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]).
1. The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- An overall architecture, described in RFC 2571 [RFC2571].

- 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].

- 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].

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

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

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

This memo specifies a MIB module that is compliant to the SMIV2. The textual conventions used in this MIB module cannot be translated to SMIV1 since the Counter64 type does not exist in SMIV1.

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

2. Overview

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

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

2.1 Relationship of the VDSL Line MIB to other MIBs

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

2.1.1 General IF-MIB Integration (RFC 2863)

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

IANAifType ::= TEXTUAL-CONVENTION
...

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

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

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

2.1.2 Usage of ifTable

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

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

===================================================================
ifIndex                  Interface index.
ifDescr                  See interfaces MIB [RFC2863].
ifType                   vdsl(97), interleaved(124), or fast(125)
ifSpeed                  Set as appropriate.
ifPhysAddress            This object MUST have an octet string with zero length.
ifAdminStatus            See interfaces MIB [RFC2863].
ifOperStatus             See interfaces MIB [RFC2863].
ifLastChange             See interfaces MIB [RFC2863].
ifName                   See interfaces MIB [RFC2863].
ifHighSpeed              Set as appropriate.
ifConnectorPresent       Set as appropriate.
ifLinkUpDownTrapEnable   Default to enabled(1).
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. Attn -- 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.

- VdslLineCodingType :

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

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

- VdslLineEntity :

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

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

2.3 Structure

The MIB is structured into following MIB groups:

- 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

- 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.

- 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):

\[
\begin{align*}
\text{ifEntry}(\text{ifType}=97) & \quad \longrightarrow \quad \text{vdslLineTableEntry} \quad 1:(0..1) \\
\text{vdslLineTableEntry} & \quad \longrightarrow \quad \text{vdslPhysTableEntry} \quad 1:(0..2) \\
& \quad \quad \longrightarrow \quad \text{vdslPerfDataEntry} \quad 1:(0..2) \\
& \quad \quad \quad \longrightarrow \quad \text{vdslLineConfProfileEntry} \quad 1:(0..1) \\
& \quad \quad \quad \longrightarrow \quad \text{vdslLineAlarmConfProfileEntry} \quad 1:(0..1) \\
\text{vdslPhysTableEntry} & \quad \longrightarrow \quad \text{vdslPerfIntervalEntry} \quad 1:(0..96) \\
& \quad \quad \longrightarrow \quad \text{vdslPerf1DayIntervalEntry} \quad 1:(0..30) \\
\text{ifEntry}(\text{ifType}=124) & \quad \longrightarrow \quad \text{vdslChanEntry} \quad 1:(0..2) \\
& \quad \quad \longrightarrow \quad \text{vdslChanPerfDataEntry} \quad 1:(0..2) \\
\text{ifEntry}(\text{ifType}=125) & \quad \longrightarrow \quad \text{vdslChanEntry} \quad 1:(0..2) \\
& \quad \quad \longrightarrow \quad \text{vdslChanPerfDataEntry} \quad 1:(0..2) \\
\text{vdslChanEntry} & \quad \longrightarrow \quad \text{vdslchanPerfIntervalEntry} \quad 1:(0..96) \\
& \quad \quad \longrightarrow \quad \text{vdslchan1DayPerfIntervalEntry} \quad 1:(0..30)
\end{align*}
\]

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).
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:

- Line Configuration Profiles - Line configuration profiles contain parameters for configuring VDSL lines. They are defined in nine
tables:
- vdslLineConfProfileTable
- vdslLineMCMConfProfileTable
- vdslLineMCMConfProfileTxBandTable
- vdslLineMCMConfProfileRxBandTable
- vdslLineMCMConfProfileTxPSDTable
- vdslLineMCMConfProfileMaxTxPSDTable
- vdslLineMCMConfProfileMaxRxPSDTable
- vdslLineSCMConfProfileTable
- vdslLineSCMConfProfileTxBandTable

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

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

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

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

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

Profiles are created, assigned, and deleted dynamically using the profile name and profile row status in each of the ten profile tables (nine line configuration tables and one alarm configuration table).

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

The ability to generate the SNMP notifications coldStart/WarmStart (per [RFC2863]) which are per agent (e.g., per Digital Subscriber Line Access Multiplexer, or DSLAM, in such a device), and linkUp/linkDown (per [RFC2863]) which are per interface (i.e., VDSL line) is required.

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

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

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

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

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

2.7 Persistence

All objects defined in this MIB which may be set (read-write or read-create), should be stored persistently. Following is an exhaustive list of these persistent objects:
vdslLineConfProfile
vdslLineAlarmConfProfile
vdslLineConfProfileName
vdslLineConfDownstreamMaxPwr
vdslLineConfUpstreamMaxPwr
vdslLineConfDownstreamMaxSnrMgn
vdslLineConfDownstreamMinSnrMgn
vdslLineConfDownstreamTargetSnrMgn
vdslLineConfUpstreamMaxSnrMgn
vdslLineConfUpstreamMinSnrMgn
vdslLineConfUpstreamTargetSnrMgn
vdslLineConfDownstreamFastMaxDataRate
vdslLineConfDownstreamFastMinDataRate
vdslLineConfDownstreamSlowMaxDataRate
vdslLineConfDownstreamSlowMinDataRate
vdslLineConfUpstreamFastMaxDataRate
vdslLineConfUpstreamFastMinDataRate
vdslLineConfUpstreamSlowMaxDataRate
vdslLineConfUpstreamSlowMinDataRate
vdslLineConfRateAdaptationRatio
vdslLineConfUpstreamDataRate
vdslLineConfDownstreamDataRate
vdslLineConfDownstreamMaxInterDelay
vdslLineConfUpstreamMaxInterDelay
vdslLineConfUpstreamPboControl
vdslLineConfDownstreamPboControl
vdslLineConfDeploymentScenario
vdslLineConfAdslOccupy
vdslLineConfApplicableStandard
vdslLineConfBandPlan
vdslLineConfBandPlanFx
vdslLineConfBandU0Usage
vdslLineConfUpstreamPsdTemplate
vdslLineConfDownstreamPsdTemplate
vdslLineConfProfileRowStatus
vdslMCMConfProfileTxWindowLength
vdslMCMConfProfileRowStatus
vdslMCMConfProfileTxBandNumber
vdslMCMConfProfileTxBandStart
vdslMCMConfProfileTxBandStop
vdslMCMConfProfileRxBandRowStatus
vdslMCMConfProfileRxBandStart
vdslMCMConfProfileRxBandStop
vdslMCMConfProfileRxBandRowStatus
vdslMCMConfProfileTxPSDTone
vdslMCMConfProfileTxPSDPSD
vdslMCMConfProfileTxPSDRowStatus
vdslMCMConfProfileMaxTxPSDTone
vdslMCMConfProfileMaxTxPSDPSD
vdslMCMConfProfileMaxTxPSDRowStatus
vdslMCMConfProfileMaxRxPSDTone
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:

- vds1Group

For MCM VDSL lines, the following group is optional:

- vds1SCMGroup

For SCM VDSL lines, the following group is optional:

- vds1MCMGroup
4. Definitions

VDXL-LINE-MIB DEFINITIONS ::= BEGIN

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

vdslMIB MODULE-IDENTITY
LAST-UPDATED "200212300000Z" -- December 30, 2002
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DESCRIPTION

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

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

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

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

REVISION "200204090000Z" -- April 9, 2002
DESCRIPTION "Removed use of IMPLIED profile indices."

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

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

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

REVISION "200210300000Z" -- October 30, 2002
DESCRIPTION "Modified per input from Umberto Bonollo and Travis Levin."

REVISION "200212300000Z" -- December 30, 2002
DESCRIPTION "Changed profile indices to strings."

::= { transmission xxxx }

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

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

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

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

-- objects
--

vdslLineTable OBJECT-TYPE
SYNTAX       SEQUENCE OF VdslLineEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
"This table includes common attributes describing both ends of the line. It is required for all VDSL physical interfaces. VDSL physical interfaces are those ifEntries where ifType is equal to vdsl(97)."
 ::= { vdslMibObjects 1 }

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

VdslLineEntry ::= SEQUENCE

{ vdslLineCoding                         VdslLineCodingType,
  vdslLineType                           INTEGER,
  vdslLineConfProfile                    SnmpAdminString,
  vdslLineAlarmConfProfile               SnmpAdminString
}

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

vdslLineType OBJECT-TYPE
SYNTAX       INTEGER
{ noChannel(1),         -- no channels exist
  fastOnly(2),          -- fast channel only
  slowOnly(3),          -- slow channel only
  either(4),            -- either fast or slow channel exist

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both(5) -- both fast and slow channels exist

MAX-ACCESS read-only

STATUS current

DESCRIPTION
"Defines the type of VDSL physical line entity that exists, by defining whether and how the line is channelized. If the line is channelized, the value will be other than noChannel(1). This object defines which channel type(s) are supported.

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

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

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

::= { vdslLineEntry 2 }

vdslLineConfProfile OBJECT-TYPE
SYNTAX SnmpAdminString (SIZE(1..32))
MAX-ACCESS read-write
STATUS current

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

::= { vdslLineEntry 3 }

vdslLineAlarmConfProfile OBJECT-TYPE
SYNTAX SnmpAdminString (SIZE(1..32))
MAX-ACCESS read-write
STATUS current

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

::= { vdslLineEntry 4 }

vdslPhysTable OBJECT-TYPE
SYNTAX SEQUENCE OF VdslPhysEntry
MAX-ACCESS not-accessible
STATUS current

DESCRIPTION
"This table provides one row for each Vtu. Each row contains the Physical Layer Parameters table for that Vtu. VDSL physical interfaces are those ifEntries where ifType is equal to vdsl(97)."
::= { vdslMibObjects 2 }

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

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

vdslPhysSide OBJECT-TYPE
SYNTAX VdslLineEntity
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Identifies whether the modem is the Vtuc or Vtur."
::= { vdslPhysEntry 1 }

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

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

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

vdslCurrSnrMgn OBJECT-TYPE
SYNTAX       Integer32 (-127..127)
UNITS        "0.25dBm"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
 "Noise Margin as seen by this Vtu with respect to its
 received signal in 0.25dB. The effective range is
 -31.75 to +31.75dB."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
:== { vdslPhysEntry 5 }  

vdslCurrAtn OBJECT-TYPE
SYNTAX       Gauge32 (0..255)
UNITS        "0.25dBm"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
 "Measured difference in the total power transmitted by
 the peer Vtu and the total power received by this Vtu.
 The effective range is 0 to +63.75dB."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
:== { vdslPhysEntry 6 }  

vdslCurrStatus OBJECT-TYPE
SYNTAX       BITS
{  
 noDefect(0),
 lossOfFraming(1),
 lossOfSignal(2),
 lossOfPower(3),
 lossOfSignalQuality(4),
 lossOfLink(5),
 dataInitFailure(6),
 configInitFailure(7),
 protocolInitFailure(8),
 noPeerVtuPresent(9)  

Expires June 30, 2003
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Indicates current state of the Vtu line. This is a
bit-map of possible conditions. The various bit
positions are:

0  noDefect     There no defects on the line
1  lossOfFraming Vtu failure due to not receiving
a valid frame.
2  lossOfSignal  Vtu failure due to not receiving
signal.
3  lossOfPower   Vtu failure due to loss of power.
4  lossOfSignalQuality Loss of Signal Quality is declared
when the Noise Margin falls below
the Minimum Noise Margin, or the
bit-error-rate exceeds 10^-7.
5  lossOfLink    Vtu failure due to inability to
link with peer Vtu. Set whenever
the transceiver is in the ‘Warm
Start’ state.
6  dataInitFailure Vtu failure during initialization
due to bit errors corrupting
startup exchange data.
7  configInitFailure Vtu failure during initialization
due to peer Vtu not able to support
requested configuration.
8  protocolInitFailure Vtu failure during initialization
due to incompatible protocol used
by the peer Vtu.
9  noPeerVtuPresent Vtu failure during initialization
due to no activation sequence
detected from peer Vtu.

This is intended to supplement ifOperStatus."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslPhysEntry 7 }
MAX-ACCESS  read-only  
STATUS     current  
DESCRIPTION  
"Measured total output power transmitted by this VTU. 
This is the measurement that was reported during 
the last activation sequence."
REFERENCE  "T1E1.4/2000-009R3"  -- Part 1, common spec :
::= { vdslPhysEntry 8 }

vdslCurrAttainableRate OBJECT-TYPE  
SYNTAX       Gauge32  
UNITS        "kbps"  
MAX-ACCESS   read-only  
STATUS       current  
DESCRIPTION  
"Indicates the maximum currently attainable data rate  
in steps of 1024 bits/second by the Vtu. This value  
will be equal or greater than the current line rate.  
Note that for SCM, the minimum and maximum data rates  
are equal."
REFERENCE  "T1E1.4/2000-009R3"  -- Part 1, common spec :
::= { vdslPhysEntry 9 }

vdslChanTable OBJECT-TYPE  
SYNTAX       SEQUENCE OF VdslChanEntry  
MAX-ACCESS   not-accessible  
STATUS       current  
DESCRIPTION  
"This table provides one row for each Vtu channel.  
VDSL channel interfaces are those ifEntries where  
ifType is equal to interleave(124) or fast(125)."
::= { vdslMibObjects 3 }

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

VdslChanEntry ::=  
SEQUENCE  
{  
    vdslChanInterleaveDelay        Gauge32,  
    vdslChanCrcBlockLength        Gauge32,  
    vdslChanCurrTxRate            Gauge32  
}
vdslChanInterleaveDelay OBJECT-TYPE
SYNTAX     Gauge32
UNITS       "ms"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "Interleave Delay for this channel.

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

In the case where the ifType is fast(125), use
noSuchObject."
REFERENCE   "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslChanEntry 1 }

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

vdslChanCurrTxRate OBJECT-TYPE
SYNTAX      Gauge32
UNITS       "kbps"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "Actual transmit data rate on this channel."
::= { vdslChanEntry 3 }

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            HCPercValidIntervals,
  vdslPerfInvalidIntervals          HCPercInvalidIntervals,
  vdslPerfLofs                      Counter64,
  vdslPerfLprs                      Counter64,
  vdslPerfESs                       Counter64,
  vdslPerfSESs                      Counter64,
  vdslPerfUASs                      Counter64,
  vdslPerfInits                     Counter64,
  vdslPerfCurr15MinTimeElapsed      HCPercTimeElapsed,
  vdslPerfCurr15MinLofs             HCPercCurrentCount,
  vdslPerfCurr15MinLoss             HCPercCurrentCount,
  vdslPerfCurr15MinLprs             HCPercCurrentCount,
  vdslPerfCurr15MinESs              HCPercCurrentCount,
  vdslPerfCurr15MinSESs             HCPercCurrentCount,
  vdslPerfCurr15MinUASs             HCPercCurrentCount,
  vdslPerfCurr15MinInits            HCPercCurrentCount,
  vdslPerf1DayValidIntervals        HCPercValidIntervals,
  vdslPerf1DayInvalidIntervals      HCPercInvalidIntervals,
  vdslPerfCurr1DayTimeElapsed       HCPercTimeElapsed,
  vdslPerfCurr1DayLofs              Counter64,
  vdslPerfCurr1DayLoss              Counter64,
  vdslPerfCurr1DayLprs              Counter64,
  vdslPerfCurr1DayESs               Counter64,
  vdslPerfCurr1DaySESs              Counter64,
  vdslPerfCurr1DayUASs              Counter64,
  vdslPerfCurr1DayInits             Counter64,
%

vdslPerfValidIntervals OBJECT-TYPE
SYNTAX HCPercValidIntervals
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Valid Intervals per definition found in
HC-PerfHist-TC-MIB."

Expires June 30, 2003
vdslPerfInvalidIntervals OBJECT-TYPE
SYNTAX       HCPerfInvalidIntervals
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  "Invalid Intervals per definition found in HC-PerfHist-TC-MIB."
 ::= { vdslPerfDataEntry 1 }

vdslPerfLofs OBJECT-TYPE
SYNTAX       Counter64
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  "Count of seconds since the unit was last reset that there was Loss of Framing."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
 ::= { vdslPerfDataEntry 2 }

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

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

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

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

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

vdslPerfInits OBJECT-TYPE
SYNTAX Counter64
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Count of the line initialization attempts since the unit
 was last reset. This count includes both successful and
 failed attempts."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
 ::= ( vdslPerfDataEntry 9 )

vdslPerfCurr15MinTimeElapsed OBJECT-TYPE
SYNTAX HCPerfTimeElapsed
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
 "Total elapsed seconds in this interval."
 ::= ( vdslPerfDataEntry 10 )

vdslPerfCurr15MinLofs OBJECT-TYPE
SYNTAX HCPerfCurrentCount
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

Expires June 30, 2003
"Count of seconds during this interval that there was Loss of Framing."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslPerfDataEntry 11 }

vdslPerfCurr15MinLoss OBJECT-TYPE
SYNTAX     HCPerfCurrentCount
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION  "Count of seconds during this interval that there was Loss of Signal."
REFERENCE  "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslPerfDataEntry 12 }

vdslPerfCurr15MinLprs OBJECT-TYPE
SYNTAX     HCPerfCurrentCount
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION  "Count of seconds during this interval that there was Loss of Power."
REFERENCE  "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslPerfDataEntry 13 }

vdslPerfCurr15MinESs OBJECT-TYPE
SYNTAX     HCPerfCurrentCount
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION  "Count of Errored Seconds during this interval. An Errored Second is a one-second interval containing one or more crc anomalies, or one or more los or lof defects."
REFERENCE  "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslPerfDataEntry 14 }

vdslPerfCurr15MinSESs OBJECT-TYPE
SYNTAX     HCPerfCurrentCount
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION  "Count of Severely Errored Seconds during this interval."
::= { vdslPerfDataEntry 15 }

vdslPerfCurr15MinUASs OBJECT-TYPE
SYNTAX     HCPerfCurrentCount
UNITS       "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
"Count of Unavailable Seconds during this interval."
::= { vdslPerfDataEntry 16 }

vdslPerfCurr15MinInits 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
::= { vdslPerfDataEntry 17 }

vdslPerf1DayValidIntervals OBJECT-TYPE
SYNTAX       HCPerfValidIntervals
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
"Valid Intervals per definition found in
HC-PerfHist-TC-MIB."
::= { vdslPerfDataEntry 18 }

vdslPerf1DayInvalidIntervals OBJECT-TYPE
SYNTAX       HCPerfInvalidIntervals
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
"Invalid Intervals per definition found in
HC-PerfHist-TC-MIB."
::= { vdslPerfDataEntry 19 }

vdslPerfCurr1DayTimeElapsed 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."
::= { vdslPerfDataEntry 20 }

vdslPerfCurr1DayLofs OBJECT-TYPE
SYNTAX       Counter64
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
Expires June 30, 2003                                          [Page 27]
"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 }

vdslPerfCurr1DaySESs OBJECT-TYPE
SYNTAX Counter64
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of Severely Errored Seconds (SES) since the beginning of the current 1-day interval."
::= { vdslPerfDataEntry 25 }

vdslPerfCurr1DayUASs OBJECT-TYPE
SYNTAX Counter64
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of Unavailable Seconds (UAS) since the beginning
of the current 1-day interval."
::= { vdslPerfDataEntry 26 }

vdslPerfCurr1DayInits OBJECT-TYPE
SYNTAX          Counter64
UNITS           "seconds"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
   "Count of the line initialization attempts since the
   beginning of the current 1-day interval. This count
   includes both successful and failed attempts."
::= { vdslPerfDataEntry 27 }

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

VdslPerfIntervalEntry :=
SEQUENCE
   { vdslIntervalNumber                     Unsigned32,
     vdslIntervalLofs                       HCPerfIntervalCount,
     vdslIntervalLoss                       HCPerfIntervalCount,
     vdslIntervalLprs                       HCPerfIntervalCount,
     vdslIntervalESs                        HCPerfIntervalCount,
     vdslIntervalSESs                       HCPerfIntervalCount,
     vdslIntervalUAs                        HCPerfIntervalCount,
     vdslIntervalInits                      HCPerfIntervalCount
   }

vdslIntervalNumber OBJECT-TYPE
SYNTAX          Unsigned32 (1..96)
MAX-ACCESS      not-accessible

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STATUS       current
DESCRIPTION
 "Performance Data Interval number 1 is the 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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vdslIntervalSEs OBJECT-TYPE
SYNTAX       HCPerfIntervalCount
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  
"Count of Severely Errored Seconds in the interval."
::= { vdslPerfIntervalEntry 6 }

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

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

vdsl1DayIntervalTable OBJECT-TYPE
SYNTAX       SEQUENCE OF Vdsl1DayIntervalEntry
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 6 }

vdsl1DayIntervalEntry OBJECT-TYPE
SYNTAX       Vdsl1DayIntervalEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  
"An entry in the vdsl1DayIntervalTable."
INDEX { ifIndex, 
  vdslPhysSide, 
  vdsl1DayIntervalNumber }
::= { vdsl1DayIntervalTable 1 }
Vdsl1DayIntervalEntry ::= SEQUENCE {
  vdsl1DayIntervalNumber Unsigned32,
  vdsl1DayIntervalMoniSecs HCPerfTimeElapsed,
  vdsl1DayIntervalLofs Counter64,
  vdsl1DayIntervalLoss Counter64,
  vdsl1DayIntervalLprs Counter64,
  vdsl1DayIntervalESs Counter64,
  vdsl1DayIntervalSESs Counter64,
  vdsl1DayIntervalUASs Counter64,
  vdsl1DayIntervalInits Counter64
}

Vdsl1DayIntervalNumber OBJECT-TYPE
SYNTAX Unsigned32 (1..30)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "History Data Interval number. Interval 1 is the the most recent previous day; interval 30 is 30 days ago. Intervals 2..30 are optional."
 ::= { vdsl1DayIntervalEntry 1 }

Vdsl1DayIntervalMoniSecs OBJECT-TYPE
SYNTAX 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."
 ::= { vdsl1DayIntervalEntry 2 }

Vdsl1DayIntervalLofs OBJECT-TYPE
SYNTAX Counter64
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of Loss of Frame (LOF) Seconds during the 1-day interval as measured by vdsl1DayIntervalMoniSecs."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
 ::= { vdsl1DayIntervalEntry 3 }

Vdsl1DayIntervalLoss OBJECT-TYPE
SYNTAX Counter64
UNITS "seconds"
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MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of Loss of Signal (LOS) Seconds during the 1-day
interval as measured by vdsl1DayIntervalMoniSecs."
REFERENCE     "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdsl1DayIntervalEntry 4 }

vdsl1DayIntervalLprs OBJECT-TYPE
SYNTAX       Counter64
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of Loss of Power (LPR) Seconds during the 1-day
interval as measured by vdsl1DayIntervalMoniSecs."
REFERENCE     "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdsl1DayIntervalEntry 5 }

vdsl1DayIntervalESs OBJECT-TYPE
SYNTAX       Counter64
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of Errored Seconds (ES) during the 1-day
interval as measured by vdsl1DayIntervalMoniSecs."
REFERENCE     "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdsl1DayIntervalEntry 6 }

vdsl1DayIntervalSESs 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

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SYNTAX       Counter64  
UNITs        "seconds"    
MAX-ACCESS   read-only    
STATUS       current      
DESCRIPTION  "Count of the line initialization attempts during the 
1-day interval as measured by vds11DayIntervalMoniSecs. 
This count includes both successful and failed attempts."  
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec  
::= { vds11DayIntervalEntry 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 ::=  
SEQUENCE  
{  
vdslChanPerfValidIntervals           HCPerfValidIntervals,  
vdslChanPerfInvalidIntervals         HCPerfInvalidIntervals,  
vdslChanCorrectedOctets              Counter64,  
vdslChanUncorrectBlks                Counter64,  
vdslChanPerfCurr15MinTimeElapsed     HCPerfTimeElapsed,  
vdslChanPerfCurr15MinCorrectedOctcts HCPerfCurrentCount,  
vdslChanPerfCurr15MinUncorrectBlks   HCPerfCurrentCount,  
vdslChanPerf1DayValidIntervals       HCPerfValidIntervals,  
vdslChanPerf1DayInvalidIntervals     HCPerfInvalidIntervals,  
vdslChanPerfCurr1DayTimeElapsed      HCPerfTimeElapsed,  
vdslChanPerfCurr1DayCorrectedOctcts HCPerfCurrentCount,  
vdslChanPerfCurr1DayUncorrectBlks    HCPerfCurrentCount  
}  

vdslChanPerfValidIntervals OBJECT-TYPE  
SYNTAX       HCPerfValidIntervals  
MAX-ACCESS   read-only  

Expires June 30, 2003
 STATUS  current
DESCRIPTION
"Valid Intervals per definition found in
HC-PerfHist-TC-MIB."
::= { vdslChanPerfDataEntry 1 }

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

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

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

vdslChanPerfCurr15MinTimeElapsed OBJECT-TYPE
SYNTAX  HCPerfTimeElapsed
UNITS  "seconds"
MAX-ACCESS  read-only
STATUS  current
DESCRIPTION
"Total elapsed seconds in this interval."
::= { vdslChanPerfDataEntry 5 }

vdslChanPerfCurr15MinCorrectedOctets OBJECT-TYPE
SYNTAX  HCPerfCurrentCount
MAX-ACCESS  read-only
STATUS  current
DESCRIPTION
"Count of corrected octets in this interval."
REFERENCE  "T1E1.4/2000-009R3"  -- Part 1, common spec
::= { vdslChanPerfDataEntry 6 }

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vdslChanPerfCurr15MinUncorrectBlks OBJECT-TYPE
SYNTAX        HCPerfCurrentCount
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION    "Count of uncorrected blocks in this interval."
REFERENCE "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslChanPerfDataEntry 7 }

vdslChanPerf1DayValidIntervals OBJECT-TYPE
SYNTAX        HCPerfValidIntervals
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION    "Valid Intervals per definition found in HC-PerfHist-TC-MIB."
::= { vdslChanPerfDataEntry 8 }

vdslChanPerf1DayInvalidIntervals OBJECT-TYPE
SYNTAX        HCPerfInvalidIntervals
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION    "Invalid Intervals per definition found in HC-PerfHist-TC-MIB."
::= { vdslChanPerfDataEntry 9 }

vdslChanPerfCurr1DayTimeElapsed 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."
::= { vdslChanPerfDataEntry 10 }

vdslChanPerfCurr1DayCorrectedOctets OBJECT-TYPE
SYNTAX        HCPerfCurrentCount
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        HCPerfCurrentCount
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
"Count of uncorrected blocks since the beginning of the current 1-day interval."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslChanPerfDataEntry 12 }

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

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

VdslChanIntervalEntry ::= SEQUENCE
{ 
vdslChanIntervalNumber             Unsigned32,
vdslChanIntervalCorrectedOctets    HCPerfIntervalCount,
vdslChanIntervalUncorrectBlks      HCPerfIntervalCount
}

vdslChanIntervalNumber OBJECT-TYPE
SYNTAX     Unsigned32 (0..96)
MAX-ACCESS not-accessible
STATUS     current
DESCRIPTION
"Performance Data Interval number 1 is the most recent previous interval; interval 96 is 24 hours ago. Intervals 2..96 are optional."
::= { vdslChanIntervalEntry 1 }

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

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

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

VdslChan1DayIntervalEntry ::= 
SEQUENCE
{
    vdslChan1DayIntervalNumber             Unsigned32,
    vdslChan1DayIntervalMoniSecs           HCPerfTimeElapsed,
    vdslChan1DayIntervalCorrectedOctets    HCPerfCurrentCount,
    vdslChan1DayIntervalUncorrectBlks      HCPerfCurrentCount
}

vdslChan1DayIntervalNumber OBJECT-TYPE
SYNTAX       Unsigned32 (1..30)
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
"History Data Interval number. Interval 1 is the most recent previous day; interval 30 is 30 days ago. Intervals 2..30 are optional."
::= { vdslChan1DayIntervalEntry 1 }

vdslChan1DayIntervalMoniSecs OBJECT-TYPE
SYNTAX       HCPerfTimeElapsed
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "The amount of time in the 1-day interval over which the
               performance monitoring information is actually counted.
               This value will be the same as the interval duration except
               in a situation where performance monitoring data could not
               be collected for any reason."
::= { vdslChan1DayIntervalEntry 2 }

vdslChan1DayIntervalCorrectedOctets OBJECT-TYPE
SYNTAX        HCPerfCurrentCount
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION    "Count of corrected octets in this interval."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslChan1DayIntervalEntry 3 }

vdslChan1DayIntervalUncorrectBlks OBJECT-TYPE
SYNTAX        HCPerfCurrentCount
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION    "Count of uncorrected blocks in this interval."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslChan1DayIntervalEntry 4 }

--
-- SCM physical band status
--

vdslSCMPhysBandTable OBJECT-TYPE
SYNTAX       SEQUENCE OF VdslSCMPhysBandEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION   "This table provides one row for each SCM Vtu band."
::= { vdslMibObjects 10 }

vdslSCMPhysBandEntry OBJECT-TYPE
SYNTAX        VdslSCMPhysBandEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION    "An entry in the vdslSCMPhysBandTable."
INDEX { ifIndex,
    vdslPhysSide,
    vdslSCMPhysTxBandNumber }
::= { vdslSCMPhysBandTable 1 }

VdslSCMPhysBandEntry ::= SEQUENCE
{
    vdslSCMPhysTxBandNumber INTEGER,
    vdslSCMPhysBandSnrMgn Integer32,
    vdslSCMPhysBandAtn Unsigned32
}

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

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

vdslSCMPhysBandAtn OBJECT-TYPE
SYNTAX Unsigned32 {0..255}
UNITS "0.25 dBm"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Measured difference in the total power transmitted by
the peer Vtu on this band and the total power received
by this Vtu on this band in 0.25 dB."
::= { vdslSCMPhysBandEntry 3 }

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

vdslLineConfProfileEntry OBJECT-TYPE
SYNTAX         VdslLineConfProfileEntry
MAX-ACCESS     not-accessible
STATUS         current
DESCRIPTION
"Each entry consists of a list of parameters that represents the configuration of a VDSL line.

A default profile with an index of 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."
INDEX { vdslLineConfProfileName }
::= { vdslLineConfProfileTable 1 }

VdslLineConfProfileEntry ::= SEQUENCE
{ 
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,
}
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vdslLineConfUpstreamPboControl     INTEGER,
vdslLineConfDownstreamPboControl   INTEGER,
vdslLineConfDeploymentScenario     INTEGER,
vdslLineConfAdslOccupy            TruthValue,
vdslLineConfApplicableStandard     INTEGER,
vdslLineConfBandPlan               INTEGER,
vdslLineConfBandPlanFx             Unsigned32,
vdslLineConfBandU0Usage            INTEGER,
vdslLineConfUpstreamPsdTemplate    INTEGER,
vdslLineConfDownstreamPsdTemplate  INTEGER,
vdslLineConfProfileRowStatus       RowStatus
}

vdslLineConfProfileName OBJECT-TYPE
SYNTAX       SnmpAdminString (SIZE (1..32))
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  "This object identifies a row in this table.
A default profile with an index of 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."
::= { vdslLineConfProfileEntry 1 }

vdslLineConfDownstreamMaxPwr OBJECT-TYPE
SYNTAX       Unsigned32 (0..58)
UNITS        "0.25dBm"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION  "Specifies the maximum aggregate downstream power level in the range 0..14.5dBm."
REFERENCE    "T1E1.4/2000-009R3"    -- Part 1, common spec
::= { vdslLineConfProfileEntry 2 }

vdslLineConfUpstreamMaxPwr 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
::= { vdslLineConfProfileEntry 3 }

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

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

vdslLineConfDownstreamTargetSnrMgn OBJECT-TYPE
SYNTAX Unsigned32 (0..127)  
UNITS "0.25dBm"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION "Specifies the target downstream Signal/Noise Margin in units of 0.25 dB, for a range of 0..31.75 dB. This is the Noise Margin the modems must achieve with a BER of 10^-7 or better to successfully complete initialization."
REFERENCE "T1E1.4/2000-009R3"  -- Part 1, common spec
::= { vdslLineConfProfileEntry 6 }

vdslLineConfUpstreamMaxSnrMgn OBJECT-TYPE
SYNTAX Unsigned32 (0..127)  
UNITS "0.25dBm"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION "Specifies the maximum upstream Signal/Noise Margin in units of 0.25 dB, for a range of 0..31.75 dB."
REFERENCE "T1E1.4/2000-009R3"  -- Part 1, common spec
::= { vdslLineConfProfileEntry 7 }

vdslLineConfUpstreamMinSnrMgn OBJECT-TYPE
SYNTAX Unsigned32 (0..127)  
UNITS "0.25dBm"  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION "Specifies the minimum upstream Signal/Noise Margin

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in units of 0.25 dB, for a range of 0..31.75 dB."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 8 }

vdslLineConfUpstreamTargetSnrMgn OBJECT-TYPE
SYNTAX Unsigned32 (0..127)
UNITS "0.25dBm"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Specifies the target upstream Signal/Noise Margin in
units of 0.25 dB, for a range of 0..31.75 dB. This
is the Noise Margin the modems must achieve with a BER of
10^-7 or better to successfully complete initialization."
REFERENCE "T1E1.4/2000-009R3" -- Part 1, common spec
::= { vdslLineConfProfileEntry 9 }

vdslLineConfDownstreamFastMaxDataRate OBJECT-TYPE
SYNTAX Unsigned32
UNITS "kbps"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Specifies the maximum downstream fast channel
data rate in steps of 1024 bits/second."
::= { vdslLineConfProfileEntry 10 }

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

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

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

vdslLineConfUpstreamFastMaxDataRate OBJECT-TYPE
SYNTAX       Unsigned32
UNITS        "kbps"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
    "Specifies the maximum upstream fast channel
data rate in steps of 1024 bits/second."
 ::= { vdslLineConfProfileEntry 14 }

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

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

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

vdslLineConfRateAdaptationRatio OBJECT-TYPE
SYNTAX       Unsigned32 (0..100)
UNITS        "percent"
MAX-ACCESS   read-create
STATUS       current

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DESCRIPTION
"For dynamic rate adaptation at startup, the allocation of data rate in excess of the minimum data rate for each channel is controlled by the object. This object specifies the ratio of the allocation of the excess data rate between the fast and the slow channels. This allocation represents Fast Channel Allocation / Slow Channel Allocation."
::= { vdslLineConfProfileEntry 18 }

vdslLineConfUpstreamDataRate OBJECT-TYPE
SYNTAX Unsigned32
UNITS "kbps"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "Aggregate upstream transmit speed for this line in steps of 1024 bits/second."
::= { vdslLineConfProfileEntry 19 }

vdslLineConfDownstreamDataRate OBJECT-TYPE
SYNTAX Unsigned32
UNITS "kbps"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "Aggregate downstream transmit speed for this line in steps of 1024 bits/second."
::= { vdslLineConfProfileEntry 20 }

vdslLineConfDownstreamMaxInterDelay OBJECT-TYPE
SYNTAX Unsigned32 (0..255)
UNITS "ms"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "Specifies the maximum interleave delay for the downstream slow channel."
::= { vdslLineConfProfileEntry 21 }

vdslLineConfUpstreamMaxInterDelay OBJECT-TYPE
SYNTAX Unsigned32 (0..255)
UNITS "ms"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "Specifies the maximum interleave delay for the upstream slow channel."
::= { vdslLineConfProfileEntry 22 }

vdslLineConfUpstreamPboControl OBJECT-TYPE
SYNTAX INTEGER
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{  
disabled(1),  
enabled(2)  
}  
MAX-ACCESS  read-create  
STATUS current  
DESCRIPTION "Upstream power backoff (PBO) control for this line. For modems which do not support upstream PBO control, this object MUST be fixed at disabled(1)."
::= { vdslLineConfProfileEntry 23 }

vds1LineConfDownstreamPboControl OBJECT-TYPE  
SYNTAX INTEGER  
{  
disabled(1),  
enabled(2)  
}  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION "Downstream power backoff (PBO) control for this line. For modems which do not support downstream PBO control, this object MUST be fixed at disabled(1)."
::= { vdslLineConfProfileEntry 24 }

vds1LineConfDeploymentScenario OBJECT-TYPE  
SYNTAX INTEGER  
{  
fttCab(1),  
fttEx(2),  
other(3)  
}  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION "The VDSL line deployment scenario. When using fttCab(1), the VTU-C is located in a street cabinet. When using fttEx(2), the VTU-C is located at the central office."
::= { vdslLineConfProfileEntry 25 }

vds1LineConfAdslOccupy OBJECT-TYPE  
SYNTAX TruthValue  
MAX-ACCESS read-create  
STATUS current  
DESCRIPTION "Indicates if the VDSL line can occupy the ADSL frequency range."
::= { vdslLineConfProfileEntry 26 }

Expires June 30, 2003
vdslLineConfApplicableStandard OBJECT-TYPE
SYNTAX INTEGER
{ ansi(1),
etsi(2),
itu(3),
other(4) }
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The VDSL standard to be used for the line."
::= { vdslLineConfProfileEntry 27 }

vdslLineConfBandPlan OBJECT-TYPE
SYNTAX INTEGER
{ bandPlan997(1),
bandPlan998(2),
bandPlanFx(3),
other(4) }
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The VDSL band plan to be used for the line.

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

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

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

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

If this object is set to bandPlanFx(3), then
the object vdslLineConfBandPlanFx MUST also be
set."
::= { vdslLineConfProfileEntry 28 }

vdslLineConfBandPlanFx OBJECT-TYPE
SYNTAX Unsigned32 (3750..12000)
UNITS "kHz"
MAX-ACCESS read-create
The frequency limit between bands D2 and U2 when
vdslLineConfBandPlan is set to bandPlanFx(3).
::= { vdslLineConfProfileEntry 29 }
A profile activated by setting this object to ‘active’. When ‘active’ is set, the system will validate the profile.

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

::= { vdslLineConfProfileEntry 33 }

--

Multiple carrier modulation (MCM) configuration profile tables
--

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

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

VdslLineMCMConfProfileEntry OBJECT-TYPE
SYNTAX VdslLineMCMConfProfileEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
  "Each entry consists of a list of parameters that represents the configuration of a multiple carrier modulation VDSL modem.

  A default profile with an index of ‘DEFVAL’, will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."
INDEX { vdslLineConfProfileName }
::= { vdslLineMCMConfProfileTable 1 }

VdslLineMCMConfProfileEntry ::= SEQUENCE
{
  vdslMCMConfProfileTxWindowLength Unsigned32,
  vdslMCMConfProfileRowStatus RowStatus
}

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

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

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

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

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

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

vdslLineMCMConfProfileTxBandEntry OBJECT-TYPE
SYNTAX       VdslLineMCMConfProfileTxBandEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  "Each entry consists of a transmit band descriptor, which
              is defined by a start and a stop tone index.
A default profile with an index of 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document.

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

VdslLineMCMConfProfileTxBandEntry ::= SEQUENCE {
    vdslMCMConfProfileTxBandNumber           Unsigned32,
    vdslMCMConfProfileTxBandStart            Unsigned32,
    vdslMCMConfProfileTxBandStop             Unsigned32,
    vdslMCMConfProfileTxBandRowStatus        RowStatus
}

vdslMCMConfProfileTxBandNumber OBJECT-TYPE
SYNTAX       Unsigned32
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION   "The index for this band descriptor entry."
 ::= { vdslLineMCMConfProfileTxBandEntry 1 }

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

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

vdslMCMConfProfileTxBandRowStatus OBJECT-TYPE
SYNTAX       RowStatus
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION   "This object is used to create a new row or modify or delete an existing row in this table.
A profile activated by setting this object to 'active'. When 'active' is set, the system will validate the profile.

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

::= { vdslLineMCMConfProfileTxBandEntry 4 }

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

The entries in this table MUST NOT be used for single carrier (SCM) VDSL lines."
::= { vdslMibObjects 14 }

VdslLineMCMConfProfileRxBandEntry OBJECT-TYPE
SYNTAX VdslLineMCMConfProfileRxBandEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"Each entry consists of a transmit band descriptor, which is defined by a start and a stop tone index.

A default profile with an index of 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."
INDEX { vdslLineConfProfileName, vdslMCMConfProfileRxBandNumber }
::= { vdslLineMCMConfProfileRxBandTable 1 }

VdslLineMCMConfProfileRxBandEntry ::= SEQUENCE
{
   vdslMCMConfProfileRxBandNumber             Unsigned32,
   vdslMCMConfProfileRxBandStart              Unsigned32,
   vdslMCMConfProfileRxBandStop               Unsigned32,
   vdslMCMConfProfileRxBandRowStatus          RowStatus
}

vdslMCMConfProfileRxBandNumber OBJECT-TYPE
Expires June 30, 2003
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SYNTAX       Unsigned32
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  
"The index for this band descriptor entry."
::= { vDSLLineMCMConfProfileRxBandEntry 1 }

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

vDSLLineMCMConfProfileRxBandStop 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 }

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

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

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

vDSLLineMCMConfProfileTxPSDTable OBJECT-TYPE
SYNTAX       SEQUENCE OF VDSLLineMCMConfProfileTxPSDEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  
"This table contains transmit PSD mask descriptor configuration information for a VDSL line. Each entry in this table reflects the configuration for one tone within a multiple carrier modulation (MCM) VDSL line. These
entries are defined by a manager and can be used to configure the VDSL line.

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

::= { vdslMibObjects 15 }

vdslLineMCMConfProfileTxPSDEntry OBJECT-TYPE
SYNTAX VdslLineMCMConfProfileTxPSDEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Each entry consists of a transmit PSD mask descriptor, which defines the power spectral density (PSD) for a tone.

A default profile with an index of 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document."
INDEX { vdslLineConfProfileName, vdslMCMConfProfileTxPSDNumber }
::= { vdslLineMCMConfProfileTxPSDTable 1 }

VdslLineMCMConfProfileTxPSDEntry ::= SEQUENCE
{
    vdslMCMConfProfileTxPSDNumber            Unsigned32,
    vdslMCMConfProfileTxPSDTone              Unsigned32,
    vdslMCMConfProfileTxPSDPSD               Unsigned32,
    vdslMCMConfProfileTxPSDRowStatus         RowStatus
}

vdslMCMConfProfileTxPSDNumber OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The index for this mask descriptor entry."
::= { vdslLineMCMConfProfileTxPSDEntry 1 }

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

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 }

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

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

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

::= { vdslLineMCMConfProfileTxPSDEntry 4 }

vdslLineMCMConfProfileMaxTxPSDTable OBJECT-TYPE
SYNTAX SEQUENCE OF VdslLineMCMConfProfileMaxTxPSDEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "This table contains transmit maximum PSD mask descriptor configuration information for a VDSL line. Each entry in this table reflects the configuration for one tone within a multiple carrier modulation (MCM) VDSL modem. These entries are defined by a manager and can be used to configure the VDSL line.

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

::= { vdslMibObjects 16 }

vdslLineMCMConfProfileMaxTxPSDEntry OBJECT-TYPE
SYNTAX VdslLineMCMConfProfileMaxTxPSDEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "Each entry consists of a transmit PSD mask descriptor, which defines the maximum power spectral density (PSD) for a tone."
A default profile with an index of ‘DEFVAL’, will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document.

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

VdslLineMCMConfProfileMaxTxPSDEntry ::= SEQUENCE {
  vdslMCMConfProfileMaxTxPSDNumber Unsigned32,
  vdslMCMConfProfileMaxTxPSDTone Unsigned32,
  vdslMCMConfProfileMaxTxPSDPSD Unsigned32,
  vdslMCMConfProfileMaxTxPSDRowStatus RowStatus
}

vdslMCMConfProfileMaxTxPSDNumber OBJECT-TYPE
SYNTAX       Unsigned32
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION   "The index for this band descriptor entry."
 ::= { vdslLineMCMConfProfileMaxTxPSDEntry 1 }

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

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

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

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

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

::= { vdslLineMCMConfProfileMaxTxPSDEntry 4 }

vdslLineMCMConfProfileMaxRxPSDTable OBJECT-TYPE
SYNTAX SEQUENCE OF VdslLineMCMConfProfileMaxRxPSDEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"This table contains maximum receive PSD mask descriptor configuration information for a VDSL line. Each entry in this table reflects the configuration for one tone within a multiple carrier modulation (MCM) VDSL modem. These entries are defined by a manager and can be used to configure the VDSL line.

The entries in this table MUST NOT be used for single carrier (SCM) VDSL lines."
::= { vdslMibObjects 17 }

VdslLineMCMConfProfileMaxRxPSDEntry ::= SEQUENCE
{
  vdslMCMConfProfileMaxRxPSDNumber            Unsigned32,
  vdslMCMConfProfileMaxRxPSDTone              Unsigned32,
  vdslMCMConfProfileMaxRxPSDPSD               Unsigned32,
  vdslMCMConfProfileMaxRxPSDRowStatus         RowStatus
}
-- Single carrier modulation (SCM) configuration profile tables

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

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

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

A default profile with an index of 'DEFVAL', will always exist and its parameters will be set to vendor specific values, unless otherwise specified in this document.
STATUS  current
DESCRIPTION
"Identifies whether this entry describes downstream or upstream transmission."
::= { vdslLineSCMConfProfileEntry 1 }

vdslSCMConfProfileInterleaveDepth OBJECT-TYPE
SYNTAX       Unsigned32 (0..64)
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
" Specifies the interleaving depth."
REFERENCE    "T1E1.4/2000-011R3"    -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 2 }

vdslSCMConfProfileNumCarriers OBJECT-TYPE
SYNTAX       INTEGER
             {
              oneCarrier(1),
              twoCarriers(2)
             }
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"Specifies the number of carriers."
REFERENCE    "T1E1.4/2000-011R3"    -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 3 }

vdslSCMConfProfileFastCodewordSize OBJECT-TYPE
SYNTAX       Unsigned32 (0..180)
UNITS        "octets"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"Specifies the length in octets of the fast codeword.
A value of 0 indicates that the single latency transport class is to be utilized."
REFERENCE    "T1E1.4/2000-011R3"    -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 4 }

vdslSCMConfProfileTransmitPSDMask OBJECT-TYPE
SYNTAX       BITS
             {
              vendorNotch1(0),     -- vendor specific notch
              vendorNotch2(1),     -- vendor specific notch
              amateurBand30m(2),   -- amateur radio band notch
              amateurBand40m(3),   -- amateur radio band notch
              amateurBand80m(4),   -- amateur radio band notch
              amateurBand160m(5)   -- amateur radio band notch
             }
MAX-ACCESS   read-create

Expires June 30, 2003
The transmit power spectral density mask code.

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

<table>
<thead>
<tr>
<th>Band</th>
<th>Start Frequency</th>
<th>Stop Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>30m</td>
<td>1810 kHz</td>
<td>2000 kHz</td>
</tr>
<tr>
<td>40m</td>
<td>3500 kHz</td>
<td>4000 kHz (ETSI); 3800 kHz (ANSI)</td>
</tr>
<tr>
<td>80m</td>
<td>7000 kHz</td>
<td>7300 kHz (ANSI); 7100 kHz (ETSI)</td>
</tr>
<tr>
<td>160m</td>
<td>10100 kHz</td>
<td>10150 kHz</td>
</tr>
</tbody>
</table>

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

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

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

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

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

vds1SCMConfProfileVendorNotch1Start OBJECT-TYPE
SYNTAX    Unsigned32
UNITS     "kHz"
MAX-ACCESS read-create
STATUS    current
DESCRIPTION   "Specifies the start frequency of the vendor-specific amateur radio notch 1."
REFERENCE  "T1E1.4/2000-011R3"  -- Part 2, SCM
::= { vds1LineSCMConfProfileEntry 6 }

vds1SCMConfProfileVendorNotch1Stop OBJECT-TYPE
SYNTAX    Unsigned32
UNITS     "kHz"
MAX-ACCESS read-create
STATUS    current
DESCRIPTION   "Specifies the stop frequency of the vendor-specific
amateur radio notch 1."
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 7 }

vdslSCMConfProfileVendorNotch2Start OBJECT-TYPE
SYNTAX          Unsigned32
UNITS           "kHz"
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION     "Specifies the start frequency of the vendor-specific amateur radio notch 2."
REFERENCE       "T1E1.4/2000-011R3" -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 8 }

vdslSCMConfProfileVendorNotch2Stop OBJECT-TYPE
SYNTAX          Unsigned32
UNITS           "kHz"
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION     "Specifies the stop frequency of the vendor-specific amateur radio notch 2."
REFERENCE       "T1E1.4/2000-011R3" -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 9 }

vdslSCMConfProfileFastFecSize OBJECT-TYPE
SYNTAX          INTEGER
{  
  noFEC(1),  
  fecSize2(2),  
  fecSize4(3),  
  fecSize16(4)  
}
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION     "When fast channel is being used, this object specifies the size of the forward error correction (FEC) codeword."
REFERENCE       "T1E1.4/2000-011R3" -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 10 }

vdslSCMConfProfileSlowBlockSize OBJECT-TYPE
SYNTAX          INTEGER
{  
  s8(1),  
  s4(2),  
  s2(3)  
}
MAX-ACCESS      read-create
STATUS          current
DESCRIPTION
"Specifies the slow channel interleaved block size.
Options are s/8, s/4, or s/2."
REFERENCE "T1E1.4/2000-011R3" -- Part 2, SCM
::= { vdslLineSCMConfProfileEntry 11 }

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

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

Before a profile can be deleted or taken out of
service, (by setting this object to 'destroy' or
'outOfService') it must be first unreferenced
from all associated lines."
::= { vdslLineSCMConfProfileEntry 12 }

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

The entries in this table MUST NOT be used for
multiple carrier (MCM) VDSL lines."
::= { vdslMibObjects 19 }

vdslLineSCMConfProfileTxBandEntry OBJECT-TYPE
SYNTAX VdslLineSCMConfProfileTxBandEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"Each entry consists of a list of parameters that
represents the configuration of a single carrier
modulation VDSL modem transmit band.

A default profile with an index of 'DEFVAL', will
always exist and its parameters will be set to vendor
specific values, unless otherwise specified in this
INDEX { vdslLineConfProfileName, 
vdslSCMConfProfileTxBandSide, 
vdslSCMConfProfileTxBandNumber } 
::= { vdslLineSCMConfProfileTxBandTable 1 } 

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

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

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

vdslSCMConfProfileTxBandTransmitPSDLevel OBJECT-TYPE 
SYNTAX     Unsigned32 
UNITS      "-dBm/Hz" 
MAX-ACCESS read-create 
STATUS     current 
DESCRIPTION 
"The transmit power spectral density for the VDSL modem." 
REFERENCE  "T1E1.4/2000-011R3"    -- Part 2, SCM 
::= { vdslLineSCMConfProfileTxBandEntry 3 }
SYNTAX       Unsigned32
UNITs        "kbaud"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"The symbol rate profile calculated as S = SR/BSR, where
SR is the required symbol rate in kbaud, BSR = 67.5."
REFERENCE    "T1E1.4/2000-011R3"    -- Part 2, SCM
::= { vdslLineSCMConfProfileTxBandEntry 4 }

vdslSCMConfProfileTxBandConstellationSize OBJECT-TYPE
SYNTAX       Unsigned32 (0..8)
UNITs        "log2"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"Specifies the constellation size."
REFERENCE    "T1E1.4/2000-011R3"    -- Part 2, SCM
::= { vdslLineSCMConfProfileTxBandEntry 5 }

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

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

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

Before a profile can be deleted or taken out of
service, (by setting this object to 'destroy' or
'outOfService') it must be first unreferenced
from all associated lines."
::= { vdslLineSCMConfProfileTxBandEntry 7 }

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

vdslLineAlarmConfProfileEntry OBJECT-TYPE
SYNTAX       VdslLineAlarmConfProfileEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
 "Each entry consists of a list of parameters that
represents the configuration of a VDSL line alarm
profile.

A default profile with an index of 'DEFVAL', will
always exist and its parameters will be set to vendor
specific values, unless otherwise specified in this
document."
INDEX { vdslLineAlarmConfProfileName }
::= { vdslLineAlarmConfProfileTable 1 }

VdslLineAlarmConfProfileEntry ::= SEQUENCE
{
  vdslLineAlarmConfProfileName       SnmpAdminString,
  vdslThresh15MinLofs                HCPerfIntervalThreshold,
  vdslThresh15MinLoss                HCPerfIntervalThreshold,
  vdslThresh15MinLprs                HCPerfIntervalThreshold,
  vdslThresh15MinESs                 HCPerfIntervalThreshold,
  vdslThresh15MinSESs                HCPerfIntervalThreshold,
  vdslThresh15MinUASs                HCPerfIntervalThreshold,
  vdslInitFailureNotificationEnable  TruthValue,
  vdslLineAlarmConfProfileRowStatus  RowStatus
}

vdslLineAlarmConfProfileName OBJECT-TYPE
SYNTAX       SnmpAdminString (SIZE (1..32))
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
 "The name for this profile as specified by a user."
::= { vdslLineAlarmConfProfileEntry 1 }

vdslThresh15MinLofs OBJECT-TYPE
SYNTAX       HCPerfIntervalThreshold
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"This object configures the threshold for the number of loss of frame seconds (lofs) within any given 15-minute performance data collection interval. If the value of loss of frame seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfLofsThreshNotification notification will be generated. No more than one notification will be sent per interval."
::= { vdslLineAlarmConfProfileEntry 2 }

vdslThresh15MinLoss OBJECT-TYPE
SYNTAX       HCPerfIntervalThreshold
UNITS        "seconds"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"This object configures the threshold for the number of loss of signal seconds (loss) within any given 15-minute performance data collection interval. If the value of loss of signal seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfLossThreshNotification notification will be generated. One notification will be sent per interval per endpoint."
::= { vdslLineAlarmConfProfileEntry 3 }

vdslThresh15MinLprs OBJECT-TYPE
SYNTAX       HCPerfIntervalThreshold
UNITS        "seconds"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"This object configures the threshold for the number of loss of power seconds (lprs) within any given 15-minute performance data collection interval. If the value of loss of power seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfLprsThreshNotification notification will be generated. No more than one notification will be sent per interval."
::= { vdslLineAlarmConfProfileEntry 4 }

vdslThresh15MinESs OBJECT-TYPE
SYNTAX       HCPerfIntervalThreshold
UNITS        "seconds"
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION
"This object configures the threshold for the number of errored seconds (ESs) within any given 15-minute performance data collection interval. If the value of errored seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfESsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 5 }

vdslThresh15MinSESs 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 (SESs) within any given 15-minute performance data collection interval. If the value of severely errored seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfSESsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 6 }

vdslThresh15MinUASs OBJECT-TYPE
SYNTAX    HCPerfIntervalThreshold
UNITS      "seconds"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"This object configures the threshold for the number of unavailable seconds (UASs) within any given 15-minute performance data collection interval. If the value of unavailable seconds in a particular 15-minute collection interval reaches/exceeds this value, a vdslPerfUASsThreshNotification notification will be generated. No more than one notification will be sent per interval."

::= { vdslLineAlarmConfProfileEntry 7 }

vdslInitFailureNotificationEnable OBJECT-TYPE
SYNTAX    TruthValue
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"This object specifies if a vdslInitFailureNotification notification will be generated if an initialization failure occurs."
 ::= { vdslLineAlarmConfProfileEntry 8 }

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

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

Before a profile can be deleted or taken out of service, (by setting this object to ‘destroy’ or ‘outOfService’) it must be first unreferenced from all associated lines."
::= { vdslLineAlarmConfProfileEntry 9 }

-- Notification definitions

vdslNotifications OBJECT IDENTIFIER ::= { vdslLineMib 0 }

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

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

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

Expires June 30, 2003
vdslPerfESsThreshNotification NOTIFICATION-TYPE
OBJECTS
  { vdslPerfCurr15MinESs,
    vdslThresh15MinESs
  }
STATUS current
DESCRIPTION
  "Errored Seconds 15-minute interval threshold reached."
::= { vdslNotifications 4 }

vdslPerfSESsThreshNotification NOTIFICATION-TYPE
OBJECTS
  { vdslPerfCurr15MinSESs,
    vdslThresh15MinSESs
  }
STATUS current
DESCRIPTION
  "Severely Errored Seconds 15-minute interval threshold reached."
::= { vdslNotifications 5 }

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

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

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

vdslUpMaxSnrMgnExceededNotification NOTIFICATION-TYPE
OBJECTS       {
               vdslCurrSnrMgn,
               vdslLineConfUpstreamMaxSnrMgn
        }
STATUS        current
DESCRIPTION
"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 }
DESCRIPTION
"The compliance statement for SNMP entities which manage VDSL interfaces."

MODULE -- this module
MANDATORY-GROUPS
{ vdslGroup }

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

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

::= { vdslCompliances 1 }

-- units of conformance

vdslGroup OBJECT-GROUP
OBJECTS
{ vdslLineCoding,
vdslLineType,
vdslLineConfProfile,
vdslLineAlarmConfProfile,
vdslInvSerialNumber,
vdslInvVendorID,
vdslInvVersionNumber,
vdslCurrSnrMgn,
vdslCurrAtn,
vdslCurrStatus,
vdslCurrOutputPwr,
vdslCurrAttainableRate,
vdslChanInterleaveDelay,
vdslChanCrcBlockLength,
vdslChanCurrTxRate,
vdslPerfValidIntervals,
vdslPerfInvalidIntervals,
vdslPerfLofs,
vdslPerfLoss,
vdslPerfLprs,
vdslPerfESs,
vdslPerfSESSs,
vdslPerfUASSs,
vdslPerfInits,
vdslPerfCurr15MinTimeElapsed,
INTERNET-DRAFT VDSL-LINE MIB December 2002

vdslPerfCurr15MinLofs,
vdslPerfCurr15MinLoss,
vdslPerfCurr15MinLprs,
vdslPerfCurr15MinESs,
vdslPerfCurr15MinSESs,
vdslPerfCurr15MinUASs,
vdslPerfCurr15MinInits,
vdslPerf1DayValidIntervals,
vdslPerf1DayInvalidIntervals,
vdslPerfCurr1DayTimeElapsed,
vdslPerfCurr1DayLofs,
vdslPerfCurr1DayLoss,
vdslPerfCurr1DayLprs,
vdslPerfCurr1DayESs,
vdslPerfCurr1DaySESs,
vdslPerfCurr1DayUASs,
vdslPerfCurr1DayInits,
vdslIntervalLofs,
vds1IntervalLoss,
vds1IntervalLprs,
vds1IntervalESs,
vds1IntervalSESs,
vds1IntervalUASs,
vds1IntervalInits,
vds1DayIntervalMoniSecs,
vds1DayIntervalLofs,
vds1DayIntervalLoss,
vds1DayIntervalLprs,
vds1DayIntervalESs,
vds1DayIntervalSESs,
vds1DayIntervalUASs,
vds1DayIntervalInits,
vds1ChanPerfValidIntervals,
vds1ChanPerfInvalidIntervals,
vds1ChanCorrectedOctets,
vds1ChanUncorrectBlks,
vds1ChanPerfCurr15MinTimeElapsed,
vds1ChanPerfCurr15MinCorrectedOctets,
vds1ChanPerfCurr15MinUncorrectBlks,
vds1ChanPerf1DayValidIntervals,
vds1ChanPerf1DayValidIntervals,
vds1ChanPerf1DayTimeElapsed,
vds1ChanPerfCurr1DayCorrectedOctets,
vds1ChanPerfCurr1DayUncorrectBlks,
vds1ChanIntervalCorrectedOctets,
vds1ChanIntervalUncorrectBlks,
vds1Chan1DayIntervalMoniSecs,
vds1Chan1DayIntervalCorrectedOctets,
vds1Chan1DayIntervalUncorrectBlks,
vds1LineConfDownstreamMaxPwr,
vds1LineConfUpstreamMaxPwr,
INTERNET-DRAFT                 VDSL-LINE MIB               December 2002

vdslLineConfDownstreamMaxSnrMgn,
vdslLineConfDownstreamMinSnrMgn,
vdslLineConfDownstreamTargetSnrMgn,
vdslLineConfUpstreamMaxSnrMgn,
vdslLineConfUpstreamMinSnrMgn,
vdslLineConfUpstreamTargetSnrMgn,
vdslLineConfDownstreamFastMaxDataRate,
vdslLineConfDownstreamFastMinDataRate,
vdslLineConfDownstreamSlowMaxDataRate,
vdslLineConfDownstreamSlowMinDataRate,
vdslLineConfUpstreamFastMaxDataRate,
vdslLineConfUpstreamFastMinDataRate,
vdslLineConfUpstreamSlowMaxDataRate,
vdslLineConfUpstreamSlowMinDataRate,
vdslLineConfRateAdaptationRatio,
vdslLineConfUpstreamDataRate,
vdslLineConfDownstreamDataRate,
vdslLineConfDownstreamMaxInterDelay,
vdslLineConfUpstreamMaxInterDelay,
vdslLineConfUpstreamPboControl,
vdslLineConfDownstreamPboControl,
vdslLineConfDeploymentScenario,
vdslLineConfAdsl1 Occupy,
vdslLineConfApplicableStandard,
vdslLineConfBandPlan,
vdslLineConfBandPlanFx,
vdslLineConfBandU0Usage,
vdslLineConfUpstreamPsdTemplate,
vdslLineConfDownstreamPsdTemplate,
vdslLineConfProfileRowStatus,
vdslThresh15MinLofs,
vdslThresh15MinLoss,
vdslThresh15MinLprs,
vdslThresh15MinESs,
vdslThresh15MinSESs,
vdslThresh15MinUASs,
vdslInitFailureNotificationEnable,
vdslLineAlarmConfProfileRowStatus
}

STATUS     current
DESCRIPTION
"A collection of objects providing information about a VDSL Line."
::= { vdslGroups 1 }

vdslMCMGroup OBJECT-GROUP
OBJECTS
{
vdslMCMConfProfileTxWindowLength,
vdslMCMConfProfileRowStatus,
vdslMCMConfProfileTxBandStart,
INTERNET-DRAFT                 VDSL-LINE MIB               December 2002

vds1MCMConfProfileTxBandStop,
vds1MCMConfProfileTxBandRowStatus,
vds1MCMConfProfileRxBandStart,
vds1MCMConfProfileRxBandStop,
vds1MCMConfProfileRxBandRowStatus,
vds1MCMConfProfileTxPSDTone,
vds1MCMConfProfileTxPSDPSD,
vds1MCMConfProfileTxPSDRowStatus,
vds1MCMConfProfileMaxTxPSDTone,
vds1MCMConfProfileMaxTxPSDPSD,
vds1MCMConfProfileMaxTxPSDRowStatus,
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,
  vds1SCMConfProfileInterleaveDepth,
  vds1SCMConfProfileNumCarriers,
  vds1SCMConfProfileFastCodewordSize,
  vds1SCMConfProfileTransmitPSDMask,
  vds1SCMConfProfileVendorNotch1Start,
  vds1SCMConfProfileVendorNotch1Stop,
  vds1SCMConfProfileVendorNotch2Start,
  vds1SCMConfProfileVendorNotch2Stop,
  vds1SCMConfProfileFastFecSize,
  vds1SCMConfProfileSlowBlockSize,
  vds1SCMConfProfileRowStatus,
  vds1SCMConfProfileTxBandTransmitPSDLevel,
  vds1SCMConfProfileTxBandSymbolRateProfile,
  vds1SCMConfProfileTxBandConstellationSize,
  vds1SCMConfProfileTxBandCenterFrequency,
  vds1SCMConfProfileTxBandRowStatus
}

STATUS     current
DESCRIPTION
"A collection of objects providing configuration information for a VDSL line based upon single carrier modulation modem."
::= { vds1Groups 3 }

Expires June 30, 2003
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vdslNotificationGroup    NOTIFICATION-GROUP
NOTIFICATIONS
{
  vdslPerfLofsThreshNotification,
  vdslPerfLossThreshNotification,
  vdslPerfLprsThreshNotification,
  vdslPerfESsThreshNotification,
  vdslPerfSSESsThreshNotification,
  vdslPerfUASSsThreshNotification,
  vdslDownMaxSnrMgnExceededNotification,
  vdslDownMinSnrMgnExceededNotification,
  vdslUpMaxSnrMgnExceededNotification,
  vdslUpMinSnrMgnExceededNotification,
  vdslInitFailureNotification
}

STATUS      current
DESCRIPTION
  "This group supports notifications of significant
  conditions associated with VDSL Lines."
::= { vdslGroups 4 }

END

Normative References

[ETSI2701]  ETSI TS 101 270-1 V1.2.1 "Transmission and Multiplexing
  (TM); Access transmission systems on metallic access
cables; Very high speed Digital Subscriber Line (VDSL);

[ETSI2702]  ETSI TS 101 270-2 V1.1.1 "Transmission and Multiplexing
  (TM); Access transmission systems on metallic access
cables; Very high speed Digital Subscriber Line (VDSL);

[ITU9931]  ITU-T G.993.1 "Very-high-speed digital subscriber line

[ITU9971]  ITU-T G.997.1 "Physical layer management for Digital

[RFC1901]  Case, J., McCloghrie, K., Rose, M. and S. Waldbusser,
  "Introduction to Community-based SNMPv2", RFC 1901,
  January 1996.

[RFC1905]  Case, J., McCloghrie, K., Rose, M. and S. Waldbusser,
  "Protocol Operations for Version 2 of the Simple Network

[RFC1906]  Case, J., McCloghrie, K., Rose, M. and S. Waldbusser,
  "Transport Mappings for Version 2 of the Simple Network

Expires June 30, 2003


Informative References


Security Considerations

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

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

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

- vdslThresh15MinLofs
- vdslThresh15MinLoss
- vdslThresh15MinLprs
- vdslThresh15MinESs
vds1Thresh15MinSESs
vds1Thresh15MinUASs

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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