

Network Working Group  
Category: Internet Draft

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October 2002

**Definitions of Managed Objects for Very High  
Speed Digital Subscriber Lines (VDSL)  
draft-ietf-adslmib-vdsl-05.txt**

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Abstract

This document defines a Management Information Base (MIB) module for use with network management protocols in the Internet community. In particular, it describes objects used for managing Very high speed Digital Subscriber Line (VDSL) interfaces [T1E1311, T1E1011, T1E1013, ETSI2701, ETSI2702, ITU9931, ITU9971].

This document specifies a MIB module in a manner that is compliant to the SMIV2 (STD 58 [RFC2578, [RFC2579](#), [RFC2580](#)]).

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## [1.](#) The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [[RFC2571](#)].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIV1 and described in STD 16 [[RFC1155](#), [RFC1212](#)] and [RFC 1215](#) [[RFC1215](#)]. The second version, called SMIV2, is described in STD 58 [[RFC2578](#), [RFC2579](#), [RFC2580](#)].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15 [[RFC1157](#)]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901](#) [[RFC1901](#)] and [RFC 1906](#) [[RFC1906](#)]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [[RFC1906](#)], [RFC 2572](#) [[RFC2572](#)] and [RFC 2574](#) [[RFC2574](#)].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15 [[RFC1157](#)]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#)

[[RFC1905](#)].

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- o A set of fundamental applications described in [RFC 2573](#) [[RFC2573](#)] and the view-based access control mechanism described in [RFC 2575](#) [[RFC2575](#)].

A more detailed introduction to the current SNMP Management Framework can be found in [RFC 2570](#) [[RFC2570](#)].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIV2. A MIB conforming to the SMIV1 can be produced through the appropriate translations. The resulting translated MIB must be semantically equivalent, except where objects or events are omitted because no translation is possible (use of Counter64). Some machine readable information in SMIV2 will be converted into textual descriptions in SMIV1 during the translation process. However, this loss of machine readable information is not considered to change the semantics of the MIB.

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.](#) Overview**

This document describes an SNMP MIB for managing VDSL Lines. These definitions are based upon the specifications for VDSL as defined in T1E1, ETSI, and ITU documentation [T1E1311, T1E1011, T1E1013, ETSI2701, ETSI2702, ITU9931, ITU9971].

The MIB is located in the MIB tree under MIB 2 transmission, as discussed in the MIB-2 Integration ([RFC 2863](#) [[RFC2863](#)]) section of this document.

### **[2.1](#) Relationship of the VDSL Line MIB to other MIBs**

This section outlines the relationship of this MIB with other MIBs described in RFCs. Specifically, IF-MIB as presented [RFC 2863](#) [[RFC2863](#)] is discussed.

#### **[2.1.1](#) General IF-MIB Integration ([RFC 2863](#))**

The VDSL Line MIB specifies the detailed attributes of a data interface. As such, it needs to integrate with [RFC 2863](#) [[RFC2863](#)]. The IANA has assigned the following ifType to VDSL:

IANAifType ::= TEXTUAL-CONVENTION

...

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```

SYNTAX INTEGER {
    ...
    vdsl(97), -- Very H-speed Digital Subscrib. Loop
    ...
}

```

Additionally, a VDSL line may contain an optional fast channel and an optional interleaved channel which also integrate into [RFC 2863](#) [RFC2863]. The IANA has assigned the following ifTypes to these channels:

```

IANAifType ::= TEXTUAL-CONVENTION
    ...
SYNTAX INTEGER {
    ...
    interleave (124), -- Interleave channel
    fast (125),      -- Fast channel
    ...
}

```

### [2.1.2](#) Usage of ifTable

The MIB branch identified by this ifType contains tables appropriate for this interface type. Most such tables extend the ifEntry table, and are indexed by ifIndex. For interfaces in systems implementing this MIB, those table entries indexed by ifIndex MUST be persistent.

The following attributes are part of the mandatory ifGeneral group in [RFC 2863](#) [RFC2863], and are not duplicated in the VDSL Line MIB.

=====	
ifIndex	Interface index.
ifDescr	See interfaces MIB [RFC2863].
ifType	vdsl(97), interleaved(124), or fast(125)
ifSpeed	Set as appropriate.
ifPhysAddress	This object MUST have an octet string with zero length.
ifAdminStatus	See interfaces MIB [RFC2863].
ifOperStatus	See interfaces MIB [RFC2863].
ifLastChange	See interfaces MIB [RFC2863].

ifName

See interfaces MIB [[RFC2863](#)].

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ifLinkUpDownTrapEnable	Default to enabled(1).
ifHighSpeed	Set as appropriate.
ifConnectorPresent	Set as appropriate.

=====

Figure 1: Use of ifTable Objects

[Section 2.3](#), below, describes the structure of this MIB in relation to ifEntry in greater detail.

## [2.2](#) Conventions used in the MIB

### [2.2.1](#) Naming Conventions

- A. Vtuc -- (VTUC) modem at near (Central) end of line
- B. Vtur -- (VTUR) modem at Remote end of line
- C. Vtu -- One of either Vtuc or Vtur
- D. Curr -- Current
- E. Prev -- Previous
- F. Atn -- Attenuation
- G. ES -- Errored Second
- H. SES -- Severely Errored Second
- I. UAS -- Unavailable Second
- J. LCS -- Line Code Specific
- K. Lof -- Loss of Frame
- L. Lol -- Loss of Link
- M. Los -- Loss of Signal
- N. Lpr -- Loss of Power
- O. xxxs -- interval of Seconds in which xxx occurs  
(e.g., xxx=Lof, Los, Lpr)
- P. Max -- Maximum
- Q. Mgn -- Margin
- R. Min -- Minimum
- S. Psd -- Power Spectral Density
- T. Snr -- Signal to Noise Ratio
- U. Tx -- Transmit
- V. Blks -- Blocks

### [2.2.2](#) Textual Conventions

The following textual conventions are defined to reflect the line topology in the MIB (further discussed in the following section) and to define the behavior of the statistics to be maintained by an agent.

- o VdslLineCodingType :

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Attributes with this syntax identify the line coding used.  
Specified as an INTEGER, the three values are:

```
other(1)  -- none of the following
mcm(2)    -- Multiple Carrier Modulation
scm(3)    -- Single Carrier Modulation
```

o VdslLineEntity :

Attributes with this syntax reference the two sides of a line.  
Specified as an INTEGER, the two values are:

```
vtuc(1)  -- central site modem
vtur(2)  -- remote site modem
```

### **2.3 Structure**

The MIB is structured into following MIB groups:

o vdslGroup :

This group supports all line code independent MIB objects found in this MIB. The following tables contain objects permitted for ifType vdsl(97):

- vdslLineTable
- vdslPhysTable
- vdslPerfDataTable
- vdslPerfIntervalTable
- vdslPerf1DayIntervalTable
- vdslLineConfProfileTable
- vdslLineAlarmConfProfileTable

The following tables contain objects permitted for ifTypes interleaved(124) and (fast):

- vdslChanTable
- vdslChanPerfDataTable
- vdslChanPerfIntervalTable
- vdslChanPerf1DayIntervalTable

o vdslMCMGroup :

This group supports MIB objects for defining configuration profiles for Multiple Carrier Modulation (MCM) VDSL modems. It contains the following tables:

- vdslLineMCMConfProfileTable
- vdslLineMCMConfProfileTxBandTable
- vdslLineMCMConfProfileRxBandTable

- vdslLineMCMConfProfileTxPSDTable

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- vdslLineMCMConfProfileMaxTxPSDTable
- vdslLineMCMConfProfileMaxRxPSDTable

Objects in this group MUST be implemented for MCM VDSL lines.

o vdslSCMGroup :

This group supports MIB objects for defining configuration profiles for Single Carrier Modulation (SCM) VDSL modems. It contains the following tables:

- vdslLineSCMConfProfileTable
- vdslLineSCMConfProfileTxBandTable

This group also supports the following line code dependent tables:

- vdslSCMPhysBandTable

Objects in this group MUST be implemented for SCM VDSL lines.

Figure 2, below, displays the relationship of the tables in the vdslGroup to ifEntry (and each other):

```

ifEntry(ifType=97) ----> vdslLineTableEntry 1:(0..1)

vdslLineTableEntry ----> vdslPhysTableEntry 1:(0..2)
                      ----> vdslPerfDataEntry 1:(0..2)
                      ----> vdslLineConfProfileEntry 1:(0..1)
                      ----> vdslLineAlarmConfProfileEntry 1:(0..1)

vdslPhysTableEntry  ----> vdslPerfIntervalEntry 1:(0..96)
                      ----> vdslPerf1DayIntervalEntry 1:(0..30)

ifEntry(ifType=124) ----> vdslChanEntry 1:(0..2)
                      ----> vdslChanPerfDataEntry 1:(0..2)

ifEntry(ifType=125) ----> vdslChanEntry 1:(0..2)
                      ----> vdslChanPerfDataEntry 1:(0..2)

vdslChanEntry        ----> vdslchanPerfIntervalEntry 1:(0..96)
                      ----> vdslchan1DayPerfIntervalEntry 1:(0..30)

```

Figure 2: Table Relationships

### **2.3.1 Line Topology**

A VDSL Line consists of a two units - Vtuc (the central termination unit) and a Vtur (the remote termination unit).

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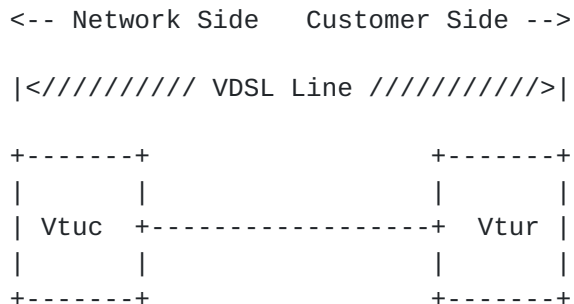


Figure 3: General topology for a VDSL Line

## 2.4 Counters, Interval Buckets and Thresholds

For Loss of Frame (lof), Loss of Link (lol), Loss of Signal (los), and Loss of Power (lpr), Errored Seconds (ES), Severely Errored Seconds (SES), and Unavailable Seconds (UAS) there are event counters, current 15-minute, 0 to 96 15-minute history bucket(s), and 0 to 30 1-day history bucket(s) of "interval-counters". Each current 15-minute event bucket has an associated threshold notification.

Each of these counters uses the textual conventions defined in the HC-PerfHist-TC-MIB. The HC-PerfHist-TC-MIB is a work-in-progress, but simply defines 64-bit versions of the textual conventions found in [RFC 2493](#) [[RFC2493](#)].

There is no requirement for an agent to ensure a fixed relationship between the start of a fifteen minute and any wall clock; however some implementations may align the fifteen minute intervals with quarter hours. Likewise, an implementation may choose to align one day intervals with the start of a day.

Counters are not reset when an Vtu is reinitialized, only when the agent is reset or reinitialized (or under specific request outside the scope of this MIB).

## 2.5 Profiles

As a managed node can handle a large number of Vtus, (e.g., hundreds or perhaps thousands of lines), provisioning every parameter on every Vtu may become burdensome. Moreover, most lines are provisioned identically with the same set of parameters. To simplify the provisioning process, this MIB makes use of profiles. A profile is a set of parameters that can be shared by multiple lines using the same configuration.

The following profiles are used in this MIB:

- o Line Configuration Profiles - Line configuration profiles contain parameters for configuring VDSL lines. They are defined in nine

tables:

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- vdslLineConfProfileTable
- vdslLineMCMConfProfileTable
- vdslLineMCMConfProfileTxBandTable
- vdslLineMCMConfProfileRxBandTable
- vdslLineMCMConfProfileTxPSDTable
- vdslLineMCMConfProfileMaxTxPSDTable
- vdslLineMCMConfProfileMaxRxPSDTable
- vdslLineSCMConfProfileTable
- vdslLineSCMConfProfileTxBandTable

As noted above, the latter eight tables in the above list are line code specific.

The object, vdslLineConfProfileIndex, is used as a common index for all of the above tables. A profile, then, consists of the combination of a line code independent configuration (i.e. an entry in vdslLineConfProfileTable) and a set of line code dependent configurations (i.e. entries in either vdslLineMCMConfProfilexxx or vdslLineSCMConfProfilexxx).

- o Alarm Configuration Profiles - These profiles contain parameters for configuring alarm thresholds for VDSL modems. These profiles are defined in the vdslLineAlarmConfProfileTable.

One or more lines may be configured to share parameters of a single profile by setting its vdslLineConfProfile objects to the value of this profile. If a change is made to the profile, all lines that refer to it will be reconfigured to the changed parameters. Before a profile can be deleted or taken out of service it must be first unreferenced from all associated lines.

Implementations MUST provide a default profile with an index value of 1 for each profile type. The values of the associated parameters will be vendor specific unless otherwise indicated in this document. Before a line's profiles have been set, these profiles will be automatically used by setting vdslLineConfProfile and vdslLineAlarmConfProfile to 1 where appropriate. This default profile entry is considered reserved in the context of profiles defined in this MIB.

Profiles are created, assigned, and deleted dynamically using the profile name and profile row status in each of the four profile tables.

Profile changes MUST take effect immediately. These changes MAY result in a restart (hard reset or soft restart) of the units on the line.

## [2.6](#) Notifications

The ability to generate the SNMP notifications coldStart/WarmStart

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(per [\[RFC2863\]](#)) which are per agent (e.g., per Digital Subscriber Line Access Multiplexer, or DSLAM, in such a device), and linkUp/linkDown (per [\[RFC2863\]](#)) which are per interface (i.e., VDSL line) is required.

The notifications defined in this MIB are for initialization failure and for the threshold crossings associated with the following events: lof, lol, los, lpr, ES, SES, and UAS. Each threshold has its own enable/threshold value. When that value is 0, the notification is disabled.

A linkDown notification MAY be generated whenever any of lof, lol, los, lpr, ES, SES, or UAS threshold crossing event (as defined in this MIB) occurs. The corresponding linkUp notification MAY be sent when all link failure conditions are cleared.

The vdslCurrStatus is a bitmask representing all outstanding error conditions associated with a particular VDSL modem. Note that since status of remote modems is obtained via the EOC, this information may be unavailable for units that are unreachable via EOC during a line error condition. Therefore, not all conditions may always be included in its current status. Notifications corresponding to the bit fields in this object are defined.

A threshold notification occurs whenever the corresponding current 15-minute interval error counter becomes equal to, or exceeds the threshold value. One notification may be sent per interval per interface. Since the current 15-minute counter are reset to 0 every 15 minutes, if the condition persists, the notification may recur as often as every 15 minutes. For example, to get a notification whenever a "loss of" event occurs (but at most once every 15 minutes), set the corresponding threshold to 1. The agent will generate a notification when the event originally occurs.

Note that the Network Management System, or NMS, may receive a linkDown notification, as well, if enabled (via ifLinkUpDownTrapEnable [\[RFC2863\]](#)). At the beginning of the next 15 minute interval, the counter is reset. When the first second goes by and the event occurs, the current interval bucket will be 1, which equals the threshold and the notification will be sent again.

## **2.7 Persistence**

All objects defined in this MIB which may be set (read-write or read-create), should be stored persistently. Following is an exhaustive list of these persistent objects:

```
vdslLineConfProfile
vdslLineAlarmConfProfile
vdslLineConfProfileIndex
```

vdslLineConfProfileName  
vdslLineConfDownstreamMaxPwr

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vdslLineConfUpstreamMaxPwr  
vdslLineConfDownstreamMaxSnrMgn  
vdslLineConfDownstreamMinSnrMgn  
vdslLineConfDownstreamTargetSnrMgn  
vdslLineConfUpstreamMaxSnrMgn  
vdslLineConfUpstreamMinSnrMgn  
vdslLineConfUpstreamTargetSnrMgn  
vdslLineConfDownstreamFastMaxDataRate  
vdslLineConfDownstreamFastMinDataRate  
vdslLineConfDownstreamSlowMaxDataRate  
vdslLineConfDownstreamSlowMinDataRate  
vdslLineConfUpstreamFastMaxDataRate  
vdslLineConfUpstreamFastMinDataRate  
vdslLineConfUpstreamSlowMaxDataRate  
vdslLineConfUpstreamSlowMinDataRate  
vdslLineConfRateAdaptationRatio  
vdslLineConfUpstreamDataRate  
vdslLineConfDownstreamDataRate  
vdslLineConfDownstreamMaxInterDelay  
vdslLineConfUpstreamMaxInterDelay  
vdslLineConfUpstreamPboControl  
vdslLineConfDownstreamPboControl  
vdslLineConfDeploymentScenario  
vdslLineConfAdslOccupancy  
vdslLineConfApplicableStandard  
vdslLineConfBandPlan  
vdslLineConfBandPlanFx  
vdslLineConfBandU0Usage  
vdslLineConfUpstreamPsdTemplate  
vdslLineConfDownstreamPsdTemplate  
vdslLineConfProfileRowStatus  
vdslMCMConfProfileTxWindowLength  
vdslMCMConfProfileRowStatus  
vdslMCMConfProfileTxBandNumber  
vdslMCMConfProfileTxBandStart  
vdslMCMConfProfileTxBandStop  
vdslMCMConfProfileTxBandRowStatus  
vdslMCMConfProfileRxBandNumber  
vdslMCMConfProfileRxBandStart  
vdslMCMConfProfileRxBandStop  
vdslMCMConfProfileRxBandRowStatus  
vdslMCMConfProfileTxPSDNumber  
vdslMCMConfProfileTxPSDTone  
vdslMCMConfProfileTxPSDPSD  
vdslMCMConfProfileTxPSDRowStatus  
vdslMCMConfProfileMaxTxPSDNumber  
vdslMCMConfProfileMaxTxPSDTone  
vdslMCMConfProfileMaxTxPSDPSD  
vdslMCMConfProfileMaxTxPSDRowStatus

vds1MCMConfProfileMaxRxPSDNumber  
vds1MCMConfProfileMaxRxPSDTone

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```
vdslMCMConfProfileMaxRxPSDPSD
vdslMCMConfProfileMaxRxPSDRowStatus
vdslSCMConfProfileSide
vdslSCMConfProfileInterleaveDepth
vdslSCMConfProfileNumCarriers
vdslSCMConfProfileFastCodewordSize
vdslSCMConfProfileTransmitPSDMask
vdslSCMConfProfileVendorNotch1Start
vdslSCMConfProfileVendorNotch1Stop
vdslSCMConfProfileVendorNotch2Start
vdslSCMConfProfileVendorNotch2Stop
vdslSCMConfProfileFastFecSize
vdslSCMConfProfileSlowBlockSize
vdslSCMConfProfileRowStatus
vdslSCMConfProfileTxBandNumber
vdslSCMConfProfileTxBandTransmitPSDLevel
vdslSCMConfProfileTxBandSymbolRateProfile
vdslSCMConfProfileTxBandConstellationSize
vdslSCMConfProfileTxBandCenterFrequency
vdslSCMConfProfileTxBandRowStatus
vdslLineAlarmConfProfileIndex
vdslLineAlarmConfProfileName
vdslThresh15MinLofs
vdslThresh15MinLoss
vdslThresh15MinLprs
vdslThresh15MinESS
vdslThresh15MinSESS
vdslThresh15MinUASs
vdslInitFailureNotificationEnable
vdslLineAlarmConfProfileRowStatus
```

It should also be noted that interface indices in this MIB are maintained persistently. VACM data relating to these should be stored persistently as well.

### **3. Conformance and Compliance**

For VDSL lines, the following group is mandatory:

- vdslGroup

For MCM VDSL lines, the following group is optional:

- vdslSCMGroup

For SCM VDSL lines, the following group is optional:

- vdslMCMGroup

### **4. Definitions**

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VDSL-LINE-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY,  
OBJECT-TYPE,  
Counter64,  
Gauge32,  
Integer32,  
Unsigned32,  
NOTIFICATION-TYPE,  
transmission FROM SNMPv2-SMI  
TEXTUAL-CONVENTION,  
RowStatus,  
TruthValue FROM SNMPv2-TC  
HCPerfValidIntervals,  
HCPerfInvalidIntervals,  
HCPerfTimeElapsed,  
HCPerfIntervalThreshold,  
HCPerfCurrentCount,  
HCPerfIntervalCount FROM HC-PerfHist-TC-MIB  
MODULE-COMPLIANCE,  
OBJECT-GROUP,  
NOTIFICATION-GROUP FROM SNMPv2-CONF  
ifIndex FROM IF-MIB  
SnmpAdminString FROM SNMP-FRAMEWORK-MIB;

vdslMIB MODULE-IDENTITY

LAST-UPDATED "200210150000Z" -- October 15, 2002

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"

## DESCRIPTION

"The MIB module defining objects for the management of a pair of VDSL modems at each end of the VDSL line. Each such line has an entry in an ifTable which may include multiple modem lines. An agent may reside at either end of the VDSL line however the MIB is designed to require no management communication between them beyond that inherent in the low-level VDSL line protocol. The agent may monitor and control this protocol for its needs.

VDSL lines may support optional Fast or Interleaved channels. If these are supported, additional entries corresponding to the supported channels must be created in the ifTable. Thus a VDSL line that supports both channels will have three entries in the ifTable, one for each physical, fast, and interleaved, whose ifType values are equal to vdsl(97), fast(125), and interleaved(124), respectively. The ifStackTable is used to represent the relationship between the entries.

## Naming Conventions:

Vtuc -- (VTUC) modem at near (Central) end of line  
Vtur -- (VTUR) modem at Remote end of line  
Vtu -- One of either Vtuc or Vtur  
Curr -- Current  
Prev -- Previous  
Atn -- Attenuation  
ES -- Errored Second.  
LCS -- Line Code Specific  
Lof -- Loss of Frame  
Lol -- Loss of Link  
Los -- Loss of Signal  
Lpr -- Loss of Power  
xxxs -- interval of Seconds in which xxx occurs  
(e.g., xxx=Lof, Los, Lpr)  
Max -- Maximum  
Mgn -- Margin  
Min -- Minimum  
Psd -- Power Spectral Density  
Snr -- Signal to Noise Ratio  
Tx -- Transmit  
Blks -- Blocks

"

REVISION "200111010000Z" -- November 1, 2001

DESCRIPTION "Initial draft."

REVISION "200203310000Z" -- March 31, 2002

DESCRIPTION "Added R. Abbi as co-author."

REVISION "200204090000Z" -- April 9, 2002

DESCRIPTION "Removed use of IMPLIED profile indices."

Expires April 15, 2002

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REVISION "200206160000Z" -- June 16, 2002  
DESCRIPTION "Revised per input from DSL Forum."

REVISION "200209230000Z" -- September 23, 2002  
DESCRIPTION "Revised per more input from DSL Forum."

REVISION "200210150000Z" -- October 15, 2002  
DESCRIPTION "Modified per input from Randy Presuhn and  
Moti Morgenstern."

::= { transmission xxxx }

vdslLineMib OBJECT IDENTIFIER ::= { vdslMIB 1 }  
vdslMibObjects OBJECT IDENTIFIER ::= { vdslLineMib 1 }

--  
-- textual conventions used in this MIB  
--

VdslLineCodingType ::= TEXTUAL-CONVENTION  
STATUS current  
DESCRIPTION  
"This data type is used as the syntax for the VDSL  
Line Code."  
SYNTAX INTEGER  
{  
other(1), -- none of the following  
mcm(2), -- Multiple Carrier Modulation  
scm(3) -- Single Carrier Modulation  
}

VdslLineEntity ::= TEXTUAL-CONVENTION  
STATUS current  
DESCRIPTION  
"Identifies a modem as being either Vtuc or Vtur. A  
VDSL line consists of two modems, a Vtuc and a Vtur."  
SYNTAX INTEGER  
{  
vtuc(1), -- central site modem  
vtur(2) -- remote site modem  
}

--  
-- objects  
--

vdslLineTable OBJECT-TYPE  
SYNTAX SEQUENCE OF VdslLineEntry  
MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION

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"This table includes common attributes describing both ends of the line. It is required for all VDSL physical interfaces. VDSL physical interfaces are those ifEntries where ifType is equal to vdsl(97)."

```
::= { vdslMibObjects 1 }
```

vdslLineEntry OBJECT-TYPE

```
SYNTAX      VdslLineEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION "An entry in the vdslLineTable."
INDEX { ifIndex }
::= { vdslLineTable 1 }
```

VdslLineEntry ::=

```
SEQUENCE
{
    vdslLineCoding                VdslLineCodingType,
    vdslLineType                  INTEGER,
    vdslLineConfProfile            Integer32,
    vdslLineAlarmConfProfile       Integer32
}
```

vdslLineCoding OBJECT-TYPE

```
SYNTAX      VdslLineCodingType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Specifies the VDSL coding type used on this line."
REFERENCE   "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineEntry 1 }
```

vdslLineType OBJECT-TYPE

```
SYNTAX      INTEGER
{
    noChannel(1),                -- no channels exist
    fastOnly(2),                 -- fast channel only
    slowOnly(3),                 -- slow channel only
    either(4),                   -- either fast or slow channel exist
    both(5)                      -- both fast and slow channels exist
}
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Defines the type of VDSL physical line entity that exists, by defining whether and how the line is channelized. If the line is channelized, the value will be other than noChannel(1). This object defines which channel type(s) are supported."
```

In the case that the line is channelized, the manager

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can use the ifStackTable to determine the ifIndex for the associated channel(s).

Note that slow and interleaved refer to the same channel."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslLineEntry 2 }

vdslLineConfProfile OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The value of this object identifies the row in the VDSL Line Configuration Profile Table, ( vdslLineConfProfileTable ), which applies for this VDSL line, and channels if applicable."

::= { vdslLineEntry 3 }

vdslLineAlarmConfProfile OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The value of this object identifies the row in the VDSL Line Alarm Configuration Profile Table, ( vdslLineAlarmConfProfileTable ), which applies to this VDSL line, and channels if applicable."

::= { vdslLineEntry 4 }

vdslPhysTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslPhysEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table provides one row for each Vtu. Each row contains the Physical Layer Parameters table for that Vtu. VDSL physical interfaces are those ifEntries where ifType is equal to vdsl(97)."

::= { vdslMibObjects 2 }

vdslPhysEntry OBJECT-TYPE

SYNTAX VdslPhysEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION "An entry in the vdslPhysTable."

INDEX { ifIndex,  
vdslPhysSide }

::= { vdslPhysTable 1 }

VdslPhysEntry ::=

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## SEQUENCE

{	
vdslPhysSide	VdslLineEntity,
vdslInvSerialNumber	SnmpAdminString,
vdslInvVendorID	SnmpAdminString,
vdslInvVersionNumber	SnmpAdminString,
vdslCurrSnrMgn	Integer32,
vdslCurrAtn	Gauge32,
vdslCurrStatus	BITS,
vdslCurrOutputPwr	Integer32,
vdslCurrAttainableRate	Gauge32
}	

## vdslPhysSide OBJECT-TYPE

SYNTAX VdslLineEntity

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Identifies whether the modem is the Vtuc or Vtur."

::= { vdslPhysEntry 1 }

## vdslInvSerialNumber OBJECT-TYPE

SYNTAX SnmpAdminString(SIZE (0..32))

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"The vendor specific string that identifies the vendor equipment."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

::= { vdslPhysEntry 2 }

## vdslInvVendorID OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (0..16))

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"The vendor ID code is a copy of the binary vendor identification field expressed as readable characters."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

::= { vdslPhysEntry 3 }

## vdslInvVersionNumber OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (0..16))

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"The vendor specific version number sent by this Vtu as part of the initialization messages. It is a copy of the binary version number field expressed as

readable characters."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

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```
::= { vdslPhysEntry 4 }
```

vdslCurrSnrMgn OBJECT-TYPE

SYNTAX Integer32 (-127..127)

UNITS "0.25dBm"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Noise Margin as seen by this Vtu with respect to its received signal in 0.25dB. The effective range is -31.75 to +31.75dB."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

```
::= { vdslPhysEntry 5 }
```

vdslCurrAtn OBJECT-TYPE

SYNTAX Gauge32 (0..255)

UNITS "0.25dBm"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Measured difference in the total power transmitted by the peer Vtu and the total power received by this Vtu. The effective range is 0 to +63.75dB."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

```
::= { vdslPhysEntry 6 }
```

vdslCurrStatus OBJECT-TYPE

SYNTAX BITS

```
{  
    noDefect(0),  
    lossOfFraming(1),  
    lossOfSignal(2),  
    lossOfPower(3),  
    lossOfSignalQuality(4),  
    lossOfLink(5),  
    dataInitFailure(6),  
    configInitFailure(7),  
    protocolInitFailure(8),  
    noPeerVtuPresent(9)  
}
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates current state of the Vtu line. This is a bit-map of possible conditions. The various bit positions are:

0	noDefect	There no defects on the line
---	----------	------------------------------

1    lossOfFraming            Vtu failure due to not receiving

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valid frame.

- |   |                     |  |
|---|---------------------|--|
| 2 | lossOfSignal        | Vtu failure due to not receiving signal.   |
| 3 | lossOfPower         | Vtu failure due to loss of power.  |
| 4 | lossOfSignalQuality | Loss of Signal Quality is declared when the Noise Margin falls below the Minimum Noise Margin, or the bit-error-rate exceeds $10^{-7}$ . |
| 5 | lossOfLink          | Vtu failure due to inability to link with peer Vtu.  |
| 6 | dataInitFailure     | Vtu failure during initialization due to bit errors corrupting startup exchange data.  |
| 7 | configInitFailure   | Vtu failure during initialization due to peer Vtu not able to support requested configuration.   |
| 8 | protocolInitFailure | Vtu failure during initialization due to incompatible protocol used by the peer Vtu.   |
| 9 | noPeerVtuPresent    | Vtu failure during initialization due to no activation sequence detected from peer Vtu.  |

This is intended to supplement ifOperStatus."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslPhysEntry 7 }

#### vdslCurrOutputPwr OBJECT-TYPE

SYNTAX Integer32 (0..160)  
 UNITS "0.1dBm"  
 MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION

"Measured total output power transmitted by this VTU.  
 This is the measurement that was reported during  
 the last activation sequence."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslPhysEntry 8 }

#### vdslCurrAttainableRate OBJECT-TYPE

SYNTAX Gauge32  
 UNITS "kbps"

MAX-ACCESS read-only

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STATUS current

DESCRIPTION

"Indicates the maximum currently attainable data rate in steps of 1024 bits/second by the Vtu. This value will be equal or greater than the current line rate. Note that for SCM, the minimum and maximum data rates are equal."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslPhysEntry 9 }

vdslChanTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslChanEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table provides one row for each Vtu channel. VDSL channel interfaces are those ifEntries where ifType is equal to interleave(124) or fast(125)."

::= { vdslMibObjects 3 }

vdslChanEntry OBJECT-TYPE

SYNTAX VdslChanEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the vdslChanTable."

INDEX { ifIndex,  
           vdslPhysSide }

::= { vdslChanTable 1 }

VdslChanEntry ::=

SEQUENCE

```
{
  vdslChanInterleaveDelay          Gauge32,
  vdslChanCrcBlockLength          Gauge32
}
```

vdslChanInterleaveDelay OBJECT-TYPE

SYNTAX Gauge32

UNITS "ms"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Interleave Delay for this channel."

Interleave delay applies only to the interleave (slow) channel and defines the mapping (relative spacing) between subsequent input bytes at the interleaver input and their placement in the bit

stream at the interleaver output. Larger numbers provide greater separation between consecutive input bytes in the output bit stream allowing for

improved impulse noise immunity at the expense of payload latency.

In the case where the ifType is fast(125), use noSuchObject."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslChanEntry 1 }

vdslChanCrcBlockLength OBJECT-TYPE

SYNTAX Gauge32

UNITS "byte"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the length of the channel data-block on which the CRC operates."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslChanEntry 2 }

vdslPerfDataTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslPerfDataEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table provides one row for each VDSL physical interface. VDSL physical interfaces are those ifEntries where ifType is equal to vdsl(97)."

::= { vdslMibObjects 4 }

vdslPerfDataEntry OBJECT-TYPE

SYNTAX VdslPerfDataEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the vdslPerfDataTable."

INDEX { ifIndex,  
           vdslPhysSide }

::= { vdslPerfDataTable 1 }

VdslPerfDataEntry ::=

SEQUENCE

{	
vdslPerfValidIntervals	HCPperfValidIntervals,
vdslPerfInvalidIntervals	HCPperfInvalidIntervals,
vdslPerfLofs	Counter64,
vdslPerfLoss	Counter64,
vdslPerfLprs	Counter64,
vdslPerfESSs	Counter64,
vdslPerfSESSs	Counter64,

vdslPerfUASS  
vdslPerfInits  
vdslPerfCurr15MinTimeElapsed

Counter64,  
Counter64,  
HCPperfTimeElapsed,

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vdslPerfCurr15MinLofs	HCPperfCurrentCount,
vdslPerfCurr15MinLoss	HCPperfCurrentCount,
vdslPerfCurr15MinLprs	HCPperfCurrentCount,
vdslPerfCurr15MinESS	HCPperfCurrentCount,
vdslPerfCurr15MinSESS	HCPperfCurrentCount,
vdslPerfCurr15MinUASS	HCPperfCurrentCount,
vdslPerfCurr15MinInits	HCPperfCurrentCount,
vdslPerf1DayValidIntervals	HCPperfValidIntervals,
vdslPerf1DayInvalidIntervals	HCPperfInvalidIntervals,
vdslPerfCurr1DayTimeElapsed	HCPperfTimeElapsed,
vdslPerfCurr1DayLofs	Counter64,
vdslPerfCurr1DayLoss	Counter64,
vdslPerfCurr1DayLprs	Counter64,
vdslPerfCurr1DayESS	Counter64,
vdslPerfCurr1DaySESS	Counter64,
vdslPerfCurr1DayUASS	Counter64,
vdslPerfCurr1DayInits	Counter64
}	

#### vdslPerfValidIntervals OBJECT-TYPE

SYNTAX           HCPperfValidIntervals  
 MAX-ACCESS      read-only  
 STATUS           current  
 DESCRIPTION  
     "Valid Intervals per definition found in  
     HC-PerfHist-TC-MIB."  
 ::= { vdslPerfDataEntry 1 }

#### vdslPerfInvalidIntervals OBJECT-TYPE

SYNTAX           HCPperfInvalidIntervals  
 MAX-ACCESS      read-only  
 STATUS           current  
 DESCRIPTION  
     "Invalid Intervals per definition found in  
     HC-PerfHist-TC-MIB."  
 ::= { vdslPerfDataEntry 2 }

#### vdslPerfLofs OBJECT-TYPE

SYNTAX           Counter64  
 UNITS            "seconds"  
 MAX-ACCESS      read-only  
 STATUS           current  
 DESCRIPTION  
     "Count of seconds since the unit was last reset that there  
     was Loss of Framing."  
 REFERENCE        "T1E1.4/2000-009R3"   -- Part 1, common spec  
 ::= { vdslPerfDataEntry 3 }

#### vdslPerfLoss OBJECT-TYPE

SYNTAX	Counter64
UNITS	"seconds"
MAX-ACCESS	read-only

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STATUS current  
DESCRIPTION  
"Count of seconds since the unit was last reset that there  
was Loss of Signal."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfDataEntry 4 }

vdslPerfLprs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of seconds since the unit was last reset that there  
was Loss of Power."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfDataEntry 5 }

vdslPerfESS OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Errored Seconds since the unit was last reset.  
An Errored Second is a one-second interval containing one  
or more crc anomalies, or one or more los or lof defects."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfDataEntry 6 }

vdslPerfSESS OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Severely Errored Seconds since the unit was last  
reset."  
::= { vdslPerfDataEntry 7 }

vdslPerfUASS OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Unavailable Seconds since the unit was last  
reset."  
::= { vdslPerfDataEntry 8 }

vdslPerfInits OBJECT-TYPE  
SYNTAX Counter64

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MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of the line initialization attempts since the unit  
    was last reset. This count includes both successful and  
    failed attempts."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfDataEntry 9 }

vdslPerfCurr15MinTimeElapsed OBJECT-TYPE

SYNTAX HCPerfTimeElapsed  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Total elapsed seconds in this interval."  
::= { vdslPerfDataEntry 10 }

vdslPerfCurr15MinLoFs OBJECT-TYPE

SYNTAX HCPerfCurrentCount  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of seconds during this interval that there  
    was Loss of Framing."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfDataEntry 11 }

vdslPerfCurr15MinLoss OBJECT-TYPE

SYNTAX HCPerfCurrentCount  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of seconds during this interval that there  
    was Loss of Signal."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfDataEntry 12 }

vdslPerfCurr15MinLprs OBJECT-TYPE

SYNTAX HCPerfCurrentCount  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of seconds during this interval that there  
    was Loss of Power."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

```
::= { vdslPerfDataEntry 13 }
```

```
vdslPerfCurr15MinESs OBJECT-TYPE
```

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SYNTAX           HCPperfCurrentCount  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of Errored Seconds during this interval. An Errored  
    Second is a one-second interval containing one or more crc  
    anomalies, or one or more los or lof defects."  
REFERENCE        "T1E1.4/2000-009R3"     -- Part 1, common spec  
::= { vdslPerfDataEntry 14 }

vdslPerfCurr15MinSESSs OBJECT-TYPE

SYNTAX           HCPperfCurrentCount  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of Severely Errored Seconds during this interval."  
::= { vdslPerfDataEntry 15 }

vdslPerfCurr15MinUASs OBJECT-TYPE

SYNTAX           HCPperfCurrentCount  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of Unavailable Seconds during this interval."  
::= { vdslPerfDataEntry 16 }

vdslPerfCurr15MinInits OBJECT-TYPE

SYNTAX           HCPperfCurrentCount  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of the line initialization attempts during this  
    interval. This count includes both successful and  
    failed attempts."  
REFERENCE        "T1E1.4/2000-009R3"     -- Part 1, common spec  
::= { vdslPerfDataEntry 17 }

vdslPerf1DayValidIntervals OBJECT-TYPE

SYNTAX           HCPperfValidIntervals  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Valid Intervals per definition found in  
    HC-PerfHist-TC-MIB."  
::= { vdslPerfDataEntry 18 }

vdslPerf1DayInvalidIntervals OBJECT-TYPE

SYNTAX            HCPperfInvalidIntervals

MAX-ACCESS       read-only

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STATUS           current  
DESCRIPTION  
    "Invalid Intervals per definition found in  
    HC-PerfHist-TC-MIB."  
 ::= { vdslPerfDataEntry 19 }

vdslPerfCurr1DayTimeElapsed OBJECT-TYPE  
SYNTAX           HCPperfTimeElapsed  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Number of seconds that have elapsed since the beginning  
    of the current 1-day interval."  
 ::= { vdslPerfDataEntry 20 }

vdslPerfCurr1DayLofs OBJECT-TYPE  
SYNTAX           Counter64  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of Loss of Framing (LOF) Seconds since the  
    beginning of the current 1-day interval."  
 ::= { vdslPerfDataEntry 21 }

vdslPerfCurr1DayLoss OBJECT-TYPE  
SYNTAX           Counter64  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of Loss of Signal (LOS) Seconds since the beginning  
    of the current 1-day interval."  
 ::= { vdslPerfDataEntry 22 }

vdslPerfCurr1DayLprs OBJECT-TYPE  
SYNTAX           Counter64  
UNITS            "seconds"  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of Loss of Power (LPR) Seconds since the beginning  
    of the current 1-day interval."  
 ::= { vdslPerfDataEntry 23 }

vdslPerfCurr1DayESs OBJECT-TYPE  
SYNTAX           Counter64  
UNITS            "seconds"

MAX-ACCESS	read-only
STATUS	current
DESCRIPTION	

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"Count of Errored Seconds (ES) since the beginning of the current 1-day interval."  
 ::= { vdslPerfDataEntry 24 }

vdslPerfCurr1DaySESSs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Severely Errored Seconds (SES) since the beginning of the current 1-day interval."  
 ::= { vdslPerfDataEntry 25 }

vdslPerfCurr1DayUASs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Unavailable Seconds (UAS) since the beginning of the current 1-day interval."  
 ::= { vdslPerfDataEntry 26 }

vdslPerfCurr1DayInits OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of the line initialization attempts since the beginning of the current 1-day interval. This count includes both successful and failed attempts."  
 ::= { vdslPerfDataEntry 27 }

vdslPerfIntervalTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslPerfIntervalEntry  
MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION  
"This table provides one row for each Vtu performance data collection interval. VDSL physical interfaces are those ifEntries where ifType is equal to vdsl(97)."  
 ::= { vdslMibObjects 5 }

vdslPerfIntervalEntry OBJECT-TYPE

SYNTAX VdslPerfIntervalEntry  
MAX-ACCESS not-accessible  
STATUS current

DESCRIPTION

"An entry in the vds1PerfIntervalTable."

INDEX { ifIndex,

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```

        vdslPhysSide,
        vdslIntervalNumber }
 ::= { vdslPerfIntervalTable 1 }

```

```
VdslPerfIntervalEntry ::=
```

```
SEQUENCE
```

```

{
    vdslIntervalNumber                Unsigned32,
    vdslIntervalLofs                  HCPerfIntervalCount,
    vdslIntervalLoss                   HCPerfIntervalCount,
    vdslIntervalLprs                   HCPerfIntervalCount,
    vdslIntervalESS                    HCPerfIntervalCount,
    vdslIntervalSESS                   HCPerfIntervalCount,
    vdslIntervalUASS                   HCPerfIntervalCount,
    vdslIntervalInits                  HCPerfIntervalCount
}

```

```
vdslIntervalNumber OBJECT-TYPE
```

```
SYNTAX      Unsigned32 (1..96)
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```

    "Performance Data Interval number 1 is the the most
    recent previous interval; interval 96 is 24 hours ago.
    Intervals 2..96 are optional."

```

```
 ::= { vdslPerfIntervalEntry 1 }
```

```
vdslIntervalLofs OBJECT-TYPE
```

```
SYNTAX      HCPerfIntervalCount
```

```
UNITS       "seconds"
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```

    "Count of seconds in the interval when there was Loss
    of Framing."

```

```
REFERENCE   "T1E1.4/2000-009R3"    -- Part 1, common spec
```

```
 ::= { vdslPerfIntervalEntry 2 }
```

```
vdslIntervalLoss OBJECT-TYPE
```

```
SYNTAX      HCPerfIntervalCount
```

```
UNITS       "seconds"
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```

    "Count of seconds in the interval when there was Loss
    of Signal."

```

```
REFERENCE   "T1E1.4/2000-009R3"    -- Part 1, common spec
```

```
 ::= { vdslPerfIntervalEntry 3 }
```

vdslIntervalLprs OBJECT-TYPE  
SYNTAX HCPperfIntervalCount  
UNITS "seconds"

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MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of seconds in the interval when there was Loss  
    of Power."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfIntervalEntry 4 }

vdslIntervalESs OBJECT-TYPE  
SYNTAX HCPerfIntervalCount  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of Errored Seconds (ES) in the interval. An Errored  
    Second is a one-second interval containing one or more crc  
    anomalies, one or more los or lof defects."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfIntervalEntry 5 }

vdslIntervalSESSs OBJECT-TYPE  
SYNTAX HCPerfIntervalCount  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of Severely Errored Seconds in the interval."  
::= { vdslPerfIntervalEntry 6 }

vdslIntervalUASs OBJECT-TYPE  
SYNTAX HCPerfIntervalCount  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of Unavailable Seconds in the interval."  
::= { vdslPerfIntervalEntry 7 }

vdslIntervalInits OBJECT-TYPE  
SYNTAX HCPerfIntervalCount  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Count of the line initialization attempts during this  
    interval. This count includes both successful and  
    failed attempts."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfIntervalEntry 8 }

vds11DayIntervalTable OBJECT-TYPE

SYNTAX SEQUENCE OF Vds11DayIntervalEntry

MAX-ACCESS not-accessible

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STATUS current

DESCRIPTION

"This table provides one row for each VDSL performance data collection interval. This table contains live data from equipment. As such, it is NOT persistent."

::= { vdslMibObjects 6 }

vdsl1DayIntervalEntry OBJECT-TYPE

SYNTAX Vdsl1DayIntervalEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the vdsl1DayIntervalTable."

INDEX { ifIndex,  
vdslPhysSide,  
vdsl1DayIntervalNumber }

::= { vdsl1DayIntervalTable 1 }

Vdsl1DayIntervalEntry ::=

SEQUENCE

{	
vdsl1DayIntervalNumber	Unsigned32,
vdsl1DayIntervalMoniSecs	HCPperfTimeElapsed,
vdsl1DayIntervalLofs	Counter64,
vdsl1DayIntervalLoss	Counter64,
vdsl1DayIntervalLprs	Counter64,
vdsl1DayIntervalESS	Counter64,
vdsl1DayIntervalSESS	Counter64,
vdsl1DayIntervalUASS	Counter64,
vdsl1DayIntervalInits	Counter64
}	

vdsl1DayIntervalNumber OBJECT-TYPE

SYNTAX Unsigned32 (1..30)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"History Data Interval number. Interval 1 is the the most recent previous day; interval 30 is 30 days ago. Intervals 2..30 are optional."

::= { vdsl1DayIntervalEntry 1 }

vdsl1DayIntervalMoniSecs OBJECT-TYPE

SYNTAX HCPperfTimeElapsed

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The amount of time in the 1-day interval over which the

performance monitoring information is actually counted.  
This value will be the same as the interval duration except  
in a situation where performance monitoring data could not

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be collected for any reason."  
::= { vdsl1DayIntervalEntry 2 }

vdsl1DayIntervalLoFs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Loss of Frame (LOF) Seconds during the 1-day  
interval as measured by vdsl1DayIntervalMoniSecs."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsl1DayIntervalEntry 3 }

vdsl1DayIntervalLoss OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Loss of Signal (LOS) Seconds during the 1-day  
interval as measured by vdsl1DayIntervalMoniSecs."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsl1DayIntervalEntry 4 }

vdsl1DayIntervalLprs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Loss of Power (LPR) Seconds during the 1-day  
interval as measured by vdsl1DayIntervalMoniSecs."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsl1DayIntervalEntry 5 }

vdsl1DayIntervalESSs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Errored Seconds (ES) during the 1-day  
interval as measured by vdsl1DayIntervalMoniSecs."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsl1DayIntervalEntry 6 }

vdsl1DayIntervalSESSs OBJECT-TYPE

SYNTAX Counter64

UNITS	"seconds"
MAX-ACCESS	read-only
STATUS	current

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## DESCRIPTION

"Count of Severely Errored Seconds (SES) during the 1-day interval as measured by vdsl1DayIntervalMoniSecs."

::= { vdsl1DayIntervalEntry 7 }

## vdsl1DayIntervalUASs OBJECT-TYPE

SYNTAX Counter64

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Count of Unavailable Seconds (UAS) during the 1-day interval as measured by vdsl1DayIntervalMoniSecs."

::= { vdsl1DayIntervalEntry 8 }

## vdsl1DayIntervalInits OBJECT-TYPE

SYNTAX Counter64

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Count of the line initialization attempts during the 1-day interval as measured by vdsl1DayIntervalMoniSecs.

This count includes both successful and failed attempts."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

::= { vdsl1DayIntervalEntry 9 }

## vdslChanPerfDataTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslChanPerfDataEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This table provides one row for each Vtu channel.

VDSL channel interfaces are those ifEntries where

ifType is equal to interleave(124) or fast(125)."

::= { vdslMibObjects 7 }

## vdslChanPerfDataEntry OBJECT-TYPE

SYNTAX VdslChanPerfDataEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the vdslChanPerfDataTable."

INDEX { ifIndex,  
vdslPhysSide }

::= { vdslChanPerfDataTable 1 }

VdslChanPerfDataEntry ::=

SEQUENCE

```
{  
  vdslChanPerfValidIntervals  
  vdslChanPerfInvalidIntervals
```

```
  HCPperfValidIntervals,  
  HCPperfInvalidIntervals,
```

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vdslChanCorrectedOctets	Counter64,
vdslChanUncorrectBlks	Counter64,
vdslChanPerfCurr15MinTimeElapsed	HCPperfTimeElapsed,
vdslChanPerfCurr15MinCorrectedOctets	HCPperfCurrentCount,
vdslChanPerfCurr15MinUncorrectBlks	HCPperfCurrentCount,
vdslChanPerf1DayValidIntervals	HCPperfValidIntervals,
vdslChanPerf1DayInvalidIntervals	HCPperfInvalidIntervals,
vdslChanPerfCurr1DayTimeElapsed	HCPperfTimeElapsed,
vdslChanPerfCurr1DayCorrectedOctets	HCPperfCurrentCount,
vdslChanPerfCurr1DayUncorrectBlks	HCPperfCurrentCount

}

vdslChanPerfValidIntervals OBJECT-TYPE

SYNTAX           HCPperfValidIntervals  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Valid Intervals per definition found in  
    HC-PerfHist-TC-MIB."  
 ::= { vdslChanPerfDataEntry 1 }

vdslChanPerfInvalidIntervals OBJECT-TYPE

SYNTAX           HCPperfInvalidIntervals  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Invalid Intervals per definition found in  
    HC-PerfHist-TC-MIB."  
 ::= { vdslChanPerfDataEntry 2 }

vdslChanCorrectedOctets OBJECT-TYPE

SYNTAX           Counter64  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of corrected octets since the unit was last reset."  
REFERENCE        "T1E1.4/2000-009R3"   -- Part 1, common spec  
 ::= { vdslChanPerfDataEntry 3 }

vdslChanUncorrectBlks OBJECT-TYPE

SYNTAX           Counter64  
MAX-ACCESS       read-only  
STATUS           current  
DESCRIPTION  
    "Count of uncorrected blocks since the unit was last reset."  
REFERENCE        "T1E1.4/2000-009R3"   -- Part 1, common spec  
 ::= { vdslChanPerfDataEntry 4 }

vdslChanPerfCurr15MinTimeElapsed OBJECT-TYPE

SYNTAX	HCPperfTimeElapsed
UNITS	"seconds"
MAX-ACCESS	read-only

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STATUS current  
DESCRIPTION  
"Total elapsed seconds in this interval."  
::= { vdslChanPerfDataEntry 5 }

vdslChanPerfCurr15MinCorrectedOctets OBJECT-TYPE

SYNTAX HCPperfCurrentCount  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of corrected octets in this interval."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslChanPerfDataEntry 6 }

vdslChanPerfCurr15MinUncorrectBlks OBJECT-TYPE

SYNTAX HCPperfCurrentCount  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of uncorrected blocks in this interval."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslChanPerfDataEntry 7 }

vdslChanPerf1DayValidIntervals OBJECT-TYPE

SYNTAX HCPperfValidIntervals  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Valid Intervals per definition found in  
HC-PerfHist-TC-MIB."  
::= { vdslChanPerfDataEntry 8 }

vdslChanPerf1DayInvalidIntervals OBJECT-TYPE

SYNTAX HCPperfInvalidIntervals  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Invalid Intervals per definition found in  
HC-PerfHist-TC-MIB."  
::= { vdslChanPerfDataEntry 9 }

vdslChanPerfCurr1DayTimeElapsed OBJECT-TYPE

SYNTAX HCPperfTimeElapsed  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Number of seconds that have elapsed since the beginning  
of the current 1-day interval."

```
::= { vdslChanPerfDataEntry 10 }
```

```
vdslChanPerfCurr1DayCorrectedOctets OBJECT-TYPE
```

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```

SYNTAX          HCPperfCurrentCount
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Count of corrected octets since the beginning of the
    current 1-day interval."
REFERENCE       "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslChanPerfDataEntry 11 }

```

#### vdslChanPerfCurr1DayUncorrectBlks OBJECT-TYPE

```

SYNTAX          HCPperfCurrentCount
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Count of uncorrected blocks since the beginning of the
    current 1-day interval."
REFERENCE       "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslChanPerfDataEntry 12 }

```

#### vdslChanIntervalTable OBJECT-TYPE

```

SYNTAX          SEQUENCE OF VdslChanIntervalEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "This table provides one row for each Vtu channel data
    collection interval. VDSL channel interfaces are those
    ifEntries where ifType is equal to interleave(124) or
    fast(125)."
::= { vdslMibObjects 8 }

```

#### vdslChanIntervalEntry OBJECT-TYPE

```

SYNTAX          VdslChanIntervalEntry
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION
    "An entry in the vdslChanIntervalTable."
INDEX { ifIndex,
        vdslPhysSide,
        vdslChanIntervalNumber }
::= { vdslChanIntervalTable 1 }

```

#### VdslChanIntervalEntry ::=

```

SEQUENCE
{
    vdslChanIntervalNumber          Unsigned32,
    vdslChanIntervalCorrectedOctets HCPperfIntervalCount,
    vdslChanIntervalUncorrectBlks  HCPperfIntervalCount
}

```

vdslChanIntervalNumber OBJECT-TYPE  
SYNTAX Unsigned32 (0..96)  
MAX-ACCESS not-accessible

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```
STATUS          current
DESCRIPTION
    "Performance Data Interval number 1 is the the most
    recent previous interval; interval 96 is 24 hours ago.
    Intervals 2..96 are optional."
 ::= { vdslChanIntervalEntry 1 }

vdslChanIntervalCorrectedOctets OBJECT-TYPE
    SYNTAX          HCPperfIntervalCount
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Count of corrected octets in this interval."
    REFERENCE       "T1E1.4/2000-009R3"    -- Part 1, common spec
    ::= { vdslChanIntervalEntry 2 }

vdslChanIntervalUncorrectBlks OBJECT-TYPE
    SYNTAX          HCPperfIntervalCount
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Count of uncorrected blocks in this interval."
    REFERENCE       "T1E1.4/2000-009R3"    -- Part 1, common spec
    ::= { vdslChanIntervalEntry 3 }

vdslChan1DayIntervalTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF VdslChan1DayIntervalEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table provides one row for each VDSL performance
        data collection interval.  This table contains live data
        from equipment.  As such, it is NOT persistent."
    ::= { vdslMibObjects 9 }

vdslChan1DayIntervalEntry OBJECT-TYPE
    SYNTAX          VdslChan1DayIntervalEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "An entry in the vdslChan1DayIntervalTable."
    INDEX { ifIndex,
            vdslPhysSide,
            vdslChan1DayIntervalNumber }
    ::= { vdslChan1DayIntervalTable 1 }

VdslChan1DayIntervalEntry ::=
    SEQUENCE
    {
```

vdslChan1DayIntervalNumber	Unsigned32,
vdslChan1DayIntervalMoniSecs	HCPperfTimeElapsed,
vdslChan1DayIntervalCorrectedOctets	HCPperfCurrentCount,

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```
    vdslChan1DayIntervalUncorrectBlks      HCPperfCurrentCount
  }
```

vdslChan1DayIntervalNumber OBJECT-TYPE

```
SYNTAX      Unsigned32 (1..30)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "History Data Interval number. Interval 1 is the the most
    recent previous day; interval 30 is 30 days ago. Intervals
    2..30 are optional."
 ::= { vdslChan1DayIntervalEntry 1 }
```

vdslChan1DayIntervalMoniSecs OBJECT-TYPE

```
SYNTAX      HCPperfTimeElapsed
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The amount of time in the 1-day interval over which the
    performance monitoring information is actually counted.
    This value will be the same as the interval duration except
    in a situation where performance monitoring data could not
    be collected for any reason."
 ::= { vdslChan1DayIntervalEntry 2 }
```

vdslChan1DayIntervalCorrectedOctets OBJECT-TYPE

```
SYNTAX      HCPperfCurrentCount
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of corrected octets in this interval."
REFERENCE   "T1E1.4/2000-009R3"    -- Part 1, common spec
 ::= { vdslChan1DayIntervalEntry 3 }
```

vdslChan1DayIntervalUncorrectBlks OBJECT-TYPE

```
SYNTAX      HCPperfCurrentCount
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of uncorrected blocks in this interval."
REFERENCE   "T1E1.4/2000-009R3"    -- Part 1, common spec
 ::= { vdslChan1DayIntervalEntry 4 }
```

```
--
-- SCM physical band status
--
```

vdslSCMPphysBandTable OBJECT-TYPE

SYNTAX	SEQUENCE OF VdslSCMPHysBandEntry
MAX-ACCESS	not-accessible
STATUS	current

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## DESCRIPTION

"This table provides one row for each SCM Vtu band."

::= { vds1MibObjects 10 }

## vds1SCMPHysBandEntry OBJECT-TYPE

SYNTAX Vds1SCMPHysBandEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the vds1SCMPHysBandTable."

INDEX { ifIndex,  
vds1PhysSide,  
vds1SCMPHysTxBandNumber }

::= { vds1SCMPHysBandTable 1 }

## Vds1SCMPHysBandEntry ::=

## SEQUENCE

{  
vds1SCMPHysTxBandNumber INTEGER,  
vds1SCMPHysBandSnrMgn Integer32,  
vds1SCMPHysBandAtn Unsigned32  
}

## vds1SCMPHysTxBandNumber OBJECT-TYPE

SYNTAX INTEGER

{  
band1(1),  
band2(2),  
upstreamU0(3)  
}

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"The SCM transmit band number for this entry."

::= { vds1SCMPHysBandEntry 1 }

## vds1SCMPHysBandSnrMgn OBJECT-TYPE

SYNTAX Integer32 (-127..127)

UNITS "0.25 dBm"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Noise margin as seen by this Vtu and band with respect  
to its received signal in 0.25 dB."

::= { vds1SCMPHysBandEntry 2 }

## vds1SCMPHysBandAtn OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "0.25 dBm"

MAX-ACCESS	read-only
STATUS	current
DESCRIPTION	

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```

        "Measured difference in the total power transmitted by
        the peer Vtu on this band and the total power received
        by this Vtu on this band in 0.25 dB."
 ::= { vdslSCMPhysBandEntry 3 }

--
-- profile tables
--

vdslLineConfProfileTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF VdslLineConfProfileEntry
    MAX-ACCESS   not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains information on the VDSL line
        configuration.  One entry in this table reflects a
        profile defined by a manager which can be used to
        configure the VDSL line."
    ::= { vdslMibObjects 11 }

vdslLineConfProfileEntry OBJECT-TYPE
    SYNTAX      VdslLineConfProfileEntry
    MAX-ACCESS   not-accessible
    STATUS      current
    DESCRIPTION
        "Each entry consists of a list of parameters that
        represents the configuration of a VDSL line.  A
        default profile with an index of 1 will always exist
        and its parameters will be set to vendor specific
        values, unless otherwise specified in this document."
    INDEX { vdslLineConfProfileIndex }
    ::= { vdslLineConfProfileTable 1 }

VdslLineConfProfileEntry ::=
    SEQUENCE
    {
        vdslLineConfProfileIndex          Unsigned32,
        vdslLineConfProfileName           SnmpAdminString,
        vdslLineConfDownstreamMaxPwr      Unsigned32,
        vdslLineConfUpstreamMaxPwr        Unsigned32,
        vdslLineConfDownstreamMaxSnrMgn   Unsigned32,
        vdslLineConfDownstreamMinSnrMgn   Unsigned32,
        vdslLineConfDownstreamTargetSnrMgn Unsigned32,
        vdslLineConfUpstreamMaxSnrMgn     Unsigned32,
        vdslLineConfUpstreamMinSnrMgn     Unsigned32,
        vdslLineConfUpstreamTargetSnrMgn  Unsigned32,
        vdslLineConfDownstreamFastMaxDataRate Unsigned32,
        vdslLineConfDownstreamFastMinDataRate Unsigned32,
        vdslLineConfDownstreamSlowMaxDataRate Unsigned32,
    }

```

vdsllineConfDownstreamSlowMinDataRate	Unsigned32,
vdsllineConfUpstreamFastMaxDataRate	Unsigned32,
vdsllineConfUpstreamFastMinDataRate	Unsigned32,

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vdslLineConfUpstreamSlowMaxDataRate	Unsigned32,
vdslLineConfUpstreamSlowMinDataRate	Unsigned32,
vdslLineConfRateAdaptationRatio	Unsigned32,
vdslLineConfUpstreamDataRate	Unsigned32,
vdslLineConfDownstreamDataRate	Unsigned32,
vdslLineConfDownstreamMaxInterDelay	Unsigned32,
vdslLineConfUpstreamMaxInterDelay	Unsigned32,
vdslLineConfUpstreamPboControl	INTEGER,
vdslLineConfDownstreamPboControl	INTEGER,
vdslLineConfDeploymentScenario	INTEGER,
vdslLineConfAdslOccupancy	TruthValue,
vdslLineConfApplicableStandard	INTEGER,
vdslLineConfBandPlan	INTEGER,
vdslLineConfBandPlanFx	Unsigned32,
vdslLineConfBandU0Usage	INTEGER,
vdslLineConfUpstreamPsdTemplate	INTEGER,
vdslLineConfDownstreamPsdTemplate	INTEGER,
vdslLineConfProfileRowStatus	RowStatus

}

#### vdslLineConfProfileIndex OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

##### DESCRIPTION

"This object identifies a row in this table. A default profile with an index of 1 MUST always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

::= { vdslLineConfProfileEntry 1 }

#### vdslLineConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS read-create

STATUS current

##### DESCRIPTION

"The name for this profile as specified by a user."

::= { vdslLineConfProfileEntry 2 }

#### vdslLineConfDownstreamMaxPwr OBJECT-TYPE

SYNTAX Unsigned32 (0..58)

UNITS "0.25dBm"

MAX-ACCESS read-create

STATUS current

##### DESCRIPTION

"Specifies the maximum aggregate downstream power level in the range 0..14.5dBm."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec

```
::= { vdslLineConfProfileEntry 3 }
```

```
vdslLineConfUpstreamMaxPwr OBJECT-TYPE
```

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SYNTAX           Unsigned32 (0..58)  
UNITS            "0.25dBm"  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Specifies the maximum aggregate upstream power  
    level in the range 0..14.5dBm."  
REFERENCE        "T1E1.4/2000-009R3"    -- Part 1, common spec  
::= { vdsLineConfProfileEntry 4 }

vdsLineConfDownstreamMaxSnrMgn OBJECT-TYPE

SYNTAX           Unsigned32 (0..127)  
UNITS            "0.25dBm"  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Specifies the maximum downstream Signal/Noise Margin  
    in units of 0.25 dB, for a range of 0..31.75 dB."  
REFERENCE        "T1E1.4/2000-009R3"    -- Part 1, common spec  
::= { vdsLineConfProfileEntry 5 }

vdsLineConfDownstreamMinSnrMgn OBJECT-TYPE

SYNTAX           Unsigned32 (0..127)  
UNITS            "0.25dBm"  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Specifies the minimum downstream Signal/Noise Margin  
    in units of 0.25 dB, for a range of 0..31.75 dB."  
REFERENCE        "T1E1.4/2000-009R3"    -- Part 1, common spec  
::= { vdsLineConfProfileEntry 6 }

vdsLineConfDownstreamTargetSnrMgn OBJECT-TYPE

SYNTAX           Unsigned32 (0..127)  
UNITS            "0.25dBm"  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Specifies the target downstream Signal/Noise Margin  
    in units of 0.25 dB, for a range of 0..31.75 dB.  
    This is the Noise Margin the modems must achieve with a  
    BER of 10<sup>-7</sup> or better to successfully complete  
    initialization."  
REFERENCE        "T1E1.4/2000-009R3"    -- Part 1, common spec  
::= { vdsLineConfProfileEntry 7 }

vdsLineConfUpstreamMaxSnrMgn OBJECT-TYPE

SYNTAX           Unsigned32 (0..127)  
UNITS            "0.25dBm"

MAX-ACCESS	read-create
STATUS	current
DESCRIPTION	

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"Specifies the maximum upstream Signal/Noise Margin  
in units of 0.25 dB, for a range of 0..31.75 dB."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsllineConfProfileEntry 8 }

vdsllineConfUpstreamMinSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)  
UNITS "0.25dBm"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"Specifies the minimum upstream Signal/Noise Margin  
in units of 0.25 dB, for a range of 0..31.75 dB."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsllineConfProfileEntry 9 }

vdsllineConfUpstreamTargetSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)  
UNITS "0.25dBm"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"Specifies the target upstream Signal/Noise Margin in  
units of 0.25 dB, for a range of 0..31.75 dB. This  
is the Noise Margin the modems must achieve with a BER of  
10<sup>-7</sup> or better to successfully complete initialization."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdsllineConfProfileEntry 10 }

vdsllineConfDownstreamFastMaxDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"Specifies the maximum downstream fast channel  
data rate in steps of 1024 bits/second."  
::= { vdsllineConfProfileEntry 11 }

vdsllineConfDownstreamFastMinDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"Specifies the minimum downstream fast channel  
data rate in steps of 1024 bits/second."  
::= { vdsllineConfProfileEntry 12 }

vdslLineConfDownstreamSlowMaxDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS "kbps"

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MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the maximum downstream slow channel  
    data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 13 }

vdslLineConfDownstreamSlowMinDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the minimum downstream slow channel  
    data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 14 }

vdslLineConfUpstreamFastMaxDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the maximum upstream fast channel  
    data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 15 }

vdslLineConfUpstreamFastMinDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the minimum upstream fast channel  
    data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 16 }

vdslLineConfUpstreamSlowMaxDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the maximum upstream slow channel  
    data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 17 }

vdslLineConfUpstreamSlowMinDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS	"kbps"
MAX-ACCESS	read-create
STATUS	current

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## DESCRIPTION

"Specifies the minimum upstream slow channel data rate in steps of 1024 bits/second."

::= { vdslLineConfProfileEntry 18 }

## vdslLineConfRateAdaptationRatio OBJECT-TYPE

SYNTAX Unsigned32 (0..100)

UNITS "percent"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"For dynamic rate adaptation at startup, the allocation of data rate in excess of the minimum data rate for each channel is controlled by the object. This object specifies the ratio of the allocation of the excess data rate between the fast and the slow channels. This allocation represents Fast Channel Allocation / Slow Channel Allocation."

::= { vdslLineConfProfileEntry 19 }

## vdslLineConfUpstreamDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS "kbps"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Aggregate upstream transmit speed for this line in steps of 1024 bits/second."

::= { vdslLineConfProfileEntry 20 }

## vdslLineConfDownstreamDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS "kbps"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Aggregate downstream transmit speed for this line in steps of 1024 bits/second."

::= { vdslLineConfProfileEntry 21 }

## vdslLineConfDownstreamMaxInterDelay OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "ms"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Specifies the maximum interleave delay for the downstream slow channel."

::= { vdslLineConfProfileEntry 22 }

vdslLineConfUpstreamMaxInterDelay OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "ms"

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MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the maximum interleave delay for the  
    upstream slow channel."  
 ::= { vdslLineConfProfileEntry 23 }

vdslLineConfUpstreamPboControl OBJECT-TYPE

SYNTAX INTEGER  
    {  
        disabled(1),  
        enabled(2)  
    }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Upstream power backoff (PBO) control for this  
    line. For modems which do not support upstream  
    PBO control, this object MUST be fixed at disabled(1)."  
 ::= { vdslLineConfProfileEntry 24 }

vdslLineConfDownstreamPboControl OBJECT-TYPE

SYNTAX INTEGER  
    {  
        disabled(1),  
        enabled(2)  
    }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Downstream power backoff (PBO) control for this  
    line. For modems which do not support downstream  
    PBO control, this object MUST be fixed at disabled(1)."  
 ::= { vdslLineConfProfileEntry 25 }

vdslLineConfDeploymentScenario OBJECT-TYPE

SYNTAX INTEGER  
    {  
        fttCab(1),  
        fttEx(2),  
        other(3)  
    }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The VDSL line deployment scenario. When using  
    fttCab(1), the VTU-C is located in a street cabinet.  
    When using fttEx(2), the VTU-C is located at the  
    central office."

```
::= { vdslLineConfProfileEntry 26 }
```

```
vdslLineConfAdsl0occupy OBJECT-TYPE
```

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SYNTAX TruthValue  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Indicates if the VDSL line can occupy the ADSL  
    frequency range."  
 ::= { vdslLineConfProfileEntry 27 }

## vdslLineConfApplicableStandard OBJECT-TYPE

SYNTAX INTEGER  
    {  
        ansi(1),  
        etsi(2),  
        itu(3),  
        other(4)  
    }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The VDSL standard to be used for the line."  
 ::= { vdslLineConfProfileEntry 28 }

## vdslLineConfBandPlan OBJECT-TYPE

SYNTAX INTEGER  
    {  
        bandPlan997(1),  
        bandPlan998(2),  
        bandPlanFx(3),  
        other(4)  
    }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The VDSL band plan to be used for the line.  
  
    bandPlan997(1) is to be used for  
        ITU-T G.993.1 Bandplan-B  
        ETSI Bandplan  
        ANSI Plan 997  
  
    bandPlan998(2) is to be used for  
        ITU-T G.993.1 Bandplan-A  
        ANSI Plan 998  
  
    bandPlanFx(3) is to be used for  
        ITU-T G.993.1 Bandplan-C.  
  
    other(4) is to be used for  
        non-standard bandplans.

If this object is set to bandPlanFx(3), then  
the object vdslLineConfBandPlanFx MUST also be

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```
        set."
 ::= { vdslLineConfProfileEntry 29 }

vdslLineConfBandPlanFx OBJECT-TYPE
    SYNTAX      Unsigned32 (3750..12000)
    UNITS       "kHz"
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "The frequency limit between bands D2 and U2 when
        vdslLineConfBandPlan is set to bandPlanFx(3)."
 ::= { vdslLineConfProfileEntry 30 }

vdslLineConfBandU0Usage OBJECT-TYPE
    SYNTAX      INTEGER
                {
                    unused(1),
                    upstream(2),
                    downstream(3)
                }
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Defines the VDSL link use of the frequency range
        [25kHz - 138kHz] (U0)."
 ::= { vdslLineConfProfileEntry 31 }

vdslLineConfUpstreamPsdTemplate OBJECT-TYPE
    SYNTAX      INTEGER
                {
                    templateMask1(1),
                    templateMask2(2)
                }
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "The upstream PSD template to be used for the line."
 ::= { vdslLineConfProfileEntry 32 }

vdslLineConfDownstreamPsdTemplate OBJECT-TYPE
    SYNTAX      INTEGER
                {
                    templateMask1(1),
                    templateMask2(2)
                }
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "The downstream PSD template to be used for the line."
```

```
::= { vdslLineConfProfileEntry 33 }
```

```
vdslLineConfProfileRowStatus OBJECT-TYPE
```

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```
SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "This object is used to create a new row or modify or
    delete an existing row in this table.

    A profile activated by setting this object to `active'.
    When `active' is set, the system will validate the profile.

    Before a profile can be deleted or taken out of
    service, (by setting this object to `destroy' or
    `outOfService') it must be first unreferenced
    from all associated lines."
 ::= { vdslLineConfProfileEntry 34 }

--
-- Multiple carrier modulation (MCM) configuration profile tables
--

vdslLineMCMConfProfileTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF VdslLineMCMConfProfileEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains additional information on
        multiple carrier VDSL lines. One entry in this table
        reflects a profile defined by a manager which can be used
        to configure the VDSL line.

        The entries in this table MUST NOT be used for single
        carrier (SCM) VDSL lines."
    ::= { vdslMibObjects 12 }

vdslLineMCMConfProfileEntry OBJECT-TYPE
    SYNTAX      VdslLineMCMConfProfileEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Each entry consists of a list of parameters that
        represents the configuration of a multiple carrier
        modulation VDSL modem. A default profile with an
        index of 1 will always exist and its parameters will
        be set to vendor specific values, unless otherwise
        specified in this document."
    INDEX { vdslLineConfProfileIndex }
    ::= { vdslLineMCMConfProfileTable 1 }

VdslLineMCMConfProfileEntry ::=
```

SEQUENCE

```
{  
    vdslMCMConfProfileTxWindowLength    Unsigned32,
```

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```
    vdslMCMConfProfileRowStatus      RowStatus
  }
```

vdslMCMConfProfileTxWindowLength OBJECT-TYPE

```
SYNTAX      Unsigned32 (1..255)
UNITS       "samples"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "Specifies the length of the transmit window, counted
    in samples at the sampling rate corresponding to the
    negotiated value of N."
REFERENCE   "T1E1.4/2000-013R4"    -- Part 3, MCM
 ::= { vdslLineMCMConfProfileEntry 1 }
```

vdslMCMConfProfileRowStatus OBJECT-TYPE

```
SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "This object is used to create a new row or modify or
    delete an existing row in this table.

    A profile activated by setting this object to `active'.
    When `active' is set, the system will validate the profile.

    Before a profile can be deleted or taken out of
    service, (by setting this object to `destroy' or
    `outOfService') it must be first unreferenced
    from all associated lines."
 ::= { vdslLineMCMConfProfileEntry 2 }
```

vdslLineMCMConfProfileTxBandTable OBJECT-TYPE

```
SYNTAX      SEQUENCE OF VdslLineMCMConfProfileTxBandEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table contains transmit band descriptor configuration
    information for a VDSL line. Each entry in this table
    reflects the configuration for one of possibly many bands
    with a multiple carrier modulation (MCM) VDSL line.
    These entries are defined by a manager and can be used to
    configure the VDSL line.

    The entries in this table MUST NOT be used for single
    carrier (SCM) VDSL lines."
 ::= { vdslMibObjects 13 }
```

vdslLineMCMConfProfileTxBandEntry OBJECT-TYPE

SYNTAX	VdslLineMCMConfProfileTxBandEntry
MAX-ACCESS	not-accessible
STATUS	current

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## DESCRIPTION

"Each entry consists of a transmit band descriptor, which is defined by a start and a stop tone index.

A default profile with an index of 1 will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { vdslLineConfProfileIndex,  
        vdslMCMConfProfileTxBandNumber }  
 ::= { vdslLineMCMConfProfileTxBandTable 1 }
```

VdslLineMCMConfProfileTxBandEntry ::=

## SEQUENCE

```
{  
    vdslMCMConfProfileTxBandNumber      Unsigned32,  
    vdslMCMConfProfileTxBandStart       Unsigned32,  
    vdslMCMConfProfileTxBandStop        Unsigned32,  
    vdslMCMConfProfileTxBandRowStatus   RowStatus  
}
```

vdslMCMConfProfileTxBandNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"The index for this band descriptor entry."

```
::= { vdslLineMCMConfProfileTxBandEntry 1 }
```

vdslMCMConfProfileTxBandStart OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Start tone index for this band."

REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM

```
::= { vdslLineMCMConfProfileTxBandEntry 2 }
```

vdslMCMConfProfileTxBandStop OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Stop tone index for this band."

REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM

```
::= { vdslLineMCMConfProfileTxBandEntry 3 }
```

vdslMCMConfProfileTxBandRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS        current

DESCRIPTION

"This object is used to create a new row or modify or

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delete an existing row in this table.

A profile activated by setting this object to `active'.  
When `active' is set, the system will validate the profile.

Before a profile can be deleted or taken out of  
service, (by setting this object to `destroy' or  
`outOfService') it must be first unreferenced  
from all associated lines."

```
::= { vdslLineMCMConfProfileTxBandEntry 4 }
```

#### vdslLineMCMConfProfileRxBandTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineMCMConfProfileRxBandEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

"This table contains receive band descriptor configuration  
information for a VDSL line. Each entry in this table  
reflects the configuration for one of possibly many bands  
with a multiple carrier modulation (MCM) VDSL line.  
These entries are defined by a manager and can be used to  
configure the VDSL line.

The entries in this table MUST NOT be used for single  
carrier (SCM) VDSL lines."

```
::= { vdslMibObjects 14 }
```

#### vdslLineMCMConfProfileRxBandEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileRxBandEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

"Each entry consists of a transmit band descriptor, which  
is defined by a start and a stop tone index.

A default profile with an index of 1 will always exist and  
its parameters will be set to vendor specific values,  
unless otherwise specified in this document."

```
INDEX { vdslLineConfProfileIndex,  
        vdslMCMConfProfileRxBandNumber }
```

```
::= { vdslLineMCMConfProfileRxBandTable 1 }
```

#### VdslLineMCMConfProfileRxBandEntry ::=

#### SEQUENCE

```
{  
    vdslMCMConfProfileRxBandNumber      Unsigned32,  
    vdslMCMConfProfileRxBandStart      Unsigned32,  
    vdslMCMConfProfileRxBandStop      Unsigned32,  
    vdslMCMConfProfileRxBandRowStatus  RowStatus
```

}

vdslMCMConfProfileRxBandNumber OBJECT-TYPE

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SYNTAX           Unsigned32  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "The index for this band descriptor entry."  
 ::= { vdslLineMCMConfProfileRxBandEntry 1 }

vdslMCMConfProfileRxBandStart OBJECT-TYPE

SYNTAX           Unsigned32  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Start tone index for this band."  
REFERENCE        "T1E1.4/2000-013R4"    -- Part 3, MCM  
 ::= { vdslLineMCMConfProfileRxBandEntry 2 }

vdslMCMConfProfileRxBandStop OBJECT-TYPE

SYNTAX           Unsigned32  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Stop tone index for this band."  
REFERENCE        "T1E1.4/2000-013R4"    -- Part 3, MCM  
 ::= { vdslLineMCMConfProfileRxBandEntry 3 }

vdslMCMConfProfileRxBandRowStatus OBJECT-TYPE

SYNTAX           RowStatus  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "This object is used to create a new row or modify or  
    delete an existing row in this table.  
  
    A profile activated by setting this object to `active'.  
    When `active' is set, the system will validate the profile.  
  
    Before a profile can be deleted or taken out of  
    service, (by setting this object to `destroy' or  
    `outOfService') it must be first unreferenced  
    from all associated lines."  
 ::= { vdslLineMCMConfProfileRxBandEntry 4 }

vdslLineMCMConfProfileTxPSDTable OBJECT-TYPE

SYNTAX           SEQUENCE OF VdslLineMCMConfProfileTxPSDEntry  
MAX-ACCESS       not-accessible  
STATUS           current  
DESCRIPTION  
    "This table contains transmit PSD mask descriptor  
    configuration information for a VDSL line. Each entry in

this table reflects the configuration for one tone within  
a multiple carrier modulation (MCM) VDSL line. These  
entries are defined by a manager and can be used to

configure the VDSL line.

The entries in this table MUST NOT be used for single carrier (SCM) VDSL lines."

::= { vdslMibObjects 15 }

vdslLineMCMConfProfileTxPSDEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry consists of a transmit PSD mask descriptor, which defines the power spectral density (PSD) for a tone. A default profile with an index of 1 will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileIndex,  
vdslMCMConfProfileTxPSDNumber }

::= { vdslLineMCMConfProfileTxPSDTable 1 }

VdslLineMCMConfProfileTxPSDEntry ::=

SEQUENCE

{	
vdslMCMConfProfileTxPSDNumber	Unsigned32,
vdslMCMConfProfileTxPSDTone	Unsigned32,
vdslMCMConfProfileTxPSDPSD	Unsigned32,
vdslMCMConfProfileTxPSDRowStatus	RowStatus
}	

vdslMCMConfProfileTxPSDNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index for this mask descriptor entry."

::= { vdslLineMCMConfProfileTxPSDEntry 1 }

vdslMCMConfProfileTxPSDTone OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The tone index for which the PSD is being specified."

REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM

::= { vdslLineMCMConfProfileTxPSDEntry 2 }

vdslMCMConfProfileTxPSDPSD OBJECT-TYPE

SYNTAX Unsigned32

UNITS "0.5dBm"

MAX-ACCESS	read-create
STATUS	current
DESCRIPTION	

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"Power Spectral Density level in steps of 0.5dB with an offset of -140dbm/Hz."

REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM  
::= { vdslLineMCMConfProfileTxPSDEntry 3 }

vdslMCMConfProfileTxPSDRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is used to create a new row or modify or delete an existing row in this table.

A profile activated by setting this object to `active'. When `active' is set, the system will validate the profile.

Before a profile can be deleted or taken out of service, (by setting this object to `destroy' or `outOfService') it must be first unreferenced from all associated lines."

::= { vdslLineMCMConfProfileTxPSDEntry 4 }

vdslLineMCMConfProfileMaxTxPSDTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineMCMConfProfileMaxTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table contains transmit maximum PSD mask descriptor configuration information for a VDSL line. Each entry in this table reflects the configuration for one tone within a multiple carrier modulation (MCM) VDSL modem. These entries are defined by a manager and can be used to configure the VDSL line.

The entries in this table MUST NOT be used for single carrier (SCM) VDSL lines."

::= { vdslMibObjects 16 }

vdslLineMCMConfProfileMaxTxPSDEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileMaxTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry consists of a transmit PSD mask descriptor, which defines the maximum power spectral density (PSD) for a tone.

A default profile with an index of 1 MUST always exist and its parameters will be set to vendor specific values,

unless otherwise specified in this document."  
INDEX { vdslLineConfProfileIndex,  
          vdslMCMConfProfileMaxTxPSDNumber }

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```
::= { vdslLineMCMConfProfileMaxTxPSDTable 1 }
```

```
VdslLineMCMConfProfileMaxTxPSDEntry ::=
```

```
SEQUENCE
```

```
{
    vdslMCMConfProfileMaxTxPSDNumber      Unsigned32,
    vdslMCMConfProfileMaxTxPSDTone        Unsigned32,
    vdslMCMConfProfileMaxTxPSDPSD         Unsigned32,
    vdslMCMConfProfileMaxTxPSDRowStatus   RowStatus
}
```

```
vdslMCMConfProfileMaxTxPSDNumber OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The index for this band descriptor entry."
```

```
::= { vdslLineMCMConfProfileMaxTxPSDEntry 1 }
```

```
vdslMCMConfProfileMaxTxPSDTone OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"The tone index for which the PSD is being specified."
```

```
REFERENCE   "T1E1.4/2000-013R4"    -- Part 3, MCM
```

```
::= { vdslLineMCMConfProfileMaxTxPSDEntry 2 }
```

```
vdslMCMConfProfileMaxTxPSDPSD OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

```
UNITS       "0.5dBm"
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"Power Spectral Density level in steps of 0.5dB with
an offset of -140dbm/Hz."
```

```
REFERENCE   "T1E1.4/2000-013R4"    -- Part 3, MCM
```

```
::= { vdslLineMCMConfProfileMaxTxPSDEntry 3 }
```

```
vdslMCMConfProfileMaxTxPSDRowStatus OBJECT-TYPE
```

```
SYNTAX      RowStatus
```

```
MAX-ACCESS  read-create
```

```
STATUS      current
```

```
DESCRIPTION
```

```
"This object is used to create a new row or modify or
delete an existing row in this table."
```

```
A profile activated by setting this object to `active'.
When `active' is set, the system will validate the profile.
```

Before a profile can be deleted or taken out of service, (by setting this object to `destroy' or

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`outOfService') it must be first unreferenced  
from all associated lines."  
 ::= { vdslLineMCMConfProfileMaxTxPSDEntry 4 }

#### vdslLineMCMConfProfileMaxRxPSDTable OBJECT-TYPE

SYNTAX           SEQUENCE OF VdslLineMCMConfProfileMaxRxPSDEntry  
MAX-ACCESS       not-accessible  
STATUS           current  
DESCRIPTION

"This table contains maximum receive PSD mask descriptor configuration information for a VDSL line. Each entry in this table reflects the configuration for one tone within a multiple carrier modulation (MCM) VDSL modem. These entries are defined by a manager and can be used to configure the VDSL line.

The entries in this table MUST NOT be used for single carrier (SCM) VDSL lines."

::= { vdslMibObjects 17 }

#### vdslLineMCMConfProfileMaxRxPSDEntry OBJECT-TYPE

SYNTAX           VdslLineMCMConfProfileMaxRxPSDEntry  
MAX-ACCESS       not-accessible  
STATUS           current  
DESCRIPTION

"Each entry consists of a transmit PSD mask descriptor, which defines the power spectral density (PSD) for a tone.

A default profile with an index of 1 will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileIndex,  
          vdslMCMConfProfileMaxRxPSDNumber }  
 ::= { vdslLineMCMConfProfileMaxRxPSDTable 1 }

#### VdslLineMCMConfProfileMaxRxPSDEntry ::=

SEQUENCE  
{  
  vdslMCMConfProfileMaxRxPSDNumber           Unsigned32,  
  vdslMCMConfProfileMaxRxPSDTone            Unsigned32,  
  vdslMCMConfProfileMaxRxPSDPSD             Unsigned32,  
  vdslMCMConfProfileMaxRxPSDRowStatus       RowStatus  
}

#### vdslMCMConfProfileMaxRxPSDNumber OBJECT-TYPE

SYNTAX           Unsigned32  
MAX-ACCESS       read-create  
STATUS           current

DESCRIPTION

"The index for this band descriptor entry."

::= { vdslLineMCMConfProfileMaxRxPSDEntry 1 }

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## vdsLMCMConfProfileMaxRxPSDTone OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"The tone index for which the PSD is being specified."

REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM

::= { vdslLineMCMConfProfileMaxRxPSDEntry 2 }

## vdsLMCMConfProfileMaxRxPSDPSD OBJECT-TYPE

SYNTAX Unsigned32

UNITS "0.5dBm"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Power Spectral Density level in steps of 0.5dB with  
an offset of -140dbm/Hz."

REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM

::= { vdslLineMCMConfProfileMaxRxPSDEntry 3 }

## vdsLMCMConfProfileMaxRxPSDRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"This object is used to create a new row or modify or  
delete an existing row in this table."

A profile activated by setting this object to 'active'.  
When 'active' is set, the system will validate the profile.

Before a profile can be deleted or taken out of  
service, (by setting this object to 'destroy' or  
'outOfService') it must be first unreferenced  
from all associated lines."

::= { vdslLineMCMConfProfileMaxRxPSDEntry 4 }

--

-- Single carrier modulation (SCM) configuration profile tables

--

## vdslLineSCMConfProfileTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineSCMConfProfileEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"This table contains information on the VDSL line  
configuration. One entry in this table reflects a

profile defined by a manager which can be used to  
configure the VDSL line.

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The entries in this table MUST NOT be used for multiple carrier (MCM) VDSL lines."

::= { vdslMibObjects 18 }

vdslLineSCMConfProfileEntry OBJECT-TYPE

SYNTAX VdslLineSCMConfProfileEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry consists of a list of parameters that represents the configuration of a single carrier modulation VDSL modem.

A default profile with an index of 1 MUST always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileIndex, vdslSCMConfProfileSide }

::= { vdslLineSCMConfProfileTable 1 }

VdslLineSCMConfProfileEntry ::=

SEQUENCE

{	
vdslSCMConfProfileSide	VdslLineEntity,
vdslSCMConfProfileInterleaveDepth	Unsigned32,
vdslSCMConfProfileNumCarriers	INTEGER,
vdslSCMConfProfileFastCodewordSize	Unsigned32,
vdslSCMConfProfileTransmitPSDMask	BITS,
vdslSCMConfProfileVendorNotch1Start	Unsigned32,
vdslSCMConfProfileVendorNotch1Stop	Unsigned32,
vdslSCMConfProfileVendorNotch2Start	Unsigned32,
vdslSCMConfProfileVendorNotch2Stop	Unsigned32,
vdslSCMConfProfileFastFecSize	INTEGER,
vdslSCMConfProfileSlowBlockSize	INTEGER,
vdslSCMConfProfileRowStatus	RowStatus
}	

vdslSCMConfProfileSide OBJECT-TYPE

SYNTAX VdslLineEntity

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Identifies whether this entry describes downstream or upstream transmission."

::= { vdslLineSCMConfProfileEntry 1 }

vdslSCMConfProfileInterleaveDepth OBJECT-TYPE

SYNTAX Unsigned32 (0..64)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the interleaving depth."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

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```
 ::= { vdslLineSCMConfProfileEntry 2 }
```

vdslSCMConfProfileNumCarriers OBJECT-TYPE

SYNTAX INTEGER

```
{
    oneCarrier(1),
    twoCarriers(2)
}
```

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the number of carriers."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

```
 ::= { vdslLineSCMConfProfileEntry 3 }
```

vdslSCMConfProfileFastCodewordSize OBJECT-TYPE

SYNTAX Unsigned32 (0..180)

UNITS "octets"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the length in octets of the fast codeword.

A value of 0 indicates that the single latency transport class is to be utilized."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

```
 ::= { vdslLineSCMConfProfileEntry 4 }
```

vdslSCMConfProfileTransmitPSDMask OBJECT-TYPE

SYNTAX BITS

```
{
    vendorNotch1(0),      -- vendor specific notch
    vendorNotch2(1),      -- vendor specific notch
    amateurBand30m(2),    -- amateur radio band notch
    amateurBand40m(3),    -- amateur radio band notch
    amateurBand80m(4),    -- amateur radio band notch
    amateurBand160m(5)    -- amateur radio band notch
}
```

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The transmit power spectral density mask code.

Amateur radio band notching is defined in the VDSL spectrum as follows:

Band	Start Frequency	Stop Frequency
----	-----	-----
30m	1810 kHz	2000 kHz
40m	3500 kHz	3800 kHz (ETSI); 4000 kHz (ANSI)

80m	7000 kHz	7100 kHz (ETSI); 7300 kHz (ANSI)
160m	10100 kHz	10150 kHz

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Notching for each standard band can be enabled or disabled via the bit mask.

Two custom, or vendor specific, notches may be specified. If either of these are enabled via the bit mask, then the following objects MUST be specified:

If vendorNotch1 is enabled, then both  
    vds1SCMConfProfileVendorNotch1Start  
    vds1SCMConfProfileVendorNotch1Stop  
MUST be specified.

If vendorNotch2 is enabled, then both  
    vds1SCMConfProfileVendorNotch2Start  
    vds1SCMConfProfileVendorNotch2Stop  
MUST be specified."

REFERENCE     "T1E1.4/2000-011R3"     -- Part 2, SCM  
::= { vds1LineSCMConfProfileEntry 5 }

vds1SCMConfProfileVendorNotch1Start OBJECT-TYPE

SYNTAX        Unsigned32

UNITS         "kHz"

MAX-ACCESS    read-create

STATUS        current

DESCRIPTION

"Specifies the start frequency of the vendor-specific  
amateur radio notch 1."

REFERENCE     "T1E1.4/2000-011R3"     -- Part 2, SCM  
::= { vds1LineSCMConfProfileEntry 6 }

vds1SCMConfProfileVendorNotch1Stop OBJECT-TYPE

SYNTAX        Unsigned32

UNITS         "kHz"

MAX-ACCESS    read-create

STATUS        current

DESCRIPTION

"Specifies the stop frequency of the vendor-specific  
amateur radio notch 1."

REFERENCE     "T1E1.4/2000-011R3"     -- Part 2, SCM  
::= { vds1LineSCMConfProfileEntry 7 }

vds1SCMConfProfileVendorNotch2Start OBJECT-TYPE

SYNTAX        Unsigned32

UNITS         "kHz"

MAX-ACCESS    read-create

STATUS        current

DESCRIPTION

"Specifies the start frequency of the vendor-specific  
amateur radio notch 2."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM  
::= { vds1LineSCMConfProfileEntry 8 }

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**vds1SCMConfProfileVendorNotch2Stop OBJECT-TYPE**

SYNTAX Unsigned32

UNITS "kHz"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Specifies the stop frequency of the vendor-specific  
amateur radio notch 2."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

::= { vds1LineSCMConfProfileEntry 9 }

**vds1SCMConfProfileFastFecSize OBJECT-TYPE**

SYNTAX INTEGER

{  
noFEC(1),  
fecSize2(2),  
fecSize4(3),  
fecSize16(4)  
}

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"When fast channel is being used, this object specifies  
the size of the forward error correction (FEC) codeword."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

::= { vds1LineSCMConfProfileEntry 10 }

**vds1SCMConfProfileSlowBlockSize OBJECT-TYPE**

SYNTAX INTEGER

{  
s8(1),  
s4(2),  
s2(3)  
}

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Specifies the slow channel interleaved block size.  
Options are s/8, s/4, or s/2."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

::= { vds1LineSCMConfProfileEntry 11 }

**vds1SCMConfProfileRowStatus OBJECT-TYPE**

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"This object is used to create a new row or modify or  
delete an existing row in this table."

A profile activated by setting this object to `active`.  
When `active` is set, the system will validate the profile.

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Before a profile can be deleted or taken out of service, (by setting this object to 'destroy' or 'outOfService') it must be first unreferenced from all associated lines."

```
::= { vdslLineSCMConfProfileEntry 12 }
```

#### vdslLineSCMConfProfileTxBandTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineSCMConfProfileTxBandEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

"This table contains transmit band descriptor configuration information for a VDSL line. Each entry in this table reflects the configuration for one of possibly three bands with a single carrier modulation (SCM) VDSL line. These entries are defined by a manager and can be used to configure the VDSL line.

The entries in this table MUST NOT be used for multiple carrier (MCM) VDSL lines."

```
::= { vdslMibObjects 19 }
```

#### vdslLineSCMConfProfileTxBandEntry OBJECT-TYPE

SYNTAX VdslLineSCMConfProfileTxBandEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

"Each entry consists of a list of parameters that represents the configuration of a single carrier modulation VDSL modem transmit band.

A default profile with an index of 1 MUST always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { vdslLineConfProfileIndex,
        vdslSCMConfProfileTxBandSide,
        vdslSCMConfProfileTxBandNumber }
```

```
::= { vdslLineSCMConfProfileTxBandTable 1 }
```

#### VdslLineSCMConfProfileTxBandEntry ::=

#### SEQUENCE

```
{
    vdslSCMConfProfileTxBandSide          VdslLineEntity,
    vdslSCMConfProfileTxBandNumber        INTEGER,
    vdslSCMConfProfileTxBandTransmitPSDLevel Unsigned32,
    vdslSCMConfProfileTxBandSymbolRateProfile Unsigned32,
    vdslSCMConfProfileTxBandConstellationSize Unsigned32,
    vdslSCMConfProfileTxBandCenterFrequency Unsigned32,
```

```
vds1SCMConfProfileTxBandRowStatus  
}
```

RowStatus

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## vds1SCMConfProfileTxBandSide OBJECT-TYPE

SYNTAX VdslLineEntity  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Identifies whether this band entry describes  
    downstream or upstream transmission."  
 ::= { vds1LineSCMConfProfileTxBandEntry 1 }

## vds1SCMConfProfileTxBandNumber OBJECT-TYPE

SYNTAX INTEGER  
    {  
        band1(1),  
        band2(2),  
        upstreamU0(3)  
    }  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The SCN transmit band number for this entry."  
 ::= { vds1LineSCMConfProfileTxBandEntry 2 }

## vds1SCMConfProfileTxBandTransmitPSDLevel OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "-dBm/Hz"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The transmit power spectral density for the VDSL modem."  
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM  
 ::= { vds1LineSCMConfProfileTxBandEntry 3 }

## vds1SCMConfProfileTxBandSymbolRateProfile OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbaud"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The symbol rate profile calculated as  $S = SR/BSR$ , where  
    SR is the required symbol rate in kbaud,  $BSR = 67.5$ ."  
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM  
 ::= { vds1LineSCMConfProfileTxBandEntry 4 }

## vds1SCMConfProfileTxBandConstellationSize OBJECT-TYPE

SYNTAX Unsigned32 (0..8)  
UNITS "log2"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION

"Specifies the constellation size."

REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM

::= { vdslLineSCMConfProfileTxBandEntry 5 }

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## vdsLSCMConfProfileTxBandCenterFrequency OBJECT-TYPE

SYNTAX           Unsigned32 (0..511)  
UNITS            "33.75kHz"  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "Specifies the center frequency profile K."  
REFERENCE        "T1E1.4/2000-011R3"     -- Part 2, SCM  
::= { vdsLLineSCMConfProfileTxBandEntry 6 }

## vdsLSCMConfProfileTxBandRowStatus OBJECT-TYPE

SYNTAX           RowStatus  
MAX-ACCESS       read-create  
STATUS           current  
DESCRIPTION  
    "This object is used to create a new row or modify or  
    delete an existing row in this table.  
  
    A profile activated by setting this object to `active'.  
    When `active' is set, the system will validate the profile.  
  
    Before a profile can be deleted or taken out of  
    service, (by setting this object to `destroy' or  
    `outOfService') it must be first unreferenced  
    from all associated lines."  
::= { vdsLLineSCMConfProfileTxBandEntry 7 }

--

-- Alarm configuration profile table

--

## vdsLLineAlarmConfProfileTable OBJECT-TYPE

SYNTAX           SEQUENCE OF VdsLLineAlarmConfProfileEntry  
MAX-ACCESS       not-accessible  
STATUS           current  
DESCRIPTION  
    "This table contains information on the VDSL line alarm  
    configuration. One entry in this table reflects a profile  
    defined by a manager which can be used to configure the  
    VDSL line alarm thresholds."  
::= { vdsLMibObjects 20 }

## vdsLLineAlarmConfProfileEntry OBJECT-TYPE

SYNTAX           VdsLLineAlarmConfProfileEntry  
MAX-ACCESS       not-accessible  
STATUS           current  
DESCRIPTION  
    "Each entry consists of a list of parameters that

represents the configuration of a VDSL line alarm profile.

A default profile with an index of 1 MUST always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { vdslLineAlarmConfProfileIndex }  
 ::= { vdslLineAlarmConfProfileTable 1 }
```

VdslLineAlarmConfProfileEntry ::=

SEQUENCE

```
{  
  vdslLineAlarmConfProfileIndex      Unsigned32,  
  vdslLineAlarmConfProfileName       SnmpAdminString,  
  vdslThresh15MinLofs                HCPperfIntervalThreshold,  
  vdslThresh15MinLoss                HCPperfIntervalThreshold,  
  vdslThresh15MinLprs                HCPperfIntervalThreshold,  
  vdslThresh15MinESS                 HCPperfIntervalThreshold,  
  vdslThresh15MinSESS                HCPperfIntervalThreshold,  
  vdslThresh15MinUASS                HCPperfIntervalThreshold,  
  vdslInitFailureNotificationEnable  TruthValue,  
  vdslLineAlarmConfProfileRowStatus  RowStatus  
}
```

vdslLineAlarmConfProfileIndex OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is used by the line alarm configuration table in order to identify a row in that table. The system MUST provide a default profile whose index is 1."

```
::= { vdslLineAlarmConfProfileEntry 1 }
```

vdslLineAlarmConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The name for this profile as specified by a user."

```
::= { vdslLineAlarmConfProfileEntry 2 }
```

vdslThresh15MinLofs OBJECT-TYPE

SYNTAX HCPperfIntervalThreshold

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object configures the threshold for the number of loss of frame seconds (lofs) within any given 15-minute performance data collection interval. If the value of loss of frame seconds in a particular 15-minute collection

interval reaches/exceeds this value, a  
vds1PerfLofsThreshNotification notification will be  
generated. No more than one notification will be sent

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```
        per interval."
 ::= { vdslLineAlarmConfProfileEntry 3 }
```

vdslThresh15MinLoss OBJECT-TYPE

SYNTAX           HCPperfIntervalThreshold

UNITS            "seconds"

MAX-ACCESS       read-create

STATUS           current

DESCRIPTION

"This object configures the threshold for the number of loss of signal seconds (loss) within any given 15-minute performance data collection interval. If the value of loss of frame seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfLossThreshNotification notification will be generated. One notification will be sent per interval per endpoint."

```
 ::= { vdslLineAlarmConfProfileEntry 4 }
```

vdslThresh15MinLprs OBJECT-TYPE

SYNTAX           HCPperfIntervalThreshold

UNITS            "seconds"

MAX-ACCESS       read-create

STATUS           current

DESCRIPTION

"This object configures the threshold for the number of loss of power seconds (lprs) within any given 15-minute performance data collection interval. If the value of loss of frame seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfLprsThreshNotification notification will be generated. No more than one notification will be sent per interval."

```
 ::= { vdslLineAlarmConfProfileEntry 5 }
```

vdslThresh15MinESs OBJECT-TYPE

SYNTAX           HCPperfIntervalThreshold

UNITS            "seconds"

MAX-ACCESS       read-create

STATUS           current

DESCRIPTION

"This object configures the threshold for the number of errored seconds (ESs) within any given 15-minute performance data collection interval. If the value of errored seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfESsThreshNotification notification will be generated. No more than one notification will be sent per interval."

```
::= { vdslLineAlarmConfProfileEntry 6 }
```

vdslThresh15MinSESS OBJECT-TYPE

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SYNTAX           HCPeIntervalThreshold

UNITS            "seconds"

MAX-ACCESS      read-create

STATUS           current

DESCRIPTION

"This object configures the threshold for the number of severely errored seconds (SESS) within any given 15-minute performance data collection interval. If the value of severely errored seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdsPerfSESSThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdsLineAlarmConfProfileEntry 7 }

vdsThresh15MinUASS OBJECT-TYPE

SYNTAX           HCPeIntervalThreshold

UNITS            "seconds"

MAX-ACCESS      read-create

STATUS           current

DESCRIPTION

"This object configures the threshold for the number of unavailable seconds (UASS) within any given 15-minute performance data collection interval. If the value of unavailable seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdsPerfUASSThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdsLineAlarmConfProfileEntry 8 }

vdsInitFailureNotificationEnable OBJECT-TYPE

SYNTAX           TruthValue

MAX-ACCESS      read-create

STATUS           current

DESCRIPTION

"This object specifies if a vdsInitFailureNotification notification will be generated if an initialization failure occurs."

::= { vdsLineAlarmConfProfileEntry 9 }

vdsLineAlarmConfProfileRowStatus OBJECT-TYPE

SYNTAX           RowStatus

MAX-ACCESS      read-create

STATUS           current

DESCRIPTION

"This object is used to create a new row or modify or delete an existing row in this table."

A profile activated by setting this object to `active`.  
When `active` is set, the system will validate the profile.

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Before a profile can be deleted or taken out of service, (by setting this object to 'destroy' or 'outOfService') it must be first unreferenced from all associated lines."

::= { vdslLineAlarmConfProfileEntry 10 }

-- Notification definitions

vdslNotifications OBJECT IDENTIFIER ::= { vdslLineMib 0 }

vdslPerfLofsThreshNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslPerfCurr15MinLofs,  
    vdslThresh15MinLofs  
}  
STATUS current  
DESCRIPTION  
    "Loss of Framing 15-minute interval threshold reached."  
::= { vdslNotifications 1 }

vdslPerfLossThreshNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslPerfCurr15MinLoss,  
    vdslThresh15MinLoss  
}  
STATUS current  
DESCRIPTION  
    "Loss of Signal 15-minute interval threshold reached."  
::= { vdslNotifications 2 }

vdslPerfLprsThreshNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslPerfCurr15MinLprs,  
    vdslThresh15MinLprs  
}  
STATUS current  
DESCRIPTION  
    "Loss of Power 15-minute interval threshold reached."  
::= { vdslNotifications 3 }

vdslPerfESsThreshNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslPerfCurr15MinESs,  
    vdslThresh15MinESs  
}  
STATUS current  
DESCRIPTION  
    "Errored Seconds 15-minute interval threshold reached."  
::= { vdslNotifications 4 }

vdslPerfSESSthreshNotification NOTIFICATION-TYPE  
OBJECTS {

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```
        vdslPerfCurr15MinSEss,
        vdslThresh15MinSEss
    }
    STATUS          current
    DESCRIPTION
        "Severely Errored Seconds 15-minute interval threshold
        reached."
    ::= { vdslNotifications 5 }

vdslPerfUASsThreshNotification NOTIFICATION-TYPE
    OBJECTS          {
        vdslPerfCurr15MinUASs,
        vdslThresh15MinUASs
    }
    STATUS          current
    DESCRIPTION
        "Unavailable Seconds 15-minute interval threshold reached."
    ::= { vdslNotifications 6 }

vdslDownMaxSnrMgnExceededNotification NOTIFICATION-TYPE
    OBJECTS          {
        vdslCurrSnrMgn,
        vdslLineConfDownstreamMaxSnrMgn
    }
    STATUS          current
    DESCRIPTION
        "The downstream Signal to Noise Margin exceeded
        vdslLineConfDownstreamMaxSnrMgn. The object
        vdslCurrSnrMgn will contain the Signal to Noise
        margin as measured by the VTU-R."
    ::= { vdslNotifications 7 }

vdslDownMinSnrMgnExceededNotification NOTIFICATION-TYPE
    OBJECTS          {
        vdslCurrSnrMgn,
        vdslLineConfDownstreamMinSnrMgn
    }
    STATUS          current
    DESCRIPTION
        "The downstream Signal to Noise Margin fell below
        vdslLineConfDownstreamMinSnrMgn. The object
        vdslCurrSnrMgn will contain the Signal to Noise
        margin as measured by the VTU-R."
    ::= { vdslNotifications 8 }

vdslUpMaxSnrMgnExceededNotification NOTIFICATION-TYPE
    OBJECTS          {
        vdslCurrSnrMgn,
        vdslLineConfUpstreamMaxSnrMgn
```

	}
STATUS	current
DESCRIPTION	

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"The upstream Signal to Noise Margin exceeded  
vdslLineConfDownstreamMaxSnrMgn. The object  
vdslCurrSnrMgn will contain the Signal to Noise  
margin as measured by the VTU-C."  
::= { vdslNotifications 9 }

vdslUpMinSnrMgnExceededNotification NOTIFICATION-TYPE

OBJECTS {  
vdslCurrSnrMgn,  
vdslLineConfUpstreamMinSnrMgn  
}

STATUS current

DESCRIPTION

"The upstream Signal to Noise Margin fell below  
vdslLineConfDownstreamMinSnrMgn. The object  
vdslCurrSnrMgn will contain the Signal to Noise  
margin as measured by the VTU-C."

::= { vdslNotifications 10 }

vdslInitFailureNotification NOTIFICATION-TYPE

OBJECTS {  
vdslCurrStatus  
}

STATUS current

DESCRIPTION

"Vtu initialization failed. See vdslCurrStatus for  
potential reasons."

::= { vdslNotifications 11 }

-- conformance information

vdslConformance OBJECT IDENTIFIER ::= { vdslLineMib 3 }

vdslGroups OBJECT IDENTIFIER ::= { vdslConformance 1 }

vdslCompliances OBJECT IDENTIFIER ::= { vdslConformance 2 }

vdslLineMibCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"The compliance statement for SNMP entities which  
manage VDSL interfaces."

MODULE -- this module

MANDATORY-GROUPS

{  
vdslGroup  
}

GROUP vdslMCMGroup

DESCRIPTION

"This group is mandatory for VDSL Lines which  
utilize multiple carrier modulation (MCM)."

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```
GROUP          vdslSCMGroup
DESCRIPTION
    "This group is mandatory for VDSL lines which
    utilize single carrier modulation (SCM)."
```

::= { vdslCompliances 1 }

-- units of conformance

```
vdslGroup OBJECT-GROUP
    OBJECTS
        {
            vdslLineCoding,
            vdslLineType,
            vdslLineConfProfile,
            vdslLineAlarmConfProfile,
            vdslPhysSide,
            vdslInvSerialNumber,
            vdslInvVendorID,
            vdslInvVersionNumber,
            vdslCurrSnrMgn,
            vdslCurrAtn,
            vdslCurrStatus,
            vdslCurrOutputPwr,
            vdslCurrAttainableRate,
            vdslChanInterleaveDelay,
            vdslChanCrcBlockLength,
            vdslPerfValidIntervals,
            vdslPerfInvalidIntervals,
            vdslPerfLofs,
            vdslPerfLoss,
            vdslPerfLprs,
            vdslPerfESS,
            vdslPerfSESS,
            vdslPerfUASS,
            vdslPerfInits,
            vdslPerfCurr15MinTimeElapsed,
            vdslPerfCurr15MinLofs,
            vdslPerfCurr15MinLoss,
            vdslPerfCurr15MinLprs,
            vdslPerfCurr15MinESS,
            vdslPerfCurr15MinSESS,
            vdslPerfCurr15MinUASS,
            vdslPerfCurr15MinInits,
            vdslPerf1DayValidIntervals,
            vdslPerf1DayInvalidIntervals,
            vdslPerfCurr1DayTimeElapsed,
            vdslPerfCurr1DayLofs,
            vdslPerfCurr1DayLoss,
```

vds1PerfCurr1DayLprs,  
vds1PerfCurr1DayESs,  
vds1PerfCurr1DaySESS,

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vdslPerfCurr1DayUASs,  
vdslPerfCurr1DayInits,  
vdslIntervalLofs,  
vdslIntervalLoss,  
vdslIntervalLprs,  
vdslIntervalESs,  
vdslIntervalSESSs,  
vdslIntervalUASs,  
vdslIntervalInits,  
vdsl1DayIntervalMoniSecs,  
vdsl1DayIntervalLofs,  
vdsl1DayIntervalLoss,  
vdsl1DayIntervalLprs,  
vdsl1DayIntervalESs,  
vdsl1DayIntervalSESSs,  
vdsl1DayIntervalUASs,  
vdsl1DayIntervalInits,  
vdslChanPerfValidIntervals,  
vdslChanPerfInvalidIntervals,  
vdslChanCorrectedOctets,  
vdslChanUncorrectBlks,  
vdslChanPerfCurr15MinTimeElapsed,  
vdslChanPerfCurr15MinCorrectedOctets,  
vdslChanPerfCurr15MinUncorrectBlks,  
vdslChanPerf1DayValidIntervals,  
vdslChanPerf1DayInvalidIntervals,  
vdslChanPerfCurr1DayTimeElapsed,  
vdslChanPerfCurr1DayCorrectedOctets,  
vdslChanPerfCurr1DayUncorrectBlks,  
vdslChanIntervalCorrectedOctets,  
vdslChanIntervalUncorrectBlks,  
vdslChan1DayIntervalMoniSecs,  
vdslChan1DayIntervalCorrectedOctets,  
vdslChan1DayIntervalUncorrectBlks,  
vdslLineConfProfileIndex,  
vdslLineConfProfileName,  
vdslLineConfDownstreamMaxPwr,  
vdslLineConfUpstreamMaxPwr,  
vdslLineConfDownstreamMaxSnrMgn,  
vdslLineConfDownstreamMinSnrMgn,  
vdslLineConfDownstreamTargetSnrMgn,  
vdslLineConfUpstreamMaxSnrMgn,  
vdslLineConfUpstreamMinSnrMgn,  
vdslLineConfUpstreamTargetSnrMgn,  
vdslLineConfDownstreamFastMaxDataRate,  
vdslLineConfDownstreamFastMinDataRate,  
vdslLineConfDownstreamSlowMaxDataRate,  
vdslLineConfDownstreamSlowMinDataRate,  
vdslLineConfUpstreamFastMaxDataRate,

vdsLineConfUpstreamFastMinDataRate,  
vdsLineConfUpstreamSlowMaxDataRate,  
vdsLineConfUpstreamSlowMinDataRate,

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```
vdslLineConfRateAdaptationRatio,
vdslLineConfUpstreamDataRate,
vdslLineConfDownstreamDataRate,
vdslLineConfDownstreamMaxInterDelay,
vdslLineConfUpstreamMaxInterDelay,
vdslLineConfUpstreamPboControl,
vdslLineConfDownstreamPboControl,
vdslLineConfDeploymentScenario,
vdslLineConfAdsl0occupy,
vdslLineConfApplicableStandard,
vdslLineConfBandPlan,
vdslLineConfBandPlanFx,
vdslLineConfBandU0Usage,
vdslLineConfUpstreamPsdTemplate,
vdslLineConfDownstreamPsdTemplate,
vdslLineConfProfileRowStatus,
vdslLineAlarmConfProfileIndex,
vdslLineAlarmConfProfileName,
vdslThresh15MinLofs,
vdslThresh15MinLoss,
vdslThresh15MinLprs,
vdslThresh15MinESS,
vdslThresh15MinSESS,
vdslThresh15MinUASS,
vdslInitFailureNotificationEnable,
vdslLineAlarmConfProfileRowStatus
}
```

STATUS current

DESCRIPTION

"A collection of objects providing information about  
a VDSL Line."

::= { vdslGroups 1 }

vdslMCMGroup OBJECT-GROUP

OBJECTS

```
{
vdslMCMConfProfileTxWindowLength,
vdslMCMConfProfileRowStatus,
vdslMCMConfProfileTxBandNumber,
vdslMCMConfProfileTxBandStart,
vdslMCMConfProfileTxBandStop,
vdslMCMConfProfileTxBandRowStatus,
vdslMCMConfProfileRxBandNumber,
vdslMCMConfProfileRxBandStart,
vdslMCMConfProfileRxBandStop,
vdslMCMConfProfileRxBandRowStatus,
vdslMCMConfProfileTxPSDNumber,
vdslMCMConfProfileTxPSDTone,
vdslMCMConfProfileTxPSDPSD,
```

vds1MCMConfProfileTxPSDRowStatus,  
vds1MCMConfProfileMaxTxPSDNumber,  
vds1MCMConfProfileMaxTxPSDTone,

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```
        vdslMCMConfProfileMaxTxPSDPSD,
        vdslMCMConfProfileMaxTxPSDRowStatus,
        vdslMCMConfProfileMaxRxPSDNumber,
        vdslMCMConfProfileMaxRxPSDTone,
        vdslMCMConfProfileMaxRxPSDPSD,
        vdslMCMConfProfileMaxRxPSDRowStatus
    }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing configuration
        information for a VDSL line based upon multiple carrier
        modulation modem."
    ::= { vdslGroups 2 }

vdslSCMGroup      OBJECT-GROUP
    OBJECTS
        {
            vdslSCMPhysBandSnrMgn,
            vdslSCMPhysBandAtn,
            vdslSCMConfProfileSide,
            vdslSCMConfProfileInterleaveDepth,
            vdslSCMConfProfileNumCarriers,
            vdslSCMConfProfileFastCodewordSize,
            vdslSCMConfProfileTransmitPSDMask,
            vdslSCMConfProfileVendorNotch1Start,
            vdslSCMConfProfileVendorNotch1Stop,
            vdslSCMConfProfileVendorNotch2Start,
            vdslSCMConfProfileVendorNotch2Stop,
            vdslSCMConfProfileFastFecSize,
            vdslSCMConfProfileSlowBlockSize,
            vdslSCMConfProfileRowStatus,
            vdslSCMConfProfileTxBandSide,
            vdslSCMConfProfileTxBandNumber,
            vdslSCMConfProfileTxBandTransmitPSDLevel,
            vdslSCMConfProfileTxBandSymbolRateProfile,
            vdslSCMConfProfileTxBandConstellationSize,
            vdslSCMConfProfileTxBandCenterFrequency,
            vdslSCMConfProfileTxBandRowStatus
        }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing configuration
        information for a VDSL line based upon single carrier
        modulation modem."
    ::= { vdslGroups 3 }

vdslNotificationGroup      NOTIFICATION-GROUP
    NOTIFICATIONS
        {
```

vds1PerfLofsThreshNotification,  
vds1PerfLossThreshNotification,  
vds1PerfLprsThreshNotification,

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```
        vdslPerfESsThreshNotification,
        vdslPerfSESSsThreshNotification,
        vdslPerfUASsThreshNotification,
        vdslDownMaxSnrMgnExceededNotification,
        vdslDownMinSnrMgnExceededNotification,
        vdslUpMaxSnrMgnExceededNotification,
        vdslUpMinSnrMgnExceededNotification,
        vdslInitFailureNotification
    }
    STATUS          current
    DESCRIPTION
        "This group supports notifications of significant
        conditions associated with VDSL Lines."
    ::= { vdslGroups 4 }
```

END

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#### Security Considerations

There are a number of management objects defined in this MIB that have a MAX-ACCESS clause of read-write and/or read-create. Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

VDSL layer connectivity from the Vtur will permit the subscriber to manipulate both the VDSL link directly and the VDSL embedded operations channel (EOC) for their own loop. For example, unchecked or unfiltered fluctuations initiated by the subscriber could generate sufficient notifications to potentially overwhelm either the management interface to the network or the element manager.

For this reason, there are a number of managed objects in this MIB that may contain sensitive information. These are:

- vdslThresh15MinLofs
- vdslThresh15MinLoss
- vdslThresh15MinLprs
- vdslThresh15MinESs
- vdslThresh15MinSESSs
- vdslThresh15MinUASs

It is thus important to control even GET access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.

Further, notifications generated by agents implementing this MIB

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will contain the above threshold information.

SNMPv1 by itself is not a secure environment. Even if the network itself is secure (for example by using IPSec), even then, there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB.

It is recommended that the implementers consider the security features as provided by the SNMPv3 framework. Specifically, the use of the User-based Security Model [RFC 2574](#) [12] and the View-based Access Control Model [RFC 2575](#) [15] is recommended.

It is then a customer/user responsibility to ensure that the SNMP entity giving access to an instance of this MIB, is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

#### IANA Considerations

The VDSL-LINE-MIB MIB module requires the allocation of a single object identifier for its MODULE-IDENTITY. IANA should allocate this object identifier in the transmission subtree.

#### Acknowledgments

David Horton (CiTR)

Moti Morgenstern (Inovia)

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