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Traffic Engineering Database Management Information Base
in support of GMPLS
draft-ietf-ccamp-gmpls-ospf-mib-01.txt

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Abstract

This memo defines the Management Information Base (MIB) objects in order to manage traffic engineering database (TED) 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](#)] being extended by [OSPFMIB UPDATE] and The ISIS MIB as [[ISISMIB](#)]. On the other side, MPLS/GMPLS based traffic engineering has so far extended OSPF/ISIS routing protocol with TE functionality [GMPLSrouting, [RFC3630](#), GMPLSisis, [RFC3784](#)]. To manage such MPLS/GMPLS networks effectively, routing information associated with MPLS/GMPLS TE parameters (TED) is preferred for the network management, however, there is no clear definition of MPLS/GMPLS TE information in existing MIBs related with OSPF/ISIS.

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

This MIB module should be used in conjunction with OSPF/ISIS 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

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[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 TE attributes, MIB objects to indicate such GMPLS TED is significant.

[4. Brief description of MIB Objects](#)

The objects described in this section support the management of TED

described in [GMPLSrouting], [GMPLSOSPF] and [GMPLSisis] for GMPLS extensions as well as in [RFC3630] and [RFC3784] for MPLS/GMPLS.

[4.1](#) teTEDTable

The teTEDTable is basically used to indicate TED information of OSPF-TE or ISIS-TE. However, this table does not contain the information of Local/Remote interface IP address, Interface Switching Capability Descriptor and Shared Risk Link Group information within the sub-TLVs for the Link-TLV.

[4.2](#) teLocalIntIpAddrTable

The teLocalIntIpAddrTable 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](#) teRemoteIntIpAddrTable

The teRemoteIntIpAddrTable 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](#) teSwCapTable

The teSwCapTable 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](#) teSrlgTable

The teSrlgTable 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.](#) TED MIB Definitions in support of GMPLS

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```
TED-DRAFT01-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
    MODULE-IDENTITY, OBJECT-TYPE, Integer32, Unsigned32, transmission,  
    IPAddress
```

```

    FROM SNMPv2-SMI --[RFC2578]
MODULE-COMPLIANCE, OBJECT-GROUP
    FROM SNMPv2-CONF --[RFC2580]
RowPointer
FROM SNMPv2-TC --[RFC2579]
    ospfAreaId, ospfLsdbLsid, ospfLsdbRouterId
    FROM OSPF-MIB; --[OSPFMIB UPDATE]
    IsisISLevel, IsisLinkStatePDUID, IsisSystemID
    FROM ISIS-MIB; --[ISISMIB]

teMIB MODULE-IDENTITY
    LAST-UPDATED "200510240000Z" -- 04 July 2005 00:00:00 GMT
    ORGANIZATION "IETF CCAMP Working Group."
    CONTACT-INFO
        "
            Tomohiro Otani
            otani@kddilabs.jp

            Masanori Miyazawa
            ma-miyazawa@kddilabs.jp

            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
        TED in support of MPLS/GMPLS Traffic
        Engienering (TE) Database.

        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.

teNotifications OBJECT IDENTIFIER ::= { teMIB 0 }

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```

```
teObjects      OBJECT IDENTIFIER ::= { teMIB 1 }
teScalars      OBJECT IDENTIFIER ::= { teObjects 1 }
teTables       OBJECT IDENTIFIER ::= { teObjects 2 }
teConformance  OBJECT IDENTIFIER ::= { teMIB 2 }
```

```
-- MIB Definitions
```

```
--
```

```
-- Scalar Objects
```

```
--
```

```
--
```

```
-- TE DB Table
```

```
--
```

```
teTEDTable OBJECT-TYPE
```

```
SYNTAX      SEQUENCE OF TeTEDEntry
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "This table indicates multiple TED information which has been
supported by [OSPF-TE]."
```

```
::= { teTables 1 }
```

```
teTEDEntry OBJECT-TYPE
```

```
    SYNTAX      TeTEDEntry
```

```
    MAX-ACCESS  not-accessible
```

```
    STATUS      current
```

```
    DESCRIPTION
```

```
    "This entry contains TED information commonly utilized in both
MPLS and GMPLS"
```

```
    INDEX { ospfAreaId, ospfLsdbLsid, ospflsdbRouterId }
```

```
::= { teTEDTable 1 }
```

```
TeTEDEntry ::= SEQUENCE {
```

```
    teLinkInformationSource      INTEGER,
```

```
    teAreaLevelID               OCTET STRING,
```

```
    teLSPDUID                   OCTET STRING,
```

```
    teRouterSystemID            OCTET STRING,
```

```
    teLinkType                   INTEGER,
```

```
    teLinkIdAddr                 IPAddress,
```

```
    teMetric                      Integer32,
```

```
    teMaxBandwidth                OCTET STRING,
```

```
    teMaxReservableBandwidth      OCTET STRING,
```

```
    teUnreservedBandwidthPri0    OCTET STRING,
```

```
    teUnreservedBandwidthPri1    OCTET STRING,
```

```
    teUnreservedBandwidthPri2    OCTET STRING,
```

```
    teUnreservedBandwidthPri3    OCTET STRING,
```

```
teUnreservedBandwidthPri4    OCTET STRING,
teUnreservedBandwidthPri5    OCTET STRING,
teUnreservedBandwidthPri6    OCTET STRING,
teUnreservedBandwidthPri7    OCTET STRING,
teAdministrativeGroup        Integer32,
```

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```
teLocalId                    Integer32,
teRemoteId                   Integer32,
teLinkProtectionType         BITS,
teLinkInformationData        RowPointer,
}
```

teLinkInformationSource OBJECT-TYPE

```
SYNTAX INTEGER {
    unknown(0),
    locallyConfigured(1),
    ospf(2),
    isis(3),
    other(4)
}
```

```
MAX-ACCESS read-only
STATUS current
DESCRIPTION
```

"This object indicates the source of the information about the TE link"

```
::= { teTEEntry 1 }
```

teAreaLevelId OBJECT-TYPE

```
SYNTAX Unsigned32 {ospfAreaId, IsisISLevel}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
```

^[9]This is corresponding to area ID in OSPF and level ID in ISIS^[9]

```
::= { teTEEntry 2 }
```

teOSPDUIId OBJECT-TYPE

```
SYNTAX Unsigned32 {ospfLsdbLsid, IsisLinkStatePDUIID}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
```

^[9]This is corresponding to link state ID in OSPF and link state PDU ID in ISIS^[9]

```
::= { teTEEntry 3 }
```

teRouterSystem OBJECT-TYPE

SYNTAX Unsigned32 {ospfLsdbRouterId, IsisSystemID}
MAX-ACCESS read-only
STATUS current
DESCRIPTION

This is corresponding to the router ID in OSPF and the system ID in ISIS

::= { teTEDEntry 4 }

teLinkType OBJECT-TYPE

SYNTAX INTEGER {
pointToPoint (1),
multiAccess (2)

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}
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"This indicates the type of the link such as point-to-point or multi-access"

::= { teTEDEntry 5 }

teLinkIdAddr OBJECT-TYPE

SYNTAX IpAddress
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."

::= { teTEDEntry 6 }

teMetric OBJECT-TYPE

SYNTAX Integer32
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"This indicates the traffic engineering metric value of the TE link."

::= { teTEDEntry 7 }

teMaxBandwidth OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(4))
UNITS "Byte per seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"This indicates the maximum bandwidth that can be used on this link in this direction"

::= { teTEDEntry 8 }

teMaxReservableBandwidth OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This indicates the maximum bandwidth that may be reserved on this link in this direction"

::= { teTEDEntry 9 }

teUnreservedBandwidthPri0 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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"This indicates the amount of bandwidth not yet reserved at the priority 0"

::= { teTEDEntry 10 }

teUnreservedBandwidthPri1 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This indicates the amount of bandwidth not yet reserved at the priority 1"

::= { teTEDEntry 11 }

teUnreservedBandwidthPri2 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This indicates the amount of bandwidth not yet reserved at the priority 2"

::= { teTEDEntry 12 }

teUnreservedBandwidthPri3 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION
"This indicates the amount of bandwidth not yet reserved at
the priority 3"
 ::= { teTEEntry 13 }

teUnreservedBandwidthPri4 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This indicates the amount of bandwidth not yet reserved at
the priority 4"
 ::= { teTEEntry 14 }

teUnreservedBandwidthPri5 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This indicates the amount of bandwidth not yet reserved at
the priority 5"
 ::= { teTEEntry 15 }

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teUnreservedBandwidthPri6 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This indicates the amount of bandwidth not yet reserved at
the priority 6"
 ::= { teTEEntry 16 }

teUnreservedBandwidthPri7 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This indicates the amount of bandwidth not yet reserved at
the priority 7"
 ::= { teTEEntry 17 }

teAdministrativeGroup 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."
 ::= { teTEDEntry 18 }

teLocalId OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This indicates the Link local identifier of an unnumbered
        link."
 ::= { teTEDEntry 19 }

teRemoteId OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        " This indicates the Link remote identifier of an unnumbered
        link."
 ::= { teTEDEntry 20 }

teLinkProtectionType OBJECT-TYPE
    SYNTAX  BITS {
        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"
 ::= { teTEDEntry 21 }

teLinkInformationData OBJECT-TYPE
    SYNTAX  RowPointer
    MAX-ACCESS read-only
    STATUS      current
    DESCRIPTION
        "This object cross-references the source of the information

```

about this TE link and should be interpreted in the context of teLinkInformationSource.

If teLinkInformationSource has the value unknown(0) this object SHOULD contain a value of zeroDotZero.

If teLinkInformationSource has the value locallyConfigured(1), this object MAY contain the identifier of the corresponding row entry in the teLinkTable of TE-LINK-STD-MIB, MAY contain the identifier of the corresponding row in a local proprietary TE link MIB module, or otherwise SHOULD contain the value of zeroDotZero.

If teLinkInformationSource has the value ospf(2), this object MAY contain the identifier of the corresponding row entry in the ospfLocalLsdbTable of [OSPF-MIB], or otherwise SHOULD contain the value of zeroDotZero.

If teLinkInformationSource has the value isis(3) this object MAY contain the identifier of the corresponding row entry in the isisAreaAddr of [ISIS-MIB], or otherwise SHOULD contain the value of zeroDotZero.

If teLinkInformationSource has the value other(4) this object MAY contain the identifier of the corresponding row entry a local proprietary MIB module, or otherwise SHOULD contain the value of zeroDotZero."

```
::= { teTEDEntry 22 }
```

```
--
```

```
-- TED Local Interface IP Address Table
```

```
--
```

```
teLocalIntAddrTable OBJECT-TYPE
```

```
    SYNTAX          SEQUENCE OF TeLocalIntAddrEntry
```

```
    MAX-ACCESS     not-accessible
```

```
    STATUS         current
```

```
    DESCRIPTION
```

```
        "This table contains the IP address information of a local TE link."
```

```
::= { teTables 2 }
```

```
teLocalIntAddrEntry OBJECT-TYPE
```

```
    SYNTAX          TeLocalIntAddrEntry
```

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```
    MAX-ACCESS     not-accessible
```

```
    STATUS         current
```

```
    DESCRIPTION
```

```
        "This entry contains the IP address information of the local TE link."
```

```
    INDEX { ospfAreaId, ospfLsdbLsid, ospfLsdbRouterId,
```

```
teLocalIntAddrIndex }
```

```
::= { teLocalIntAddrTable 1 }
```

```

TeLocalIntAddrEntry ::= SEQUENCE {
    teLocalIntAddrIndex Unsigned32,
    teLocalIntAddr      IPAddress,
}

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

teLocalIntAddr OBJECT-TYPE
    SYNTAX      IPAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object indicates the address of the local TE link."
    ::= { teLocalIntAddrEntry 2 }

--
--  TED Remote Interface IP Address Table
--

teRemoteIntAddrTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF TeRemoteIntAddrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains the IP address information of a remote
TE link."
    ::= { teTables 3 }

teRemoteIntAddrEntry OBJECT-TYPE
    SYNTAX      TeRemoteIntAddrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This entry contains the IP address information of the remote
TE link."
    INDEX { ospfAreaId, ospfLsdbLsid, ospfLsdbRouterId,
teRemoteIntAddrIndex }
    ::= { teRemoteIntAddrTable 1 }

```

```
TeRemoteIntAddrEntry ::= SEQUENCE {
    teRemoteIntAddrIndex Unsigned32,
    teRemoteIntAddr      IPAddress,
}
```

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

```
teRemoteIntAddr OBJECT-TYPE
    SYNTAX      IPAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object indicates the address of the remote TE link."
 ::= { teRemoteIntAddrEntry 2 }
```

```
--
-- TED Switch Capable Table
--
```

```
teSwCapTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF TeSwCapEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains the GMPLS TED switching capability
information."
 ::= { teTables 4 }
```

```
teSwCapEntry OBJECT-TYPE
    SYNTAX      TeSwCapEntry
    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 { ospfAreaId, ospfLsdbLsid, ospfLsdbRouterId,
teSwCapIndex }
 ::= { teSwCapTable 1 }
```

```
TeSwCapEntry ::= SEQUENCE {
    teSwCapIndex      Unsigned32,
```

teSwitchingType INTEGER,
teEncoding INTEGER,

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teMaxLspBandwidthPri0 OCTET STRING,
teMaxLspBandwidthPri1 OCTET STRING,
teMaxLspBandwidthPri2 OCTET STRING,
teMaxLspBandwidthPri3 OCTET STRING,
teMaxLspBandwidthPri4 OCTET STRING,
teMaxLspBandwidthPri5 OCTET STRING,
teMaxLspBandwidthPri6 OCTET STRING,
teMaxLspBandwidthPri7 OCTET STRING,
teMinLspBandwidth OCTET STRING,
teIntMtu Integer32,
teIndication INTEGER

}

teSwCapIndex 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."

::= { teSwCapEntry 1 }

teSwitchingType 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."

::= { teSwCapEntry 2 }

teEncoding 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
```

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DESCRIPTION

"This object indicates the GMPLS encoding type assigned to the TE link."

::= { teSwCapEntry 3 }

teMaxLspBandwidthPri0 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

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."

::= { teSwCapEntry 4 }

teMaxLspBandwidthPri1 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

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."

::= { teSwCapEntry 5 }

teMaxLspBandwidthPri2 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

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."

::= { teSwCapEntry 6 }

teMaxLspBandwidthPri3 OBJECT-TYPE

SYNTAX OCTET STRING (SIZE (4))

UNITS "Byte per seconds"

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."
::= { teSwCapEntry 7 }

teMaxLspBandwidthPri4 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
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."
::= { teSwCapEntry 8 }

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teMaxLspBandwidthPri5 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"

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."
::= { teSwCapEntry 9 }

teMaxLspBandwidthPri6 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
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."
::= { teSwCapEntry 10 }

teMaxLspBandwidthPri7 OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
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."
::= { teSwCapEntry 11 }

teMinLspBandwidth OBJECT-TYPE
SYNTAX OCTET STRING (SIZE (4))
UNITS "Byte per seconds"
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."
 ::= { teSwCapEntry 12 }

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

teIndication OBJECT-TYPE
SYNTAX INTEGER {

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standard (0),
arbitrary (1)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This object indicates whether the interface supports
Standard or Arbitrary SONET/SDH."
 ::= { teSwCapEntry 14 }

--
-- TED SRLG Table
--

teSrlgTable OBJECT-TYPE
SYNTAX SEQUENCE OF TeSrlgEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table contains the SRLG information of the TE link."
 ::= { teTables 5 }

teSrlgEntry OBJECT-TYPE
SYNTAX TeSrlgEntry

```

MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "This entry relates each TE link with its SRLG information."
INDEX { ospfAreaId, ospfLsdbLsid, ospfLsdbRouterId, teSrlgIndex }
 ::= { teSrlgTable 1 }

```

```

TeSrlgEntry ::= SEQUENCE {
    teSrlgIndex Unsigned32
    teSrlg      Integer32
}

```

```

teSrlgIndex 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."
 ::= { teSrlgTableEntry 1 }

```

```

teSrlg 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"
 ::= { teSrlgEntry 2 }

```

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```

-- Conformance Statement
teGroups
    OBJECT IDENTIFIER ::= { teConformance 1 }

```

```

teCompliances
    OBJECT IDENTIFIER ::= { teConformance 2 }

```

-- Module Compliance

```

teModuleFullCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "Compliance statement for agents provides full support
        for the TED MIB"
    MODULE -- this module
        MANDATORY-GROUPS { teMainGroup
}

```

```

 ::= { teCompliances 1 }

--
-- ReadOnly Compliance
--

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

 ::= { teCompliances 2 }

-- Units of conformance.
teMainGroup OBJECT-GROUP
    OBJECTS {
        teLinkInformationSource      ,
        teLinkType                   ,
        teLinkIdAddr                 ,
        teMetric                      ,
        teMaxBandwidth               ,
        teMaxReservableBandwidth     ,
        teUnreservedBandwidthPri0    ,
        teUnreservedBandwidthPri1    ,
        teUnreservedBandwidthPri2    ,
        teUnreservedBandwidthPri3    ,
        teUnreservedBandwidthPri4    ,
        teUnreservedBandwidthPri5    ,
        teUnreservedBandwidthPri6    ,

        teUnreservedBandwidthPri7    ,
        teAdministrativeGroup         ,
        teLocalId                     ,
        teRemoteId                    ,
        teLinkProtectionType         ,
        teLinkInformationData         ,
        teLocalIntAddr                ,
        teRemoteIntAddr               ,
        teSwitchingType               ,
        teEncoding                     ,

```

```

        teMaxLspBandwidthPri0      ,
        teMaxLspBandwidthPri1      ,
        teMaxLspBandwidthPri2      ,
        teMaxLspBandwidthPri3      ,
        teMaxLspBandwidthPri4      ,
        teMaxLspBandwidthPri5      ,
        teMaxLspBandwidthPri6      ,
        teMaxLspBandwidthPri7      ,
        teMinLspBandwidth          ,
        teIntMtu                    ,
        teIndication                ,
        teSrlg                       ,
    }
    STATUS current
    DESCRIPTION
        "Collection of objects for TED management"
 ::= { teGroups 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 TED-STD-MIB

The IANA is requested to assign { teMIB XXX } to the TED-STD-MIB module specified in this document.

8. References

8.1 Normative References

8.2 Informative References

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