

Network Working Group
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Definitions of Managed Objects for VDSL Lines
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[1.](#) Abstract

This document defines a portion of the 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 [[18](#), [19](#), [20](#)].

This document specifies a MIB module in a manner that is compliant to the SMIV2 (STD 58 [[5](#), [6](#), [7](#)]).

[2.](#) The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [[1](#)].
- 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, [RFC 1155](#) [[2](#)], STD 16, [RFC 1212](#) [[3](#)] and [RFC 1215](#) [[4](#)]. The second version, called SMIV2, is described in STD 58, [RFC 2578](#) [[5](#)], STD 58, [RFC 2579](#) [[6](#)] and STD 58, [RFC 2580](#) [[7](#)].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and

described in STD 15, [RFC 1157](#) [8]. A second version of the SNMP message protocol, which is not an Internet standards track

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protocol, is called SNMPv2c and described in [RFC 1901](#) [9] and [RFC 1906](#) [10]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [10], [RFC 2572](#) [11] and [RFC 2574](#) [12].

- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15, [RFC 1157](#) [8]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#) [13].
- o A set of fundamental applications described in [RFC 2573](#) [14] and the view-based access control mechanism described in [RFC 2575](#) [15].

A more detailed introduction to the current SNMP Management Framework can be found in [RFC 2570](#) [16].

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

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

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [17].

3. Introduction

This document describes an SNMP MIB for managing VDSL Lines. These definitions are based upon the specifications for VDSL as defined in [18, 19, 20].

The MIB is located in the MIB tree under MIB 2 transmission, as discussed in the MIB-2 Integration ([RFC 2863](#) [23]) section of this document.

3.1 IANA Considerations

The SNMPv2-TM MIB module requires the allocation of a single object identifier for its MODULE-IDENTITY. IANA should allocate this object

identifier in the snmpModules subtree, defined in the SNMPv2-SMI MIB module.

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3.2. 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](#) [[23](#)] is discussed.

3.2.1 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](#) [[23](#)]. The IANA has assigned the following ifType to VDSL:

```
IANAifType ::= TEXTUAL-CONVENTION
    ...
    SYNTAX INTEGER {
        ...
        vdsl(97), -- Very H-speed Digital Subscrib. Loop
        ...
    }
```

3.2.2 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](#) [[23](#)], and are not duplicated in the VDSL Line MIB.

=====	
ifIndex	Interface index.
ifDescr	See interfaces MIB [21].
ifType	vdsl(97)
ifSpeed	Set as appropriate.
ifPhysAddress	This object MUST have an octet string with zero length.
ifAdminStatus	See interfaces MIB [21].
ifOperStatus	See interfaces MIB [21].
ifLastChange	See interfaces MIB [21].
ifName	See interfaces MIB [21].

ifLinkUpDownTrapEnable Default to enabled(1).

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ifHighSpeed Set as appropriate.

ifConnectorPresent Set as appropriate.

=====

Figure 1: Use of ifTable Objects

4. Conventions used in the MIB

4.1. 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. LCS -- Line Code Specific
- I. Lof -- Loss of Frame
- J. Lol -- Loss of Link
- K. Los -- Loss of Signal
- L. Lpr -- Loss of Power
- M. xxxs -- interval of Seconds in which xxx occurs
(e.g., xxx=Lof, Los, Lpr)
- N. Max -- Maximum
- O. Mgn -- Margin
- P. Min -- Minimum
- Q. Psd -- Power Spectral Density
- R. Snr -- Signal to Noise Ratio
- S. Tx -- Transmit
- T. Blks -- Blocks, a data unit, see vdslVtuXChanCrcBlockLength

4.2. 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 :

Attributes with this syntax reference the two sides of a line.

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Specified as an INTEGER, the two values are:

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

4.3. Structure

The MIB is structured into following MIB groups:

o vdslGroup :

This group supports all line code independent MIB objects found in this MIB. It contains the following tables:

- vdslLineTable
- vdslPhysTable
- vdslChanTable
- vdslPerfDataTable
- vdslPerfIntervalTable
- vdslChanPerfDataTable
- vdslChanPerfIntervalTable
- vdslLineConfProfileTable
- vdslLineAlarmConfProfileTable

o vdslMCMGroup :

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

- vdslLineMCMConfProfileTable
- 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 following tables:

- vdslLineSCMConfProfileTable

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

4.3.1 Line Topology

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

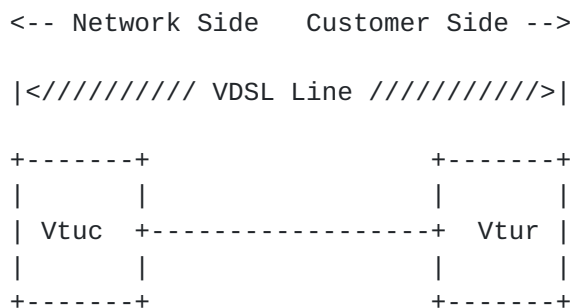


Figure 2: General topology for a VDSL Line

4.4. Counters, Interval Buckets and Thresholds

For Loss of Frame (lof), Loss of Link (lol), Loss of Signal (los), and Loss of Power (lpr), there are event counters, current 15-minute and 0 to 96 15-minute 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](#) [21].

Unlike [RFC 2493](#) [21] and [RFC 2662](#) [22], there is no representation in the MIB for invalid buckets. In those cases where the data for an interval is suspect or known to be invalid, the agent MUST NOT report the interval. If the current 15-minute event bucket is determined to be invalid, notifications based upon the value of the event bucket MUST NOT be generated.

Not reporting an interval will result in holes in the associated table. For example, the table, vdslPerfIntervalTable, is indexed by { ifIndex, vdslPhysSide, vdslIntervalNumber }. If interval 12 is determined to be invalid but intervals 11 and 13 are valid, a Get Next operation on the indices .1.1.11 would return indices .1.1.13.

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).

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4.5. 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 eight tables:

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

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

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

The index value for this profile is a locally-unique administratively assigned name for the profile having the textual convention 'SnmpAdminString' ([RFC 2571](#) [1]).

One or more lines may be configured to share parameters of a single profile (e.g., vdslLineConfProfile = 'silver') 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 whose name is '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.

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

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

4.6. Notifications

The ability to generate the SNMP notifications coldStart/WarmStart (per [21]) which are per agent (e.g., per Digital Subscriber Line Access Multiplexer, or DSLAM, in such a device), and linkUp/linkDown (per [21]) which are per interface (i.e., VDSL line) is required.

For Loss of Frame (lof), Loss of Link (lol), Loss of Signal (los), and Loss of Power (lpr),

A linkDown notification MAY be generated whenever any of lof, lol, los, or lpr event occurs. The corresponding linkUp notification MAY be sent when all link failure conditions are cleared.

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

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 [23]). 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.

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5. 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

6. Definitions

```
VDSL-LINE-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

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

```
vdslMIB MODULE-IDENTITY
```

```
    LAST-UPDATED "200203310000Z" -- March 31, 2002
```

```
    ORGANIZATION "ADSLMIB Working Group"
```

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

```
        Info:      https://www1.ietf.org/mailman/listinfo/adslmib
```

```
        Chair:     Mike Sneed
```

```
                   Inovia Telecoms
```

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```

```
                   Raleigh NC 27606 USA
```

```
        Email:     Mike.Sneed@go.ecitele.com
```

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```

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"

DESCRIPTION

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

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

Naming Conventions:

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

"

REVISION "200111010000Z" -- November 1, 2001

DESCRIPTION "Initial draft."

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REVISION "200203310000Z" -- March 31, 2002

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

::= { transmission xxxx }

vdslLineMib OBJECT IDENTIFIER ::= { vdslMIB 1 }

vdslMibObjects OBJECT IDENTIFIER ::= { vdslLineMib 1 }

--

-- textual conventions used in this MIB

--

VdslLineCodingType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"This data type is used as the syntax for the VDSL
Line Code."

SYNTAX INTEGER

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

VdslLineEntity ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"Identifies a modem as being either Vtuc or Vtur. A
VDSL line consists of two modems, a Vtuc and a Vtur."

SYNTAX INTEGER

{
vtuc(1), -- central site modem
vtur(2) -- remote site modem
}

--

-- objects

--

vdslLineTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"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
```

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```
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),           -- slow channel only
    either(4),             -- either fast or slow channel exist
    both(5)                -- both fast and slow channels exist
}
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Defines the type of VDSL physical line
entity that exists, by defining whether and how
the line is channelized. If the line is channelized,
the value will be other than noChannel(1). This
object defines which channel type(s) are supported.

In the case that the line is channelized, the manager
can use the ifStackTable to determine the ifIndex for
the associated channel(s)."
REFERENCE   "T1E1.4/2000-009R3" -- Part 1, common spec
 ::= { vdslLineEntry 2 }
```

vdslLineConfProfile OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS read-write

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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)."

::= { 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	INTEGER,
vdslCurrAtn	Gauge32,
vdslCurrStatus	BITS,
vdslCurrOutputPwr	INTEGER,

```
vds1CurrAttainableRate  
}
```

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vds1PhysSide OBJECT-TYPE

SYNTAX Vds1LineEntity

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

::= { vds1PhysEntry 1 }

vds1InvSerialNumber 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

::= { vds1PhysEntry 2 }

vds1InvVendorID 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 defined by the PHY[10] and
expressed as readable characters."

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

::= { vds1PhysEntry 3 }

vds1InvVersionNumber 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 defined by the
PHY[10] and expressed as readable characters."

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

::= { vds1PhysEntry 4 }

vds1CurrSnrMgn OBJECT-TYPE

SYNTAX INTEGER(-640..640)

UNITS "tenth dB"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Noise Margin as seen by this Vtu with respect to its
received signal in tenth dB."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vds1PhysEntry 5 }

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vds1CurrAtn OBJECT-TYPE

SYNTAX Gauge32(0..630)

UNITS "tenth dB"

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."

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

::= { vds1PhysEntry 6 }

vds1CurrStatus OBJECT-TYPE

SYNTAX BITS

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

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

0	noDefect	There no defects on the line
1	lossOfFraming	Vtu failure due to not receiving valid frame.
2	lossOfSignal	Vtu failure due to not receiving signal.
3	lossOfPower	Vtu failure due to loss of power.
4	lossOfSignalQuality	Loss of Signal Quality is declared when the Noise Margin falls below the Minimum Noise Margin, or the bit-error-rate exceeds 10 ⁻⁷ .
5	lossOfLink	Vtu failure due to inability to link with peer Vtu.

6 dataInitFailure

Vtu failure during initialization
due to bit errors corrupting

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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 INTEGER (-310..310)

UNITS "tenth dBm"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Measured total output power transmitted by this ATU.
 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 "bps"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the maximum currently attainable data rate
 by the Vtu. This value will be equal or greater than
 the current line rate."

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)."  
 ::= { vds1MibObjects 3 }
```

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vdslChanEntry OBJECT-TYPE

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

VdslChanEntry ::=

SEQUENCE
 {
 vdslChanInterleaveDelay Gauge32,
 vdslChanCrcBlockLength Gauge32
 }

vdslChanInterleaveDelay OBJECT-TYPE

SYNTAX Gauge32
UNITS "milli-seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Interleave Delay for this channel.

Interleave delay applies only to the interleave (slow) channel and defines the mapping (relative spacing) between subsequent input bytes at the interleaver input and their placement in the bit stream at the interleaver output. Larger numbers provide greater separation between consecutive input bytes in the output bit stream allowing for improved impulse noise immunity at the expense of payload latency.

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

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

vdslChanCrcBlockLength OBJECT-TYPE

SYNTAX Gauge32
UNITS "byte"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Indicates the length of the channel data-block on which the CRC operates."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
 ::= { vdslChanEntry 2 }

vdslPerfDataTable OBJECT-TYPE
 SYNTAX SEQUENCE OF VdslPerfDataEntry

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```

MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
    "This table provides one row for each VDSL physical
    interface.  VDSL physical interfaces are those ifEntries
    where ifType is equal to vdsl(97)."
```

::= { vdslMibObjects 4 }

```

vdslPerfDataEntry      OBJECT-TYPE
    SYNTAX              VdslPerfDataEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION
        "An entry in the vdslPerfDataTable."
    INDEX               { ifIndex, vdslPhysSide }
    ::= { vdslPerfDataTable 1 }
```

```

VdslPerfDataEntry ::=
    SEQUENCE
    {
        vdslPerfValidIntervals      INTEGER,
        vdslPerfInvalidIntervals    INTEGER,
        vdslPerfLofs                 Counter64,
        vdslPerfLoss                 Counter64,
        vdslPerfLprs                 Counter64,
        vdslPerfESS                 Counter64,
        vdslPerfInits                Counter64,
        vdslPerfCurr15MinTimeElapsed INTEGER,
        vdslPerfCurr15MinLofs        HCPperfCurrentCount,
        vdslPerfCurr15MinLoss        HCPperfCurrentCount,
        vdslPerfCurr15MinLprs        HCPperfCurrentCount,
        vdslPerfCurr15MinESS         HCPperfCurrentCount,
        vdslPerfCurr15MinInits       HCPperfCurrentCount
    }
```

```

vdslPerfValidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Valid Intervals per xxxValidInterval definition
        found in HC-PerfHist-TC-MIB."
    ::= { vdslPerfDataTable 1 }
```

```

vdslPerfInvalidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
```

```
"Invalid Intervals per xxxInvalidInterval definition  
found in HC-PerfHist-TC-MIB."  
::= { vdslPerfDataEntry 2 }
```

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vds1PerfLofs 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

::= { vds1PerfDataEntry 3 }

vds1PerfLoss 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

::= { vds1PerfDataEntry 4 }

vds1PerfLprs 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

::= { vds1PerfDataEntry 5 }

vds1PerfESS OBJECT-TYPE

SYNTAX Counter64

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of Errored Seconds since the unit was last reset.
An Errored Second is a one-second interval containing one or more crc anomalies, or one or more los defects."

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

::= { vds1PerfDataEntry 6 }

vds1PerfInits 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

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failed attempts."

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

vdslPerfCurr15MinTimeElapsed OBJECT-TYPE

SYNTAX INTEGER(0..899)

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Total elapsed seconds in this interval."

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

vdslPerfCurr15MinLofs OBJECT-TYPE

SYNTAX HCPperfCurrentCount

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of seconds during this interval that there
was Loss of Framing."

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

vdslPerfCurr15MinLoss OBJECT-TYPE

SYNTAX HCPperfCurrentCount

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 10 }

vdslPerfCurr15MinLprs OBJECT-TYPE

SYNTAX HCPperfCurrentCount

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 11 }

vdslPerfCurr15MinESs OBJECT-TYPE

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

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```

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 defects."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
 ::= { vdslPerfDataEntry 12 }

```

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 13 }

```

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          INTEGER,
    vdslIntervalLoFs            HCPperfIntervalCount,
    vdslIntervalLoss            HCPperfIntervalCount,
    vdslIntervalLprs            HCPperfIntervalCount,
    vdslIntervalESS             HCPperfIntervalCount,
    vdslIntervalInits           HCPperfIntervalCount
}

```

vdsIntervalNumber OBJECT-TYPE
SYNTAX INTEGER(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 }

vdslIntervalESS OBJECT-TYPE
    SYNTAX      HCPerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds in the interval.  An Errored
        Second is a one-second interval containing one or more crc
        anomalies, or one or more los defects."
```

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vds1PerfIntervalEntry 5 }

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vdslIntervalInits OBJECT-TYPE

SYNTAX HCPerfIntervalCount

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of the line initialization attempts during this interval. This count includes both successful and failed attempts."

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

::= { vdslPerfIntervalEntry 6 }

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 6 }

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          INTEGER,
    vdslChanPerfInvalidIntervals        INTEGER,
    vdslChanCorrectedOctets             Counter64,
    vdslChanUncorrectBlks               Counter64,
    vdslChanPerfCurr15MinTimeElapsed    INTEGER,
    vdslChanPerfCurr15MinCorrectedOctets HCPerfCurrentCount,
    vdslChanPerfCurr15MinUncorrectBlks   HCPerfCurrentCount
}

```

vdslChanPerfValidIntervals OBJECT-TYPE

SYNTAX INTEGER(0..96)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

```
::= { vdslChanPerfDataEntry 1 }
```

```
vdslChanPerfInvalidIntervals OBJECT-TYPE
```

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SYNTAX INTEGER(0..96)
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Invalid Intervals per xxxInvalidInterval 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 INTEGER(0..899)
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
::= { vdslChanPerfDataEntry 6 }

vdslChanPerfCurr15MinUncorrectBlks 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
::= { vdslChanPerfDataEntry 7 }

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```

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 7 }

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          INTEGER,
            vdslChanIntervalCorrectedOctets  HCPperfIntervalCount,
            vdslChanIntervalUncorrectBlks    HCPperfIntervalCount
        }

vdslChanIntervalNumber OBJECT-TYPE
    SYNTAX      INTEGER(1..96)
    MAX-ACCESS   not-accessible
    STATUS      current
    DESCRIPTION
        "Performance Data Interval number 1 is the the most
        recent previous interval; interval 96 is 24 hours ago.
        Intervals 2..96 are optional."
    ::= { vdslChanIntervalEntry 1 }

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

vdslChanIntervalUncorrectBlks OBJECT-TYPE
    SYNTAX      HCPperfIntervalCount

```

MAX-ACCESS	read-only
STATUS	current
DESCRIPTION	

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"Count of uncorrected blocks in this interval."
 REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
 ::= { vdslChanIntervalEntry 3 }

vdslLineConfProfileTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineConfProfileEntry
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "This table contains information on the VDSL line configuration. One entry in this table reflects a profile defined by a manager which can be used to configure the VDSL line."
 ::= { vdslMibObjects 8 }

vdslLineConfProfileEntry OBJECT-TYPE

SYNTAX VdslLineConfProfileEntry
 MAX-ACCESS not-accessible
 STATUS current
 DESCRIPTION
 "Each entry consists of a list of parameters that represents the configuration of a VDSL modem. A default profile will always exist. This profile's name will be set to 'DEFVAL' and its parameters will be set to vendor specific values, unless otherwise specified in this document."
 INDEX { IMPLIED vdslLineConfProfileName,
 vdslPhysSide }
 ::= { vdslLineConfProfileTable 1 }

VdslLineConfProfileEntry ::=

SEQUENCE
 {
 vdslLineConfProfileName SnmpAdminString,
 vdslLineConfTargetSnrMgn INTEGER,
 vdslLineConfTxSpeed INTEGER,
 vdslLineConfRxSpeed INTEGER,
 vdslLineConfProfileRowStatus RowStatus
 }

vdslLineConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))
 MAX-ACCESS read-create
 STATUS current
 DESCRIPTION
 "This object is used by the line configuration table in order to identify a row in that table. The system will always provide a default profile whose name is 'DEFVAL'."

```
::= { vdslLineConfProfileEntry 1 }
```

```
vdslLineConfTargetSnrMgn OBJECT-TYPE
```

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SYNTAX INTEGER (0..310)
UNITS "tenth dB"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
 "Configured Target Signal/Noise Margin. This is the
 Noise Margin the modem must achieve with a BER of 10⁻⁷
 or better to successfully complete initialization."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 2 }

vdslLineConfTxSpeed OBJECT-TYPE

SYNTAX INTEGER
UNITS "bits per second"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
 "Transmit speed for this modem. The corresponding modem
 on the other end of the VDSL line will have an equal
 vdslLineConfRxSpeed value."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 3 }

vdslLineConfRxSpeed OBJECT-TYPE

SYNTAX INTEGER
UNITS "bits per second"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
 "Receive speed for this modem. The corresponding modem
 on the other end of the VDSL line will have an equal
 vdslLineConfTxSpeed value."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 4 }

vdslLineConfProfileRowStatus 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."  
::= { vdslLineConfProfileEntry 5 }
```

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--
--
--

vdslLineMCMConfProfileTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineMCMConfProfileEntry

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.

This table MUST be implemented for multiple carrier VDSL lines. This table MUST NOT be implemented for Single carrier VDSL lines."

::= { vdslMibObjects 9 }

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

INDEX { IMPLIED vdslLineConfProfileName,
vdslPhysSide }

::= { vdslLineMCMConfProfileTable 1 }

VdslLineMCMConfProfileEntry ::=

SEQUENCE

{
vdslMCMConfProfileTxWindowLength INTEGER,
vdslMCMConfProfileRowStatus RowStatus
}

vdslMCMConfProfileTxWindowLength OBJECT-TYPE

SYNTAX INTEGER(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

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```
::= { vdslLineMCMConfProfileEntry 1 }
```

vdslMCMConfProfileRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

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

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

```
::= { vdslLineMCMConfProfileEntry 2 }
```

vdslLineMCMConfProfileTxBandTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineMCMConfProfileTxBandEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

This table MUST be implemented for multiple carrier modulation (MCM) VDSL lines. This table MUST NOT be implemented for single carrier modulation VDSL lines."

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

vdslLineMCMConfProfileTxBandEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileTxBandEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry consists of a transmit band descriptor, which defines the start and stop bands and the power spectral density (PSD) for that band.

A default profile will always exist. This profile's name will be set to 'DEFVAL' and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { IMPLIED vdslLineConfProfileName,  
               vdslPhysSide,  
               vdslMCMConfProfileTxBandNumber }
```

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```
 ::= { vdslLineMCMConfProfileTxBandTable 1 }
```

```
VdslLineMCMConfProfileTxBandEntry ::=
```

```
SEQUENCE
```

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

```
vdslMCMConfProfileTxBandNumber OBJECT-TYPE
```

```
SYNTAX          INTEGER
```

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

```
STATUS          current
```

```
DESCRIPTION
```

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

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

```
vdslMCMConfProfileTxBandStart OBJECT-TYPE
```

```
SYNTAX          INTEGER
```

```
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          INTEGER
```

```
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.
```

```
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."

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```
::= { 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.

This table MUST be implemented for multiple carrier modulation (MCM) VDSL lines. This table MUST NOT be implemented for single carrier modulation VDSL lines."

```
::= { vdslMibObjects 11 }
```

vdslLineMCMConfProfileRxBandEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileRxBandEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Each entry consists of a transmit band descriptor, which defines the start and stop bands and the power spectral density (PSD) for that band.

A default profile will always exist. This profile's name will be set to 'DEFVAL' and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { IMPLIED vdslLineConfProfileName,
vdslPhysSide,
vdslMCMConfProfileRxBandNumber }

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

VdslLineMCMConfProfileRxBandEntry ::=

SEQUENCE

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

vdslMCMConfProfileRxBandNumber OBJECT-TYPE

SYNTAX INTEGER

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index for this band descriptor entry."

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```
 ::= { vdslLineMCMConfProfileRxBandEntry 1 }
```

vdslMCMConfProfileRxBandStart OBJECT-TYPE

SYNTAX INTEGER

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 INTEGER

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Stop tone index for this band."

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

```
 ::= { vdslLineMCMConfProfileRxBandEntry 3 }
```

vdslMCMConfProfileRxBandRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

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

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

```
 ::= { vdslLineMCMConfProfileRxBandEntry 4 }
```

vdslLineMCMConfProfileTxPSDTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineMCMConfProfileTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

This table MUST be implemented for multiple carrier modulation (MCM) VDSL lines. This table MUST NOT be implemented for single carrier modulation VDSL lines."

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```
::= { vdslMibObjects 12 }
```

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

INDEX { IMPLIED vdslLineConfProfileName,
vdslPhysSide,
vdslMCMConfProfileTxPSDNumber }

```
::= { vdslLineMCMConfProfileTxPSDTable 1 }
```

VdslLineMCMConfProfileTxPSDEntry ::=

SEQUENCE

```
{  
    vdslMCMConfProfileTxPSDNumber          INTEGER,  
    vdslMCMConfProfileTxPSDTone            INTEGER,  
    vdslMCMConfProfileTxPSDPSD             INTEGER,  
    vdslMCMConfProfileTxPSDRowStatus       RowStatus  
}
```

vdslMCMConfProfileTxPSDNumber OBJECT-TYPE

SYNTAX INTEGER

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index for this mask descriptor entry."

```
::= { vdslLineMCMConfProfileTxPSDEntry 1 }
```

vdslMCMConfProfileTxPSDTone OBJECT-TYPE

SYNTAX INTEGER

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

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

```
::= { vdslLineMCMConfProfileTxPSDEntry 2 }
```

vdslMCMConfProfileTxPSDPSD OBJECT-TYPE

SYNTAX INTEGER

UNITS "0.5dB"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Power Spectral Density level in steps of 0.5dB with

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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.

This table MUST be implemented for multiple carrier modulation (MCM) VDSL lines. This table MUST NOT be implemented for single carrier modulation VDSL lines."

::= { vdslMibObjects 13 }

vdslLineMCMConfProfileMaxTxPSDEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileMaxTxPSDEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION

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

A default profile will always exist. This profile's name will be set to 'DEFVAL' and its parameters will be set to

vendor specific values, unless otherwise specified in this document."

INDEX { IMPLIED vdsllineConfProfileName,

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```
        vdslPhysSide,
        vdslMCMConfProfileMaxTxPSDNumber }
 ::= { vdslLineMCMConfProfileMaxTxPSDTable 1 }
```

```
VdslLineMCMConfProfileMaxTxPSDEntry ::=
SEQUENCE
{
    vdslMCMConfProfileMaxTxPSDNumber          INTEGER,
    vdslMCMConfProfileMaxTxPSDTone            INTEGER,
    vdslMCMConfProfileMaxTxPSDPSD             INTEGER,
    vdslMCMConfProfileMaxTxPSDRowStatus       RowStatus
}
```

```
vdslMCMConfProfileMaxTxPSDNumber OBJECT-TYPE
SYNTAX      INTEGER
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The index for this band descriptor entry."
 ::= { vdslLineMCMConfProfileMaxTxPSDEntry 1 }
```

```
vdslMCMConfProfileMaxTxPSDTone OBJECT-TYPE
SYNTAX      INTEGER
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      INTEGER
UNITS       "0.5dB"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "Power Spectral Density level in steps of 0.5dB with
    an offset of -140dbm/Hz."
REFERENCE   "T1E1.4/2000-013R4"    -- Part 3, MCM
 ::= { vdslLineMCMConfProfileMaxTxPSDEntry 3 }
```

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

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

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

```
::= { 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.

This table MUST be implemented for multiple carrier modulation (MCM) VDSL lines. This table MUST NOT be implemented for single carrier modulation VDSL lines."

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

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

INDEX { IMPLIED vdslLineConfProfileName,
 vdslPhysSide,
 vdslMCMConfProfileMaxRxPSDNumber }

```
::= { vdslLineMCMConfProfileMaxRxPSDTable 1 }
```

VdslLineMCMConfProfileMaxRxPSDEntry ::=

SEQUENCE

```
{
  vdslMCMConfProfileMaxRxPSDNumber          INTEGER,
  vdslMCMConfProfileMaxRxPSDTone             INTEGER,
  vdslMCMConfProfileMaxRxPSDPSD             INTEGER,
  vdslMCMConfProfileMaxRxPSDRowStatus        RowStatus
}
```

vds1MCMConfProfileMaxRxPSDNumber OBJECT-TYPE
SYNTAX INTEGER

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

vdslMCMConfProfileMaxRxPSDTone OBJECT-TYPE

```
SYNTAX        INTEGER
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        INTEGER
UNITS         "0.5dB"
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 table
--
```

vdslLineSCMConfProfileTable OBJECT-TYPE

```
SYNTAX        SEQUENCE OF VdslLineSCMConfProfileEntry
```

MAX-ACCESS	not-accessible
STATUS	current
DESCRIPTION	

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"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.

This table MUST be implemented for single carrier modulation (SCM) VDSL lines. This table MUST NOT be implemented for multiple carrier modulation (MCM) VDSL lines."

```
::= { vdslMibObjects 15 }
```

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

INDEX { IMPLIED vdslLineConfProfileName,
vdslPhysSide }

```
::= { vdslLineSCMConfProfileTable 1 }
```

VdslLineSCMConfProfileEntry ::=

SEQUENCE

```
{
  vdslSCMConfProfileInterleaveDepth    INTEGER,
  vdslSCMConfProfileFastCodewordSize   INTEGER,
  vdslSCMConfProfileTransmitPSDMask    BITS,
  vdslSCMConfProfileTransmitPSDLevel   INTEGER,
  vdslSCMConfProfileSymbolRateProfile  INTEGER,
  vdslSCMConfProfileConstellationSize  INTEGER,
  vdslSCMConfProfileCenterFrequency    INTEGER,
  vdslSCMConfProfileRowStatus           RowStatus
}
```

vdslSCMConfProfileInterleaveDepth OBJECT-TYPE

SYNTAX INTEGER

UNITS "octets"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the interleaving depth."

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

```
::= { vdslLineSCMConfProfileEntry 1 }
```

vds1SCMConfProfileFastCodewordSize OBJECT-TYPE

SYNTAX INTEGER(0..180)

UNITS "octets"

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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 2 }

vdslSCMConfProfileTransmitPSDMask OBJECT-TYPE

SYNTAX BITS
 {
 vendorNotch1(0), -- vendor specific notch
 vendorNotch2(1), -- vendor specific notch
 amateurBand30m(2), -- amateur radio band notch
 amateurBand40m(3), -- amateur radio band notch
 amateurBand80m(4), -- amateur radio band notch
 amateurBand160m(5) -- amateur radio band notch
 }
MAX-ACCESS read-create
STATUS current
DESCRIPTION
 "The transmit power spectral density mask code."
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 3 }

vdslSCMConfProfileTransmitPSDLevel OBJECT-TYPE

SYNTAX INTEGER
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
::= { vdslLineSCMConfProfileEntry 4 }

vdslSCMConfProfileSymbolRateProfile OBJECT-TYPE

SYNTAX INTEGER
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
::= { vdslLineSCMConfProfileEntry 5 }

vdslSCMConfProfileConstellationSize OBJECT-TYPE

SYNTAX INTEGER(0..15)

UNITS	"log2"
MAX-ACCESS	read-create
STATUS	current

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DESCRIPTION

"Specifies the constellation size."

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

::= { vdslLineSCMConfProfileEntry 6 }

vdslSCMConfProfileCenterFrequency OBJECT-TYPE

SYNTAX INTEGER(0..511)

UNITS "kHz"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the center frequency profile K."

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

::= { vdslLineSCMConfProfileEntry 7 }

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 8 }

--

-- Alarm configuration profile table

--

vdslLineAlarmConfProfileTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineAlarmConfProfileEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"This table contains information on the VDSL line alarm configuration. One entry in this table reflects a profile defined by a manager which can be used to configure the VDSL line alarm thresholds."

::= { vdslMibObjects 16 }

vdslLineAlarmConfProfileEntry OBJECT-TYPE

SYNTAX VdslLineAlarmConfProfileEntry

MAX-ACCESS	not-accessible
STATUS	current
DESCRIPTION	

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"Each entry consists of a list of parameters that represents the configuration of a VDSL line alarm profile. A default profile will always exist. This profile's name will be set to `DEFVAL' and its parameters will be set to vendor specific values, unless otherwise specified in this document."

```
INDEX { IMPLIED vdslLineAlarmConfProfileName,
            vdslPhysSide }
 ::= { vdslLineAlarmConfProfileTable 1 }
```

VdslLineAlarmConfProfileEntry ::=

SEQUENCE

```
{
    vdslLineAlarmConfProfileName      SnmpAdminString,
    vdslThresh15MinLofs               INTEGER,
    vdslThresh15MinLoss               INTEGER,
    vdslThresh15MinLprs               INTEGER,
    vdslThresh15MinESS                INTEGER,
    vdslInitFailureNotificationEnable TruthValue,
    vdslLineAlarmConfProfileRowStatus RowStatus
}
```

vdslLineAlarmConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object is used by the line alarm configuration table in order to identify a row in that table. The system will always provide a default profile whose name is `DEFVAL'."

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

vdslThresh15MinLofs OBJECT-TYPE

SYNTAX INTEGER(0..899)

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	INTEGER(0..899)
UNITS	"seconds"
MAX-ACCESS	read-create

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STATUS current

DESCRIPTION

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

::= { vdslLineAlarmConfProfileEntry 3 }

vdslThresh15MinLprs OBJECT-TYPE

SYNTAX INTEGER(0..899)

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

::= { vdslLineAlarmConfProfileEntry 4 }

vdslThresh15MinESs OBJECT-TYPE

SYNTAX INTEGER(0..899)

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object configures the threshold for the number of errored 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 vdslPerfESsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 5 }

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 6 }
```

```
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 7 }
```

```
-- Notification definitions
```

```
vdslNotifications OBJECT IDENTIFIER ::= { vdslLineMib 0 }
```

```
vdslPerfLofsThreshNotification NOTIFICATION-TYPE
```

```
OBJECTS      {  
                vdslPerfCurr15MinLofs,  
                vdslThresh15MinLofs  
            }
```

```
STATUS      current
```

```
DESCRIPTION
```

"Loss of Framing 15-minute interval threshold reached."

```
::= { vdslNotifications 1 }
```

```
vdslPerfLossThreshNotification NOTIFICATION-TYPE
```

```
OBJECTS      {  
                vdslPerfCurr15MinLoss,  
                vdslThresh15MinLoss  
            }
```

```
STATUS      current
```

```
DESCRIPTION
```

"Loss of Signal 15-minute interval threshold reached."

```
::= { vdslNotifications 2 }
```

```
vdslPerfLprsThreshNotification NOTIFICATION-TYPE
```

```
OBJECTS      {  
                vdslPerfCurr15MinLprs,  
                vdslThresh15MinLprs  
            }
```

```
STATUS      current
```

DESCRIPTION

"Loss of Power 15-minute interval threshold reached."

::= { vdslNotifications 3 }

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vdslPerfESsThreshNotification NOTIFICATION-TYPE

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

vdslInitFailureNotification NOTIFICATION-TYPE

```
OBJECTS      {
                vdslCurrStatus
            }
STATUS       current
DESCRIPTION  "Vtu initialization failed. See vdslCurrStatus for
                potential reasons."
 ::= { vdslNotifications 5 }
```

-- conformance information

```
vdslConformance OBJECT IDENTIFIER ::= { vdslLineMib 3 }
vdslGroups OBJECT IDENTIFIER ::= { vdslConformance 1 }
vdslCompliances OBJECT IDENTIFIER ::= { vdslConformance 2 }
```

vdslLineMibCompliance MODULE-COMPLIANCE

```
STATUS      current
DESCRIPTION  "The compliance statement for SNMP entities which
                manage VDSL interfaces."
```

MODULE -- this module

MANDATORY-GROUPS

```
{
    vdslGroup
}
```

GROUP vdslMCMGroup

DESCRIPTION

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

This group should not be implemented for VDSL lines
which utilize single carrier modulation."

GROUP vdslSCMGroup

DESCRIPTION

"This group is mandatory for VDSL lines which

utilize single carrier modulation.

This group should not be implemented for VDSL lines

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```
    which utilize multiple carrier modulation"
 ::= { vdslCompliances 1 }
```

```
-- units of conformance
```

```
vdslGroup OBJECT-GROUP
  OBJECTS
```

```
  {
    vdslLineCoding,
    vdslLineType,
    vdslLineConfProfile,
    vdslLineAlarmConfProfile,
    vdslPhysSide,
    vdslInvSerialNumber,
    vdslInvVendorID,
    vdslInvVersionNumber,
    vdslCurrSnrMgn,
    vdslCurrAtn,
    vdslCurrStatus,
    vdslCurrOutputPwr,
    vdslCurrAttainableRate,
    vdslChanInterleaveDelay,
    vdslChanCrcBlockLength,
    vdslPerfValidIntervals,
    vdslPerfInvalidIntervals,
    vdslPerfLofs,
    vdslPerfLoss,
    vdslPerfLprs,
    vdslPerfESs,
    vdslPerfInits,
    vdslPerfCurr15MinTimeElapsed,
    vdslPerfCurr15MinLofs,
    vdslPerfCurr15MinLoss,
    vdslPerfCurr15MinLprs,
    vdslPerfCurr15MinESs,
    vdslPerfCurr15MinInits,
    vdslIntervalLofs,
    vdslIntervalLoss,
    vdslIntervalLprs,
    vdslIntervalESs,
    vdslIntervalInits,
    vdslChanPerfValidIntervals,
    vdslChanPerfInvalidIntervals,
    vdslChanCorrectedOctets,
    vdslChanUncorrectBlks,
    vdslChanPerfCurr15MinTimeElapsed,
    vdslChanPerfCurr15MinCorrectedOctets,
    vdslChanPerfCurr15MinUncorrectBlks,
    vdslChanIntervalCorrectedOctets,
```

vdslChanIntervalUncorrectBlks,
vdslLineConfProfileName,
vdslLineConfTargetSnrMgn,

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```
    vdslLineConfTxSpeed,
    vdslLineConfRxSpeed,
    vdslLineConfProfileRowStatus,
    vdslLineAlarmConfProfileName,
    vdslThresh15MinLofs,
    vdslThresh15MinLoss,
    vdslThresh15MinLprs,
    vdslThresh15MinESs,
    vdslInitFailureNotificationEnable,
    vdslLineAlarmConfProfileRowStatus
  }
STATUS      current
DESCRIPTION
    "A collection of objects providing information about
      a VDSL Line."
 ::= { vdslGroups 1 }
```

vdslMCMGroup OBJECT-GROUP

OBJECTS

```
{
    vdslMCMConfProfileTxWindowLength,
    vdslMCMConfProfileRowStatus,
    vdslMCMConfProfileTxBandNumber,
    vdslMCMConfProfileTxBandStart,
    vdslMCMConfProfileTxBandStop,
    vdslMCMConfProfileTxBandRowStatus,
    vdslMCMConfProfileRxBandNumber,
    vdslMCMConfProfileRxBandStart,
    vdslMCMConfProfileRxBandStop,
    vdslMCMConfProfileRxBandRowStatus,
    vdslMCMConfProfileTxPSDNumber,
    vdslMCMConfProfileTxPSDTone,
    vdslMCMConfProfileTxPSDPSD,
    vdslMCMConfProfileTxPSDRowStatus,
    vdslMCMConfProfileMaxTxPSDNumber,
    vdslMCMConfProfileMaxTxPSDTone,
    vdslMCMConfProfileMaxTxPSDPSD,
    vdslMCMConfProfileMaxTxPSDRowStatus,
    vdslMCMConfProfileMaxRxPSDNumber,
    vdslMCMConfProfileMaxRxPSDTone,
    vdslMCMConfProfileMaxRxPSDPSD,
    vdslMCMConfProfileMaxRxPSDRowStatus
}
```

STATUS current

DESCRIPTION

"A collection of objects providing configuration information for a VDSL line based upon multiple carrier modulation modem."

::= { vdslGroups 2 }

vds1SCMGroup OBJECT-GROUP
OBJECTS

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```
        {
        vdslSCMConfProfileInterleaveDepth,
        vdslSCMConfProfileFastCodewordSize,
        vdslSCMConfProfileTransmitPSDMask,
        vdslSCMConfProfileTransmitPSDLevel,
        vdslSCMConfProfileSymbolRateProfile,
        vdslSCMConfProfileConstellationSize,
        vdslSCMConfProfileCenterFrequency,
        vdslSCMConfProfileRowStatus
        }
    STATUS          current
    DESCRIPTION
        "A collection of objects providing configuration
        information for a VDSL line based upon single carrier
        modulation modem."
    ::= { vdslGroups 3 }

    vdslNotificationGroup    NOTIFICATION-GROUP
        NOTIFICATIONS
        {
        vdslPerfLofsThreshNotification,
        vdslPerfLossThreshNotification,
        vdslPerfLprsThreshNotification,
        vdslPerfESsThreshNotification,
        vdslInitFailureNotification
        }
    STATUS          current
    DESCRIPTION
        "This group supports notifications of significant
        conditions associated with VDSL Lines."
    ::= { vdslGroups 4 }

END
```

7. Security Considerations

1) Blocking unauthorized access to the VDSL MIB via the element management system is outside the scope of this document. It should be noted that access to the MIB permits the unauthorized entity to modify the profiles ([section 6.4](#)) such that both subscriber service and network operations can be interfered with. Subscriber service can be altered by modifying any of a number of service characteristics such as rate partitioning and maximum transmission rates. Network operations can be impacted by modification of notification thresholds such as lof thresholds.

2) There are a number of managed objects in this MIB that may be considered to contain sensitive information. In particular, the certain objects may be considered sensitive in many environments,

since it would allow an intruder to obtain information about which vendor's equipment is in use on the network. Therefore, it may be important in some environments to control read access to these

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objects and possibly to even encrypt the values of these object when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.

It is recommended that the implementors 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 those objects only to those principals (users) that have legitimate rights to access them.

3) 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.

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

8. Acknowledgments

Your name goes here!

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