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 (DSL Forum) 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 New Generation xDSL 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) SHOULD be managed with the MIB specified by RFC2662. ADSL, ADSL2, and ADSL2+ lines identified with ifType=ADSL2 (230) SHOULD 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 x tus).
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 New Generation DSL MIB.

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

The NGDSL-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 RFC2662 management model and ADSL/ADSL2 and ADSL2+ lines managed with the model defined in this document.

Also the NGDSL-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.

- 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

**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

**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.

**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.

**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

- Ads12OperationModes:

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.
ads1 (2),               - ADSL (POTS or ISDN)
ads12Pots (3),          - ADSL2 (ISDN)
ads12Isdn (4),          - ADSL2 (ISDN)
ads12PlusPots (5),      - ADSL2+ (POTS)
ads12PlusIsdn (6),      - ADSL2+ (ISDN)
ads12ReachExtended (7)  - Reach Extended ADSL2

- Ads12PowerMngState:

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

10(0)                  - L0 - Full power management state
11(1)                  - L1 - Low power management state (for G.992.2)
12(2)                  - L2 - Low power management state (for G.992.3, G.992.4, and G.992.5)
13(3)                  - L3 - Idle power management state

- Ads12ConfPmsForce:

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

13toL0 (1)             - 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:
- The default value, in case LDSF was never requested for the associated line.

- The recent command completed successfully.

- The Loop Diagnostics process is in progress.

- The NE or the line card doesn’t support LDSF.

- The NE cannot initiate the command, due to a non specific reason.

- The Loop Diagnostics process aborted.

- The Loop Diagnostics process failed.

- The NE cannot initiate the command, due to the specific mode of the relevant line.

- The NE cannot initiate the command because the relevant line is administratively ‘Up’.

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

- The NE cannot initiate the command, due to lack of internal memory resources.

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

- INF not required

- INF length = 1/2 symbol

- INF length = 1 symbol

- INF length = 2 symbols

- INF length = 3 symbols

- INF length = 4 symbols

- INF length = 5 symbols

- INF length = 6 symbols

- INF length = 7 symbols

- INF length = 8 symbols

- INF length = 9 symbols

- INF length = 10 symbols

- INF length = 11 symbols

- INF length = 12 symbols

- INF length = 13 symbols

- INF length = 14 symbols

- INF length = 15 symbols

- INF length = 16 symbols
- **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

- **Adsl2ScMaskDs:**
  
  Attributes with this syntax are configuration parameters that reference the downstream sub-carrier mask. It is a bitmap of up to 512 bits.

- **Adsl2ScMaskUs:**
  
  Attributes with this syntax are configuration parameters that reference the upstream sub-carrier mask. It is a bitmap of up to 64 bits.

- **Adsl2RfiDs:**
  
  Attributes with this syntax are configuration parameters that reference the downstream notch filters. It is a bitmap of up to 512 bits.

- **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.

- **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.

- **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.
- 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).

- 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.

- 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

- Adsl2ChPtmStatus:

  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

- 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:
- adsl2PMLLineCurrTable
- adsl2PMLLineCurrInitTable
- adsl2PMChCurrTable

- 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:

- adsl2PMLLineHist15MinTable
- adsl2PMLLineInitHist15MinTable
- adsl2PMChHist15MinTable

- 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:

- adsl2PMLLineHist1DayTable
- adsl2PMLLineInitHist1DayTable
- adsl2PMChHist1DTable

- 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

- 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

o 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. 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.
2.6. Counters, Interval Buckets, and Thresholds

2.6.1. 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.
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.

2.6.2. 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.

2.6.3. 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).

2.6.4. 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.

2.7. 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

2.7.1. 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.

2.7.2. 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 ads12LineAlarmConfProfTable.

- 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 ads12ChAlarmConfProfTable.

- 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.

### 2.7.3. 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](https://www.rfc-editor.org/rfc/rfc3411)).

One or more lines may be configured to share parameters of a single configuration template (e.g., ads12LConfTempTemplateName = ‘silver’) by setting its ads12LCnfgLineTemplate 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., ads12LAlarmConfTempTemplateName = ‘silver’) by setting its ads12LCnfgAlarmTemplate 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.

2.7.4. Managing Multiple Bearer Channels

The number of bearer channels is configured by setting the template attributes adsl2LConfTempChan1ConfProfile, adsl2LConfTempChan2ConfProfile, adsl2LConfTempChan3ConfProfile, and adsl2LConfTempChan4ConfProfile 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, adsl2PMChCurrTable, adsl2PMChHist15MinTable and adsl2PMChHist1DTable tables for that line.

2.8. 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 ADSL+ 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

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

IMPORTS
    MODULE-IDENTITY, transmission
    FROM SNMPv2-SMI

TEXTUAL-CONVENTION
    FROM SNMPv2-TC;

ngdslTCMIB MODULE-IDENTITY
    LAST-UPDATED "200510090000Z" -- October 9, 2005
    ORGANIZATION "ADSLMIB Working Group"
    CONTACT-INFO "WG-email: adslmib@ietf.org
    Info: https://www1.ietf.org/mailman/listinfo/adslmib

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Co-editor:     Moti Morgenstern
                ECI Telecom Ltd.
Postal:        30 Hasivim St.
DESCRIPTION

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

Copyright (C) The Internet Society (2005). This version of this MIB module is part of RFC XXXX: see the RFC itself for full legal notices."

-- RFC Ed.: replace XXXX with assigned number & remove this note
REVISION "20051009000002" -- October 09, 2005
DESCRIPTION "Initial version, published as RFC XXXX."
-- RFC Ed.: replace XX with assigned number & remove this note
::= { transmission xxx }
-- RFC Ed.: we suggest to put it under { transmission 230 } because this is the first available number.

---------------------------------------------
-- Textual Conventions --

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)"
<table>
<thead>
<tr>
<th>Bit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>G.992.2 with TCM-ISDN non-overlapped (L)</td>
</tr>
<tr>
<td>11</td>
<td>G.992.2 with TCM-ISDN overlapped (L)</td>
</tr>
<tr>
<td>12</td>
<td>G.992.1 TCM-ISDN symmetric (F) --- not in G.997.1</td>
</tr>
<tr>
<td>13-17</td>
<td>Reserved</td>
</tr>
<tr>
<td>18</td>
<td>G.992.3 POTS non-overlapped (F)</td>
</tr>
<tr>
<td>19</td>
<td>G.992.3 POTS overlapped (F)</td>
</tr>
<tr>
<td>20</td>
<td>G.992.3 ISDN non-overlapped (F)</td>
</tr>
<tr>
<td>21</td>
<td>G.992.3 ISDN overlapped (F)</td>
</tr>
<tr>
<td>22-23</td>
<td>Reserved</td>
</tr>
<tr>
<td>24</td>
<td>G.992.4 POTS non-overlapped (L)</td>
</tr>
<tr>
<td>25</td>
<td>G.992.4 POTS overlapped (L)</td>
</tr>
<tr>
<td>26-27</td>
<td>Reserved</td>
</tr>
<tr>
<td>28</td>
<td>G.992.3 Annex I All-Digital non-overlapped (F)</td>
</tr>
<tr>
<td>29</td>
<td>G.992.3 Annex I All-Digital overlapped (F)</td>
</tr>
<tr>
<td>30</td>
<td>G.992.3 Annex J All-Digital non-overlapped (F)</td>
</tr>
<tr>
<td>31</td>
<td>G.992.3 Annex J All-Digital overlapped (F)</td>
</tr>
<tr>
<td>32</td>
<td>G.992.4 Annex I All-Digital non-overlapped (L)</td>
</tr>
<tr>
<td>33</td>
<td>G.992.4 Annex I All-Digital overlapped (L)</td>
</tr>
<tr>
<td>34</td>
<td>G.992.3 Annex L POTS non-overlapped, mode 1, wide U/S (F)</td>
</tr>
<tr>
<td>35</td>
<td>G.992.3 Annex L POTS non-overlapped, mode 2, narrow U/S(F)</td>
</tr>
<tr>
<td>36</td>
<td>G.992.3 Annex L POTS overlapped, mode 3, wide U/S (F)</td>
</tr>
<tr>
<td>37</td>
<td>G.992.3 Annex L POTS overlapped, mode 4, narrow U/S (F)</td>
</tr>
<tr>
<td>38</td>
<td>G.992.3 Annex M POTS non-overlapped (F)</td>
</tr>
<tr>
<td>39</td>
<td>G.992.3 Annex M POTS overlapped (F)</td>
</tr>
<tr>
<td>40</td>
<td>G.992.5 POTS non-overlapped (F)</td>
</tr>
<tr>
<td>41</td>
<td>G.992.5 POTS overlapped (F)</td>
</tr>
<tr>
<td>42</td>
<td>G.992.5 ISDN non-overlapped (F)</td>
</tr>
<tr>
<td>43</td>
<td>G.992.5 ISDN overlapped (F)</td>
</tr>
<tr>
<td>44-45</td>
<td>Reserved</td>
</tr>
<tr>
<td>46</td>
<td>G.992.5 Annex I All-Digital non-overlapped (F)</td>
</tr>
<tr>
<td>47</td>
<td>G.992.5 Annex I All-Digital overlapped (F)</td>
</tr>
<tr>
<td>48</td>
<td>G.992.5 Annex J All-Digital non-overlapped (F)</td>
</tr>
<tr>
<td>49</td>
<td>G.992.5 Annex J All-Digital overlapped (F)</td>
</tr>
<tr>
<td>50</td>
<td>G.992.5 Annex M POTS non-overlapped (F)</td>
</tr>
<tr>
<td>51</td>
<td>G.992.5 Annex M POTS overlapped (F)</td>
</tr>
<tr>
<td>52-55</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

SYNTAX

```plaintext
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),
q9923AnnexIAllDigNonOverlapped(28),
q9923AnnexIAllDigOverlapped(29),
q9923AnnexJAllDigNonOverlapped(30),
q9923AnnexJAllDigOverlapped(31),
q9924AnnexIAllDigNonOverlapped(32),
q9924AnnexIAllDigOverlapped(33),
q9923AnnexLMo1NonOverlapped(34),
q9923AnnexLMo2NonOverlapped(35),
q9923AnnexLMo3Overlapped(36),
q9923AnnexLMo4Overlapped(37),
q9923AnnexMPotsNonOverlapped(38),
q9923AnnexMPotsOverlapped(39),
q9925PotsNonOverlapped(40),
q9925PotsOverlapped(41),
q9925IsdnNonOverlapped(42),
q9925IsdnOverlapped(43),
reserved10(44),
reserved11(45),
q9925AnnexIAllDigNonOverlapped(46),
q9925AnnexIAllDigOverlapped(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"
  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(0) - L0 - Full power management state
  11(1) - L1 - Low power management state (for G.992.2)
  12(2) - L2 - Low power management state (for G.992.3,
              G.992.4, and G.992.5)
  13(3) - L3 - Idle power management state"

SYNTAX      INTEGER {
    10(0),
    11(1),
    12(2),
    13(3)
}

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 (1)      - 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)"

SYNTAX      INTEGER {
    13toL0 (0),
    10toL2 (2),
    10orL2toL3 (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"

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"
nineSymbols (11),
tenSymbols (12),
elevenSymbols (13),
twelveSymbols (14),
threeSymbols (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:
        minus3 (1) - Maximum BER=E^-3
        minus5 (2) - Maximum BER=E^-5
        minus7 (3) - Maximum BER=E^-7"
  SYNTAX INTEGER {
        minus3(1),
        minus5(2),
        minus7(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 downstream direction. A value of one indicates that the bin is not in use."
  SYNTAX OCTET STRING (SIZE(0..8))

Adsl2RfiDs ::= 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))

Adsl2PsdMaskDs ::= 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))

Adsl2PsdMaskUs ::= 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))

Adsl2Tssi ::= 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."

**SYNTAX**

```
INTEGER {
  atucG9941(0),
  atucQuiet1(1),
  atucCombi(2),
  atucQuiet2(3),
  atucCombi2(4),
  atucIcombi(5),
  atucLineprob(6),
  atucQuiet3(7),
  atucCombi3(8),
  atucIcombi2(9),
  atucMsgfmt(10),
  atucMsgpcb(11),
  atucQuiet4(12),
  atucReverb1(13),
  atucTrefi(14),
  atucReverb2(15),
  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),
  atucReverb7(30),
  atucSegue4(31),
  atucShowtime(32),
  --
  aturG9941(100),
  aturQuiet1(101),
  aturCombi(102),
  aturQuiet2(103),
  aturCombi2(104),
  aturIcombi(105),
  aturLineprob(106),
  aturQuiet3(107),
  aturCombi3(108),
  aturIcombi2(109),
...}
```
aturMsgfmt(110),
aturMsgpcb(111),
aturReverb1(112),
aturQuiet4(113),
aturReverb2(114),
aturQuiet5(115),
aturReverb3(116),
aturEct(117),
aturReverb4(118),
aturSegue1(119),
aturReverb5(120),
aturSegue2(121),
aturMsg1(122),
aturMedley(123),
aturExchmarker(124),
aturMsg2(125),
aturReverb6(126),
aturSegue3(127),
aturParams(128),
aturSegue4(129),
aturSegue5(130),
aturShowtime(131)

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.
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."

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:
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"

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.
oOfSync (1) - Out of synchronization."

SYNTAX BITS {
  noDefect(0),
oOfSync(1)
}
END
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]

Adsl2Unit,
Adsl2Direction,
Adsl2TransmissionModeType,
Adsl2RaMode,
Adsl2InitResult,
Adsl2OperationModes,
Adsl2PowerMngState,
Adsl2ConfPmsForce,
Adsl2ConfProfPmMode,
Adsl2LineLdsf,
Adsl2LdsfResult,
Adsl2SymbolProtection,
Adsl2MaxBer,
Adsl2ScMaskDs,
Adsl2ScMaskUs,
Adsl2RfiDs,
Adsl2PsdMaskDs,
Adsl2PsdMaskUs,
Adsl2Tssi,
Adsl2LastTransmittedState,
Adsl2LineStatus,
Adsl2ChAtmStatus,
Adsl2ChPtmStatus
FROM NGDSL-LINE-TC-MIB  -- [This document]
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.
adsl2            OBJECT IDENTIFIER ::= { ngdslMIB 1 }

adsl2Line      OBJECT IDENTIFIER ::= { adsl2 1 }
adsl2Status    OBJECT IDENTIFIER ::= { adsl2 2 }
adsl2Inventory OBJECT IDENTIFIER ::= { adsl2 3 }
adsl2PM        OBJECT IDENTIFIER ::= { adsl2 4 }
adsl2Profile   OBJECT IDENTIFIER ::= { adsl2 5 }
adsl2Scalar    OBJECT IDENTIFIER ::= { adsl2 6 }
adsl2Notifications OBJECT IDENTIFIER ::= { adsl2 0 }
adsl2Conformance 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 adsl2(230)."
::= { adsl2Line 1 }
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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,
adsl2LineCmndConfPmsf            Adsl2ConfPmsForce,
adsl2LineCmndConfLdsf            Adsl2LineLdsf,
adsl2LineCmndConfLdsfFailReason  Adsl2LdsfResult,
adsl2LineCmndAutomodeColdStart   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
}

adsl2LineCnfgTemplate  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, (Adsl2ConfTemplatesTable),
which applies for this ADSL2 line."
REFERENCE    "DSL Forum TR-90, paragraph 5.1.1"
DEFVAL  { "DEFVAL" } ::= { adsl2LineEntry 1 }

adsl2LineAlarmCnfTemplate  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."
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)."
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. "
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 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."

DEFVAL { none }
::= { adsl2LineEntry 5 }

ads12LineCmdnAutmodeColdStart OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-write
STATUS current
DESCRIPTION

"Autemode cold start forced. This parameter is defined in order to improve testing of the performance of ATUs supporting autemode 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 autemode and for shortening G.994.1 handshake and initialization.

Autemode is the case where multiple operation-modes are enabled through the ads12LConfProfAtuTransSysEna 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."
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:0(0), 1(1), 2(2), 3(3)."
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: noFailure(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. States are per the specific ADSL type and are counted from 0 (if G.994.1 is used) or 1 (if G.994.1 is not used) up to Showtime."
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. States are per the specific ADSL type and are counted from 0 (if G.994.1 is used) or 1 (if G.994.1 is not used) up to Showtime."
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. The various bit positions are: noFailure(0), lossOfFraming(1), lossOfSignal(2), lossOfPower(3), initFailure(4) - never active on ATU-R"
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. The various bit positions are: noFailure(0), lossOfFraming(1), lossOfSignal(2), lossOfPower(3), initFailure(4)
REFERENCE "ITU-T G.997.1, paragraph 7.1.1.1"
::= { adsl2LineEntry 13 }

adsl2LineStatusLnAttenDs  OBJECT-TYPE
SYNTAX      Unsigned32
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 subcarriers during diagnostics mode and initialization. It ranges from 0 to 1270 units of 0.1 dB (Physical values are 0 to 127 dB). A value of all 1's indicates the line attenuation is out of range to be represented."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.6"
::= { adsl2LineEntry 14 }

adsl2LineStatusLnAttenUs  OBJECT-TYPE
SYNTAX      Unsigned32
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 subcarriers during diagnostics mode and initialization. It ranges from 0 to 1270 units of 0.1 dB (Physical values are 0 to 127 dB). A value of all 1's indicates the line attenuation is out of range to be represented."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.7"
::= { adsl2LineEntry 15 }

adsl2LineStatusSigAttenDs  OBJECT-TYPE
SYNTAX      Unsigned32
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 subcarriers during Showtime. It ranges from 0 to 1270 units of 0.1 dB (Physical values are 0 to 127 dB). A value of all 1's indicates the line attenuation is out of range to be represented."
adsl2LineStatusSigAttenUs  OBJECT-TYPE
SYNTAX      Unsigned32
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 value of all
1’s indicates the line attenuation is out of range to be
represented."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.1.8"
 ::= { adsl2LineEntry 16 }

adsl2LineStatusSnrMarginDs  OBJECT-TYPE
SYNTAX      Integer32
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 value of all 1’s indicates the line
attenuation is out of range to be represented."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.1.9"
 ::= { adsl2LineEntry 17 }

adsl2LineStatusSnrMarginUs  OBJECT-TYPE
SYNTAX      Integer32
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 value of all 1’s indicates the line attenuation
is out of range to be represented."
REFERENCE    "ITU-T G.997.1, paragraph 7.5.1.10"
 ::= { adsl2LineEntry 18 }

adsl2LineStatusSnrMarginUs  OBJECT-TYPE
SYNTAX      Integer32
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 value of all 1’s indicates the line attenuation
is out of range to be represented."
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
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 all 1’s 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
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 all 1’s 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
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 all 1’s 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
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 all 1’s indicates the measurement is out of range to be represented."
REFERENCE "ITU-T G.997.1, paragraph 7.5.1.17"
::= { adsl2LineEntry 25 }

-- -------------------------------
--  adsl2ChannelStatusTable      --
-- -------------------------------

adsl2ChannelStatusTable OBJECT-TYPE
SYNTAX SEQUENCE OF Adsl2ChannelStatusEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The table adsl2ChannelStatusTable contains status parameters of ADSL2 channel."
::= { adsl2Status 1 }

adsl2ChannelStatusEntry OBJECT-TYPE
SYNTAX      Adsl2ChannelStatusEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
 "The table adsl2ChannelStatusTable 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:
noFailure(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:
    noFailure(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 --
--

ads12SCStatusTable OBJECT-TYPE
SYNTAX  SEQUENCE OF Ads12SCStatusEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table ads12SCStatusTable contains status parameters
of ADSL2 sub-carriers."
 ::= { ads12Status 2 }

ads12SCStatusEntry OBJECT-TYPE
SYNTAX  Ads12SCStatusEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table Ads12SCStatusEntry contains status parameters
of ADSL2 sub-carriers.
The index of this table is an interface index where the
interface has an ifType of ads12(230)."
INDEX { ifIndex, ads12SCStatusDirection }
 ::= { ads12SCStatusTable 1 }

Ads12SCStatusEntry ::= SEQUENCE {
    ads12SCStatusDirection  Ads12Direction,
    ads12SCStatusMtime     Unsigned32,
    ads12SCStatusSnr       OCTET STRING,
    ads12SCStatusBitsAlloc OCTET STRING,
    ads12SCStatusGainAlloc OCTET STRING,
    ads12SCStatusTssi     Ads12Tssi,
    ads12SCStatusLinScale UnSigned32,
    ads12SCStatusLinReal   OCTET STRING,
    ads12SCStatusLinImg    OCTET STRING,
    ads12SCStatusLogMt     UnSigned32,
    ads12SCStatusLog       OCTET STRING,
    ads12SCStatusQlnMt     UnSigned32,
    ads12SCStatusQln       OCTET STRING,
    ads12SCStatusLnAtten   UnSigned32,
    ads12SCStatusSigAtten  UnSigned32,
    ads12SCStatusSnrMargin Integer32,
    ads12SCStatusAttainableRate UnSigned32,
    ads12SCStatusActAtp    Integer32,
    ads12SCStatusRowStatus RowStatus
}

ads12SCStatusDirection OBJECT-TYPE
SYNTAX  Ads12Direction
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 bytes, designed for supporting up to 512 (downstream) sub-carriers. The number of utilized octets on downstream direction depends on NSCd, and on upstream direction it depends on NSCu. This value is referred here as NSC.
Byte 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 bytes (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 (BITSpus)"
::= { 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 (GAINSpds) and paragraph 7.5.1.21.4 (GAINSpus)"
::= { 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 }

adsl2SCStatusLinImg  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 NSCds, and on upstream direction it depends on NSCus. 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 (QLNpsu)"
::= { adsl2SCStatusEntry 13 }

adsl2SCStatusLnAtten  OBJECT-TYPE
SYNTAX       Unsigned32
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 value of all 1’s indicates the line attenuation 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 7.5.1.6 (LATNd) and paragraph 7.5.1.7 (LATNu)"
::= { adsl2SCStatusEntry 14 }

adsl2SCStatusSigAtten  OBJECT-TYPE
SYNTAX      Unsigned32
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 value of all 1’s indicates the line
attenuation 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 7.5.1.8 (SATNd)
and paragraph 7.5.1.9 (SATNu)"
::= { adsl2SCStatusEntry 15 }

ads12SCStatusSnrMargin OBJECT-TYPE
SYNTAX      Integer32
UNITS       "0.1 dB"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
"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 value of all 1’s indicates the SNR margin 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 7.5.1.10 (SNRMd)
and paragraph 7.5.1.11 (SNRMu)"
::= { adsl2SCStatusEntry 16 }

ads12SCStatusAttainableRate OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "bits/second"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"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}

adsl2SCStatusActAtp OBJECT-TYPE
SYNTAX Integer32
UNITS "0.1 dB"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"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-write
STATUS current
DESCRIPTION
"Row Status. The SNMP agent should create a row in this table for storing the results of a DELT performed on the associated line, if such a row does not already exist. The SNMP agent may have limited resources; therefore, if multiple rows co-exist in the table, it may fail to add new rows to the table or allocate memory resources for a new DELT process. If that occurs, the SNMP agent responds with
either the value 'tableFull' or the value 'noResources' (for adsl2LineCmdConfLdsfFailReason object in adsl2LineTable)
The management system (the operator) may delete rows according to any scheme. E.g., after retrieving the results.

::= { adsl2SCStatusEntry 19 }

------------------------------------------------
--        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            OCTET STRING,
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(0..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(0..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
STATUS current
DESCRIPTION "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 }

adsl2LInvSerialNumber  OBJECT-TYPE
SYNTAX OCTET STRING (SIZE(0..32))
MAX-ACCESS read-only
STATUS current
DESCRIPTION "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 }

adsl2LInvSelfTestResult  OBJECT-TYPE
SYNTAX OCTET STRING  (SIZE(0..4))
MAX-ACCESS read-only
STATUS current
DESCRIPTION "The ATU self-test result, coded as a 32-bit integer. The most significant octet of this object 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 }

adsl2LInvTransmissionCapabilities  OBJECT-TYPE
SYNTAX Adsl2TransmissionModeType
MAX-ACCESS read-only
STATUS current
DESCRIPTION "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."
::= { 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 }

adsl2LConfTempLineProfile  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 adsl2ChConfProfileTable 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 into 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 - Ads12ConfTemplateChan1RaRatioDs 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 4 }

ads12LConfTempChan1RaRatioUs 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 #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 - Ads12ConfTemplateChan1RaRatioUs 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 5 }

adsl2LConfTempChan2ConfProfile 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 #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 }

adsl2LConfTempChan2RaRatioDs 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 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 }
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 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 'outOfService'), it must be first unreferenced from all associated lines."
::= { adsl2LineConfTemplateEntry 15 }
adsl2LineConfProfTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2LineConfProfEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION  "The table adsl2LineConfProfTable contains ADSL2 line profile configuration."
 ::= { ads12ProfileLine 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 }
 ::= { ads12LineConfProfTable 1 }

Adsl2LineConfProfEntry  ::=  
SEQUENCE  {
      adsl2LConfProfProfileName          SnmpAdminString,
      adsl2LConfProfScMaskDs             Adsl2ScMaskDs,
      adsl2LConfProfScMaskUs             Adsl2ScMaskUs,
      adsl2LConfProfRfiBandsDs           Adsl2RfiDs,
      adsl2LConfProfRaModeDs             Adsl2RaMode,
      adsl2LConfProfRaModeUs             Adsl2RaMode,
      adsl2LConfProfRaUsNrmDs            Unsigned32,
      adsl2LConfProfRaUsNrmUs            Unsigned32,
      adsl2LConfProfRaUsTimeDs           Unsigned32,
      adsl2LConfProfRaUsTimeUs           Unsigned32,
      adsl2LConfProfRaDsNrmsDs           Unsigned32,
      adsl2LConfProfRaDsNrmsUs           Unsigned32,
      adsl2LConfProfRaDsTimeDs           Unsigned32,
      adsl2LConfProfRaDsTimeUs           Unsigned32,
      adsl2LConfProfTargetSnrmDs         Unsigned32,
      adsl2LConfProfTargetSnrmUs         Unsigned32,
      adsl2LConfProfMaxSnrmDs            Unsigned32,
      adsl2LConfProfMaxSnrmUs            Unsigned32,
      adsl2LConfProfMinSnrmDs            Unsigned32,
      adsl2LConfProfMinSnrmUs            Unsigned32,
      adsl2LConfProfMsgMinUs             Unsigned32,
      adsl2LConfProfMsgMinDs             Unsigned32,
      adsl2LConfProfAtuTransSysEna       Adsl2TransmissionModeType,
adsl2LConfProfPmMode               Adsl2LConfProfPmMode,
adsl2LConfProfL0Time               Unsigned32,
adsl2LConfProfL2Time               Unsigned32,
adsl2LConfProfL2Atpr               Unsigned32,
adsl2LConfProfL2Atprt              Unsigned32,
adsl2LConfProfRowStatus            RowStatus
}

adsl2LConfProfProfileName  OBJECT-TYPE  
SYNTAX      SnmpAdminString (SIZE(1..32))  
MAX-ACCESS  not-accessible  
STATUS      current  
DESCRIPTION  "This object identifies a row in this table."  
::= { adsl2LineConfProfEntry 1 }

adsl2LConfProfScMaskDs  OBJECT-TYPE  
SYNTAX      Adsl2ScMaskDs  
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 }

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 $i$ ($0 \leq i < \text{NSCds}$) 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 ads12LConfProfPsdMaskDs. Note that if $\text{NSCds} < 512$, all bits $i$ ($\text{NSCds} < i < 512$) should be set to '0'.

REFERENCE "ITU-T G.997.1, paragraph 7.3.1.2.9"
::= { ads12LineConfProfEntry 4 }

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 }
::= { ads12LineConfProfEntry 5 }

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 }
::= { ads12LineConfProfEntry 6 }

adsl2LConfProfRaUsNrmDs  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
Adsl2LineConfRaModeDs 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 Adsl2LineConfRaUsTimeDs,
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 }

adsl2LConfProfRaUsNrmUs  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 }
::= { 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)."
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
STATUS      current
DESCRIPTION  
"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 }

adsl2LConfProfTargetSnrmDs  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 achieve, relative to the BER requirement for each of the downstream bearer channels, to successfully complete initialization. The target 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 7.3.1.3.1"
DEFVAL { 60 }
::= { adsl2LineConfProfEntry 15 }

adsl2LConfProfTargetSnrmUs 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 achieve, relative to the BER requirement for each of the upstream bearer channels, to successfully complete initialization. The target 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 7.3.1.3.2"
DEFVAL { 60 }
::= { adsl2LineConfProfEntry 16 }

adsl2LConfProfMaxSnrmDs OBJECT-TYPE
SYNTAX Unsigned32
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 all 1’s 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
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 all 1’s means that there is no maximum."
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 }
::= { adsl2LineConfProfEntry 22 }

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 }

adsl2LConfProfPmMode OBJECT-TYPE
SYNTAX      Adsl2LConfProfPmMode
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"Power management state Enabling. Defines the power states the
ATU-C or ATU-R may autonomously transition to on this line.
The various bit positions are: allowTransitionsToIdle (0) and
allowTransitionsToLowPower (1). A bit with a ’1’ value means
that the ATU is allowed to transit into the respective state
and a ’0’ value means that the ATU is not allowed
to transit into the respective state."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.1.4"
DEFVAL  { { allowTransitionsToIdle, allowTransitionsToLowPower } }
::= { adsl2LineConfProfEntry 24 }

adsl2LConfProfL0Time  OBJECT-TYPE
SYNTAX      Unsigned32 (0..255)
UNITS       "seconds"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"This minimum time (in seconds) between an Exit from the L2
state and the next Entry into the L2 state. It ranges from 0
to 255 seconds."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.1.1.5"
DEFVAL       { 255 }
::= { adsl2LineConfProfEntry 25 }

adsl2LConfProfL2Time  OBJECT-TYPE
SYNTAX      Unsigned32 (0..255)
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 }

dsl2LConfProfRowStatus  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 ‘outOfService’),
it must be first unreferenced from all associated
templates."
 ::= { adsl2LineConfProfEntry 29 }

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

dsl2LineConfProfModeSpecTable  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
dsl2LConfProfAdslMode == defMode(1), is called a
‘mandatory’ row.
A row in this table that has an index such that
dsl2LConfProfAdslMode 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."

::= { adsl2ProfileLine 3 }

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,
adsl2LConfProfMaxAggRxPwrUs        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)
UNITS       "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..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 all ones 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 NSCdcs. 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 }

ads12LConfProfPsdMaskUs  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 NSCu. 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 }
ads12LConfProfPsdMaskSelectUs 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
ads12LConfProfAtuTransSysEna."
REFERENCE     "ITU-T G.997.1 (amendment 1), 7.3.1.10"
DEFVAL       { 1 }
::= { ads12LineConfProfModeSpecEntry 9 }

ads12LConfProfModeSpecRowStatus 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 ‘outOfService’),
it must be first unreferenced from all associated
templates."
::= { ads12LineConfProfModeSpecEntry 10 }

-----------------------------------------------
--          adsl2ChConfProfileTable           --
-----------------------------------------------

ads12ChConfProfileTable OBJECT-TYPE
SYNTAX       SEQUENCE  OF  Adsl2ChConfProfileEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION  "The table adsl2ChConfProfileTable contains ADSL2 channel
profile configuration."
::= { ads12ProfileChannel 1 }

ads12ChConfProfileEntry OBJECT-TYPE
SYNTAX       Adsl2ChConfProfileEntry
MAX-ACCESS   not-accessible
STATUS       current
DESCRIPTION
"The table adsl2ChConfProfileTable 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 { adsl2ChConfProfProfileName }
::= { adsl2ChConfProfileTable 1 }

Adsl2ChConfProfileEntry ::= 
SEQUENCE {
adsl2ChConfProfProfileName       SnmpAdminString,
adsl2ChConfProfMinDataRateDs     Unsigned32,
adsl2ChConfProfMinDataRateUs     Unsigned32,
adsl2ChConfProfMinResDataRateDs  Unsigned32,
adsl2ChConfProfMinResDataRateUs  Unsigned32,
adsl2ChConfProfMaxDataRateDs     Unsigned32,
adsl2ChConfProfMaxDataRateUs     Unsigned32,
adsl2ChConfProfMinDataRateLowPwrDs Unsigned32,
adsl2ChConfProfMinDataRateLowPwrUs 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 }

adsl2ChConfProfMinResDataRateDs  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 }

adsl2ChConfProfMinResDataRateUs  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 }

adsl2ChConfProfMaxDataRateDs  OBJECT-TYPE
SYNTAX      Unsigned32(0..200000000)
UNITS       "bits/second"
MAX-ACCESS  read-create
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 }

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 }

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 }

Minimum Data Rate in Low Power state on Upstream 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 9 }

Minimum Data Rate in Low Power state on Downstream direction. The minimum net data rate for the bearer channel, coded in millisecond.

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

::= { adsl2ChConfProfileEntry 9 }

Minimum Data Rate in Low Power state on Upstream direction. The minimum net data rate for the bearer channel, coded in milliseconds.

REFERENCE "ITU-T G.997.1, paragraph 7.3.2.1"
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 10 }

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 11 }

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 12 }

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 13 }
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 (1),
   halfSymbol (2),
   singleSymbol (3),
   twoSymbols (4),
   fourSymbols (5),
   eightSymbols (6),
   sixteenSymbols (7)."
REFERENCE  "ITU-T G.997.1, paragraph 7.3.2.3"
DEFVAL    { noProtection }
::= { adsl2ChConfProfileEntry 13 }

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 14 }

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 15 }
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 16 }

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 17 }

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 18 }

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 19 }

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 20 }

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 'outOfService'), it must be first unreferenced from all associated templates."
::= { adsl2ChConfProfileEntry 21 }

--        adsl2LineAlarmConfTemplateTable          --

--        adsl2LineAlarmConfTemplateTable          --

adsl2LineAlarmConfTemplateTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2LineAlarmConfTemplateEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2LineConfTemplateTable contains ADSL2 line configuration template."
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.

<table>
<thead>
<tr>
<th>adsl2LAlarmConfTempTemplateName</th>
<th>SnmpAdminString</th>
</tr>
</thead>
<tbody>
<tr>
<td>adsl2LAlarmConfTempLineProfile</td>
<td>SnmpAdminString</td>
</tr>
<tr>
<td>adsl2LAlarmConfTempChan1ConfProfile</td>
<td>SnmpAdminString</td>
</tr>
<tr>
<td>adsl2LAlarmConfTempChan2ConfProfile</td>
<td>SnmpAdminString</td>
</tr>
<tr>
<td>adsl2LAlarmConfTempChan3ConfProfile</td>
<td>SnmpAdminString</td>
</tr>
<tr>
<td>adsl2LAlarmConfTempChan4ConfProfile</td>
<td>SnmpAdminString</td>
</tr>
<tr>
<td>adsl2LAlarmConfTempRowStatus</td>
<td>RowStatus</td>
</tr>
</tbody>
</table>
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 }

adsl2LAlarmConfTempChan3ConfProfile  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
 adsl2ChAlarmConfProfileTable table.
 This object may be set to a non-zero length string only if
 adsl2LAlarmConfTempChan2ConfProfile contains a non-zero
 length string."
REFERENCE    "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL       { "" }
::= { adsl2LineAlarmConfTemplateEntry 5 }
adsl2LAlarmConfTempChan4ConfProfile 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 adsl2ChAlarmConfProfileTable table. This object may be set to a non-zero length string only if adsl2LAlarmConfTempChan3ConfProfile contains a non-zero length string."
REFERENCE    "DSL Forum TR-90, paragraph 5.4.1"
DEFVAL       { "" }
 ::= { adsl2LineAlarmConfTemplateEntry 6 }

adsl2LAlarmConfTempRowStatus  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 ‘outOfService’), 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."
 ::= { adsl2ProfileAlarmConf 2 }
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,
    adsl2LineAlarmConfProfileAturThresh15MinFecs           HCPerfIntervalThreshold,
    adsl2LineAlarmConfProfileAturThresh15MinEs             HCPerfIntervalThreshold,
    adsl2LineAlarmConfProfileAturThresh15MinSes            HCPerfIntervalThreshold,
    adsl2LineAlarmConfProfileAturThresh15MinLoss           HCPerfIntervalThreshold,
    adsl2LineAlarmConfProfileAturThresh15MinUas            HCPerfIntervalThreshold,
    adsl2LineAlarmConfProfileThresh15MinFailedFullInt      Unsigned32,
    adsl2LineAlarmConfProfileThresh15MinFailedShrtInt      Unsigned32,
    adsl2LineAlarmConfProfileRowStatus                   RowStatus
}
```

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.
This object identifies a row in this table.

::= { adsl2LineAlarmConfProfileEntry 1 }

adsl2LineAlarmConfProfileAtucThresh15MinFecs OBJECT-TYPE
SYNTAX    HCPerfIntervalThreshold
UNITS     "seconds"
MAX-ACCESS read-create
STATUS    current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MFecs counter, when adsl2PMLCurrUnit 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 }
::= { adsl2LineAlarmConfProfileEntry 2 }

adsl2LineAlarmConfProfileAtucThresh15MinEs OBJECT-TYPE
SYNTAX    HCPerfIntervalThreshold
UNITS     "seconds"
MAX-ACCESS read-create
STATUS    current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MEs counter, when adsl2PMLCurrUnit 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 }
::= { adsl2LineAlarmConfProfileEntry 3 }

adsl2LineAlarmConfProfileAtucThresh15MinSes OBJECT-TYPE
SYNTAX    HCPerfIntervalThreshold
UNITS     "seconds"
MAX-ACCESS read-create
STATUS    current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MSes counter, when adsl2PMLCurrUnit 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 }
::= { adsl2LineAlarmConfProfileEntry 4 }

adsl2LineAlarmConfProfileAtucThresh15MinLoss OBJECT-TYPE
SYNTAX    HCPerfIntervalThreshold
UNITS   "seconds"
MAX-ACCESS  read-create
STATUS current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MLoss counter,
when adsl2PMLCurrUnit 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 }
 ::= { adsl2LineAlarmConfProfileEntry 5 }

adsl2LineAlarmConfProfileAtucThresh15MinUas OBJECT-TYPE
SYNTAX     HCPerfIntervalThreshold
UNITS       "seconds"
MAX-ACCESS read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MUas counter,
when adsl2PMLCurrUnit 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 }
 ::= { adsl2LineAlarmConfProfileEntry 6 }

adsl2LineAlarmConfProfileAturThresh15MinFecs 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 }
 ::= { ads12LineAlarmConfProfileEntry 8 }

adsl2LineAlarmConfProfileAturThresh15MinSes OBJECT-TYPE
SYNTAX HCPerfIntervalThreshold
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
"A threshold for the adsl2PMLCurr15MSses 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 }
 ::= { ads12LineAlarmConfProfileEntry 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 }
 ::= { ads12LineAlarmConfProfileEntry 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 }
 ::= { ads12LineAlarmConfProfileEntry 11 }
ads12LineAlarmConfProfileThresh15MinFailedFullInt  OBJECT-TYPE
SYNTAX     Unsigned32
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
 "A threshold for the ads12PMLCurrInit15MfailedFullInits 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 }
::= { ads12LineAlarmConfProfileEntry 12 }

ads12LineAlarmConfProfileThresh15MinFailedShrtInt  OBJECT-TYPE
SYNTAX     Unsigned32
MAX-ACCESS read-create
STATUS     current
DESCRIPTION
 "A threshold for the ads12PMLCurrInit15MFailedShortInits 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 }
::= { ads12LineAlarmConfProfileEntry 13 }

ads12LineAlarmConfProfileRowStatus  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 ‘outOfService’), it must be first unreferenced from all associated templates."
::= { ads12LineAlarmConfProfileEntry 14 }

-- adsl2ChAlarmConfProfileTable --
ads12ChAlarmConfProfileTable  OBJECT-TYPE
SYNTAX  SEQUENCE OF Ads12ChAlarmConfProfileEntry
MAX-ACCESS  not-accessible
STATUS  current
DESCRIPTION
"The table ads12ChAlarmConfProfileTable contains ADSL2 channel PM thresholds profiles."
::= { ads12ProfileAlarmConf 3 }

ads12ChAlarmConfProfileEntry  OBJECT-TYPE
SYNTAX  Ads12ChAlarmConfProfileEntry
MAX-ACCESS  not-accessible
STATUS  current
DESCRIPTION
"The table ads12ChAlarmConfProfileTable 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  { ads12ChAlarmConfProfileName }
::= { ads12ChAlarmConfProfileTable 1 }

Ads12ChAlarmConfProfileEntry ::= SEQUENCE {
ads12ChAlarmConfProfileName SnmpAdminString,
ads12ChAlarmConfProfileAtucThresh15MinCodingViolations Unsigned32,
ads12ChAlarmConfProfileAtucThresh15MinCorrected Unsigned32,
ads12ChAlarmConfProfileAturThresh15MinCodingViolations Unsigned32,
ads12ChAlarmConfProfileAturThresh15MinCorrected Unsigned32,
ads12ChAlarmConfProfileRowStatus RowStatus }

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

ads12ChAlarmConfProfileAtucThresh15MinCodingViolations  OCTET STRING  SIZE(1..32)
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 }
 ::= { adsl2ChAlarmConfProfileEntry 2 }

adsl2ChAlarmConfProfileAtucThresh15MinCorrected 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 }
 ::= { adsl2ChAlarmConfProfileEntry 3 }

adsl2ChAlarmConfProfileAturThresh15MinCodingViolations OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMChCurr15MCodingViolations counter, when adsl2PMChCurrUnit 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 }
 ::= { adsl2ChAlarmConfProfileEntry 4 }

adsl2ChAlarmConfProfileAturThresh15MinCorrected OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
"A threshold for the adsl2PMChCurr15MCorrectedBlocks counter, when adsl2PMChCurrUnit 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 }
 ::= { adsl2ChAlarmConfProfileEntry 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 'outOfService'),
it must be first unreferenced from all associated
templates."
::= { ads12ChAlarmConfProfileEntry 6 }

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

adsl2PMLLineCurrTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2PMLLineCurrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2PMLLineCurrTable contains current Performance
Monitoring results of ADSL2 line."
::= { adsl2PMLine 1 }

adsl2PMLLineCurrEntry  OBJECT-TYPE
SYNTAX      Adsl2PMLLineCurrEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table adsl2PMLLineCurrTable 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."
INDEX  { ifIndex, adsl2PMLCurrUnit }
::= { adsl2PMLLineCurrTable 1 }

Adsl2PMLLineCurrEntry ::= SEQUENCE {
adsl2PMLCurrUnit                    Adsl2Unit,
adsl2PMLCurrValidIntervals          Unsigned32,
adsl2PMLCurrInvalidIntervals        Unsigned32,
adsl2PMLCurr15MTimeElapsed          HCPerfTimeElapsed,
adsl2PMLCurr15MFecs                 Counter32,
adsl2PMLCurr15MEs Counter32,
adsl2PMLCurr15Mses Counter32,
adsl2PMLCurr15MLoss Counter32,
adsl2PMLCurr15MUas 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)."
 ::= { adsl2PMLLineCurrEntry 1 }

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 in this interval"
 ::= { 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"

::= { adsl2PMLineCurrEntry 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 }

adsl2PMLCurr15Mses 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"
::= { adsl2PMLineCurrEntry 7 }

adsl2PMLCurr15MLoss OBJECT-TYPE
SYNTAX Counter32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Count of seconds during this interval that there was LOS (or
adsl2PMLCurr15MUas 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 8 }

adsl2PMLCurr1DayValidIntervals OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Valid intervals."
::= { adsl2PMLLineCurrEntry 9 }

adsl2PMLCurr1DayInvalidIntervals OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Invalid intervals."
::= { adsl2PMLLineCurrEntry 10 }

adsl2PMLCurr1DayTimeElapsed OBJECT-TYPE
SYNTAX HCPerfTimeElapsed
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total elapsed seconds in this interval."
::= { adsl2PMLLineCurrEntry 12 }

adsl2PMLCurr1DayFecs OBJECT-TYPE
SYNTAX Counter32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current

REFERENCE "ITU-T G.997.1, paragraph 7.2.1"
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 13 }

adsl2PMLCurr1DayEs 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"
::= { adsl2PMLLineCurrEntry 14 }

adsl2PMLCurr1DaySes 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 15 }

adsl2PMLCurr1DayLoss 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 16 }
adsl2PMLCurr1DayUas  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 17 }

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

adsl2PMLLineCurrInitTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2PMLLineCurrInitEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION  
"The table adsl2PMLLineCurrInitTable contains current initialization counters of ADSL2 line."
 ::= { adsl2PMLLine 2 }

adsl2PMLLineCurrInitEntry  OBJECT-TYPE
SYNTAX      Adsl2PMLLineCurrInitEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION  
"The table adsl2PMLLineCurrInitTable 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 }
 ::= { adsl2PMLLineCurrInitTable 1 }

Adsl2PMLLineCurrInitEntry  ::=  
SEQUENCE  
{
   adsl2PMLCurrInit15MTimeElapsed          Unsigned32,
adsl2PMLCurrInit15MFullInits            Unsigned32,
adsl2PMLCurrInit15MFailedFullInits      Unsigned32,
adsl2PMLCurrInit15MShortInits           Unsigned32,
adsl2PMLCurrInit15MFailedShortInits     Unsigned32,
adsl2PMLCurrInit1DayTimeElapsed         Unsigned32,
}
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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 in this interval."
 ::= { adsl2PMLLineCurrInitEntry 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"
 ::= { adsl2PMLLineCurrInitEntry 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"
 ::= { adsl2PMLLineCurrInitEntry 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"
 ::= { adsl2PMLLineCurrInitEntry 4 }

adsl2PMLCurrInit15MFailedShortInits  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
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STATUS       current
DESCRIPTION   "Count of failed short initializations on the line during this
interval."
REFERENCE     "ITU-T G.997.1, paragraph 7.2.1"
::= { adsl2PMLLineCurrInitEntry 5 }

ads12PMLCurrInit1DayTimeElapsed OBJECT-TYPE
SYNTAX       Unsigned32
UNITS        "seconds"
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION   "Total elapsed seconds in this interval."
::= { adsl2PMLLineCurrInitEntry 6 }

ads12PMLCurrInit1DayFullInits 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"
::= { adsl2PMLLineCurrInitEntry 7 }

ads12PMLCurrInit1DayFailedFullInits 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"
::= { adsl2PMLLineCurrInitEntry 8 }

ads12PMLCurrInit1DayShortInits 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"
::= { adsl2PMLLineCurrInitEntry 9 }

ads12PMLCurrInit1DayFailedShortInits 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 }

-- PM line history 15 Minutes --

 ads1PMLineHist15MinTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2PMLineHist15MinEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table ads1PMLineHist15MinTable contains PM line history
for 15min intervals of ADSL2 line."
 ::= { ads1PMLine 3 }

 Adsl2PMLineHist15MinEntry  OBJECT-TYPE
SYNTAX      Adsl2PMLineHist15MinEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
"The table ads1PMLineHist15MinTable 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 ads12(230), the termination unit,
and an interval number."
INDEX  { ifIndex,
    ads1PMLHist15MUnit,
    ads1PMLHist15MInterval }
 ::= { ads1PMLineHist15MinTable 1 }

 Adsl2PMLineHist15MinEntry  ::=  
SEQUENCE  {
     ads1PMLHist15MUnit                 Adsl2Unit,
     ads1PMLHist15MInterval             Unsigned32,
     ads1PMLHist15MMonitoredTime        Unsigned32,
     ads1PMLHist15MFecs                 Counter32,
     ads1PMLHist15MEs                   Counter32,
     ads1PMLHist15MSES                  Counter32,
     ads1PMLHist15MLoss                 Counter32,
     ads1PMLHist15MUas                  Counter32,
     ads1PMLHist15MValidInterval        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
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 }

ads12PMLHist15MSes  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"
::= { adsl2PMLineHist15MinEntry 6 }

ads12PMLHist15MLoss  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 }

ads12PMLHist15MUas  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 }

ads12PMLHist15MValidInterval  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 --
---------------------------------------
--       PM line history 1 Day       --
---------------------------------------
adsl2PMLineHist1DayTable OBJECT-TYPE
SYNTAX SEQUENCE OF Adsl2PMLineHist1DayEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table adsl2PMLineHist1DayTable contains PM line history for 24 hours intervals of ADSL2 line."
 ::= { adsl2PMLine 4 }
adsl2PMLineHist1DayEntry OBJECT-TYPE
SYNTAX Adsl2PMLineHist1DayEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The table adsl2PMLineHist1DayTable 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  }
 ::= { adsl2PMLineHist1DayTable 1 }

Adsl2PMLineHist1DayEntry ::= SEQUENCE {
adsl2PMLHist1DUnit Adsl2Unit,  
adsl2PMLHist1DInterval Unsigned32,  
adsl2PMLHist1DMonitoredTime Unsigned32,  
adsl2PMLHist1DFecs Counter32,  
adsl2PMLHist1DEs Counter32,  
adsl2PMLHist1DSes Counter32,  
adsl2PMLHist1DLoss Counter32,  
adsl2PMLHist1DUas Counter32,  
adsl2PMLHist1DValidInterval TruthValue
}
ads12PMLHist1DUnit OBJECT-TYPE
SYNTAX Ads12Unit
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The termination unit."
 ::= { ads12PMLLineHist1DayEntry 1 }

ads12PMLHist1DInterval OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The interval number."
 ::= { ads12PMLLineHist1DayEntry 2 }

ads12PMLHist1DMonitoredTime OBJECT-TYPE
SYNTAX Unsigned32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total seconds monitored in this interval."
 ::= { ads12PMLLineHist1DayEntry 3 }

ads12PMLHist1DFecs 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"
 ::= { ads12PMLLineHist1DayEntry 4 }

ads12PMLHist1DEs 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"
::= { adsl2PMLineHist1DayEntry 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 }

adsl2PMLHist1DLoss 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"
::= { adsl2PMLineHist1DayEntry 7 }

adsl2PMLHist1DUas 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"
::= { adsl2PMLineHist1DayEntry 8 }

adsl2PMLHist1DValidInterval OBJECT-TYPE
SYNTAX TruthValue
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This variable indicates if the data for this interval is valid."
::= { adsl2PLineHist1DayEntry 9 }

-- PM line init history 15 Minutes --

adsl2PLineInitHist15MinTable OBJECT-TYPE
SYNTAX    SEQUENCE  OF  Adsl2PLineInitHist15MinEntry
MAX-ACCESS not-accessible
STATUS     current
DESCRIPTION
"The table adsl2PLineInitHist15MinTable contains PM line initialization history for 15 minutes intervals of ADSL2 line."
::= { adsl2PLine 5 }

adsl2PLineInitHist15MinEntry OBJECT-TYPE
SYNTAX    Adsl2PLineInitHist15MinEntry
MAX-ACCESS not-accessible
STATUS     current
DESCRIPTION
"The table adsl2PLineInitHist15MinTable 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 }
::= { adsl2PLineInitHist15MinTable 1 }

Adsl2PLineInitHist15MinEntry ::= SEQUENCE {
    adsl2PMLHistInit15MInterval             Unsigned32,
    adsl2PMLHistInit15MMonitoredTime        Unsigned32,
    adsl2PMLHistInit15MFullInits            Unsigned32,
    adsl2PMLHistInit15MFailedFullInits      Unsigned32,
    adsl2PMLHistInit15MShortInits           Unsigned32,
    adsl2PMLHistInit15MFailedShortInits     Unsigned32,
    adsl2PMLHistInit15MValidInterval        TruthValue
}

adsl2PMLHistInit15MInterval OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION  "The interval number."
::= { adsl2PMLineInitHist15MinEntry 1 }

ads12PMLHistInit15MMonitoredTime     OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION  "Total seconds monitored in this interval."
::= { adsl12PMLLineInitHist15MinEntry 2 }

ads12PMLHistInit15MFullInits      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"
::= { adsl12PMLLineInitHist15MinEntry 3 }

ads12PMLHistInit15MFailedFullInits     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"
::= { adsl12PMLLineInitHist15MinEntry 4 }

ads12PMLHistInit15MShortInits      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"
::= { adsl12PMLLineInitHist15MinEntry 5 }

ads12PMLHistInit15MFailedShortInits     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 }

adsl2PMLHistInit15MVValidInterval  OBJECT-TYPE
SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION  "This variable indicates if the data for this interval is
valid."
::= { adsl2PMLLineInitHist15MinEntry 7 }

--- PM line init history 1 Day ---
-----------------------------
adsl2PMLLineInitHist1DayTable  OBJECT-TYPE
SYNTAX      SEQUENCE  OF  Adsl2PMLineInitHist1DayEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION  "The table adsl2PMLLineInitHist1DayTable contains PM line
initialization history for 24 hours intervals of ADSL2 line."
::= { adsl2PMLLine 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 ads12(230) and an interval number."
INDEX  { ifIndex,
adsl2PMLHistInit1DInterval }
::= { adsl2PMLineInitHist1DayTable 1 }

Adsl2PMLineInitHist1DayEntry ::= SEQUENCE {

adsl2PMLHistinit1DInterval OBJECT-TYPE
SYNTAX Unsigned32
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION "The interval number."
::= { adsl2PMLLineInitHist1DayEntry 1 }

adsl2PMLHistinit1DMonitoredTime OBJECT-TYPE
SYNTAX Unsigned32
UNITS "seconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Total seconds monitored in this interval."
::= { adsl2PMLLineInitHist1DayEntry 2 }

adsl2PMLHistinit1DFullInits 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 }

adsl2PMLHistinit1DFailedFullInits 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 }

adsl2PMLHistinit1DShortInits 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"
 ::= { adsl2PMLineInitHist1DayEntry 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 }

ads12PMLHistinit1DValidInterval  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."
 ::= { adsl2PMChannel 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, adsl2PMChCurrUnit }
::= { adsl2PMChCurrTable 1 }

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<td>DESCRIPTION</td>
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<td>SYNTAX</td>
<td>HCPerfTimeElapsed</td>
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</table>
| UNITS                       | "seconds"
MAX-ACCESS  read-only
STATUS current
DESCRIPTION
"Total elapsed seconds in this interval."
::= { adsl2PMChCurrEntry 4 }

adsl2PMChCurr15MCodingViolations  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 }

adsl2PMChCurr15MCorrectedBlocks  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 }

adsl2PMChCurr1DayValidIntervals  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS current
DESCRIPTION
"Valid intervals."
::= { adsl2PMChCurrEntry 7 }

adsl2PMChCurr1DayInvalidIntervals  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS current
DESCRIPTION
"Invalid intervals."
::= { adsl2PMChCurrEntry 8 }

adsl2PMChCurr1DayTimeElapsed OBJECT-TYPE
SYNTAX        HCPerfTimeElapsed
UNITs         "seconds"
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION   "Total elapsed seconds in this interval."
::= { adsl2PMChCurrEntry 9 }

adsl2PMChCurr1DayCodingViolations 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 }

adsl2PMChCurr1DayCorrectedBlocks 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      --
-------------------------------------------

adsl2PMChHist15MinTable 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 adsl2PMChCurrTable 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, 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
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."
 ::= { ads12PMChHist15MinEntry 3 }

ads12PMChHist15MCodingViolations  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"
 ::= { ads12PMChHist15MinEntry 4 }

ads12PMChHist15MCorrectedBlocks  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"
 ::= { ads12PMChHist15MinEntry 5 }

ads12PMChHist15MValidInterval  OBJECT-TYPE
SYNTAX       TruthValue
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION
 "This variable indicates if the data for this interval is
valid."
 ::= { ads12PMChHist15MinEntry 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
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."

::= { adslPMChHist1DEntry 6 }

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

ads12LinePerfFECSThreshAtuc NOTIFICATION-TYPE
OBJECTS
{ ads12PMLCurr15MFecs,
  ads12LineAlarmConfProfileAtucThresh15MinFecs
}
STATUS current
DESCRIPTION
"This notification indicates that the FEC seconds threshold has been reached/exceeded for the referred ATU-C."
::= { adsl2Notifications 1 }

ads12LinePerfFECSThreshAtur NOTIFICATION-TYPE
OBJECTS
{ ads12PMLCurr15MFecs,
  ads12LineAlarmConfProfileAturThresh15MinFecs
}
STATUS current
DESCRIPTION
"This notification indicates that the FEC seconds threshold has been reached/exceeded for the referred ATU-R."
::= { adsl2Notifications 2 }

ads12LinePerfESThreshAtuc NOTIFICATION-TYPE
OBJECTS
{ ads12PMLCurr15MEs,
  ads12LineAlarmConfProfileAtucThresh15MinEs
}
STATUS current
DESCRIPTION
"This notification indicates that the errored seconds threshold has been reached/exceeded for the referred ATU-C."
::= { adsl2Notifications 3 }

ads12LinePerfESThreshAtur NOTIFICATION-TYPE
OBJECTS
{ ads12PMLCurr15MEs,

adsl2LineAlarmConfProfileAturThresh15MinEs
{
  STATUS current
  DESCRIPTION "This notification indicates that the errored seconds threshold has been reached/exceeded for the referred ATU-R."
  ::= { adsl2Notifications 4 }

adsl2LinePerfSESThreshAtuc NOTIFICATION-TYPE
OBJECTS
  {  
adsl2PMLCurr15MSes,  
adsl2LineAlarmConfProfileAtucThresh15MinSes  

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

adsl2LinePerfSESThreshAtur NOTIFICATION-TYPE
OBJECTS
  {  
adsl2PMLCurr15MSes,  
adsl2LineAlarmConfProfileAturThresh15MinSes  

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

adsl2LinePerfLOSThreshAtuc NOTIFICATION-TYPE
OBJECTS
  {  
adsl2PMLCurr15MLoss,  
adsl2LineAlarmConfProfileAtucThresh15MinLoss  

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

adsl2LinePerfLOSThreshAtur NOTIFICATION-TYPE
OBJECTS
  {  
adsl2PMLCurr15MLoss,  

  }
adsl2LineAlarmConfProfileAturThresh15MinLoss
}
STATUS current
DESCRIPTION
"This notification indicates that the LOS seconds
threshold has been reached/exceeded for the referred ATU-R."
::= { adsl2Notifications 8 }

adsl2LinePerfUASThreshAtuc NOTIFICATION-TYPE
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 }

adsl2LinePerfUASThreshAtur NOTIFICATION-TYPE
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 }

adsl2LinePerfCodingViolationsThreshAtuc NOTIFICATION-TYPE
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 }

adsl2LinePerfCodingViolationsThreshAtur NOTIFICATION-TYPE
OBJECTS
{
adsl2PMChCurr15MCodingViolations,


adsl2ChAlarmConfProfileAturThresh15MinCodingViolations
}
STATUS current
DESCRIPTION
"This notification indicates that the coding violations
threshold has been reached/exceeded for the referred ATU-R."
 ::= { adsl2Notifications 12 }

adsl2LinePerfCorrectedThreshAtuc NOTIFICATION-TYPE
OBJECTS
{ adsl2PMLChCurr15MCorrectedBlocks,
adsl2ChAlarmConfProfileAtucThresh15MinCorrected }
STATUS current
DESCRIPTION
"This notification indicates that the corrected blocks
(FEC events) threshold has been reached/exceeded for the
referred ATU-C."
 ::= { adsl2Notifications 13 }

adsl2LinePerfCorrectedThreshAtur NOTIFICATION-TYPE
OBJECTS
{ adsl2PMLChCurr15MCorrectedBlocks,
adsl2ChAlarmConfProfileAturThresh15MinCorrected }
STATUS current
DESCRIPTION
"This notification indicates that the corrected blocks
(FEC events) threshold has been reached/exceeded for the
referred ATU-R."
 ::= { adsl2Notifications 14 }

adsl2LinePerfFailedFullInitThresh NOTIFICATION-TYPE
OBJECTS
{ adsl2PMLChCurrInit15MFailedFullInits,
adsl2LineAlarmConfProfileThresh15MinFailedFullInt }
STATUS current
DESCRIPTION
"This notification indicates that the failed full
initializations threshold has been reached/exceeded for the
referred ADSL/ADSL2 or ADSL2 line."
 ::= { adsl2Notifications 15 }

adsl2LinePerfFailedShortInitThresh NOTIFICATION-TYPE

OBJECTS
{
adsl2PMLCurrInit15MFailedShortInit,
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 adsl2LineGroup,
GROUP adsl2ChannelStatusGroup,
GROUP adsl2SCStatusGroup,
GROUP adsl2LineInventoryGroup,
GROUP adsl2LineConfTemplateGroup,
GROUP adsl2LineConfProfGroup,
GROUP adsl2LineConfProfModeSpecGroup,
GROUP adsl2ChConfProfileGroup,
GROUP adsl2LineAlarmConfTemplateGroup,
GROUP adsl2PMLineCurrGroup,
GROUP adsl2PMLineCurrInitGroup,
GROUP adsl2PMLineHist15MinGroup,
GROUP adsl2PMLineHist1DayGroup,
GROUP adsl2PMLineInitHist15MinGroup,
GROUP adsl2PMLineInitHist1DayGroup,
GROUP adsl2PMChCurrGroup,
GROUP adsl2PMChHist15MinGroup,
GROUP adsl2PMChHist1DGroup

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,
Internet-Draft            NGDSL-LINE MIB            October 2005

adsl2LineAlarmCnfgTemplate,  
adsl2LineCmndConfPsmsf,       
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 }

adsl2ChannelStatusPtmGroup OBJECT-GROUP
OBJECTS
 {
   adsl2ChStatusPtmStatus
 }
STATUS current
DESCRIPTION
"The group of status objects on the data path level when it is PTM."
 ::= { adsl2Groups 4 }

adsl2SCStatusGroup OBJECT-GROUP
OBJECTS
 {
   adsl2SCStatusMtime,
   adsl2SCStatusSnr,
   adsl2SCStatusBitsAlloc,
   adsl2SCStatusGainAlloc,
   adsl2SCStatusTssi,
   adsl2SCStatusLinScale,
   adsl2SCStatusLinReal,
   adsl2SCStatusLinImg,
   adsl2SCStatusLogMt,
   adsl2SCStatusLog,
   adsl2SCStatusQlnMt,
   adsl2SCStatusQln,
   adsl2SCStatusLnAtten,
   adsl2SCStatusSigAtten,
   adsl2SCStatusSnrMargin,
   adsl2SCStatusAttainableRate,
   adsl2SCStatusActAtp,
   adsl2SCStatusRowStatus
 }
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 }

adsl2LineInventoryGroup 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  
{  
adsl12ConfTempLineProfile,  
adsl12ConfTempChan1ConfProfile,  
adsl12ConfTempChan1RaRatioDs,  
adsl12ConfTempChan1RaRatioUs,  
adsl12ConfTempChan2ConfProfile,  
adsl12ConfTempChan2RaRatioDs,  
adsl12ConfTempChan2RaRatioUs,  
adsl12ConfTempChan3ConfProfile,  
adsl12ConfTempChan3RaRatioDs,  
adsl12ConfTempChan3RaRatioUs,  
adsl12ConfTempChan4ConfProfile,  
adsl12ConfTempChan4RaRatioDs,  
adsl12ConfTempChan4RaRatioUs,  
adsl12ConfTempRowStatus  
}

STATUS current
DESCRIPTION  
"The group of objects in a line configuration template."  
::= { adsl2Groups 7 }

ads12LineConfProfGroup OBJECT-GROUP
OBJECTS  
{  
adsl12ConfProfScMaskDs,  
adsl12ConfProfScMaskUs,  
adsl12ConfProfRfiBandsDs,  
adsl12ConfProfRaModeDs,  
adsl12ConfProfRaModeUs,  
adsl12ConfProfTargetSnrmDs,  
adsl12ConfProfTargetSnrmUs,  
adsl12ConfProfMaxSnrmDs,  
adsl12ConfProfMaxSnrmUs,  
}
adsl2LConfProfMinSnrmDs,
adsl2LConfProfMinSnrmUs,
adsl2LConfProfAtuTransSysEna,
adsl2LConfProfPmMode,
adsl2LConfProfL0Time,
adsl2LConfProfL2Time,
adsl2LConfProfL2Atpr,
adsl2LConfProfL2Atprt,
adsl2LConfProfRowStatus
)

STATUS       current
DESCRIPTION   "The group of objects in a line configuration profile."
 ::=  (    adsl2Groups 8    )

adsl2LineConfProfRaGroup OBJECT-GROUP
OBJECTS
{
    adsl2LConfProfRaUsNrmDs,
adsl2LConfProfRaUsNrmUs,
adsl2LConfProfRaUsTimeDs,
adsl2LConfProfRaUsTimeUs,
adsl2LConfProfRaDsNrmsDs,
adsl2LConfProfRaDsNrmsUs,
adsl2LConfProfRaDsTimeDs,
adsl2LConfProfRaDsTimeUs
}

STATUS       current
DESCRIPTION   "The group of objects required for controlling the rate
adaptive behavior of the line."
 ::=  (    adsl2Groups 9    )

adsl2LineConfProfMsgMinGroup OBJECT-GROUP
OBJECTS
{
    adsl2LConfProfMsgMinUs,
adsl2LConfProfMsgMinDs
}

STATUS       current
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,
adsl2ChConfProfMinDataRateLowPwrUs,
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 }

adsl2ChConfProfileMinResGroup OBJECT-GROUP
OBJECTS
{
adsl2ChConfProfMinResDataRateDs,
adsl2ChConfProfMinResDataRateUs
}
STATUS current
DESCRIPTION
"The group of configuration objects required for the reserved data rate."
::= { adsl2Groups 14 }

adsl2LineAlarmConfTemplateGroup OBJECT-GROUP
OBJECTS
{
adsl2LAlarmConfTempLineProfile,
adsl2LAlarmConfTempChan1ConfProfile,
adsl2LAlarmConfTempChan2ConfProfile,
adsl2LAlarmConfTempChan3ConfProfile,
adsl2LAlarmConfTempChan4ConfProfile,
adsl2LAlarmConfTempRowStatus
}
STATUS current
DESCRIPTION
"The group of objects in a line alarm template."
::= { adsl2Groups 15 }

adsl2LineAlarmConfProfileGroup OBJECT-GROUP
OBJECTS
{
adsl2LineAlarmConfProfileAtucThresh15MinFecs,
adsl2LineAlarmConfProfileAtucThresh15MinEs,
adsl2LineAlarmConfProfileAtucThresh15MinSes,
adsl2LineAlarmConfProfileAtucThresh15MinLoss,
adsl2LineAlarmConfProfileAtucThresh15MinUas,
adsl2LineAlarmConfProfileAturThresh15MinFecs,
adsl2LineAlarmConfProfileAturThresh15MinEs,
adsl2LineAlarmConfProfileAturThresh15MinSes,
adsl2LineAlarmConfProfileAturThresh15MinLoss,
adsl2LineAlarmConfProfileAturThresh15MinUas,
adsl2LineAlarmConfProfileThresh15MinFailedFullInt,
adsl2LineAlarmConfProfileThresh15MinFailedShrtInt,
adsl2LineAlarmConfProfileRowStatus
)
STATUS current
DESCRIPTION
"The group of objects in a line alarm profile."
::= { adsl2Groups 16 }

adsl2ChAlarmConfProfileGroup OBJECT-GROUP
OBJECTS
{
  adsl2ChAlarmConfProfileAtucThresh15MinCodingViolations,
adsl2ChAlarmConfProfileAtucThresh15MinCorrected,
adsl2ChAlarmConfProfileAturThresh15MinCodingViolations,
adsl2ChAlarmConfProfileAturThresh15MinCorrected,
adsl2ChAlarmConfProfileRowStatus
}
STATUS current
DESCRIPTION
"The group of objects in a channel alarm profile."
::= { adsl2Groups 17 }

adsl2PMLineCurrGroup OBJECT-GROUP
OBJECTS
{
  adsl2PMLCurrValidIntervals,
adsl2PMLCurrInvalidIntervals,
adsl2PMLCurr15MTimeElapsed,
adsl2PMLCurr15MFecs,
adsl2PMLCurr15MEs,
adsl2PMLCurr15MSes,
adsl2PMLCurr15MLoss,
adsl2PMLCurr15MUas,
adsl2PMLCurr1DayValidIntervals,
adsl2PMLCurr1DayInvalidIntervals,
adsl2PMLCurr1DayTimeElapsed,
adsl2PMLCurr1DayFecs,
adsl2PMLCurr1DayEs,
adsl2PMLCurr1DaySes,
adsl2PMLCurr1DayLoss,
adsl2PMLCurr1DayUas
}
STATUS current
DESCRIPTION
"The group of objects that report the line level
counters for current PM intervals."
::= { adsl2Groups 18 }
adsl2PMLineCurrInitGroup 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 }

adsl2PMLineCurrInitShortGroup 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 }

adsl2PMLineHist15MinGroup OBJECT-GROUP
OBJECTS
{
adsl2PMLHist15MMonitoredTime,
adsl2PMLHist15M FECs,
adsl2PMLHist15M Errors,
adsl2PMLHist15M SESs,
adsl2PMLHist15M Lost,
adsl2PMLHist15M UAs,
adsl2PMLHist15M Valid Interval
}
STATUS    current
DESCRIPTION
"The group of line level PM counters for the previous
15 minutes intervals."
 ::= { adsl2Groups 21 }

adsl2PMLineHist1DayGroup 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 }  

adsl2PMLLineInitHist1DayShortGroup 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,
adsl2LinePerfLOSThreshAtuc,
adsl2LinePerfLOSThreshAtur,
adsl2LinePerfUASThreshAtuc,
adsl2LinePerfUASThreshAtur,
adsl2LinePerfCodingViolationsThreshAtuc,
adsl2LinePerfCodingViolationsThreshAtur,
adsl2LinePerfCorrectedThreshAtuc,
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:

- Though the configuration templates/profiles allow referring to 1-4 bearer channels, ADSL links are limited to 2 channels at most.
- Though the channel configuration profile allows higher data rates, ADSL links are limited to downstream/upstream data rate as assumed in RFC 2662 [RFC2662].
- The Impulse Noise Protection (INP) configuration parameters are given by minimum protection and maximum delay parameters.
- 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.
- 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:

- adsl2LineTable

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

  * adsl2LineCnfgTemplate
  * adsl2LineAlarmCnfgTemplate
  * adsl2LineCmndConfPmsf
  * adsl2LineCmndConfLdsf
  * adsl2LineCmndAutomodeColdStart

  Unauthorized changes to adsl2LineCnfgTemplate could have a major adverse operational effect on many lines simultaneously.

  Unauthorized changes to adsl2LineAlarmCnfgTemplate could have a contrary effect on notifications.

  Unauthorized changes to adsl2LineCmndConfPmsf could have an adverse affect on the power consumption of a line and may disrupt an operational service.

  Unauthorized changes to adsl2LineCmndConfLdsf could cause an unscheduled line test to be carried out on the line.

  Unauthorized changes to adsl2LineCmndAutomodeColdStart could cause an unscheduled cold reset to the line.

- adsl2SCStatusTable

  This table contains one object, adsl2SCStatusRowStatus, that supports SET operations. Unauthorized changes could result in line test results being deleted prematurely.
o  adsl2LineConfTemplateTable

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

*  adsl2LConfTempLineProfile
*  adsl2LConfTempChan1ConfProfile
*  adsl2LConfTempChan1RaRatioDs
*  adsl2LConfTempChan1RaRatioUs
*  adsl2LConfTempChan2ConfProfile
*  adsl2LConfTempChan2RaRatioDs
*  adsl2LConfTempChan2RaRatioUs
*  adsl2LConfTempChan3ConfProfile
*  adsl2LConfTempChan3RaRatioDs
*  adsl2LConfTempChan3RaRatioUs
*  adsl2LConfTempChan4ConfProfile
*  adsl2LConfTempChan4RaRatioDs
*  adsl2LConfTempChan4RaRatioUs
*  adsl2LConfTempRowStatus

Unauthorized changes to adsl2LConfTempLineProfile, adsl2LConfTempChan1ConfProfile, adsl2LConfTempChan2ConfProfile, adsl2LConfTempChan3ConfProfile, or 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 adsl2LConfTempChan1RaRatioDs, adsl2LConfTempChan2RaRatioDs, adsl2LConfTempChan3RaRatioDs, or 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 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.

o  adsl2LineConfProfTable

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

*  adsl2LConfProfScMaskDs
*  adsl2LConfProfScMaskUs
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 adsl2LConfRowStatus 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.

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.

- adsl2ChConfProfileTable

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

* adsl2ChConfProfMinDataRateDs
* adsl2ChConfProfMinDataRateUs
* adsl2ChConfProfMinResDataRateDs
* adsl2ChConfProfMinResDataRateUs
* adsl2ChConfProfMaxDataRateDs
* adsl2ChConfProfMaxDataRateUs
* adsl2ChConfProfMinDataRateLowPwrDs
* adsl2ChConfProfMinDataRateLowPwrUs
* 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
The table consists of the following objects that support SET operations:

- `adsl2LAlarmConfTempLineProfile`
- `adsl2LAlarmConfTempChan1ConfProfile`
- `adsl2LalarmConfTempChan2ConfProfile`
- `adsl2LalarmConfTempChan3ConfProfile`
- `adsl2LalarmConfTempChan4ConfProfile`
- `adsl2LAlarmConfTempRowStatus`

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.

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

- `adsl2LineAlarmConfProfileAtucThresh15MinFecs`
- `adsl2LineAlarmConfProfileAtucThresh15MinEs`
- `adsl2LineAlarmConfProfileAtucThresh15MinSes`
- `adsl2LineAlarmConfProfileAtucThresh15MinLoss`
- `adsl2LineAlarmConfProfileAtucThresh15MinUas`
- `adsl2LineAlarmConfProfileAturThresh15MinFecs`
- `adsl2LineAlarmConfProfileAturThresh15MinEs`
- `adsl2LineAlarmConfProfileAturThresh15MinSes`
- `adsl2LineAlarmConfProfileAturThresh15MinLoss`
- `adsl2LineAlarmConfProfileAturThresh15MinUas`
- `adsl2LineAlarmConfProfileThresh15MinFailedFullInt`
- `adsl2LineAlarmConfProfileThresh15MinFailedShrtInt`
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.

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.
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:

- adsl2LineInventoryTable

  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.

  * adsl2LInvG994VendorId
  * adsl2LInvSystemVendorId
  * adsl2LInvVersionNumber
  * adsl2LInvSerialNumber
  * adsl2LInvSelfTestResult
  * adsl2LInvTransmissionCapabilities

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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