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    Definitions of Managed Objects for Asymmetric Digital Subscriber Line 2
                               (ADSL2)
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Abstract

   This document defines a Management Information Base (MIB) module for
   use with network management protocols in the Internet community. In
   particular, it describes objects used for managing parameters of the
   "Asymmetric Digital Subscriber Line" family of interface types,

especially including ADSL, ADSL2, and ADSL2+.

Table of Contents

1. The Internet-Standard Management Framework

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

Managed objects are accessed via a virtual information store, termed
the Management Information Base or MIB. MIB objects are generally
accessed through the Simple Network Management Protocol (SNMP).
Objects in the MIB are defined using the mechanisms defined in the
Structure of Management Information (SMI). This memo specifies a MIB
module that is compliant to the SMIv2, which is described in STD 58,
RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580
[RFC2580].

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

2. Overview

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

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

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

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

from either G.997.1 [G.997.1] or one of its amendment documents.

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

The MIB module is located in the MIB tree under MIB 2 transmission,
as discussed in the IANA Considerations section of this document.

2.1. Relationship to other MIBs

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

2.1.1. General IF-MIB Integration (RFC 2863)

The ADSL2 Line MIB specifies the detailed attributes of a data
interface. As such, it needs to integrate with RFC 2863 [RFC2863].
The IANA has assigned the following ifTypes, which may be applicable
for ADSL lines:

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

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

In any case, the SNMP agent may use either ifType=Interleave (124) or
Fast (125) for each channel, e.g., depending on whether or not it is
capable of using an interleaver on that channel. It may use the
ifType=channel (70) when all channels are capable of using an
interleaver (e.g., for ADSL2 xtus).

Note that the ifFixedLengthGroup from RFC 2863 [RFC2863] MUST be
supported and that the ifRcvAddressGroup does not apply to this MIB
module.

2.1.2. Usage of ifTable

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

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

```
================================================================


    ifIndex              Interface index.

    ifDescr              See interfaces MIB.

    ifType               ADSL2 (230) or
                         Channel (70) or
                         Interleave (124) or
                         Fast (125)

    ifSpeed              Set as appropriate.

    ifPhysAddress        This object MUST have an octet string
                         with zero length.

    ifAdminStatus        See interfaces MIB.

    ifOperStatus         See interfaces MIB.

    ifLastChange         See interfaces MIB.

    ifName               See interfaces MIB.

    ifAlias              See interfaces MIB.

    ifLinkUpDownTrapEnable   Default to enabled(1).

    ifHighSpeed          Set as appropriate.

    ifConnectorPresent   Set as appropriate.
```

```
===================================================================
```
                    Figure 1: Use of ifTable Objects

2.2. IANA Considerations

The ADSL2-LINE-MIB module requires the allocation of a new ifType
value for Asymmetric Digital Subscriber Loop Version 2, to
distinguish between ADSL lines that are managed with the RFC2662
management model and ADSL/ADSL2 and ADSL2+ lines managed with the
model defined in this document.

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

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

2.3. Conventions Used in the MIB Module

2.3.1. Naming Conventions

    AtuC A central site terminal unit
    AtuR A remote site terminal unit

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

2.3.2. Textual Conventions

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

   o Adsl2Unit:

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

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

   o Adsl2Direction:

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

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

   o Adsl2TransmissionModeType:

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

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

   o Adsl2RaMode:

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

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

   o Adsl2InitResult:

      Attributes with this syntax reference the recent result of a full
      initialization attempt:

```
        noFail (0)              - Successful initialization
        configError (1)         - Configuration failure
        configNotFeasible (2)   - Configuration details not supported
        commFail (3)            - Communication failure
        noPeerAtu (4)           - Peer ATU not detected
        otherCause (5)          - Other initialization failure reason
```

o Adsl2OperationModes:

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

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

o Adsl2PowerMngState:

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

```
     l0(1)        - L0 - Full power management state
     l1(2)        - L1 - Low power management state (for G.992.2)
     l2(3)        - L2 - Low power management state (for G.992.3,
                     G.992.4, and G.992.5)
     l3(4)        - L3 - Idle power management state
```

o Adsl2ConfPmsForce:

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

```
     l3toL0 (0)      - Perform a transition from L3 to L0 (Full
                        power management state)
     l0toL2 (2)      - Perform a transition from L0 to L2 (Low
                        power management state)
     l0orL2toL3 (3)  - Perform a transition into L3 (Idle power
                        management state)
```

o 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.
```

o 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
```

o Adsl2LdsfResult:

Attributes with this syntax are status parameters that report the
result of the recent Loop Diagnostic mode issued for the ADSL/
ADSL2 or ADSL2+ link:

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

   o Adsl2SymbolProtection:

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

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

   o Adsl2MaxBer:

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

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

   o Adsl2ScMaskDs:

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

   o Adsl2ScMaskUs:

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

o Adsl2RfiDs:

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

o Adsl2PsdMaskDs:

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

o Adsl2PsdMaskUs:

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

o Adsl2Tssi:

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

o Adsl2LastTransmittedState:

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

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

o Adsl2LineStatus:

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

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

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

   o Adsl2ChAtmStatus:

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

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

          noDefect (0)   - This bit position positively reports
                                        that no defect or failure exist.
          noCellDelineation (1)   - The link was successfully

                                      initialized but cell delineation

                                      was never acquired on the

                                      associated ATM data path.
          lossOfCellDelineation (2)- Loss of cell delineation on the
                                        associated ATM data path

   o 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:

   o 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

   o Channel Status Group:

      This group supports MIB objects for retrieving channel layer
      status information. It contains the following table:

         - adsl2ChannelStatusTable

   o 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

   o Unit Inventory Group:

      This group supports MIB objects for retrieving Unit inventory
      information about units in ADSL/ADSL2 or ADSL2+ lines via the EOC.
      It contains the following table:

         - adsl2LineInventoryTable

   o Current Performance Group:

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

         - adsl2PMLineCurrTable
         - adsl2PMLineCurrInitTable
         - adsl2PMChCurrTable

   o 15-Minute Interval Performance Group:

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

          - adsl2PMLineHist15MinTable
          - adsl2PMLineInitHist15MinTable
          - adsl2PMChHist15MinTable

   o 1-Day Interval Performance Group:

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

          - adsl2PMLineHist1DayTable
          - adsl2PMLineInitHist1DayTable
          - adsl2PMChHist1DTable

   o Configuration Template and Profile Group:

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

          - adsl2LineConfTemplateTable
          - adsl2LineConfProfTable
          - adsl2LineConfProfModeSpecTable
          - adsl2ChConfProfileTable

   o Alarm Configuration Template and Profile Group:

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

          - adsl2LineAlarmConfTemplateTable
          - adsl2LineAlarmConfProfileTable
          - adsl2ChAlarmConfProfileTable

   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. Persistence

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

           adsl2LineCnfgTemplate
           adsl2LineAlarmCnfgTemplate
           adsl2LineCmndConfPmsf
           adsl2LineCmndConfLdsf
           adsl2LineCmndAutomodeColdStart
           adsl2LConfTempTemplateName
           adsl2LConfTempLineProfile
           adsl2LConfTempChan1ConfProfile
           adsl2LConfTempChan1RaRatioDs
           adsl2LConfTempChan1RaRatioUs
           adsl2LConfTempChan2ConfProfile
           adsl2LConfTempChan2RaRatioDs
           adsl2LConfTempChan2RaRatioUs
           adsl2LConfTempChan3ConfProfile
           adsl2LConfTempChan3RaRatioDs
           adsl2LConfTempChan3RaRatioUs
           adsl2LConfTempChan4ConfProfile
           adsl2LConfTempChan4RaRatioDs
           adsl2LConfTempChan4RaRatioUs
           adsl2LConfTempRowStatus
           adsl2LConfProfProfileName
           adsl2LConfProfScMaskDs
           adsl2LConfProfScMaskUs

```
            adsl2LConfProfRfiBandsDs
            adsl2LConfProfRaModeDs
            adsl2LConfProfRaModeUs
            adsl2LConfProfRaUsNrmDs
            adsl2LConfProfRaUsNrmUs
            adsl2LConfProfRaUsTimeDs
            adsl2LConfProfRaUsTimeUs
            adsl2LConfProfRaDsNrmsDs
            adsl2LConfProfRaDsNrmsUs
            adsl2LConfProfRaDsTimeDs
            adsl2LConfProfRaDsTimeUs
            adsl2LConfProfTargetSnrmDs
            adsl2LConfProfTargetSnrmUs
            adsl2LConfProfMaxSnrmDs
            adsl2LConfProfMaxSnrmUs
            adsl2LConfProfMinSnrmDs
            adsl2LConfProfMinSnrmUs
            adsl2LConfProfMsgMinUs
            adsl2LConfProfMsgMinDs
            adsl2LConfProfAtuTransSysEna
            adsl2LConfProfPmMode
            adsl2LConfProfL0Time
            adsl2LConfProfL2Time
            adsl2LConfProfL2Atpr
            adsl2LConfProfL2Atprt
            adsl2LconfProfRowStatus
            adsl2LconfProfAdslMode
            adsl2LConfProfMaxNomPsdDs
            adsl2LConfProfMaxNomPsdUs
            adsl2LConfProfMaxNomAtpDs
            adsl2LConfProfMaxNomAtpUs
            adsl2LConfProfMaxAggRxPwrUs
            adsl2LConfProfPsdMaskDs
            adsl2LConfProfPsdMaskUs
            adsl2LConfProfPsdMaskSelectUs
            adsl2LConfProfModeSpecRowStatus
            adsl2ChConfProfProfileName
            adsl2ChConfProfMinDataRateDs
            adsl2ChConfProfMinDataRateUs
            adsl2ChConfProfMinResDataRateDs
            adsl2ChConfProfMinResDataRateUs
            adsl2ChConfProfMaxDataRateDs
            adsl2ChConfProfMaxDataRateUs
            adsl2ChConfProfMinDataRateLowPwrDs
            adsl2ChConfProfMaxDelayDs
            adsl2ChConfProfMaxDelayUs
            adsl2ChConfProfMinProtectionDs
            adsl2ChConfProfMinProtectionUs
```

```
        adsl2ChConfProfMaxBerDs
        adsl2ChConfProfMaxBerUs
        adsl2ChConfProfUsDataRateDs
        adsl2ChConfProfDsDataRateDs
        adsl2ChConfProfUsDataRateUs
        adsl2ChConfProfDsDataRateUs
        adsl2ChConfProfImaEnabled
        adsl2ChConfProfRowStatus
        adsl2LAlarmConfTempTemplateName
        adsl2LAlarmConfTempLineProfile
        adsl2LAlarmConfTempChan1ConfProfile
        adsl2LAlarmConfTempChan2ConfProfile
        adsl2LAlarmConfTempChan3ConfProfile
        adsl2LAlarmConfTempChan4ConfProfile
        adsl2LAlarmConfTempRowStatus
        adsl2LineAlarmConfProfileName
        adsl2LineAlarmConfProfileAtucThresh15MinFecs
        adsl2LineAlarmConfProfileAtucThresh15MinEs
        adsl2LineAlarmConfProfileAtucThresh15MinSes
        adsl2LineAlarmConfProfileAtucThresh15MinLoss
        adsl2LineAlarmConfProfileAtucThresh15MinUas
        adsl2LineAlarmConfProfileAturThresh15MinFecs
        adsl2LineAlarmConfProfileAturThresh15MinEs
        adsl2LineAlarmConfProfileAturThresh15MinSes
        adsl2LineAlarmConfProfileAturThresh15MinLoss
        adsl2LineAlarmConfProfileAturThresh15MinUas
        adsl2LineAlarmConfProfileThresh15MinFailedFullInt
        adsl2LineAlarmConfProfileThresh15MinFailedShrtInt
        adsl2LineAlarmConfProfileRowStatus
        adsl2ChAlarmConfProfileName
        adsl2ChAlarmConfProfileAtucThresh15MinCodingViolations
        adsl2ChAlarmConfProfileAtucThresh15MinCorrected
        adsl2ChAlarmConfProfileAturThresh15MinCodingViolations
        adsl2ChAlarmConfProfileAturThresh15MinCorrected
        adsl2ChAlarmConfProfileRowStatus
```

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

2.6. Line Topology

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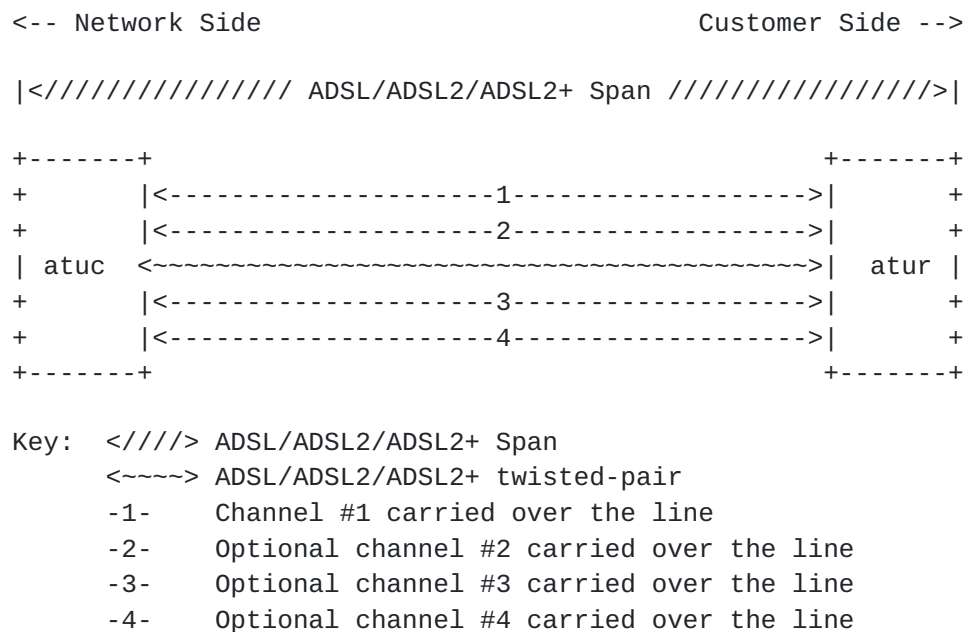   flow, as shown in the figure below.

```
       <-- Network Side                              Customer Side -->


       |<//////////////// ADSL/ADSL2/ADSL2+ Span ////////////////>|


       +-------+                                          +-------+
       +        |<--------------------1------------------>|       +
       +        |<--------------------2------------------>|       +
       | atuc   <~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~>|  atur |
       +        |<--------------------3------------------>|       +
       +        |<--------------------4------------------>|       +
       +-------+                                          +-------+


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

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

2.7. Counters, Interval Buckets, and Thresholds

2.7.1. Counters Managed

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

   o 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.

   o 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.

o On the bearer channel level

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

2.7.2. Minimum Number Of Buckets

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

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

2.7.3. Interval Buckets Initialization

There is no requirement for an agent to ensure a fixed relationship
between the start of a 15-minute interval and any wall clock;
however, some implementations may align the 15-minute intervals with
quarter hours. Likewise, an implementation may choose to align one
day intervals with the start of a day.

Counters are not reset when an xtU is reinitialized, only when the
agent is reset or reinitialized (or under specific request outside
the scope of this MIB module).

2.7.4. Interval Buckets Validity

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

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

1) For implementations that align the 15-minute intervals with
   quarter hours, and the 1-day intervals with start of a day, the
   management system may still start the PM process not aligned with
   the wall clock. Such a management system may wish to retrieve
   even partial information for the first event buckets, rather than
   declaring them all as invalid.
2) For an event bucket that suffered relatively short outages, the
   management system may wish to retrieve the available PM outcomes,
   rather than declaring the whole event bucket as invalid. This is
   more important for 1-day event buckets.
3) An event bucket may be shorter or longer than the formal duration
   if a clock adjustment was performed during the interval.

This MIB allows supporting the exceptional scenarios described above
by reporting the actual Monitoring Time of a monitoring interval.
This parameter is relevant only for Valid intervals, but is useful
for these exceptional scenarios:
a) The management system MAY still declare a partial PM interval as
   Valid and report the actual number of seconds the interval lasted.
b) If the interval was shortened or extended due to clock
   corrections, the management system SHOULD report the actual number
   of seconds the interval lasted, beside reporting that the interval
   is Valid.

2.8. Profiles

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

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

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

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

threshold crossing notifications.

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

2.8.1. Configuration Profiles And Templates

o 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.

o 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.

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

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

2.8.2. Alarm Configuration Profiles And Templates
o **Line Alarm Configuration Profiles - Line level Alarm configuration** profiles contain the threshold values for Performance Monitoring (PM) parameters, counted either on the whole line level or on an

xtu level. Thresholds are required only for failures and
anomalies. E.g., there are thresholds for failed initializations
and LOS seconds, but not for the aggregate number of full
initializations. These profiles are defined in the
adsl2LineAlarmConfProfTable.

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

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

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

2.8.3. Managing Profiles And Templates

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

One or more lines may be configured to share parameters of a single
configuration template (e.g., adsl2LConfTempTemplateName = 'silver')
by setting its adsl2LCnfgLineTemplate objects to the value of this
template.

One or more lines may be configured to share parameters of a single
Alarm configuration template (e.g., adsl2LAlarmConfTempTemplateName =
'silver') by setting its adsl2LCnfgAlarmTemplate objects to the value
of this template.

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

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

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

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

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

2.8.4. Managing Multiple Bearer Channels

The number of bearer channels is configured by setting the template
attributes 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 :

o 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.
o 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.

2.9. Notifications

The ability to generate the SNMP notifications coldStart/warmStart
(per [RFC3418]), which are per agent (e.g., per Digital Subscriber
Line Access Multiplexer, or DSLAM, in such a device), and linkUp/
linkDown (per [RFC2863]), which are per interface (i.e., ADSL/ADSL2

or ADSL2+ line) is REQUIRED.

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

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

The adsl2LStatusStatusAtur and adsl2LStatusStatusAtuc are bitmasks
representing all outstanding error conditions associated with the
AtuR and AtuC (respectively). Note that since the AtuR status is
obtained via the EOC, this information may be unavailable in case the
AtuR is unreachable via EOC during a line error condition.
Therefore, not all conditions may always be included in its current
status. Notifications corresponding to the bit fields in those two
status objects are defined.

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

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

Notifications, other than the threshold notifications listed above,
SHOULD be rate limited (throttled) such that there is an
implementation-specific gap between the generation of consecutive
notifications of the same event. When notifications are rate
limited, they are dropped and not queued for sending at a future
time. This is intended to be a general rate-limiting statement for
notifications that otherwise have no explicit rate limiting
assertions in this document.

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

3. Definitions

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

    IMPORTS
       MODULE-IDENTITY,
       transmission
          FROM SNMPv2-SMI

       TEXTUAL-CONVENTION
          FROM SNMPv2-TC;

    adsl2TCMIB MODULE-IDENTITY
       LAST-UPDATED "200606110000Z" -- June 11, 2006
       ORGANIZATION "ADSLMIB Working Group"
       CONTACT-INFO "WG-email: adslmib@ietf.org
       Info: https://www1.ietf.org/mailman/listinfo/adslmib

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

              Copyright (C) The Internet Society (2006). 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 "200606110000Z" -- June 11, 2006
        DESCRIPTION "Initial version, published as RFC XXXX."
    -- RFC Ed.: replace XX with assigned number & remove this note
           ::= { transmission xxx 2} -- adsl2MIB 2
    -- IANA, the xxx here must be the same as the one assigned
    --   to the adsl2MIB below.
    -- RFC Ed.: Please fill in xxx once assigned by IANA.

    --   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)
            Bit 10 : G.992.2 with TCM-ISDN non-overlapped (L)
            Bit 11 : G.992.2 with TCM-ISDN overlapped (L)
            Bit 12 : G.992.1 TCM-ISDN symmetric (F) --- not in G.997.1
            Bit 13-17: Reserved
            Bit 18 : G.992.3 POTS non-overlapped (F)
            Bit 19 : G.992.3 POTS overlapped (F)
```

```
            Bit 20 : G.992.3 ISDN non-overlapped (F)
            Bit 21 : G.992.3 ISDN overlapped (F)
            Bit 22-23: Reserved
            Bit 24 : G.992.4 POTS non-overlapped (L)
            Bit 25 : G.992.4 POTS overlapped (L)
            Bit 26-27: Reserved
            Bit 28 : G.992.3 Annex I All-Digital non-overlapped (F)
            Bit 29 : G.992.3 Annex I All-Digital overlapped (F)
            Bit 30 : G.992.3 Annex J All-Digital non-overlapped (F)
            Bit 31 : G.992.3 Annex J All-Digital overlapped (F)
            Bit 32 : G.992.4 Annex I All-Digital non-overlapped (L)
            Bit 33 : G.992.4 Annex I All-Digital overlapped (L)
            Bit 34 : G.992.3 Annex L POTS non-overlapped, mode 1,
                                 wide U/S (F)
            Bit 35 : G.992.3 Annex L POTS non-overlapped, mode 2,
                                 narrow U/S(F)
            Bit 36 : G.992.3 Annex L POTS overlapped, mode 3,
                                 wide U/S (F)
            Bit 37 : G.992.3 Annex L POTS overlapped, mode 4,
                                 narrow U/S (F)
            Bit 38 : G.992.3 Annex M POTS non-overlapped (F)
            Bit 39 : G.992.3 Annex M POTS overlapped (F)
            Bit 40 : G.992.5 POTS non-overlapped (F)
            Bit 41 : G.992.5 POTS overlapped (F)
            Bit 42 : G.992.5 ISDN non-overlapped (F)
            Bit 43 : G.992.5 ISDN overlapped (F)
            Bit 44-45: Reserved
            Bit 46 : G.992.5 Annex I All-Digital non-overlapped (F)
            Bit 47 : G.992.5 Annex I All-Digital overlapped (F)
            Bit 48 : G.992.5 Annex J All-Digital non-overlapped (F)
            Bit 49 : G.992.5 Annex J All-Digital overlapped (F)
            Bit 50 : G.992.5 Annex M POTS non-overlapped (F)
            Bit 51 : G.992.5 Annex M POTS overlapped (F)
            Bit 52-55: Reserved"
     SYNTAX      BITS {
                 ansit1413(0),
                 etsi(1),
                 g9921PotsNonOverlapped(2),
                 g9921PotsOverlapped(3),
                 g9921IsdnNonOverlapped(4),
                 g9921isdnOverlapped(5),
                 g9921tcmIsdnNonOverlapped(6),
                 g9921tcmIsdnOverlapped(7),
                 g9922potsNonOverlapeed(8),
                 g9922potsOverlapped(9),
                 g9922tcmIsdnNonOverlapped(10),
                 g9922tcmIsdnOverlapped(11),
                 g9921tcmIsdnSymmetric(12),
```

```
                        reserved1(13),
                        reserved2(14),
                        reserved3(15),
                        reserved4(16),
                        reserved5(17),
                        g9923PotsNonOverlapped(18),
                        g9923PotsOverlapped(19),
                        g9923IsdnNonOverlapped(20),
                        g9923isdnOverlapped(21),
                        reserved6(22),
                        reserved7(23),
                        g9924potsNonOverlapeed(24),
                        g9924potsOverlapped(25),
                        reserved8(26),
                        reserved9(27),
                        g9923AnnexIAllDigNonOverlapped(28),
                        g9923AnnexIAllDigOverlapped(29),
                        g9923AnnexJAllDigNonOverlapped(30),
                        g9923AnnexJAllDigOverlapped(31),
                        g9924AnnexIAllDigNonOverlapped(32),
                        g9924AnnexIAllDigOverlapped(33),
                        g9923AnnexLMode1NonOverlapped(34),
                        g9923AnnexLMode2NonOverlapped(35),
                        g9923AnnexLMode3Overlapped(36),
                        g9923AnnexLMode4Overlapped(37),
                        g9923AnnexMPotsNonOverlapped(38),
                        g9923AnnexMPotsOverlapped(39),
                        g9925PotsNonOverlapped(40),
                        g9925PotsOverlapped(41),
                        g9925IsdnNonOverlapped(42),
                        g9925isdnOverlapped(43),
                        reserved10(44),
                        reserved11(45),
                        g9925AnnexIAllDigNonOverlapped(46),
                        g9925AnnexIAllDigOverlapped(47),
                        g9925AnnexJAllDigNonOverlapped(48),
                        g9925AnnexJAllDigOverlapped(49),
                        g9925AnnexMPotsNonOverlapped(50),
                        g9925AnnexMPotsOverlapped(51),
                        reserved12(52),
                        reserved13(53),
                        reserved14(54),
                        reserved15(55)
                    }

    Adsl2RaMode ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
```

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

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

           The values used are as defined in ITU-T G.997.1,
           paragraph 7.5.1.3"

    SYNTAX       INTEGER {
                    noFail(0),
                    configError(1),
                    configNotFeasible(2),
                    commFail(3),
                    noPeerAtu(4),
                    otherCause(5)
                 }

   Adsl2OperationModes ::= TEXTUAL-CONVENTION
      STATUS      current
      DESCRIPTION
         "The ADSL2 management model specified includes an ADSL Mode
          attribute which identifies an instance of ADSL Mode-Specific
          PSD Configuration object in the ADSL Line Profile.  The
          following classes of ADSL operating mode are defined.
          The notes (F) and (L) denote Full-Rate and Lite/splitterless
```

respectively:

```
+-------+-----------------------------------------------------+
| Value |          ADSL operation mode description            |
+-------+-----------------------------------------------------+
      1  - The default/generic PSD configuration.  Default
           configuration will be used when no other matching
           mode specific configuration can be found.
      2  - ADSL family. The attributes included in the Mode-
           Specific PSD Configuration are irrelevant for
           ITU-T G.992.1 and G.992.2 ADSL modes.  Hence, it
           is possible to map those modes to this generic
           class.
    3-7  - Unused. Reserved for future ITU-T specification.
      8  - G.992.3 POTS non-overlapped (F)
      9  - G.992.3 POTS overlapped (F)
     10  - G.992.3 ISDN non-overlapped (F)
     11  - G.992.3 ISDN overlapped (F)
  12-13  - Unused. Reserved for future ITU-T specification.
     14  - G.992.4 POTS non-overlapped (L)
     15  - G.992.4 POTS overlapped (L)
  16-17  - Unused. Reserved for future ITU-T specification.
     18  - G.992.3 Annex I All-Digital non-overlapped (F)
     19  - G.992.3 Annex I All-Digital overlapped (F)
     20  - G.992.3 Annex J All-Digital non-overlapped (F)
     21  - G.992.3 Annex J All-Digital overlapped (F)
     22  - G.992.4 Annex I All-Digital non-overlapped (L)
     23  - G.992.4 Annex I All-Digital overlapped (L)
     24  - G.992.3 Annex L POTS non-overlapped, mode 1,
           wide U/S (F)
     25  - G.992.3 Annex L POTS non-overlapped, mode 2,
           narrow U/S(F)
     26  - G.992.3 Annex L POTS overlapped, mode 3,
           wide U/S (F)
     27  - G.992.3 Annex L POTS overlapped, mode 4,
           narrow U/S (F)
     28  - G.992.3 Annex M POTS non-overlapped (F)
     29  - G.992.3 Annex M POTS overlapped (F)
     30  - G.992.5 POTS non-overlapped (F)
     31  - G.992.5 POTS overlapped (F)
     32  - G.992.5 ISDN non-overlapped (F)
     33  - G.992.5 ISDN overlapped (F)
  34-35  - Unused. Reserved for future ITU-T specification.
     36  - G.992.5 Annex I All-Digital non-overlapped (F)
     37  - G.992.5 Annex I All-Digital overlapped (F)
     38  - G.992.5 Annex J All-Digital non-overlapped (F)
     39  - G.992.5 Annex J All-Digital overlapped (F)
     40  - G.992.5 Annex M POTS non-overlapped (F)
     41  - G.992.5 Annex M POTS overlapped (F)
```

```
               "
        SYNTAX        INTEGER {
                        defMode (1),
                        adsl(2),
                        g9923PotsNonOverlapped(8),
                        g9923PotsOverlapped(9),
                        g9923IsdnNonOverlapped(10),
                        g9923isdnOverlapped(11),
                        g9924potsNonOverlapeed(14),
                        g9924potsOverlapped(15),
                        g9923AnnexIAllDigNonOverlapped(18),
                        g9923AnnexIAllDigOverlapped(19),
                        g9923AnnexJAllDigNonOverlapped(20),
                        g9923AnnexJAllDigOverlapped(21),
                        g9924AnnexIAllDigNonOverlapped(22),
                        g9924AnnexIAllDigOverlapped(23),
                        g9923AnnexLMode1NonOverlapped(24),
                        g9923AnnexLMode2NonOverlapped(25),
                        g9923AnnexLMode3Overlapped(26),
                        g9923AnnexLMode4Overlapped(27),
                        g9923AnnexMPotsNonOverlapped(28),
                        g9923AnnexMPotsOverlapped(29),
                        g9925PotsNonOverlapped(30),
                        g9925PotsOverlapped(31),
                        g9925IsdnNonOverlapped(32),
                        g9925isdnOverlapped(33),
                        g9925AnnexIAllDigNonOverlapped(36),
                        g9925AnnexIAllDigOverlapped(37),
                        g9925AnnexJAllDigNonOverlapped(38),
                        g9925AnnexJAllDigOverlapped(39),
                        g9925AnnexMPotsNonOverlapped(40),
                        g9925AnnexMPotsOverlapped(41)
                      }


    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:
              l0(1) - L0 - Full power management state
              l1(2) - L1 - Low power management state (for G.992.2)
              l2(3) - L2 - Low power management state (for G.992.3,
                           G.992.4, and G.992.5)
              l3(4) - L3 - Idle power management state"

        SYNTAX        INTEGER {
```

```
                         l0(1),
                         l1(2),
                         l2(3),
                         l3(4)
                    }

    Adsl2ConfPmsForce ::= TEXTUAL-CONVENTION
        STATUS      current
        DESCRIPTION
           "Attributes with this syntax are configuration parameters
            that reference the desired power management state for the
            ADSL/ADSL2 or ADSL2+ link:
              l3toL0 (0)           - Perform a transition from L3 to L0
                                       (Full power management state)
              l0toL2 (2)           - Perform a transition from L0 to L2
                                       (Low power management state)
              l0orL2toL3 (3)       - Perform a transition into L3 (Idle
                                       power management state)

            The values used are as defined in ITU-T G.997.1,
            paragraph 7.3.1.1.3"

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

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

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

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

    Adsl2LineLdsf ::= TEXTUAL-CONVENTION
```

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

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

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

    Adsl2LdsfResult ::= TEXTUAL-CONVENTION
        STATUS current
        DESCRIPTION
           "Possible failure reasons associated with performing
            Dual Ended Loop Test (DELT) on a DSL line.
            Possible values are:
              none   (1) - The default value in case LDSF was never
                                 requested for the associated line.
              success   (2) - The recent command completed
                                 successfully.
              inProgress   (3) - The Loop Diagnostics process is in
                                 progress.
              unsupported (4) - The NE or the line card doesn't support
                                 LDSF.
              cannotRun   (5) - The NE cannot initiate the command, due
                                 to a non specific reason.
              aborted   (6) - The Loop Diagnostics process aborted.
              failed   (7) - The Loop Diagnostics process failed.
              illegalMode (8) - The NE cannot initiate the command, due
                                 to the specific mode of the relevant
                                 line.
              adminUp   (9) - The NE cannot initiate the command, as
                                 the relevant line is administratively
                                 'Up'.
              tableFull   (10)- The NE cannot initiate the command, due
                                 to reaching the maximum number of rows
                                 in the results table.
              noResources (11)- The NE cannot initiate the command, due
                                 to lack of internal memory resources."
        SYNTAX INTEGER {
            none (1),
            success (2),

```
           inProgress (3),
           unsupported (4),
           cannotRun (5),
           aborted (6),
           failed (7),
           illegalMode (8),
           adminUp (9),
           tableFull (10),
           noResources (11)
       }

   Adsl2SymbolProtection ::= TEXTUAL-CONVENTION
      STATUS      current
      DESCRIPTION
         "Attributes with this syntax are configuration parameters
          that reference the minimum length impulse noise protection
          (INP) in terms of number of symbols.  The possible values are:
          noProtection (i.e., INP not required), halfSymbol (i.e., INP
          length is 1/2 symbol), and 1-16 symbols in steps of 1 symbol"

      SYNTAX      INTEGER {
                  noProtection (1),
                  halfSymbol (2),
                  singleSymbol (3),
                  twoSymbols (4),
                  threeSymbols (5),
                  fourSymbols (6),
                  fiveSymbols (7),
                  sixSymbols (8),
                  sevenSymbols (9),
                  eightSymbols (10),
                  nineSymbols (11),
                  tenSymbols (12),
                  elevenSymbols (13),
                  twelveSymbols (14),
                  thirteeSymbols (15),
                  fourteenSymbols (16),
                  fifteenSymbols (17),
                  sixteenSymbols (18)
                }
   Adsl2MaxBer ::= TEXTUAL-CONVENTION
      STATUS      current
      DESCRIPTION
         "Attributes with this syntax are configuration parameters
          that reference the maximum Bit Error Rate (BER).
          The possible values are:

             eminus3 (1)  - Maximum BER=E^-3
```

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


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


Adsl2ScMaskUs ::= TEXTUAL-CONVENTION
   STATUS      current
   DESCRIPTION
      "Each one of the 64 bits in this OCTET
      STRING array represents the corresponding bin
      in the upstream direction.  A value of one
      indicates that the bin is not in use."
   SYNTAX      OCTET STRING (SIZE(0..8))


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. States are
            per the specific xDSL technology and are numbered
            from 0 (if G.994.1 is used) or 1 (if G.994.1 is
            not used) up to Showtime."
       SYNTAX   INTEGER {
         atucG9941(0),
         atucQuiet1(1),
         atucComb1(2),
         atucQuiet2(3),
         atucComb2(4),
         atucIcomb1(5),
         atucLineprob(6),
         atucQuiet3(7),
         atucComb3(8),
         atucIComb2(9),
         atucMsgfmt(10),

```
            atucMsgpcb(11),
            atucQuiet4(12),
            atucReverb1(13),
            atucTref1(14),
            atucReverb2(15),
            atucEct(16),
            atucReverb3(17),
            atucTref2(18),
            atucReverb4(19),
            atucSegue1(20),
            atucMsg1(21),
            atucReverb5(22),
            atucSegue2(23),
            atucMedley(24),
            atucExchmarker(25),
            atucMsg2(26),
            atucReverb6(27),
            atucSegue3(28),
            atucParams(29),
            atucReverb7(30),
            atucSegue4(31),
            atucShowtime(32),
            --
            aturG9941(100),
            aturQuiet1(101),
            aturComb1(102),
            aturQuiet2(103),
            aturComb2(104),
            aturIcomb1(105),
            aturLineprob(106),
            aturQuiet3(107),
            aturComb3(108),
            aturIcomb2(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),
          aturReverb7(129),
          aturSegue4(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.
                              Never active on ATU-R."

      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.
                 outOfSync (1)   - Out of synchronization. "

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

     END

     ADSL2-LINE-MIB DEFINITIONS ::= BEGIN

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

```
    ifIndex
       FROM IF-MIB

    TruthValue,
    RowStatus
        FROM SNMPv2-TC

    SnmpAdminString
       FROM SNMP-FRAMEWORK-MIB

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

    Adsl2Unit,
    Adsl2Direction,
    Adsl2TransmissionModeType,
    Adsl2RaMode,
    Adsl2InitResult,
    Adsl2OperationModes,
    Adsl2PowerMngState,
    Adsl2ConfPmsForce,
    Adsl2LConfProfPmMode,
    Adsl2LineLdsf,
    Adsl2LdsfResult,
    Adsl2SymbolProtection,
    Adsl2MaxBer,
    Adsl2ScMaskDs,
    Adsl2ScMaskUs,
    Adsl2RfiDs,
    Adsl2PsdMaskDs,
    Adsl2PsdMaskUs,
    Adsl2Tssi,
    Adsl2LastTransmittedState,
    Adsl2LineStatus,
    Adsl2ChAtmStatus,
    Adsl2ChPtmStatus
           FROM    ADSL2-LINE-TC-MIB       -- [This document]

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

 adsl2MIB MODULE-IDENTITY
    LAST-UPDATED "200606110000Z" -- June 11, 2006
    ORGANIZATION "ADSLMIB Working Group"
    CONTACT-INFO "WG-email:  adslmib@ietf.org
```

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                     "
         DESCRIPTION
             "
             This document defines a Management Information Base (MIB)
             module for use with network management protocols in the
             Internet community for the purpose of managing ADSL, ADSL2,

          and ADSL2+ lines. The MIB module described in RFC 2662
          [RFC2662] describes objects used for managing Asymmetric
          Bit-Rate DSL (ADSL) interfaces per [T1E1.413], [G.992.1],
          and [G.992.2]. These object descriptions are based upon the
          specifications for the ADSL Embedded Operations Channel
          (EOC) as defined in American National Standards Institute
          (ANSI) T1E1.413/1995 [T1E1.413] and International
          Telecommunication Union (ITU-T) G.992.1 [G.992.1] and
          G.992.2 [G.992.2].

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

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

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

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

          Copyright (C) The Internet Society (2006). 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 "200606110000Z" -- June 11, 2006
     DESCRIPTION "Initial version, published as RFC XXXX."
  -- RFC Ed.: replace XXXX with assigned number & remove this note
         ::= { transmission xxx }
  -- IANA, we suggest to put it under { transmission 230 } because
  --   this is the first available number.
  -- RFC Ed.: Please fill in xxx once assigned by IANA.

     adsl2   OBJECT IDENTIFIER ::= { adsl2MIB 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                  --
   --------------------------------------------------
   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).

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

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

   Adsl2LineEntry  ::=
```

```
      SEQUENCE {
         adsl2LineCnfgTemplate            SnmpAdminString,
         adsl2LineAlarmCnfgTemplate       SnmpAdminString,
         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, (adsl2LineConfTemplateTable),
          which applies for this ADSL2 line.

          This object MUST be maintained in a persistent manner."
      REFERENCE   "DSL Forum TR-90, paragraph 5.1.1"
      DEFVAL      { "DEFVAL" }
      ::= { adsl2LineEntry 1 }

   adsl2LineAlarmCnfgTemplate  OBJECT-TYPE
      SYNTAX      SnmpAdminString (SIZE(1..32))
      MAX-ACCESS  read-write
      STATUS      current
      DESCRIPTION
         "The value of this object identifies the row in the ADSL2 Line
```

         Alarm Configuration Template Table,
         (adsl2LineAlarmConfTemplateTable), which applies to this ADSL2
         line.

         This object MUST be maintained in a persistent manner."
      REFERENCE   "DSL Forum TR-90, paragraph 5.1.1"
      DEFVAL   { "DEFVAL" }
      ::= { adsl2LineEntry 2 }

   adsl2LineCmndConfPmsf OBJECT-TYPE
      SYNTAX   Adsl2ConfPmsForce
      MAX-ACCESS   read-write
      STATUS   current
      DESCRIPTION
         "Power management state forced. Defines the line states to be
          forced by the near-end ATU on this line. The various possible
          values are:
             l3toL0 (0),
             l0toL2 (2),
             l0orL2toL3 (3).

          This object MUST be maintained in a persistent manner."
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.1.1.3"
      DEFVAL   { l3toL0 }
      ::= { adsl2LineEntry 3 }

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

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

   adsl2LineCmndConfLdsfFailReason OBJECT-TYPE
      SYNTAX   Adsl2LdsfResult
      MAX-ACCESS   read-only
      STATUS   current

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

        adsl2LineCmndAutomodeColdStart   OBJECT-TYPE
           SYNTAX   TruthValue
           MAX-ACCESS   read-write
           STATUS   current
           DESCRIPTION
              "Automode cold start forced. This parameter is defined
               in order to improve testing of the performance of ATUs
               supporting automode when it is enabled in the MIB.
               Change the value of this parameter to 'true' indicates
               a change in loop conditions applied to the devices under
               test. The ATUs shall reset any historical information
               used for automode and for shortening G.994.1 handshake
               and initialization.

               Automode is the case where multiple operation-modes are
               enabled through the adsl2LConfProfAtuTransSysEna object
               in the line configuration profile being used for the
               ADSL line, and where the selection of the actual

           operation-mode depends not only on the common
           capabilities of both ATUs (as exchanged in G.994.1), but
           also on achievable data rates under given loop
           conditions.

           This object MUST be maintained in a persistent manner."

        REFERENCE   "ITU-T G.997.1 (amendment 1), 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:l0(1), l1(2), l2(3), l3(4)."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.2"
          ::= { adsl2LineEntry 8 }

    adsl2LineStatusInitResult OBJECT-TYPE
       SYNTAX   Adsl2InitResult
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Indicates the result of the last full initialization performed

          on the line. It is an enumeration type with the following
          values: noFail(0), configError(1), configNotFeasible(2),
          commFail(3), noPeerAtu(4), otherCause(5)."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.3"
       ::= { adsl2LineEntry 9 }

   adsl2LineStatusLastStateDs OBJECT-TYPE
       SYNTAX   Adsl2LastTransmittedState
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "The last successful transmitted initialization state in
           the downstream direction in the last full initialization
           performed on the line. "
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.4"
       ::= { adsl2LineEntry 10 }

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

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

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

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

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

    adsl2LineStatusSigAttenDs OBJECT-TYPE
       SYNTAX   Unsigned32 (0..1270 | 2147483646 | 2147483647)
       UNITS   "0.1 dB"
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "The measured difference in the total power transmitted by the
           ATU-C and the total power received by the ATU-R over all sub-
           carriers during Showtime. It ranges from 0 to 1270 units of
           0.1 dB (Physical values are 0 to 127 dB).
           A special value of 0x7FFFFFFF (2147483647) indicates the
           signal attenuation is out of range to be represented.

         A special value of 0x7FFFFFFE (2147483646) indicates the
         signal attenuation measurement is currently unavailable."
      REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.8"
      ::= { adsl2LineEntry 16 }

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

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

   adsl2LineStatusSnrMarginUs OBJECT-TYPE
      SYNTAX   Integer32 (-640..630 | 2147483646 | 2147483647)
      UNITS   "0.1 dB"
      MAX-ACCESS   read-only
      STATUS   current
      DESCRIPTION
         "Upstream SNR Margin is the maximum increase in dB of the noise
          power received at the ATU-C, such that the BER requirements

          are met for all downstream bearer channels. It ranges from
          -640 to 630 units of 0.1 dB (Physical values are -64 to
          63 dB).
          A special value of 0x7FFFFFFF (2147483647) indicates the
          SNR Margin is out of range to be represented.
          A special value of 0x7FFFFFFE (2147483646) indicates the
          SNR Margin measurement is currently unavailable."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.11"
       ::= { adsl2LineEntry 19 }

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

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

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

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

    adsl2LineStatusActAtpDs OBJECT-TYPE
       SYNTAX   Integer32 (-310..310 | 2147483647)
       UNITS   "0.1 dB"
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Actual Aggregate Transmit Power Downstream. The total amount
           of transmit power delivered by the ATU-C at the U-C reference
           point, at the instant of measurement. It ranges from -310 to
           310 units of 0.1 dB (Physical values are -31 to 31 dBm).
           A value of 0x7FFFFFFF (2147483647) indicates the measurement
           is out of range to be represented."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.16"
       ::= { adsl2LineEntry 24 }

    adsl2LineStatusActAtpUs OBJECT-TYPE
       SYNTAX   Integer32 (-310..310 | 2147483647)
       UNITS   "0.1 dB"
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Actual Aggregate Transmit Power Upstream. The total amount of
           transmit power delivered by the ATU-R at the U-R
           reference point, at the instant of measurement. It ranges
           from -310 to 310 units of 0.1 dB (Physical values are -31
           to 31 dBm).
           A value of 0x7FFFFFFF (2147483647) indicates the measurement
           is out of range to be represented."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.17"
       ::= { adsl2LineEntry 25 }

    --   adsl2ChannelStatusTable   --
    ----
    adsl2ChannelStatusTable OBJECT-TYPE
       SYNTAX   SEQUENCE OF Adsl2ChannelStatusEntry
       MAX-ACCESS not-accessible
       STATUS   current
       DESCRIPTION
          "The table adsl2ChannelStatusTable contains status
           parameters of ADSL2 channel. This table contains live data
           from equipment. "
       ::= { 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:
              noDefect (0),
              noCellDelineation(1),
              lossOfCellDelineation (2).
          In case the channel is not of ATM Data Path the object is set
          to '0'."
       REFERENCE   "ITU-T G.997.1, paragraph 7.1.4"
       ::= { adsl2ChannelStatusEntry 6 }

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

    --   Scalars that relate to the adsl2SCStatusTable.
    ----

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

    adsl2ScalarSCAvailInterfaces OBJECT-TYPE
       SYNTAX   Unsigned32

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


   --------------------------------------------------
   --          adsl2SCStatusTable             --
   --------------------------------------------------


   adsl2SCStatusTable  OBJECT-TYPE
      SYNTAX      SEQUENCE  OF  Adsl2SCStatusEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "The table adsl2SCStatusTable contains status parameters
          of ADSL2 sub-carriers. This following points apply to this
          table :
          1.   The main purpose of this table is to hold the results
               of a DELT test.
          2.   This table also holds parameters obtained at line
               initialisation time.
          3.   The rows in this table are volatile, that is they are
               lost if the SNMP agent is rebooted.
          4.   Due to the large OCTET STRING attributes in this table,
               the worst case memory requirements for this table are
               very high. The manager may use the row status attribute
               of this table to delete rows in order to reclaim memory.
          5.   The manager may create rows in this table. The SNMP
               agent may create rows in this table. Only the manager
               may delete rows in this table.
          6.   The maximum number of rows allowable in this table is
               indicated by the scalar attribute
               adsl2ScalarSCMaxInterfaces.
               The number of rows available in this table is indicated
               by the scalar attribute adsl2ScalarSCAvailInterfaces.
          7.   The SNMP agent is permitted to create rows in this table
               when a DELT test completes successfully or when line
               initialisation occurs. It is not mandatory for the SNMP
               agent to create rows in this table, hence it may be
               necessary for the manager to create rows in this table
               before any results can be stored.
          8.   If the manager attempts to create a row in this table
               and there are no more rows available, the creation
               attempt will fail and the response to the SNMP SET PDU
```

              will contain the error noCreation(11).
         9.   If the SNMP agent attempts to create a row in this table
              and there are no more rows available, the creation
              attempt will fail and the attribute
              adsl2LineCmndConfLdsfFailReason will indicate the
              reason for the failure. The failure reason will be either
              tableFull(10) or noResources(11).
         10. An example of use of this table is as follows :
              Step 1. : The DELT test is started by setting the
                      : adsl2LineCmndConfLdsf from inhibit to force.
              Step 2. : The DELT test completes and valid data is
                      : available.
              Step 3. : The row in the adsl2SCStatusTable where the
                      : results will be stored does not yet exist so
                      : the SNMP agent attempts to create the row.
              Step 4. : Due to a low memory condition, a row in the
                      : adsl2SCStatusTable table cannot be created at
                      : this time.
              Step 5. : The reason for the failure, tableFull(10), is
                      : indicated in the adsl2LineCmndConfLdsfFailReason
                      : attribute.
         11. Another example of use of this table is as follows :
              Step 1. : The DELT test is started by setting the
                      : adsl2LineCmndConfLdsf from inhibit to force.
              Step 2. : The DELT test completes and valid data is
                      : available.
              Step 3. : The row in the adsl2SCStatusTable where the
                      : results will be stored does not yet exist so
                      : the SNMP agent attempts to create the row.
              Step 4. : The row creation is successfully.
              Step 5. : The value of the attribute
                      : adsl2LineCmndConfLdsfFailReasonreason is set
                      : to success(2).
         12. Another example of use of this table is as follows :
              Step 1. : The manager creates a row in adsl2SCStatusTable
                      : for a particular ADSL2 line.
              Step 2. : The DELT test is started on the above mentioned
                      : line by setting the adsl2LineCmndConfLdsf from
                      : inhibit to force.
              Step 3. : The DELT test completes and valid data is
                      : available.
              Step 4. : The value of the attribute
                      : adsl2LineCmndConfLdsfFailReasonreason is set
                      : to success(2)."
         ::= { adsl2Status 2 }

    adsl2SCStatusEntry OBJECT-TYPE
       SYNTAX   Adsl2SCStatusEntry

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

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

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

  adsl2SCStatusMtime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "symbols"
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
```

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

    adsl2SCStatusSnr OBJECT-TYPE
        SYNTAX   OCTET STRING (SIZE(0..512))
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
        "The SNR Margin per sub-carrier, expressing the ratio between
         the received signal power and received noise power per
         subscriber. It is an array of 512 octets, designed for
         supporting up to 512 (downstream) sub-carriers.
         The number of utilized octets on downstream direction depends
         on NSCds, and on upstream direction it depends on NSCus. This
         value is referred here as NSC.
         Octet i (0 <= i < NSC) is set to a value in the range 0 to
         254 to indicate that the respective downstream or upstream sub-
         carrier i has SNR of: (-32 + Adsl2SubcarrierSnr(i)/2) in dB
         (i.e., -32 to 95dB).
         The special value 255 means that no measurement could be done
         for the subcarrier because it is out of the PSD mask passband
         or that the noise PSD is out of range to be represented.
         Each value in this array is 8 bits wide."
        REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.20.2 (SNRpsds)
                      and paragraph 7.5.1.20.4 (SNRpsus)"
          ::= { adsl2SCStatusEntry 3 }

    adsl2SCStatusBitsAlloc OBJECT-TYPE
        SYNTAX   OCTET STRING (SIZE(0..256))
        UNITS   "bits"
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
        "The bits allocation per sub-carrier. An array of 256 octets
         (512 nibbles), designed for supporting up to 512 (downstream)
         sub-carriers.
         The number of utilized nibbles on downstream direction depends
         on NSCds, and on upstream direction it depends on NSCus. This
         value is referred here as NSC.
         Nibble i (0 <= i < NSC) is set to a value in the range 0

          to 15 to indicate that the respective downstream or upstream
          sub-carrier i has the same amount of bits allocation."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.21.1 (BITSpsds)
                     and paragraph 7.5.1.21.2 (BITSpsus)"
          ::= { adsl2SCStatusEntry 4 }

   adsl2SCStatusGainAlloc OBJECT-TYPE
       SYNTAX   OCTET STRING (SIZE(0..1024))
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
       "The gain allocation per sub-carrier. An array of 512 16-bits
       values, designed for supporting up to 512 (downstream) sub-
       carriers.
       The number of utilized octets on downstream direction depends
       on NSCds, and on upstream direction it depends on NSCus. This
       value is referred here as NSC.
       Value i (0 <= i < NSC) is in the range 0 to 4093 to indicate
       that the respective downstream or upstream sub-carrier i has the
       same amount of gain value.
       The gain value is represented as a multiple of 1/512 on
       linear scale. Each value in this array is 16 bits wide and is
       stored in big endian format."
       REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.21.3 (GAINSpsds)
                     and paragraph 7.5.1.21.4 (GAINSpsus)"
          ::= { adsl2SCStatusEntry 5 }

   adsl2SCStatusTssi OBJECT-TYPE
       SYNTAX   Adsl2Tssi
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
       "The transmit spectrum shaping (TSSi) breakpoints expressed
       as the set of breakpoints exchanged during G.994.1.
       Each breakpoint is a pair of values occupying 3 octets with the
       following structure:
       First 2 octets - Index of the subcarrier used in the context of
                        the breakpoint.
       Third octet   - The shaping parameter at the breakpoint.
       Subcarrier index is an unsigned number in the range 1 to either
       NSCds (downstream direction) or NSCus (upstream direction).
       The shaping parameter value is in the range 0 to 127 (units of
       -0.5dB). The special value 127 indicates that the subcarrier
       is not transmitted."
       REFERENCE "ITU-T G.997.1, paragraph 7.5.1.21.5 (TSSpsds)
                   and paragraph 7.5.1.21.6 (TSSpsus)"
          ::= { adsl2SCStatusEntry 6 }

    adsl2SCStatusLinScale OBJECT-TYPE
        SYNTAX   Unsigned32
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
        "The scale factor to be applied to the H(f) linear
        representation values for the respective transmission direction.
        This parameter is only available after a loop diagnostic
        procedure."
       REFERENCE "ITU-T G.997.1, paragraph 7.5.1.18.1 (HLINSCds)
                   and paragraph 7.5.1.18.5 (HLINSCus)"
        ::= { adsl2SCStatusEntry 7 }

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

    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 NSCds, and on upstream direction it depends on NSCus. This
        value is referred here as NSC.
        Each array entry represents the QLN(f = i*Df) value for a
        particular sub-carrier index i, (0 <= i < NSC).

        The QLN(f) is represented as (-23-n(i)/2), with n(i) in the
        range 0 to 254. A special value n(i)=255 indicates that no
        measurement could be done for the subcarrier because it is out
        of the passband or that the noise PSD is out of range to be
        represented.
        This parameter is applicable in loop diagnostic procedure and
        initialization. Each value in this array is 8 bits wide."
    REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.19.2 (QLNpsds)
                 and paragraph 7.5.1.19.4 (QLNpsus)"
     ::= { adsl2SCStatusEntry 13 }

adsl2SCStatusLnAtten OBJECT-TYPE
    SYNTAX   Unsigned32 (0..1270 | 2147483646 | 2147483647)
    UNITS   "0.1 dB"
    MAX-ACCESS   read-only
    STATUS   current
    DESCRIPTION
       "When referring to the downstream direction, it is the measured
        difference in the total power transmitted by the ATU-C and the
        total power received by the ATU-R over all sub-carriers during
        diagnostics mode.
        When referring to the upstream direction, it is the measured
        difference in the total power transmitted by the ATU-R and the
        total power received by the ATU-C over all sub-carriers during
        diagnostics mode.
        It ranges from 0 to 1270 units of 0.1 dB (Physical values are
        0 to 127 dB).
        A special value of 0x7FFFFFFF (2147483647) indicates the line
        attenuation is out of range to be represented.
        A special value of 0x7FFFFFFE (2147483646) indicates the line
        attenuation measurement is unavailable.
        This object reflects the value of the parameter following the
        most recent DELT performed on the associated line. Once
        the DELT process is over, the parameter no longer changes
        until the row is deleted or a new DELT process is initiated. "
    REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.6 (LATNds)
                 and paragraph 7.5.1.7 (LATNus)"
     ::= { adsl2SCStatusEntry 14 }

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

        carriers during Showtime after the diagnostics mode.
        When referring to the upstream direction, it is the measured
        difference in the total power transmitted by the
        ATU-R and the total power received by the ATU-C over all sub
        carriers during Showtime after the diagnostics mode.
        It ranges from 0 to 1270 units of 0.1 dB (Physical values
        are 0 to 127 dB).
        A special value of 0x7FFFFFFF (2147483647) indicates the
        signal attenuation is out of range to be represented.
        A special value of 0x7FFFFFFE (2147483646) indicates the
        signal attenuation measurement is unavailable.
        This object reflects the value of the parameter following the
        most recent DELT performed on the associated line. Once
        the DELT process is over, the parameter no longer changes
        until the row is deleted or a new DELT process is initiated. "
    REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.8 (SATNds)
                and paragraph 7.5.1.9 (SATNus)"
    ::= { adsl2SCStatusEntry 15 }

adsl2SCStatusSnrMargin OBJECT-TYPE
    SYNTAX   Integer32 (-640..630 | 2147483646 | 2147483647)
    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 special value of 0x7FFFFFFF (2147483647) indicates the
        SNR Margin is out of range to be represented.
        A special value of 0x7FFFFFFE (2147483646) indicates the
        SNR Margin measurement is currently unavailable.
        This object reflects the value of the parameter following the
        most recent DELT performed on the associated line. Once
        the DELT process is over, the parameter no longer changes
        until the row is deleted or a new DELT process is initiated. "
    REFERENCE   "ITU-T G.997.1, paragraph 7.5.1.10 (SNRMds)
                and paragraph 7.5.1.11 (SNRMus)"
    ::= { adsl2SCStatusEntry 16 }

adsl2SCStatusAttainableRate 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 7.5.1.16 (ACTATPds)
                   and paragraph 7.5.1.17 (ACTATPus)"
      ::= { adsl2SCStatusEntry 18 }

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

   ---------------------------------------------------
   --         adsl2LineInventoryTable          --
   ---------------------------------------------------
   adsl2LineInventoryTable  OBJECT-TYPE
```

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

      adsl2LineInventoryEntry OBJECT-TYPE
         SYNTAX   Adsl2LineInventoryEntry
         MAX-ACCESS   not-accessible
         STATUS   current
         DESCRIPTION
            "The table adsl2LineInventoryTable contains inventory of ADSL2
             unit.
             The index of this table is an interface index where the
             interface has an ifType of adsl2(230)."
         INDEX { ifIndex, adsl2LInvUnit }
         ::= { adsl2LineInventoryTable 1 }

      Adsl2LineInventoryEntry ::=
         SEQUENCE {
            adsl2LInvUnit   Adsl2Unit,
            adsl2LInvG994VendorId   OCTET STRING,
            adsl2LInvSystemVendorId   OCTET STRING,
            adsl2LInvVersionNumber   OCTET STRING,
            adsl2LInvSerialNumber   OCTET STRING,
            adsl2LInvSelfTestResult   Unsigned32,
            adsl2LInvTransmissionCapabilities Adsl2TransmissionModeType
         }

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

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

        REFERENCE   "ITU-T G.997.1, paragraph 7.4"
        ::= { adsl2LineInventoryEntry 2 }

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

    adsl2LInvVersionNumber OBJECT-TYPE
        SYNTAX   OCTET STRING (SIZE(0..16))
        MAX-ACCESS   read-only
        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   Unsigned32
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The ATU self-test result, coded as a 32-bit value. The

```
        most significant octet of the result is '0' if the self-test
        passed, and '1' if the self-test failed.  The interpretation
        of the other octets is vendor discretionary."
   REFERENCE     "ITU-T G.997.1, paragraph 7.4"
   ::= { adsl2LineInventoryEntry 6 }

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.

      Entries in this table MUST be maintained in a
      persistent manner."
   ::= { adsl2ProfileLine 1 }

adsl2LineConfTemplateEntry  OBJECT-TYPE
   SYNTAX       Adsl2LineConfTemplateEntry
   MAX-ACCESS   not-accessible
   STATUS       current
   DESCRIPTION
     "The table adsl2LineConfTemplateTable contains ADSL2 line
      configuration template.
      A default template with an index of 'DEFVAL' will
      always exist and its parameters will be set to vendor-specific
      values, unless otherwise specified in this document"
   INDEX  { adsl2LConfTempTemplateName }
   ::= { adsl2LineConfTemplateTable 1 }
```

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

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

   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 }

   adsl2LConfTempChan1ConfProfile  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 }

   adsl2LConfTempChan1RaRatioDs 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 -
          Adsl2ConfTemplateChan1RaRatioDs is the ratio of excess data
          rate to be assigned to all other bearer channels on Downstream
          direction. The sum of rate adaptation ratios over all bearers
          on the same direction shall be equal to 100%."
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
      DEFVAL   { 100 }
      ::= { adsl2LineConfTemplateEntry 4 }

   adsl2LConfTempChan1RaRatioUs 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 - Adsl2ConfTemplateChan1RaRatioUs is the ratio of excess
          data rate to be assigned to all other bearer channels on
          Upstream direction. The sum of rate adaptation ratios over
          all bearers on the same direction shall be equal to 100 %."
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
      DEFVAL   { 100 }
      ::= { adsl2LineConfTemplateEntry 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 }
        ::= { adsl2LineConfTemplateEntry 10 }

    adsl2LConfTempChan3RaRatioUs OBJECT-TYPE
        SYNTAX   Unsigned32(0..100)
        UNITS   "percents"
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION

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

    adsl2LConfTempChan4ConfProfile OBJECT-TYPE
        SYNTAX   SnmpAdminString (SIZE(0..32))
        MAX-ACCESS   read-create
        STATUS   current
        DESCRIPTION
           "The value of this object identifies the row in the ADSL2
            Channel Configuration Profile Table
            (Adsl2ChanConfProfileTableDs) that applies to ADSL2 bearer
            channel #4. If the channel is unused, then the object is set
            to a zero length string.
            This object may be set to a non-zero length string only if
            adsl2LConfTempChan3ConfProfile contains a non-zero length
            string."
        DEFVAL   { "" }
        ::= { adsl2LineConfTemplateEntry 12 }

    adsl2LConfTempChan4RaRatioDs OBJECT-TYPE
        SYNTAX   Unsigned32(0..100)
        UNITS   "percents"
        MAX-ACCESS   read-create
        STATUS   current
        DESCRIPTION
           "Rate Adaptation Ratio. The ratio (in %) that should be taken
            into account for the bearer channel #4 when performing rate
            adaptation on Downstream. The ratio refers to the available
            data rate in excess of the Minimum Data Rate, summed over all
            bearer channels. Also, the 100 -

            adsl2LConfTempChan4RaRatioDs is the ratio of
            excess data rate to be assigned to all other bearer channels.
            The sum of rate adaptation ratios over all bearers on the same
            direction shall sum to 100%."
        REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
        DEFVAL   { 0 }
        ::= { adsl2LineConfTemplateEntry 13 }

    adsl2LConfTempChan4RaRatioUs OBJECT-TYPE
       SYNTAX   Unsigned32(0..100)
       UNITS   "percents"
       MAX-ACCESS read-create
       STATUS   current
       DESCRIPTION
          "Rate Adaptation Ratio. The ratio (in %) that should be taken
           into account for the bearer channel #4 when performing rate
           adaptation on Upstream. The ratio refers to the available
           data rate in excess of the Minimum Data Rate, summed over
           all bearer channels. Also, the 100 -

           adsl2LConfTempChan4RaRatioUs is the
           ratio of excess data rate to be assigned to all other bearer
           channels. The sum of rate adaptation ratios over all bearers
           on the same direction shall sum to 100%."
       REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
       DEFVAL   { 0 }
       ::= { adsl2LineConfTemplateEntry 14 }

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

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

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

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

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

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

          A default profile with an index of 'DEFVAL' will
          always exist and its parameters will be set to vendor-specific
          values, unless otherwise specified in this document"
      INDEX  { adsl2LConfProfProfileName }
      ::= { adsl2LineConfProfTable 1 }

   Adsl2LineConfProfEntry  ::=
      SEQUENCE {
         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 }

   adsl2LConfProfRfiBandsDs  OBJECT-TYPE
       SYNTAX       Adsl2RfiDs
       MAX-ACCESS  read-create
       STATUS       current
       DESCRIPTION
```

```
            "The subset of downstream PSD mask breakpoints that shall be
            used to notch an RFI band.
            The specific interpolation around these points is defined in
            G.992.5.  It is a bitmap of 512 bits that allows referring to
            up to 512 downstream sub-carriers, depending on NSCds.  If bit
            i (0 <= i < NSCds) is set to '1', the respective downstream
            sub-carrier i is part of a notch filter, and if set to '0',
            the respective sub-carrier is not part of a notch filter.
            This information complements the specification provided by
            adsl2LconfProfPsdMaskDs.
            Note that if NSCds < 512, all bits i (NSCds<i<512)
            should be set to '0'. "
        REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.2.9"
        ::= { adsl2LineConfProfEntry 4 }

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

    adsl2LConfProfRaModeUs  OBJECT-TYPE
        SYNTAX       Adsl2RaMode
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The mode of operation of a rate-adaptive ATU-R in the transmit
            direction.  The parameter can take three values:
                manual (1),
                raInit (2),
                dynamicRa (3)."
        REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.4.2"
        DEFVAL       { manual }
        ::= { adsl2LineConfProfEntry 6 }

    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 }

      adsl2LConfProfRaUsTimeUs OBJECT-TYPE
          SYNTAX   Unsigned32(0..16383)
          UNITS   "seconds"

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

   adsl2LConfProfRaDsNrmsDs  OBJECT-TYPE
      SYNTAX      Unsigned32(0..310)
      UNITS       "0.1 dB"
      MAX-ACCESS  read-create
      STATUS      current
      DESCRIPTION
         "The Downstream Down-Shift Noise Margin value, to be used when
          Adsl2LineConfRaModeDs is set to dynamicRa.  If the downstream
          noise margin is below this value and stays below that for more
          than the time specified by the Adsl2LineConfRaDsTimeDs, the
          ATU-R shall attempt to decrease the downstream net data rate.
          The Downstream Down-shift Noise Margin ranges from 0 to 310
          units of 0.1 dB (Physical values are 0 to 31 dB)."
      REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.4.7"
      DEFVAL       { 10 }
      ::= { adsl2LineConfProfEntry 11 }

   adsl2LConfProfRaDsNrmsUs  OBJECT-TYPE
      SYNTAX      Unsigned32(0..310)
      UNITS       "0.1 dB"
      MAX-ACCESS  read-create
      STATUS      current
      DESCRIPTION
         "The Upstream Downshift Noise Margin value, to be used when
          Adsl2LineConfRaModeUs is set to dynamicRa.  If the upstream
          noise margin is below this value and stays below that for more
          than the time specified by the Adsl2LineConfRaDsTimeUs, the
          ATU-C shall attempt to decrease the upstream net data rate.
          The Upstream Down-shift Noise Margin ranges from 0 to 310
          units of 0.1 dB (Physical values are 0 to 31 dB)."
      REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.4.8"
      DEFVAL       { 10 }
      ::= { adsl2LineConfProfEntry 12 }

   adsl2LConfProfRaDsTimeDs  OBJECT-TYPE
```

```
          SYNTAX       Unsigned32(0..16383)
          UNITS        "seconds"
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The Downstream Downshift Time Interval, to be used when
              Adsl2LineConfRaModeDs is set to dynamicRa.  The interval of
              time the downstream noise margin should stay below the
              Downstream Down-shift Noise Margin before the ATU-R shall
              attempt to decrease the downstream net data rate.  The time
              interval ranges from 0 to 16383 seconds."
          REFERENCE    "ITU-T G.997.1, paragraph 7.3.1.4.9"
          DEFVAL       { 3600 }
          ::= { adsl2LineConfProfEntry 13 }

      adsl2LConfProfRaDsTimeUs  OBJECT-TYPE
          SYNTAX       Unsigned32(0..16383)
          UNITS        "seconds"
          MAX-ACCESS   read-create
          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 (0..310 | 2147483647)
       UNITS   "0.1 dB"
       MAX-ACCESS   read-create
       STATUS   current
       DESCRIPTION
          "The maximum Noise Margin the ATU-R receiver shall try to
           sustain. If the Noise Margin is above this level, the ATU-R
           shall request that the ATU-C reduce the ATU-C transmit power
           to get a noise margin below this limit (if this functionality
           is supported). The maximum noise margin ranges from 0 to 310
           units of 0.1 dB (Physical values are 0 to 31 dB). A value of
           0x7FFFFFFF (2147483647) means that there is no maximum."
       REFERENCE   "ITU-T G.997.1, paragraph 7.3.1.3.3"
       DEFVAL   { 310 }
       ::= { adsl2LineConfProfEntry 17 }

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

        DEFVAL   { 310 }
        ::= { adsl2LineConfProfEntry 18 }

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

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

    adsl2LConfProfMsgMinUs OBJECT-TYPE
        SYNTAX   Unsigned32(4000..63000)
        UNITS   "bits/second"
        MAX-ACCESS   read-create
        STATUS   current
        DESCRIPTION
           "Minimum Overhead Rate Upstream. Defines the minimum rate of

```
         the message-based overhead that shall be maintained by the ATU
         in upstream direction.  Expressed in bits per second and
         ranges from 4000 to 63000 bps."
   REFERENCE     "ITU-T G.997.1, paragraph 7.3.1.5.1"
   DEFVAL        { 4000 }
   ::= { adsl2LineConfProfEntry 21 }

adsl2LConfProfMsgMinDs  OBJECT-TYPE
   SYNTAX        Unsigned32(4000..63000)
   UNITS         "bits/second"
   MAX-ACCESS  read-create
   STATUS        current
   DESCRIPTION
      "Minimum Overhead Rate Downstream.  Defines the minimum rate of
       the message-based overhead that shall be maintained by the ATU
       in downstream direction.  Expressed in bits per second and
       ranges from 4000 to 63000 bps."
   REFERENCE     "ITU-T G.997.1, paragraph 7.3.1.5.2"
   DEFVAL        { 4000 }
   ::= { 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 }

   adsl2LConfProfRowStatus  OBJECT-TYPE
      SYNTAX      RowStatus
      MAX-ACCESS  read-create
      STATUS      current
      DESCRIPTION
         "This object is used to create a new row or to modify or
         delete an existing row in this table.

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

         Before a profile can be deleted or taken out of service
         (by setting this object to 'destroy' or 'notInService'),
         it must be first unreferenced from all associated
         templates."
      ::= { adsl2LineConfProfEntry 29 }



   -------------------------------------------
   --   adsl2LineConfProfModeSpecTable    --
   -------------------------------------------
   adsl2LineConfProfModeSpecTable  OBJECT-TYPE
      SYNTAX      SEQUENCE  OF  Adsl2LineConfProfModeSpecEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "The table adsl2LineConfProfModeSpecTable extends the
          ADSL2 line configuration profile by ADSL Mode Specific
          parameters.
          A row in this table that has an index of
          adsl2LconfProfAdslMode == defMode(1), is called a
          'mandatory' row.
          A row in this table that has an index such that
          adsl2LconfProfAdslMode is not equal to defMode(1),
          is called an 'optional' row.
          When a row in the adsl2LineConfProfTable table
          (the parent row) is created, the SNMP agent will
```

            automatically create a 'mandatory' row in this table.
            When the parent row is deleted, the SNMP agent will
            automatically delete all associated rows in this table.
            Any attempt to delete the 'mandatory' row using the
            adsl2LConfProfModeSpecRowStatus attribute will be
            rejected by the SNMP agent.
            The manager MAY create an 'optional' row in this table
            using the adsl2LConfProfModeSpecRowStatus attribute if
            the parent row exists.
            The manager MAY delete an 'optional' row in this table
            using the adsl2LConfProfModeSpecRowStatus attribute at
            any time.
            If the actual transmission mode of a DSL line does not
            match one of the 'optional' rows in this table, then
            the line will use the PSD configuration from the
            'mandatory' row.

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

  adsl2LConfProfPsdMaskDs   OBJECT-TYPE
      SYNTAX       Adsl2PsdMaskDs
      MAX-ACCESS   read-create
      STATUS       current
      DESCRIPTION
        "The downstream PSD mask applicable at the U-C2 reference
         point.
         This parameter is used only for G.992.5 and it may impose PSD
         restrictions (breakpoints) in addition to the Limit PSD mask
         defined in G.992.5.
         This is a string of 32 pairs of values in the following
```

         structure:
         Octets 0+1 - Index of 1st sub-carrier used in the context
                      of a first breakpoint.
         Octet 2   - The PSD reduction for the sub-carrier indicated in
                      octets 0 and 1.
         Octets 3-5 - Same, for a 2nd breakpoint.
         Octets 6-8 - Same, for a 3rd breakpoint.
         This architecture continues until octets 94-95, which are
         associated with a 32nd breakpoint.
         Each subcarrier index is an unsigned number in the range 1 and
         NSCds. Each PSD reduction value is in the range 0 (0dBm/Hz) to
         255 (-127.5dBm/Hz) with steps of 0.5dBm/Hz. Valid values are
         in the range 0 to 190 (0 to -95dBm/Hz).
         When the number of breakpoints is less than 32, all remaining
         octets are set to the value 0. Note that the content of this
         object should be correlated with the sub-carriers mask and with
         the RFI setup. "
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.1.2"
        ::= { adsl2LineConfProfModeSpecEntry 7 }

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

      REFERENCE   "ITU-T G.997.1, paragraph 7.3.1.2"
        ::= { adsl2LineConfProfModeSpecEntry 8 }

   adsl2LConfProfPsdMaskSelectUs OBJECT-TYPE
      SYNTAX   Unsigned32(1..9)
      MAX-ACCESS   read-create
      STATUS   current
      DESCRIPTION
        "The selected upstream PSD mask. This parameter is used only
         for annexes J and M of G.992.3 and G.992.5, and the same
         selection is used for all relevant enabled bits in
         adsl2LConfProfAtuTransSysEna. "
      REFERENCE   "ITU-T G.997.1 (amendment 1), 7.3.1.2.10"
      DEFVAL   { 1 }
       ::= { adsl2LineConfProfModeSpecEntry 9 }

   adsl2LConfProfModeSpecRowStatus OBJECT-TYPE
      SYNTAX   RowStatus
      MAX-ACCESS   read-create
      STATUS   current
      DESCRIPTION

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

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

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

      ::= { adsl2LineConfProfModeSpecEntry 10 }

   --   adsl2ChConfProfileTable   --
   ----
   adsl2ChConfProfileTable OBJECT-TYPE
      SYNTAX   SEQUENCE OF Adsl2ChConfProfileEntry
      MAX-ACCESS   not-accessible
      STATUS   current
      DESCRIPTION
        "The table adsl2ChConfProfileTable contains ADSL2 channel
         profile configuration.

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

```
       ::= { adsl2ProfileChannel 1 }

   adsl2ChConfProfileEntry  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,
         adsl2ChConfProfMaxDelayDs           Unsigned32,
         adsl2ChConfProfMaxDelayUs           Unsigned32,
         adsl2ChConfProfMinProtectionDs      Adsl2SymbolProtection,
         adsl2ChConfProfMinProtectionUs      Adsl2SymbolProtection,
         adsl2ChConfProfMaxBerDs             Adsl2MaxBer,
         adsl2ChConfProfMaxBerUs             Adsl2MaxBer,
         adsl2ChConfProfUsDataRateDs         Unsigned32,
         adsl2ChConfProfDsDataRateDs         Unsigned32,
         adsl2ChConfProfUsDataRateUs         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
      STATUS   current
      DESCRIPTION
         "Maximum Data Rate on Downstream direction. The maximum net
          data rate for the bearer channel, coded in bit/s."
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
      ::= { adsl2ChConfProfileEntry 6 }

   adsl2ChConfProfMaxDataRateUs OBJECT-TYPE
      SYNTAX   Unsigned32(0..200000000)
      UNITS   "bits/second"
      MAX-ACCESS   read-create
      STATUS   current
      DESCRIPTION
         "Maximum Data Rate on Upstream direction. The maximum net data
          rate for the bearer channel, coded in bit/s."
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.1"
      ::= { adsl2ChConfProfileEntry 7 }

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

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

```
      bound is being imposed."
   REFERENCE    "ITU-T G.997.1, paragraph 7.3.2.2"
   ::= { adsl2ChConfProfileEntry 9 }

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

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

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

          of 1 symbol."
      REFERENCE   "ITU-T G.997.1, paragraph 7.3.2.3"
      DEFVAL   { noProtection }
      ::= { adsl2ChConfProfileEntry 12 }

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

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

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

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

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

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

    adsl2ChConfProfImaEnabled OBJECT-TYPE
       SYNTAX   TruthValue
       MAX-ACCESS   read-create
       STATUS   current
       DESCRIPTION
          "IMA Mode Enable. The parameter enables the IMA operation mode

```
         in the ATM Data Path.  Relevant only if the channel is of ATM
         Data Path.  When in 'enable' state, the ATM data path should
         comply with the requirements for IMA transmission."
      REFERENCE    "ITU-T G.997.1, paragraph 7.3.4.1"
      DEFVAL       { false }
    ::= { adsl2ChConfProfileEntry 19 }

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

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

         Before a profile can be deleted or taken out of service
         (by setting this object to 'destroy' or 'notInService'),
         it must be first unreferenced from all associated
         templates."
      ::= { adsl2ChConfProfileEntry 20 }

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

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

   adsl2LineAlarmConfTemplateEntry  OBJECT-TYPE
      SYNTAX       Adsl2LineAlarmConfTemplateEntry
      MAX-ACCESS   not-accessible
      STATUS       current
      DESCRIPTION
         "The table adsl2LineAlarmConfTemplateTable contains ADSL2
         line PM thresholds template.
         A default template with an index of 'DEFVAL' will
         always exist and its parameters will be set to vendor
```

                 specific values, unless otherwise specified in this
                 document"
              INDEX { adsl2LAlarmConfTempTemplateName }
              ::= { adsl2LineAlarmConfTemplateTable 1 }

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

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

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

          adsl2LAlarmConfTempChan1ConfProfile OBJECT-TYPE
              SYNTAX   SnmpAdminString (SIZE(1..32))
              MAX-ACCESS read-create
              STATUS   current
              DESCRIPTION
                 "The value of this object identifies the row in the ADSL2
                  Channel Thresholds Configuration Profile Table
                  (adsl2ChAlarmConfProfileTable) that applies for ADSL2
                  bearer channel #1. The channel profile name specified here
                  must match the name of an existing row in the
                  adsl2ChAlarmConfProfileTable table."

         REFERENCE   "DSL Forum TR-90, paragraph 5.4.1"
         DEFVAL   { "DEFVAL" }
         ::= { adsl2LineAlarmConfTemplateEntry 3 }

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

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

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

   --   adsl2LineAlarmConfProfileTable   --
   ----

   adsl2LineAlarmConfProfileTable OBJECT-TYPE
       SYNTAX   SEQUENCE OF Adsl2LineAlarmConfProfileEntry
       MAX-ACCESS not-accessible
       STATUS   current
       DESCRIPTION
        "The table adsl2LineAlarmConfProfileTable contains ADSL2
         line PM thresholds profiles.

          Entries in this table MUST be maintained in a
          persistent manner."
       ::= { adsl2ProfileAlarmConf 2 }

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

         A default profile with an index of 'DEFVAL' will
         always exist and its parameters will be set to vendor
         specific values, unless otherwise specified in this
         document"
        INDEX { adsl2LineAlarmConfProfileName }
        ::= { adsl2LineAlarmConfProfileTable 1 }

    Adsl2LineAlarmConfProfileEntry ::=
        SEQUENCE {
        adsl2LineAlarmConfProfileName   SnmpAdminString,
        adsl2LineAlarmConfProfileAtucThresh15MinFecs
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAtucThresh15MinEs
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAtucThresh15MinSes
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAtucThresh15MinLoss
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAtucThresh15MinUas
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAturThresh15MinFecs
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAturThresh15MinEs
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAturThresh15MinSes
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAturThresh15MinLoss
                                        HCPerfIntervalThreshold,
        adsl2LineAlarmConfProfileAturThresh15MinUas
                                        HCPerfIntervalThreshold,

        adsl2LineAlarmConfProfileThresh15MinFailedFullInt   Unsigned32,
        adsl2LineAlarmConfProfileThresh15MinFailedShrtInt   Unsigned32,

        adsl2LineAlarmConfProfileRowStatus   RowStatus
        }

    adsl2LineAlarmConfProfileName OBJECT-TYPE
        SYNTAX   SnmpAdminString (SIZE(1..32))
        MAX-ACCESS not-accessible
        STATUS   current
        DESCRIPTION
        "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 }
        ::= { adsl2LineAlarmConfProfileEntry 8 }

   adsl2LineAlarmConfProfileAturThresh15MinSes  OBJECT-TYPE
```

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

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

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

   adsl2LineAlarmConfProfileThresh15MinFailedFullInt  OBJECT-TYPE
        SYNTAX       Unsigned32
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
        "A threshold for the adsl2PMLCurrInit15MfailedFullInits
        counter.
```

        The value 0 means that no threshold is specified for the
        associated counter."
     REFERENCE   "ITU-T G.997.1, paragraph 7.3.1"
     DEFVAL   { 0 }
       ::= { adsl2LineAlarmConfProfileEntry 12 }

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

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

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

         Before a profile can be deleted or taken out of service
         (by setting this object to 'destroy' or 'notInService'),
         it must be first unreferenced from all associated
         templates."
       ::= { adsl2LineAlarmConfProfileEntry 14 }

     --   adsl2ChAlarmConfProfileTable   --
     ----

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

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

   adsl2ChAlarmConfProfileEntry OBJECT-TYPE
        SYNTAX   Adsl2ChAlarmConfProfileEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
         "The table adsl2ChAlarmConfProfileTable contains ADSL2
          channel PM thresholds profiles.
          A default profile with an index of 'DEFVAL' will
          always exist and its parameters will be set to vendor-specific
          values, unless otherwise specified in this document"
        INDEX { adsl2ChAlarmConfProfileName }
        ::= { adsl2ChAlarmConfProfileTable 1 }

   Adsl2ChAlarmConfProfileEntry ::=
        SEQUENCE {
        adsl2ChAlarmConfProfileName
                                             SnmpAdminString,
        adsl2ChAlarmConfProfileAtucThresh15MinCodingViolations
                                             Unsigned32,
        adsl2ChAlarmConfProfileAtucThresh15MinCorrected Unsigned32,
        adsl2ChAlarmConfProfileAturThresh15MinCodingViolations
                                             Unsigned32,
        adsl2ChAlarmConfProfileAturThresh15MinCorrected Unsigned32,
        adsl2ChAlarmConfProfileRowStatus   RowStatus
        }

   adsl2ChAlarmConfProfileName OBJECT-TYPE
        SYNTAX   SnmpAdminString (SIZE(1..32))
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
        "This object identifies a row in this table."
        ::= { adsl2ChAlarmConfProfileEntry 1 }

   adsl2ChAlarmConfProfileAtucThresh15MinCodingViolations OBJECT-TYPE
        SYNTAX   Unsigned32
        MAX-ACCESS   read-create
        STATUS   current
        DESCRIPTION
        "A threshold for the adsl2PMChCurr15MCodingViolations
        counter, when adsl2PMChCurrUnit is ATUC {1}.
        The value 0 means that no threshold is specified for the
        associated counter."
       REFERENCE   "ITU-T G.997.1, paragraph 7.3.2"

```
       DEFVAL        { 0 }
          ::= { 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 'notInService'),
        it must be first unreferenced from all associated
        templates."
        ::= { adsl2ChAlarmConfProfileEntry 6 }

    --   PM line current counters   --
    ----
    adsl2PMLineCurrTable OBJECT-TYPE
       SYNTAX   SEQUENCE OF Adsl2PMLineCurrEntry
       MAX-ACCESS   not-accessible
       STATUS   current
       DESCRIPTION
          "The table adsl2PMLineCurrTable contains current Performance
           Monitoring results of ADSL2 line. "
       ::= { adsl2PMLine 1 }

    adsl2PMLineCurrEntry OBJECT-TYPE
       SYNTAX   Adsl2PMLineCurrEntry
       MAX-ACCESS   not-accessible
       STATUS   current
       DESCRIPTION
          "The table adsl2PMLineCurrTable contains current Performance
           Monitoring results of ADSL2 line.
           The index of this table is an interface index where the
           interface has an ifType of adsl2(230) and the termination
           unit.
           The PM counters in the table are not reset even when the xtU
           is reinitialized. They are re-initialized only when the
           agent itself is reset or reinitialized. "
       INDEX { ifIndex, adsl2PMLCurrUnit }
       ::= { adsl2PMLineCurrTable 1 }

    Adsl2PMLineCurrEntry ::=
       SEQUENCE {
          adsl2PMLCurrUnit   Adsl2Unit,
          adsl2PMLCurrValidIntervals   Unsigned32,
          adsl2PMLCurrInvalidIntervals   Unsigned32,
          adsl2PMLCurr15MTimeElapsed   HCPerfTimeElapsed,
          adsl2PMLCurr15MFecs   Counter32,
          adsl2PMLCurr15MEs   Counter32,
          adsl2PMLCurr15MSes   Counter32,

```
        adsl2PMLCurr15MLoss                  Counter32,
        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}."
    ::= { adsl2PMLineCurrEntry 1 }

 adsl2PMLCurrValidIntervals  OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "Valid intervals."
    ::= { adsl2PMLineCurrEntry 2 }

 adsl2PMLCurrInvalidIntervals  OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "Invalid intervals."
    ::= { adsl2PMLineCurrEntry 3 }

 adsl2PMLCurr15MTimeElapsed  OBJECT-TYPE
    SYNTAX      HCPerfTimeElapsed
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "Total elapsed seconds since this PM interval began.
        Note that the PM counters are not reset even when the xtU
        is reinitialized. They are re-initialized only when the
        agent itself is reset or reinitialized. "
    ::= { adsl2PMLineCurrEntry 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
           LOS-FE for ATU-R)."
       REFERENCE   "ITU-T G.997.1, paragraph 7.2.1"
       ::= { adsl2PMLineCurrEntry 8 }

   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"
       ::= { adsl2PMLineCurrEntry 9 }

   adsl2PMLCurr1DayValidIntervals OBJECT-TYPE
       SYNTAX   Unsigned32
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Valid intervals."
       ::= { adsl2PMLineCurrEntry 10 }

   adsl2PMLCurr1DayInvalidIntervals OBJECT-TYPE
       SYNTAX   Unsigned32
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Invalid intervals."
       ::= { adsl2PMLineCurrEntry 11 }

   adsl2PMLCurr1DayTimeElapsed OBJECT-TYPE
       SYNTAX   HCPerfTimeElapsed
       UNITS   "seconds"
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Total elapsed seconds since this PM interval began.
           Note that the PM counters are not reset even when the xtU
           is reinitialized. They are re-initialized only when the
           agent itself is reset or reinitialized. "
       ::= { adsl2PMLineCurrEntry 12 }

   adsl2PMLCurr1DayFecs OBJECT-TYPE

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

    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"
       ::= { adsl2PMLineCurrEntry 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"
       ::= { adsl2PMLineCurrEntry 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"
   ::= { adsl2PMLineCurrEntry 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"
   ::= { adsl2PMLineCurrEntry 17 }


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

adsl2PMLineCurrInitTable   OBJECT-TYPE
   SYNTAX      SEQUENCE  OF  Adsl2PMLineCurrInitEntry
   MAX-ACCESS  not-accessible
   STATUS      current
   DESCRIPTION
      "The table adsl2PMLineCurrInitTable contains current
       initialization counters of ADSL2 line.
       The PM counters in the table are not reset even when the xtU
       is reinitialized. They are re-initialized only when the
       agent itself is reset or reinitialized. "
   ::= { adsl2PMLine 2 }

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

Adsl2PMLineCurrInitEntry  ::=
```

       SEQUENCE {
          adsl2PMLCurrInit15MTimeElapsed   Unsigned32,
          adsl2PMLCurrInit15MFullInits   Unsigned32,
          adsl2PMLCurrInit15MFailedFullInits   Unsigned32,
          adsl2PMLCurrInit15MShortInits   Unsigned32,
          adsl2PMLCurrInit15MFailedShortInits   Unsigned32,
          adsl2PMLCurrInit1DayTimeElapsed   Unsigned32,
          adsl2PMLCurrInit1DayFullInits   Unsigned32,
          adsl2PMLCurrInit1DayFailedFullInits   Unsigned32,
          adsl2PMLCurrInit1DayShortInits   Unsigned32,
          adsl2PMLCurrInit1DayFailedShortInits   Unsigned32
       }

   adsl2PMLCurrInit15MTimeElapsed OBJECT-TYPE
      SYNTAX   Unsigned32
      UNITS   "seconds"
      MAX-ACCESS read-only
      STATUS   current
      DESCRIPTION
         "Total elapsed seconds since this PM interval began.
          Note that the PM counters are not reset even when the xtU
          is reinitialized. They are re-initialized only when the
          agent itself is reset or reinitialized. "
      ::= { adsl2PMLineCurrInitEntry 1 }

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

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

   adsl2PMLCurrInit15MShortInits OBJECT-TYPE
      SYNTAX   Unsigned32
      MAX-ACCESS read-only

```
         STATUS       current
         DESCRIPTION
           "Count of short initializations attempted on the line
            (successful and failed) during this interval."
         REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
         ::= { adsl2PMLineCurrInitEntry 4 }

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

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

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

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

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

    adsl2PMLCurrInit1DayFailedShortInits OBJECT-TYPE
       SYNTAX   Unsigned32
       MAX-ACCESS read-only
       STATUS   current
       DESCRIPTION
          "Count of failed short initializations on the line during this
           interval."
       REFERENCE   "ITU-T G.997.1, paragraph 7.2.1"
       ::= { adsl2PMLineCurrInitEntry 10 }

    --   PM line history 15 Minutes   --
    ----
    adsl2PMLineHist15MinTable   OBJECT-TYPE
       SYNTAX   SEQUENCE OF Adsl2PMLineHist15MinEntry
       MAX-ACCESS not-accessible
       STATUS   current
       DESCRIPTION
          "The table adsl2PMLineHist15MinTable contains PM line history
           for 15min intervals of ADSL2 line. "
       ::= { adsl2PMLine 3 }

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

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

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

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

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

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

```
       ::= { adsl2PMLineHist15MinEntry 4 }

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

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

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

    adsl2PMLHist15MUas  OBJECT-TYPE
       SYNTAX       Counter32
       UNITS        "seconds"
       MAX-ACCESS   read-only
       STATUS       current
```

      DESCRIPTION
         "Count of seconds in Unavailability State during this interval.
          Unavailability begins at the onset of 10 contiguous severely
          -errored seconds, and ends at the onset of 10 contiguous
          seconds with no severely-errored seconds."
      REFERENCE   "ITU-T G.997.1, paragraph 7.2.1"
      ::= { adsl2PMLineHist15MinEntry 8 }

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

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

   adsl2PMLHist1DUnit  OBJECT-TYPE
      SYNTAX      Adsl2Unit
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "The termination unit."
      ::= { adsl2PMLineHist1DayEntry 1 }

   adsl2PMLHist1DInterval  OBJECT-TYPE
      SYNTAX      Unsigned32 (1..30)
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
         "The interval number."
      ::= { adsl2PMLineHist1DayEntry 2 }

   adsl2PMLHist1DMonitoredTime  OBJECT-TYPE
      SYNTAX      Unsigned32
      UNITS       "seconds"
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "Total seconds monitored in this interval."
      ::= { adsl2PMLineHist1DayEntry 3 }

   adsl2PMLHist1DFecs  OBJECT-TYPE
      SYNTAX      Counter32
      UNITS       "seconds"
      MAX-ACCESS  read-only
      STATUS      current
      DESCRIPTION
         "Count of seconds during this interval that there was at least
          one FEC correction event for one or more bearer channels in
          this line.  This parameter is inhibited during UAS or SES."
      REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
      ::= { adsl2PMLineHist1DayEntry 4 }
```

    adsl2PMLHist1DEs OBJECT-TYPE
       SYNTAX   Counter32
       UNITS   "seconds"
       MAX-ACCESS read-only
       STATUS   current
       DESCRIPTION
          "Count of seconds during this interval that there was:
               ATU-C: CRC-8 >= 1 for one or more bearer channels OR
                       LOS >= 1 OR SEF >= 1 OR LPR >= 1
               ATU-R: FEBE >= 1 for one or more bearer channels OR
                       LOS-FE >= 1 OR RDI >= 1 OR LPR-FE >= 1.
           This parameter is inhibited during UAS."
       REFERENCE   "ITU-T G.997.1, paragraph 7.2.1"
       ::= { 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."
        ::= { adsl2PMLineHist1DayEntry 9 }

     --   PM line init history 15 Minutes   --
     ----

     adsl2PMLineInitHist15MinTable   OBJECT-TYPE
        SYNTAX   SEQUENCE OF Adsl2PMLineInitHist15MinEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "The table adsl2PMLineInitHist15MinTable contains PM line
            initialization history for 15 minutes intervals of ADSL2
            line. "
        ::= { adsl2PMLine 5 }

     adsl2PMLineInitHist15MinEntry OBJECT-TYPE
        SYNTAX   Adsl2PMLineInitHist15MinEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "The table adsl2PMLineInitHist15MinTable 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 }
        ::= { adsl2PMLineInitHist15MinTable 1 }

     Adsl2PMLineInitHist15MinEntry ::=

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

    adsl2PMLHistInit15MInterval OBJECT-TYPE
        SYNTAX   Unsigned32 (1..96)
        MAX-ACCESS not-accessible
        STATUS   current
        DESCRIPTION
          "The interval number."
        ::= { adsl2PMLineInitHist15MinEntry 1 }

    adsl2PMLHistInit15MMonitoredTime OBJECT-TYPE
        SYNTAX   Unsigned32
        UNITS   "seconds"
        MAX-ACCESS read-only
        STATUS   current
        DESCRIPTION
          "Total seconds monitored in this interval."
        ::= { adsl2PMLineInitHist15MinEntry 2 }

    adsl2PMLHistInit15MFullInits 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"
        ::= { adsl2PMLineInitHist15MinEntry 3 }

    adsl2PMLHistInit15MFailedFullInits OBJECT-TYPE
        SYNTAX   Unsigned32
        MAX-ACCESS read-only
        STATUS   current
        DESCRIPTION
          "Count of failed full initializations on the line during this
           interval."
        REFERENCE   "ITU-T G.997.1, paragraph 7.2.1"
        ::= { adsl2PMLineInitHist15MinEntry 4 }

    adsl2PMLHistInit15MShortInits 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"
   ::= { adsl2PMLineInitHist15MinEntry 5 }

adsl2PMLHistInit15MFailedShortInits  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Count of failed short initializations on the line during this
       interval."
   REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
   ::= { adsl2PMLineInitHist15MinEntry 6 }

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



   --------------------------------------------
   --       PM line init history 1 Day      --
   --------------------------------------------
adsl2PMLineInitHist1DayTable      OBJECT-TYPE
   SYNTAX      SEQUENCE  OF  Adsl2PMLineInitHist1DayEntry
   MAX-ACCESS  not-accessible
   STATUS      current
   DESCRIPTION
      "The table adsl2PMLineInitHist1DayTable contains PM line
       initialization history for 24 hours intervals of ADSL2
       line. "
   ::= { adsl2PMLine 6 }

adsl2PMLineInitHist1DayEntry  OBJECT-TYPE
   SYNTAX      Adsl2PMLineInitHist1DayEntry
   MAX-ACCESS  not-accessible
   STATUS      current
   DESCRIPTION
```

```
        "The table adsl2PMLineInitHist1DayTable contains PM line
         initialization history for 24 hours intervals of ADSL2
         line.
         The indexes of this table is an interface index where the
         interface has an ifType of adsl2(230) and an interval number."
    INDEX  { ifIndex,
             adsl2PMLHistinit1DInterval }
    ::= { adsl2PMLineInitHist1DayTable 1 }

Adsl2PMLineInitHist1DayEntry  ::=
    SEQUENCE {
        adsl2PMLHistinit1DInterval            Unsigned32,
        adsl2PMLHistinit1DMonitoredTime       Unsigned32,
        adsl2PMLHistinit1DFullInits           Unsigned32,
        adsl2PMLHistinit1DFailedFullInits     Unsigned32,
        adsl2PMLHistinit1DShortInits          Unsigned32,
        adsl2PMLHistinit1DFailedShortInits    Unsigned32,
        adsl2PMLHistinit1DValidInterval       TruthValue
    }

adsl2PMLHistinit1DInterval  OBJECT-TYPE
    SYNTAX      Unsigned32 (1..30)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The interval number."
    ::= { adsl2PMLineInitHist1DayEntry 1 }

adsl2PMLHistinit1DMonitoredTime  OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Total seconds monitored in this interval."
    ::= { adsl2PMLineInitHist1DayEntry 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"
     ::= { adsl2PMLineInitHist1DayEntry 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"
   ::= { adsl2PMLineInitHist1DayEntry 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 }

adsl2PMLHistinit1DFailedShortInits  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Count of failed short initializations on the line during this
       interval."
   REFERENCE    "ITU-T G.997.1, paragraph 7.2.1"
   ::= { adsl2PMLineInitHist1DayEntry 6 }

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



   ------------------------------------------------------
   --         PM channel current counters          --
   ------------------------------------------------------
   adsl2PMChCurrTable       OBJECT-TYPE
      SYNTAX      SEQUENCE  OF  Adsl2PMChCurrEntry
      MAX-ACCESS  not-accessible
      STATUS      current
      DESCRIPTION
```

```
        "The table adsl2PMChCurrTable contains current Performance
         Monitoring results of ADSL2 channel.
         The PM counters in the table are not reset even when the xtU
         is reinitialized. They are re-initialized only when the
         agent itself is reset or reinitialized. "
    ::= { adsl2PMChannel 1 }

adsl2PMChCurrEntry  OBJECT-TYPE
    SYNTAX        Adsl2PMChCurrEntry
    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 and the termination unit."
    INDEX  { ifIndex, adsl2PMChCurrUnit }
    ::= { adsl2PMChCurrTable 1 }

Adsl2PMChCurrEntry  ::=
    SEQUENCE {
        adsl2PMChCurrUnit                    Adsl2Unit,
        adsl2PMChCurrValidIntervals          Unsigned32,
        adsl2PMChCurrInvalidIntervals        Unsigned32,
        adsl2PMChCurr15MTimeElapsed          HCPerfTimeElapsed,
        adsl2PMChCurr15MCodingViolations     Unsigned32,
        adsl2PMChCurr15MCorrectedBlocks      Unsigned32,
        adsl2PMChCurr1DayValidIntervals      Unsigned32,
        adsl2PMChCurr1DayInvalidIntervals    Unsigned32,
        adsl2PMChCurr1DayTimeElapsed         HCPerfTimeElapsed,
        adsl2PMChCurr1DayCodingViolations    Unsigned32,
        adsl2PMChCurr1DayCorrectedBlocks     Unsigned32
    }

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

adsl2PMChCurrValidIntervals  OBJECT-TYPE
    SYNTAX        Unsigned32
    MAX-ACCESS  read-only
    STATUS        current
    DESCRIPTION
```

           "Valid intervals."
        ::= { adsl2PMChCurrEntry 2 }

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

     adsl2PMChCurr15MTimeElapsed OBJECT-TYPE
        SYNTAX   HCPerfTimeElapsed
        UNITS   "seconds"
        MAX-ACCESS read-only
        STATUS   current
        DESCRIPTION
           "Total elapsed seconds since this PM interval began.
            Note that the PM counters are not reset even when the xtU
            is reinitialized. They are re-initialized only when the
            agent itself is reset or reinitialized. "
        ::= { 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 since this PM interval began.
              Note that the PM counters are not reset even when the xtU
              is reinitialized. They are re-initialized only when the
              agent itself is reset or reinitialized. "
          ::= { adsl2PMChCurrEntry 9 }

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

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

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

   adsl2PMChHist15MCorrectedBlocks  OBJECT-TYPE
       SYNTAX      Unsigned32
       MAX-ACCESS  read-only
       STATUS      current
       DESCRIPTION
          "Count of FEC (FFEC for ATU-R) anomalies (corrected code words)
```

          occurring in the channel during the interval. This parameter
          is inhibited during UAS or SES. If the FEC is applied over
          multiple channels, then each related FEC (or FFEC) anomaly
          should increment each of the counters related to the
          individual channels."
       REFERENCE   "ITU-T G.997.1, paragraph 7.2.2"
       ::= { adsl2PMChHist15MinEntry 5 }

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

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

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

       INDEX { ifIndex,
               adsl2PMChHist1DUnit,
               adsl2PMChHist1DInterval }
       ::= { adsl2PMChHist1DTable 1 }

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

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

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

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

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

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

    adsl2PMChHist1DValidInterval OBJECT-TYPE
       SYNTAX   TruthValue
       MAX-ACCESS read-only
       STATUS   current
       DESCRIPTION
          "This variable indicates if the data for this interval is
           valid."
       ::= { adsl2PMChHist1DEntry 6 }

    --   Notifications Group   --
    ----

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

    adsl2LinePerfFECSThreshAtur NOTIFICATION-TYPE
       OBJECTS
       {
       adsl2PMLCurr15MFecs,
       adsl2LineAlarmConfProfileAturThresh15MinFecs
       }
       STATUS   current
       DESCRIPTION
         "This notification indicates that the FEC seconds threshold

         has been reached/exceeded for the referred ATU-R."
      ::= { adsl2Notifications 2 }

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

   adsl2LinePerfESThreshAtur NOTIFICATION-TYPE
      OBJECTS
      {
      adsl2PMLCurr15MEs,
      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 }

    adsl2LinePerfLOSSThreshAtuc 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 }

    adsl2LinePerfLOSSThreshAtur 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
        {
        adsl2PMChCurr15MCorrectedBlocks,
        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
        {
        adsl2PMChCurr15MCorrectedBlocks,
        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
        {
        adsl2PMLCurrInit15MFailedFullInits,
        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
        {
        adsl2PMLCurrInit15MFailedShortInits,
        adsl2LineAlarmConfProfileThresh15MinFailedShrtInt
        }
        STATUS   current
        DESCRIPTION
          "This notification indicates that the failed short
           initializations threshold has been reached/exceeded for the
           referred ADSL/ADSL2 or ADSL2 line."
        ::= { adsl2Notifications 16 }

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

    adsl2LineStatusChangeAtur NOTIFICATION-TYPE
        OBJECTS
        {
        adsl2LineStatusAtur
        }
        STATUS   current

```
         DESCRIPTION
           "This notification indicates that a status change is
            detected for the referred ATU-R."
         ::= { adsl2Notifications 18 }



         -- conformance information

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

         adsl2LineMibCompliance MODULE-COMPLIANCE
            STATUS  current
            DESCRIPTION
                "The compliance statement for SNMP entities which
                manage ADSL2 interfaces."
            MODULE  -- this module
            MANDATORY-GROUPS
                {
                adsl2LineGroup,
                adsl2ChannelStatusGroup,
                adsl2SCStatusGroup,
                adsl2LineInventoryGroup,
                adsl2LineConfTemplateGroup,
                adsl2LineConfProfGroup,
                adsl2LineConfProfModeSpecGroup,
                adsl2ChConfProfileGroup,
                adsl2LineAlarmConfTemplateGroup,
                adsl2PMLineCurrGroup,
                adsl2PMLineCurrInitGroup,
                adsl2PMLineHist15MinGroup,
                adsl2PMLineHist1DayGroup,
                adsl2PMLineInitHist15MinGroup,
                adsl2PMLineInitHist1DayGroup,
                adsl2PMChCurrGroup,
                adsl2PMChHist15MinGroup,
                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

        adsl2LineGroup OBJECT-GROUP
           OBJECTS
               {
               adsl2LineCnfgTemplate,
               adsl2LineAlarmCnfgTemplate,
               adsl2LineCmndConfPmsf,
               adsl2LineCmndConfLdsf,
               adsl2LineCmndConfLdsfFailReason,
               adsl2LineCmndAutomodeColdStart,
               adsl2LineStatusAtuTransSys,
               adsl2LineStatusPwrMngState,
               adsl2LineStatusInitResult,
               adsl2LineStatusLastStateDs,
               adsl2LineStatusLastStateUs,
               adsl2LineStatusAtur,
               adsl2LineStatusAtuc,
               adsl2LineStatusLnAttenDs,
               adsl2LineStatusLnAttenUs,
               adsl2LineStatusSigAttenDs,
               adsl2LineStatusSigAttenUs,
               adsl2LineStatusSnrMarginDs,
               adsl2LineStatusSnrMarginUs,
               adsl2LineStatusAttainableRateDs,
               adsl2LineStatusAttainableRateUs,
               adsl2LineStatusActPsdDs,
               adsl2LineStatusActPsdUs,
               adsl2LineStatusActAtpDs,
               adsl2LineStatusActAtpUs
               }
           STATUS     current
           DESCRIPTION
               "The group of configuration, status, and commands objects
               on the line level."
           ::= { adsl2Groups 1 }
```

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

        adsl2ChannelStatusAtmGroup OBJECT-GROUP
           OBJECTS
               {
               adsl2ChStatusAtmStatus
               }
           STATUS   current
           DESCRIPTION
               "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 }

    adsl2LineConfTemplateGroup OBJECT-GROUP
        OBJECTS
            {
            adsl2LConfTempLineProfile,
            adsl2LConfTempChan1ConfProfile,
            adsl2LConfTempChan1RaRatioDs,
            adsl2LConfTempChan1RaRatioUs,
            adsl2LConfTempChan2ConfProfile,
            adsl2LConfTempChan2RaRatioDs,
            adsl2LConfTempChan2RaRatioUs,
            adsl2LConfTempChan3ConfProfile,
            adsl2LConfTempChan3RaRatioDs,
            adsl2LConfTempChan3RaRatioUs,
            adsl2LConfTempChan4ConfProfile,
            adsl2LConfTempChan4RaRatioDs,
            adsl2LConfTempChan4RaRatioUs,
            adsl2LConfTempRowStatus
            }
```

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

         adsl2LineConfProfGroup OBJECT-GROUP
             OBJECTS
                 {
                 adsl2LConfProfScMaskDs,
                 adsl2LConfProfScMaskUs,
                 adsl2LConfProfRfiBandsDs,
                 adsl2LConfProfRaModeDs,
                 adsl2LConfProfRaModeUs,
                 adsl2LConfProfTargetSnrmDs,
                 adsl2LConfProfTargetSnrmUs,
                 adsl2LConfProfMaxSnrmDs,
                 adsl2LConfProfMaxSnrmUs,
                 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,
       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,
            adsl2PMLHist15MFecs,
            adsl2PMLHist15MEs,
            adsl2PMLHist15MSes,
            adsl2PMLHist15MLoss,
            adsl2PMLHist15MUas,
            adsl2PMLHist15MValidInterval
            }
        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 }

    adsl2PMLineInitHist15MinGroup 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 }

    adsl2PMLineInitHist15MinShortGroup OBJECT-GROUP
        OBJECTS
```

```
             {
             adsl2PMLHistInit15MShortInits,
             adsl2PMLHistInit15MFailedShortInits
             }
        STATUS      current
        DESCRIPTION
          "The group of PM counters for the previous 15 minutes
          intervals short initializations."
        ::= { adsl2Groups 24 }

    adsl2PMLineInitHist1DayGroup OBJECT-GROUP
        OBJECTS
             {
             adsl2PMLHistinit1DMonitoredTime,
             adsl2PMLHistinit1DFullInits,
             adsl2PMLHistinit1DFailedFullInits,
             adsl2PMLHistinit1DValidInterval
             }
        STATUS      current
        DESCRIPTION
          "The group of PM counters for the previous 24 hours
          intervals full initializations."
        ::= { adsl2Groups 25 }

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

    adsl2PMChCurrGroup OBJECT-GROUP
        OBJECTS
             {
             adsl2PMChCurrValidIntervals,
             adsl2PMChCurrInvalidIntervals,
             adsl2PMChCurr15MTimeElapsed,
             adsl2PMChCurr15MCodingViolations,
             adsl2PMChCurr15MCorrectedBlocks,
             adsl2PMChCurr1DayValidIntervals,
             adsl2PMChCurr1DayInvalidIntervals,
             adsl2PMChCurr1DayTimeElapsed,
             adsl2PMChCurr1DayCodingViolations,
```

```
            adsl2PMChCurr1DayCorrectedBlocks
            }
        STATUS      current
        DESCRIPTION
          "The group of objects that report the channel level
           counters for current PM intervals."
        ::= { adsl2Groups 27 }

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

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

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

```
    adsl2ThreshNotificationGroup NOTIFICATION-GROUP
       NOTIFICATIONS
       {
       adsl2LinePerfFECSThreshAtuc,
       adsl2LinePerfFECSThreshAtur,
       adsl2LinePerfESThreshAtuc,
       adsl2LinePerfESThreshAtur,
       adsl2LinePerfSESThreshAtuc,
       adsl2LinePerfSESThreshAtur,
       adsl2LinePerfLOSSThreshAtuc,
       adsl2LinePerfLOSSThreshAtur,
       adsl2LinePerfUASThreshAtuc,
       adsl2LinePerfUASThreshAtur,
       adsl2LinePerfCodingViolationsThreshAtuc,
       adsl2LinePerfCodingViolationsThreshAtur,
       adsl2LinePerfCorrectedThreshAtuc,
       adsl2LinePerfCorrectedThreshAtur,
       adsl2LinePerfFailedFullInitThresh,
       adsl2LinePerfFailedShortInitThresh
       }
       STATUS     current
       DESCRIPTION
         "This group supports notifications of significant conditions
          associated with ADSL2 lines."
       ::= { adsl2Groups 31 }

    adsl2StatusChangeNotificationGroup NOTIFICATION-GROUP
       NOTIFICATIONS
       {
       adsl2LineStatusChangeAtuc,
       adsl2LineStatusChangeAtur
       }
       STATUS     current
       DESCRIPTION
         "This group supports notifications of thresholds crossing
          associated with ADSL2 lines."
       ::= { adsl2Groups 32 }

 END
```

4. Implementation Analysis

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

including the following aspects:

o Though the configuration templates/profiles allow referring to 1-4
   bearer channels, ADSL links are limited to 2 channels at most
o Though the channel configuration profile allows higher data rates,
   ADSL links are limited to downstream/upstream data rate as assumed
   in RFC 2662 [RFC2662]
o The Impulse Noise Protection (INP) configuration parameters are
   given by minimum protection and maximum delay parameters.
o The line configuration profile includes a sub-table that addresses
   mode-specific parameters. For ADSL links, the management
   application SHOULD create a row in that table for the 'adsl' mode.
o The line configuration profile includes parameters that are
   irrelevant for ADSL links. Similarly, many status parameters in
   the MIB are irrelevant for certain ADSL modes. Therefore, it is
   advised to consult with ITU G.997.1 standard [G.997.1] regarding
   the scope and relevance of each parameter in this MIB.

5. Security Considerations

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

o 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.

o 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
*   adsl2LConfProfRfiBandsDs
*   adsl2LConfProfRaModeDs
*   adsl2LConfProfRaModeUs
*   adsl2LConfProfRaUsNrmDs
*   adsl2LConfProfRaUsNrmUs
*   adsl2LConfProfRaUsTimeDs
*   adsl2LConfProfRaUsTimeUs
*   adsl2LConfProfRaDsNrmsDs
*   adsl2LConfProfRaDsNrmsUs
*   adsl2LConfProfRaDsTimeDs
*   adsl2LConfProfRaDsTimeUs
*   adsl2LConfProfTargetSnrmDs
*   adsl2LConfProfTargetSnrmUs
*   adsl2LConfProfMaxSnrmDs
*   adsl2LConfProfMaxSnrmUs
*   adsl2LConfProfMinSnrmDs
*   adsl2LConfProfMinSnrmUs
*   adsl2LConfProfMsgMinUs
*   adsl2LConfProfMsgMinDs
*   adsl2LConfProfAtuTransSysEna
*   adsl2LConfProfPmMode
*   adsl2LConfProfL0Time
*   adsl2LConfProfL2Time
*   adsl2LConfProfL2Atpr
*   adsl2LConfProfL2Atprt
*   adsl2LConfProfRowStatus

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

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

   o adsl2LineConfProfModeSpecTable

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

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

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

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

   o adsl2ChConfProfileTable

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

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

        * adsl2ChConfProfDsDataRateUs
        * adsl2ChConfProfImaEnabled
        * adsl2ChConfProfRowStatus

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

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

   o adsl2LineAlarmConfTemplateTable

      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.

   o adsl2LineAlarmConfProfileTable

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

        * adsl2LineAlarmConfProfileAtucThresh15MinFecs

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

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

      Changing a threshold value could also have an impact on the amount
      of notifications the agent sends. The Notifications Section of
      this document has a paragraph which provides general guidance on
      the rate limiting of notifications. Agent implementations not
      providing rate limiting could result in notifications being
      generated at an uncontrolled rate. Unauthorized changes to a
      threshold value could result in an undesired notification rate.

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

   o adsl2ChAlarmConfProfileTable

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

      *   adsl2ChAlarmConfProfileAtucThresh15MinCodingViolations
      *   adsl2ChAlarmConfProfileAtucThresh15MinCorrected
      *   adsl2ChAlarmConfProfileAturThresh15MinCodingViolations
      *   adsl2ChAlarmConfProfileAturThresh15MinCorrected
      *   adsl2ChAlarmConfProfileRowStatus
      *   adsl2LineAlarmConfProfileAturThresh15MinFecs
      *   adsl2LineAlarmConfProfileAturThresh15MinEs

       *   adsl2LineAlarmConfProfileAturThresh15MinSes
       *   adsl2LineAlarmConfProfileAturThresh15MinLoss
       *   adsl2LineAlarmConfProfileAturThresh15MinUas
       *   adsl2LineAlarmConfProfileThresh15MinFailedFullInt
       *   adsl2LineAlarmConfProfileThresh15MinFailedShrtInt
       *   adsl2LineAlarmConfProfileRowStatus

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

       Changing a threshold value could also have an impact on the amount
       of notifications the agent sends. The Notifications Section of
       this document has a paragraph which provides general guidance on
       the rate limiting of notifications. Agent implementations not
       providing rate limiting could result in notifications being
       generated at an uncontrolled rate. Unauthorized changes to a
       threshold value could result in an undesired notification rate.

       Unauthorized changes to row status could result in unwanted
       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:

   o   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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