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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
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 [GMPLS-routing], [GMPLS-OSPF] and [GMPLS-ISIS] 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
    Engineering (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
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,

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"
 ::= { teTEDEntry 1 }

teaAreaLevelId OBJECT-TYPE
SYNTAX Usigned32 {ospfAreaId, IsisisLevel}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This is corresponding to area ID in OSPF and level ID in
ISIS"
 ::= { teTEDEntry 2 }

teOSPDUID OBJECT-TYPE
SYNTAX Usigned32 {ospfLsdbLsid, IsisisLinkStatePDUID}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This is corresponding to link state ID in OSPF and link
state PDU ID in ISIS"
 ::= { teTEDEntry 3 }

terouterSystem OBJECT-TYPE
SYNTAX Usigned32 {ospfLsdbRouterId, IsisisSystemID}
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
"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"
 ::= { teTEDEntry 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"
 ::= { teTEDEntry 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"
 ::= { teTEDEntry 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"
::= { teTEDEntry 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"
::= { teTEDEntry 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 }

telLinkInformationData 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
telLinkInformationSource.
   If telLinkInformationSource has the value unknown(0) this
   object SHOULD contain a value of zeroDotZero.
   If telLinkInformationSource has the value
   locallyConfigured(1), this object MAY contain the identifier of the
   corresponding row entry in the telLinkTable 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 telLinkInformationSource 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 telLinkInformationSource 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 telLinkInformationSource 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
--

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

telLocalIntAddrEntry OBJECT-TYPE
   SYNTAX       TelLocalIntAddrEntry
   MAX-ACCESS   not-accessible
   STATUS       current
   DESCRIPTION
   "This entry contains the IP address information of the local
   TE link."
   INDEX { ospfAreaId, ospfLsdbLsid, ospfLsdbRouterId,
   telLocalIntAddrIndex }
::= { teLocalIntAddrTable 1 }

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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 }

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"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,
   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
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))
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."
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."

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."

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

teIndication 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."

--
-- 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."

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
tGroups
  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

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9. Acknowledgment

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10. Author’s Address

Tomohiro Otani
KDDI R&D Laboratories, Inc.
2-1-15 Ohara Fujimino Phone: +81-49-278-7357
Saitama, 356-8502. Japan Email: otani@kddilabs.jp

Masanori Miyazawa
KDDI R&D Laboratories, Inc.
2-1-15 Ohara Fujimino Phone: +81-49-278-7559
Saitama, 356-8502. Japan Email: ma-miyazawa@kddilabs.jp

Thomas D. Nadeau
Cisco Systems, Inc.
300 Beaver Brook Road Phone: +1-978-936-1470
Boxboro, MA 01719 Email: tnadeau@cisco.com
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