

**Definitions of Managed Objects for Very High
Speed Digital Subscriber Lines (VDSL)
draft-ietf-adslmib-vdsl-07.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. The textual conventions used in this MIB module cannot be translated to SMIV1 since the Counter64 type does not exist in SMIV1.

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
```

```
...
```

```
SYNTAX INTEGER {
```

```
...
```

```
    vdsl(97), -- Very H-speed Digital Subscrib. Loop
```

```
...
```

}

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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].
ifHighSpeed	Set as appropriate.
ifConnectorPresent	Set as appropriate.

ifLinkUpDownTrapEnable Default to enabled(1).

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=====

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 :

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 :

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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
- 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

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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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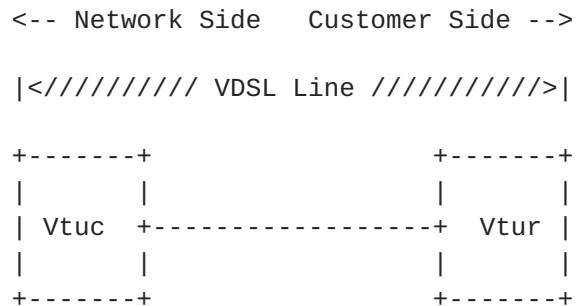


Figure 3: General topology for a VDSL Line

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:

- 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, vdslLineConfProfileName, 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 'DEFVAL' 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 'DEFVAL' where appropriate. This default profile name, 'DEFVAL', 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 ten profile tables (nine line configuration tables and one alarm configuration table).

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

line.

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2.6 Notifications

The ability to generate the SNMP notifications coldStart/WarmStart (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:

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vdslLineConfProfile
vdslLineAlarmConfProfile
vdslLineConfProfileName
vdslLineConfDownstreamMaxPwr
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
vdslMCMConfProfileRxBandStart
vdslMCMConfProfileRxBandStop
vdslMCMConfProfileRxBandRowStatus
vdslMCMConfProfileTxPSDTone
vdslMCMConfProfileTxPSDPSD
vdslMCMConfProfileTxPSDRowStatus
vdslMCMConfProfileMaxTxPSDTone
vdslMCMConfProfileMaxTxPSDPSD

vds1MCMConfProfileMaxTxPSDRowStatus
vds1MCMConfProfileMaxRxPSDTone

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```
vdslMCMConfProfileMaxRxPSDPSD
vdslMCMConfProfileMaxRxPSDRowStatus
vdslSCMConfProfileInterleaveDepth
vdslSCMConfProfileNumCarriers
vdslSCMConfProfileFastCodewordSize
vdslSCMConfProfileTransmitPSDMask
vdslSCMConfProfileVendorNotch1Start
vdslSCMConfProfileVendorNotch1Stop
vdslSCMConfProfileVendorNotch2Start
vdslSCMConfProfileVendorNotch2Stop
vdslSCMConfProfileFastFecSize
vdslSCMConfProfileSlowBlockSize
vdslSCMConfProfileRowStatus
vdslSCMConfProfileTxBandTransmitPSDLevel
vdslSCMConfProfileTxBandSymbolRateProfile
vdslSCMConfProfileTxBandConstellationSize
vdslSCMConfProfileTxBandCenterFrequency
vdslSCMConfProfileTxBandRowStatus
vdslLineAlarmConfProfileName
vdslThresh15MinLofs
vdslThresh15MinLoss
vdslThresh15MinLprs
vdslThresh15MinESs
vdslThresh15MinSESSs
vdslThresh15MinUASSs
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

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4. Definitions

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

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ORGANIZATION "ADSLMIB Working Group"

CONTACT-INFO "WG-email: adslmib@ietf.org

Info: <https://www1.ietf.org/mailman/listinfo/adslmib>

Chair: Mike Sneed
Sand Channel Systems

Postal: P.O. Box 37324
Raleigh NC 27627-7324

Email: sneedmike@hotmail.com

Phone: +1 206 600 7022

Co-editor: Bob Ray
PESA Switching Systems, Inc.

Postal: 330-A Wynn Drive
Huntsville, AL 35805 USA

Email: rray@pesa.com

Phone: +1 256 726 9200 ext. 142

Co-editor: Rajesh Abbi

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[Page 13]

Alcatel USA
Postal: 2912 Wake Forest Road
Raleigh, NC 27609-7860 USA
Email: Rajesh.Abbi@alcatel.com
Phone: +1 919 850 6194

"

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

"

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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."

REVISION "200210300000Z" -- October 30, 2002

DESCRIPTION "Modified per input from Umberto Bonollo
and Travis Levin."

REVISION "200212300000Z" -- December 30, 2002

DESCRIPTION "Changed profile indices to strings."

::= { 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

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```
        vtur(2)  -- remote site modem
    }

--
-- objects
--

vdslLineTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF VdslLineEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "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     SnmpAdminString,
        vdslLineAlarmConfProfile SnmpAdminString
    }

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),  
either(4),
```

```
-- slow channel only  
-- either fast or slow channel exist
```

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```
        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 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 SnmpAdminString (SIZE(1..32))

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 SnmpAdminString (SIZE(1..32))

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)."

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```
::= { 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 ::=

```
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  not-accessible
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

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```
::= { 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

```
::= { 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)
```

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```

    }
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 a 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. Set whenever the transceiver is in the 'Warm Start' state.
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"

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```

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
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,
    vdslChanCurrTxRate           Gauge32
}

```

}

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vds1ChanInterleaveDelay 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
::= { vds1ChanEntry 1 }

vds1ChanCrcBlockLength 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
::= { vds1ChanEntry 2 }

vds1ChanCurrTxRate OBJECT-TYPE

SYNTAX Gauge32
UNITS "kbps"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"Actual transmit data rate on this channel."

::= { vds1ChanEntry 3 }

vds1PerfDataTable OBJECT-TYPE

SYNTAX SEQUENCE OF Vds1PerfDataEntry
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)."

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```
::= { 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,
        vdslPerfESS                   Counter64,
        vdslPerfSESS                  Counter64,
        vdslPerfUASS                  Counter64,
        vdslPerfInits                 Counter64,
        vdslPerfCurr15MinTimeElapsed HCPperfTimeElapsed,
        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."

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```
::= { vdslPerfDataEntry 1 }
```

vdslPerfInvalidIntervals OBJECT-TYPE

SYNTAX HCPerfInvalidIntervals

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

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.

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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 }

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

vdslPerfCurr15MinLoFs OBJECT-TYPE

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

STATUS	current
DESCRIPTION	

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"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

SYNTAX HCPerfCurrentCount

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 HCPerfCurrentCount

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"

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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
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

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"Count of Loss of Framing (LOF) Seconds since the beginning of the current 1-day interval."
 ::= { vds1PerfDataEntry 21 }

vds1PerfCurr1DayLoss 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."
 ::= { vds1PerfDataEntry 22 }

vds1PerfCurr1DayLprs 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."
 ::= { vds1PerfDataEntry 23 }

vds1PerfCurr1DayESs OBJECT-TYPE

SYNTAX Counter64
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"Count of Errored Seconds (ES) since the beginning of the current 1-day interval."
 ::= { vds1PerfDataEntry 24 }

vds1PerfCurr1DaySESSs 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."
 ::= { vds1PerfDataEntry 25 }

vds1PerfCurr1DayUASs OBJECT-TYPE

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

DESCRIPTION

"Count of Unavailable Seconds (UAS) since the beginning

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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 vdslPerfIntervalTable."

INDEX { ifIndex,
 vdslPhysSide,
 vdslIntervalNumber }

::= { vdslPerfIntervalTable 1 }

VdslPerfIntervalEntry ::=

SEQUENCE

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

vdslIntervalNumber OBJECT-TYPE

SYNTAX	Unsigned32 (1..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."

::= { 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 HCPerfIntervalCount

UNITS "seconds"

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 }

vdslIntervalESSs 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
::= { vds1PerfIntervalEntry 5 }

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vds1IntervalSEss OBJECT-TYPE

SYNTAX HCPerfIntervalCount

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of Severely Errored Seconds in the interval."

::= { vds1PerfIntervalEntry 6 }

vds1IntervalUASs OBJECT-TYPE

SYNTAX HCPerfIntervalCount

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of Unavailable Seconds in the interval."

::= { vds1PerfIntervalEntry 7 }

vds1IntervalInits 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

::= { vds1PerfIntervalEntry 8 }

vds11DayIntervalTable OBJECT-TYPE

SYNTAX SEQUENCE OF Vds11DayIntervalEntry

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."

::= { vds1MibObjects 6 }

vds11DayIntervalEntry OBJECT-TYPE

SYNTAX Vds11DayIntervalEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"An entry in the vds11DayIntervalTable."

INDEX { ifIndex,
vds1PhysSide,
vds11DayIntervalNumber }

```
::= { vds11DayIntervalTable 1 }
```

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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 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"

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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 }

vdsl1DayIntervalESs 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
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 }

vds11DayIntervalInits OBJECT-TYPE

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```

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      HCPperfValidIntervals,
        vdslChanPerfInvalidIntervals    HCPperfInvalidIntervals,
        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

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```
STATUS          current
DESCRIPTION
    "Valid Intervals per definition found in
    HC-PerfHist-TC-MIB."
 ::= { vdslChanPerfDataEntry 1 }

vdslChanPerfInvalidIntervals OBJECT-TYPE
SYNTAX          HCPerfInvalidIntervals
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          HCPerfTimeElapsed
UNITS           "seconds"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Total elapsed seconds in this interval."
 ::= { vdslChanPerfDataEntry 5 }

vdslChanPerfCurr15MinCorrectedOctets OBJECT-TYPE
SYNTAX          HCPerfCurrentCount
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "Count of corrected octets in this interval."
REFERENCE       "T1E1.4/2000-009R3"    -- Part 1, common spec
```

```
::= { vds1ChanPerfDataEntry 6 }
```

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vds1ChanPerfCurr15MinUncorrectBlks 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

::= { vds1ChanPerfDataEntry 7 }

vds1ChanPerf1DayValidIntervals OBJECT-TYPE

SYNTAX HCPperfValidIntervals

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Valid Intervals per definition found in
HC-PerfHist-TC-MIB."

::= { vds1ChanPerfDataEntry 8 }

vds1ChanPerf1DayInvalidIntervals OBJECT-TYPE

SYNTAX HCPperfInvalidIntervals

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Invalid Intervals per definition found in
HC-PerfHist-TC-MIB."

::= { vds1ChanPerfDataEntry 9 }

vds1ChanPerfCurr1DayTimeElapsed 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."

::= { vds1ChanPerfDataEntry 10 }

vds1ChanPerfCurr1DayCorrectedOctets OBJECT-TYPE

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

::= { vds1ChanPerfDataEntry 11 }

vds1ChanPerfCurr1DayUncorrectBlks OBJECT-TYPE

SYNTAX HCPperfCurrentCount

MAX-ACCESS	read-only
STATUS	current

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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 HCPeIntervalCount,
  vdslChanIntervalUncorrectBlks   HCPeIntervalCount
}
```

vdslChanIntervalNumber OBJECT-TYPE

SYNTAX Unsigned32 (0..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."

::= { vdslChanIntervalEntry 1 }

vdslChanIntervalCorrectedOctets OBJECT-TYPE

SYNTAX HCPeIntervalCount

MAX-ACCESS read-only

STATUS	current
DESCRIPTION	

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"Count of corrected octets in this interval."
 REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
 ::= { vdslChanIntervalEntry 2 }

vdslChanIntervalUncorrectBlks OBJECT-TYPE

SYNTAX HCPerfIntervalCount
 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 HCPerfTimeElapsed,
 vdslChan1DayIntervalCorrectedOctets HCPerfCurrentCount,
 vdslChan1DayIntervalUncorrectBlks HCPerfCurrentCount
 }

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."

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```
::= { vdslChan1DayIntervalEntry 1 }
```

```
vdslChan1DayIntervalMoniSecs OBJECT-TYPE
```

```
    SYNTAX      HCPerfTimeElapsed
```

```
    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      HCPerfCurrentCount
```

```
    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      HCPerfCurrentCount
```

```
    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
```

```
--
```

```
vdslSCMPhysBandTable OBJECT-TYPE
```

```
    SYNTAX      SEQUENCE OF VdslSCMPhysBandEntry
```

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

```
    STATUS      current
```

```
    DESCRIPTION
```

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

```
::= { vdslMibObjects 10 }
```

```
vdslSCMPhysBandEntry OBJECT-TYPE
```

```
    SYNTAX      VdslSCMPhysBandEntry
```

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

```
    STATUS      current
```

DESCRIPTION

"An entry in the vds1SCMPHysBandTable."

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```
INDEX { ifIndex,
        vdslPhysSide,
        vdslSCMPHysTxBandNumber }
 ::= { vdslSCMPHysBandTable 1 }
```

```
VdslSCMPHysBandEntry ::=
SEQUENCE
{
    vdslSCMPHysTxBandNumber      INTEGER,
    vdslSCMPHysBandSnrMgn        Integer32,
    vdslSCMPHysBandAtn           Unsigned32
}
```

vdslSCMPHysTxBandNumber 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."
 ::= { vdslSCMPHysBandEntry 1 }
```

vdslSCMPHysBandSnrMgn 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."
 ::= { vdslSCMPHysBandEntry 2 }
```

vdslSCMPHysBandAtn OBJECT-TYPE

```
SYNTAX          Unsigned32 (0..255)
UNITS           "0.25 dBm"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
    "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

--

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vdsLineConfProfileTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdsLineConfProfileEntry

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."

::= { vdsMibObjects 11 }

vdsLineConfProfileEntry OBJECT-TYPE

SYNTAX VdsLineConfProfileEntry

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 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdsLineConfProfileName }

::= { vdsLineConfProfileTable 1 }

VdsLineConfProfileEntry ::=

SEQUENCE

{	
vdsLineConfProfileName	SnmpAdminString,
vdsLineConfDownstreamMaxPwr	Unsigned32,
vdsLineConfUpstreamMaxPwr	Unsigned32,
vdsLineConfDownstreamMaxSnrMgn	Unsigned32,
vdsLineConfDownstreamMinSnrMgn	Unsigned32,
vdsLineConfDownstreamTargetSnrMgn	Unsigned32,
vdsLineConfUpstreamMaxSnrMgn	Unsigned32,
vdsLineConfUpstreamMinSnrMgn	Unsigned32,
vdsLineConfUpstreamTargetSnrMgn	Unsigned32,
vdsLineConfDownstreamFastMaxDataRate	Unsigned32,
vdsLineConfDownstreamFastMinDataRate	Unsigned32,
vdsLineConfDownstreamSlowMaxDataRate	Unsigned32,
vdsLineConfDownstreamSlowMinDataRate	Unsigned32,
vdsLineConfUpstreamFastMaxDataRate	Unsigned32,
vdsLineConfUpstreamFastMinDataRate	Unsigned32,
vdsLineConfUpstreamSlowMaxDataRate	Unsigned32,
vdsLineConfUpstreamSlowMinDataRate	Unsigned32,
vdsLineConfRateAdaptationRatio	Unsigned32,
vdsLineConfUpstreamDataRate	Unsigned32,
vdsLineConfDownstreamDataRate	Unsigned32,

vdslLineConfDownstreamMaxInterDelay	Unsigned32,
vdslLineConfUpstreamMaxInterDelay	Unsigned32,

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vdsLineConfUpstreamPboControl	INTEGER,
vdsLineConfDownstreamPboControl	INTEGER,
vdsLineConfDeploymentScenario	INTEGER,
vdsLineConfAdslOccupancy	TruthValue,
vdsLineConfApplicableStandard	INTEGER,
vdsLineConfBandPlan	INTEGER,
vdsLineConfBandPlanFx	Unsigned32,
vdsLineConfBandU0Usage	INTEGER,
vdsLineConfUpstreamPsdTemplate	INTEGER,
vdsLineConfDownstreamPsdTemplate	INTEGER,
vdsLineConfProfileRowStatus	RowStatus

}

vdsLineConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This object identifies a row in this table.

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

::= { vdsLineConfProfileEntry 1 }

vdsLineConfDownstreamMaxPwr 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

::= { vdsLineConfProfileEntry 2 }

vdsLineConfUpstreamMaxPwr OBJECT-TYPE

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 3 }

vdsLineConfDownstreamMaxSnrMgn OBJECT-TYPE

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

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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
::= { vdslLineConfProfileEntry 4 }

vdslLineConfDownstreamMinSnrMgn 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
::= { vdslLineConfProfileEntry 5 }

vdslLineConfDownstreamTargetSnrMgn 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 10⁻⁷ or better to successfully complete
 initialization."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 6 }

vdslLineConfUpstreamMaxSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)
UNITS "0.25dBm"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
 "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 7 }

vdslLineConfUpstreamMinSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)
UNITS "0.25dBm"
MAX-ACCESS read-create
STATUS current

DESCRIPTION

"Specifies the minimum upstream Signal/Noise Margin

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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 }

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
10⁻⁷ or better to successfully complete initialization."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 9 }

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 10 }

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 11 }

vdslLineConfDownstreamSlowMaxDataRate OBJECT-TYPE

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

vdslLineConfDownstreamSlowMinDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS	"kbps"
MAX-ACCESS	read-create

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STATUS current
DESCRIPTION
 "Specifies the minimum downstream slow channel
 data rate in steps of 1024 bits/second."
 ::= { vdslLineConfProfileEntry 13 }

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 14 }

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 15 }

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 16 }

vdslLineConfUpstreamSlowMinDataRate OBJECT-TYPE

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

vdslLineConfRateAdaptationRatio OBJECT-TYPE

SYNTAX Unsigned32 (0..100)
UNITS "percent"

MAX-ACCESS	read-create
STATUS	current

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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 18 }

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 19 }

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 20 }

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 21 }

vdslLineConfUpstreamMaxInterDelay OBJECT-TYPE

SYNTAX Unsigned32 (0..255)

UNITS "ms"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

::= { vdslLineConfProfileEntry 22 }

vdslLineConfUpstreamPboControl OBJECT-TYPE
SYNTAX INTEGER

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```
        {
            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 23 }
```

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 24 }
```

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 25 }
```

vdslLineConfAdslOccupancy OBJECT-TYPE

```
SYNTAX          TruthValue
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
    "Indicates if the VDSL line can occupy the ADSL
    frequency range."
```

```
::= { vds1LineConfProfileEntry 26 }
```

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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 27 }

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
set."
::= { vdsllineConfProfileEntry 28 }

vdsllineConfBandPlanFx OBJECT-TYPE

SYNTAX Unsigned32 (3750..12000)

UNITS	"kHz"
MAX-ACCESS	read-create

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STATUS current

DESCRIPTION

"The frequency limit between bands D2 and U2 when
vdsLineConfBandPlan is set to bandPlanFx(3)."

::= { vdsLineConfProfileEntry 29 }

vdsLineConfBandU0Usage 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)."

::= { vdsLineConfProfileEntry 30 }

vdsLineConfUpstreamPsdTemplate 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."

::= { vdsLineConfProfileEntry 31 }

vdsLineConfDownstreamPsdTemplate 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."

::= { vdsLineConfProfileEntry 32 }

vdsLineConfProfileRowStatus 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.

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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 33 }

--

-- 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 'DEFVAL', will always
exist and its parameters will be set to vendor specific
values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileName }

::= { vdslLineMCMConfProfileTable 1 }

VdslLineMCMConfProfileEntry ::=

SEQUENCE

```
{
  vdslMCMConfProfileTxWindowLength      Unsigned32,
  vdslMCMConfProfileRowStatus           RowStatus
}
```

vds1MCMConfProfileTxWindowLength OBJECT-TYPE

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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
::= { vdsLineMCMConfProfileEntry 1 }

vdsLineMCMConfProfileRowStatus 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."
::= { vdsLineMCMConfProfileEntry 2 }

vdsLineMCMConfProfileTxBandTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdsLineMCMConfProfileTxBandEntry
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."
::= { vdsMibObjects 13 }

vdsLineMCMConfProfileTxBandEntry OBJECT-TYPE

SYNTAX VdsLineMCMConfProfileTxBandEntry
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.

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

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

VdslLineMCMConfProfileTxBandEntry ::=

SEQUENCE

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

vdslMCMConfProfileTxBandNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS not-accessible

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

delete an existing row in this table.

Expires June 30, 2003

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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 'DEFVAL', will
always exist and its parameters will be set to vendor
specific values, unless otherwise specified in this
document."

```
INDEX { vdslLineConfProfileName,  
        vdslMCMConfProfileRxBandNumber }
```

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

VdslLineMCMConfProfileRxBandEntry ::=

SEQUENCE

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

vds1MCMConfProfileRxBandNumber OBJECT-TYPE

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SYNTAX Unsigned32
MAX-ACCESS not-accessible
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

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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 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileName,
vdslMCMConfProfileTxPSDNumber }

::= { vdslLineMCMConfProfileTxPSDTable 1 }

VdslLineMCMConfProfileTxPSDEntry ::=

SEQUENCE

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

vdslMCMConfProfileTxPSDNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS not-accessible

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 }

vds1MCMConfProfileTxPSDPSD OBJECT-TYPE
SYNTAX Unsigned32

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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
::= { 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.

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

```
INDEX { vdslLineConfProfileName,  
        vdslMCMConfProfileMaxTxPSDNumber }  
 ::= { vdslLineMCMConfProfileMaxTxPSDTable 1 }
```

VdslLineMCMConfProfileMaxTxPSDEntry ::=

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

vdslMCMConfProfileMaxTxPSDNumber OBJECT-TYPE

```
SYNTAX      Unsigned32  
MAX-ACCESS  not-accessible  
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

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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."

```
::= { 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 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { vdslLineConfProfileName,
        vdslMCMConfProfileMaxRxPSDNumber }
::= { vdslLineMCMConfProfileMaxRxPSDTable 1 }
```

VdslLineMCMConfProfileMaxRxPSDEntry ::=

```
SEQUENCE
{
    vdslMCMConfProfileMaxRxPSDNumber      Unsigned32,
    vdslMCMConfProfileMaxRxPSDTone        Unsigned32,
```

vds\MCMConfProfileMaxRxPSDPSD
vds\MCMConfProfileMaxRxPSDRowStatus

Unsigned32,
RowStatus

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```
}
```

```
vdslMCMConfProfileMaxRxPSDNumber OBJECT-TYPE
```

```
    SYNTAX      Unsigned32
```

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

```
    STATUS      current
```

```
    DESCRIPTION
```

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

```
    ::= { vdslLineMCMConfProfileMaxRxPSDEntry 1 }
```

```
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
```

--

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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.

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 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { vdslLineConfProfileName,
        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 not-accessible

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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
 ::= { 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

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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

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

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```
    amateur radio notch 1."
REFERENCE    "T1E1.4/2000-011R3"    -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 7 }
```

vdslSCMConfProfileVendorNotch2Start 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
::= { vdslLineSCMConfProfileEntry 8 }
```

vdslSCMConfProfileVendorNotch2Stop 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
::= { vdslLineSCMConfProfileEntry 9 }
```

vdslSCMConfProfileFastFecSize 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
::= { vdslLineSCMConfProfileEntry 10 }
```

vdslSCMConfProfileSlowBlockSize OBJECT-TYPE

```
SYNTAX      INTEGER
            {
                s8(1),
                s4(2),
                s2(3)
            }
```

MAX-ACCESS	read-create
STATUS	current

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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

::= { vdslLineSCMConfProfileEntry 11 }

vdslSCMConfProfileRowStatus 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."

::= { 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 'DEFVAL', will

always exist and its parameters will be set to vendor
specific values, unless otherwise specified in this

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```
    document."
INDEX { vdslLineConfProfileName,
        vdslSCMConfProfileTxBandSide,
        vdslSCMConfProfileTxBandNumber }
 ::= { vdslLineSCMConfProfileTxBandTable 1 }

VdslLineSCMConfProfileTxBandEntry ::=
SEQUENCE
{
    vdslSCMConfProfileTxBandSide          VdslLineEntity,
    vdslSCMConfProfileTxBandNumber        INTEGER,
    vdslSCMConfProfileTxBandTransmitPSDLevel Unsigned32,
    vdslSCMConfProfileTxBandSymbolRateProfile Unsigned32,
    vdslSCMConfProfileTxBandConstellationSize Unsigned32,
    vdslSCMConfProfileTxBandCenterFrequency Unsigned32,
    vdslSCMConfProfileTxBandRowStatus      RowStatus
}

vdslSCMConfProfileTxBandSide OBJECT-TYPE
SYNTAX      VdslLineEntity
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "Identifies whether this band entry describes
    downstream or upstream transmission."
 ::= { vdslLineSCMConfProfileTxBandEntry 1 }

vdslSCMConfProfileTxBandNumber OBJECT-TYPE
SYNTAX      INTEGER
            {
                band1(1),
                band2(2),
                upstreamU0(3)
            }
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "The SCN transmit band number for this entry."
 ::= { vdslLineSCMConfProfileTxBandEntry 2 }

vdslSCMConfProfileTxBandTransmitPSDLevel 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
 ::= { vdslLineSCMConfProfileTxBandEntry 3 }
```

vdslSCMConfProfileTxBandSymbolRateProfile OBJECT-TYPE

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```

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
 ::= { vdslLineSCMConfProfileTxBandEntry 4 }

```

vdslSCMConfProfileTxBandConstellationSize 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 }

```

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

--

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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 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdsllineAlarmConfProfileName }

::= { vdsllineAlarmConfProfileTable 1 }

VdsllineAlarmConfProfileEntry ::=

SEQUENCE

```
{
  vdsllineAlarmConfProfileName      SnmpAdminString,
  vdsllThresh15MinLofs              HCPeIntervalThreshold,
  vdsllThresh15MinLoss              HCPeIntervalThreshold,
  vdsllThresh15MinLprs              HCPeIntervalThreshold,
  vdsllThresh15MinESs              HCPeIntervalThreshold,
  vdsllThresh15MinSESS              HCPeIntervalThreshold,
  vdsllThresh15MinUASS              HCPeIntervalThreshold,
  vdsllInitFailureNotificationEnable TruthValue,
  vdsllineAlarmConfProfileRowStatus RowStatus
}
```

vdsllineAlarmConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

::= { vdsllineAlarmConfProfileEntry 1 }

vds1Thresh15MinLoFs OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold

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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 vdslPerfLofsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 2 }

vdslThresh15MinLoss OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold
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 signal 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 3 }

vdslThresh15MinLprs OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold
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 power 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 4 }

vdslThresh15MinESs OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold
UNITS "seconds"

MAX-ACCESS	read-create
STATUS	current

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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 5 }

vdslThresh15MinSESSs OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object configures the threshold for the number of severely errored seconds (SESSs) 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 vdslPerfSESSsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 6 }

vdslThresh15MinUASSs OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object configures the threshold for the number of unavailable seconds (UASSs) 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 vdslPerfUASSsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 7 }

vdslInitFailureNotificationEnable OBJECT-TYPE

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object specifies if a vdslInitFailureNotification

notification will be generated if an initialization
failure occurs."

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```
::= { vdslLineAlarmConfProfileEntry 8 }
```

```
vdslLineAlarmConfProfileRowStatus 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."

```
::= { vdslLineAlarmConfProfileEntry 9 }
```

```
-- 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."  
::= { vds1Notifications 3 }
```

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vdslPerfESsThreshNotification NOTIFICATION-TYPE

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

vdslPerfSESSsThreshNotification NOTIFICATION-TYPE

```
OBJECTS      {
                vdslPerfCurr15MinSESSs,
                vdslThresh15MinSESSs
            }
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

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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

"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 }

vdsLineMibCompliance MODULE-COMPLIANCE
STATUS current

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```
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)."
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,
            vdslInvSerialNumber,
            vdslInvVendorID,
            vdslInvVersionNumber,
            vdslCurrSnrMgn,
            vdslCurrAtn,
            vdslCurrStatus,
            vdslCurrOutputPwr,
            vdslCurrAttainableRate,
            vdslChanInterleaveDelay,
            vdslChanCrcBlockLength,
            vdslChanCurrTxRate,
            vdslPerfValidIntervals,
            vdslPerfInvalidIntervals,
            vdslPerfLofs,
            vdslPerfLoss,
            vdslPerfLprs,
            vdslPerfESSs,
            vdslPerfSESSs,
            vdslPerfUASSs,
```

vds1PerfInits,
vds1PerfCurr15MinTimeElapsed,

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vds1PerfCurr15MinLofs,
vds1PerfCurr15MinLoss,
vds1PerfCurr15MinLprs,
vds1PerfCurr15MinESS,
vds1PerfCurr15MinSESS,
vds1PerfCurr15MinUASS,
vds1PerfCurr15MinInits,
vds1Perf1DayValidIntervals,
vds1Perf1DayInvalidIntervals,
vds1PerfCurr1DayTimeElapsed,
vds1PerfCurr1DayLofs,
vds1PerfCurr1DayLoss,
vds1PerfCurr1DayLprs,
vds1PerfCurr1DayESS,
vds1PerfCurr1DaySESS,
vds1PerfCurr1DayUASS,
vds1PerfCurr1DayInits,
vds1IntervalLofs,
vds1IntervalLoss,
vds1IntervalLprs,
vds1IntervalESS,
vds1IntervalSESS,
vds1IntervalUASS,
vds1IntervalInits,
vds11DayIntervalMoniSecs,
vds11DayIntervalLofs,
vds11DayIntervalLoss,
vds11DayIntervalLprs,
vds11DayIntervalESS,
vds11DayIntervalSESS,
vds11DayIntervalUASS,
vds11DayIntervalInits,
vds1ChanPerfValidIntervals,
vds1ChanPerfInvalidIntervals,
vds1ChanCorrectedOctets,
vds1ChanUncorrectBlks,
vds1ChanPerfCurr15MinTimeElapsed,
vds1ChanPerfCurr15MinCorrectedOctets,
vds1ChanPerfCurr15MinUncorrectBlks,
vds1ChanPerf1DayValidIntervals,
vds1ChanPerf1DayInvalidIntervals,
vds1ChanPerfCurr1DayTimeElapsed,
vds1ChanPerfCurr1DayCorrectedOctets,
vds1ChanPerfCurr1DayUncorrectBlks,
vds1ChanIntervalCorrectedOctets,
vds1ChanIntervalUncorrectBlks,
vds1Chan1DayIntervalMoniSecs,
vds1Chan1DayIntervalCorrectedOctets,
vds1Chan1DayIntervalUncorrectBlks,

vdsLineConfDownstreamMaxPwr,
vdsLineConfUpstreamMaxPwr,

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```
vdsLineConfDownstreamMaxSnrMgn,  
vdsLineConfDownstreamMinSnrMgn,  
vdsLineConfDownstreamTargetSnrMgn,  
vdsLineConfUpstreamMaxSnrMgn,  
vdsLineConfUpstreamMinSnrMgn,  
vdsLineConfUpstreamTargetSnrMgn,  
vdsLineConfDownstreamFastMaxDataRate,  
vdsLineConfDownstreamFastMinDataRate,  
vdsLineConfDownstreamSlowMaxDataRate,  
vdsLineConfDownstreamSlowMinDataRate,  
vdsLineConfUpstreamFastMaxDataRate,  
vdsLineConfUpstreamFastMinDataRate,  
vdsLineConfUpstreamSlowMaxDataRate,  
vdsLineConfUpstreamSlowMinDataRate,  
vdsLineConfRateAdaptationRatio,  
vdsLineConfUpstreamDataRate,  
vdsLineConfDownstreamDataRate,  
vdsLineConfDownstreamMaxInterDelay,  
vdsLineConfUpstreamMaxInterDelay,  
vdsLineConfUpstreamPboControl,  
vdsLineConfDownstreamPboControl,  
vdsLineConfDeploymentScenario,  
vdsLineConfAdslOccupancy,  
vdsLineConfApplicableStandard,  
vdsLineConfBandPlan,  
vdsLineConfBandPlanFx,  
vdsLineConfBandU0Usage,  
vdsLineConfUpstreamPsdTemplate,  
vdsLineConfDownstreamPsdTemplate,  
vdsLineConfProfileRowStatus,  
vdsThresh15MinLofs,  
vdsThresh15MinLoss,  
vdsThresh15MinLprs,  
vdsThresh15MinESs,  
vdsThresh15MinSESSs,  
vdsThresh15MinUASSs,  
vdsInitFailureNotificationEnable,  
vdsLineAlarmConfProfileRowStatus  
}
```

STATUS current

DESCRIPTION

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

::= { vdsGroups 1 }

vdsMCMGroup OBJECT-GROUP

OBJECTS

```
{  
vdsMCMConfProfileTxWindowLength,
```

vds\MCMConfProfileRowStatus,
vds\MCMConfProfileTxBandStart,

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```
    vdslMCMConfProfileTxBandStop,
    vdslMCMConfProfileTxBandRowStatus,
    vdslMCMConfProfileRxBandStart,
    vdslMCMConfProfileRxBandStop,
    vdslMCMConfProfileRxBandRowStatus,
    vdslMCMConfProfileTxPSDTone,
    vdslMCMConfProfileTxPSDPSD,
    vdslMCMConfProfileTxPSDRowStatus,
    vdslMCMConfProfileMaxTxPSDTone,
    vdslMCMConfProfileMaxTxPSDPSD,
    vdslMCMConfProfileMaxTxPSDRowStatus,
    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,
    vdslSCMConfProfileInterleaveDepth,
    vdslSCMConfProfileNumCarriers,
    vdslSCMConfProfileFastCodewordSize,
    vdslSCMConfProfileTransmitPSDMask,
    vdslSCMConfProfileVendorNotch1Start,
    vdslSCMConfProfileVendorNotch1Stop,
    vdslSCMConfProfileVendorNotch2Start,
    vdslSCMConfProfileVendorNotch2Stop,
    vdslSCMConfProfileFastFecSize,
    vdslSCMConfProfileSlowBlockSize,
    vdslSCMConfProfileRowStatus,
    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."
```

```
::= { vds1Groups 3 }
```

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```
vdslNotificationGroup    NOTIFICATION-GROUP
    NOTIFICATIONS
    {
        vdslPerfLofsThreshNotification,
        vdslPerfLossThreshNotification,
        vdslPerfLprsThreshNotification,
        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

Normative References

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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

vds1Thresh15MinESs

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vdslThresh15MinSESS
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 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.

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Authors' Addresses

Bob Ray
PESA Switching Systems, Inc.
330-A Wynn Drive
Huntsville, AL 35805 USA

Phone: +1 256 726 9200 ext. 142
Fax: +1 256 726 9271
EMail: rray@pesa.com

Rajesh Abbi
Alcatel USA
2912 Wake Forest Road
Raleigh, NC 27609-7860 USA

Phone: +1 919 850 6194
EMail: Rajesh.Abbi@alcatel.com

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