"
::= { ospfTeLsdbEntry 11 }

ospfTeUnreservedBandwidthPri5 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```



```
        "This indicates the amount of bandwidth not yet reserved at
the priority 5"
::= { ospfTeLsdbEntry 12 }

ospfTeUnreservedBandwidthPri6 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 6"
::= { ospfTeLsdbEntry 13 }

ospfTeUnreservedBandwidthPri7 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the amount of bandwidth not yet reserved at
the priority 7"
::= { ospfTeLsdbEntry 14 }

ospfTeAdministrativeGroup OBJECT-TYPE
    SYNTAX       Integer32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the Administrative Group which the link
belong to.  Since the value is a bit mask, the link can belong to
multiple groups.  This is also called Resource Class/Color."
::= { ospfTeLsdbEntry 15 }
```

```
ospfTeLocalId OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This indicates the Link local identifier of an unnumbered
link."
::= { ospfTeLsdbEntry 16 }

ospfTeRemoteId OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        " This indicates the Link remote identifier of an unnumbered
link."
::= { ospfTeLsdbEntry 17 }

ospfTeLinkProtectionType OBJECT-TYPE
    SYNTAX  INTEGER {
            extraTraffic(0),
            unprotected(1),
```



```
            shared (2),
            dedicatedOneToOne (3),
            dedicatedOnePlusOne(4),
            enhanced(5)
    }
    MAX-ACCESS read-only
    STATUS  current
    DESCRIPTION
        "This object indicates the protection type of the TE link"
::= { ospfTeLsdbEntry 18 }


--
--  OSPF TE Local Interface IP Address Table
--

ospfTeLocalIntAddrTable OBJECT-TYPE
    SYNTAX       SEQUENCE OF OspfTeLocalIntAddrEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table contains the IP address information of a local TE
link."
::= { ospfTeTables 2 }
```

```
ospfTeLocalIntAddrEntry OBJECT-TYPE
    SYNTAX       OspfTeLocalIntAddrEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This entry contains the IP address information of the local
TE link."
    INDEX { ospfLsdbLsid, ospflsdbRouterId, ospfTeLocalIntAddrIndex }
::= { ospfTeLocalIntAddrTable 1 }

OspfTeLocalIntAddrEntry ::= SEQUENCE {
        ospfTeLocalIntAddrIndex Unsigned32,
        ospfTeLocalIntAddr      InetAddress,
        ospfTeLocalIntAddrType  InetAddressType
    }

ospfTeLocalIntAddrIndex OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
    "This indicates the index to identify multiple local TE links"
::= { ospfTeLocalIntAddrEntry 1 }

ospfTeLocalIntAddr OBJECT-TYPE
    SYNTAX       InetAddress
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```



```
    "This object indicates the address of the local TE link."
::= { ospfTeLocalIntAddrEntry 2 }

ospfTeLocalIntAddrType OBJECT-TYPE
    SYNTAX       InetAddressType
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
    "This object indicates the type of local TE link address."
::= { ospfTeLocalIntAddrEntry 3 }


--
--  OSPF TE Remote Interface IP Address Table
--

ospfTeRemoteIntAddrTable OBJECT-TYPE
    SYNTAX       SEQUENCE OF OspfTeRemoteIntAddrEntry
```

```
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table contains the IP address information of a remote
TE link."
::= { ospfTeTables 3 }

ospfTeRemoteIntAddrEntry OBJECT-TYPE
    SYNTAX       OspfTeRemoteIntAddrEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This entry contains the IP address information of the remote
TE link."
INDEX { ospfLsdbLsid, ospflsdbRouterId, ospfTeRemoteIntAddrIndex }
    ::= { ospfTeRemoteIntAddrTable 1 }

OspfTeRemoteIntAddrEntry ::= SEQUENCE {
    ospfTeRemoteIntAddrIndex Unsigned32,
    ospfTeRemoteIntAddr      InetAddress,
    ospfTeRemoteIntAddrType  InetAddressType
}

ospfTeRemoteIntAddrIndex OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This indicates the index to identify multiple remote TE
links."
::= { ospfTeRemoteIntAddrEntry 1 }

ospfTeRemoteIntAddr OBJECT-TYPE
    SYNTAX       InetAddress
    MAX-ACCESS   read-only
    STATUS       current
```



```
    DESCRIPTION
        "This object indicates the address of the remote TE link."
::= { ospfTeRemoteIntAddrEntry 2 }

ospfTeRemoteIntAddrType OBJECT-TYPE
    SYNTAX       InetAddressType
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the type of the remote TE link
address."
```

```
::= { ospfTeRemoteIntAddrEntry 3 }


--
--  OSPF TE Switch Capable Table
--

ospfTeSwCapTable OBJECT-TYPE
    SYNTAX       SEQUENCE OF OspfTeSwCapEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table contains the GMPLS OSPF TE switching capability
information."
::= { ospfTeTables 4 }

ospfTeSwCapEntry OBJECT-TYPE
    SYNTAX       OspfTeSwCapEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This entry relates each TE link with its GMPLS TE switching
capability information. IF the MIB deals with only OSPF-TE
information, the value of each object related with GMPLS TE
extensions should be null."
    INDEX { ospfLsdbLsid, ospflsdbRouterId, ospfTeSwCapIndex }
::= { ospfTeSwCapTable 1 }

OspfTeSwCapEntry ::= SEQUENCE {
    ospfTeSwCapIndex            Unsigned32,
    ospfTeSwitchingType         INTEGER,
    ospfTeEncoding              INTEGER,
    ospfTeMaxLspBandwidthPri0   Unsigned32,
    ospfTeMaxLspBandwidthPri1   Unsigned32,
    ospfTeMaxLspBandwidthPri2   Unsigned32,
    ospfTeMaxLspBandwidthPri3   Unsigned32,
    ospfTeMaxLspBandwidthPri4   Unsigned32,
    ospfTeMaxLspBandwidthPri5   Unsigned32,
    ospfTeMaxLspBandwidthPri6   Unsigned32,
    ospfTeMaxLspBandwidthPri7   Unsigned32,
    ospfTeMinLspBandwidth       Unsigned32,
    ospfTeIntMtu                Integer32,
    ospfTeIndication            INTEGER
```



```
}

ospfTeSwCapIndex OBJECT-TYPE
    SYNTAX       Unsigned32
```

```
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This index is utilized to identify multiple switching
functions on a local or remote TE link."
::= { ospfTeSwCapEntry 1 }

ospfTeSwitchingType OBJECT-TYPE
   SYNTAX  INTEGER {
               unknown (0),
               psc1    (1),
               psc2    (2),
               psc3    (3),
               psc4    (4),
               l2sc   (51),
               tdm   (100),
               lsc   (150),
               fsc   (200)
        }
        MAX-ACCESS read-only
        STATUS  current
        DESCRIPTION
            "This object indicates the GMPLS switching capability
assigned to the TE link."
        ::= { ospfTeSwCapEntry 2 }

ospfTeEncoding OBJECT-TYPE
        SYNTAX  INTEGER {
              packet         (1),
              ethernet       (2),
              ansiEtsiPdh    (3),
              sdhSonet       (5),
              digitalWrapper (7),
              lambda         (8),
              fiber          (9),
              fiberChannel  (11)
            }
    MAX-ACCESS read-only
    STATUS  current
    DESCRIPTION
        "This object indicates the GMPLS encoding type assigned to
the TE link."
::= { ospfTeSwCapEntry 3 }

ospfTeMaxLspBandwidthPri0 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```

```
        "This object indicates the maximum bandwidth of the TE link
at the priority 0 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 4 }

ospfTeMaxLspBandwidthPri1 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the maximum bandwidth of the TE link
at the priority 1 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 5 }

ospfTeMaxLspBandwidthPri2  OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the maximum bandwidth of the TE link
at the priority 2 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 6 }

ospfTeMaxLspBandwidthPri3 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the maximum bandwidth of the TE link
at the priority 3 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 7 }

ospfTeMaxLspBandwidthPri4 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the maximum bandwidth of the TE link
at the priority 4 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 8 }

ospfTeMaxLspBandwidthPri5  OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the maximum bandwidth of the TE link
at the priority 5 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 9 }
```

```
ospfTeMaxLspBandwidthPri6 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```



```
        "This object indicates the maximum bandwidth of the TE link
at the priority 6 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 10 }

ospfTeMaxLspBandwidthPri7 OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the maximum bandwidth of the TE link
at the priority 7 for GMPLS LSP creation."
::= { ospfTeSwCapEntry 11 }

ospfTeLspMinBandwidth OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates the minimum bandwidth of the TE link
for GMPLS LSP creation if the switching capability field is TDM, PSC-
1, PSC-2, PSC-3, or PSC-4."
::= { ospfTeSwCapEntry 12 }

ospfTeIntMtu OBJECT-TYPE
    SYNTAX       Integer32
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
        "This object indicates the MTU of the local or remote TE
link"
::= { ospfTeSwCapEntry 13 }

ospfTeIndication OBJECT-TYPE
    SYNTAX       INTEGER {
                   standard (0),
                   arbitrary (1)
                   }
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicates whether the interface supports
Standard or Arbitrary SONET/SDH."
```

```
::= { ospfTeSwCapEntry 14 }

--
--  OSPF TE SRLG Table
--

ospfTeSrlgTable OBJECT-TYPE
    SYNTAX       SEQUENCE OF OspfTeSrlgEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table contains the SRLG information of the TE link."
```



```
::= { ospfTeTables 5 }

ospfTeSrlgEntry OBJECT-TYPE
    SYNTAX       OspfTeSrlgEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This entry relates each TE link with its SRLG information."
    INDEX { ospfLsdbLsid, ospflsdbRouterId, ospfTeSrlgIndex }
::= { ospfTeSrlgTable 1 }

OspfTeSrlgEntry ::= SEQUENCE {
    ospfTeSrlgIndex Unsigned32
    ospfTeSrlg      Integer32
    }

ospfTeSrlgIndex OBJECT-TYPE
    SYNTAX       Unsigned32
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This index is utilized to identify multiple SRLG values on a
local or remote TE link."
::= { ospfTeLsdbEntry 1 }

ospfTeSrlg OBJECT-TYPE
    SYNTAX       Integer32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "This object indicate the SRLG value assigned to a local or
remote TE link"
::= { ospfTeSrlgEntry 2 }

-- Conformance Statement
```

```
ospfTeGroups
      OBJECT IDENTIFIER ::= { ospfTeConformance 1 }

ospfTeCompliances
      OBJECT IDENTIFIER ::= { ospfTeConformance 2 }

-- Module Compliance

ospfTeModuleFullCompliance MODULE-COMPLIANCE
      STATUS current
      DESCRIPTION
         "Compliance statement for agents provides full support
          for the OSPF-TE MIB"
      MODULE -- this module
         MANDATORY-GROUPS    { ospfTeMainGroup
                             }

   ::= { ospfTeCompliances 1 }
```



```
--
-- ReadOnly Compliance
--

ospfTeModuleReadOnlyCompliance MODULE-COMPLIANCE
      STATUS current
      DESCRIPTION
        "Compliance requirement for implementations only provide
        read-only support for OSPF-TE. Such devices can then be
        monitored but cannot be configured using this MIB module.
        "
      MODULE -- this module
         MANDATORY-GROUPS    { ospfTeMainGroup
                             }

   ::= { ospfTeCompliances 2 }


   -- Units of conformance.
   ospfTeMainGroup OBJECT-GROUP
      OBJECTS {
            ospfTeLinkType                ,
            ospfTeLinkIdAddr              ,
            ospfTeLinkIdAddrType          ,
            ospfTeMetric                  ,
            ospfTeMaxBandwidth            ,
            ospfTeMaxReservableBandwidth  ,
            ospfTeUnreservedBandwidthPri0 ,
            ospfTeUnreservedBandwidthPri1 ,
```

```
            ospfTeUnreservedBandwidthPri2   ,
            ospfTeUnreservedBandwidthPri3   ,
            ospfTeUnreservedBandwidthPri4   ,
            ospfTeUnreservedBandwidthPri5   ,
            ospfTeUnreservedBandwidthPri6   ,
            ospfTeUnreservedBandwidthPri7   ,
            ospfTeAdministrativeGroup       ,
            ospfTeLocalId                   ,
            ospfTeRemoteId                  ,
            ospfTeLinkProtectionType        ,
            ospfTeLocalIntAddrIndex         ,
            ospfTeLocalIntAddr              ,
            ospfTeLocalIntAddrType          ,
            ospfTeRemoteIntAddrIndex        ,
            ospfTeRemoteIntAddr             ,
            ospfTeRemoteIntAddrType         ,
            ospfTeSwCapIndex                ,
            ospfTeSwitchingType             ,
            ospfTeEncoding                  ,
            ospfTeMaxLspBandwidthPri0       ,
            ospfTeMaxLspBandwidthPri1       ,
            ospfTeMaxLspBandwidthPri2       ,
            ospfTeMaxLspBandwidthPri3       ,
            ospfTeMaxLspBandwidthPri4       ,
            ospfTeMaxLspBandwidthPri5       ,
```



```
            ospfTeMaxLspBandwidthPri6       ,
            ospfTeMaxLspBandwidthPri7       ,
            ospfTeIntMtu                    ,
            ospfTeIndication                ,
            ospfTeSrlgIndex                 ,
            ospfTeSrlg
           }
      STATUS  current
      DESCRIPTION
             "Collection of objects for OSPF-TE management"
    ::= { ospfTeGroups 1 }

END
```

6. Security consideration

This document introduces no new security issues beyond those detailed in the OSPF MIB.

7. IANA Considerations

The following "IANA Considerations" subsection requests IANA for a new assignment under the transmission subtree. New assignments can only be made via a Standards Action as specified in [RFC2434].

7.1 IANA Considerations for OSPF-TE-STD-MIB

The IANA is requested to assign { ospfTeMIB XXX } to the OSPF-TE-STD-MIB module specified in this document.

8. References

8.1 Normative References

8.2 Informative References

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[RFC2434] Narten, T. and H. Alvestrand., "Guidelines for Writing an IANA Considerations Section in RFCs" BCP 26, RFC 2434, October 1998.

9. Acknowledgment

The authors wish to acknowledge and thank the following individuals for their valuable comments to this document: Ken Nagami and Shuichi Okamoto.

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