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**Definitions of Managed Objects for Very High  
Speed Digital Subscriber Lines (VDSL)  
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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](#)].

- o A set of fundamental applications described in [RFC 2573](#) [[RFC2573](#)]

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and the view-based access control mechanism described in [RFC 2575](#) [[RFC2575](#)].

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

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

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

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

## **2. Overview**

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

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

### **2.1 Relationship of the VDSL Line MIB to other MIBs**

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

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

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

IANAifType ::= TEXTUAL-CONVENTION

...

SYNTAX INTEGER {

...

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```

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

```

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

IANAifType ::= TEXTUAL-CONVENTION

```

...
SYNTAX INTEGER {
...
    interleave (124), -- Interleave channel
    fast (125),      -- Fast channel
...
}

```

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

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

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

|               |  |
|---------------|--|
| =====         |  |
| ifIndex       | Interface index.   |
| ifDescr       | See interfaces MIB [ <a href="#">RFC2863</a> ].            |
| ifType        | vdsl(97),<br>interleaved(124), or<br>fast(125)             |
| ifSpeed       | Set as appropriate.  |
| ifPhysAddress | This object MUST have an octet string<br>with zero length. |
| ifAdminStatus | See interfaces MIB [ <a href="#">RFC2863</a> ].            |
| ifOperStatus  | See interfaces MIB [ <a href="#">RFC2863</a> ].            |
| ifLastChange  | See interfaces MIB [ <a href="#">RFC2863</a> ].            |
| ifName        | See interfaces MIB [ <a href="#">RFC2863</a> ].            |

ifLinkUpDownTrapEnable    Default to enabled(1).

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|                    |                     |
|--------------------|---------------------|
| ifHighSpeed        | Set as appropriate. |
| ifConnectorPresent | Set as appropriate. |

=====

Figure 1: Use of ifTable Objects

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

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

### [2.2.1](#) Naming Conventions

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

### [2.2.2](#) Textual Conventions

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

o VdslLineCodingType :

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

other(1) -- none of the following

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```
mcm(2)    -- Multiple Carrier Modulation
scm(3)    -- Single Carrier Modulation
```

```
o    VdslLineEntity :
```

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

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

### **2.3 Structure**

The MIB is structured into following MIB groups:

```
o    vdslGroup :
```

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

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

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

- vdslChanTable
- vdslChanPerfDataTable
- vdslChanPerfIntervalTable
- vdslChanPerf1DayIntervalTable

```
o    vdslMCMGroup :
```

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

- vdslLineMCMConfProfileTable
- vdslLineMCMConfProfileTxBandTable
- vdslLineMCMConfProfileRxBandTable
- vdslLineMCMConfProfileTxPSDTable
- vdslLineMCMConfProfileMaxTxPSDTable
- vdslLineMCMConfProfileMaxRxPSDTable

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

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o vdslSCMGroup :

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

- vdslLineSCMConfProfileTable
- vdslLineSCMConfProfileTxBandTable

This group also supports the following line code dependent tables:

- vdslSCMPhysBandTable

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

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

```

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

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

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

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

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

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

```

Figure 2: Table Relationships

### 2.3.1 Line Topology

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

```

<-- Network Side    Customer Side -->

|<////////// VDSL Line //////////>|

+-----+           +-----+

```

$$\begin{array}{ccccccc} | & & | & & | & & | \\ | & V_{tuc} & + & \text{-----} & + & V_{tur} & | \end{array}$$

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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

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- vdslLineSCMConfProfileTable
- vdslLineSCMConfProfileTxBandTable

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

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

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

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

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

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

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

## **2.6 Notifications**

The ability to generate the SNMP notifications coldStart/WarmStart (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

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disabled.

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

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

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

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

## **2.7 Persistence**

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

- vdslLineConfProfile
- vdslLineAlarmConfProfile
- vdslLineConfProfileIndex
- vdslLineConfProfileName
- vdslLineConfDownstreamMaxPwr
- vdslLineConfUpstreamMaxPwr
- vdslLineConfDownstreamMaxSnrMgn
- vdslLineConfDownstreamMinSnrMgn
- vdslLineConfDownstreamTargetSnrMgn
- vdslLineConfUpstreamMaxSnrMgn
- vdslLineConfUpstreamMinSnrMgn

vdslLineConfUpstreamTargetSnrMgn  
vdslLineConfDownstreamFastMaxDataRate  
vdslLineConfDownstreamFastMinDataRate

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vdslLineConfDownstreamSlowMaxDataRate  
vdslLineConfDownstreamSlowMinDataRate  
vdslLineConfUpstreamFastMaxDataRate  
vdslLineConfUpstreamFastMinDataRate  
vdslLineConfUpstreamSlowMaxDataRate  
vdslLineConfUpstreamSlowMinDataRate  
vdslLineConfRateAdaptationRatio  
vdslLineConfUpstreamDataRate  
vdslLineConfDownstreamDataRate  
vdslLineConfDownstreamMaxInterDelay  
vdslLineConfUpstreamMaxInterDelay  
vdslLineConfUpstreamPboControl  
vdslLineConfDownstreamPboControl  
vdslLineConfDeploymentScenario  
vdslLineConfAdslOccupy  
vdslLineConfApplicableStandard  
vdslLineConfBandPlan  
vdslLineConfBandPlanFx  
vdslLineConfBandU0Usage  
vdslLineConfUpstreamPsdTemplate  
vdslLineConfDownstreamPsdTemplate  
vdslLineConfProfileRowStatus  
vdslMCMConfProfileTxWindowLength  
vdslMCMConfProfileRowStatus  
vdslMCMConfProfileTxBandNumber  
vdslMCMConfProfileTxBandStart  
vdslMCMConfProfileTxBandStop  
vdslMCMConfProfileTxBandRowStatus  
vdslMCMConfProfileRxBandNumber  
vdslMCMConfProfileRxBandStart  
vdslMCMConfProfileRxBandStop  
vdslMCMConfProfileRxBandRowStatus  
vdslMCMConfProfileTxPSDNumber  
vdslMCMConfProfileTxPSDTone  
vdslMCMConfProfileTxPSDPSD  
vdslMCMConfProfileTxPSDRowStatus  
vdslMCMConfProfileMaxTxPSDNumber  
vdslMCMConfProfileMaxTxPSDTone  
vdslMCMConfProfileMaxTxPSDPSD  
vdslMCMConfProfileMaxTxPSDRowStatus  
vdslMCMConfProfileMaxRxPSDNumber  
vdslMCMConfProfileMaxRxPSDTone  
vdslMCMConfProfileMaxRxPSDPSD  
vdslMCMConfProfileMaxRxPSDRowStatus  
vdslSCMConfProfileDownInterleaveDepth  
vdslSCMConfProfileUpInterleaveDepth  
vdslSCMConfProfileDownNumCarriers  
vdslSCMConfProfileUpNumCarriers  
vdslSCMConfProfileDownFastCodewordSize

vds1SCMConfProfileUpFastCodewordSize  
vds1SCMConfProfileTransmitPSDMask  
vds1SCMConfProfileVendorNotch1Start

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```
vdslSCMConfProfileVendorNotch1Stop
vdslSCMConfProfileVendorNotch2Start
vdslSCMConfProfileVendorNotch2Stop
vdslSCMConfProfileDownFastFecSize
vdslSCMConfProfileUpFastFecSize
vdslSCMConfProfileDownSlowBlockSize
vdslSCMConfProfileUpSlowBlockSize
vdslSCMConfProfileRowStatus
vdslSCMConfProfileTxBandNumber
vdslSCMConfProfileTxBandTransmitPSDLevel
vdslSCMConfProfileTxBandSymbolRateProfile
vdslSCMConfProfileTxBandConstellationSize
vdslSCMConfProfileTxBandCenterFrequency
vdslSCMConfProfileTxBandRowStatus
vdslLineAlarmConfProfileIndex
vdslLineAlarmConfProfileName
vdslThresh15MinLofs
vdslThresh15MinLoss
vdslThresh15MinLprs
vdslThresh15MinESs
vdslThresh15MinSESS
vdslThresh15MinUASS
vdslInitFailureNotificationEnable
vdslLineAlarmConfProfileRowStatus
```

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

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

For VDSL lines, the following group is mandatory:

- vdslGroup

For MCM VDSL lines, the following group is optional:

- vdslSCMGroup

For SCM VDSL lines, the following group is optional:

- vdslMCMGroup

### **4. Definitions**

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

```
IMPORTS
```

```
MODULE-IDENTITY,
```

OBJECT-TYPE,  
Counter64,

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Gauge32,  
Integer32,  
Unsigned32,  
NOTIFICATION-TYPE,  
transmission FROM SNMPv2-SMI  
TEXTUAL-CONVENTION,  
RowStatus,  
TruthValue FROM SNMPv2-TC  
HCPperfValidIntervals,  
HCPperfInvalidIntervals,  
HCPperfTimeElapsed,  
HCPperfIntervalThreshold,  
HCPperfCurrentCount,  
HCPperfIntervalCount FROM HC-PerfHist-TC-MIB  
MODULE-COMPLIANCE,  
OBJECT-GROUP,  
NOTIFICATION-GROUP FROM SNMPv2-CONF  
ifIndex FROM IF-MIB  
SnmAdminString FROM SNMP-FRAMEWORK-MIB;

## vdslMIB MODULE-IDENTITY

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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  
"

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DESCRIPTION "Revised per input from DSL Forum."

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

::= { transmission xxxx }

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```
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
    SYNTAX      VdslLineEntry
    MAX-ACCESS   not-accessible
    STATUS      current
```

```
DESCRIPTION  "An entry in the vds1LineTable."  
INDEX { ifIndex }  
::= { vds1LineTable 1 }
```

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

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

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

        In the case that the line is channelized, the manager
        can use the ifStackTable to determine the ifIndex for
        the associated channel(s).

        Note that slow and interleaved refer to the same
        channel."
    REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
    ::= { vdslLineEntry 2 }
```

```
vdslLineConfProfile OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS   read-write
```

STATUS        current

DESCRIPTION

"The value of this object identifies the row

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in the VDSL Line Configuration Profile Table,  
 ( vdslLineConfProfileTable ), which applies for this  
 VDSL line, and channels if applicable."  
 ::= { vdslLineEntry 3 }

#### vdslLineAlarmConfProfile OBJECT-TYPE

SYNTAX Integer32  
 MAX-ACCESS read-write  
 STATUS current  
 DESCRIPTION  
 "The value of this object identifies the row in the VDSL  
 Line Alarm Configuration Profile Table,  
 ( vdslLineAlarmConfProfileTable ), which applies to this  
 VDSL line, and channels if applicable."  
 ::= { vdslLineEntry 4 }

#### vdslPhysTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslPhysEntry  
 MAX-ACCESS not-accessible  
 STATUS current  
 DESCRIPTION  
 "This table provides one row for each Vtu. Each row  
 contains the Physical Layer Parameters table for that  
 Vtu. VDSL physical interfaces are those ifEntries where  
 ifType is equal to vdsl(97)."  
 ::= { vdslMibObjects 2 }

#### vdslPhysEntry OBJECT-TYPE

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

#### VdslPhysEntry ::=

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

vdslPhysSide OBJECT-TYPE

SYNTAX VdslLineEntity

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MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Identifies whether the modem is the Vtuc or Vtur."  
 ::= { vdslPhysEntry 1 }

vdslInvSerialNumber OBJECT-TYPE

SYNTAX SnmpAdminString(SIZE (0..32))  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The vendor specific string that identifies the  
    vendor equipment."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslPhysEntry 2 }

vdslInvVendorID OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (0..16))  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The vendor ID code is a copy of the binary vendor  
    identification field expressed as readable characters."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslPhysEntry 3 }

vdslInvVersionNumber OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (0..16))  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "The vendor specific version number sent by this Vtu  
    as part of the initialization messages. It is a copy  
    of the binary version number field expressed as  
    readable characters."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { 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 }

vds1CurrAtn OBJECT-TYPE

SYNTAX Gauge32 (0..255)

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UNITS "0.25dBm"  
 MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION  
   "Measured difference in the total power transmitted by  
   the peer Vtu and the total power received by this Vtu.  
   The effective range is 0 to +63.75dB."  
 REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
 ::= { vdslPhysEntry 6 }

#### vdslCurrStatus OBJECT-TYPE

SYNTAX BITS

```

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

```

MAX-ACCESS read-only

STATUS current

#### DESCRIPTION

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

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

6 dataInitFailure

Vtu failure during initialization  
due to bit errors corrupting  
startup exchange data.

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- |   |                     |  |
|---|---------------------|--|
| 7 | configInitFailure   | Vtu failure during initialization due to peer Vtu not able to support requested configuration. |
| 8 | protocolInitFailure | Vtu failure during initialization due to incompatible protocol used by the peer Vtu.           |
| 9 | noPeerVtuPresent    | Vtu failure during initialization due to no activation sequence detected from peer Vtu.        |

This is intended to supplement ifOperStatus."

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

vdslCurrOutputPwr OBJECT-TYPE

SYNTAX Integer32 (0..160)

UNITS "0.1dBm"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

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

vdslCurrAttainableRate OBJECT-TYPE

SYNTAX Gauge32

UNITS "kbps"

MAX-ACCESS read-only

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 }

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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 "ms"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION

"Interleave Delay for this channel.

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

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

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

## vdslChanCrcBlockLength OBJECT-TYPE

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

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

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vds1ChanEntry 2 }

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```

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

```
 ::= { vdslMibObjects 4 }
```

```

vdslPerfDataEntry      OBJECT-TYPE
    SYNTAX              VdslPerfDataEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION
        "An entry in the vdslPerfDataTable."
```

```

    INDEX { ifIndex,
            vdslPhysSide }
```

```
 ::= { vdslPerfDataTable 1 }
```

```
VdslPerfDataEntry ::=
```

```
SEQUENCE
```

```

{
    vdslPerfValidIntervals      HCPperfValidIntervals,
    vdslPerfInvalidIntervals    HCPperfInvalidIntervals,
    vdslPerfLofs                Counter64,
    vdslPerfLoss                Counter64,
    vdslPerfLprs                Counter64,
    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,
```

```
vds1PerfCurr1DayInits  
}
```

Counter64

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## vds1PerfValidIntervals OBJECT-TYPE

SYNTAX HCPerfValidIntervals

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

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

::= { vds1PerfDataEntry 1 }

## vds1PerfInvalidIntervals OBJECT-TYPE

SYNTAX HCPerfInvalidIntervals

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

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

::= { vds1PerfDataEntry 2 }

## 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

```
::= { vdslPerfDataEntry 5 }
```

vdslPerfESs OBJECT-TYPE

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

## 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 HCPerfTimeElapsed  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
    "Total elapsed seconds in this interval."

```
::= { vdslPerfDataEntry 10 }
```

```
vdslPerfCurr15MinLofs OBJECT-TYPE
```

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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 11 }

## 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 12 }

## 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 13 }

## vdslPerfCurr15MinESs OBJECT-TYPE

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

## vdslPerfCurr15MinSESSs OBJECT-TYPE

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

DESCRIPTION

"Count of Severely Errored Seconds during this interval."

::= { vdslPerfDataEntry 15 }

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## vds1PerfCurr15MinUASs OBJECT-TYPE

SYNTAX HCPerfCurrentCount

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Count of Unavailable Seconds during this interval."

::= { vds1PerfDataEntry 16 }

## vds1PerfCurr15MinInits OBJECT-TYPE

SYNTAX HCPerfCurrentCount

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

::= { vds1PerfDataEntry 17 }

## vds1Perf1DayValidIntervals OBJECT-TYPE

SYNTAX HCPerfValidIntervals

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

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

::= { vds1PerfDataEntry 18 }

## vds1Perf1DayInvalidIntervals OBJECT-TYPE

SYNTAX HCPerfInvalidIntervals

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

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

::= { vds1PerfDataEntry 19 }

## vds1PerfCurr1DayTimeElapsed OBJECT-TYPE

SYNTAX HCPerfTimeElapsed

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Number of seconds that have elapsed since the beginning  
of the current 1-day interval."

::= { vds1PerfDataEntry 20 }

vds1PerfCurr1DayLoFs OBJECT-TYPE

SYNTAX Counter64

UNITS "seconds"

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

vdslPerfCurr1DayLoss OBJECT-TYPE

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

vdslPerfCurr1DayLprs OBJECT-TYPE

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

vdslPerfCurr1DayESs OBJECT-TYPE

SYNTAX Counter64  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of Errored Seconds (ES) since the beginning  
of the current 1-day interval."  
::= { vdslPerfDataEntry 24 }

vdslPerfCurr1DaySESSs OBJECT-TYPE

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

vdslPerfCurr1DayUASSs OBJECT-TYPE

SYNTAX Counter64

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

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## DESCRIPTION

"Count of Unavailable Seconds (UAS) since the beginning of the current 1-day interval."

::= { vdslPerfDataEntry 26 }

## vdslPerfCurr1DayInits OBJECT-TYPE

SYNTAX Counter64

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"Count of the line initialization attempts since the beginning of the current 1-day interval. This count includes both successful and failed attempts."

::= { vdslPerfDataEntry 27 }

## vdslPerfIntervalTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslPerfIntervalEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

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

::= { vdslMibObjects 5 }

## vdslPerfIntervalEntry OBJECT-TYPE

SYNTAX VdslPerfIntervalEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"An entry in the 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)

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MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

::= { vdslPerfIntervalEntry 1 }

vdslIntervalLofs OBJECT-TYPE

SYNTAX HCPerfIntervalCount

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

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

::= { vdslPerfIntervalEntry 2 }

vdslIntervalLoss OBJECT-TYPE

SYNTAX HCPerfIntervalCount

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

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

::= { vdslPerfIntervalEntry 3 }

vdslIntervalLprs OBJECT-TYPE

SYNTAX 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 (ES) in the interval. An Errored Second is a one-second interval containing one or more crc

anomalies, one or more los or lof defects."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslPerfIntervalEntry 5 }

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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 }

```
::= { vdsl1DayIntervalTable 1 }
```

```
Vdsl1DayIntervalEntry ::=
```

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## SEQUENCE

```
{
vds11DayIntervalNumber          Unsigned32,
vds11DayIntervalMoniSecs        HCPerfTimeElapsed,
vds11DayIntervalLoFs            Counter64,
vds11DayIntervalLoss            Counter64,
vds11DayIntervalLprs            Counter64,
vds11DayIntervalESS             Counter64,
vds11DayIntervalSESS            Counter64,
vds11DayIntervalUASS            Counter64,
vds11DayIntervalInits           Counter64
}
```

## vds11DayIntervalNumber 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."

::= { vds11DayIntervalEntry 1 }

## vds11DayIntervalMoniSecs 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."

::= { vds11DayIntervalEntry 2 }

## vds11DayIntervalLoFs 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 vds11DayIntervalMoniSecs."

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

::= { vds11DayIntervalEntry 3 }

## vds11DayIntervalLoss OBJECT-TYPE

SYNTAX Counter64

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

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## 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 }

## vdsl1DayIntervalInits OBJECT-TYPE

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

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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

STATUS current

DESCRIPTION

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

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

vdslChanPerfInvalidIntervals OBJECT-TYPE

SYNTAX            HCPperfInvalidIntervals

MAX-ACCESS       read-only

STATUS            current

DESCRIPTION

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

```
::= { vdslChanPerfDataEntry 2 }
```

vdslChanCorrectedOctets OBJECT-TYPE

SYNTAX            Counter64

MAX-ACCESS       read-only

STATUS            current

DESCRIPTION

"Count of corrected octets since the unit was last reset."

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

```
::= { vdslChanPerfDataEntry 3 }
```

vdslChanUncorrectBlks OBJECT-TYPE

SYNTAX            Counter64

MAX-ACCESS       read-only

STATUS            current

DESCRIPTION

"Count of uncorrected blocks since the unit was last reset."

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

```
::= { vdslChanPerfDataEntry 4 }
```

vdslChanPerfCurr15MinTimeElapsed OBJECT-TYPE

SYNTAX            HCPperfTimeElapsed

UNITS            "seconds"

MAX-ACCESS       read-only

STATUS            current

DESCRIPTION

"Total elapsed seconds in this interval."

```
::= { vdslChanPerfDataEntry 5 }
```

vdslChanPerfCurr15MinCorrectedOctets OBJECT-TYPE

SYNTAX            HCPperfCurrentCount

MAX-ACCESS       read-only

STATUS            current

DESCRIPTION

"Count of corrected octets in this interval."

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

```
::= { vdslChanPerfDataEntry 6 }
```

vdslChanPerfCurr15MinUncorrectBlks OBJECT-TYPE

SYNTAX            HCPperfCurrentCount

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

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"Count of uncorrected blocks in this interval."  
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vdslChanPerfDataEntry 7 }

vdslChanPerf1DayValidIntervals OBJECT-TYPE

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

vdslChanPerf1DayInvalidIntervals OBJECT-TYPE

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

vdslChanPerfCurr1DayTimeElapsed OBJECT-TYPE

SYNTAX HCPperfTimeElapsed  
UNITS "seconds"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Number of seconds that have elapsed since the beginning  
of the current 1-day interval."  
::= { vdslChanPerfDataEntry 10 }

vdslChanPerfCurr1DayCorrectedOctets OBJECT-TYPE

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

vdslChanPerfCurr1DayUncorrectBlks OBJECT-TYPE

SYNTAX HCPperfCurrentCount  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"Count of uncorrected blocks since the beginning of the  
current 1-day interval."

REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec  
::= { vds1ChanPerfDataEntry 12 }

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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 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
        "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

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```

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

```

#### vdslChan1DayIntervalTable OBJECT-TYPE

```

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

```

#### vdslChan1DayIntervalEntry OBJECT-TYPE

```

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

```

#### VdslChan1DayIntervalEntry ::=

```

SEQUENCE
{
    vdslChan1DayIntervalNumber          Unsigned32,
    vdslChan1DayIntervalMoniSecs        HCPperfTimeElapsed,
    vdslChan1DayIntervalCorrectedOctets HCPperfCurrentCount,
    vdslChan1DayIntervalUncorrectBlks   HCPperfCurrentCount
}

```

#### vdslChan1DayIntervalNumber OBJECT-TYPE

```

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

```

#### vdslChan1DayIntervalMoniSecs OBJECT-TYPE

```

SYNTAX          HCPperfTimeElapsed
UNITS           "seconds"

```

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

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"The amount of time in the 1-day interval over which the performance monitoring information is actually counted. This value will be the same as the interval duration except in a situation where performance monitoring data could not be collected for any reason."

::= { vdslChan1DayIntervalEntry 2 }

vdslChan1DayIntervalCorrectedOctets OBJECT-TYPE

SYNTAX HCPperfCurrentCount

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of corrected octets in this interval."

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

::= { vdslChan1DayIntervalEntry 3 }

vdslChan1DayIntervalUncorrectBlks OBJECT-TYPE

SYNTAX HCPperfCurrentCount

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of uncorrected blocks in this interval."

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

::= { vdslChan1DayIntervalEntry 4 }

--

-- SCM physical band status

--

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 vdslSCMPhysBandTable."

INDEX { ifIndex,  
vdslPhysSide,  
vdslSCMPhysTxBandNumber }

::= { vdslSCMPhysBandTable 1 }

VdslSCMPhysBandEntry ::=

SEQUENCE

{

vds1SCMPHysTxBandNumber

INTEGER,

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```
    vds1SCMPHysBandSnrMgn      Integer32,
    vds1SCMPHysBandAtn        Unsigned32
}
```

vds1SCMPHysTxBandNumber OBJECT-TYPE

```
SYNTAX      INTEGER
            {
              band1(1),
              band2(2),
              upstreamU0(3)
            }
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "The SCM transmit band number for this entry."
 ::= { vds1SCMPHysBandEntry 1 }
```

vds1SCMPHysBandSnrMgn OBJECT-TYPE

```
SYNTAX      Integer32 (-127..127)
UNITS       "0.25 dBm"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Noise margin as seen by this Vtu and band with respect
     to its received signal in 0.25 dB."
 ::= { vds1SCMPHysBandEntry 2 }
```

vds1SCMPHysBandAtn OBJECT-TYPE

```
SYNTAX      Unsigned32 (0..255)
UNITS       "0.25 dBm"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "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."
 ::= { vds1SCMPHysBandEntry 3 }
```

```
--
-- profile tables
--
```

vds1LineConfProfileTable OBJECT-TYPE

```
SYNTAX      SEQUENCE OF Vds1LineConfProfileEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table contains information on the VDSL line
     configuration. One entry in this table reflects a
```

```
    profile defined by a manager which can be used to  
    configure the VDSL line."  
 ::= { vdslMibObjects 11 }
```

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## vdslLineConfProfileEntry OBJECT-TYPE

SYNTAX VdslLineConfProfileEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Each entry consists of a list of parameters that represents the configuration of a VDSL line. A default profile with an index of 1 will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileIndex }

::= { vdslLineConfProfileTable 1 }

VdslLineConfProfileEntry ::=

## SEQUENCE

|                                       |                  |
|---------------------------------------|------------------|
| {                                     |                  |
| vdslLineConfProfileIndex              | Unsigned32,      |
| vdslLineConfProfileName               | SnmpAdminString, |
| vdslLineConfDownstreamMaxPwr          | Unsigned32,      |
| vdslLineConfUpstreamMaxPwr            | Unsigned32,      |
| vdslLineConfDownstreamMaxSnrMgn       | Unsigned32,      |
| vdslLineConfDownstreamMinSnrMgn       | Unsigned32,      |
| vdslLineConfDownstreamTargetSnrMgn    | Unsigned32,      |
| vdslLineConfUpstreamMaxSnrMgn         | Unsigned32,      |
| vdslLineConfUpstreamMinSnrMgn         | Unsigned32,      |
| vdslLineConfUpstreamTargetSnrMgn      | Unsigned32,      |
| vdslLineConfDownstreamFastMaxDataRate | Unsigned32,      |
| vdslLineConfDownstreamFastMinDataRate | Unsigned32,      |
| vdslLineConfDownstreamSlowMaxDataRate | Unsigned32,      |
| vdslLineConfDownstreamSlowMinDataRate | Unsigned32,      |
| vdslLineConfUpstreamFastMaxDataRate   | Unsigned32,      |
| vdslLineConfUpstreamFastMinDataRate   | Unsigned32,      |
| vdslLineConfUpstreamSlowMaxDataRate   | Unsigned32,      |
| vdslLineConfUpstreamSlowMinDataRate   | Unsigned32,      |
| vdslLineConfRateAdaptationRatio       | Unsigned32,      |
| vdslLineConfUpstreamDataRate          | Unsigned32,      |
| vdslLineConfDownstreamDataRate        | Unsigned32,      |
| vdslLineConfDownstreamMaxInterDelay   | Unsigned32,      |
| vdslLineConfUpstreamMaxInterDelay     | Unsigned32,      |
| vdslLineConfUpstreamPboControl        | INTEGER,         |
| vdslLineConfDownstreamPboControl      | INTEGER,         |
| vdslLineConfDeploymentScenario        | INTEGER,         |
| vdslLineConfAdslOccupancy             | TruthValue,      |
| vdslLineConfApplicableStandard        | INTEGER,         |
| vdslLineConfBandPlan                  | INTEGER,         |
| vdslLineConfBandPlanFx                | Unsigned32,      |
| vdslLineConfBandU0Usage               | INTEGER,         |
| vdslLineConfUpstreamPsdTemplate       | INTEGER,         |

```
    vdsLineConfDownstreamPsdTemplate    INTEGER,  
    vdsLineConfProfileRowStatus        RowStatus  
}
```

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## vdsLineConfProfileIndex OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

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

::= { vdsLineConfProfileEntry 1 }

## vdsLineConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

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

::= { vdsLineConfProfileEntry 2 }

## 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 3 }

## 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 4 }

## vdsLineConfDownstreamMaxSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)

UNITS "0.25dBm"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Specifies the maximum downstream Signal/Noise Margin  
in units of 0.25 dB, for a range of 0..31.75 dB."

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

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```
::= { vdslLineConfProfileEntry 5 }
```

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 6 }
```

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<sup>-7</sup> or better to successfully complete  
initialization."

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

```
::= { vdslLineConfProfileEntry 7 }
```

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 8 }
```

vdslLineConfUpstreamMinSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)

UNITS "0.25dBm"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the minimum upstream Signal/Noise Margin  
in units of 0.25 dB, for a range of 0..31.75 dB."

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

```
::= { vdslLineConfProfileEntry 9 }
```

vdslLineConfUpstreamTargetSnrMgn OBJECT-TYPE

SYNTAX Unsigned32 (0..127)

UNITS "0.25dBm"

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

vdslLineConfDownstreamFastMaxDataRate OBJECT-TYPE

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

vdslLineConfDownstreamFastMinDataRate OBJECT-TYPE

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

vdslLineConfDownstreamSlowMaxDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the maximum downstream slow channel  
    data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 13 }

vdslLineConfDownstreamSlowMinDataRate OBJECT-TYPE

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

vdslLineConfUpstreamFastMaxDataRate OBJECT-TYPE

SYNTAX Unsigned32

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

vdslLineConfUpstreamFastMinDataRate OBJECT-TYPE

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

vdslLineConfUpstreamSlowMaxDataRate OBJECT-TYPE

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

vdslLineConfUpstreamSlowMinDataRate OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "kbps"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"Specifies the minimum upstream slow channel  
data rate in steps of 1024 bits/second."  
::= { vdslLineConfProfileEntry 18 }

vdslLineConfRateAdaptationRatio OBJECT-TYPE

SYNTAX Unsigned32 (0..100)  
UNITS "percent"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
"For dynamic rate adaptation at startup, the allocation  
of data rate in excess of the minimum data rate for each  
channel is controlled by the object. This object specifies  
the ratio of the allocation of the excess data rate between  
the fast and the slow channels. This allocation represents

```
Fast Channel Allocation / Slow Channel Allocation."  
::= { vdslLineConfProfileEntry 19 }
```

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## vdsLineConfUpstreamDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS "kpbs"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

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

::= { vdsLineConfProfileEntry 20 }

## vdsLineConfDownstreamDataRate OBJECT-TYPE

SYNTAX Unsigned32

UNITS "kpbs"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

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

::= { vdsLineConfProfileEntry 21 }

## vdsLineConfDownstreamMaxInterDelay 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."

::= { vdsLineConfProfileEntry 22 }

## vdsLineConfUpstreamMaxInterDelay 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."

::= { vdsLineConfProfileEntry 23 }

## vdsLineConfUpstreamPboControl OBJECT-TYPE

SYNTAX INTEGER

```
{
    disabled(1),
    enabled(2)
}
```

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Upstream power backoff (PBO) control for this line. For modems which do not support upstream PBO control, this object MUST be fixed at disabled(1)."

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```
::= { vdslLineConfProfileEntry 24 }
```

vdslLineConfDownstreamPboControl OBJECT-TYPE

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

```
::= { vdslLineConfProfileEntry 25 }
```

vdslLineConfDeploymentScenario OBJECT-TYPE

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

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

vdslLineConfAdslOccupancy OBJECT-TYPE

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

```
::= { vdslLineConfProfileEntry 27 }
```

vdslLineConfApplicableStandard OBJECT-TYPE

```
SYNTAX          INTEGER
                {
                    ansi(1),
                    etsi(2),
                    itu(3),
                    other(4)
                }
```

|             |             |
|-------------|-------------|
| MAX-ACCESS  | read-create |
| STATUS      | current     |
| DESCRIPTION |             |

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"The VDSL standard to be used for the line."  
 ::= { vdslLineConfProfileEntry 28 }

vdslLineConfBandPlan OBJECT-TYPE

SYNTAX INTEGER

{  
 bandPlan997(1),  
 bandPlan998(2),  
 bandPlanFx(3),  
 other(4)  
 }

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The VDSL band plan to be used for the line.

bandPlan997(1) is to be used for  
 ITU-T G.993.1 Bandplan-B  
 ETSI Bandplan  
 ANSI Plan 997

bandPlan998(2) is to be used for  
 ITU-T G.993.1 Bandplan-A  
 ANSI Plan 998

bandPlanFx(3) is to be used for  
 ITU-T G.993.1 Bandplan-C.

other(4) is to be used for  
 non-standard bandplans.

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

::= { vdslLineConfProfileEntry 29 }

vdslLineConfBandPlanFx OBJECT-TYPE

SYNTAX Unsigned32 (3750..12000)

UNITS "kHz"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

::= { vdslLineConfProfileEntry 30 }

vdslLineConfBandU0Usage OBJECT-TYPE

SYNTAX INTEGER

{

```
unused(1),  
upstream(2),  
downstream(3)
```

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```
    }
    MAX-ACCESS    read-create
    STATUS        current
    DESCRIPTION
        "Defines the VDSL link use of the frequency range
        [25kHz - 138kHz] (U0)."
```

::= { vdslLineConfProfileEntry 31 }

vdslLineConfUpstreamPsdTemplate OBJECT-TYPE

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

::= { vdslLineConfProfileEntry 32 }

vdslLineConfDownstreamPsdTemplate OBJECT-TYPE

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

::= { vdslLineConfProfileEntry 33 }

vdslLineConfProfileRowStatus OBJECT-TYPE

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

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

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

::= { vdslLineConfProfileEntry 34 }

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

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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 12 }

## vdslLineMCMConfProfileEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Each entry consists of a list of parameters that represents the configuration of a multiple carrier modulation VDSL modem. A default profile with an index of 1 will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."

INDEX { vdslLineConfProfileIndex }

::= { vdslLineMCMConfProfileTable 1 }

## VdslLineMCMConfProfileEntry ::=

## SEQUENCE

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

## vdslMCMConfProfileTxWindowLength OBJECT-TYPE

SYNTAX Unsigned32 (1..255)

UNITS "samples"

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Specifies the length of the transmit window, counted in samples at the sampling rate corresponding to the negotiated value of N."

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

::= { vdslLineMCMConfProfileEntry 1 }

vds1MCMConfProfileRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

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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 13 }

vdslLineMCMConfProfileTxBandEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileTxBandEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

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

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

INDEX { vdslLineConfProfileIndex,  
vdslMCMConfProfileTxBandNumber }

::= { vdslLineMCMConfProfileTxBandTable 1 }

VdslLineMCMConfProfileTxBandEntry ::=

SEQUENCE

{

vdsLMCMConfProfileTxBandNumber  
vdsLMCMConfProfileTxBandStart  
vdsLMCMConfProfileTxBandStop

Unsigned32,  
Unsigned32,  
Unsigned32,

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```
        vdslMCMConfProfileTxBandRowStatus      RowStatus
    }
```

vdslMCMConfProfileTxBandNumber OBJECT-TYPE

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

vdslMCMConfProfileTxBandStart OBJECT-TYPE

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

vdslMCMConfProfileTxBandStop OBJECT-TYPE

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

vdslMCMConfProfileTxBandRowStatus OBJECT-TYPE

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

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

        Before a profile can be deleted or taken out of
        service, (by setting this object to `destroy' or
        `outOfService') it must be first unreferenced
        from all associated lines."
    ::= { vdslLineMCMConfProfileTxBandEntry 4 }
```

vdslLineMCMConfProfileRxBandTable OBJECT-TYPE

```
    SYNTAX      SEQUENCE OF VdslLineMCMConfProfileRxBandEntry
    MAX-ACCESS   not-accessible
```

STATUS        current

DESCRIPTION

"This table contains receive band descriptor configuration

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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 14 }

#### vdsLineMCMConfProfileRxBandEntry OBJECT-TYPE

SYNTAX VdsLineMCMConfProfileRxBandEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

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

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

INDEX { vdsLineConfProfileIndex,  
vdsMCMConfProfileRxBandNumber }

::= { vdsLineMCMConfProfileRxBandTable 1 }

#### VdsLineMCMConfProfileRxBandEntry ::=

#### SEQUENCE

|                                  |             |
|----------------------------------|-------------|
| {                                |             |
| vdsMCMConfProfileRxBandNumber    | Unsigned32, |
| vdsMCMConfProfileRxBandStart     | Unsigned32, |
| vdsMCMConfProfileRxBandStop      | Unsigned32, |
| vdsMCMConfProfileRxBandRowStatus | RowStatus   |
| }                                |             |

#### vdsMCMConfProfileRxBandNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

#### DESCRIPTION

"The index for this band descriptor entry."

::= { vdsLineMCMConfProfileRxBandEntry 1 }

#### vdsMCMConfProfileRxBandStart 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  
::= { vds1LineMCMConfProfileRxBandEntry 2 }

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## vdsLMCMConfProfileRxBandStop OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

"Stop tone index for this band."

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

::= { vdslLineMCMConfProfileRxBandEntry 3 }

## vdsLMCMConfProfileRxBandRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS current

## DESCRIPTION

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

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

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

::= { vdslLineMCMConfProfileRxBandEntry 4 }

## vdslLineMCMConfProfileTxPSDTable OBJECT-TYPE

SYNTAX SEQUENCE OF VdslLineMCMConfProfileTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

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

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 15 }

## vdslLineMCMConfProfileTxPSDEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

## DESCRIPTION

"Each entry consists of a transmit PSD mask descriptor,

which defines the power spectral density (PSD) for a tone.

A default profile with an index of 1 will always exist and

its parameters will be set to vendor specific values,  
unless otherwise specified in this document."

```
INDEX { vdslLineConfProfileIndex,
        vdslMCMConfProfileTxPSDNumber }
 ::= { vdslLineMCMConfProfileTxPSDTable 1 }
```

VdslLineMCMConfProfileTxPSDEntry ::=

SEQUENCE

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

vdslMCMConfProfileTxPSDNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"The index for this mask descriptor entry."

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

vdslMCMConfProfileTxPSDTone OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

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

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

vdslMCMConfProfileTxPSDPSD OBJECT-TYPE

SYNTAX Unsigned32

UNITS "0.5dBm"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"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`.

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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 16 }
```

#### vdslLineMCMConfProfileMaxTxPSDEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileMaxTxPSDEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

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

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

```
INDEX { vdslLineConfProfileIndex,
        vdslMCMConfProfileMaxTxPSDNumber }
```

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

#### VdslLineMCMConfProfileMaxTxPSDEntry ::=

#### SEQUENCE

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

vds1MCMConfProfileMaxTxPSDNumber OBJECT-TYPE  
SYNTAX Unsigned32

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

vdslMCMConfProfileMaxTxPSDTone OBJECT-TYPE

SYNTAX Unsigned32  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "The tone index for which the PSD is being specified."  
REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM  
 ::= { vdslLineMCMConfProfileMaxTxPSDEntry 2 }

vdslMCMConfProfileMaxTxPSDPSD OBJECT-TYPE

SYNTAX Unsigned32  
UNITS "0.5dBm"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Power Spectral Density level in steps of 0.5dB with  
    an offset of -140dbm/Hz."  
REFERENCE "T1E1.4/2000-013R4" -- Part 3, MCM  
 ::= { vdslLineMCMConfProfileMaxTxPSDEntry 3 }

vdslMCMConfProfileMaxTxPSDRowStatus OBJECT-TYPE

SYNTAX RowStatus  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "This object is used to create a new row or modify or  
    delete an existing row in this table.  
  
    A profile activated by setting this object to `active'.  
    When `active' is set, the system will validate the profile.  
  
    Before a profile can be deleted or taken out of  
    service, (by setting this object to `destroy' or  
    `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 17 }

#### vdslLineMCMConfProfileMaxRxPSDEntry OBJECT-TYPE

SYNTAX VdslLineMCMConfProfileMaxRxPSDEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

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

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

INDEX { vdslLineConfProfileIndex,  
           vdslMCMConfProfileMaxRxPSDNumber }

::= { vdslLineMCMConfProfileMaxRxPSDTable 1 }

#### VdslLineMCMConfProfileMaxRxPSDEntry ::=

#### SEQUENCE

|                                     |             |
|-------------------------------------|-------------|
| {                                   |             |
| vdslMCMConfProfileMaxRxPSDNumber    | Unsigned32, |
| vdslMCMConfProfileMaxRxPSDTone      | Unsigned32, |
| vdslMCMConfProfileMaxRxPSDPSD       | Unsigned32, |
| vdslMCMConfProfileMaxRxPSDRowStatus | RowStatus   |
| }                                   |             |

#### vdslMCMConfProfileMaxRxPSDNumber OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

#### DESCRIPTION

"The index for this band descriptor entry."

::= { vdslLineMCMConfProfileMaxRxPSDEntry 1 }

#### 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 }

vds1MCMConfProfileMaxRxPSDPSD 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  
::= { vdslLineMCMConfProfileMaxRxPSDEntry 3 }

vdslMCMConfProfileMaxRxPSDRowStatus OBJECT-TYPE

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

--

-- Single carrier modulation (SCM) configuration profile tables

--

vdslLineSCMConfProfileTable OBJECT-TYPE

SYNTAX          SEQUENCE OF VdslLineSCMConfProfileEntry  
MAX-ACCESS      not-accessible  
STATUS          current  
DESCRIPTION  
    "This table contains information on the VDSL line  
    configuration. One entry in this table reflects a  
    profile defined by a manager which can be used to  
    configure the VDSL line.  
  
    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 18 }

vdslLineSCMConfProfileEntry OBJECT-TYPE

SYNTAX          VdslLineSCMConfProfileEntry  
MAX-ACCESS      not-accessible

STATUS           current

DESCRIPTION

"Each entry consists of a list of parameters that

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represents the configuration of a single carrier modulation VDSL modem.

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

```
INDEX { vdslLineConfProfileIndex }
::= { vdslLineSCMConfProfileTable 1 }
```

VdslLineSCMConfProfileEntry ::=

SEQUENCE

```
{
  vdslSCMConfProfileDownInterleaveDepth  Unsigned32,
  vdslSCMConfProfileUpInterleaveDepth     Unsigned32,
  vdslSCMConfProfileDownNumCarriers       INTEGER,
  vdslSCMConfProfileUpNumCarriers         INTEGER,
  vdslSCMConfProfileDownFastCodewordSize Unsigned32,
  vdslSCMConfProfileUpFastCodewordSize   Unsigned32,
  vdslSCMConfProfileTransmitPSDMask       BITS,
  vdslSCMConfProfileVendorNotch1Start     Unsigned32,
  vdslSCMConfProfileVendorNotch1Stop      Unsigned32,
  vdslSCMConfProfileVendorNotch2Start     Unsigned32,
  vdslSCMConfProfileVendorNotch2Stop      Unsigned32,
  vdslSCMConfProfileDownFastFecSize       INTEGER,
  vdslSCMConfProfileUpFastFecSize         INTEGER,
  vdslSCMConfProfileDownSlowBlockSize    INTEGER,
  vdslSCMConfProfileUpSlowBlockSize       INTEGER,
  vdslSCMConfProfileRowStatus             RowStatus
}
```

vdslSCMConfProfileDownInterleaveDepth OBJECT-TYPE

SYNTAX Unsigned32 (0..64)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the downstream interleaving depth."

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

::= { vdslLineSCMConfProfileEntry 1 }

vdslSCMConfProfileUpInterleaveDepth OBJECT-TYPE

SYNTAX Unsigned32 (0..64)

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Specifies the upstream interleaving depth."

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

::= { vdslLineSCMConfProfileEntry 2 }

vdslSCMConfProfileDownNumCarriers OBJECT-TYPE

SYNTAX

INTEGER

```
{  
  oneCarrier(1),
```

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```
        twoCarriers(2)
    }
    MAX-ACCESS    read-create
    STATUS        current
    DESCRIPTION
        "Specifies the number of downstream carriers."
    REFERENCE     "T1E1.4/2000-011R3"    -- Part 2, SCM
    ::= { vdslLineSCMConfProfileEntry 3 }
```

vdslSCMConfProfileUpNumCarriers OBJECT-TYPE

```
    SYNTAX        INTEGER
        {
            oneCarrier(1),
            twoCarriers(2)
        }
    MAX-ACCESS    read-create
    STATUS        current
    DESCRIPTION
        "Specifies the number of upstream carriers."
    REFERENCE     "T1E1.4/2000-011R3"    -- Part 2, SCM
    ::= { vdslLineSCMConfProfileEntry 4 }
```

vdslSCMConfProfileDownFastCodewordSize OBJECT-TYPE

```
    SYNTAX        Unsigned32 (0..180)
    UNITS         "octets"
    MAX-ACCESS    read-create
    STATUS        current
    DESCRIPTION
        "Specifies the length in octets of the downstream
         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 5 }
```

vdslSCMConfProfileUpFastCodewordSize OBJECT-TYPE

```
    SYNTAX        Unsigned32 (0..180)
    UNITS         "octets"
    MAX-ACCESS    read-create
    STATUS        current
    DESCRIPTION
        "Specifies the length in octets of the upstream
         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 6 }
```

vdslSCMConfProfileTransmitPSDMask OBJECT-TYPE

```
    SYNTAX        BITS
    {
```

```
vendorNotch1(0),    -- vendor specific notch  
vendorNotch2(1),    -- vendor specific notch  
amateurBand30m(2),  -- amateur radio band notch
```

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```

    amateurBand40m(3),    -- amateur radio band notch
    amateurBand80m(4),    -- amateur radio band notch
    amateurBand160m(5)    -- amateur radio band notch
}
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "The transmit power spectral density mask code.

```

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

| Band | Start Frequency | Stop Frequency                   |
|------|-----------------|----------------------------------|
| 30m  | 1810 kHz        | 2000 kHz                         |
| 40m  | 3500 kHz        | 3800 kHz (ETSI); 4000 kHz (ANSI) |
| 80m  | 7000 kHz        | 7100 kHz (ETSI); 7300 kHz (ANSI) |
| 160m | 10100 kHz       | 10150 kHz                        |

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 7 }

```

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 8 }

```

vds1SCMConfProfileVendorNotch1Stop OBJECT-TYPE

SYNTAX Unsigned32

UNITS "kHz"

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MAX-ACCESS read-create  
STATUS current  
DESCRIPTION  
    "Specifies the stop frequency of the vendor-specific  
    amateur radio notch 1."  
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM  
::= { vdslLineSCMConfProfileEntry 9 }

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 10 }

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 11 }

vdslSCMConfProfileDownFastFecSize 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 downstream forward error correction (FEC)  
    codeword."  
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM  
::= { vdslLineSCMConfProfileEntry 12 }

vdslSCMConfProfileUpFastFecSize OBJECT-TYPE

SYNTAX INTEGER

```
{  
  noFEC(1),  
  fecSize2(2),
```

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```
        fecSize4(3),
        fecSize16(4)
    }
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "When fast channel is being used, this object specifies
    the size of the upstream forward error correction (FEC)
    codeword."
REFERENCE     "T1E1.4/2000-011R3"    -- Part 2, SCM
 ::= { vdslLineSCMConfProfileEntry 13 }
```

vdslSCMConfProfileDownSlowBlockSize OBJECT-TYPE

```
SYNTAX        INTEGER
    {
        s8(1),
        s4(2),
        s2(3)
    }
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "Specifies the downstream slow channel interleaved
    block size.  Options are s/8, s/4, or s/2."
REFERENCE     "T1E1.4/2000-011R3"    -- Part 2, SCM
 ::= { vdslLineSCMConfProfileEntry 14 }
```

vdslSCMConfProfileUpSlowBlockSize OBJECT-TYPE

```
SYNTAX        INTEGER
    {
        s8(1),
        s4(2),
        s2(3)
    }
MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "Specifies the upstream slow channel interleaved
    block size.  Options are s/8, s/4, or s/2."
REFERENCE     "T1E1.4/2000-011R3"    -- Part 2, SCM
 ::= { vdslLineSCMConfProfileEntry 15 }
```

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.

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

::= { vdslLineSCMConfProfileEntry 16 }

#### 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.

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 19 }

#### vdslLineSCMConfProfileTxBandEntry OBJECT-TYPE

SYNTAX VdslLineSCMConfProfileTxBandEntry

MAX-ACCESS not-accessible

STATUS current

#### DESCRIPTION

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

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

INDEX { vdslLineConfProfileIndex,  
vdslSCMConfProfileTxBandSide,  
vdslSCMConfProfileTxBandNumber }

::= { vdslLineSCMConfProfileTxBandTable 1 }

#### VdslLineSCMConfProfileTxBandEntry ::=

#### SEQUENCE

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

|   |             |
|---|-------------|
| vds1SCMConfProfileTxBandConstellationSize | Unsigned32, |
| vds1SCMConfProfileTxBandCenterFrequency   | Unsigned32, |
| vds1SCMConfProfileTxBandRowStatus         | RowStatus   |

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```
}
```

```
vdslSCMConfProfileTxBandSide OBJECT-TYPE
```

```
SYNTAX      VdslLineEntity
```

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

```
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  read-create
```

```
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
```

```
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."

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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

--

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

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profile.

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

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

VdslLineAlarmConfProfileEntry ::=

SEQUENCE

```
{
  vdslLineAlarmConfProfileIndex      Unsigned32,
  vdslLineAlarmConfProfileName      SnmpAdminString,
  vdslThresh15MinLoFs                HCPeIntervalThreshold,
  vdslThresh15MinLoss                HCPeIntervalThreshold,
  vdslThresh15MinLprs                HCPeIntervalThreshold,
  vdslThresh15MinESs                HCPeIntervalThreshold,
  vdslThresh15MinSESS                HCPeIntervalThreshold,
  vdslThresh15MinUASS                HCPeIntervalThreshold,
  vdslInitFailureNotificationEnable TruthValue,
  vdslLineAlarmConfProfileRowStatus RowStatus
}
```

vdslLineAlarmConfProfileIndex OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

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

vdslLineAlarmConfProfileName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (1..32))

MAX-ACCESS read-create

STATUS current

DESCRIPTION

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

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

vdslThresh15MinLoFs OBJECT-TYPE

SYNTAX HCPeIntervalThreshold

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

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vds1PerfLofsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vds1LineAlarmConfProfileEntry 3 }

vds1Thresh15MinLoss 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 frame seconds in a particular 15-minute collection interval reaches/exceeds this value, a vds1PerfLossThreshNotification notification will be generated. One notification will be sent per interval per endpoint."

::= { vds1LineAlarmConfProfileEntry 4 }

vds1Thresh15MinLprs 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 frame seconds in a particular 15-minute collection interval reaches/exceeds this value, a vds1PerfLprsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vds1LineAlarmConfProfileEntry 5 }

vds1Thresh15MinESs OBJECT-TYPE

SYNTAX HCPerfIntervalThreshold

UNITS "seconds"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"This object configures the threshold for the number of errored seconds (ESs) within any given 15-minute performance data collection interval. If the value of errored seconds in a particular 15-minute collection interval reaches/exceeds this value, a vds1PerfESsThreshNotification notification will be

```
generated. No more than one notification will be sent
per interval."
::= { vdslLineAlarmConfProfileEntry 6 }
```

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**vds1Thresh15MinSESSs 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 vds1PerfSESSsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vds1LineAlarmConfProfileEntry 7 }

**vds1Thresh15MinUASSs 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 vds1PerfUASSsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vds1LineAlarmConfProfileEntry 8 }

**vds1InitFailureNotificationEnable OBJECT-TYPE**

SYNTAX TruthValue

MAX-ACCESS read-create

STATUS current

**DESCRIPTION**

"This object specifies if a vds1InitFailureNotification notification will be generated if an initialization failure occurs."

::= { vds1LineAlarmConfProfileEntry 9 }

**vds1LineAlarmConfProfileRowStatus 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`.

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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 10 }
```

-- Notification definitions

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

vdslPerfLofsThreshNotification NOTIFICATION-TYPE

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

vdslPerfLossThreshNotification NOTIFICATION-TYPE

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

vdslPerfLprsThreshNotification NOTIFICATION-TYPE

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

vdslPerfESsThreshNotification NOTIFICATION-TYPE

```
OBJECTS      {
                vdslPerfCurr15MinESs,
                vdslThresh15MinESs
            }
STATUS       current
DESCRIPTION
```

```
"Errored Seconds 15-minute interval threshold reached."  
::= { vds1Notifications 4 }
```

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## vdslPerfSESSthreshNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslPerfCurr15MinSESSs,  
    vdslThresh15MinSESSs  
}

STATUS current

DESCRIPTION  
    "Severely Errored Seconds 15-minute interval threshold  
    reached."  
::= { vdslNotifications 5 }

## vdslPerfUASSthreshNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslPerfCurr15MinUASSs,  
    vdslThresh15MinUASSs  
}

STATUS current

DESCRIPTION  
    "Unavailable Seconds 15-minute interval threshold reached."  
::= { vdslNotifications 6 }

## vdslDownMaxSnrMgnExceededNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslCurrSnrMgn,  
    vdslLineConfDownstreamMaxSnrMgn  
}

STATUS current

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

## vdslDownMinSnrMgnExceededNotification NOTIFICATION-TYPE

OBJECTS {  
    vdslCurrSnrMgn,  
    vdslLineConfDownstreamMinSnrMgn  
}

STATUS current

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

## vdslUpMaxSnrMgnExceededNotification NOTIFICATION-TYPE

OBJECTS {

```
vds1CurrSnrMgn,  
vds1LineConfUpstreamMaxSnrMgn  
}
```

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```
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 }

vdslLineMibCompliance MODULE-COMPLIANCE
STATUS current
DESCRIPTION
    "The compliance statement for SNMP entities which
    manage VDSL interfaces."

MODULE -- this module
MANDATORY-GROUPS
    {
        vdslGroup
    }
```

GROUP vds1MCMGroup

DESCRIPTION

"This group is mandatory for VDSL Lines which

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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 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,
    vdslPerfSESS,
    vdslPerfUASs,
    vdslPerfInits,
    vdslPerfCurr15MinTimeElapsed,
    vdslPerfCurr15MinLofs,
    vdslPerfCurr15MinLoss,
    vdslPerfCurr15MinLprs,
    vdslPerfCurr15MinESS,
    vdslPerfCurr15MinSESS,
```

vds1PerfCurr15MinUASs,  
vds1PerfCurr15MinInits,  
vds1Perf1DayValidIntervals,

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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,  
vds1LineConfProfileIndex,  
vds1LineConfProfileName,  
vds1LineConfDownstreamMaxPwr,  
vds1LineConfUpstreamMaxPwr,  
vds1LineConfDownstreamMaxSnrMgn,  
vds1LineConfDownstreamMinSnrMgn,  
vds1LineConfDownstreamTargetSnrMgn,  
vds1LineConfUpstreamMaxSnrMgn,

vdsLineConfUpstreamMinSnrMgn,  
vdsLineConfUpstreamTargetSnrMgn,  
vdsLineConfDownstreamFastMaxDataRate,

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```
vdsLineConfDownstreamFastMinDataRate,  
vdsLineConfDownstreamSlowMaxDataRate,  
vdsLineConfDownstreamSlowMinDataRate,  
vdsLineConfUpstreamFastMaxDataRate,  
vdsLineConfUpstreamFastMinDataRate,  
vdsLineConfUpstreamSlowMaxDataRate,  
vdsLineConfUpstreamSlowMinDataRate,  
vdsLineConfRateAdaptationRatio,  
vdsLineConfUpstreamDataRate,  
vdsLineConfDownstreamDataRate,  
vdsLineConfDownstreamMaxInterDelay,  
vdsLineConfUpstreamMaxInterDelay,  
vdsLineConfUpstreamPboControl,  
vdsLineConfDownstreamPboControl,  
vdsLineConfDeploymentScenario,  
vdsLineConfAdslOccupancy,  
vdsLineConfApplicableStandard,  
vdsLineConfBandPlan,  
vdsLineConfBandPlanFx,  
vdsLineConfBandU0Usage,  
vdsLineConfUpstreamPsdTemplate,  
vdsLineConfDownstreamPsdTemplate,  
vdsLineConfProfileRowStatus,  
vdsLineAlarmConfProfileIndex,  
vdsLineAlarmConfProfileName,  
vdsThresh15MinLoss,  
vdsThresh15MinLoss,  
vdsThresh15MinLprs,  
vdsThresh15MinESS,  
vdsThresh15MinSESS,  
vdsThresh15MinUASS,  
vdsInitFailureNotificationEnable,  
vdsLineAlarmConfProfileRowStatus  
}
```

STATUS current

DESCRIPTION

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

::= { vdsGroups 1 }

vdsLMCMGroup OBJECT-GROUP

OBJECTS

```
{  
vdsLMCMConfProfileTxWindowLength,  
vdsLMCMConfProfileRowStatus,  
vdsLMCMConfProfileTxBandNumber,  
vdsLMCMConfProfileTxBandStart,  
vdsLMCMConfProfileTxBandStop,  
vdsLMCMConfProfileTxBandRowStatus,  
}
```

vds\MCMConfProfileRxBandNumber,  
vds\MCMConfProfileRxBandStart,  
vds\MCMConfProfileRxBandStop,

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```
    vds1MCMConfProfileRxBandRowStatus,
    vds1MCMConfProfileTxPSDNumber,
    vds1MCMConfProfileTxPSDTone,
    vds1MCMConfProfileTxPSDPSD,
    vds1MCMConfProfileTxPSDRowStatus,
    vds1MCMConfProfileMaxTxPSDNumber,
    vds1MCMConfProfileMaxTxPSDTone,
    vds1MCMConfProfileMaxTxPSDPSD,
    vds1MCMConfProfileMaxTxPSDRowStatus,
    vds1MCMConfProfileMaxRxPSDNumber,
    vds1MCMConfProfileMaxRxPSDTone,
    vds1MCMConfProfileMaxRxPSDPSD,
    vds1MCMConfProfileMaxRxPSDRowStatus
  }
STATUS      current
DESCRIPTION
    "A collection of objects providing configuration
    information for a VDSL line based upon multiple carrier
    modulation modem."
::= { vds1Groups 2 }

vds1SCMGroup      OBJECT-GROUP
OBJECTS
{
    vds1SCMPhysBandSnrMgn,
    vds1SCMPhysBandAtn,
    vds1SCMConfProfileDownInterleaveDepth,
    vds1SCMConfProfileUpInterleaveDepth,
    vds1SCMConfProfileDownNumCarriers,
    vds1SCMConfProfileUpNumCarriers,
    vds1SCMConfProfileDownFastCodewordSize,
    vds1SCMConfProfileUpFastCodewordSize,
    vds1SCMConfProfileTransmitPSDMask,
    vds1SCMConfProfileVendorNotch1Start,
    vds1SCMConfProfileVendorNotch1Stop,
    vds1SCMConfProfileVendorNotch2Start,
    vds1SCMConfProfileVendorNotch2Stop,
    vds1SCMConfProfileDownFastFecSize,
    vds1SCMConfProfileUpFastFecSize,
    vds1SCMConfProfileDownSlowBlockSize,
    vds1SCMConfProfileUpSlowBlockSize,
    vds1SCMConfProfileRowStatus,
    vds1SCMConfProfileTxBandSide,
    vds1SCMConfProfileTxBandNumber,
    vds1SCMConfProfileTxBandTransmitPSDLevel,
    vds1SCMConfProfileTxBandSymbolRateProfile,
    vds1SCMConfProfileTxBandConstellationSize,
    vds1SCMConfProfileTxBandCenterFrequency,
    vds1SCMConfProfileTxBandRowStatus
```

}  
STATUS       current  
DESCRIPTION

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

END

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#### Security Considerations

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

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

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

vds1Thresh15MinLofs  
vds1Thresh15MinLoss

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vdslThresh15MinLprs  
vdslThresh15MinESs  
vdslThresh15MinSESSs  
vdslThresh15MinUASS

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

Further, notifications generated by agents implementing this MIB 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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