Definitions of Managed Objects for Asymmetric Digital Subscriber Line 2 (ADSL2)
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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 parameters of the "Asymmetric Digital Subscriber Line" family of interface types,
especially including ADSL, ADSL2, and ADSL2+.

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1. The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to Section 7 of RFC 3410 [RFC3410].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580 [RFC2580].

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 defines a Management Information Base (MIB) module for use with network management protocols in the Internet community for the purpose of managing ADSL, ADSL2, and ADSL2+ lines.

The MIB module described in RFC 2662 [RFC2662] describes objects used for managing Asymmetric Bit-Rate DSL (ADSL) interfaces per [T1E1.413], [G.992.1], and [G.992.2]. These object descriptions are based upon the specifications for the ADSL Embedded Operations Channel (EOC) as defined in American National Standards Institute (ANSI) T1E1.413/1995 [T1E1.413] and International Telecommunication Union (ITU-T) G.992.1 [G.992.1] and G.992.2 [G.992.2].

This document does not obsolete RFC 2662 [RFC2662], but rather provides a more comprehensive management model that includes the ADSL2 and ADSL2+ technologies per G.992.3, G.992.4, and G.992.5 ([G.992.3], [G.992.4], and [G.992.5] respectively). In addition, objects have been added to improve the management of ADSL, ADSL2, and ADSL2+ lines.

Additionally, the management framework for New Generation ADSL lines specified [TR-90] by the Digital Subscriber Line Forum (DSLF) has been taken into consideration. That framework is based on ITU-T G.997.1 standard [G.997.1] as well as on two amendments: ([G.997.1 am1] and [G.997.1 am2]). This document refers to all three documents as G.997.1. That is, a MIB attribute whose REFERENCE section provides a paragraph number in ITU-T G.997.1 is actually originated
from either G.997.1 [G.997.1] or one of its amendment documents.

Note that future revision of ITU-T G.997.1 standard will refer also to next generation of VDSL technology, known as VDSL2, per ITU-T G.993.2 [G.993.2]. However, managing VDSL2 lines is currently beyond the scope of the MIB this document specifies.

The MIB module 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 to other MIBs

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

2.1.1. General IF-MIB Integration (RFC 2863)

The ADSL2 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 ifTypes, which may be applicable for ADSL lines:

IANAifType ::= TEXTUAL-CONVENTION
...
SYNTAX INTEGER {
...
channel(70),   -- channel
ADSL (94),     -- Asymmetric Digital Subscriber Loop
...
Interleave(124), -- Interleaved Channel
Fast(125),     -- Fast Channel
...
ADSL2 (230),   -- Asymmetric Digital Subscriber Loop 2
...
}

ADSL lines that are identified with ifType=ADSL (94) MUST be managed with the MIB specified by RFC2662. ADSL, ADSL2, and ADSL2+ lines identified with ifType=ADSL2 (230) MUST be managed with the MIB specified by this document.

In any case, the SNMP agent may use either ifType=Interleave (124) or Fast (125) for each channel, e.g., depending on whether or not it is capable of using an interleaver on that channel. It may use the ifType=channel (70) when all channels are capable of using an interleaver (e.g., for ADSL2 xtus).
Note that the ifFixedLengthGroup from RFC 2863 [RFC2863] MUST be supported and that the ifRcvAddressGroup does not apply to this MIB module.

2.1.2.  Usage of ifTable

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

The following attributes are part of the mandatory ifGeneralInformationGroup in the Interfaces MIB [RFC2863], and are not duplicated in the ADSL2 Line MIB.

--=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

ifIndex               Interface index.
ifDescr               See interfaces MIB.
ifType                ADSL2 (230) or Channel (70) or Interleave (124) or Fast (125)
ifSpeed               Set as appropriate.
ifPhysAddress         This object MUST have an octet string with zero length.
ifAdminStatus         See interfaces MIB.
ifOperStatus          See interfaces MIB.
ifLastChange          See interfaces MIB.
ifName                See interfaces MIB.
ifAlias               See interfaces MIB.
ifLinkUpDownTrapEnable Default to enabled(1).
ifHighSpeed           Set as appropriate.
ifConnectorPresent    Set as appropriate.
2.2. IANA Considerations

The ADSL2-LINE-MIB module requires the allocation of a new ifType value for Asymmetric Digital Subscriber Loop Version 2, to distinguish between ADSL lines that are managed with the RFC 2662 management model and ADSL/ADSL2 and ADSL2+ lines managed with the model defined in this document.

Also the ADSL2-LINE-MIB module requires the allocation of a single object identifier for its MODULE-IDENTITY. The IANA should allocate this object identifier in the transmission subtree.

An assignment was in fact done when RFC 2662 was published, but as this MIB does not obsolete RFC 2662, it requires new assignment from IANA.

2.3. Conventions Used in the MIB Module

2.3.1. Naming Conventions

AtuC  A central site terminal unit
AtuR  A remote site terminal unit
xtu   A terminal unit; either an AtuC or AtuR
CRC   Cyclical redundancy check
DELT  Dual Ended Loop Test
ES    Errored second
FEC   Forward Error Correction
LOF   Loss of framing
LOS   Loss of signal
LOSS  LOS Second
SES   Severely-errored second
SNR   Signal-to-noise ratio
UAS   Unavailable second

2.3.2. Textual Conventions

The following textual conventions are defined to reflect the line topology in the MIB module (further discussed in the following section), the various transmission modes, power states, synchronization states, possible values for various configuration parameters, status parameters, and other parameter types.
o Adsl2Unit:

Attributes with this syntax uniquely identify each unit in the ADSL/ADSL2/ADSL2+ link. It mirrors the EOC addressing mechanism:

- atuc(1) - central office (CO) terminal unit
- atur(2) - customer premises equipment (CPE) terminal unit

o Adsl2Direction:

Attributes with this syntax uniquely identify a transmission direction in an ADSL/ADSL2/ADSL2+ link. Upstream direction is a transmission from the customer premises equipment (CPE) towards the central office (CO), while downstream direction is a transmission from the CO towards the CPE.

- upstream(1) - Transmission from the CPE to the CO
- downstream(2) - Transmission from the CO to the CPE

o Adsl2TransmissionModeType:

Attributes with this syntax reference the list of possible transmission modes for ADSL/ADSL2 or ADSL2+.

Specified as a BITS construct, there are currently a few dozen transmission modes in the list.

o Adsl2RaMode:

Attributes with this syntax reference if and how Rate-Adaptive synchronization is being used on the respective ADSL/ADSL2 or ADSL2+ link:

- manual (1) - No Rate-Adaptation. The initialization process attempts to synchronize to a specified rate.
- raInit (2) - Rate-Adaptation during initialization process only, which attempts to synchronize to a rate between minimum and maximum specified values.
- dynamicRa (3) - Dynamic Rate-Adaptation during initialization process as well as during SHOWTIME.

o Adsl2InitResult:

Attributes with this syntax reference the recent result of a full initialization attempt:
noFail (0) - Successful initialization
configError (1) - Configuration failure
configNotFeasible (2) - Configuration details not supported
commFail (3) - Communication failure
noPeerAtu (4) - Peer ATU not detected
otherCause (5) - Other initialization failure reason

- Adsl2OperationModes:

Attributes with this syntax uniquely identify an ADSL mode, which is a category associated with each transmission mode defined for the ADSL/ADSL2 or ADSL2+ link. Part of the line configuration profile depends on the ADSL Mode:

- defMode (1), - The default/generic PSD configuration. The default configuration will be used when no other matching mode specific configuration can be found.
- adsl (2), - ADSL (POTS or ISDN)
- adsl2Pots (3), - ADSL2 (ISDN)
- adsl2Isdn (4), - ADSL2 (ISDN)
- adsl2PlusPots (5), - ADSL2+ (POTS)
- adsl2PlusIsdn (6), - ADSL2+ (ISDN)
- adsl2ReachExtended (7) - Reach Extended ADSL2

- Adsl2PowerMngState:

Attributes with this syntax uniquely identify each power management state defined for the ADSL/ADSL2 or ADSL2+ link:

- 10(1) - L0 - Full power management state
- 11(2) - L1 - Low power management state (for G.992.2)
- 12(3) - L2 - Low power management state (for G.992.3, G.992.4, and G.992.5)
- 13(4) - L3 - Idle power management state

- Adsl2ConfPmsForce:

Attributes with this syntax are configuration parameters that reference the desired power management state for the ADSL/ADSL2 or ADSL2+ link:

- 13toL0 (0) - Perform a transition from L3 to L0 (Full power management state)
- 10toL2 (2) - Perform a transition from L0 to L2 (Low power management state)
- 10orL2toL3 (3) - Perform a transition into L3 (Idle power management state)
- Adsl2LConfProfPmMode:

  Attributes with this syntax are configuration parameters that reference the power modes/states into which the ATU-C or ATU-R may autonomously transit.

  This is a BITS structure that allows control of the following transit options:

  - allowTransitionsToIdle (0) - xTU may autonomously transit to idle (L3) state.
  - allowTransitionsToLowPower (1) - xTU may autonomously transit to low-power (L2) state.

- Adsl2LineLdsf:

  Attributes with this syntax are configuration parameters that control the Loop Diagnostic mode for the ADSL/ADSL2 or ADSL2+ link:

  - inhibit (0) - Inhibit Loop Diagnostic mode
  - force (1) - Force/Initiate Loop Diagnostic mode

- Adsl2LdsfResult:

  Attributes with this syntax are status parameters that report the result of the recent Loop Diagnostic mode issued for the ADSL/ADSL2 or ADSL2+ link:
none (1) - The default value, in case LDSF was never requested for the associated line.
success (2) - The recent command completed successfully.
inProgress (3) - The Loop Diagnostics process is in progress.
unsupported (4) - The NE or the line card doesn’t support LDSF.
cannotRun (5) - The NE cannot initiate the command, due to a non specific reason.
aborted (6) - The Loop Diagnostics process aborted.
failed (7) - The Loop Diagnostics process failed.
illegalMode (8) - The NE cannot initiate the command, due to the specific mode of the relevant line.
adminUp (9) - The NE cannot initiate the command because the relevant line is administratively 'Up'.
tableFull (10) - The NE cannot initiate the command, due to reaching the maximum number of rows in the results table.
noResources (11) - The NE cannot initiate the command, due to lack of internal memory resources.

o Adsl2SymbolProtection:

Attributes with this syntax are configuration parameters that reference the minimum length impulse noise protection (INF) in terms of number of symbols:

noProtection (1) - INF not required
halfSymbol (2) - INF length = 1/2 symbol
singleSymbol (3) - INF length = 1 symbol
twoSymbols (4) - INF length = 2 symbols
threeSymbols (5) - INF length = 3 symbols
fourSymbols (6) - INF length = 4 symbols
fiveSymbols (7) - INF length = 5 symbols
sixSymbols (8) - INF length = 6 symbols
sevenSymbols (9) - INF length = 7 symbols
eightSymbols (10) - INF length = 8 symbols
nineSymbols (11) - INF length = 9 symbols
tenSymbols (12) - INF length = 10 symbols
elevenSymbols (13) - INF length = 11 symbols
twelveSymbols (14) - INF length = 12 symbols
thirteenSymbols (15) - INF length = 13 symbols
fourteenSymbols (16) - INF length = 14 symbols
fifteenSymbols (17) - INF length = 15 symbols
sixteenSymbols (18) - INF length = 16 symbols
o Adsl2MaxBer:

Attributes with this syntax are configuration parameters that reference the maximum Bit Error Rate (BER):

eminus3 (1)  - Maximum BER=E^-3
eminus5 (2)  - Maximum BER=E^-5
eminus7 (3)  - Maximum BER=E^-7

o Adsl2ScMaskDs:

Attributes with this syntax are configuration parameters that reference the downstream sub-carrier mask. It is a bitmap of up to 512 bits.

o Adsl2ScMaskUs:

Attributes with this syntax are configuration parameters that reference the upstream sub-carrier mask. It is a bitmap of up to 64 bits.

o Adsl2RfiDs:

Attributes with this syntax are configuration parameters that reference the downstream notch filters. It is a bitmap of up to 512 bits.

o Adsl2PsdMaskDs:

Attributes with this syntax are configuration parameters that reference the downstream power spectrum density (PSD) mask. It is a structure of up to 32 breakpoints, where each breakpoint occupies 3 octets.

o Adsl2PsdMaskUs:

Attributes with this syntax are configuration parameters that reference the upstream power spectrum density (PSD) mask. It is a structure of up to 4 breakpoints, where each breakpoint occupies 3 octets.

o Adsl2Tssi:

Attributes with this syntax are status parameters that reference the transmit spectrum shaping (TSSi). It is a structure of up to 32 breakpoints, where each breakpoint occupies 3 octets.
o Adsl2LastTransmittedState:

Attributes with this syntax reference the list of initialization states for ADSL/ADSL2 or ADSL2+ modems. The list of states for CO side modems is different from the list of states for the CPE side modems.

Specified as an enumeration type, there are currently a few dozen states in the list per each unit side (i.e., CO and CPE).

o Adsl2LineStatus:

Attributes with this syntax are status parameters that reflect the failure status for a given endpoint of ADSL/ADSL2 or ADSL2+ link.

This is a BITS structure that can report the following failures:

- noDefect (0) - This bit position positively reports that no defect or failure exist.
- lossOfFraming (1) - Loss of frame synchronization
- lossOfSignal (2) - Loss of signal
- lossOfPower (3) - Loss of power. Usually this failure may be reported for CPE units only
- initFailure (4) - Recent initialization process failed. Never active on ATU-R.

o Adsl2ChAtmStatus:

Attributes with this syntax are status parameters that reflect the failure status for Transmission Convergence (TC) layer of a given ATM interface (data path over an ADSL/ADSL2 or ADSL2+ link).

This is a BITS structure that can report the following failures:

- noDefect (0) - This bit position positively reports that no defect or failure exist.
- noCellDelineation (1) - The link was successfully initialized but cell delineation was never acquired on the associated ATM data path.
- lossOfCellDelineation (2) - Loss of cell delineation on the associated ATM data path.
 Attributes with this syntax are status parameters that reflect the failure status for a given PTM interface (packet data path over an ADSL/ADSL2 or ADSL2+ link).

This is a BITS structure that can report the following failures:

- noDefect (0) - This bit position positively reports that no defect or failure exist.
- outOfSync (1) - Out of synchronization.

### 2.4. Structure

The MIB module is structured into following MIB groups:

- **Line Configuration, Maintenance, and Status Group:**
  - This group supports MIB objects for configuring parameters for the ADSL/ADSL2 or ADSL2+ line and retrieving line status information. It also supports MIB objects for configuring a requested power state or initiating a Dual Ended Line Test (DELT) process in the ADSL/ADSL2 or ADSL2+ line. It contains the following table:
    - adsl2LineTable

- **Channel Status Group:**
  - This group supports MIB objects for retrieving channel layer status information. It contains the following table:
    - adsl2ChannelStatusTable

- **Subcarrier Status Group:**
  - This group supports MIB objects for retrieving the sub-carrier layer status information, mostly collected by a Dual Ended Line Test (DELT) process. It contains the following table:
    - adsl2SCStatusTable

- **Unit Inventory Group:**
  - This group supports MIB objects for retrieving Unit inventory information about units in ADSL/ADSL2 or ADSL2+ lines via the EOC. It contains the following table:
    - adsl2LineInventoryTable
o Current Performance Group:

This group supports MIB objects that provide the current performance information relating to ADSL/ADSL2 and ADSL2+ line, units and channels level. It contains the following tables:

- `adsl2PMLineCurrTable`
- `adsl2PMLineCurrInitTable`
- `adsl2PMChCurrTable`

o 15-Minute Interval Performance Group:

This group supports MIB objects that provide historic performance information relating to ADSL/ADSL2 and ADSL2+ line, units and channels level in 15-minute intervals. It contains the following tables:

- `adsl2PMLineHist15MinTable`
- `adsl2PMLineInitHist15MinTable`
- `adsl2PMChHist15MinTable`

o 1-Day Interval Performance Group:

This group supports MIB objects that provide historic performance information relating to ADSL/ADSL2 and ADSL2+ line, units and channels level in 1-day intervals. It contains the following tables:

- `adsl2PMLineHist1DayTable`
- `adsl2PMLineInitHist1DayTable`
- `adsl2PMChHist1DTable`

o Configuration Template and Profile Group:

This group supports MIB objects for defining configuration profiles for ADSL/ADSL2 and ADSL2+ lines and channels, as well as configuration templates. Each configuration template is comprised of one line configuration profile and one or more channel configuration profiles. This group contains the following tables:

- `adsl2LineConfTemplateTable`
- `adsl2LineConfProfTable`
- `adsl2LineConfProfModeSpecTable`
- `adsl2ChConfProfileTable`

o Alarm Configuration Template and Profile Group:

This group supports MIB objects for defining alarm profiles for
ADSL/ADSL2 and ADSL2+ lines and channels, as well as alarm templates. Each alarm template is comprised of one line alarm profile and one or more channel alarm profiles. This group contains the following tables:

- adsl2LineAlarmConfTemplateTable
- adsl2LineAlarmConfProfileTable
- adsl2ChAlarmConfProfileTable

**Notifications Group:**

This group defines the notifications supported for ADSL/ADSL2 and ADSL2+ lines:

- adsl2LinePerfFECSThreshAtuc
- adsl2LinePerfFECSThreshAtur
- adsl2LinePerfESThreshAtuc
- adsl2LinePerfESThreshAtur
- adsl2LinePerfSESThreshAtuc
- adsl2LinePerfSESThreshAtur
- adsl2LinePerfLOSSThreshAtuc
- adsl2LinePerfLOSSThreshAtur
- adsl2LinePerfUASThreshAtuc
- adsl2LinePerfUASThreshAtur
- adsl2LinePerfCodingViolationsThreshAtuc
- adsl2LinePerfCodingViolationsThreshAtur
- adsl2LinePerfCorrectedThreshAtuc
- adsl2LinePerfCorrectedThreshAtur
- adsl2LinePerfFailedFullInitThresh
- adsl2LinePerfFailedShortInitThresh
- adsl2LineStatusChangeAtuc
- adsl2LineStatusChangeAtur

### 2.5. Persistence

All read-create objects and most read-write objects defined in this MIB module SHOULD be stored persistently. Following is an exhaustive list of these persistent objects:

- adsl2LineCnfgTemplate
- adsl2LineAlarmCnfgTemplate
- adsl2LineCmndConfPmsf
- adsl2LineCmndConfLdsf
- adsl2LineCmndAutomodeColdStart
- adsl2LConfTempTemplateName
- adsl2LConfTempLineProfile
- adsl2LConfTempChan1ConfProfile
- adsl2LConfTempChan1RaRatioDs
ads1LConfTempChan1RaRatioUs
ads1LConfTempChan2ConfProfile
ads1LConfTempChan2RaRatioDs
ads1LConfTempChan2RaRatioUs
ads1LConfTempChan3ConfProfile
ads1LConfTempChan3RaRatioDs
ads1LConfTempChan3RaRatioUs
ads1LConfTempChan4ConfProfile
ads1LConfTempChan4RaRatioDs
ads1LConfTempChan4RaRatioUs
ads1LConfTempRowStatus
ads1LConfProfProfileName
ads1LConfProfScMaskDs
ads1LConfProfScMaskUs
ads1LConfProfRaModeDs
ads1LConfProfRaModeUs
ads1LConfProfRaUsNrmDs
ads1LConfProfRaUsNrmUs
ads1LConfProfRaUsTimeDs
ads1LConfProfRaUsTimeUs
ads1LConfProfRaDsNrmsDs
ads1LConfProfRaDsNrmsUs
ads1LConfProfRaDsTimeDs
ads1LConfProfRaDsTimeUs
ads1LConfProfTargetSnrmDs
ads1LConfProfTargetSnrmUs
ads1LConfProfMaxSnrmDs
ads1LConfProfMaxSnrmUs
ads1LConfProfMinSnrmDs
ads1LConfProfMinSnrmUs
ads1LConfProfMsgMinUs
ads1LConfProfMsgMinDs
ads1LConfProfAtuTransSysEna
ads1LConfProfPmMode
ads1LConfProfL0Time
ads1LConfProfL2Time
ads1LConfProfL2Atpr
ads1LConfProfL2Atprt
ads1LConfProfRowStatus
ads1LConfProfAds1Mode
ads1LConfProfMaxNomPsdDs
ads1LConfProfMaxNomPsdUs
ads1LConfProfMaxNomAtpDs
ads1LConfProfMaxNomAtpUs
ads1LConfProfMaxAggRxPwrUs
ads1LConfProfPsdMaskDs
ads1LConfProfPsdMaskUs
ads12LConfProfPsdMaskSelectUs
ads12LConfProfModeSpecRowStatus
ads12ChConfProfProfileName
ads12ChConfProfMinDataRateDs
ads12ChConfProfMinDataRateUs
ads12ChConfProfMinResDataRateDs
ads12ChConfProfMinResDataRateUs
ads12ChConfProfMaxDataRateDs
ads12ChConfProfMaxDataRateUs
ads12ChConfProfMinDataRateLowPwrDs
ads12ChConfProfMaxDelayDs
ads12ChConfProfMaxDelayUs
ads12ChConfProfMinProtectionDs
ads12ChConfProfMinProtectionUs
ads12ChConfProfMaxBerDs
ads12ChConfProfMaxBerUs
ads12ChConfProfUsDataRateDs
ads12ChConfProfDsDataRateDs
ads12ChConfProfUsDataRateUs
ads12ChConfProfDsDataRateUs
ads12ChConfProfImaEnabled
ads12ChConfProfRowStatus
ads12LAAlarmConfTempTemplateName
ads12LAAlarmConfTempLineProfile
ads12LAAlarmConfTempChan1ConfProfile
ads12LAAlarmConfTempChan2ConfProfile
ads12LAAlarmConfTempChan3ConfProfile
ads12LAAlarmConfTempChan4ConfProfile
ads12LAAlarmConfTempRowStatus
ads12LineAlarmConfProfileName
ads12LineAlarmConfProfileAtucThresh15MinFecs
ads12LineAlarmConfProfileAtucThresh15MinEs
ads12LineAlarmConfProfileAtucThresh15MinSes
ads12LineAlarmConfProfileAtucThresh15MinLoss
ads12LineAlarmConfProfileAtucThresh15MinUas
ads12LineAlarmConfProfileAturThresh15MinFecs
ads12LineAlarmConfProfileAturThresh15MinEs
ads12LineAlarmConfProfileAturThresh15MinSes
ads12LineAlarmConfProfileAturThresh15MinLoss
ads12LineAlarmConfProfileAturThresh15MinUas
ads12LineAlarmConfProfileThreshold15MinFailedFullInt
ads12LineAlarmConfProfileThreshold15MinFailedShrtInt
ads12LineAlarmConfProfileRowStatus
ads12ChAlarmConfProfileName
ads12ChAlarmConfProfileAtucThresh15MinCodingViolations
ads12ChAlarmConfProfileAtucThresh15MinCorrected
ads12ChAlarmConfProfileAturThresh15MinCodingViolations
ads12ChAlarmConfProfileAturThresh15MinCorrected
adsl2ChAlarmConfProfileRowStatus

Note also that the interface indices in this MIB are maintained persistently. View-based Access Control Model (VACM) data relating to these SHOULD be stored persistently as well [RFC3410].

2.6. Line Topology

An ADSL/ADSL2 and ADSL2+ Line consists of two units: atuc (the central termination unit) and atur (the remote termination unit). There are up to 4 channels, each carrying an independent information flow, as shown in the figure below.

--- Network Side Customer Side ---

|<------------------------------- ADSL/ADSL2/ADSL2+ Span ------------------->|
++-------------------+-------------------++-------------------+-------------------++
++                  +                  ++                  +                  +
+ atuc                  + atur                  +
++-------------------+-------------------++
++                  +                  ++                  +
++<----------------------------------1------------------------->
++<----------------------------------2------------------------->
++<----------------------------------3------------------------->
++<----------------------------------4------------------------->
++-------------------+-------------------++-------------------+-------------------++

Key: <///> ADSL/ADSL2/ADSL2+ Span
<~~~~> ADSL/ADSL2/ADSL2+ twisted-pair
-1-  Channel #1 carried over the line
-2-  Optional channel #2 carried over the line
-3-  Optional channel #3 carried over the line
-4-  Optional channel #4 carried over the line

Figure 2: General topology for an ADSL/ADSL2/ADSL2+ Line

2.7. Counters, Interval Buckets, and Thresholds

2.7.1. Counters Managed

There are various types of counters specified in this MIB. Each counter refers either to the whole ADSL/ADSL2/ADSL2+ line, to one of the xtu entities, or to one of the bearer channels.

- On the whole line level

For full initializations, failed full initializations, short initializations, and for failed short initializations there are event counters, current 15-minute and 0 to 96 15-minute history bucket(s)
of "interval-counters", as well as current and 0 to 30 previous 1-day
interval-counter(s). Each current 15-minute "failed" event bucket
has an associated threshold notification.

- On the xtU level

For the LOS Seconds, ES, SES, FEC seconds, and UAS, there are event
counters, current 15-minute and 0 to 96 15-minute history bucket(s)
of "interval-counters", as well as current and 0 to 30 previous 1-day
interval-counter(s). Each current 15-minute event bucket has an
associated threshold notification.

- On the bearer channel level

For the coding violations (CRC anomalies) and corrected blocks (i.e.,
FEC events) there are event counters, current 15-minute and 0 to 96
15-minute history bucket(s) of "interval-counters", as well as
current and 0 to 30 previous 1-day interval-counter(s). Each current
15-minute event bucket has an associated threshold notification.

2.7.2. Minimum Number Of Buckets

Although it is possible to support up to 96 15-minute history buckets
of "interval-counters", systems implementing this MIB module SHOULD
practically support at least 16 buckets, as specified in ITU-T
G.997.1, paragraph 7.2.7.2.

Similarly, it is possible to support up to 30 previous 1-day
"interval-counters", but systems implementing this MIB module SHOULD
support at least 1 previous day buckets.

2.7.3. Interval Buckets Initialization

There is no requirement for an agent to ensure a fixed relationship
between the start of a 15-minute interval and any wall clock;
however, some implementations may align the 15-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 xtU is reinitialized, only when the
agent is reset or reinitialized (or under specific request outside
the scope of this MIB module).

2.7.4. Interval Buckets Validity

As in RFC 3593 [RFC3593] and RFC 2662 [RFC2662], in case the data for
an interval is suspect or known to be invalid, the agent MUST report
the interval as invalid. If the current 15-minute event bucket is
determined to be invalid, the element management system SHOULD ignore its content and the agent MUST NOT generate notifications based upon the value of the event bucket.

A valid 15-minute event bucket SHOULD usually count the events for exactly 15 minutes. Similarly, a valid 1-day event bucket SHOULD usually count the events for exactly 24 hours. However, the following scenarios are exceptional:

1) For implementations that align the 15-minute intervals with quarter hours, and the 1-day intervals with start of a day, the management system may still start the PM process not aligned with the wall clock. Such a management system may wish to retrieve even partial information for the first event buckets, rather than declaring them all as invalid.

2) For an event bucket that suffered relatively short outages, the management system may wish to retrieve the available PM outcomes, rather than declaring the whole event bucket as invalid. This is more important for 1-day event buckets.

3) An event bucket may be shorter or longer than the formal duration if a clock adjustment was performed during the interval.

This MIB allows supporting the exceptional scenarios described above by reporting the actual Monitoring Time of a monitoring interval. This parameter is relevant only for Valid intervals, but is useful for these exceptional scenarios:

a) The management system MAY still declare a partial PM interval as Valid and report the actual number of seconds the interval lasted.

b) If the interval was shortened or extended due to clock corrections, the management system SHOULD report the actual number of seconds the interval lasted, beside reporting that the interval is Valid.

2.8. Profiles

As a managed node can handle a large number of xtUs, (e.g., hundreds or perhaps thousands of lines), provisioning every parameter on every xtU may become burdensome. Moreover, most lines are provisioned identically with the same set of parameters. To simplify the provisioning process, this MIB module makes use of profiles and templates.

A configuration profile is a set of parameters that can be shared by multiple entities. There are configuration profiles to address the line level provisioning and another type of profile that addresses the channel level provisioning parameters.

A configuration template is actually a profile-of-profiles. That is, a template is comprised of one line configuration profile and one or
more channel configuration profiles. A template provides the complete configuration of a line. The same configuration can be shared by multiple lines.

Similarly to the configuration profiles and templates, this MIB module makes use of templates and profiles for specifying the alarm thresholds associated with performance parameters. This allows provisioning multiple lines with the same criteria for generating threshold crossing notifications.

The following paragraphs describe templates and profiles used in this MIB module.

### 2.8.1. Configuration Profiles And Templates

- **Line Configuration Profiles** - Line configuration profiles contain parameters for configuring the low layer of ADSL/ADSL2 and ADSL2+ lines. They are defined in the adsl2LineConfProfTable.

  The line configuration includes issues such as the specific ADSL/ADSL2 or ADSL2+ modes to enable on the respective line, power spectrum parameters, rate adaptation criteria, and SNR margin related parameters. A subset of the line configuration parameters depends upon the specific ADSL Mode allowed (i.e., Does the profile allow ADSL, ADSL2 and/or ADSL2+?) as well as what annex/annexes of the standard are allowed. This is the reason a line profile MUST include one or more mode-specific extensions.

- **Channel Configuration Profiles** - Channel configuration profiles contain parameters for configuring bearer channels over the ADSL/ADSL2 and ADSL2+ lines. They are sometimes considered as the service layer configuration of the ADSL/ADSL2 and ADSL2+ lines. They are defined in the adsl2ChConfProfTable.

  The channel configuration includes issues such as the desired minimum and maximum rate on each traffic flow direction and impulse noise protection parameters.

- **Line Configuration Templates** - Line configuration templates allow combining line configuration profiles and channel configuration profiles to a comprehensive configuration of the ADSL/ADSL2 and ADSL2+ line. They are defined in the adsl2LineConfTemplateTable.

  The line configuration template includes one index (OID) of a line configuration profile and one to four indexes of channel configuration profiles. The template also addresses the issue of distributing the excess available data rate on each traffic flow direction (i.e., the data rate left after each channel is
allocated a data rate to satisfy its minimum requested data rate) among the various channels.

2.8.2. Alarm Configuration Profiles And Templates

- Line Alarm Configuration Profiles - Line level Alarm configuration profiles contain the threshold values for Performance Monitoring (PM) parameters, counted either on the whole line level or on an xtu level. Thresholds are required only for failures and anomalies. E.g., there are thresholds for failed initializations and LOS seconds, but not for the aggregate number of full initializations. These profiles are defined in the adsl2LineAlarmConfProfTable.

- Channel Alarm Configuration Profiles - Channel level Alarm configuration profiles contain the threshold values for PM parameters counted on a bearer channel level. Thresholds are defined for two types of anomalies: corrected blocks and coding violations. These profiles are defined in the adsl2ChAlarmConfProfTable.

- Line Alarm Configuration Templates - Line Alarm configuration templates allow combining line level alarm configuration profiles and channel level alarm configuration profiles to a comprehensive configuration of the PM thresholds for ADSL/ADSL2 and ADSL2+ line. They are defined in the adsl2LineAlarmConfTemplateTable.

The line alarm configuration template includes one index (OID) of a line level alarm configuration profile and one to four indexes of channel level alarm configuration profiles.

2.8.3. Managing Profiles And Templates

The index value for each profile and template is a locally-unique, administratively assigned name having the textual convention ‘SnmpAdminString’ (RFC 3411 [RFC3411]).

One or more lines may be configured to share parameters of a single configuration template (e.g., adsl2LCnfgTempTemplateName = ‘silver’) by setting its adsl2LCnfgLLineTemplate objects to the value of this template.

One or more lines may be configured to share parameters of a single Alarm configuration template (e.g., adsl2LAlarmConfTempTemplateName = ‘silver’) by setting its adsl2LCnfgLAlarmTemplate objects to the value of this template.

Before a template can be deleted or taken out of service it MUST be...
first unreferenced from all associated lines. Implementations MAY also reject template modification while it is associated with any line.

Before a profile can be deleted or taken out of service it MUST be first unreferenced from all associated templates. Implementations MAY also reject profile modification while it is referenced by any template.

Implementations MUST provide a default profile whose name is ‘DEFVAL’ for each profile and template type. The values of the associated parameters will be vendor-specific unless otherwise indicated in this document. Before a line’s templates have been set, these templates will be automatically used by setting adsl2LCnfgLineTemplate and adsl2LCnfgAlarmTemplate to ‘DEFVAL’ where appropriate. This default profile name, ‘DEFVAL’, is considered reserved in the context of profiles and templates defined in this MIB module.

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

If the implementation allows modifying a profile or template while it is associated with a line, then such changes MUST take effect immediately. These changes MAY result in a restart (hard reset or soft restart) of the units on the line.

2.8.4. Managing Multiple Bearer Channels

The number of bearer channels is configured by setting the template attributes adsl2LCnfTempChan1ConfProfile, adsl2LCnfTempChan2ConfProfile, adsl2LCnfTempChan3ConfProfile, and adsl2LCnfTempChan4ConfProfile and then assigning that template to a DSL line using the adsl2LineCnfgTemplate attribute. When the number of bearer channels for a DSL line changes, the SNMP agent will automatically create or destroy rows in channel-related tables associated with that line. For example, when a DSL line is operating with one bearer channel, there will be zero rows in channel-related tables for channels two, three, and four. The SNMP agent MUST create and destroy channel related rows as follows:

- When the number of bearer channels for a DSL line changes to a higher number, the SNMP agent will automatically create rows in the adsl2ChannelStatusTable, and adsl2PMChCurrTable tables for that line.
- When the number of bearer channels for a DSL line changes to a lower number, the SNMP agent will automatically destroy rows in the adsl2ChannelStatusTable,
2.9. Notifications

The ability to generate the SNMP notifications coldStart/WarmStart (per [RFC3418]), 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., ADSL/ADSL2 or ADSL2+ line) is required.

A linkDown notification MAY be generated whenever any of ES, SES, CRC Anomaly, LOS, LOF, or UAS event occurs. The corresponding linkUp notification MAY be sent when all link failure conditions are cleared.

The notifications defined in this MIB module are for status change (e.g., initialization failure) and for the threshold crossings associated with the following events: Full initialization failures, short initialization failures, ES, SES, FEC Seconds, LOS Seconds, UAS, FEC Seconds, FEC events, and CRC anomalies. Each threshold has its own enable/threshold value. When that value is 0, the notification is disabled.

The adsl2LStatusStatusAtur and adsl2LStatusStatusAtuc are bitmasks representing all outstanding error conditions associated with the AtuR and AtuC (respectively). Note that since the AtuR status is obtained via the EOC, this information may be unavailable in case the AtuR is 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 those two status objects are defined.

Note that there are other status parameters that refer to the AtuR (e.g., downstream line attenuation). Those parameters also depend on the availability of EOC between the central office xtu and the remote xtu.

A threshold notification occurs whenever the corresponding current 15-minute interval error counter becomes equal to, or exceeds the threshold value. Only one notification SHOULD be sent per interval per interface. Since the current 15-minute counter is reset to 0 every 15 minutes, and 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.
Notifications, other than the threshold notifications listed above, SHOULD be rate limited (throttled) such that there is an implementation-specific gap between the generation of consecutive notifications of the same event. When notifications are rate limited, they are dropped and not queued for sending at a future time. This is intended to be a general rate-limiting statement for notifications that otherwise have no explicit rate limiting assertions in this document.

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.

3. Definitions

ADSL2-LINE-TC-MIB DEFINITIONS ::= BEGIN

IMPORTS
    MODULE-IDENTITY, transmission
FROM SNMPv2-SMI

TEXTUAL-CONVENTION
FROM SNMPv2-TC;

adsl2TCMIB MODULE-IDENTITY
    LAST-UPDATED "200604250000Z" - April 25, 2006
    ORGANIZATION "ADSLMIB Working Group"
    CONTACT-INFO "WG-email:  adslmib@ietf.org
Info: https://www1.ietf.org/mailman/listinfo/adslmib

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DESCRIPTION

"This MIB Module provides Textual Conventions to be used by the ADSL2-LINE-MIB module for the purpose of managing ADSL, ADSL2 and ADSL2+ lines.

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-- RFC Ed.: replace XXXX with assigned number & remove this note
REVISION "200604250000Z" -- April 25, 2006
DESCRIPTION "Initial version, published as RFC XXXX."
-- RFC Ed.: replace XX with assigned number & remove this note
 ::= { transmission xxx 2} -- adsl2MIB 2
-- IANA, the xxx here must be the same as the one assigned to the adsl2MIB below.
-- RFC Ed.: Please fill in xxx once assigned by IANA.
Adsl2Unit ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Identifies a transceiver as being either atuc or atur. An ADSL line consists of two transceivers, an atuc and an atur. Attributes with this syntax reference the two sides of a line. Specified as an INTEGER, the two values are:
   atuc(1) -- central site transceiver
   atur(2) -- remote site transceiver"
SYNTAX INTEGER {
    atuc(1),
    atur(2)
}

Adsl2Direction ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Identifies the direction of a band as being either upstream or downstream. Specified as an INTEGER, the two values are:
   upstream(1)
   downstream(2)"
SYNTAX INTEGER {
    upstream(1),
    downstream(2)
}

Adsl2TransmissionModeType ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"A set of ADSL2 line transmission modes, with one bit per mode. The notes (F) and (L) denote Full-Rate and Lite/splitterless respectively:
   Bit 00 : Regional Std. (ANSI T1.413) (F)
   Bit 01 : Regional Std. (ETSI DTS/TM06006) (F)
   Bit 02 : G.992.1 POTS non-overlapped (F)
   Bit 03 : G.992.1 POTS overlapped (F)
   Bit 04 : G.992.1 ISDN non-overlapped (F)
   Bit 05 : G.992.1 ISDN overlapped (F)
   Bit 06 : G.992.1 TCM-ISDN non-overlapped (F)
   Bit 07 : G.992.1 TCM-ISDN overlapped (F)"
Bit 08 : G.992.2 POTS non-overlapped (L)
Bit 09 : G.992.2 POTS overlapped (L)
Bit 10 : G.992.2 with TCM-ISDN non-overlapped (L)
Bit 11 : G.992.2 with TCM-ISDN overlapped (L)
Bit 12 : G.992.1 TCM-ISDN symmetric (F) --- not in G.997.1
Bit 13-17: Reserved
Bit 18 : G.992.3 POTS non-overlapped (F)
Bit 19 : G.992.3 POTS overlapped (F)
Bit 20 : G.992.3 ISDN non-overlapped (F)
Bit 21 : G.992.3 ISDN overlapped (F)
Bit 22-23: Reserved
Bit 24 : G.992.4 POTS non-overlapped (L)
Bit 25 : G.992.4 POTS overlapped (L)
Bit 26-27: Reserved
Bit 28 : G.992.3 Annex I All-Digital non-overlapped (F)
Bit 29 : G.992.3 Annex I All-Digital overlapped (F)
Bit 30 : G.992.3 Annex J All-Digital non-overlapped (F)
Bit 31 : G.992.3 Annex J All-Digital overlapped (F)
Bit 32 : G.992.4 Annex I All-Digital non-overlapped (L)
Bit 33 : G.992.4 Annex I All-Digital overlapped (L)
Bit 34 : G.992.3 Annex L POTS non-overlapped, mode 1, wide U/S (F)
Bit 35 : G.992.3 Annex L POTS non-overlapped, mode 2, narrow U/S (F)
Bit 36 : G.992.3 Annex L POTS overlapped, mode 3, wide U/S (F)
Bit 37 : G.992.3 Annex L POTS overlapped, mode 4, narrow U/S (F)
Bit 38 : G.992.3 Annex M POTS non-overlapped (F)
Bit 39 : G.992.3 Annex M POTS overlapped (F)
Bit 40 : G.992.5 POTS non-overlapped (F)
Bit 41 : G.992.5 POTS overlapped (F)
Bit 42 : G.992.5 ISDN non-overlapped (F)
Bit 43 : G.992.5 ISDN overlapped (F)
Bit 44-45: Reserved
Bit 46 : G.992.5 Annex I All-Digital non-overlapped (F)
Bit 47 : G.992.5 Annex I All-Digital overlapped (F)
Bit 48 : G.992.5 Annex J All-Digital non-overlapped (F)
Bit 49 : G.992.5 Annex J All-Digital overlapped (F)
Bit 50 : G.992.5 Annex M POTS non-overlapped (F)
Bit 51 : G.992.5 Annex M POTS overlapped (F)
Bit 52-55: Reserved

SYNTAX BITS {
    ansi1413(0),
    etsi(1),
    q9921PotsNonOverlapped(2),
    q9921PotsOverlapped(3),
    q9921IsdnNonOverlapped(4),
    \}
q9921isdnOverlapped(5),
q9921tcmIsdnNonOverlapped(6),
q9921tcmIsdnOverlapped(7),
q9922potsNonOverlapped(8),
q9922potsOverlapped(9),
q9922tcmIsdnNonOverlapped(10),
q9922tcmIsdnOverlapped(11),
q9921tcmIsdnSymmetric(12),
reserved1(13),
reserved2(14),
reserved3(15),
reserved4(16),
reserved5(17),
q9923PotsNonOverlapped(18),
q9923PotsOverlapped(19),
q9923IsdnNonOverlapped(20),
q9923isdnOverlapped(21),
reserved6(22),
reserved7(23),
q9924potsNonOverlapped(24),
q9924potsOverlapped(25),
reserved8(26),
reserved9(27),
q9923AnnexIAAllDigNonOverlapped(28),
q9923AnnexIAAllDigOverlapped(29),
q9923AnnexJAllDigNonOverlapped(30),
q9923AnnexJAllDigOverlapped(31),
q9924AnnexIAAllDigNonOverlapped(32),
q9924AnnexIAAllDigOverlapped(33),
q9923AnnexLMODE1NonOverlapped(34),
q9923AnnexLMODE2NonOverlapped(35),
q9923AnnexLMODE3Overlapped(36),
q9923AnnexLMODE4Overlapped(37),
q9923AnnexMPotsNonOverlapped(38),
q9923AnnexMPotsOverlapped(39),
q9925PotsNonOverlapped(40),
q9925potsOverlapped(41),
q9925tcmIsdnNonOverlapped(42),
q9925isdnOverlapped(43),
reserved10(44),
reserved11(45),
q9925AnnexIAAllDigNonOverlapped(46),
q9925AnnexIAAllDigOverlapped(47),
q9925AnnexJAllDigNonOverlapped(48),
q9925AnnexJAllDigOverlapped(49),
q9925AnnexMPotsNonOverlapped(50),
q9925AnnexMPotsOverlapped(51),
reserved12(52),
reserved13(53),
reserved14(54),
reserved15(55)
}

Adsl2RaMode ::= TEXTUAL-CONVENTION
  STATUS      current
  DESCRIPTION
    "Specifies the rate adaptation behavior for the line. The three possible behaviors are:
    manual (1)   - No Rate-Adaptation. The initialization process attempts to synchronize to a
                   specified rate.
    raInit (2)   - Rate-Adaptation during initialization process only, which attempts to synchronize to a rate
                   between minimum and maximum specified values.
    dynamicRa (3) - Dynamic Rate-Adaptation during initialization process as well as during SHOWTIME"
  SYNTAX      INTEGER {
    manual(1),
    raInit(2),
    dynamicRa(3)
  }

Adsl2InitResult ::= TEXTUAL-CONVENTION
  STATUS      current
  DESCRIPTION
    "Specifies the result of full initialization attempt; the six possible result values are:
    noFail (0)            - Successful initialization
    configError (1)       - Configuration failure
    configNotFeasible (2) - Configuration details not supported
    commFail (3)          - Communication failure
    noPeerAtu (4)         - Peer ATU not detected
    otherCause (5)        - Other initialization failure reason

    The values used are as defined in ITU-T G.997.1, paragraph 7.5.1.3"
  SYNTAX      INTEGER {
    noFail(0),
    configError(1),
    configNotFeasible(2),
    commFail(3),
    noPeerAtu(4),
    otherCause(5)
  }
Adsl2OperationModes ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "The ADSL2 management model specified includes an ADSL Mode attribute which identifies an instance of ADSL Mode-Specific PSD Configuration object in the ADSL Line Profile. The following classes of ADSL operating mode are defined."
SYNTAX INTEGER {
defMode (1),
adsl (2),
adsl2Pots (3),
adsl2Isdn (4),
adsl2PlusPots (5),
adsl2PlusIsdn (6),
adsl2ReachExtended (7)
}

Adsl2PowerMngState ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Attributes with this syntax uniquely identify each power management state defined for the ADSL/ADSL2 or ADSL2+ link. The possible values are:
10(1) - L0 - Full power management state
11(2) - L1 - Low power management state (for G.992.2)
12(3) - L2 - Low power management state (for G.992.3, G.992.4, and G.992.5)
13(4) - L3 - Idle power management state"
SYNTAX INTEGER {
10(1),
11(2),
12(3),
13(4)
}

Adsl2ConfPmsForce ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "Attributes with this syntax are configuration parameters that reference the desired power management state for the ADSL/ADSL2 or ADSL2+ link:
13toL0 (0) - Perform a transition from L3 to L0 (Full power management state)
10toL2 (2) - Perform a transition from L0 to L2 (Low power management state)
10orL2toL3 (3) - Perform a transition into L3 (Idle power management state)"
The values used are as defined in ITU-T G.997.1, paragraph 7.3.1.1.3

SYNTAX INTEGER {
    l3toL0 (0),
    l0toL2 (2),
    l0orL2toL3 (3)
}

Adsl2LConfProfPmMode ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Attributes with this syntax are configuration parameters that reference the power modes/states into which the ATU-C or ATU-R may autonomously transit.

It is a BITS structure that allows control of the following transit options:
allowTransitionsToIdle (0) - xTU may autonomously transit to idle (L3) state.
allowTransitionsToLowPower (1) - xTU may autonomously transit to low-power (L2) state."

SYNTAX BITS {
    allowTransitionsToIdle(0),
    allowTransitionsToLowPower(1)
}

Adsl2LineLdsf ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Attributes with this syntax are configuration parameters that control the Loop Diagnostic mode for the ADSL/ADSL2 or ADSL2+ link. The possible values are:
inhibit (0) - Inhibit Loop Diagnostic mode
force (1) - Force/Initiate Loop Diagnostic mode

The values used are as defined in ITU-T G.997.1, paragraph 7.3.1.1.8"

SYNTAX INTEGER {
    inhibit(0),
    force(1)
}

Adsl2LdsfResult ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Possible failure reasons associated with performing Dual Ended Loop Test (DELT) on a DSL line. Possible values are:

- none (1) - The default value in case LDSF was never requested for the associated line.
- success (2) - The recent command completed successfully.
- inProgress (3) - The Loop Diagnostics process is in progress.
- unsupported (4) - The NE or the line card doesn’t support LDSF.
- cannotRun (5) - The NE cannot initiate the command, due to a non specific reason.
- aborted (6) - The Loop Diagnostics process aborted.
- failed (7) - The Loop Diagnostics process failed.
- illegalMode (8) - The NE cannot initiate the command, due to the specific mode of the relevant line.
- adminUp (9) - The NE cannot initiate the command, as the relevant line is administratively 'Up'.
- tableFull (10) - The NE cannot initiate the command, due to reaching the maximum number of rows in the results table.
- noResources (11) - The NE cannot initiate the command, due to lack of internal memory resources."

SYNTAX INTEGER {
  none (1),
  success (2),
  inProgress (3),
  unsupported (4),
  cannotRun (5),
  aborted (6),
  failed (7),
  illegalMode (8),
  adminUp (9),
  tableFull (10),
  noResources (11)
}

Adsl2SymbolProtection ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Attributes with this syntax are configuration parameters that reference the minimum length impulse noise protection (INP) in terms of number of symbols. The possible values are: noProtection (i.e., INP not required), halfSymbol (i.e., INP length is 1/2 symbol), and 1-16 symbols in steps of 1 symbol"
SYNTAX      INTEGER {
    noProtection (1),
    halfSymbol (2),
    singleSymbol (3),
    twoSymbols (4),
    threeSymbols (5),
    fourSymbols (6),
    fiveSymbols (7),
    sixSymbols (8),
    sevenSymbols (9),
    eightSymbols (10),
    nineSymbols (11),
    tenSymbols (12),
    elevenSymbols (13),
    twelveSymbols (14),
    thirteeSymbols (15),
    fourteenSymbols (16),
    fifteenSymbols (17),
    sixteenSymbols (18)
}

Adsl2MaxBer ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION  
    "Attributes with this syntax are configuration parameters 
    that reference the maximum Bit Error Rate (BER). 
    The possible values are:

    eminus3 (1)  - Maximum BER=E^-3
    eminus5 (2)  - Maximum BER=E^-5
    eminus7 (3)  - Maximum BER=E^-7"
SYNTAX      INTEGER {
    eminus3(1),
    eminus5(2),
    eminus7(3)
}

Adsl2ScMaskDs ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION  
    "Each one of the 512 bits in this OCTET 
    STRING array represents the corresponding bin 
    in the downstream direction. A value of one 
    indicates that the bin is not in use."
SYNTAX      OCTET STRING (SIZE(0..64))

Adsl2ScMaskUs ::= TEXTUAL-CONVENTION
STATUS      current
DESCRIPTION  

"Each one of the 64 bits in this OCTET STRING array represents the corresponding bin in the upstream direction. A value of one indicates that the bin is not in use."

SYNTAX OCTET STRING (SIZE(0..8))

Ads12RfiDs ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Each one of the 512 bits in this OCTET STRING array represents the corresponding bin in the downstream direction. A value of one indicates that the bin is part of a notch filter."

SYNTAX OCTET STRING (SIZE(0..64))

Ads12PsdMaskDs ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"This is a structure that represents up to 32 PSD Mask breakpoints. Each breakpoint occupies 3 octets: The first two octets hold the index of the sub-carrier associated with the breakpoint. The third octet holds the PSD reduction at the breakpoint from 0 (0dBm/Hz) to 255 (-127.5 dBm/Hz) using units of 0.5dBm/Hz."

SYNTAX OCTET STRING (SIZE(0..96))

Ads12PsdMaskUs ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"This is a structure that represents up to 4 PSD Mask breakpoints. Each breakpoint occupies 3 octets: The first two octets hold the index of the sub-carrier associated with the breakpoint. The third octet holds the PSD reduction at the breakpoint from 0 (0dBm/Hz) to 255 (-127.5 dBm/Hz) using units of 0.5dBm/Hz."

SYNTAX OCTET STRING (SIZE(0..12))

Ads12Tssi ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"This is a structure that represents up to 32 transmit spectrum shaping (TSSi) breakpoints. Each breakpoint occupies 3 octets: The first
two octets hold the index of the sub-carrier associated with the breakpoint. The third octet holds the shaping parameter at the breakpoint. It is a value from 0 to 127 (units of -0.5dB). The special value 127 indicates that the sub-carrier is not transmitted."

SYNTAX OCTET STRING (SIZE(0..96))

Adsl2LastTransmittedState ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION "This parameter represents the last successful transmitted initialization state in the last full initialization performed on the line. States are per the specific xDSL technology and are numbered from 0 (if G.994.1 is used) or 1 (if G.994.1 is not used) up to Showtime."

SYNTAX INTEGER {
atucG9941(0),
atucQuiet1(1),
atucComb1(2),
atucQuiet2(3),
atucComb2(4),
atucIcomb1(5),
atucLineprob(6),
atucQuiet3(7),
atucComb3(8),
atucIComb2(9),
atucMsgfmt(10),
atucMsgpcb(11),
atucQuiet4(12),
atucReverb1(13),
atucTref1(14),
atucReverb2(15),
atucEct(16),
atucReverb3(17),
atucTref2(18),
atucReverb4(19),
atucSegue1(20),
atucMsg1(21),
atucReverb5(22),
atucSegue2(23),
atucMedley(24),
atucExchmarker(25),
atucMsg2(26),
atucReverb6(27),
atucSegue3(28),
atucParams(29),
Adsl2LineStatus ::= TEXTUAL-CONVENTION
  STATUS current
  DESCRIPTION
  "Attributes with this syntax are status parameters
  that reflect the failure status for a given endpoint of
  ADSL/ADSL2 or ADSL2+ link.

  This BITS structure can report the following failures:

  noDefect (0)       - This bit position positively reports
that no defect or failure exist.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lossOfFraming (1)</td>
<td>Loss of frame synchronization</td>
</tr>
<tr>
<td>lossOfSignal (2)</td>
<td>Loss of signal</td>
</tr>
<tr>
<td>lossOfPower (3)</td>
<td>Loss of power. Usually this failure may be reported for CPE units only</td>
</tr>
<tr>
<td>initFailure (4)</td>
<td>Recent initialization process failed. Never active on ATU-R.</td>
</tr>
</tbody>
</table>

```
SYNTAX BITS {
  noDefect(0),
  lossOfFraming(1),
  lossOfSignal(2),
  lossOfPower(3),
  initFailure(4)
}
```

Adsl2ChAtmStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Attributes with this syntax are status parameters that reflect the failure status for Transmission Convergence (TC) layer of a given ATM interface (data path over an ADSL/ADSL2 or ADSL2+ link).

This BITS structure can report the following failures:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>noDefect (0)</td>
<td>This bit position positively reports that no defect or failure exist.</td>
</tr>
<tr>
<td>noCellDelineation (1)</td>
<td>The link was successfully initialized but cell delineation was never acquired on the associated ATM data path.</td>
</tr>
<tr>
<td>lossOfCellDelineation (2)</td>
<td>Loss of cell delineation on the associated ATM data path</td>
</tr>
</tbody>
</table>

```
SYNTAX BITS {
  noDefect(0),
  noCellDelineation(1),
  lossOfCellDelineation(2)
}
```

Adsl2ChPtmStatus ::= TEXTUAL-CONVENTION
STATUS current
DESCRIPTION
"Attributes with this syntax are status parameters that

reflect the failure status for a given PTM interface (packet
data path over an ADSL/ADSL2 or ADSL2+ link).

This BITS structure can report the following failures:

- noDefect (0) - This bit position positively reports that no defect or failure exist.
- outOfSync (1) - Out of synchronization.

```plaintext
SYNTAX BITS {
  noDefect(0),
  outOfSync(1)
}
```

END

ADSL2-LINE-MIB DEFINITIONS ::= BEGIN

IMPORTS
  MODULE-IDENTITY,
  OBJECT-TYPE,
  transmission,
  Unsigned32,
  NOTIFICATION-TYPE,
  Integer32,
  Counter32
  FROM SNMPv2-SMI

  ifIndex
  FROM IF-MIB

  TruthValue,
  RowStatus
  FROM SNMPv2-TC

  SnmpAdminString
  FROM SNMP-FRAMEWORK-MIB

  HCPerfIntervalThreshold,
  HCPerfTimeElapsed
  FROM HC-PerfHist-TC-MIB   -- [RFC3705]

  Ads12Unit,
  Ads12Direction,
  Ads12TransmissionModeType,
  Ads12RaMode,

Adsl2InitResult,
Adsl2OperationModes,
Adsl2PowerMngState,
Adsl2ConfPmsForce,
Adsl2LConfProfPmMode,
Adsl2LineLdsf,
Adsl2LdsfResult,
Adsl2SymbolProtection,
Adsl2MaxBer,
Adsl2ScMaskDs,
Adsl2ScMaskUs,
Adsl2RfiDs,
Adsl2PsdMaskDs,
Adsl2PsdMaskUs,
Adsl2Tssi,
Adsl2LastTransmittedState,
Adsl2LineStatus,
Adsl2ChAtmStatus,
Adsl2ChPtmStatus
FROM ADSL2-LINE-TC-MIB -- [This document]

MODULE-COMPLIANCE,
OBJECT-GROUP,
NOTIFICATION-GROUP
FROM SNMPv2-CONF;

ads12MIB MODULE-IDENTITY
LAST-UPDATED "200604250000Z" - April 25, 2006
ORGANIZATION "ADSLMIB Working Group"
CONTACT-INFO "WG-email: adslmib@ietf.org
Info: https://www1.ietf.org/mailman/listinfo/adslmib

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DESCRIPTION

This document defines a Management Information Base (MIB) module for use with network management protocols in the Internet community for the purpose of managing ADSL, ADSL2, and ADSL2+ lines. The MIB module described in RFC 2662 [RFC2662] describes objects used for managing Asymmetric Bit-Rate DSL (ADSL) interfaces per [T1E1.413], [G.992.1], and [G.992.2]. These object descriptions are based upon the specifications for the ADSL Embedded Operations Channel (EOC) as defined in American National Standards Institute (ANSI) T1E1.413/1995 [T1E1.413] and International Telecommunication Union (ITU-T) G.992.1 [G.992.1] and G.992.2 [G.992.2].

This document does not obsolete RFC 2662 [RFC2662], but rather provides a more comprehensive management model that includes the ADSL2 and ADSL2+ technologies per G.992.3, G.992.4, and G.992.5 ([G.992.3], [G.992.4], and [G.992.5], respectively). In addition, objects have been added to improve the management of ADSL, ADSL2, and ADSL2+ lines.

Additionally, the management framework for New Generation ADSL lines specified by the Digital Subscriber Line Forum
(DSLF) has been taken into consideration [TR-90]. That framework is based on ITU-T G.997.1 standard [G.997.1] as well as two amendments: [G.997.1 am1] and [G.997.1 am2].

Note that the revised ITU-T G.997.1 standard refers also to next generation of VDSL technology, known as VDSL2, per ITU-T G.993.2 [G.993.2]. However, managing VDSL2 lines is currently beyond the scope of this document.

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

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```
adsl2 OBJECT IDENTIFIER ::= { adsl2MIB 1 }
ads12Line OBJECT IDENTIFIER ::= { adsl2 1 }
ads12Status OBJECT IDENTIFIER ::= { adsl2 2 }
ads12Inventory OBJECT IDENTIFIER ::= { adsl2 3 }
ads12PM OBJECT IDENTIFIER ::= { adsl2 4 }
ads12Profile OBJECT IDENTIFIER ::= { adsl2 5 }
ads12Scalar OBJECT IDENTIFIER ::= { adsl2 6 }
ads12Notifications OBJECT IDENTIFIER ::= { adsl2 0 }
ads12Conformance OBJECT IDENTIFIER ::= { adsl2 8 }
```

```
adsl2PMLine OBJECT IDENTIFIER ::= { adsl2PM 1 }
adsl2PMChannel OBJECT IDENTIFIER ::= { adsl2PM 2 }
```

```
adsl2ProfileLine OBJECT IDENTIFIER ::= { adsl2Profile 1 }
adsl2ProfileChannel OBJECT IDENTIFIER ::= { adsl2Profile 2 }
adsl2ProfileAlarmConf OBJECT IDENTIFIER ::= { adsl2Profile 3 }
```

```
adsl2ScalarSC OBJECT IDENTIFIER ::= { adsl2Scalar 1 }
```
adsl2LineTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2LineEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
 "The table adsl2LineTable contains configuration, command and status parameters of the ADSL2 line. The index of this table is an interface index where the interface has an ifType of ads12(230).

Several objects in this table MUST be maintained in a persistent manner."
::= { adsl2Line 1 }

adsl2LineEntry  OBJECT-TYPE
SYNTAX      Adsl2LineEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
 "The table adsl2LineTable contains configuration, commands and status parameters of the ADSL2 line"
INDEX  { ifIndex }
::= { adsl2LineTable 1 }

Adsl2LineEntry  ::=  
SEQUENCE {
  adsl2LineCnfgTemplate            SnmpAdminString,
adsl2LineAlarmCnfgTemplate       SnmpAdminString,
adsl2LineCmdConfPmsf            Adsl2ConfPmsForce,
adsl2LineCmdConfLdsf            Adsl2LineLdsf,
adsl2LineCmdConfLdsfFailReason  Adsl2LdsfResult,
adsl2LineCmdnAutomodeColdStart   TruthValue,
adsl2LineStatusAtuTransSys       Adsl2TransmissionModeType,
adsl2LineStatusPwrMngState       Adsl2PowerMngState,
adsl2LineStatusInitResult        Adsl2InitResult,
adsl2LineStatusLastStateDs       Adsl2LastTransmittedState,
adsl2LineStatusLastStateUs       Adsl2LastTransmittedState,
adsl2LineStatusAtur              Adsl2LineStatus,
adsl2LineStatusAtuc              Adsl2LineStatus,
adsl2LineStatusLnAttenDs         Unsigned32,
adsl2LineStatusLnAttenUs         Unsigned32,
adsl2LineStatusSigAttenDs        Unsigned32,
adsl2LineStatusSigAttenUs        Unsigned32,
adsl2LineStatusSnrMarginDs       Integer32,
adsl2LineStatusSnrMarginUs       Integer32,
adsl2LineStatusAttainableRateDs  Unsigned32,
adsl2LineStatusAttainableRateUs  Unsigned32,
adsl2LineStatusActPsdDs          Integer32,
adsl2LineStatusActPsdUs          Integer32,
adsl2LineStatusActAtpDs          Integer32,
adsl2LineStatusActAtpUs          Integer32
}
adsl2LineConfgTemplate  OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
"The value of this object identifies the row in the ADSL2 Line
Configuration Templates Table, (adsl2LineConfTemplateTable),
which applies for this ADSL2 line.

This object MUST be maintained in a persistent manner."
REFERENCE    "DSL Forum TR-90, paragraph 5.1.1"
DEFVAL       { "DEFVAL" }
::= { adsl2LineEntry 1 }
adsl2LineAlarmCnfgTemplate  OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
"The value of this object identifies the row in the ADSL2 Line
Alarm Configuration Template Table, 
(adsl2LineAlarmConfTemplateTable), which applies to this ADSL2
line.

This object MUST be maintained in a persistent manner."
REFERENCE    "DSL Forum TR-90, paragraph 5.1.1"
DEFVAL       { "DEFVAL" }
::= { adsl2LineEntry 2 }
adsl2LineCmndConfPmsf  OBJECT-TYPE
SYNTAX      Adsl2ConfPmsForce
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
"Power management state forced. Defines the line states to be
forced by the near-end ATU on this line. The various possible
values are:
  l3toL0 (0),
  l0toL2 (2),
  l0orL2toL3 (3)."
This object MUST be maintained in a persistent manner.
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.1.3"
DEFVAL       { l3toL0 }
::= { adsl2LineEntry 3 }

adsl2LineCmndConfLdsf OBJECT-TYPE
SYNTAX      Adsl2LineLdsf
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
"Loop diagnostics mode forced (LDSF). Defines whether the line
should be forced into the loop diagnostics mode by the
near-end ATU on this line or only be responsive to loop
diagnostics initiated by the far-end ATU.

This object MUST be maintained in a persistent manner.
However, in case the operator forces loop diagnostics mode
then the access node should reset the object (inhibit) when
loop diagnostics mode procedures are completed."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.1.8"
DEFVAL       { inhibit }
::= { adsl2LineEntry 4 }

adsl2LineCmndConfLdsfFailReason OBJECT-TYPE
SYNTAX      Adsl2LdsfResult
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"The status of the recent occasion the Loop diagnostics mode
forced (LDSF) was issued for the associated line. Possible
values are:
  none        (1) - The default value in case LDSF was never
                  requested for the associated line.
  success     (2) - The recent command completed
                  successfully.
  inProgress  (3) - The Loop Diagnostics process is in
                  progress.
  unsupported (4) - The NE or the line card doesn’t support
                  LDSF.
  cannotRun   (5) - The NE cannot initiate the command, due
                  to a non specific reason.
  aborted     (6) - The Loop Diagnostics process aborted.
  failed      (7) - The Loop Diagnostics process failed.
  illegalMode (8) - The NE cannot initiate the command, due
                  to the specific mode of the relevant
  adminUp     (9) - The NE cannot initiate the command, as
                  the relevant line is administratively
'Up'.

tableFull   (10)- The NE cannot initiate the command, due to reaching the maximum number of rows in the results table.

noResources (11)- The NE cannot initiate the command, due to lack of internal memory resources."

DEFVAL       { none }
 ::= { adsl2LineEntry 5 }

adsl2LineCmdAutemodeColdStart   OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
 "Automode cold start forced. This parameter is defined in order to improve testing of the performance of ATUs supporting automode when it is enabled in the MIB. Change the value of this parameter to 'true' indicates a change in loop conditions applied to the devices under test. The ATUs shall reset any historical information used for automode and for shortening G.994.1 handshake and initialization.

Automode is the case where multiple operation-modes are enabled through the adsl2LConfProfAtuTransSysEna object in the line configuration profile being used for the ADSL line, and where the selection of the actual operation-mode depends not only on the common capabilities of both ATUs (as exchanged in G.994.1), but also on achievable data rates under given loop conditions.

This object MUST be maintained in a persistent manner."

REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.1.10"
DEFVAL       { false }
 ::= { adsl2LineEntry 6 }

adsl2LineStatusAtuTransSys   OBJECT-TYPE
SYNTAX      Adsl2TransmissionModeType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "The ATU Transmission System (ATS) in use. It is coded in a bit-map representation with one bit set to '1' (the selected coding for the ADSL line). This parameter may be derived from the handshaking procedures defined in
Recommendation G.994.1. A set of ADSL2 line transmission modes, with one bit per mode."

REFERENCE "ITU-T G.997.1, paragraph 7.3.1.1.1"

::= { adsl2LineEntry 7 }

adsl2LineStatusPwrMngState OBJECT-TYPE
SYNTAX Adsl2PowerMngState
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The current power management state. One of four possible power management states:
L0 - Synchronized and full transmission (i.e., Showtime),
L1 - Low Power with reduced net data rate (G.992.2 only),
L2 - Low Power with reduced net data rate (G.992.3 and G.992.4 only),
L3 - No power
The various possible values are:10(1), 11(2), 12(3), 13(4)."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.2"

::= { adsl2LineEntry 8 }

adsl2LineStatusInitResult OBJECT-TYPE
SYNTAX Adsl2InitResult
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates the result of the last full initialization performed on the line. It is an enumeration type with the following values: noFail(0), configError(1), configNotFeasible(2), commFail(3), noPeerAtu(4), otherCause(5)."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.3"

::= { adsl2LineEntry 9 }

adsl2LineStatusLastStateDs OBJECT-TYPE
SYNTAX Adsl2LastTransmittedState
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The last successful transmitted initialization state in the downstream direction in the last full initialization performed on the line."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.4"

::= { adsl2LineEntry 10 }

adsl2LineStatusLastStateUs OBJECT-TYPE
SYNTAX Adsl2LastTransmittedState
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The last successful transmitted initialization state in the upstream direction in the last full initialization performed on the line."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.5"
::= {adsl2LineEntry 11}

adsl2LineStatusAtur OBJECT-TYPE
SYNTAX Adsl2LineStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates current state (existing failures) of the ATU-R. This is a bit-map of possible conditions."
REFERENCE "ITU-T G.997.1, paragraph 7.1.1.2"
::= {adsl2LineEntry 12}

adsl2LineStatusAtuc OBJECT-TYPE
SYNTAX Adsl2LineStatus
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Indicates current state (existing failures) of the ATU-C. This is a bit-map of possible conditions."
REFERENCE "ITU-T G.997.1, paragraph 7.1.1.1"
::= {adsl2LineEntry 13}

adsl2LineStatusLnAttenDs OBJECT-TYPE
SYNTAX Unsigned32 (0..1270 | 2147483646 | 2147483647)
UNITS "0.1 dB"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The measured difference in the total power transmitted by the ATU-C and the total power received by the ATU-R over all sub-carriers during diagnostics mode and initialization. It ranges from 0 to 1270 units of 0.1 dB (Physical values are 0 to 127 dB).
A special value of 0x7FFFFFFF (2147483647) indicates the line attenuation is out of range to be represented.
A special value of 0x7FFFFFFE (2147483646) indicates the line attenuation measurement is currently unavailable."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.6"
::= {adsl2LineEntry 14}

adsl2LineStatusLnAttenUs OBJECT-TYPE
SYNTAX Unsigned32 (0..1270 | 2147483646 | 2147483647)
UNITS "0.1 dB"
MAX-ACCESS      read-only
STATUS         current
DESCRIPTION
"The measured difference in the total power transmitted by the
ATU-R and the total power received by the ATU-C over all sub-
carriers during diagnostics mode and initialization.
It ranges from 0 to 1270 units of 0.1 dB (Physical values are
0 to 127 dB).
A special value of 0x7FFFFFFF (2147483647) indicates the line
attenuation is out of range to be represented.
A special value of 0x7FFFFFFE (2147483646) indicates the line
attenuation measurement is currently unavailable."
REFERENCE     "ITU-T G.997.1, paragraph 7.5.1.7"
::= { adsl2LineEntry 15 }  

adsl2LineStatusSigAttenDs  OBJECT-TYPE
SYNTAX       Unsigned32 (0..1270 | 2147483646 | 2147483647)
UNITS        "0.1 dB"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
"The measured difference in the total power transmitted by the
ATU-C and the total power received by the ATU-R over all sub-
carriers during Showtime. It ranges from 0 to 1270 units of
0.1 dB (Physical values are 0 to 127 dB).
A special value of 0x7FFFFFFF (2147483647) indicates the
signal attenuation is out of range to be represented.
A special value of 0x7FFFFFFE (2147483646) indicates the
signal attenuation measurement is currently unavailable."
REFERENCE     "ITU-T G.997.1, paragraph 7.5.1.8"
::= { adsl2LineEntry 16 }  

adsl2LineStatusSigAttenUs  OBJECT-TYPE
SYNTAX       Unsigned32 (0..1270 | 2147483646 | 2147483647)
UNITS        "0.1 dB"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
"The measured difference in the total power transmitted by the
ATU-R and the total power received by the ATU-C over all sub-
carriers during Showtime. It ranges from 0 to 1270 units of
0.1 dB (Physical values are 0 to 127 dB).
A special value of 0x7FFFFFFF (2147483647) indicates the
signal attenuation is out of range to be represented.
A special value of 0x7FFFFFFE (2147483646) indicates the
signal attenuation measurement is currently unavailable."
REFERENCE     "ITU-T G.997.1, paragraph 7.5.1.9"
::= { adsl2LineEntry 17 }  

adsl2LineStatusSnrMarginDs  OBJECT-TYPE
SYNTAX      Integer32 (-640..630 | 2147483646 | 2147483647)
UNITS       "0.1 dB"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Downstream SNR Margin is the maximum increase in dB of the
noise power received at the ATU-R, such that the BER
requirements are met for all downstream bearer channels. It
ranges from -640 to 630 units of 0.1 dB (Physical values are
-64 to 63 dB).
A special value of 0x7FFFFFFF (2147483647) indicates the
SNR Margin is out of range to be represented.
A special value of 0x7FFFFFFE (2147483646) indicates the
SNR Margin measurement is currently unavailable."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.1.10"
 ::= { adsl2LineEntry 18 }

adsl2LineStatusSnrMarginUs  OBJECT-TYPE
SYNTAX      Integer32 (-640..630 | 2147483646 | 2147483647)
UNITS       "0.1 dB"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Upstream SNR Margin is the maximum increase in dB of the noise
power received at the ATU-C, such that the BER requirements
are met for all downstream bearer channels. It ranges from
-640 to 630 units of 0.1 dB (Physical values are -64 to
63 dB).
A special value of 0x7FFFFFFF (2147483647) indicates the
SNR Margin is out of range to be represented.
A special value of 0x7FFFFFFE (2147483646) indicates the
SNR Margin measurement is currently unavailable."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.1.11"
 ::= { adsl2LineEntry 19 }

adsl2LineStatusAttainableRateDs  OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "bits/second"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Maximum Attainable Data Rate Downstream.
The maximum downstream net data rate currently attainable by
the ATU-C transmitter and the ATU-R receiver, coded in bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.1.12"
 ::= { adsl2LineEntry 20 }
adsl2LineStatusAttainableRateUs  OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "bits/second"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Maximum Attainable Data Rate Upstream. The maximum upstream net data rate currently attainable by the ATU-R transmitter and the ATU-C receiver, coded in bit/s."
REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.13"
 ::= { adsl2LineEntry 21 }

adsl2LineStatusActPsdDs OBJECT-TYPE
SYNTAX      Integer32 (-900..0 | 2147483647)
UNITS       "0.1 dB"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Actual Power Spectrum Density (PSD) Downstream. The average downstream transmit PSD over the sub-carriers used for downstream. It ranges from -900 to 0 units of 0.1 dB (Physical values are -90 to 0 dBm/Hz).
A value of 0x7FFFFFFF (2147483647) indicates the measurement is out of range to be represented."
REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.14"
 ::= { adsl2LineEntry 22 }

adsl2LineStatusActPsdUs OBJECT-TYPE
SYNTAX      Integer32 (-900..0 | 2147483647)
UNITS       "0.1 dB"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Actual Power Spectrum Density (PSD) Upstream. The average upstream transmit PSD over the sub-carriers used for upstream. It ranges from -900 to 0 units of 0.1 dB (Physical values are -90 to 0 dBm/Hz).
A value of 0x7FFFFFFF (2147483647) indicates the measurement is out of range to be represented."
REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.15"
 ::= { adsl2LineEntry 23 }

adsl2LineStatusActAtpDs  OBJECT-TYPE
SYNTAX      Integer32 (-310..310 | 2147483647)
UNITS       "0.1 dB"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"..."
"Actual Aggregate Transmit Power Downstream. The total amount of transmit power delivered by the ATU-C at the U-C reference point, at the instant of measurement. It ranges from -310 to 310 units of 0.1 dB (Physical values are -31 to 31 dBm). A value of 0x7FFFFFFF (2147483647) indicates the measurement is out of range to be represented."

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.16"
::= { adsl2LineEntry 24 }

adsl2LineStatusActAtpUs OBJECT-TYPE
SYNTAX Integer32 (-310..310 | 2147483647)
UNITS "0.1 dB"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Actual Aggregate Transmit Power Upstream. The total amount of transmit power delivered by the ATU-R at the U-R reference point, at the instant of measurement. It ranges from -310 to 310 units of 0.1 dB (Physical values are -31 to 31 dBm). A value of 0x7FFFFFFF (2147483647) indicates the measurement is out of range to be represented."

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.17"
::= { adsl2LineEntry 25 }

--        adsl2ChannelStatusTable             --
--        ----------------------------------------
ads12ChannelStatusActAtpUs OBJECT-TYPE
SYNTAX SEQUENCE OF Ads12ChannelStatusEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table ads12ChannelStatusTable contains status parameters of ADSL2 channel. This table contains live data from equipment."
::= { ads12Status 1 }

ads12ChannelStatusEntry OBJECT-TYPE
SYNTAX Ads12ChannelStatusEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table ads12ChannelStatusTable contains status parameters of ADSL2 channel. The index of this table is an interface index where the interface has an ifType value that is applicable
for a DSL channel and the termination unit."
INDEX { ifIndex, adsl2ChStatusUnit }
::= { adsl2ChannelStatusTable 1 }

Adsl2ChannelStatusEntry ::= SEQUENCE {
adsl2ChStatusUnit                Adsl2Unit,
adsl2ChStatusChannelNum          Unsigned32,
adsl2ChStatusActDataRate         Unsigned32,
adsl2ChStatusPrevDataRate        Unsigned32,
adsl2ChStatusActDelay            Unsigned32,
adsl2ChStatusAtmStatus           Adsl2ChAtmStatus,
adsl2ChStatusPtmStatus           Adsl2ChPtmStatus
}

adsl2ChStatusUnit OBJECT-TYPE
SYNTAX      Adsl2Unit
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
 "The termination unit ATUC(1) or ATUR(2)."
 ::= { adsl2ChannelStatusEntry 1 }

adsl2ChStatusChannelNum OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "Provides the bearer channel number associated with this
 row (i.e., the channel ifIndex). This enables determining
 the channel configuration profile and the channel thresholds
 profile applicable for this bearer channel."
 ::= { adsl2ChannelStatusEntry 2 }

adsl2ChStatusActDataRate OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "The actual net data rate that the bearer channel is operating
 at, if in L0 power management state. In L1 or L2 states, it
 relates to the previous L0 state. The data rate is coded in
 bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.2.1"
 ::= { adsl2ChannelStatusEntry 3 }

adsl2ChStatusPrevDataRate  OBJECT-TYPE
SYNTAX       Unsigned32(0..200000000)
UNITS        "bits/second"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  
"The previous net data rate that the bearer channel was
operating at just before the latest rate change event. This
could be a full or short initialization, fast retrain, DRA or
power management transitions, excluding transitions between L0
state and L1 or L2 states. The data rate is coded in bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.2.2"
 ::= { adsl2ChannelStatusEntry 4 }

adsl2ChStatusActDelay  OBJECT-TYPE
SYNTAX       Unsigned32(0..8176)
UNITS        "milliseconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  
"The actual one-way interleaving delay introduced by the
PMS-TC in the direction of the bearer channel, if in L0
power management state. In L1 or L2 states, it relates to
the previous L0 state. It is coded in ms (rounded to the
nearest ms)."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.2.3"
 ::= { adsl2ChannelStatusEntry 5 }

adsl2ChStatusAtmStatus  OBJECT-TYPE
SYNTAX       Adsl2ChAtmStatus
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  
"Indicates current state (existing failures) of the ADSL
channel in case its Data Path is ATM. This is a bit-map of
possible conditions. The various bit positions are:
noDefect (0),
noCellDelineation (1),
lossOfCellDelineation (2).
In case the channel is not of ATM Data Path the object is set
to '0'."
REFERENCE    "ITU-T G.997.1, paragraph 7.1.4"
 ::= { adsl2ChannelStatusEntry 6 }

adsl2ChStatusPtmStatus  OBJECT-TYPE
SYNTAX       Adsl2ChPtmStatus
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
"Indicates current state (existing failures) of the ADSL channel in case its Data Path is PTM. This is a bit-map of possible conditions. The various bit positions are:
  noDefect (0),
  outOfSync (1).
In case the channel is not of PTM Data Path the object is set to '0'."
REFERENCE  "ITU-T G.997.1, paragraph 7.1.5"
 ::= { adsl2ChannelStatusEntry 7 }

-- Scalars that relate to the adsl2SCStatusTable.

adsl2ScalarSCMaxInterfaces OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This value determines the upper size of adsl2SCStatusTable. The maximum number of entries in adsl2SCStatusTable is equal to two times the value of this attribute."
 ::= { adsl2ScalarSC 1 }

adsl2ScalarSCAvailInterfaces OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
 "This value determines the amount of space that is currently available in adsl2SCStatusTable. The number of entries available in adsl2SCStatusTable is equal to two times the value of this attribute."
 ::= { adsl2ScalarSC 2 }

-- adsl2SCStatusTable --

adsl2SCStatusTable OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2SCStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
 "The table adsl2SCStatusTable contains status parameters of ADSL2 sub-carriers. This following points apply to this
1. The main purpose of this table is to hold the results of a DELT test.
2. This table also holds parameters obtained at line initialisation time.
3. The rows in this table are volatile, that is they are lost if the SNMP agent is rebooted.
4. Due to the large OCTET STRING attributes in this table, the worst case memory requirements for this table are very high. The manager may use the row status attribute of this table to delete rows in order to reclaim memory.
5. The manager may create rows in this table. The SNMP agent may create rows in this table. Only the manager may delete rows in this table.
6. The maximum number of rows allowable in this table is indicated by the scalar attribute ads12ScalarSCMaxInterfaces.
   The number of rows available in this table is indicated by the scalar attribute ads12ScalarSCAvailInterfaces.
7. The SNMP agent is permitted to create rows in this table when a DELT test completes successfully or when line initialisation occurs. It is not mandatory for the SNMP agent to create rows in this table, hence it may be necessary for the manager to create rows in this table before any results can be stored.
8. If the manager attempts to create a row in this table and there are no more rows available, the creation attempt will fail and the response to the SNMP SET PDU will contain the error noCreation(11).
9. If the SNMP agent attempts to create a row in this table and there are no more rows available, the creation attempt will fail and the attribute ads12LineCmdConfLdsfFailReason will indicate the reason for the failure. The failure reason will be either tableFull(10) or noResources(11).
10. An example of use of this table is as follows:
    Step 1.: The DELT test is started by setting the ads12LineCmdConfLdsf from inhibit to force.
    Step 2.: The DELT test completes and valid data is available.
    Step 3.: The row in the ads12SCStatusTable where the results will be stored does not yet exist so the SNMP agent attempts to create the row.
    Step 4.: Due to a low memory condition, a row in the ads12SCStatusTable table cannot be created at this time.
    Step 5.: The reason for the failure, tableFull(10), is indicated in the ads12LineCmdConfLdsfFailReason...
11. Another example of use of this table is as follows:
   Step 1. The DELT test is started by setting the
           : adsl2LineCmndConfLdsf from inhibit to force.
   Step 2. The DELT test completes and valid data is
           : available.
   Step 3. The row in the adsl2SCStatusTable where the
           : results will be stored does not yet exist so
           : the SNMP agent attempts to create the row.
   Step 4. The row creation is successfully.
   Step 5. The value of the attribute
           : adsl2LineCmndConfLdsfFailReasonreason is set
           : to success(2).

12. Another example of use of this table is as follows:
   Step 1. The manager creates a row in adsl2SCStatusTable
           : for a particular ADSL2 line.
   Step 2. The DELT test is started on the above mentioned
           : line by setting the adsl2LineCmndConfLdsf from
           : inhibit to force.
   Step 3. The DELT test completes and valid data is
           : available.
   Step 4. The value of the attribute
           : adsl2LineCmndConfLdsfFailReasonreason is set
           : to success(2).

::= { adsl2Status 2 }

adsl2SCStatusEntry OBJECT-TYPE
SYNTAX     Adsl2SCStatusEntry
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
   "The table Hfadsl2SCStatusEntry contains status parameters
   of ADSL2 sub-carriers.
   The index of this table is an interface index where the
   interface has an ifType of adsl2(230)."
INDEX { ifIndex, adsl2SCStatusDirection }
::= { adsl2SCStatusTable 1 }

    Adsl2SCStatusEntry ::= SEQUENCE {
        adsl2SCStatusDirection         Adsl2Direction,
        adsl2SCStatusMtime             Unsigned32,
        adsl2SCStatusSnr               OCTET STRING,
        adsl2SCStatusBitsAlloc         OCTET STRING,
        adsl2SCStatusGainAlloc         OCTET STRING,
        adsl2SCStatusTssi              Adsl2Tssi,
        adsl2SCStatusLinScale          Unsigned32,
        adsl2SCStatusLinReal           OCTET STRING,
    }
adsl2SCStatusLinImg OCTET STRING,
adsl2SCStatusLogMt Unsigned32,
adsl2SCStatusLog OCTET STRING,
adsl2SCStatusQlnMt Unsigned32,
adsl2SCStatusQln OCTET STRING,
adsl2SCStatusLnAtten Unsigned32,
adsl2SCStatusSigAtten Unsigned32,
adsl2SCStatusSnrMargin Integer32,
adsl2SCStatusAttainableRate Unsigned32,
adsl2SCStatusActAtp Integer32,
adsl2SCStatusRowStatus RowStatus

adsl2SCStatusDirection OBJECT-TYPE
SYNTAX Adsl2Direction
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The direction of the sub-carrier either upstream or downstream"
::= { adsl2SCStatusEntry 1 }

adsl2SCStatusMtime OBJECT-TYPE
SYNTAX Unsigned32
UNITS "symbols"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"SNR Measurement Time. The number of symbols used to measure the SNR values on the respective transmission direction. It should correspond to the value specified in the recommendation (e.g., the number of symbols in 1 second time interval for G.992.3). This parameter corresponds to 1 second in loop diagnostic procedure and should be updated otherwise"
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.20.1 (SNRMTds) and paragraph 7.5.1.20.3 (SNRMTus)"
::= { adsl2SCStatusEntry 2 }

adsl2SCStatusSnr OBJECT-TYPE
SYNTAX OCTET STRING (SIZE(0..512))
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The SNR Margin per sub-carrier, expressing the ratio between the received signal power and received noise power per subscriber. It is an array of 512 octets, designed for supporting up to 512 (downstream) sub-carriers."
The number of utilized octets on downstream direction depends on NSCds, and on upstream direction it depends on NSCus. This value is referred here as NSC.

Octet i (0 <= i < NSC) is set to a value in the range 0 to 254 to indicate that the respective downstream or upstream sub-carrier i has SNR of: (-32 + Adsl2SubcarrierSnr(i)/2) in dB (i.e., -32 to 95dB).

The special value 255 means that no measurement could be done for the subcarrier because it is out of the PSD mask passband or that the noise PSD is out of range to be represented.

Each value in this array is 8 bits wide.

REFERENCE
"ITU-T G.997.1, paragraph 7.5.1.20.2 (SNRpsds) and paragraph 7.5.1.20.4 (SNRpsus)"

::= { adsl2SCStatusEntry 3 }

adsl2SCStatusBitsAlloc OBJECT-TYPE
SYNTAX OCTET STRING (SIZE(0..256))
UNITS "bits"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The bits allocation per sub-carrier. An array of 256 octets (512 nibbles), designed for supporting up to 512 (downstream) sub-carriers.

The number of utilized nibbles on downstream direction depends on NSCds, and on upstream direction it depends on NSCus. This value is referred here as NSC.

Nibble i (0 <= i < NSC) is set to a value in the range 0 to 15 to indicate that the respective downstream or upstream sub-carrier i has the same amount of bits allocation." 

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.21.1 (BITSpds) and paragraph 7.5.1.21.2 (BITYpsus)"

::= { adsl2SCStatusEntry 4 }

adsl2SCStatusGainAlloc OBJECT-TYPE
SYNTAX OCTET STRING (SIZE(0..1024))
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The gain allocation per sub-carrier. An array of 512 16-bits values, designed for supporting up to 512 (downstream) sub-carriers.

The number of utilized octets on downstream direction depends on NSCds, and on upstream direction it depends on NSCus. This value is referred here as NSC.

Value i (0 <= i < NSC) is in the range 0 to 4093 to indicate that the respective downstream or upstream sub-carrier i has the same amount of gain value."
The gain value is represented as a multiple of 1/512 on linear scale. Each value in this array is 16 bits wide and is stored in big endian format.

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.21.3 (GAINSpsds) and paragraph 7.5.1.21.4 (GAINSpsus)"

::= { adsl2SCStatusEntry 5 }

adsl2SCStatusTssi OBJECT-TYPE
SYNTAX     Adsl2Tssi
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
"The transmit spectrum shaping (TSSi) breakpoints expressed as the set of breakpoints exchanged during G.994.1. Each breakpoint is a pair of values occupying 3 octets with the following structure:
First 2 octets - Index of the subcarrier used in the context of the breakpoint.
Third octet    - The shaping parameter at the breakpoint.
Subcarrier index is an unsigned number in the range 1 to either NSCds (downstream direction) or NSCus (upstream direction). The shaping parameter value is in the range 0 to 127 (units of -0.5dB). The special value 127 indicates that the subcarrier is not transmitted."

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.21.5 (TSSpsds) and paragraph 7.5.1.21.6 (TSSpsus)"

::= { adsl2SCStatusEntry 6 }

adsl2SCStatusLinScale OBJECT-TYPE
SYNTAX     Unsigned32
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
"The scale factor to be applied to the H(f) linear representation values for the respective transmission direction. This parameter is only available after a loop diagnostic procedure."

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.18.1 (HLINSCds) and paragraph 7.5.1.18.5 (HLINSCus)"

::= { adsl2SCStatusEntry 7 }

adsl2SCStatusLinReal OBJECT-TYPE
SYNTAX     OCTET STRING  (SIZE(0..1024))
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
"An array of up to 512 complex H(f) linear representation values in linear scale for the respective transmission
direction. It is designed to support up to 512 (downstream)
sub-carriers.
The number of utilized values on downstream direction depends
on NSCds, and on upstream direction it depends on NSCus. This
value is referred here as NSC.
Each array entry represents the real component [referred here as
a(i)] of Hlin(f = i*Df) value for a particular sub-carrier index
i (0 <= i < NSC).
Hlin(f) is represented as ((scale/2^15)*((a(i)+j*b(i))/2^15)),
where scale is Adsl2SubcarrierLinScale and a(i) and b(i)
[provided by the Adsl2SubcarrierLinImg object] are in the range
(-2^15+1) to (+2^15-1).
A special value a(i)=b(i)= -2^15 indicates that no measurement
could be done for the subcarrier because it is out of the
passband or that the attenuation is out of range to be
represented. This parameter is only available after a loop
diagnostic procedure.
Each value in this array is 16 bits wide and is stored in big
endian format."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.18.2 (HLINpsds)
and paragraph 7.5.1.18.6 (HLINpsds)"
::= { adsl2SCStatusEntry 8 }

ads12SCStatusLinImg OBJECT-TYPE
SYNTAX OCTET STRING (SIZE(0..1024))
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"An array of up to 512 complex H(f) linear representation
values in linear scale for the respective transmission
direction. It is designed to support up to 512 (downstream)
sub-carriers.
The number of utilized values on downstream direction depends
on NSCds, and on upstream direction it depends on NSCus. This
value is referred here as NSC.
Each array entry represents the imaginary component [referred
here as b(i)] of Hlin(f = i*Df) value for a particular sub-
carrier index i (0 <= i < NSC).
Hlin(f) is represented as ((scale/2^15)*((a(i)+j*b(i))/2^15)),
where scale is Adsl2SubcarrierLinScale and a(i) [provided by
the Adsl2SubcarrierLinReal object] and b(i) are in the range
(-2^15+1) to (+2^15-1).
A special value a(i)=b(i)= -2^15 indicates that no measurement
could be done for the subcarrier because it is out of the
passband or that the attenuation is out of range to be
represented. This parameter is only available after a loop
diagnostic procedure.
Each value in this array is 16 bits wide and is stored in big
endian format."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.18.2 (HLINpsds)
and paragraph 7.5.1.18.6 (HLINpsds)"
::= { adsl2SCStatusEntry 9 }

adsl2SCStatusLogMt OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"The number of symbols used to measure the H(f) logarithmic
measurement values for the respective transmission direction.
This parameter should correspond to the value specified in the
recommendation (e.g., the number of symbols in 1 second
time interval for G.992.3). This parameter corresponds to 1
second in loop diagnostic procedure and should be updated in
initialization"
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.18.3 (HLOGMTds)
and paragraph 7.5.1.18.7 (HLOGMTus)"
::= { adsl2SCStatusEntry 10 }

adsl2SCStatusLog OBJECT-TYPE
SYNTAX      OCTET STRING  (SIZE(0..1024))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"An array of up to 512 real H(f) logarithmic representation
values in dB for the respective transmission direction. It is
designed to support up to 512 (downstream) sub-carriers
The number of utilized values on downstream direction depends
on NSCd, and on upstream direction it depends on NSCu. This
value is referred here as NSC.
Each array entry represents the real Hlog(f = i*Df) value for a
particular sub-carrier index i, (0 <= i < NSC).
The real Hlog(f) value is represented as (6-m(i)/10), with m(i)
in the range 0 to 1022. A special value m=1023 indicates that
no measurement could be done for the subcarrier because it is
out of the passband or that the attenuation is out of range to
be represented. This parameter is applicable in loop
diagnostic procedure and initialization.
Each value in this array is 16 bits wide and is stored
in big endian format."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.18.4 (HLOGpsds)
and paragraph 7.5.1.18.8 (HLOGpsus)"
::= { adsl2SCStatusEntry 11 }

adsl2SCStatusQlnMt OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of symbols used to measure the Quiet Line Noise values on the respective transmission direction. This parameter should correspond to the value specified in the recommendation (e.g., the number of symbols in 1 second time interval for G.992.3). This parameter corresponds to 1 second in loop diagnostic procedure and should be updated in initialization.

REFERENCE "ITU-T G.997.1, paragraph 7.5.1.19.1 (QLNMTds)
and paragraph 7.5.1.19.3 (QLNMTus)"
::= { adsl2SCStatusEntry 12 }

adsl2SCStatusQln OBJECT-TYPE
SYNTAX OCTET STRING (SIZE(0..512))
UNITS "dBm/Hz"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"An array of up to 512 real Quiet Line Noise values in dBm/Hz for the respective transmission direction. It is designed for up to 512 (downstream) sub-carriers. The number of utilized values on downstream direction depends on NSCd, and on upstream direction it depends on NSCu. This value is referred here as NSC.

Each array entry represents the QLN(f = i*Df) value for a particular sub-carrier index i, (0 <= i < NSC).

The QLN(f) is represented as ( -23-n(i)/2), with n(i) in the range 0 to 254. A special value n(i)=255 indicates that no measurement could be done for the subcarrier because it is out of the passband or that the noise PSD is out of range to be represented.

This parameter is applicable in loop diagnostic procedure and initialization. Each value in this array is 8 bits wide."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.19.2 (QLNpsds)
and paragraph 7.5.1.19.4 (QLNpsus)"
::= { adsl2SCStatusEntry 13 }

adsl2SCStatusLnAtten OBJECT-TYPE
SYNTAX Unsigned32 (0..1270 | 2147483646 | 2147483647)
UNITS "0.1 dB"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"When referring to the downstream direction, it is the measured difference in the total power transmitted by the ATU-C and the total power received by the ATU-R over all sub-carriers during
diagnostics mode.

When referring to the upstream direction, it is the measured difference in the total power transmitted by the ATU-R and the total power received by the ATU-C over all sub-carriers during diagnostics mode.

It ranges from 0 to 1270 units of 0.1 dB (Physical values are 0 to 127 dB).

A special value of 0x7FFFFFFF (2147483647) indicates the line attenuation is out of range to be represented.

A special value of 0x7FFFFFFE (2147483646) indicates the line attenuation measurement is unavailable.

This object reflects the value of the parameter following the most recent DELT performed on the associated line. Once the DELT process is over, the parameter no longer changes until the row is deleted or a new DELT process is initiated. 

REFERENCE  "ITU-T G.997.1, paragraph 7.5.1.6 (LATNds)
and paragraph 7.5.1.7 (LATNus)"

::= { adsl2SCStatusEntry 14 }

adsl2SCStatusSigAtten OBJECT-TYPE
SYNTAX Unsigned32 (0..1270 | 2147483646 | 2147483647)
UNITS "0.1 dB"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"When referring to the downstream direction, it is the measured difference in the total power transmitted by the ATU-C and the total power received by the ATU-R over all sub carriers during Showtime after the diagnostics mode.

When referring to the upstream direction, it is the measured difference in the total power transmitted by the ATU-R and the total power received by the ATU-C over all sub carriers during Showtime after the diagnostics mode.

It ranges from 0 to 1270 units of 0.1 dB (Physical values are 0 to 127 dB).

A special value of 0x7FFFFFFF (2147483647) indicates the signal attenuation is out of range to be represented.

A special value of 0x7FFFFFFE (2147483646) indicates the signal attenuation measurement is unavailable.

This object reflects the value of the parameter following the most recent DELT performed on the associated line. Once the DELT process is over, the parameter no longer changes until the row is deleted or a new DELT process is initiated. 

REFERENCE  "ITU-T G.997.1, paragraph 7.5.1.8 (SATNds)
and paragraph 7.5.1.9 (SATNus)"

::= { adsl2SCStatusEntry 15 }

adsl2SCStatusSnrMargin OBJECT-TYPE
SNR Margin is the maximum increase in dB of the noise power received at the ATU (ATU-R on downstream direction and ATU-C on upstream direction), such that the BER requirements are met for all bearer channels received at the ATU. It ranges from -640 to 630 units of 0.1 dB (Physical values are -64 to 63 dB).

A special value of 0x7FFFFFFF (2147483647) indicates the SNR Margin is out of range to be represented.

A special value of 0x7FFFFFFE (2147483646) indicates the SNR Margin measurement is currently unavailable.

This object reflects the value of the parameter following the most recent DELT performed on the associated line. Once the DELT process is over, the parameter no longer changes until the row is deleted or a new DELT process is initiated.

REFERENCE  "ITU-T G.997.1, paragraph 7.5.1.10 (SNRMds) and paragraph 7.5.1.11 (SNRMus)"

::= { adsl2SCStatusEntry 16 }

Maximum Attainable Data Rate. The maximum net data rate currently attainable by the ATU-C transmitter and ATU-R receiver (when referring to downstream direction) or by the ATU-R transmitter and ATU-C receiver (when referring to upstream direction). Value is coded in bits/s.

This object reflects the value of the parameter following the most recent DELT performed on the associated line. Once the DELT process is over, the parameter no longer changes until the row is deleted or a new DELT process is initiated.

REFERENCE  "ITU-T G.997.1, paragraph 7.5.1.12 (ATTNDRds) and paragraph 7.5.1.13 (ATTNDRus)"

::= { adsl2SCStatusEntry 17 }

Maximum Attainable Data Rate. The maximum net data rate currently attainable by the ATU-C transmitter and ATU-R receiver (when referring to downstream direction) or by the ATU-R transmitter and ATU-C receiver (when referring to upstream direction). Value is coded in bits/s.

This object reflects the value of the parameter following the most recent DELT performed on the associated line. Once the DELT process is over, the parameter no longer changes until the row is deleted or a new DELT process is initiated.

REFERENCE  "ITU-T G.997.1, paragraph 7.5.1.12 (ATTNDRds) and paragraph 7.5.1.13 (ATTNDRus)"

::= { adsl2SCStatusEntry 17 }
"Actual Aggregate Transmit Power from the ATU (ATU-R on
downstream direction and ATU-C on upstream direction), at the
instant of measurement. It ranges from -310 to 310 units of
0.1 dB (Physical values are -31 to 31 dBm). A value of all
1's indicates the measurement is out of range to be
represented.

This object reflects the value of the parameter following the
most recent DElt performed on the associated line. Once
the DElt process is over, the parameter no longer changes
until the row is deleted or a new DElt process is initiated.

REFERENCE  "ITU-T G.997.1, paragraph 7.5.1.14 (ACTPSdds)
and paragraph 7.5.1.15 (ACTPSDus)"

::= { adsl2SCStatusEntry 18 }

adsl2SCStatusRowStatus  OBJECT-TYPE
SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Row Status. The manager may create and delete rows
of this table. Please see the description of
adsl2SCStatusTable above for more details."
::= { adsl2SCStatusEntry 19 }

--        adsl2LineInventoryTable             --
--        adsl2LineInventoryTable             --

adsl2LineInventoryTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2LineInventoryEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2LineInventoryTable contains inventory of ADSL2
unit."
::= { adsl2Inventory 1 }

adsl2LineInventoryEntry  OBJECT-TYPE
SYNTAX      Adsl2LineInventoryEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2LineInventoryTable contains inventory of ADSL2
unit. The index of this table is an interface index where the
interface has an ifType of adsl2(230)."
INDEX  { ifIndex, adsl2LInvUnit }
::= { adsl2LineInventoryTable 1 }
Adsl2LineInventoryEntry ::= 
SEQUENCE {
  adsl2LInvUnit                      Adsl2Unit,
  adsl2LInvG994VendorId              OCTET STRING,
  adsl2LInvSystemVendorId            OCTET STRING,
  adsl2LInvVersionNumber             OCTET STRING,
  adsl2LInvSerialNumber              OCTET STRING,
  adsl2LInvSelfTestResult            Unsigned32,
  adsl2LInvTransmissionCapabilities  Adsl2TransmissionModeType
}

adsl2LInvUnit  OBJECT-TYPE
SYNTAX      Adsl2Unit
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "The termination unit ATUC{1} or ATUR{2}."
 ::= { adsl2LineInventoryEntry 1 }

adsl2LInvG994VendorId  OBJECT-TYPE
SYNTAX      OCTET STRING  (SIZE(8))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "The ATU G.994.1 Vendor ID as inserted in the G.994.1 CL/CLR
message. It consists of 8 binary octets, including a country
code followed by a (regionally allocated) provider code, as
defined in Recommendation T.35."
REFERENCE    "ITU-T G.997.1, paragraph 7.4"
 ::= { adsl2LineInventoryEntry 2 }

adsl2LInvSystemVendorId  OBJECT-TYPE
SYNTAX      OCTET STRING  (SIZE(8))
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "The ATU System Vendor ID (identifies the ATU system
integrator) as inserted in the Overhead Messages (both ATUs
for G.992.3 and G.992.4) or in the Embedded Operations
Channel (only ATU-R in G.992.1 and G.992.2). It consists of
8 binary octets, with same format as used for
Adsl2InvG994VendorId."
REFERENCE    "ITU-T G.997.1, paragraph 7.4"
 ::= { adsl2LineInventoryEntry 3 }

adsl2LInvVersionNumber  OBJECT-TYPE
SYNTAX      OCTET STRING  (SIZE(0..16))
MAX-ACCESS  read-only
The ATU version number (vendor specific information) as inserted in the Overhead Messages (both ATUs for G.992.3 and G.992.4) or in the Embedded Operations Channel (only ATU-R in G.992.1 and G.992.2). It consists of up to 16 binary octets.

REFERENCE "ITU-T G.997.1, paragraph 7.4"

::= { adsl2LineInventoryEntry 4 }

The ATU serial number (vendor specific information) as inserted in the Overhead Messages (both ATUs for G.992.3 and G.992.4) or in the Embedded Operations Channel (only ATU-R in G.992.1 and G.992.2). It is vendor specific information. It consists of up to 32 ASCII characters.

REFERENCE "ITU-T G.997.1, paragraph 7.4"

::= { adsl2LineInventoryEntry 5 }

The ATU self-test result, coded as a 32-bit value. The most significant octet of the result is '0' if the self-test passed, and '1' if the self-test failed. The interpretation of the other octets is vendor discretionary.

REFERENCE "ITU-T G.997.1, paragraph 7.4"

::= { adsl2LineInventoryEntry 6 }

The ATU transmission system capability list of the different coding types. It is coded in a bit-map representation with 1 or more bits set. A bit set to '1' means that the ATU supports the respective coding. The value may be derived from the handshaking procedures defined in G.994.1. A set of ADSL2 line transmission modes, with one bit per mode.

REFERENCE "ITU-T G.997.1, paragraph 7.4"

::= { adsl2LineInventoryEntry 7 }
-- adsl2LineConfTemplateTable --

adsl2LineConfTemplateTable  OBJECT-TYPE
SYNTAX  SEQUENCE  OF  Adsl2LineConfTemplateEntry
MAX-ACCESS not-accessible
STATUS  current
DESCRIPTION
"The table adsl2LineConfTemplateTable contains ADSL2 line configuration template.
Entries in this table MUST be maintained in a persistent manner."
 ::= { adsl2ProfileLine 1 }

adsl2LineConfTemplateEntry  OBJECT-TYPE
SYNTAX  Adsl2LineConfTemplateEntry
MAX-ACCESS not-accessible
STATUS  current
DESCRIPTION
"The table adsl2LineConfTemplateTable contains ADSL2 line configuration template.
A default template 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  { adsl2LConfTempTemplateName }
 ::= { adsl2LineConfTemplateTable 1 }

Adsl2LineConfTemplateEntry  ::=  
SEQUENCE 
{  
adsl2LConfTempTemplateName  SnmpAdminString,  
adsl2LConfTempLineProfile  SnmpAdminString,  
adsl2LConfTempChan1ConfProfile  SnmpAdminString,  
adsl2LConfTempChan1RaRatioDs  Unsigned32,  
adsl2LConfTempChan1RaRatioUs  Unsigned32,  
adsl2LConfTempChan2ConfProfile  SnmpAdminString,  
adsl2LConfTempChan2RaRatioDs  Unsigned32,  
adsl2LConfTempChan2RaRatioUs  Unsigned32,  
adsl2LConfTempChan3ConfProfile  SnmpAdminString,  
adsl2LConfTempChan3RaRatioDs  Unsigned32,  
adsl2LConfTempChan3RaRatioUs  Unsigned32,  
adsl2LConfTempChan4ConfProfile  SnmpAdminString,  
adsl2LConfTempChan4RaRatioDs  Unsigned32,  
adsl2LConfTempChan4RaRatioUs  Unsigned32,  
adsl2LConfTempRowStatus  RowStatus  
}

adsl2LConfTempTemplateName  OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION  
"This object identifies a row in this table."
REFERENCE   "DSL Forum TR-90, paragraph 5.1.4"
::= { adsl2LineConfTemplateEntry 1 }

ads12LConfTempLineProfile OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION  
"The value of this object identifies the row in the ADSL2 Line 
Configuration Profile Table, (Adsl2LineConfProfileTable), 
which applies for this ADSL2 line."
REFERENCE   "DSL Forum TR-90, paragraph 5.1.4"
DEFVAL       { "DEFVAL" }
::= { adsl2LineConfTemplateEntry 2 }

ads12LConfTempChan1ConfProfile OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION  
"The value of this object identifies the row in the ADSL2 
Channel Configuration Profile Table, 
(Adsl2ChanConfProfileTable) that applies to ADSL2 bearer 
channel #1. The channel profile name specified here must 
match the name of an existing row in the 
ads12ChConfProfileTable table."
DEFVAL       { "DEFVAL" }
::= { adsl2LineConfTemplateEntry 3 }

ads12LConfTempChan1RaRatioDs OBJECT-TYPE
SYNTAX      Unsigned32(0..100)
UNITS       "percents"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION  
"Rate Adaptation Ratio. The ratio (in %) that should be taken 
to account for the bearer channel #1 when performing rate 
adaptation on Downstream. The ratio refers to the available 
data rate in excess of the Minimum Data Rate, summed over all 
bearer channels. Also, the 100 - 
Adsl2ConfTemplateChan1RaRatioDs is the ratio of excess data 
rate to be assigned to all other bearer channels on Downstream 
direction. The sum of rate adaptation ratios over all bearers
Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #1 when performing rate adaptation on Upstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - Adsl2ConfTemplateChan1RaRatioUs is the ratio of excess data rate to be assigned to all other bearer channels on Upstream direction. The sum of rate adaptation ratios over all bearers on the same direction shall be equal to 100 %.

REFERENCE "ITU-T G.997.1, paragraph 7.3.2.1"

DEFVAL { 100 } ::= { adsl2LineConfTemplateEntry 4 }

Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #2 when performing rate adaptation on Downstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - Adsl2ConfTemplateChan2RaRatioDs is the ratio of excess data rate to be assigned to all other bearer channels on Downstream direction. The sum of rate adaptation ratios over all bearers on the same direction shall be equal to 100 %.

REFERENCE "ITU-T G.997.1, paragraph 7.3.2.1"

DEFVAL { 100 } ::= { adsl2LineConfTemplateEntry 5 }

The value of this object identifies the row in the ADSL2 Channel Configuration Profile Table, (Adsl2ChanConfProfileTable) that applies to ADSL2 bearer channel #2. If the channel is unused, then the object is set to a zero length string. This object may be set to a zero length string only if adsl2LConfTempChan3ConfProfile contains a zero length string.

DEFVAL { "" } ::= { adsl2LineConfTemplateEntry 6 }

Rate Adaptation Ratio. The ratio (in %) that should be taken...
into account for the bearer channel #2 when performing rate adaptation on Downstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - Adsl2ConfTemplateChan2RaRatioDs is the ratio of excess data rate to be assigned to all other bearer channels on Downstream direction. The sum of rate adaptation ratios over all bearers on the same direction shall be equal to 100%.

REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.1"
DEFVAL       { 0 }
 ::= { adsl2LineConfTemplateEntry 7 }

adsl2LConfTempChan2RaRatioUs  OBJECT-TYPE
SYNTAX      Unsigned32(0..100)
UNITS       "percents"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
 "Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #2 when performing rate adaptation on Upstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - Adsl2ConfTemplateChan2RaRatioUs is the ratio of excess data rate to be assigned to all other bearer channels on Upstream direction. The sum of rate adaptation ratios over all bearers on the same direction shall be equal to 100 %." 
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.1"
DEFVAL       { 0 }
 ::= { adsl2LineConfTemplateEntry 8 }

adsl2LConfTempChan3ConfProfile  OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(0..32))
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
 "The value of this object identifies the row in the ADSL2 Channel Configuration Profile Table, (Adsl2ChanConfProfileTable) that applies to ADSL2 bearer channel #3. If the channel is unused, then the object is set to a zero length string. This object may be set to a zero length string only if adsl2LConfTempChan4ConfProfile contains a zero length string. This object may be set to a non-zero length string only if adsl2LConfTempChan2ConfProfile contains a non-zero length string."
DEFVAL  { "" }
 ::= { adsl2LineConfTemplateEntry 9 }

adsl2LConfTempChan3RaRatioDs  OBJECT-TYPE
SYNTAX      Unsigned32(0..100)
UNITS       "percents"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #3 when performing rate adaptation on Downstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - Adsl2ConfTemplateChan3RaRatioDs is the ratio of excess data rate to be assigned to all other bearer channels on Downstream direction. The sum of rate adaptation ratios over all bearers on the same direction shall be equal to 100%.
"
REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
DEFVAL       { 0 }
 ::= { adsl2LineConfTemplateEntry 10 }

adsl2LConfTempChan3RaRatioUs  OBJECT-TYPE
SYNTAX      Unsigned32(0..100)
UNITS       "percents"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #3 when performing rate adaptation on Upstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - Adsl2ConfTemplateChan3RaRatioUs is the ratio of excess data rate to be assigned to all other bearer channels on Upstream direction. The sum of rate adaptation ratios over all bearers on the same direction shall be equal to 100%.
"
REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
DEFVAL       { 0 }
 ::= { adsl2LineConfTemplateEntry 11 }

adsl2LConfTempChan4ConfProfile  OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(0..32))
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"The value of this object identifies the row in the ADSL2 Channel Configuration Profile Table"
(Adsl2ChanConfProfileTableDs) that applies to ADSL2 bearer channel #4. If the channel is unused, then the object is set to a zero length string. This object may be set to a non-zero length string only if adsl2LConfTempChan3ConfProfile contains a non-zero length string.

DEFVAL       { "" }
::= { adsl2LineConfTemplateEntry 12 }

adsl2LConfTempChan4RaRatioDs OBJECT-TYPE
SYNTAX      Unsigned32(0..100)
UNITS       "percents"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #4 when performing rate adaptation on Downstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - adsl2LConfTempChan4RaRatioDs is the ratio of excess data rate to be assigned to all other bearer channels. The sum of rate adaptation ratios over all bearers on the same direction shall sum to 100%." 
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.1"
DEFVAL       { 0 }
::= { adsl2LineConfTemplateEntry 13 }

adsl2LConfTempChan4RaRatioUs OBJECT-TYPE
SYNTAX      Unsigned32(0..100)
UNITS       "percents"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Rate Adaptation Ratio. The ratio (in %) that should be taken into account for the bearer channel #4 when performing rate adaptation on Upstream. The ratio refers to the available data rate in excess of the Minimum Data Rate, summed over all bearer channels. Also, the 100 - adsl2LConfTempChan4RaRatioUs is the ratio of excess data rate to be assigned to all other bearer channels. The sum of rate adaptation ratios over all bearers on the same direction shall sum to 100%." 
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.1"
DEFVAL       { 0 }
::= { adsl2LineConfTemplateEntry 14 }

adsl2LConfTempRowStatus OBJECT-TYPE
SYNTAX RowStatus
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"This object is used to create a new row or to modify or delete an existing row in this table.

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

Before a template can be deleted or taken out of service (by setting this object to ‘destroy’ or ‘notInService’), it must be first unreferenced from all associated lines."
::= { adsl2LineConfTemplateEntry 15 }

------------------------------------------
--        adsl2LineConfProfTable        --
------------------------------------------

adsl2LineConfProfTable OBJECT-TYPE
SYNTAX SEQUENCE OF Adsl2LineConfProfEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table adsl2LineConfProfTable contains ADSL2 line profile configuration.

Entries in this table MUST be maintained in a persistent manner."
::= { adsl2ProfileLine 2 }

adsl2LineConfProfEntry OBJECT-TYPE
SYNTAX Adsl2LineConfProfEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table adsl2LineConfProfTable contains ADSL2 line profile configuration.

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 { adsl2LConfProfProfileName }
::= { adsl2LineConfProfTable 1 }

Adsl2LineConfProfEntry ::=
SEQUENCE {
    adsl2ConfProfProfileName           SnmpAdminString,
    adsl2ConfProfScMaskDs              Ads12ScMaskDs,
    adsl2ConfProfScMaskUs              Ads12ScMaskUs,
    adsl2ConfProfRfiBandsDs            Ads12RfiDs,
    adsl2ConfProfRaModeDs              Ads12RaMode,
    adsl2ConfProfRaModeUs              Ads12RaMode,
    adsl2ConfProfRaUsNrmDs             Unsigned32,
    adsl2ConfProfRaUsNrmUs             Unsigned32,
    adsl2ConfProfRaUsTimeDs            Unsigned32,
    adsl2ConfProfRaUsTimeUs            Unsigned32,
    adsl2ConfProfRaDsNrmsDs            Unsigned32,
    adsl2ConfProfRaDsNrmsUs            Unsigned32,
    adsl2ConfProfRaDsTimeDs            Unsigned32,
    adsl2ConfProfRaDsTimeUs            Unsigned32,
    adsl2ConfProfTargetSnrmDs          Unsigned32,
    adsl2ConfProfTargetSnrmUs          Unsigned32,
    adsl2ConfProfMaxSnrmDs             Unsigned32,
    adsl2ConfProfMaxSnrmUs             Unsigned32,
    adsl2ConfProfMinSnrmDs             Unsigned32,
    adsl2ConfProfMinSnrmUs             Unsigned32,
    adsl2ConfProfMsgMinUs              Unsigned32,
    adsl2ConfProfMsgMinDs              Unsigned32,
    adsl2ConfProfAtuTransSysEna       Ads12TransmissionModeType,
    adsl2ConfProfPmMode                Ads12ConfProfPmMode,
    adsl2ConfProfL0Time                Unsigned32,
    adsl2ConfProfL2Time                Unsigned32,
    adsl2ConfProfL2Atpr                Unsigned32,
    adsl2ConfProfL2Atprt               Unsigned32,
    adsl2ConfProfRowStatus             RowStatus
}

adsl2ConfProfProfileName  OBJECT-TYPE
SYNTAX       SnmpAdminString (SIZE(1..32))
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  "This object identifies a row in this table."
::= { adsl2LineConfProfEntry 1 }

adsl2ConfProfScMaskDs  OBJECT-TYPE
SYNTAX       Ads12ScMaskDs
MAX-ACCESS   read-create
STATUS       current
DESCRIPTION  "Sub-carriers mask. A bitmap of 512 bits that allows masking up to 512 downstream sub-carriers, depending on NSCds. If bit i (0 <= i < NSCds) is set to '1', the respective
downstream sub-carrier i is masked, and if set to '0', the respective sub-carrier is unmasked. Note that there should always be unmasked sub-carriers (i.e., the object cannot be all 1's). Also note that if NSCds < 512, all bits i (NSCds <= i <= 512) should be set to '1'."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2.6"

::= { adsl2LineConfProfEntry 2 }

adsl2LConfProfScMaskUs OBJECT-TYPE
SYNTAX    Adsl2ScMaskUs
MAX-ACCESS read-create
STATUS     current
DESCRIPTION "Sub-carriers mask. A bitmap of 64 bits that allows masking up to 64 downstream sub-carriers, depending on NSCds. If bit i (0 <= i < NSCus) is set to '1', the respective upstream sub-carrier i is masked, and if set to '0', the respective sub-carrier is unmasked. Note that there should always be unmasked sub-carriers (i.e., the object cannot be all 1's). Also note that if NSCus < 64, all bits i (NSCus < i <= 64) should be set to '1'."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2.7"

::= { adsl2LineConfProfEntry 3 }

adsl2LConfProfRfiBandsDs OBJECT-TYPE
SYNTAX    Adsl2RfiDs
MAX-ACCESS read-create
STATUS     current
DESCRIPTION "The subset of downstream PSD mask breakpoints that shall be used to notch an RFI band. The specific interpolation around these points is defined in G.992.5. It is a bitmap of 512 bits that allows referring to up to 512 downstream sub-carriers, depending on NSCds. If bit i (0 <= i < NSCds) is set to '1', the respective downstream sub-carrier i is part of a notch filter, and if set to '0', the respective sub-carrier is not part of a notch filter. This information complements the specification provided by adsl2LconfProfPsdMaskDs. Note that if NSCds < 512, all bits i (NSCds < i <= 512) should be set to '0'."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2.9"

::= { adsl2LineConfProfEntry 4 }

adsl2LConfProfRaModeDs OBJECT-TYPE
SYNTAX    Adsl2RaMode
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"The mode of operation of a rate-adaptive ATU-C in the transmit
direction. The parameter can take three values:
  manual (1),
  raInit (2),
  dynamicRa (3)."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.1"
DEFVAL { manual }
::= { adsl2LineConfProfEntry 5 }

ads12LConfProfRaModeUs OBJECT-TYPE
SYNTAX   Adsl2RaMode
MAX-ACCESS read-create
STATUS   current
DESCRIPTION
"The mode of operation of a rate-adaptive ATU-R in the transmit
direction. The parameter can take three values:
  manual (1),
  raInit (2),
  dynamicRa (3)."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.2"
DEFVAL { manual }
::= { adsl2LineConfProfEntry 6 }

ads12LConfProfRaUsNrmDs OBJECT-TYPE
SYNTAX   Unsigned32(0..310)
UNITS    "0.1 dB"
MAX-ACCESS read-create
STATUS   current
DESCRIPTION
"The Downstream Up-Shift Noise Margin value, to be used when
Ads12LineConfRaModeDs is set to dynamicRa. If the downstream
noise margin is above this value and stays above it for
more than the time specified by the Ads12LineConfRaUsTimeDs,
the ATU-R shall attempt to increase the downstream net data
rate. The Downstream Up-shift Noise Margin ranges from 0 to
310 units of 0.1 dB (Physical values are 0 to 31 dB)."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.3"
DEFVAL { 10 }
::= { adsl2LineConfProfEntry 7 }

ads12LConfProfRaUsNrmUs OBJECT-TYPE
SYNTAX   Unsigned32(0..310)
UNITS    "0.1 dB"
MAX-ACCESS read-create
STATUS   current
DESCRIPTION
"The Upstream Up-Shift Noise Margin value, to be used when
Adsl2LineConfRaModeUs is set to dynamicRa. If the upstream noise margin is above this value and stays above it for more than the time specified by the Adsl2LineConfRaUsTimeUs, the ATU-C shall attempt to increase the upstream net data rate.

The Upstream Up-shift Noise Margin ranges from 0 to 310 units of 0.1 dB (Physical values are 0 to 31 dB)."  
REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.4.4"  
DEFVAL       { 10 }  
::= { adsl2LineConfProfEntry 8 }

adsl2LConfProfRaUsTimeDs OBJECT-TYPE  
SYNTAX       Unsigned32(0..16383)  
UNITS        "seconds"  
MAX-ACCESS   read-create  
STATUS       current  
DESCRIPTION  
"The Downstream Up-Shift Time Interval, to be used when Adsl2LineConfRaModeDs is set to dynamicRa. The interval of time that the downstream noise margin should stay above the Downstream Up-shift Noise Margin before the ATU-R shall attempt to increase the downstream net data rate. The time interval ranges from 0 to 16383 seconds."  
REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.4.5"  
DEFVAL       { 3600 }  
::= { adsl2LineConfProfEntry 9 }

adsl2LConfProfRaUsTimeUs OBJECT-TYPE  
SYNTAX       Unsigned32(0..16383)  
UNITS        "seconds"  
MAX-ACCESS   read-create  
STATUS       current  
DESCRIPTION  
"The Upstream Up-Shift Time Interval, to be used when Adsl2LineConfRaModeUs is set to dynamicRa. The interval of time the upstream noise margin should stay above the Upstream Up-shift Noise Margin before the ATU-C shall attempt to increase the upstream net data rate. The time interval ranges from 0 to 16383 seconds."  
REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.4.6"  
DEFVAL       { 3600 }  
::= { adsl2LineConfProfEntry 10 }

adsl2LConfProfRaDsNrmsDs OBJECT-TYPE  
SYNTAX       Unsigned32(0..310)  
UNITS        "0.1 dB"  
MAX-ACCESS   read-create  
STATUS       current  
DESCRIPTION
"The Downstream Down-Shift Noise Margin value, to be used when Adsl2LineConfRaModeDs is set to dynamicRa. If the downstream noise margin is below this value and stays below that for more than the time specified by the Adsl2LineConfRaDsTimeDs, the ATU-R shall attempt to decrease the downstream net data rate. The Downstream Down-shift Noise Margin ranges from 0 to 310 units of 0.1 dB (Physical values are 0 to 31 dB)."

REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.7"
DEFVAL { 10 }
::= { adsl2LineConfProfEntry 11 }

adsl2LConfProfRaDsNrmsUs OBJECT-TYPE
SYNTAX Unsigned32(0..310)
UNITS "0.1 dB"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The Upstream Downshift Noise Margin value, to be used when Adsl2LineConfRaModeUs is set to dynamicRa. If the upstream noise margin is below this value and stays below that for more than the time specified by the Adsl2LineConfRaDsTimeUs, the ATU-C shall attempt to decrease the upstream net data rate. The Upstream Down-shift Noise Margin ranges from 0 to 310 units of 0.1 dB (Physical values are 0 to 31 dB)."

REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.8"
DEFVAL { 10 }
::= { adsl2LineConfProfEntry 12 }

adsl2LConfProfRaDsTimeDs OBJECT-TYPE
SYNTAX Unsigned32(0..16383)
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The Downstream Downshift Time Interval, to be used when Adsl2LineConfRaModeDs is set to dynamicRa. The interval of time the downstream noise margin should stay below the Downstream Down-shift Noise Margin before the ATU-R shall attempt to decrease the downstream net data rate. The time interval ranges from 0 to 16383 seconds."

REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.9"
DEFVAL { 3600 }
::= { adsl2LineConfProfEntry 13 }

adsl2LConfProfRaDsTimeUs OBJECT-TYPE
SYNTAX Unsigned32(0..16383)
UNITS "seconds"
MAX-ACCESS read-create
The Upstream Down-Shift Time Interval, to be used when Adsl2LineConfRaModeUs is set to dynamicRa. The interval of time the upstream noise margin should stay below the Upstream Down-shift Noise Margin before the ATU-C shall attempt to decrease the upstream net data rate. The time interval ranges from 0 to 16383 seconds.

REFERENCE "ITU-T G.997.1, paragraph 7.3.1.4.10"
DEFVAL { 3600 }
 ::= { adsl2LineConfProfEntry 14 }

::= { adsl2LineConfProfEntry 15 }

::= { adsl2LineConfProfEntry 16 }

::= { 2147483647 }
UNITS "0.1 dB"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The maximum Noise Margin the ATU-R receiver shall try to
sustain. If the Noise Margin is above this level, the ATU-R
shall request that the ATU-C reduce the ATU-C transmit power
to get a noise margin below this limit (if this functionality
is supported). The maximum noise margin ranges from 0 to 310
units of 0.1 dB (Physical values are 0 to 31 dB). A value of
0x7FFFFFFF (2147483647) means that there is no maximum."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.3.3"
DEFVAL { 310 }
::= { adsl2LineConfProfEntry 17 }

adsl2LConfProfMaxSnrmUs OBJECT-TYPE
SYNTAX Unsigned32 (0..310 | 2147483647)
UNITS "0.1 dB"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The maximum Noise Margin the ATU-C receiver shall try to
sustain. If the Noise Margin is above this level, the ATU-C
shall request that the ATU-R reduce the ATU-R transmit power
to get a noise margin below this limit (if this functionality
is supported). The maximum noise margin ranges from 0 to 310
units of 0.1 dB (Physical values are 0 to 31 dB). A value of
0x7FFFFFFF (2147483647) means that there is no maximum."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.3.4"
DEFVAL { 310 }
::= { adsl2LineConfProfEntry 18 }

adsl2LConfProfMinSnrmDs OBJECT-TYPE
SYNTAX Unsigned32(0..310)
UNITS "0.1 dB"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "The minimum Noise Margin the ATU-R receiver shall tolerate.
If the noise margin falls below this level, the ATU-R shall
request that the ATU-C increase the ATU-C transmit power.
If an increase to ATU-C transmit power is not possible, a
loss-of-margin (LOM) defect occurs, the ATU-R shall fail and
attempt to reinitialize and the NMS shall be notified. The
minimum noise margin ranges from 0 to 310 units of
0.1 dB (Physical values are 0 to 31 dB). A value of 0 means
that there is no minimum."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.3.5"
DEFVAL { 10 }
 ::= { adsl2LineConfProfEntry 19 }

adsl2LConfProfMinSnrmUs OBJECT-TYPE
SYNTAX Unsigned32(0..310)
UNITS "0.1 dB"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The minimum Noise Margin the ATU-C receiver shall tolerate. If the noise margin falls below this level, the ATU-C shall request that the ATU-R increase the ATU-R transmit power. If an increase of ATU-R transmit power is not possible, a loss-of-margin (LOM) defect occurs, the ATU-C shall fail and attempt to re-initialize and the NMS shall be notified. The minimum noise margin ranges from 0 to 310 units of 0.1 dB (Physical values are 0 to 31 dB). A value of 0 means that there is no minimum."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.3.6"
DEFVAL { 10 }
 ::= { adsl2LineConfProfEntry 20 }

adsl2LConfProfMsgMinUs OBJECT-TYPE
SYNTAX Unsigned32(4000..63000)
UNITS "bits/second"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Minimum Overhead Rate Upstream. Defines the minimum rate of the message-based overhead that shall be maintained by the ATU in upstream direction. Expressed in bits per second and ranges from 4000 to 63000 bps."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.5.1"
DEFVAL { 4000 }
 ::= { adsl2LineConfProfEntry 21 }

adsl2LConfProfMsgMinDs OBJECT-TYPE
SYNTAX Unsigned32(4000..63000)
UNITS "bits/second"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"Minimum Overhead Rate Downstream. Defines the minimum rate of the message-based overhead that shall be maintained by the ATU in downstream direction. Expressed in bits per second and ranges from 4000 to 63000 bps."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.5.2"
DEFVAL { 4000 }
adsl2LConfProfAtuTransSysEna OBJECT-TYPE
SYNTAX     Adsl2TransmissionModeType
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"ATU Transmission System Enabling (ATSE). A list of the
different coding types enabled in this profile. It is coded
in a bit-map representation with 1 or more bits set. A bit
set to ‘1’ means that the ATUs may apply the respective
coding for the ADSL line. A bit set to ‘0’ means that
the ATUs cannot apply the respective coding for the ADSL
line. All ‘reserved’ bits should be set to ‘0’." 
REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.1.1"
::= { adsl2LineConfProfEntry 23 }
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"This minimum time (in seconds) between an Entry into the L2 state and the first Power Trim in the L2 state and between two consecutive Power Trims in the L2 State. It ranges from 0 to 255 seconds."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.1.6"
DEFVAL { 255 }
::= { adsl2LineConfProfEntry 26 }

adsl2LConfProfL2Atpr OBJECT-TYPE
SYNTAX   Unsigned32 (0..31)
UNITS    "dB"
MAX-ACCESS read-create
STATUS   current
DESCRIPTION
"The maximum aggregate transmit power reduction (in dB) that can be performed at transition of L0 to L2 state or through a single Power Trim in the L2 state. It ranges from 0 dB to 31 dB."
REFERENCE "ITU-T G.997.1 (amendment 1), 7.3.1.1.7"
DEFVAL   { 10 }
::= { adsl2LineConfProfEntry 27 }

adsl2LConfProfL2Atprt OBJECT-TYPE
SYNTAX   Unsigned32 (0..31)
UNITS    "dB"
MAX-ACCESS read-create
STATUS   current
DESCRIPTION
"The total maximum aggregate transmit power reduction (in dB) that can be performed in an L2 state. This is the sum of all reductions of L2 Request (i.e., at transition of L0 to L2 state) and Power Trims."
REFERENCE "ITU-T G.997.1 (amendment 1), 7.3.1.1.9"
DEFVAL   { 31 }
::= { adsl2LineConfProfEntry 28 }

adsl2LConfProfRowStatus OBJECT-TYPE
SYNTAX   RowStatus
MAX-ACCESS read-create
STATUS   current
DESCRIPTION
"This object is used to create a new row or to modify or delete an existing row in this table."
A profile is 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 ‘notInService’), it must be first unreferenced from all associated templates.

::= { adsl2LineConfProfEntry 29 }

---------------------------------------------------
--    adsl2LineConfProfModeSpecTable    --
---------------------------------------------------

adsl2LineConfProfModeSpecTable  OBJECT-TYPE
SYNTAX     SEQUENCE  OF  Adsl2LineConfProfModeSpecEntry
MAX-ACCESS not-accessible
STATUS      current
DESCRIPTION
"The table adsl2LineConfProfModeSpecTable extends the ADSL2 line configuration profile by ADSL Mode Specific parameters.
A row in this table that has an index of
adsl2LconfProfAdslMode == defMode(1), is called a ‘mandatory’ row.
A row in this table that has an index such that
adsl2LconfProfAdslMode is not equal to defMode(1), is called an ‘optional’ row.
When a row in the adsl2LineConfProfTable table (the parent row) is created, the SNMP agent will automatically create a ‘mandatory’ row in this table. When the parent row is deleted, the SNMP agent will automatically delete all associated rows in this table. Any attempt to delete the ‘mandatory’ row using the adsl2LConfProfModeSpecRowStatus attribute will be rejected by the SNMP agent.
The manager MAY create an ‘optional’ row in this table using the adsl2LConfProfModeSpecRowStatus attribute if the parent row exists.
The manager MAY delete an ‘optional’ row in this table using the adsl2LConfProfModeSpecRowStatus attribute at any time.
If the actual transmission mode of a DSL line does not match one of the ‘optional’ rows in this table, then the line will use the PSD configuration from the ‘mandatory’ row.

Entries in this table MUST be maintained in a persistent manner."
adsl2LineConfProfModeSpecEntry OBJECT-TYPE
SYNTAX Adsl2LineConfProfModeSpecEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The table adsl2LineConfProfModeSpecTable extends the
ADSL2 line configuration profile by ADSL Mode Specific
parameters."
INDEX { adsl2LConfProfProfileName, adsl2LconfProfAdslMode }
 ::= { adsl2LineConfProfModeSpecTable 1 }

Adsl2LineConfProfModeSpecEntry ::= SEQUENCE {
  adsl2LconfProfAdslMode             Adsl2OperationModes,
adsl2LConfProfMaxNomPsdDs          Integer32,
adsl2LConfProfMaxNomPsdUs          Integer32,
adsl2LConfProfMaxNomAtpDs          Unsigned32,
adsl2LConfProfMaxNomAtpUs          Unsigned32,
adsl2LConfProfMaxAtpRxPwrUs        Integer32,
adsl2LConfProfPsdMaskDs            Adsl2PsdMaskDs,
adsl2LConfProfPsdMaskUs            Adsl2PsdMaskUs,
adsl2LConfProfPsdMaskSelectUs      Unsigned32,
adsl2LConfProfModeSpecRowStatus    RowStatus
}

adsl2LconfProfAdslMode OBJECT-TYPE
SYNTAX     Adsl2OperationModes
MAX-ACCESS not-accessible
STATUS     current
DESCRIPTION "The ADSL Mode is a way of categorizing the various ADSL
transmission modes into groups, each group (ADSL Mode) shares
the same PSD configuration.
There should be multiple entries in this table for a given
line profile in case multiple bits are set in
adsl2LConfProfAtuTransSysEna for that profile."
REFERENCE   "DSL Forum TR-90, paragraph 5.1.8"
 ::= { adsl2LineConfProfModeSpecEntry 1 }

adsl2LConfProfMaxNomPsdDs  OBJECT-TYPE
SYNTAX     Integer32(-600..-300)
UNIT       "0.1 dBm/Hz"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION "The maximum nominal transmit PSD in the downstream

direction during initialization and Showtime. It ranges from -600 to -300 units of 0.1 dBm/Hz. (physical values are -60 to -30 dBm/Hz).

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2"
DEFVAL { -300 }
::= { adsl2LineConfProfModeSpecEntry 2 }

adsl2LConfProfMaxNomPsdUs  OBJECT-TYPE
SYNTAX   Integer32(-600..-300)
UNITS    "0.1 dBm/Hz"
MAX-ACCESS  read-create
STATUS    current
DESCRIPTION
"The maximum nominal transmit PSD in the upstream direction during initialization and Showtime. It ranges from -600 to -300 units of 0.1 dBm/Hz. (physical values are -60 to -30 dBm/Hz)."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2"
DEFVAL { -300 }
::= { adsl2LineConfProfModeSpecEntry 3 }

adsl2LConfProfMaxNomAtpDs  OBJECT-TYPE
SYNTAX   Unsigned32 (0..255)
UNITS    "0.1 dBm"
MAX-ACCESS  read-create
STATUS    current
DESCRIPTION
"The maximum nominal aggregate transmit power in the downstream direction during initialization and Showtime. It ranges from 0 to 255 units of 0.1 dBm (physical values are 0 to 25.5 dBm)."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2"
DEFVAL { 255 }
::= { adsl2LineConfProfModeSpecEntry 4 }

adsl2LConfProfMaxNomAtpUs  OBJECT-TYPE
SYNTAX   Unsigned32 (0..255)
UNITS    "0.1 dBm"
MAX-ACCESS  read-create
STATUS    current
DESCRIPTION
"The maximum nominal aggregate transmit power in the upstream direction during initialization and Showtime. It ranges from 0 to 255 units of 0.1 dBm (physical values are 0 to 25.5 dBm)."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.2"
DEFVAL { 255 }
::= { adsl2LineConfProfModeSpecEntry 5 }
adsl2LConfProfMaxAggRxPwrUs  OBJECT-TYPE
SYNTAX      Integer32(-255..255 | 2147483647)
UNITS       "0.1 dBm"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"The maximum upstream aggregate receive power over the relevant
set of sub-carriers. The ATU-C should verify that the
upstream power cutback is such that this maximum aggregate
receive power value is honored. It ranges from -255 to 255
units of 0.1 dBm (physical values are -25.5 to 25.5 dBm).
A value of 0x7FFFFFFF (2147483647) means that there is no
limit."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.2"
DEFVAL       { 255 }
::= { adsl2LineConfProfModeSpecEntry 6 }

adsl2LConfProfPsdMaskDs   OBJECT-TYPE
SYNTAX      Adsl2PsdMaskDs
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"The downstream PSD mask applicable at the U-C2 reference
point. This parameter is used only for G.992.5 and it may impose PSD
restrictions (breakpoints) in addition to the Limit PSD mask
defined in G.992.5.
This is a string of 32 pairs of values in the following
structure:
Octets 0+1 - Index of 1st sub-carrier used in the context
    of a first breakpoint.
Octet 2    - The PSD reduction for the sub-carrier indicated in
    octets 0 and 1.
Octets 3-5 - Same, for a 2nd breakpoint.
Octets 6-8 - Same, for a 3rd breakpoint.
This architecture continues until octets 94-95, which are
associated with a 32nd breakpoint.
Each subcarrier index is an unsigned number in the range 1 and
NSCds. Each PSD reduction value is in the range 0 (0dBm/Hz) to
255 (-127.5dBm/Hz) with steps of 0.5dBm/Hz. Valid values are
in the range 0 to 190 (0 to -95dBm/Hz).
When the number of breakpoints is less than 32, all remaining
octets are set to the value 0. Note that the content of this
object should be correlated with the sub-carriers mask and with
the RFI setup."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.2"
::= { adsl2LineConfProfModeSpecEntry 7 }
adsl2LConfProfPsdMaskUs OBJECT-TYPE
SYNTAX    Adsl2PsdMaskUs
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"The upstream PSD mask applicable at the U-R2 reference point.
This parameter is used only for G.992.5 and it may impose PSD restrictions (breakpoints) in addition to the Limit PSD mask defined in G.992.5.
This is a string of 4 pairs of values in the following structure:
Octets 0+1 - Index of 1st sub-carrier used in the context of a first breakpoint.
Octet 2    - The PSD reduction for the sub-carrier indicated in octets 0 and 1.
Octets 3-5 - Same, for a 2nd breakpoint.
Octets 6-8 - Same, for a 3rd breakpoint.
This architecture continues until octets 9-11, which are associated with a 4th breakpoint.
Each subcarrier index is an unsigned number in the range 1 and NSCus. Each PSD reduction value is in the range 0 (0dBm/Hz) to 255 (-127.5dBm/Hz) with steps of 0.5dBm/Hz. Valid values are in the range 0 to 190 (0 to -95dBm/Hz).
When the number of breakpoints is less than 4, all remaining octets are set to the value 0. Note that the content of this object should be correlated with the sub-carriers mask and with the RFI setup."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1.2"
 ::= { adsl2LineConfProfModeSpecEntry 8 }

adsl2LConfProfPsdMaskSelectUs OBJECT-TYPE
SYNTAX    Unsigned32(1..9)
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"The selected upstream PSD mask. This parameter is used only for annexes J and M of G.992.3 and G.992.5, and the same selection is used for all relevant enabled bits in adsl2LConfProfAtuTransSysEna."
REFERENCE "ITU-T G.997.1 (amendment 1), 7.3.1.10"
DEFVAL     { 1 }
 ::= { adsl2LineConfProfModeSpecEntry 9 }

adsl2LConfProfModeSpecRowStatus OBJECT-TYPE
SYNTAX    RowStatus
MAX-ACCESS read-create
STATUS     current
This object is used to create a new row or to modify or delete an existing row in this table.

A profile is 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 'notInService'), it must be first unreferenced from all associated templates.

 ::= { adsl2LineConfProfModeSpecEntry 10 }

----------
ads12ChConfProfileTable
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SYNTAX SEQUENCE OF Adsl2ChConfProfileEntry
MAX-ACCESS not-accessible
STATUS current

DESCRIPTION
"The table ads12ChConfProfileTable contains ADSL2 channel profile configuration.

Entries in this table MUST be maintained in a persistent manner."

 ::= { ads12ProfileChannel 1 }

SYNTAX Adsl2ChConfProfileEntry
MAX-ACCESS not-accessible
STATUS current

DESCRIPTION
"The table ads12ChConfProfileTable contains ADSL2 channel profile configuration.
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 { ads12ChConfProfProfileName }

 ::= { ads12ChConfProfileTable 1 }

Adsl2ChConfProfileEntry ::= 
SEQUENCE {
  ads12ChConfProfProfileName SnmpAdminString,
  ads12ChConfProfMinDataRateDs Unsigned32,
  ads12ChConfProfMinDataRateUs Unsigned32,
adsl2ChConfProfMinResDataRateDs    Unsigned32,
adsl2ChConfProfMinResDataRateUs    Unsigned32,
adsl2ChConfProfMaxDataRateDs       Unsigned32,
adsl2ChConfProfMaxDataRateUs       Unsigned32,
adsl2ChConfProfMinDataRateLowPwrDs  Unsigned32,
adsl2ChConfProfMaxDelayDs          Unsigned32,
adsl2ChConfProfMaxDelayUs          Unsigned32,
adsl2ChConfProfMinProtectionDs      Adsl2SymbolProtection,
adsl2ChConfProfMinProtectionUs      Adsl2SymbolProtection,
adsl2ChConfProfMaxBerDs             Adsl2MaxBer,
adsl2ChConfProfMaxBerUs             Adsl2MaxBer,
adsl2ChConfProfUsDataRateDs        Unsigned32,
adsl2ChConfProfUsDataRateUs        Unsigned32,
adsl2ChConfProfDsDataRateDs        Unsigned32,
adsl2ChConfProfDsDataRateUs        Unsigned32,
adsl2ChConfProfImaEnabled           TruthValue,
adsl2ChConfProfRowStatus            RowStatus

adsl2ChConfProfProfileName  OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"This object identifies a row in this table."
::= { adsl2ChConfProfileEntry 1 }

adsl2ChConfProfMinDataRateDs    OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Minimum Data Rate on Downstream direction. The minimum net
data rate for the bearer channel, coded in bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 2 }

adsl2ChConfProfMinDataRateUs    OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Minimum Data Rate on Upstream direction. The minimum net data
rate for the bearer channel, coded in bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 3 }
ads12ChConfProfMinResDataRateDs  OBJECT-TYPE  
SYNTAX  Unsigned32(0..200000000)  
UNITS   "bits/second"  
MAX-ACCESS read-create  
STATUS  current  
DESCRIPTION  
"Minimum Reserved Data Rate on Downstream direction. The minimum reserved net data rate for the bearer channel, coded in bit/s. This parameter is used only if the Rate Adaptation Mode in the direction of the bearer channel (i.e., Adsl2LineConfRaModeDs) is set to dynamicRa."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 4 }

ads12ChConfProfMinResDataRateUs  OBJECT-TYPE  
SYNTAX  Unsigned32(0..200000000)  
UNITS   "bits/second"  
MAX-ACCESS read-create  
STATUS  current  
DESCRIPTION  
"Minimum Reserved Data Rate on Upstream direction. The minimum reserved net data rate for the bearer channel, coded in bit/s. This parameter is used only if the Rate Adaptation Mode in the direction of the bearer channel (i.e., Adsl2LineConfRaModeUs) is set to dynamicRa."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 5 }

ads12ChConfProfMaxDataRateDs  OBJECT-TYPE  
SYNTAX  Unsigned32(0..200000000)  
UNITS   "bits/second"  
MAX-ACCESS read-create  
STATUS  current  
DESCRIPTION  
"Maximum Data Rate on Downstream direction. The maximum net data rate for the bearer channel, coded in bit/s."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 6 }

ads12ChConfProfMaxDataRateUs  OBJECT-TYPE  
SYNTAX  Unsigned32(0..200000000)  
UNITS   "bits/second"  
MAX-ACCESS read-create  
STATUS  current  
DESCRIPTION  
"Maximum Data Rate on Upstream direction. The maximum net data rate for the bearer channel, coded in bit/s."

REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 7 }

adsl2ChConfProfMinDataRateLowPwrDs OBJECT-TYPE
SYNTAX     Unsigned32(0..200000000)
UNITS      "bits/second"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"Minimum Data Rate in Low Power state on Downstream direction. The minimum net data rate for the bearer channel, coded in bit/s., during the low power state (L1 in G.992.2, L2 in G.992.3)."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.1"
::= { adsl2ChConfProfileEntry 8 }

adsl2ChConfProfMaxDelayDs OBJECT-TYPE
SYNTAX     Unsigned32(0..63)
UNITS      "milliseconds"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"Maximum Interleave Delay on Downstream direction. The maximum one-way interleaving delay introduced by the PMS-TC on Downstream direction. The ATUs shall choose the S (factor) and D (depth) values such that the actual one-way interleaving delay (Adsl2ChanStatusActDelay) is as close as possible to, but less than or equal to, Adsl2ChanConfMaxDelayDs. The delay is coded in ms, with the value 0 indicating no delay bound is being imposed."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.2"
::= { adsl2ChConfProfileEntry 9 }

adsl2ChConfProfMaxDelayUs OBJECT-TYPE
SYNTAX     Unsigned32(0..63)
UNITS      "milliseconds"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"Maximum Interleave Delay on Upstream direction. The maximum one-way interleaving delay introduced by the PMS-TC on Upstream direction. The ATUs shall choose the S (factor) and D (depth) values such that the actual one-way interleaving delay (Adsl2ChanStatusActDelay) is as close as possible to, but less than or equal to, Adsl2ChanConfMaxDelayUs. The delay is coded in ms, with the value 0 indicating no delay bound is being imposed."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.2"
::= { adsl2ChConfProfileEntry 10 }

adsl2ChConfProfMinProtectionDs OBJECT-TYPE
SYNTAX    Adsl2SymbolProtection
UNITS      "symbols"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"Minimum Impulse Noise Protection on Downstream direction. The minimum impulse
noise protection for the bearer channel, expressed in symbols. The parameter can take the following
values: noProtection (i.e., INP not required), halfSymbol (i.e., INP length is 1/2 symbol) and 1-16 symbols in steps
of 1 symbol."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.3"
DEFVAL     { noProtection }
::= { adsl2ChConfProfileEntry 11 }

adsl2ChConfProfMinProtectionUs OBJECT-TYPE
SYNTAX    Adsl2SymbolProtection
UNITS      "symbols"
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"Minimum Impulse Noise Protection on Upstream direction. The minimum impulse
noise protection for the bearer channel, expressed in symbols. The parameter can take the following
values: noProtection (i.e., INP not required), halfSymbol (i.e., INP length is 1/2 symbol) and 1-16 symbols in steps
of 1 symbol."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.3"
DEFVAL     { noProtection }
::= { adsl2ChConfProfileEntry 12 }

adsl2ChConfProfMaxBerDs OBJECT-TYPE
SYNTAX    Adsl2MaxBer
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
"Maximum Bit Error Ratio on Downstream direction. The maximum
bit error ratio for the bearer channel. The parameter can take the following values (for 1E-3, 1E-5 or 1E-7):
eminus3 (1),
eminus5 (2),
eminus7 (3)"
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.4"
DEFVAL     { eminus5 }
::= { adsl2ChConfProfileEntry 13 }

adsl2ChConfProfMaxBerUs OBJECT-TYPE
SYNTAX      Adsl2MaxBer
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Maximum Bit Error Ratio on Upstream direction. The maximum
bit error ratio for the bearer channel. The parameter can
take the following values (for 1E-3, 1E-5 or 1E-7):
    eminus3 (1),
    eminus5 (2),
    eminus7 (3)"
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.4"
DEFVAL       { eminus5 }
 ::= { adsl2ChConfProfileEntry 14 }

adsl2ChConfProfUsDataRateDs  OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Data Rate Threshold Up shift for downstream direction. An
'Up-shift rate change' event is triggered when the actual
downstream data rate exceeds, by more than the threshold, the
data rate at the last entry into Showtime. The parameter is
coded in bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.6"
 ::= { adsl2ChConfProfileEntry 15 }

adsl2ChConfProfDsDataRateDs  OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Data Rate Threshold Downshift for downstream direction. A
'Down-shift rate change' event is triggered when the actual
downstream data rate is below the data rate at the last entry
into Showtime, by more than the threshold. The parameter is
coded in bit/s."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.6"
 ::= { adsl2ChConfProfileEntry 16 }

adsl2ChConfProfUsDataRateUs  OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Data Rate Threshold Up shift for upstream direction. An 'Up-shift rate change' event is triggered when the actual upstream data rate exceeds, by more than the threshold, the data rate at the last entry into Showtime. The parameter is coded in bit/s."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.6"
::= { adsl2ChConfProfileEntry 17 }

adsl2ChConfProfDsDataRateUs  OBJECT-TYPE
SYNTAX    Unsigned32(0..200000000)
UNITS     "bits/second"
MAX-ACCESS read-create
STATUS    current
DESCRIPTION
"Data Rate Threshold Downshift for upstream direction. A 'Down-shift rate change' event is triggered when the actual upstream data rate is below the data rate at the last entry into Showtime, by more than the threshold. The parameter is coded in bit/s."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.6"
::= { adsl2ChConfProfileEntry 18 }

adsl2ChConfProfImaEnabled  OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"IMA Mode Enable. The parameter enables the IMA operation mode in the ATM Data Path. Relevant only if the channel is of ATM Data Path. When in 'enable' state, the ATM data path should comply with the requirements for IMA transmission."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.4.1"
DEFVAL       { false }
::= { adsl2ChConfProfileEntry 19 }

adsl2ChConfProfRowStatus  OBJECT-TYPE
SYNTAX    RowStatus
MAX-ACCESS read-create
STATUS    current
DESCRIPTION
"This object is used to create a new row or to modify or delete an existing row in this table.

A profile is 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 'notInService'),
it must be first unreferenced from all associated
templates.
 ::= { adsl2ChConfProfileEntry 20 }

-- adsl2LineAlarmConfTemplateTable --

adsl2LineAlarmConfTemplateTable OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2LineAlarmConfTemplateEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2LineAlarmConfTemplateTable contains
ADSL2 line configuration template.

Entries in this table MUST be maintained in a
persistent manner."
 ::= { adsl2ProfileAlarmConf 1 }

adsl2LineAlarmConfTemplateEntry OBJECT-TYPE
SYNTAX      Adsl2LineAlarmConfTemplateEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2LineAlarmConfTemplateTable contains ADSL2
line PM thresholds template.
A default template 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  { adsl2LAlarmConfTempTemplateName }
 ::= { adsl2LineAlarmConfTemplateTable 1 }

Adsl2LineAlarmConfTemplateEntry ::= SEQUENCE {
  adsl2LAlarmConfTempTemplateName      SnmpAdminString,
  adsl2LAlarmConfTempLineProfile       SnmpAdminString,
  adsl2LAlarmConfTempChan1ConfProfile  SnmpAdminString,
  adsl2LAlarmConfTempChan2ConfProfile  SnmpAdminString,
  adsl2LAlarmConfTempChan3ConfProfile  SnmpAdminString,
  adsl2LAlarmConfTempChan4ConfProfile  SnmpAdminString,
  adsl2LAlarmConfTempRowStatus         RowStatus
}

adsl2LAlarmConfTempTemplateName OBJECT-TYPE
SYNTAX      SnmpAdminString (SIZE(1..32))
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"This object identifies a row in this table."
::= { adsl2LineAlarmConfTemplateEntry 1 }

adsl2LAlarmConfTempLineProfile OBJECT-TYPE
SYNTAX SnmpAdminString (SIZE(1..32))
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The value of this object identifies the row in the ADSL2 Line
Thresholds Configuration Profile Table
(adsl2LineAlarmConfProfileTable) that applies to this ADSL2
line."
REFERENCE "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL { "DEFVAL" }
::= { adsl2LineAlarmConfTemplateEntry 2 }

adsl2LAlarmConfTempChan1ConfProfile OBJECT-TYPE
SYNTAX SnmpAdminString (SIZE(1..32))
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The value of this object identifies the row in the ADSL2
Channel Thresholds Configuration Profile Table
(adsl2ChAlarmConfProfileTable) that applies for ADSL2
bearer channel #1. The channel profile name specified here
must match the name of an existing row in the
adsl2ChAlarmConfProfileTable table."
REFERENCE "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL { "DEFVAL" }
::= { adsl2LineAlarmConfTemplateEntry 3 }

adsl2LAlarmConfTempChan2ConfProfile OBJECT-TYPE
SYNTAX SnmpAdminString (SIZE(0..32))
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"The value of this object identifies the row in the ADSL2
Channel Thresholds Configuration Profile Table
(adsl2ChAlarmConfProfileTable) that applies for ADSL2
bearer channel #2. The channel profile name specified here
must match the name of an existing row in the
adsl2ChAlarmConfProfileTable table. If the channel is unused,
then the object is set to a zero length string."
REFERENCE "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL { "" }
::= { adsl2LineAlarmConfTemplateEntry 4 }
ads12LAlarmConfTempChan3ConfProfile OBJECT-TYPE
SYNTAX    SnmpAdminString (SIZE(0..32))
MAX-ACCESS read-create
STATUS     current
DESCRIPTION "The value of this object identifies the row in the ADSL2
Channel Thresholds Configuration Profile Table
(adsl2ChAlarmConfProfileTable) that applies for ADSL2
bearer channel #3. The channel profile name specified here
must match the name of an existing row in the
ads12ChAlarmConfProfileTable table.
This object may be set to a non-zero length string only if
ads12LAlarmConfTempChan2ConfProfile contains a non-zero
length string."
REFERENCE   "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL      { "" }
::= { adsl2LineAlarmConfTemplateEntry 5 }

ads12LAlarmConfTempChan4ConfProfile OBJECT-TYPE
SYNTAX    SnmpAdminString (SIZE(0..32))
MAX-ACCESS read-create
STATUS     current
DESCRIPTION "The value of this object identifies the row in the ADSL2
Channel Thresholds Configuration Profile Table
(adsl2ChAlarmConfProfileTable) that applies for ADSL2
bearer channel #4. The channel profile name specified here
must match the name of an existing row in the
ads12ChAlarmConfProfileTable table.
This object may be set to a non-zero length string only if
ads12LAlarmConfTempChan3ConfProfile contains a non-zero
length string."
REFERENCE   "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL      { "" }
::= { adsl2LineAlarmConfTemplateEntry 6 }

ads12LAlarmConfTempRowStatus OBJECT-TYPE
SYNTAX    RowStatus
MAX-ACCESS read-create
STATUS     current
DESCRIPTION "This object is used to create a new row or to modify or
delete an existing row in this table.

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

Before a template can be deleted or taken out of service
(by setting this object to 'destroy' or 'notInService'),
    it must be first unreferenced from all associated
    lines."
::= { adsl2LineAlarmConfTemplateEntry 7 }

-- adsl2LineAlarmConfProfileTable --

adsl2LineAlarmConfProfileTable OBJECT-TYPE
SYNTAX        SEQUENCE  OF  Adsl2LineAlarmConfProfileEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
"The table adsl2LineAlarmConfProfileTable contains ADSL2
line PM thresholds profiles. Entries in this table MUST be maintained in a
persistent manner."
::= { adsl2ProfileAlarmConf 2 }

adsl2LineAlarmConfProfileEntry OBJECT-TYPE
SYNTAX        Adsl2LineAlarmConfProfileEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
"The table adsl2LineAlarmConfProfileTable contains ADSL2
line PM thresholds profiles. 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  { adsl2LineAlarmConfProfileName }
::= { adsl2LineAlarmConfProfileTable 1 }

Adsl2LineAlarmConfProfileEntry ::= SEQUENCE {
adsl2LineAlarmConfProfileName                SnmpAdminString,
adsl2LineAlarmConfProfileAtucThresh15MinFecs  HCPerfIntervalThreshold,
adsl2LineAlarmConfProfileAtucThresh15MinEs   HCPerfIntervalThreshold,
adsl2LineAlarmConfProfileAtucThresh15MinSes  HCPerfIntervalThreshold,
adsl2LineAlarmConfProfileAtucThresh15MinLoss HCPerfIntervalThreshold,
adsl2LineAlarmConfProfileAtucThresh15MinUas  HCPerfIntervalThreshold,
ads2LineAlarmConfProfileAtucThresh15MinFecs
HCPerfIntervalThreshold,
ads2LineAlarmConfProfileAtucThresh15MinEs
HCPerfIntervalThreshold,
ads2LineAlarmConfProfileAtucThresh15MinSes
HCPerfIntervalThreshold,
ads2LineAlarmConfProfileAtucThresh15MinLoss
HCPerfIntervalThreshold,
ads2LineAlarmConfProfileAtucThresh15MinUas
HCPerfIntervalThreshold,

ads2LineAlarmConfProfileThresh15MinFailedFullInt
Unsigned32,
ads2LineAlarmConfProfileThresh15MinFailedShrtInt
Unsigned32,

ads2LineAlarmConfProfileRowStatus
RowStatus
}

ads2LineAlarmConfProfileName
OBJECT-TYPE
SYNTAX
SnmpAdminString (SIZE(1..32))
MAX-ACCESS
not-accessible
STATUS
current
DESCRIPTION
"This object identifies a row in this table."
::= { ads2LineAlarmConfProfileEntry 1 }

ads2LineAlarmConfProfileAtucThresh15MinFecs
OBJECT-TYPE
SYNTAX
HCPerfIntervalThreshold
UNITS
"seconds"
MAX-ACCESS
read-create
STATUS
current
DESCRIPTION
"A threshold for the ads2PMLCurr15MFecs counter,
when ads2PMLCurrUnit is ATUC {1}. The value 0 means that no
threshold is specified for the associated counter."
REFERENCE
"ITU-T G.997.1, paragraph 7.3.1"
DEFVAL
{ 0 }
::= { ads2LineAlarmConfProfileEntry 2 }

ads2LineAlarmConfProfileAtucThresh15MinEs
OBJECT-TYPE
SYNTAX
HCPerfIntervalThreshold
UNITS
"seconds"
MAX-ACCESS
read-create
STATUS
current
DESCRIPTION
"A threshold for the ads2PMLCurr15MEs counter,
when ads2PMLCurrUnit is ATUC {1}. The value 0 means that no
threshold is specified for the
ads12LineAlarmConfProfileAtucThresh15MinSes OBJECT-TYPE
SYNTAX HCPeerIntervalThreshold
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "A threshold for the ads12PMLCurr15MSes counter, when ads12PMLCurrUnit is ATUC {1}. The value 0 means that no threshold is specified for the associated counter."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL { 0 }
::= { ads12LineAlarmConfProfileEntry 3 }

ads12LineAlarmConfProfileAtucThresh15MinLoss OBJECT-TYPE
SYNTAX HCPeerIntervalThreshold
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "A threshold for the ads12PMLCurr15MLoss counter, when ads12PMLCurrUnit is ATUC {1}. The value 0 means that no threshold is specified for the associated counter."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL { 0 }
::= { ads12LineAlarmConfProfileEntry 4 }

ads12LineAlarmConfProfileAtucThresh15MinUas OBJECT-TYPE
SYNTAX HCPeerIntervalThreshold
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION "A threshold for the ads12PMLCurr15MUas counter, when ads12PMLCurrUnit is ATUC {1}. The value 0 means that no threshold is specified for the associated counter."
REFERENCE "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL { 0 }
::= { ads12LineAlarmConfProfileEntry 5 }

ads12LineAlarmConfProfileAturThresh15MinFecs OBJECT-TYPE
SYNTAX      HCPerfIntervalThreshold
UNITS       "seconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MFecs counter, when adsl2PMLCurrUnit is ATUR (2). The value 0 means that no threshold is specified for the associated counter."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL       { 0 }
::= { adsl2LineAlarmConfProfileEntry 7 }

adsl2LineAlarmConfProfileAturThresh15MinEs  OBJECT-TYPE
SYNTAX      HCPerfIntervalThreshold
UNITS       "seconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MEs counter, when adsl2PMLCurrUnit is ATUR (2). The value 0 means that no threshold is specified for the associated counter."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL       { 0 }
::= { adsl2LineAlarmConfProfileEntry 8 }

adsl2LineAlarmConfProfileAturThresh15MinSes  OBJECT-TYPE
SYNTAX      HCPerfIntervalThreshold
UNITS       "seconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MSes counter, when adsl2PMLCurrUnit is ATUR (2). The value 0 means that no threshold is specified for the associated counter."
REFERENCE    "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL       { 0 }
::= { adsl2LineAlarmConfProfileEntry 9 }

adsl2LineAlarmConfProfileAturThresh15MinLoss  OBJECT-TYPE
SYNTAX      HCPerfIntervalThreshold
UNITS       "seconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MLoss counter,
when adsl2PMLCurrUnit is ATUR {2}.
The value 0 means that no threshold is specified for the
associated counter.
REFERENCE "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL { 0 }
::= { adsl2LineAlarmConfProfileEntry 10 }

adsl2LineAlarmConfProfileAturThresh15MinUas OBJECT-TYPE
SYNTAX     HCPerfIntervalThreshold
UNITS       "seconds"
MAX-ACCESS read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MUas counter,
when adsl2PMLCurrUnit is ATUR {2}.
The value 0 means that no threshold is specified for the
associated counter."
REFERENCE   "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL       { 0 }
::= { adsl2LineAlarmConfProfileEntry 11 }

adsl2LineAlarmConfProfileThresh15MinFailedFullInt OBJECT-TYPE
SYNTAX     Unsigned32
MAX-ACCESS read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurrInit15MfailedFullInits
counter.
The value 0 means that no threshold is specified for the
associated counter."
REFERENCE   "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL       { 0 }
::= { adsl2LineAlarmConfProfileEntry 12 }

adsl2LineAlarmConfProfileThresh15MinFailedShrtInt OBJECT-TYPE
SYNTAX     Unsigned32
MAX-ACCESS read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurrInit15MFailedShortInits
counter.
The value 0 means that no threshold is specified for the
associated counter."
REFERENCE   "ITU-T G.997.1, paragraph 7.3.1"
DEFVAL       { 0 }
::= { adsl2LineAlarmConfProfileEntry 13 }

adsl2LineAlarmConfProfileRowStatus OBJECT-TYPE
SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
  "This object is used to create a new row or to modify or
delete an existing row in this table.

A profile is 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 'notInService'),
it must be first unreferenced from all associated
templates."
::= { adsl2LineAlarmConfProfileEntry 14 }

---------------------------------------
--      adsl2ChAlarmConfProfileTable  --
---------------------------------------

adsl2ChAlarmConfProfileTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2ChAlarmConfProfileEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "The table adsl2ChAlarmConfProfileTable contains ADSL2
channel PM thresholds profiles.

  Entries in this table MUST be maintained in a
persistent manner."
::= { adsl2ProfileAlarmConf 3 }

adsl2ChAlarmConfProfileEntry  OBJECT-TYPE
SYNTAX      Adsl2ChAlarmConfProfileEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "The table adsl2ChAlarmConfProfileTable contains ADSL2
channel PM thresholds profiles.
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  { adsl2ChAlarmConfProfileName }
::= { adsl2ChAlarmConfProfileTable 1 }

Adsl2ChAlarmConfProfileEntry ::= 
SEQUENCE {

ads12ChAlarmConfProfileName
SnmpAdminString,
ads12ChAlarmConfProfileAtucThresh15MinCodingViolations
Unsigned32,
ads12ChAlarmConfProfileAtucThresh15MinCorrected Unsigned32,
ads12ChAlarmConfProfileAturThresh15MinCodingViolations
Unsigned32,
ads12ChAlarmConfProfileAturThresh15MinCorrected Unsigned32,
ads12ChAlarmConfProfileRowStatus
RowStatus
}

ads12ChAlarmConfProfileName OBJECT-TYPE
SYNTAX SnmpAdminString (SIZE(1..32))
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "This object identifies a row in this table."
::= { ads12ChAlarmConfProfileEntry 1 }

ads12ChAlarmConfProfileAtucThresh15MinCodingViolations OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current
DESCRIPTION "A threshold for the adsl2PMChCurr15MCodingViolations counter, when adsl2PMChCurrUnit is ATUC (1). The value 0 means that no threshold is specified for the associated counter."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2"
DEFVAL { 0 }
::= { ads12ChAlarmConfProfileEntry 2 }

ads12ChAlarmConfProfileAtucThresh15MinCorrected OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS current
DESCRIPTION "A threshold for the adsl2PMChCurr15MCorrectedBlocks counter, when adsl2PMChCurrUnit is ATUC (1). The value 0 means that no threshold is specified for the associated counter."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2"
DEFVAL { 0 }
::= { ads12ChAlarmConfProfileEntry 3 }

ads12ChAlarmConfProfileAturThresh15MinCodingViolations OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-create
STATUS  current
DESCRIPTION
"A threshold for the ads12PMChCurr15MCodingViolations counter, when ads12PMChCurrUnit is ATUR (2).
The value 0 means that no threshold is specified for the associated counter."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2"
DEFVAL  { 0 }
 ::=  {  ads12ChAlarmConfProfileEntry 4 }

adsl2ChAlarmConfProfileAturThresh15MinCorrected  OBJECT-TYPE
SYNTAX  Unsigned32
MAX-ACCESS  read-create
STATUS  current
DESCRIPTION
"A threshold for the ads12PMChCurr15MCorrectedBlocks counter, when ads12PMChCurrUnit is ATUR (2).
The value 0 means that no threshold is specified for the associated counter."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2"
DEFVAL  { 0 }
 ::=  {  ads12ChAlarmConfProfileEntry 5 }

adsl2ChAlarmConfProfileRowStatus  OBJECT-TYPE
SYNTAX  RowStatus
MAX-ACCESS  read-create
STATUS  current
DESCRIPTION
"This object is used to create a new row or to modify or delete an existing row in this table.
A profile is 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 'notInService'),
it must be first unreferenced from all associated templates."
 ::=  {  ads12ChAlarmConfProfileEntry 6 }

--          PM line current counters          --
--          PM line current counters          --

adsl2PMLineCurrTable  OBJECT-TYPE
SYNTAX  SEQUENCE  OF  Adsl2PMLineCurrEntry
MAX-ACCESS  not-accessible
STATUS  current
DESCRIPTION
"The table adsl2PMLineCurrTable contains current Performance Monitoring results of ADSL2 line."

::= { adsl2PMLine 1 }

adsl2PMLineCurrEntry OBJECT-TYPE
SYNTAX      Adsl2PMLineCurrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2PMLineCurrTable contains current Performance Monitoring results of ADSL2 line.
The index of this table is an interface index where the interface has an ifType of adsl2(230) and the termination unit.
The PM counters in the table are not reset even when the xtU is reinitialized. They are re-initialized only when the agent itself is reset or reinitialized."

INDEX  { ifIndex, adsl2PMLCurrUnit }
::= { adsl2PMLineCurrTable 1 }

Adsl2PMLineCurrEntry ::= SEQUENCE {
  adsl2PMLCurrUnit                    Adsl2Unit,
  adsl2PMLCurrValidIntervals          Unsigned32,
  adsl2PMLCurrInvalidIntervals        Unsigned32,
  adsl2PMLCurr15MTimeElapsed          HCPerfTimeElapsed,
  adsl2PMLCurr15MFecs                 Counter32,
  adsl2PMLCurr15MEs                   Counter32,
  adsl2PMLCurr15MSES                  Counter32,
  adsl2PMLCurr15MLoss                 Counter32,
  adsl2PMLCurr1DayValidIntervals      Unsigned32,
  adsl2PMLCurr1DayInvalidIntervals    Unsigned32,
  adsl2PMLCurr1DayTimeElapsed         HCPerfTimeElapsed,
  adsl2PMLCurr1DayFecs                Counter32,
  adsl2PMLCurr1DayEs                  Counter32,
  adsl2PMLCurr1DaySES                 Counter32,
  adsl2PMLCurr1DayLoss                Counter32,
  adsl2PMLCurr1DayUas                 Counter32
}

adsl2PMLCurrUnit OBJECT-TYPE
SYNTAX      Adsl2Unit
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The termination unit ATUC(1) or ATUR(2)."
::= { adsl2PMLineCurrEntry 1 }
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adsl2PMLCurrValidIntervals  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Valid intervals."
   ::= { adsl2PMLLineCurrEntry 2 }

adsl2PMLCurrInvalidIntervals  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Invalid intervals."
   ::= { adsl2PMLLineCurrEntry 3 }

adsl2PMLCurr15MTimeElapsed  OBJECT-TYPE
   SYNTAX      HCPerfTimeElapsed
   UNITS       "seconds"
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Total elapsed seconds since this PM interval began.  
       Note that the PM counters are not reset even when the xtU 
       is reinitialized. They are re-initialized only when the 
       agent itself is reset or reinitialized."
   ::= { adsl2PMLLineCurrEntry 4 }

adsl2PMLCurr15MFecs  OBJECT-TYPE
   SYNTAX      Counter32
   UNITS       "seconds"
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Count of seconds during this interval that there was at least 
       one FEC correction event for one or more bearer channels in 
       this line.  This parameter is inhibited during UAS or SES."
   REFERENCE   "ITU-T G.997.1, paragraph 7.2.1"
   ::= { adsl2PMLLineCurrEntry 5 }

adsl2PMLCurr15MEs  OBJECT-TYPE
   SYNTAX      Counter32
   UNITS       "seconds"
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Count of seconds during this interval that there was:
       ATU-C: CRC-8 >= 1 for one or more bearer channels OR
LOS >= 1 OR SEF >= 1 OR LPR >= 1
ATU-R: FEBE >= 1 for one or more bearer channels OR
   LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
This parameter is inhibited during UAS."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrEntry 6 }

ads12PMLCurr15MSes  OBJECT-TYPE
SYNTAX  Counter32
UNITS "seconds"
MAX-ACCESS  read-only
STATUS  current
DESCRIPTION
"Count of seconds during this interval that there was:
   ATU-C: (CRC-8 summed over all bearer channels) >= 18 OR
   LOS >= 1 OR SEF >= 1 OR LPR >= 1
   ATU-R: (FEBE summed over all bearer channels) >= 18 OR
   LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
   This parameter is inhibited during UAS."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineCurrEntry 7 }

ads12PMLCurr15MLoss  OBJECT-TYPE
SYNTAX  Counter32
UNITS "seconds"
MAX-ACCESS  read-only
STATUS  current
DESCRIPTION
"Count of seconds during this interval that there was LOS (or
   LOS-FE for ATU-R)."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineCurrEntry 8 }

ads12PMLCurr15MUas  OBJECT-TYPE
SYNTAX  Counter32
UNITS "seconds"
MAX-ACCESS  read-only
STATUS  current
DESCRIPTION
"Count of seconds in Unavailability State during this
   interval.  Unavailability begins at the onset of 10
   contiguous severely-errored seconds, and ends at the
   onset of 10 contiguous seconds with no severely-errored
   seconds."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineCurrEntry 9 }

ads12PMLCurr1DayValidIntervals  OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Valid intervals."
::= { adsl2PMLineCurrEntry 10 }

ads12PMLCurr1DayInvalidIntervals OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Invalid intervals."
::= { adsl2PMLineCurrEntry 11 }

ads12PMLCurr1DayTimeElapsed OBJECT-TYPE
SYNTAX HCPerfTimeElapsed
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total elapsed seconds since this PM interval began.
Note that the PM counters are not reset even when the xtU
is reinitialized. They are re-initialized only when the
agent itself is reset or reinitialized."
::= { adsl2PMLineCurrEntry 12 }

ads12PMLCurr1DayFecs OBJECT-TYPE
SYNTAX Counter32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of seconds during this interval that there was at least
one FEC correction event for one or more bearer channels in
this line. This parameter is inhibited during UAS or SES."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrEntry 13 }

ads12PMLCurr1DayEs OBJECT-TYPE
SYNTAX Counter32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of seconds during this interval that there was:
ATU-C: CRC-8 >= 1 for one or more bearer channels OR
LOS >= 1 OR SEF >= 1 OR LPR >= 1"
ATU-R: FEBE >= 1 for one or more bearer channels OR
   LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
   This parameter is inhibited during UAS.
   REFERENCE  "ITU-T G.997.1, paragraph 7.2.1"
::= { ads12PMLineCurrEntry 14 }

ads12PMLCurr1DaySes  OBJECT-TYPE
SYNTAX      Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Count of seconds during this interval that there was:
   ATU-C: (CRC-8 summed over all bearer channels) >= 18 OR
   LOS >= 1 OR SEF >= 1 OR LPR >= 1
   ATU-R: (FEBE summed over all bearer channels) >= 18 OR
   LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1
   This parameter is inhibited during UAS."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.1"
::= { ads12PMLLineCurrEntry 15 }

ads12PMLCurr1DayLoss  OBJECT-TYPE
SYNTAX      Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Count of seconds during this interval that there was LOS (or
   LOS-FE for ATU-R)."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.1"
::= { ads12PMLLineCurrEntry 16 }

ads12PMLCurr1DayUas  OBJECT-TYPE
SYNTAX      Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Count of seconds in Unavailability State during this interval.
   Unavailability begins at the onset of 10 contiguous severely
   -errored seconds, and ends at the onset of 10 contiguous
   seconds with no severely-errored seconds."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.1"
::= { ads12PMLLineCurrEntry 17 }

--          PM line init current counters     --

The table `adsl2PMLineCurrInitTable` contains current initialization counters of ADSL2 line. The PM counters in the table are not reset even when the xtU is reinitialized. They are re-initialized only when the agent itself is reset or reinitialized.

```
::= { adsl2PMLine 2 }  
```

```
adsl2PMLineCurrInitEntry  OBJECT-TYPE
SYNTAX      Adsl2PMLineCurrInitEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2PMLineCurrInitTable contains current initialization counters of ADSL2 line. The index of this table is an interface index where the interface has an ifType of adsl2(230) and the termination unit."
INDEX  { ifIndex }
 ::= { adsl2PMLineCurrInitTable 1 }

Adsl2PMLineCurrInitEntry  ::=  
SEQUENCE {
  adsl2PMLCurrInit15MTimeElapsed          Unsigned32,
  adsl2PMLCurrInit15MFullInits            Unsigned32,
  adsl2PMLCurrInit15MFailedFullInits      Unsigned32,
  adsl2PMLCurrInit15MShortInits           Unsigned32,
  adsl2PMLCurrInit15MFailedShortInits     Unsigned32,
  adsl2PMLCurrInit1DayTimeElapsed         Unsigned32,
  adsl2PMLCurrInit1DayFullInits           Unsigned32,
  adsl2PMLCurrInit1DayFailedFullInits     Unsigned32,
  adsl2PMLCurrInit1DayShortInits          Unsigned32,
  adsl2PMLCurrInit1DayFailedShortInits    Unsigned32
}
```

```
adsl2PMLCurrInit15MTimeElapsed  OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Total elapsed seconds since this PM interval began.

Note that the PM counters are not reset even when the xtU is reinitialized. They are re-initialized only when the agent itself is reset or reinitialized.

::= { adsl2PMLineCurrInitEntry 1 }  

adsl2PMLCurrInit15MFullInits OBJECT-TYPE
SYNTAX       Unsigned32
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of full initializations attempted on the line (successful and failed) during this interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 2 }  

adsl2PMLCurrInit15MFailedFullInits OBJECT-TYPE
SYNTAX       Unsigned32
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of failed full initializations on the line during this interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 3 }  

adsl2PMLCurrInit15MShortInits OBJECT-TYPE
SYNTAX       Unsigned32
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of short initializations attempted on the line (successful and failed) during this interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 4 }  

adsl2PMLCurrInit15MFailedShortInits OBJECT-TYPE
SYNTAX       Unsigned32
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Count of failed short initializations on the line during this interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 5 }  

adsl2PMLCurrInit1DayTimeElapsed OBJECT-TYPE
SYNTAX       Unsigned32
UNITS        "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total elapsed seconds since this PM interval began. Note that the PM counters are not reset even when the xtU is reinitialized. They are re-initialized only when the agent itself is reset or reinitialized."
::= { adsl2PMLineCurrInitEntry 6 }

adsl2PMLCurrInit1DayFullInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of full initializations attempted on the line (successful and failed) during this interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 7 }

adsl2PMLCurrInit1DayFailedFullInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of failed full initializations on the line during this interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 8 }

adsl2PMLCurrInit1DayShortInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of short initializations attempted on the line (successful and failed) during this interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 9 }

adsl2PMLCurrInit1DayFailedShortInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of failed short initializations on the line during this interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineCurrInitEntry 10 }
adsl2PMLineHist15MinTable  OBJECT-TYPE
SYNTAX  SEQUENCE  OF  Adsl2PMLineHist15MinEntry
MAX-ACCESS  not-accessible
STATUS  current
DESCRIPTION
"The table adsl2PMLineHist15MinTable contains PM line history
for 15min intervals of ADSL2 line."
 ::= { adsl2PMLine 3 }

adsl2PMLineHist15MinEntry  OBJECT-TYPE
SYNTAX  Adsl2PMLineHist15MinEntry
MAX-ACCESS  not-accessible
STATUS  current
DESCRIPTION
"The table adsl2PMLineHist15MinTable contains PM line history
for 15min intervals of ADSL2 line.
The index of this table is an interface index where the
interface has an ifType of adsl2(230), the termination unit,
and an interval number."
INDEX  { ifIndex,
   adsl2PMLHist15MUnit,
   adsl2PMLHist15MInterval }
 ::= { adsl2PMLineHist15MinTable 1 }

Adsl2PMLineHist15MinEntry  ::=  
SEQUENCE  {
   adsl2PMLHist15MUnit                 Adsl2Unit,
   adsl2PMLHist15MInterval             Unsigned32,
   adsl2PMLHist15MMonitoredTime        Unsigned32,
   adsl2PMLHist15MFecs                 Counter32,
   adsl2PMLHist15MEs                   Counter32,
   adsl2PMLHist15MSes                  Counter32,
   adsl2PMLHist15MLoss                 Counter32,
   adsl2PMLHist15MUas                  Counter32,
   adsl2PMLHist15MValidInterval        TruthValue
}

adsl2PMLHist15MUnit  OBJECT-TYPE
SYNTAX  Adsl2Unit
MAX-ACCESS  not-accessible
STATUS  current
DESCRIPTION
"The termination unit ATUC(1) or ATUR(2)."
 ::= { adsl2PMLineHist15MinEntry 1 }
adsl2PMLHist15MInterval  OBJECT-TYPE
SYNTAX     Unsigned32 (1..96)
MAX-ACCESS not-accessible
STATUS     current
DESCRIPTION
  "The interval number."
::= { adsl2PMLineHist15MinEntry 2 }

adsl2PMLHist15MMonitoredTime  OBJECT-TYPE
SYNTAX     Unsigned32
UNITS      "seconds"
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
  "Total seconds monitored in this interval."
::= { adsl2PMLineHist15MinEntry 3 }

adsl2PMLHist15MFecs  OBJECT-TYPE
SYNTAX     Counter32
UNITS      "seconds"
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
  "Count of seconds during this interval that there was at least
  one FEC correction event for one or more bearer channels in
  this line. This parameter is inhibited during UAS or SES."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineHist15MinEntry 4 }

adsl2PMLHist15MEs  OBJECT-TYPE
SYNTAX     Counter32
UNITS      "seconds"
MAX-ACCESS read-only
STATUS     current
DESCRIPTION
  "Count of seconds during this interval that there was:
  ATU-C: CRC-8 >= 1 for one or more bearer channels OR
  LOS >= 1 OR SEF >= 1 OR LPR >= 1
  ATU-R: FEBE >= 1 for one or more bearer channels OR
  LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
  This parameter is inhibited during UAS."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineHist15MinEntry 5 }

adsl2PMLHist15MSes  OBJECT-TYPE
SYNTAX     Counter32
UNITS      "seconds"
MAX-ACCESS read-only
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STATUS      current
DESCRIPTION "Count of seconds during this interval that there was:
   ATU-C: (CRC-8 summed over all bearer channels) >= 18 OR
   LOS >= 1 OR SEF >= 1 OR LPR >= 1
   ATU-R: (FEBE summed over all bearer channels) >= 18 OR
   LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
   This parameter is inhibited during UAS."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineHist15MinEntry 6 }

adsl2PMLHist15MLoss  OBJECT-TYPE
SYNTAX       Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Count of seconds during this interval that there was LOS (or
   LOS-FE for ATU-R)."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineHist15MinEntry 7 }

adsl2PMLHist15MUas  OBJECT-TYPE
SYNTAX       Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "Count of seconds in Unavailability State during this interval.
   Unavailability begins at the onset of 10 contiguous severely
   -errored seconds, and ends at the onset of 10 contiguous
   seconds with no severely-errored seconds."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineHist15MinEntry 8 }

adsl2PMLHist15MValidInterval  OBJECT-TYPE
SYNTAX       TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "This variable indicates if the data for this interval is
   valid."
::= { adsl2PMLineHist15MinEntry 9 }

---------------------------------------
--       PM line history 1 Day       --

adsl2PMLLineHist1DayTable OBJECT-TYPE
SYNTAX SEQUENCE OF Adsl2PMLLineHist1DayEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The table adsl2PMLLineHist1DayTable contains PM line history for 24 hours intervals of ADSL2 line."
::= { adsl2PMLine 4 }

adsl2PMLLineHist1DayEntry OBJECT-TYPE
SYNTAX Adsl2PMLLineHist1DayEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The table adsl2PMLLineHist1DayTable contains PM line history for 24 hours intervals of ADSL2 line. The indexes of this table is an interface index where the interface has an ifType of adsl2(230), the termination unit and an interval number."

INDEX { ifIndex,
adsl2PMLHist1DUnit,
adsl2PMLHist1DInterval }
::= { adsl2PMLLineHist1DayTable 1 }

Adsl2PMLLineHist1DayEntry ::= SEQUENCE {
adsl2PMLHist1DUnit Adsl2Unit,
adsl2PMLHist1DInterval Unsigned32,
adsl2PMLHist1DMonitoredTime Unsigned32,
adsl2PMLHist1DFecs Counter32,
adsl2PMLHist1DEs Counter32,
adsl2PMLHist1DSes Counter32,
adsl2PMLHist1DLoss Counter32,
adsl2PMLHist1DUas Counter32,
adsl2PMLHist1DValidInterval TruthValue
}

adsl2PMLHist1DUnit OBJECT-TYPE
SYNTAX Adsl2Unit
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The termination unit."
::= { adsl2PMLLineHist1DayEntry 1 }

adsl2PMLHist1DInterval OBJECT-TYPE
SYNTAX          Unsigned32 (1..30)
MAX-ACCESS      not-accessible
STATUS          current
DESCRIPTION     "The interval number."
 ::= { adsl2PMLLineHist1DayEntry 2 }

adsl2PMLHist1DMonitoredTime OBJECT-TYPE
SYNTAX          Unsigned32
UNITS           "seconds"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION     "Total seconds monitored in this interval."
 ::= { adsl2PMLLineHist1DayEntry 3 }

adsl2PMLHist1DFecs OBJECT-TYPE
SYNTAX          Counter32
UNITS           "seconds"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION     "Count of seconds during this interval that there was at least
one FEC correction event for one or more bearer channels in
this line.  This parameter is inhibited during UAS or SES."
REFERENCE       "ITU-T G.997.1, paragraph 7.2.1"
 ::= { adsl2PMLLineHist1DayEntry 4 }

adsl2PMLHist1DEs OBJECT-TYPE
SYNTAX          Counter32
UNITS           "seconds"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION     "Count of seconds during this interval that there was:
    ATU-C: CRC-8 >= 1 for one or more bearer channels OR
    LOS >= 1 OR SEF >= 1 OR LPR >= 1
    ATU-R: FEBE >= 1 for one or more bearer channels OR
    LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
    This parameter is inhibited during UAS."
REFERENCE       "ITU-T G.997.1, paragraph 7.2.1"
 ::= { adsl2PMLLineHist1DayEntry 5 }

adsl2PMLHist1DSes OBJECT-TYPE
SYNTAX          Counter32
UNITS           "seconds"
MAX-ACCESS      read-only
STATUS          current
DESCRIPTION
"Count of seconds during this interval that there was:
   ATU-C: (CRC-8 summed over all bearer channels) >= 18 OR
   LOS >= 1 OR SEF >> 1 OR LPR >= 1
   ATU-R: (FEBE summed over all bearer channels) >= 18 OR
   LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
This parameter is inhibited during UAS."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineHist1DayEntry 6 }

ads12PMLHist1DLoss OBJECT-TYPE
SYNTAX      Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Count of seconds during this interval that there was LOS (or
   LOS-FE for ATU-R)."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineHist1DayEntry 7 }

ads12PMLHist1DUas OBJECT-TYPE
SYNTAX      Counter32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Count of seconds in Unavailability State during this interval.
   Unavailability begins at the onset of 10 contiguous severely
   errored seconds, and ends at the onset of 10 contiguous
   seconds with no severely-errored seconds."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineHist1DayEntry 8 }

ads12PMLHist1DValidInterval OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"This variable indicates if the data for this interval is
valid."
::= { adsl2PMLLineHist1DayEntry 9 }
adsl2PMLLineInitHist15MinTable OBJECT-TYPE
SYNTAX        SEQUENCE  OF  Adsl2PMLLineInitHist15MinEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
"The table adsl2PMLLineInitHist15MinTable contains PM line
initialization history for 15 minutes intervals of ADSL2
line."
 ::= { adsl2PMLLine 5 }

adsl2PMLLineInitHist15MinEntry OBJECT-TYPE
SYNTAX        Adsl2PMLLineInitHist15MinEntry
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
"The table adsl2PMLLineInitHist15MinTable contains PM line
initialization history for 15 minutes intervals of ADSL2
line.
The index of this table is an interface index where the
interface has an ifType of adsl2(230) and an interval number."

INDEX  { ifIndex,
          adsl2PMLHistInit15MInterval }
 ::= { adsl2PMLLineInitHist15MinTable 1 }

Adsl2PMLLineInitHist15MinEntry ::= SEQUENCE {
   adsl2PMLHistInit15MInterval              Unsigned32,
   adsl2PMLHistInit15MMonitoredTime         Unsigned32,
   adsl2PMLHistInit15MFullInits             Unsigned32,
   adsl2PMLHistInit15MFailedFullInits       Unsigned32,
   adsl2PMLHistInit15MShortInits            Unsigned32,
   adsl2PMLHistInit15MFailedShortInits      Unsigned32,
   adsl2PMLHistInit15MValidInterval         TruthValue
}

adsl2PMLHistInit15MInterval OBJECT-TYPE
SYNTAX        Unsigned32 (1..96)
MAX-ACCESS    not-accessible
STATUS        current
DESCRIPTION
"The interval number."
 ::= { adsl2PMLLineInitHist15MinEntry 1 }

adsl2PMLHistInit15MMonitoredTime OBJECT-TYPE
SYNTAX        Unsigned32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Total seconds monitored in this interval."
 ::= { adsl2PMLLineInitHist15MinEntry 2 }

adsl2PMLHistInit15MFullInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Count of full initializations attempted on the line
(sucessful and failed) during this interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
 ::= { adsl2PMLLineInitHist15MinEntry 3 }

adsl2PMLHistInit15MFailedFullInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Count of failed full initializations on the line during this
interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
 ::= { adsl2PMLLineInitHist15MinEntry 4 }

adsl2PMLHistInit15MShortInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Count of short initializations attempted on the line
(sucessful and failed) during this interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
 ::= { adsl2PMLLineInitHist15MinEntry 5 }

adsl2PMLHistInit15MFailedShortInits OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"Count of failed short initializations on the line during this
interval."
REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
 ::= { adsl2PMLLineInitHist15MinEntry 6 }

adsl2PMLHistInit15MValidInterval OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This variable indicates if the data for this interval is valid."
::= { adsl2PMLineInitHist15MinEntry 7 }

-- PM line init history 1 Day --

adsl2PMLineInitHist1DayTable OBJECT-TYPE
SYNTAX SEQUENCE OF Adsl2PMLineInitHist1DayEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table adsl2PMLineInitHist1DayTable contains PM line initialization history for 24 hours intervals of ADSL2 line."
 ::= { adsl2PMLine 6 }

Adsl2PMLineInitHist1DayEntry OBJECT-TYPE
SYNTAX Adsl2PMLineInitHist1DayEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table adsl2PMLineInitHist1DayTable contains PM line initialization history for 24 hours intervals of ADSL2 line.
The indexes of this table is an interface index where the interface has an ifType of adsl2(230) and an interval number."
INDEX { ifIndex,
adsl2PMLHistinit1DInterval }
 ::= { adsl2PMLineInitHist1DayTable 1 }

Adsl2PMLineInitHist1DayEntry ::= SEQUENCE {
adsl2PMLHistinit1DInterval Unsigned32,
adsl2PMLHistinit1DMonitoredTime Unsigned32,
adsl2PMLHistinit1DFullInits Unsigned32,
adsl2PMLHistinit1DFailedFullInits Unsigned32,
adsl2PMLHistinit1DShortInits Unsigned32,
adsl2PMLHistinit1DFailedShortInits Unsigned32,
adsl2PMLHistinit1DValidInterval TruthValue
}
ads12PMLHistinit1DInterval  OBJECT-TYPE
SYNTAX      Unsigned32 (1..30)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
  "The interval number."
::= { adsl2PMLLineInitHist1DayEntry 1 }

ads12PMLHistinit1DMonitoredTime  OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Total seconds monitored in this interval."
::= { adsl2PMLLineInitHist1DayEntry 2 }

ads12PMLHistinit1DFullInits  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Count of full initializations attempted on the line
  (successful and failed) during this interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineInitHist1DayEntry 3 }

ads12PMLHistinit1DFailedFullInits  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Count of failed full initializations on the line during this
  interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineInitHist1DayEntry 4 }

ads12PMLHistinit1DShortInits  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
  "Count of short initializations attempted on the line
  (successful and failed) during this interval."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineInitHist1DayEntry 5 }

ads12PMLHistinit1DFailedShortInits  OBJECT-TYPE
SYNTAX              Unsigned32
MAX-ACCESS          read-only
STATUS              current
DESCRIPTION          "Count of failed short initializations on the line during this interval."
REFERENCE           "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLineInitHist1DayEntry 6 }

adsl2PMLHistinit1DValidInterval OBJECT-TYPE
SYNTAX               TruthValue
MAX-ACCESS           read-only
STATUS               current
DESCRIPTION          "This variable indicates if the data for this interval is valid."
::= { adsl2PMLineInitHist1DayEntry 7 }

--                      PM channel current counters                      --
--------------------------------------------------------------------------
ads12PMChCurrTable    OBJECT-TYPE
SYNTAX                SEQUENCE  OF  Adsl2PMChCurrEntry
MAX-ACCESS           not-accessible
STATUS               current
DESCRIPTION          "The table ads12PMChCurrTable contains current Performance Monitoring results of ADSL2 channel. The PM counters in the table are not reset even when the xtU is reinitialized. They are re-initialized only when the agent itself is reset or reinitialized."
::= { ads12PMChannel 1 }

ads12PMChCurrEntry    OBJECT-TYPE
SYNTAX                Adsl2PMChCurrEntry
MAX-ACCESS           not-accessible
STATUS               current
DESCRIPTION          "The table ads12PMChCurrTable contains current Performance Monitoring results of ADSL2 channel. The indexes of this table is an interface index where the interface has an ifType value which is applicable for a DSL channel and the termination unit."
INDEX { ifIndex, ads12PMChCurrUnit }
::= { ads12PMChCurrTable 1 }
Adsl2PMChCurrEntry ::=  
  SEQUENCE {  
    adsl2PMChCurrUnit         Adsl2Unit,  
    adsl2PMChCurrValidIntervals Unsigned32,  
    adsl2PMChCurrInvalidIntervals Unsigned32,  
    adsl2PMChCurr15MTimeElapsed HCPefTimeElapsed,  
    adsl2PMChCurr15MCodingViolations Unsigned32,  
    adsl2PMChCurr15MCorrectedBlocks Unsigned32,  
    adsl2PMChCurr1DayValidIntervals Unsigned32,  
    adsl2PMChCurr1DayInvalidIntervals Unsigned32,  
    adsl2PMChCurr1DayTimeElapsed HCPefTimeElapsed,  
    adsl2PMChCurr1DayCodingViolations Unsigned32,  
    adsl2PMChCurr1DayCorrectedBlocks Unsigned32  
  }

adsl2PMChCurrUnit  OBJECT-TYPE
  SYNTAX      Adsl2Unit
  MAX-ACCESS  not-accessible
  STATUS      current
  DESCRIPTION  
    "The termination unit."
  ::= { adsl2PMChCurrEntry 1 }

adsl2PMChCurrValidIntervals  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION  
    "Valid intervals."
  ::= { adsl2PMChCurrEntry 2 }

adsl2PMChCurrInvalidIntervals  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION  
    "Invalid intervals."
  ::= { adsl2PMChCurrEntry 3 }

adsl2PMChCurr15MTimeElapsed  OBJECT-TYPE
  SYNTAX      HCPefTimeElapsed
  UNITS       "seconds"
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION  
    "Total elapsed seconds since this PM interval began."
    Note that the PM counters are not reset even when the xtU
    is reinitialized. They are re-initialized only when the
agent itself is reset or reinitialized.

::= { adsl2PMChCurrEntry 4 }

ads1PMChCurr15MCodingViolations OBJECT-TYPE
SYNTAX    Unsigned32
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
"Count of CRC-8 (FEBE for ATU-R) anomalies occurring in the channel during the interval. This parameter is inhibited during UAS or SES. If the CRC is applied over multiple channels, then each related CRC-8 (or FEBE) anomaly should increment each of the counters related to the individual channels."
REFERENCE   "ITU-T G.997.1, paragraph 7.2.2"
::= { adsl2PMChCurrEntry 5 }

ads1PMChCurr15MCorrectedBlocks OBJECT-TYPE
SYNTAX    Unsigned32
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
"Count of FEC (FFEC for ATU-R) anomalies (corrected code words) occurring in the channel during the interval. This parameter is inhibited during UAS or SES. If the FEC is applied over multiple channels, then each related FEC (or FFEC) anomaly should increment each of the counters related to the individual channels."
REFERENCE   "ITU-T G.997.1, paragraph 7.2.2"
::= { adsl2PMChCurrEntry 6 }

ads1PMChCurr1DayValidIntervals OBJECT-TYPE
SYNTAX    Unsigned32
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
"Valid intervals."
::= { adsl2PMChCurrEntry 7 }

ads1PMChCurr1DayInvalidIntervals OBJECT-TYPE
SYNTAX    Unsigned32
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
"Invalid intervals."
::= { adsl2PMChCurrEntry 8 }

ads1PMChCurr1DayTimeElapsed OBJECT-TYPE
SYNTAX      HCPefTimeElapsed
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Total elapsed seconds since this PM interval began.  
   Note that the PM counters are not reset even when the xtU 
   is reinitialized. They are re-initialized only when the 
   agent itself is reset or reinitialized."
::= { adsl2PMChCurrEntry 9 }

ads12PMChCurr1DayCodingViolations OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Count of CRC-8 (FEBE for ATU-R) anomalies occurring in the 
   channel during the interval. This parameter is inhibited 
   during UAS or SES. If the CRC is applied over multiple 
   channels, then each related CRC-8 (or FEBE) anomaly should 
   increment each of the counters related to the individual 
   channels."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.2"
::= { adsl2PMChCurrEntry 10 }

ads12PMChCurr1DayCorrectedBlocks OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"Count of FEC (FFEC for ATU-R) anomalies (corrected code words) 
   occurring in the channel during the interval. This parameter 
   is inhibited during UAS or SES. If the FEC is applied over 
   multiple channels, then each related FEC (or FFEC) anomaly 
   should increment each of the counters related to the 
   individual channels."
REFERENCE    "ITU-T G.997.1, paragraph 7.2.2"
::= { adsl2PMChCurrEntry 11 }

------------------------------------------------------------------
--      PM channel history 15 Minutes      --
------------------------------------------------------------------
ads12PMChHist15MinTable OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2PMChHist15MinEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2PMChCurrTable contains current Performance Monitoring results of ADSL2 channel."
::= { adsl2PMChannel 2 }

adsl2PMChHist15MinEntry OBJECT-TYPE
SYNTAX      Adsl2PMChHist15MinEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2PMChHist15MinTable contains current Performance Monitoring results of ADSL2 channel. The indexes of this table are an interface index where the interface has an ifType value which is applicable for a DSL channel, the termination unit and the interval number."
INDEX  { ifIndex, adsl2PMChHist15MUnit, adsl2PMChHist15MInterval }
::= { adsl2PMChHist15MinTable 1 }

Adsl2PMChHist15MinEntry ::= SEQUENCE {
adsl2PMChHist15MUnit                     Adsl2Unit,
adsl2PMChHist15MInterval                 Unsigned32,
adsl2PMChHist15MMonitoredTime            Unsigned32,
adsl2PMChHist15MCodingViolations         Unsigned32,
adsl2PMChHist15MCorrectedBlocks          Unsigned32,
adsl2PMChHist15MValidInterval            TruthValue
}

adsl2PMChHist15MUnit OBJECT-TYPE
SYNTAX      Adsl2Unit
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The termination unit."
::= { adsl2PMChHist15MinEntry 1 }

adsl2PMChHist15MInterval OBJECT-TYPE
SYNTAX      Unsigned32 (1..96)
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The interval number."
::= { adsl2PMChHist15MinEntry 2 }

adsl2PMChHist15MMonitoredTime OBJECT-TYPE
SYNTAX    Unsigned32
UNITS      "seconds"
MAX-ACCESS read-only
STATUS     current
DESCRIPTION "Total seconds monitored in this interval."
::= { adsl2PMChHist15MinEntry 3 }

adsl2PMChHist15MCodingViolations  OBJECT-TYPE
SYNTAX    Unsigned32
MAX-ACCESS read-only
STATUS     current
DESCRIPTION "Count of CRC-8 (FEBE for ATU-R) anomalies occurring in the channel during the interval. This parameter is inhibited during UAS or SES. If the CRC is applied over multiple channels, then each related CRC-8 (or FEBE) anomaly should increment each of the counters related to the individual channels."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.2"
::= { adsl2PMChHist15MinEntry 4 }

adsl2PMChHist15MCorrectedBlocks  OBJECT-TYPE
SYNTAX    Unsigned32
MAX-ACCESS read-only
STATUS     current
DESCRIPTION "Count of FEC (FFEC for ATU-R) anomalies (corrected code words) occurring in the channel during the interval. This parameter is inhibited during UAS or SES. If the FEC is applied over multiple channels, then each related FEC (or FFEC) anomaly should increment each of the counters related to the individual channels."
REFERENCE  "ITU-T G.997.1, paragraph 7.2.2"
::= { adsl2PMChHist15MinEntry 5 }

adsl2PMChHist15MValidInterval  OBJECT-TYPE
SYNTAX    TruthValue
MAX-ACCESS read-only
STATUS     current
DESCRIPTION "This variable indicates if the data for this interval is valid."
::= { adsl2PMChHist15MinEntry 6 }

------------------------------------------
-- PM channel history 1 Day --
-----------------------------
adsl2PMChHist1DTable OBJECT-TYPE
SYNTAX Sequence of Adsl2PMChHist1DEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The table adsl2PMChHist1DayTable contains PM channel history
for 1 day intervals of ADSL2."
 ::= { adsl2PMChannel 3 } 

adsl2PMChHist1DEntry OBJECT-TYPE
SYNTAX Adsl2PMChHist1DEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The table adsl2PMChHist1DayTable contains PM channel history
for 1 day intervals of ADSL2. The indexes of this table is an interface index where
the interface has an ifType value which is applicable
for a DSL channel, the termination unit and the
interval number."
INDEX { ifIndex,
adsl2PMChHist1DUnit,
adsl2PMChHist1DInterval }
 ::= { adsl2PMChHist1DTable 1 } 

Adsl2PMChHist1DEntry ::= Sequence {
adsl2PMChHist1DUnit Adsl2Unit,
adsl2PMChHist1DInterval Unsigned32,
adsl2PMChHist1DMonitoredTime Unsigned32,
adsl2PMChHist1DCodingViolations Unsigned32,
adsl2PMChHist1DCorrectedBlocks Unsigned32,
adsl2PMChHist1DValidInterval TruthValue
}

adsl2PMChHist1DUnit OBJECT-TYPE
SYNTAX Adsl2Unit
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The termination unit."
 ::= { adsl2PMChHist1DEntry 1 } 

adsl2PMChHist1DInterval OBJECT-TYPE
SYNTAX Unsigned32 (1..30)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The interval number."
 ::= { adsl2PMChHist1DEntry 2 }

adsl2PMChHist1DMonitoredTime OBJECT-TYPE
SYNTAX Unsigned32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total seconds monitored in this interval."
 ::= { adsl2PMChHist1DEntry 3 }

adsl2PMChHist1DCodingViolations OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of CRC-8 (FEBE for ATU-R) anomalies occurring in the channel during the interval. This parameter is inhibited during UAS or SES. If the CRC is applied over multiple channels, then each related CRC-8 (or FEBE) anomaly should increment each of the counters related to the individual channels."
REFERENCE "ITU-T G.997.1, paragraph 7.2.2"
 ::= { adsl2PMChHist1DEntry 4 }

adsl2PMChHist1DCorrectedBlocks OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of FEC (FFEC for ATU-R) anomalies (corrected code words) occurring in the channel during the interval. This parameter is inhibited during UAS or SES. If the FEC is applied over multiple channels, then each related FEC (or FFEC) anomaly should increment each of the counters related to the individual channels."
REFERENCE "ITU-T G.997.1, paragraph 7.2.2"
 ::= { adsl2PMChHist1DEntry 5 }

adsl2PMChHist1DValidInterval OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"This variable indicates if the data for this interval is valid."
::= { adsl2PMChHist1DEntry 6 }

-------------------------------------------
--          Notifications Group          --
-------------------------------------------

adsl2LinePerfFECSThreshAtuc NOTIFICATION-TYPE
OBJECTS
{  
adsl2PMLCurr15MFecs,  
adsl2LineAlarmConfProfileAtucThresh15MinFecs  
}
STATUS    current
DESCRIPTION
   "This notification indicates that the FEC seconds threshold has been reached/exceeded for the referred ATU-C."
::= { adsl2Notifications 1 }

adsl2LinePerfFECSThreshAtur NOTIFICATION-TYPE
OBJECTS
{  
adsl2PMLCurr15MFecs,  
adsl2LineAlarmConfProfileAturThresh15MinFecs  
}
STATUS    current
DESCRIPTION
   "This notification indicates that the FEC seconds threshold has been reached/exceeded for the referred ATU-R."
::= { adsl2Notifications 2 }

adsl2LinePerfESThreshAtuc NOTIFICATION-TYPE
OBJECTS
{  
adsl2PMLCurr15MEs,  
adsl2LineAlarmConfProfileAtucThresh15MinEs  
}
STATUS    current
DESCRIPTION
   "This notification indicates that the errored seconds threshold has been reached/exceeded for the referred ATU-C."
::= { adsl2Notifications 3 }

adsl2LinePerfESThreshAtur NOTIFICATION-TYPE
OBJECTS
{  
adsl2PMLCurr15MEs,  
}
ads12LineAlarmConfProfileAturThresh15MinEs
}
STATUS  current
DESCRIPTION
"This notification indicates that the errored seconds threshold has been reached/exceeded for the referred ATU-R."
 ::= { adsl2Notifications 4 }

ads12LinePerfSESThreshAtuc NOTIFICATION-TYPE
OBJECTS
{
  ads12PMLCurr15Mses,
  ads12LineAlarmConfProfileAtucThresh15MinSes
}
STATUS  current
DESCRIPTION
"This notification indicates that the severely-errored seconds threshold has been reached/exceeded for the referred ATU-C."
 ::= { adsl2Notifications 5 }

ads12LinePerfSESThreshAtur NOTIFICATION-TYPE
OBJECTS
{
  ads12PMLCurr15Mses,
  ads12LineAlarmConfProfileAturThresh15MinSes
}
STATUS  current
DESCRIPTION
"This notification indicates that the severely-errored seconds threshold has been reached/exceeded for the referred ATU-R."
 ::= { adsl2Notifications 6 }

ads12LinePerfLOSSThreshAtuc NOTIFICATION-TYPE
OBJECTS
{
  ads12PMLCurr15MLoss,
  ads12LineAlarmConfProfileAtucThresh15MinLoss
}
STATUS  current
DESCRIPTION
"This notification indicates that the LOS seconds threshold has been reached/exceeded for the referred ATU-C."
 ::= { adsl2Notifications 7 }

ads12LinePerfLOSSThreshAtur NOTIFICATION-TYPE
OBJECTS
{
  ads12PMLCurr15MLoss,
}
adsl2LineAlarmConfProfileAturThresh15MinLoss

STATUS current
DESCRIPTION
"This notification indicates that the LOS seconds threshold has been reached/exceeded for the referred ATU-R."
::= { adsl2Notifications 8 }

adsl2LinePerfUASThreshAtucNotificationType
OBJECTS
{ adsl2PMLCurr15MUas, adsl2LineAlarmConfProfileAtucThresh15MinUas }
STATUS current
DESCRIPTION
"This notification indicates that the unavailable seconds threshold has been reached/exceeded for the referred ATU-C."
::= { adsl2Notifications 9 }

adsl2LinePerfUASThreshAturNotificationType
OBJECTS
{ adsl2PMLCurr15MUas, adsl2LineAlarmConfProfileAturThresh15MinUas }
STATUS current
DESCRIPTION
"This notification indicates that the unavailable seconds threshold has been reached/exceeded for the referred ATU-R."
::= { adsl2Notifications 10 }

adsl2LinePerfCodingViolationsThreshAtucNotificationType
OBJECTS
{ adsl2PMChCurr15MCodingViolations, adsl2ChAlarmConfProfileAtucThresh15MinCodingViolations }
STATUS current
DESCRIPTION
"This notification indicates that the coding violations threshold has been reached/exceeded for the referred ATU-C."
::= { adsl2Notifications 11 }

adsl2LinePerfCodingViolationsThreshAturNotificationType
OBJECTS
{ adsl2PMChCurr15MCodingViolations,}
ads12ChAlarmConfProfileAturThresh15MinCodingViolations
)
STATUS current
DESCRIPTION
"This notification indicates that the coding violations
threshold has been reached/exceeded for the referred ATU-R."
::= { ads12Notifications 12 }

ads12LinePerfCorrectedThreshAtuc NOTIFICATION-TYPE
OBJECTS
{ ads12PMChCurr15MCorrectedBlocks,
  ads12ChAlarmConfProfileAtucThresh15MinCorrected }
STATUS current
DESCRIPTION
"This notification indicates that the corrected blocks
(FEC events) threshold has been reached/exceeded for the
referred ATU-C."
::= { ads12Notifications 13 }

ads12LinePerfCorrectedThreshAtur NOTIFICATION-TYPE
OBJECTS
{ ads12PMChCurr15MCorrectedBlocks,
  ads12ChAlarmConfProfileAturThresh15MinCorrected }
STATUS current
DESCRIPTION
"This notification indicates that the corrected blocks
(FEC events) threshold has been reached/exceeded for the
referred ATU-R."
::= { ads12Notifications 14 }

ads12LinePerfFailedFullInitThresh NOTIFICATION-TYPE
OBJECTS
{ ads12PMLCurrInit15MFailedFullInits,
  ads12LineAlarmConfProfileThresh15MinFailedFullInt }
STATUS current
DESCRIPTION
"This notification indicates that the failed full
initializations threshold has been reached/exceeded for the
referred ADSL/ADSL2 or ADSL2 line."
::= { ads12Notifications 15 }

ads12LinePerfFailedShortInitThresh NOTIFICATION-TYPE
OBJECTS
{
adsl2PMLCurrInit15MFailedShortInits,
adsl2LineAlarmConfProfileThresh15MinFailedShrtInt
}
STATUS current
DESCRIPTION
"This notification indicates that the failed short
initializations threshold has been reached/exceeded for the
referred ADSL/ADSL2 or ADSL2 line."
::= { adsl2Notifications 16 }

adsl2LineStatusChangeAtuc NOTIFICATION-TYPE
OBJECTS
{
adsl2LineStatusAtuc
}
STATUS current
DESCRIPTION
"This notification indicates that a status change is
detected for the referred ATU-C."
::= { adsl2Notifications 17 }

adsl2LineStatusChangeAtur NOTIFICATION-TYPE
OBJECTS
{
adsl2LineStatusAtur
}
STATUS current
DESCRIPTION
"This notification indicates that a status change is
detected for the referred ATU-R."
::= { adsl2Notifications 18 }

-- conformance information

adsl2Groups OBJECT IDENTIFIER ::= { adsl2Conformance 1 }
adsl2Compliances OBJECT IDENTIFIER ::= { adsl2Conformance 2 }

adsl2LineMibCompliance MODULE-COMPLIANCE
STATUS current
DESCRIPTION
"The compliance statement for SNMP entities which
manage ADSL2 interfaces."
MODULE -- this module
MANDATORY-GROUPS
{
GROUP  adsl2ChannelStatusAtmGroup
   DESCRIPTION
      "The group of status objects required when the data path
       is ATM."

GROUP  adsl2ChannelStatusPtmGroup
   DESCRIPTION
      "The group of status objects required when the data path
       is PTM."

GROUP  adsl2LineConfProfRaGroup
   DESCRIPTION
      "The group of objects required for controlling the rate
       adaptive behavior of the line."

GROUP  adsl2LineConfProfMsgMinGroup
   DESCRIPTION
      "The group of objects required for controlling the rate
       reserved for Overhead traffic."

GROUP  adsl2LineAlarmConfProfileGroup
   DESCRIPTION
      "The group of objects that define the alarm thresholds
       on line level PM counters."

GROUP  adsl2ChAlarmConfProfileGroup
   DESCRIPTION
      "The group of objects that define the alarm thresholds
on channel level PM counters."

GROUP  adsl2ChConfProfileAtmGroup
DESCRIPTION
"The group of configuration objects required when the data
path is ATM."

GROUP  adsl2ChConfProfileMinResGroup
DESCRIPTION
"The group of configuration objects required for the
reserved data rate."

GROUP  adsl2PMLineCurrInitShortGroup
DESCRIPTION
"The group of PM counters for the current intervals
short initializations."

GROUP  adsl2PMLineInitHist15MinShortGroup
DESCRIPTION
"The group of PM counters for the previous 15 minutes
intervals short initializations."

GROUP  adsl2PMLineInitHist1DayShortGroup
DESCRIPTION
"The group of PM counters for the previous 24 hours
intervals short initializations."

GROUP  adsl2ScalarSCGroup
DESCRIPTION
"The group of objects that report the available memory
resources for DELT processes."

GROUP  adsl2ThreshNotificationGroup
DESCRIPTION
"The group of thresholds crossing notifications."

GROUP  adsl2StatusChangeNotificationGroup
DESCRIPTION
"The group of status change notifications."

::= { adsl2Compliances 1 }

-- units of conformance

ads12LineGroup OBJECT-GROUP
OBJECTS
{
  adsl2LineCnfgTemplate,
adsl2LineAlarmCnfgTemplate,
adsl2LineCmndConfPmsf,
adsl2LineCmndConfLdsf,
adsl2LineCmndConfLdsfFailReason,
adsl2LineCmndAutomodeColdStart,
adsl2LineStatusAtuTransSys,
adsl2LineStatusPwrMngState,
adsl2LineStatusInitResult,
adsl2LineStatusLastStateDs,
adsl2LineStatusLastStateUs,
adsl2LineStatusAtur,
adsl2LineStatusAtuc,
adsl2LineStatusLnAttenDs,
adsl2LineStatusLnAttenUs,
adsl2LineStatusSigAttenDs,
adsl2LineStatusSigAttenUs,
adsl2LineStatusSnrMarginDs,
adsl2LineStatusSnrMarginUs,
adsl2LineStatusAttainableRateDs,
adsl2LineStatusAttainableRateUs,
adsl2LineStatusActPsdDs,
adsl2LineStatusActPsdUs,
adsl2LineStatusActAtpDs,
adsl2LineStatusActAtpUs

}  
STATUS current  
DESCRIPTION  
"The group of configuration, status, and commands objects on the line level."
::= { adsl2Groups 1 }

adsl2ChannelStatusGroup OBJECT-GROUP  
OBJECTS  
{  
adsl2ChStatusChannelNum,
adsl2ChStatusActDataRate,
adsl2ChStatusPrevDataRate,
adsl2ChStatusActDelay
}  
STATUS current  
DESCRIPTION  
"The group of status objects on the channel level."
::= { adsl2Groups 2 }

adsl2ChannelStatusAtmGroup OBJECT-GROUP  
OBJECTS  
{  
adsl2ChStatusAtmStatus

The group of status objects on the data path level when it is ATM.

::= { adsl2Groups 3 }

ads12ChannelStatusPtmGroup OBJECT-GROUP

OBJECTS

{ ads12ChStatusPtmStatus }

STATUS current
DESCRIPTION
"The group of status objects on the data path level when it is PTM."

::= { adsl2Groups 4 }

ads12SCStatusGroup OBJECT-GROUP

OBJECTS

{ ads12SCStatusMtime, ads12SCStatusSnr, ads12SCStatusBitsAlloc, ads12SCStatusGainAlloc, ads12SCStatusTssi, ads12SCStatusLinScale, ads12SCStatusLinReal, ads12SCStatusLinImg, ads12SCStatusLogMt, ads12SCStatusLog, ads12SCStatusQlnMt, ads12SCStatusQln, ads12SCStatusLnAtten, ads12SCStatusSigAtten, ads12SCStatusSnrMargin, ads12SCStatusAttainableRate, ads12SCStatusActAtp, ads12SCStatusRowStatus }

STATUS current
DESCRIPTION
"The group of status objects on the sub-carrier level. They are updated as a result of a DELT process."

::= { adsl2Groups 5 }

ads12LineInventoryGroup OBJECT-GROUP

OBJECTS
{  
adsl2LInvG994VendorId,  
adsl2LInvSystemVendorId,  
adsl2LInvVersionNumber,  
adsl2LInvSerialNumber,  
adsl2LInvSelfTestResult,  
adsl2LInvTransmissionCapabilities  
}  
STATUS current  
DESCRIPTION  
"The group of inventory objects per xTU."  
::= { adsl2Groups 6 }  

ads12LineConfTemplateGroup OBJECT-GROUP  
OBJECTS  
{  
adsl2ConfTempLineProfile,  
adsl2ConfTempChan1ConfProfile,  
adsl2ConfTempChan1RaRatioDs,  
adsl2ConfTempChan1RaRatioUs,  
adsl2ConfTempChan2ConfProfile,  
adsl2ConfTempChan2RaRatioDs,  
adsl2ConfTempChan2RaRatioUs,  
adsl2ConfTempChan3ConfProfile,  
adsl2ConfTempChan3RaRatioDs,  
adsl2ConfTempChan3RaRatioUs,  
adsl2ConfTempChan4ConfProfile,  
adsl2ConfTempChan4RaRatioDs,  
adsl2ConfTempChan4RaRatioUs,  
adsl2ConfTempRowStatus  
}  
STATUS current  
DESCRIPTION  
"The group of objects in a line configuration template."  
::= { adsl2Groups 7 }  

ads12LineConfProfGroup OBJECT-GROUP  
OBJECTS  
{  
adsl2ConfProfScMaskDs,  
adsl2ConfProfScMaskUs,  
adsl2ConfProfRfiBandsDs,  
adsl2ConfProfRaModeDs,  
adsl2ConfProfRaModeUs,  
adsl2ConfProfTargetSnrmDs,  
adsl2ConfProfTargetSnrmUs,  
adsl2ConfProfMaxSnrmDs,  
adsl2ConfProfMaxSnrmUs,
adsl2ConfProfMinSnrmDs,
adsl2ConfProfMinSnrmUs,
adsl2ConfProfAtuTransSysEna,
adsl2ConfProfPmMode,
adsl2ConfProfL0Time,
adsl2ConfProfL2Time,
adsl2ConfProfL2Atpr,
adsl2ConfProfL2Atprt,
adsl2ConfProfRowStatus
}

DESCRIPTION
"The group of objects in a line configuration profile."
::= { adsl2Groups 8 }

adsl2LineConfProfRaGroup OBJECT-GROUP
OBJECTS
{
  adsl2ConfProfRaUsNrmDs,
adsl2ConfProfRaUsNrmUs,
adsl2ConfProfRaUsTimeDs,
adsl2ConfProfRaUsTimeUs,
adsl2ConfProfRaDsNrmsDs,
adsl2ConfProfRaDsNrmsUs,
adsl2ConfProfRaDsTimeDs,
adsl2ConfProfRaDsTimeUs
}

DESCRIPTION
"The group of objects required for controlling the rate adaptive behavior of the line."
::= { adsl2Groups 9 }

adsl2LineConfProfMsgMinGroup OBJECT-GROUP
OBJECTS
{
  adsl2ConfProfMsgMinUs,
adsl2ConfProfMsgMinDs
}

DESCRIPTION
"The group of objects required for controlling the rate reserved for Overhead traffic."
::= { adsl2Groups 10 }

adsl2LineConfProfModeSpecGroup OBJECT-GROUP
OBJECTS
{
adsl2LConfProfMaxNomPsdDs,
adsl2LConfProfMaxNomPsdUs,
adsl2LConfProfMaxNomAtpDs,
adsl2LConfProfMaxNomAtpUs,
adsl2LConfProfMaxAggRxPwrUs,
adsl2LConfProfPsdMaskDs,
adsl2LConfProfPsdMaskUs,
adsl2LConfProfPsdMaskSelectUs,
adsl2LConfProfModeSpecRowStatus
}

STATUS current
DESCRIPTION
"The group of objects in a line configuration profile
that have an instance for each operation mode allowed."
::= { adsl2Groups 11 }

adsl2ChConfProfileGroup OBJECT-GROUP
OBJECTS
{
  adsl2ChConfProfMinDataRateDs,
adsl2ChConfProfMinDataRateUs,
adsl2ChConfProfMaxDataRateDs,
adsl2ChConfProfMaxDataRateUs,
adsl2ChConfProfMinDataRateLowPwrDs,
adsl2ChConfProfMaxDelayDs,
adsl2ChConfProfMaxDelayUs,
adsl2ChConfProfMinProtectionDs,
adsl2ChConfProfMinProtectionUs,
adsl2ChConfProfMaxBerDs,
adsl2ChConfProfMaxBerUs,
adsl2ChConfProfUsDataRateDs,
adsl2ChConfProfDsDataRateDs,
adsl2ChConfProfUsDataRateUs,
adsl2ChConfProfDsDataRateUs,
adsl2ChConfProfRowStatus
}

STATUS current
DESCRIPTION
"The group of objects in a channel configuration profile."
::= { adsl2Groups 12 }

adsl2ChConfProfileAtmGroup OBJECT-GROUP
OBJECTS
{
  adsl2ChConfProfImaEnabled,
adsl2ChStatusAtmStatus
}

STATUS current
DESCRIPTION
"The group of configuration objects required when the data path is ATM."
 ::= { adsl2Groups 13 }

ads12ChConfProfileMinResGroup OBJECT-GROUP
OBJECTS
{      
  ads12ChConfProfMinResDataRateDs,  
  ads12ChConfProfMinResDataRateUs
}
STATUS       current
DESCRIPTION
"The group of configuration objects required for the reserved data rate."
 ::= { adsl2Groups 14 }

ads12LineAlarmConfTemplateGroup OBJECT-GROUP
OBJECTS
{      
  ads12LAlarmConfTempLineProfile,  
  ads12LAlarmConfTempChan1ConfProfile,  
  ads12LAlarmConfTempChan2ConfProfile,  
  ads12LAlarmConfTempChan3ConfProfile,  
  ads12LAlarmConfTempChan4ConfProfile,  
  ads12LAlarmConfTempRowStatus
}
STATUS       current
DESCRIPTION
"The group of objects in a line alarm template."
 ::= { adsl2Groups 15 }

ads12LineAlarmConfProfileGroup OBJECT-GROUP
OBJECTS
{      
  ads12LAlarmConfProfileAtucThresh15MinFecs,  
  ads12LAlarmConfProfileAtucThresh15MinEs,  
  ads12LAlarmConfProfileAtucThresh15MinSes,  
  ads12LAlarmConfProfileAtucThresh15MinLoss,  
  ads12LAlarmConfProfileAtucThresh15MinUas,  
  ads12LAlarmConfProfileAturThresh15MinFecs,  
  ads12LAlarmConfProfileAturThresh15MinEs,  
  ads12LAlarmConfProfileAturThresh15MinSes,  
  ads12LAlarmConfProfileAturThresh15MinLoss,  
  ads12LAlarmConfProfileAturThresh15MinUas,  
  ads12LAlarmConfProfileThresh15MinFailedFullInt,  
  ads12LAlarmConfProfileThresh15MinFailedShrtInt,
ads12LineAlarmConfProfileRowStatus
}

STATUS current
DESCRIPTION
"The group of objects in a line alarm profile."
::= { adsl2Groups 16 }

ads12ChAlarmConfProfileGroup OBJECT-GROUP
OBJECTS
{
  ads12ChAlarmConfProfileAtucThresh15MinCodingViolations,
  ads12ChAlarmConfProfileAtucThresh15MinCorrected,
  ads12ChAlarmConfProfileAturThresh15MinCodingViolations,
  ads12ChAlarmConfProfileAturThresh15MinCorrected,
  ads12ChAlarmConfProfileRowStatus
}

STATUS current
DESCRIPTION
"The group of objects in a channel alarm profile."
::= { adsl2Groups 17 }

ads12PMLineCurrGroup OBJECT-GROUP
OBJECTS
{
  ads12PMLCurrValidIntervals,
  ads12PMLCurrInvalidIntervals,
  ads12PMLCurr15MTimeElapsed,
  ads12PMLCurr15MFecs,
  ads12PMLCurr15MEs,
  ads12PMLCurr15MSes,
  ads12PMLCurr15MLoss,
  ads12PMLCurr15MUas,
  ads12PMLCurr1DayValidIntervals,
  ads12PMLCurr1DayInvalidIntervals,
  ads12PMLCurr1DayTimeElapsed,
  ads12PMLCurr1DayFecs,
  ads12PMLCurr1DayEs,
  ads12PMLCurr1DaySes,
  ads12PMLCurr1DayLoss,
  ads12PMLCurr1DayUas
}

STATUS current
DESCRIPTION
"The group of objects that report the line level
counters for current PM intervals."
::= { adsl2Groups 18 }

ads12PMLineCurrInitGroup OBJECT-GROUP
OBJECTS
{
adsl2PMLCurrInit15MTimeElapsed,
adsl2PMLCurrInit15MFullInits,
adsl2PMLCurrInit15MFailedFullInits,
adsl2PMLCurrInit1DayTimeElapsed,
adsl2PMLCurrInit1DayFullInits,
adsl2PMLCurrInit1DayFailedFullInits
}
STATUS  current
DESCRIPTION
"The group of objects that report the full initializations counters for current PM intervals."
::= { adsl2Groups 19 }

adsl2PMLLineCurrInitShortGroup OBJECT-GROUP
OBJECTS
{
adsl2PMLCurrInit15MShortInits,
adsl2PMLCurrInit15MFailedShortInits,
adsl2PMLCurrInit1DayShortInits,
adsl2PMLCurrInit1DayFailedShortInits
}
STATUS  current
DESCRIPTION
"The group of objects that report the short initializations counters for current PM intervals."
::= { adsl2Groups 20 }

ads12PMLLineHist15MinGroup OBJECT-GROUP
OBJECTS
{
adsl2PMLHist15MMonitoredTime,
adsl2PMLHist15MFecs,
adsl2PMLHist15MEs,
adsl2PMLHist15MSes,
adsl2PMLHist15MLoss,
adsl2PMLHist15MUas,
adsl2PMLHist15MValidInterval
}
STATUS  current
DESCRIPTION
"The group of line level PM counters for the previous 15 minutes intervals."
::= { adsl2Groups 21 }

ads12PMLLineHist1DayGroup OBJECT-GROUP
OBJECTS
{ adsl2PMLHist1DMonitoredTime,
adsl2PMLHist1DFecs,
adsl2PMLHist1DEs,
adsl2PMLHist1DSes,
adsl2PMLHist1DLoss,
adsl2PMLHist1DUas,
adsl2PMLHist1DValidInterval }

STATUS current

DESCRIPTION
"The group of line level PM counters for the previous 24 hours intervals."

::= { adsl2Groups 22 }

ads12PMLLineInitHist15MinGroup OBJECT-GROUP

OBJECTS

{ adsl2PMLHistInit15MMonitoredTime,
adsl2PMLHistInit15MFullInits,
adsl2PMLHistInit15MFailedFullInits,
adsl2PMLHistInit15MValidInterval }

STATUS current

DESCRIPTION
"The group of PM counters for the previous 15 minutes intervals full initializations."

::= { adsl2Groups 23 }

ads12PMLLineInitHist15MinShortGroup OBJECT-GROUP

OBJECTS

{ adsl2PMLHistInit15MShortInits,
adsl2PMLHistInit15MFailedShortInits }

STATUS current

DESCRIPTION
"The group of PM counters for the previous 15 minutes intervals short initializations."

::= { adsl2Groups 24 }

ads12PMLLineInitHist1DayGroup OBJECT-GROUP

OBJECTS

{ adsl2PMLHistinit1DMonitoredTime,
adsl2PMLHistinit1DFullInits,
adsl2PMLHistinit1DFailedFullInits,
adsl2PMLHistinit1DValidInterval
}  
STATUS  current
DESCRIPTION  
"The group of PM counters for the previous 24 hours intervals full initializations."
::= { adsl2Groups 25 }

adsl2PMLineInitHist1DayShortGroup OBJECT-GROUP
OBJECTS
{
  adsl2PMLHistinit1DShortInits,
  adsl2PMLHistinit1DFailedShortInits
}
STATUS  current
DESCRIPTION  
"The group of PM counters for the previous 24 hours intervals short initializations."
::= { adsl2Groups 26 }

adsl2PMChCurrGroup OBJECT-GROUP
OBJECTS
{
  adsl2PMChCurrValidIntervals,
  adsl2PMChCurrInvalidIntervals,
  adsl2PMChCurr15MTimeElapsed,
  adsl2PMChCurr15MCodingViolations,
  adsl2PMChCurr15MCorrectedBlocks,
  adsl2PMChCurr1DayValidIntervals,
  adsl2PMChCurr1DayInvalidIntervals,
  adsl2PMChCurr1DayTimeElapsed,
  adsl2PMChCurr1DayCodingViolations,
  adsl2PMChCurr1DayCorrectedBlocks
}
STATUS  current
DESCRIPTION  
"The group of objects that report the channel level counters for current PM intervals."
::= { adsl2Groups 27 }

adsl2PMChHist15MinGroup OBJECT-GROUP
OBJECTS
{
  adsl2PMChHist15MMonitoredTime,
  adsl2PMChHist15MCodingViolations,
  adsl2PMChHist15MCorrectedBlocks,
  adsl2PMChHist15MValidInterval
}
STATUS  current
DESCRIPTION
"The group of objects that report the channel level
counters for previous 15 minutes PM intervals."
::= { adsl2Groups 28 }

adsl2PMChHist1DGroup OBJECT-GROUP
OBJECTS
{  
adsl2PMChHist1DMonitoredTime,
adsl2PMChHist1DCodingViolations,
adsl2PMChHist1DCorrectedBlocks,
adsl2PMChHist1DValidInterval
}
STATUS current
DESCRIPTION
"The group of objects that report the channel level
counters for previous 24 hours PM intervals."
::= { adsl2Groups 29 }

adsl2ScalarSCGroup OBJECT-GROUP
OBJECTS
{  
adsl2ScalarSCMaxInterfaces,
adsl2ScalarSCAvailInterfaces
}
STATUS current
DESCRIPTION
"The group of objects that report the available memory
resources for DELT processes."
::= { adsl2Groups 30 }

adsl2ThreshNotificationGroup NOTIFICATION-GROUP
NOTIFICATIONS
{  
adsl2LinePerfFECSThreshAtuc,
adsl2LinePerfFECSThreshAtur,
adsl2LinePerfESThreshAtuc,
adsl2LinePerfESThreshAtur,
adsl2LinePerfSESThreshAtuc,
adsl2LinePerfSESThreshAtur,
adsl2LinePerfLOSSThreshAtuc,
adsl2LinePerfLOSSThreshAtur,
adsl2LinePerfUASThreshAtuc,
adsl2LinePerfUASThreshAtur,
adsl2LinePerfCodingViolationsThreshAtuc,
adsl2LinePerfCodingViolationsThreshAtur,
adsl2LinePerfCorrectedThreshAtuc,
adsl2LinePerfCorrectedThreshAtur,
ads12LinePerfFailedFullInitThresh,
ads12LinePerfFailedShortInitThresh
}
STATUS      current
DESCRIPTION
"This group supports notifications of significant conditions
associated with ADSL2 lines."
::= { adsl2Groups 31 }

ads12StatusChangeNotificationGroup NOTIFICATION-GROUP
NOTIFICATIONS
{
  ads12LineStatusChangeAtuc,
  ads12LineStatusChangeAtur
}
STATUS      current
DESCRIPTION
"This group supports notifications of thresholds crossing
associated with ADSL2 lines."
::= { adsl2Groups 32 }

END

4.  Implementation Analysis

A management application intended to manage ADSL links (e.g.,
G.992.1) with this MIB module MUST be modified to adapt itself to
certain differences between RFC 2662 [RFC2662] and this MIB module,
including the following aspects:

o  Though the configuration templates/profiles allow referring to 1-4
  bearer channels, ADSL links are limited to 2 channels at most
o  Though the channel configuration profile allows higher data rates,
  ADSL links are limited to downstream/upstream data rate as assumed
  in RFC 2662 [RFC2662]

o  The Impulse Noise Protection (INP) configuration parameters are
given by minimum protection and maximum delay parameters.

o  The line configuration profile includes a sub-table that addresses
  mode-specific parameters. For ADSL links, the management
  application SHOULD create a row in that table for the ‘adsl’ mode.

o  The line configuration profile includes parameters that are
  irrelevant for ADSL links. Similarly, many status parameters in
  the MIB are irrelevant for certain ADSL modes. Therefore, it is
  advised to consult with ITU G.997.1 standard [G.997.1] regarding
  the scope and relevance of each parameter in this MIB.
5. Security Considerations

There are a number of management objects defined in this MIB module with 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. These are the tables and objects and their sensitivity/vulnerability:

- **ads12LineTable**

  The table consists of the following objects that support SET operations:

  * ads12LineCnfgTemplate
  * ads12LineAlarmCnfgTemplate
  * ads12LineCmndConfPmsf
  * ads12LineCmndConfLdsf
  * ads12LineCmndAutomodeColdStart

  Unauthorized changes to ads12LineCnfgTemplate could have a major adverse operational effect on many lines simultaneously.

  Unauthorized changes to ads12LineAlarmCnfgTemplate could have a contrary effect on notifications.

  Unauthorized changes to ads12LineCmndConfPmsf could have an adverse affect on the power consumption of a line and may disrupt an operational service.

  Unauthorized changes to ads12LineCmndConfLdsf could cause an unscheduled line test to be carried out on the line.

  Unauthorized changes to ads12LineCmndAutomodeColdStart could cause an unscheduled cold reset to the line.

- **ads12SCStatusTable**

  This table contains one object, ads12SCStatusRowStatus, that supports SET operations. Unauthorized changes could result in line test results being deleted prematurely.

- **ads12LineConfTemplateTable**

  The table consists of the following objects that support SET operations:
Unauthorized changes to \texttt{adsl2LConfTempLineProfile}, \texttt{adsl2LConfTempChan1ConfProfile}, \texttt{adsl2LConfTempChan2ConfProfile}, \texttt{adsl2LConfTempChan3ConfProfile}, or \texttt{adsl2LConfTempChan4ConfProfile} could have an adverse operational effect on several lines; could change several lines over to running in unwanted levels of operation; or could result in several services undergoing changes in the number of channels that carry the service.

Unauthorized changes to \texttt{adsl2LConfTempChan1RaRatioDs}, \texttt{adsl2LConfTempChan2RaRatioDs}, \texttt{adsl2LConfTempChan3RaRatioDs}, or \texttt{adsl2LConfTempChan4RaRatioDs}, would alter the relative rate allocations among all channels belonging to a line. This could have an adverse operational effect on several lines.

Unauthorized changes to \texttt{adsl2LConfTempRowStatus} could result in templates being created or brought into service prematurely; or could result in templates being inadvertently deleted or taken out of service.

\textbf{o  adsl2LineConfProfTable}

The table consists of the following objects that support \texttt{SET} operations:

* \texttt{adsl2LConfProfScMaskDs}
* \texttt{adsl2LConfProfScMaskUs}
* \texttt{adsl2LConfProfRfiBandsDs}
* \texttt{adsl2LConfProfRaModeDs}
* \texttt{adsl2LConfProfRaModeUs}
* \texttt{adsl2LConfProfRaUsNrmDs}
* \texttt{adsl2LConfProfRaUsNrmUs}
Unauthorized changes resulting in the setting of any of the above objects to an incorrect value could have an adverse operational effect on several lines.

Also, unauthorized changes to adsl2LConfProfRowStatus could result in unwanted line profiles being created or brought into service prematurely; or could result in line profiles being inadvertently deleted or taken out of service.

o  adsl2LineConfProfModeSpecTable

The table consists of the following objects that support SET operations:

*  adsl2LConfProfMaxNomPsdDs
*  adsl2LConfProfMaxNomPsdUs
*  adsl2LConfProfMaxNomAtpDs
*  adsl2LConfProfMaxNomAtpUs
*  adsl2LConfProfMaxAggRxPwrUs
*  adsl2LConfProfPsdMaskDs
*  adsl2LConfProfPsdMaskUs
*  adsl2LConfProfPsdMaskSelectUs
*  adsl2LConfProfModeSpecRowStatus

Unauthorized changes resulting in the setting of any of the above objects to an incorrect value could have an adverse operational
effect on several lines.

Also, unauthorized changes to adsl2LConfProfModeSpecRowStatus could result in unwanted PSD configurations being created or brought into service prematurely; or could result in PSD configurations being inadvertently deleted or taken out of service.

- **ads12ChConfProfileTable**

  The table consists of the following objects that support SET operations:

  * adsl2ChConfProfMinDataRateDs
  * adsl2ChConfProfMinDataRateUs
  * adsl2ChConfProfMinResDataRateDs
  * adsl2ChConfProfMinResDataRateUs
  * adsl2ChConfProfMaxDataRateDs
  * adsl2ChConfProfMaxDataRateUs
  * adsl2ChConfProfMinDataRateLowPwrDs
  * adsl2ChConfProfMaxDelayDs
  * adsl2ChConfProfMaxDelayUs
  * adsl2ChConfProfMinProtectionDs
  * adsl2ChConfProfMinProtectionUs
  * adsl2ChConfProfMaxBerDs
  * adsl2ChConfProfMaxBerUs
  * adsl2ChConfProfUsDataRateDs
  * adsl2ChConfProfDsDataRateDs
  * adsl2ChConfProfUsDataRateUs
  * adsl2ChConfProfDsDataRateUs
  * adsl2ChConfProfImaEnabled
  * adsl2ChConfProfRowStatus

  Unauthorized changes resulting in the setting of any of the above objects to an incorrect value could have an adverse operational effect on several lines.

  Also, unauthorized changes to adsl2ChConfProfRowStatus could result in unwanted channel profiles being created or brought into service prematurely; or could result in channel profiles being inadvertently deleted or taken out of service.

- **ads12LineAlarmConfTemplateTable**

  The table consists of the following objects that support SET operations:
Unauthorized changes to `adsl2LAlarmConfTempLineProfile`, `adsl2LAlarmConfTempChan1ConfProfile`, `adsl2LAlarmConfTempChan2ConfProfile`, `adsl2LAlarmConfTempChan3ConfProfile`, or `adsl2LAlarmConfTempChan4ConfProfile` could have an adverse effect on the management of notifications generated at the scope of several to many lines; or could change several to many lines over to running with unwanted management rates for generated notifications.

Unauthorized changes to `adsl2LAlarmConfTempRowStatus` could result in alarm templates being created or brought into service prematurely; or could result in alarm templates being inadvertently deleted or taken out of service.

* `adsl2LineAlarmConfProfileTable`

The table consists of the following objects that support SET operations:

* `adsl2LineAlarmConfProfileAtucThresh15MinFecs`
* `adsl2LineAlarmConfProfileAtucThresh15MinEs`
* `adsl2LineAlarmConfProfileAtucThresh15MinSes`
* `adsl2LineAlarmConfProfileAtucThresh15MinLoss`
* `adsl2LineAlarmConfProfileAtucThresh15MinUas`
* `adsl2LineAlarmConfProfileAturThresh15MinFecs`
* `adsl2LineAlarmConfProfileAturThresh15MinEs`
* `adsl2LineAlarmConfProfileAturThresh15MinSes`
* `adsl2LineAlarmConfProfileAturThresh15MinLoss`
* `adsl2LineAlarmConfProfileAturThresh15MinUas`
* `adsl2LineAlarmConfProfileThresh15MinFailedFullInt`
* `adsl2LineAlarmConfProfileThresh15MinFailedShrtInt`
* `adsl2LineAlarmConfProfileRowStatus`

Increasing any of the threshold values could result in a notification being suppressed or deferred. Setting a threshold to 0 could result in a notification being suppressed. Suppressing or deferring a notification could prevent the timely delivery of important diagnostic information. Decreasing any of the threshold values could result in a notification being sent from the network falsely reporting a threshold crossing.
Changing a threshold value could also have an impact on the amount of notifications the agent sends. The Notifications Section of this document has a paragraph which provides general guidance on the rate limiting of notifications. Agent implementations not providing rate limiting could result in notifications being generated at an uncontrolled rate. Unauthorized changes to a threshold value could result in an undesired notification rate.

Unauthorized changes to row status could result in unwanted line alarm profiles being created or brought into service. Also, changes to the row status could result in line alarm profiles being inadvertently deleted or taken out of service.

- ads12ChAlarmConfProfileTable

  The table consists of the following objects that support SET operations:

  * ads12ChAlarmConfProfileAtucThresh15MinCodingViolations
  * ads12ChAlarmConfProfileAtucThresh15MinCorrected
  * ads12ChAlarmConfProfileAturThresh15MinCodingViolations
  * ads12ChAlarmConfProfileAturThresh15MinCorrected
  * ads12ChAlarmConfProfileRowStatus
  * ads12LineAlarmConfProfileAturThresh15MinFecs
  * ads12LineAlarmConfProfileAturThresh15MinEs
  * ads12LineAlarmConfProfileAturThresh15MinSes
  * ads12LineAlarmConfProfileAturThresh15MinLoss
  * ads12LineAlarmConfProfileAturThresh15MinUas
  * ads12LineAlarmConfProfileThresh15MinFailedFullInt
  * ads12LineAlarmConfProfileThresh15MinFailedShrtInt
  * ads12LineAlarmConfProfileRowStatus

  Increasing any of the threshold values could result in a notification being suppressed or deferred. Setting a threshold to 0 could result in a notification being suppressed. Suppressing or deferring a notification could prevent the timely delivery of important diagnostic information. Decreasing any of the threshold values could result in a notification being sent from the network falsely reporting a threshold crossing.

Changing a threshold value could also have an impact on the amount of notifications the agent sends. The Notifications Section of this document has a paragraph which provides general guidance on the rate limiting of notifications. Agent implementations not providing rate limiting could result in notifications being generated at an uncontrolled rate. Unauthorized changes to a threshold value could result in an undesired notification rate.
Unauthorized changes to row status could result in unwanted channel alarm profiles being created or brought into service. Also, changes to the row status could result in channel alarm profiles being inadvertently deleted or taken out of service.

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. It is thus important to control even GET and/or NOTIFY access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP. These are the tables and objects and their sensitivity/vulnerability:

- **ads12LineInventoryTable**
  - Access to these objects would allow an intruder to obtain information about which vendor's equipment is in use on the network. Further, such information is considered sensitive in many environments for competitive reasons.
  - * ads12LInvG994VendorId
  - * ads12LInvSystemVendorId
  - * ads12LInvVersionNumber
  - * ads12LInvSerialNumber
  - * ads12LInvSelfTestResult
  - * ads12LInvTransmissionCapabilities

SNMP versions prior to SNMPv3 did not include adequate security. 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 module.

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [RFC3410], Section 8), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

It is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module is properly configured to give access only to those objects whose principals (users) have legitimate rights to indeed GET or SET (change/create/delete) them.

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7. References

7.1. Normative References


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7.2. Informative References


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