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Definitions of Managed Objects for the ADSL Lines

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

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1. Abstract

This document defines a standard SNMP MIB for ADSL lines based on the ADSL Forum standard data model [9]. The ADSL standard describes ATU-C and ATU-R as two sides of the ADSL line. This MIB covers both ATU-C and ATU-R agent's perspectives. Each instance defined in the

MIB represents a single ADSL line.

It should be noted that the ADSL Forum Network Management Working Group provided input towards the content of this document. See the Acknowledgement Section for a list of individuals who made this document possible.

2. The SNMP Network Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in RFC 2571 [13].
- o Mechanisms for describing and naming objects and events for the purpose of management. The first version of this Structure of Management Information (SMI) is called SMIV1 and described in STD 16, RFC 1155 [14], STD 16, RFC 1212 [15] and RFC 1215 [16]. The second version, called SMIV2, is described in STD 58, RFC 2578 [1], STD 58, RFC 2579 [2] and STD 58, RFC 2580 [17].
- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15, RFC 1157 [7]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in RFC 1901 [18] and RFC 1906 [19]. The third version of the message protocol is called SNMPv3 and described in RFC 1906 [19], RFC 2572 [20] and RFC 2574 [21].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15, RFC 1157 [7]. A second set of protocol operations and associated PDU formats is described in RFC 1905 [8].
- o A set of fundamental applications described in RFC 2573 [22] and the view-based access control mechanism described in RFC 2575 [23].

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

3. Object Definitions

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. Objects in the MIB are defined using the extended subset of Abstract Syntax Notation One (ASN.1) defined in the SMI. In particular, each object type is named by an OBJECT IDENTIFIER, an administratively assigned name. The object type together with an object instance serves to uniquely identify a specific instantiation of the object. For human convenience, we often use a textual string, termed the descriptor, to also refer to the object type.

4. Relationship of the ADSL LINE MIB with standard MIBs

This section outlines the relationship of ADSL Line MIB with other MIBs described in RFCs and in their various degrees of "standardization".

4.1 Use of the IfTable

The ADSL LINE MIB specifies the detailed attributes of a data interface. As such, it needs to integrate with IF-MIB [5]. The IANA has assigned the following ifType(s) relative to ADSL:

```
IANAifType ::= TEXTUAL-CONVENTION
```

```
    . . .
```

```
SYNTAX INTEGER {
```

```
    . . .
```

```
    adsl(94),      -- Asymmetric Digital Subscriber Loop
```

```
    . . .
```

```
    adslInterleave(124),  -- ADSL Interleaved Channel
```

```
    adslFast(125),       -- ADSL Fast Channel
```

```
    . . .
```

```
}
```

Interfaces of each of these types are modeled by this document. Most MIB tables in this document represent information of one of these interface types and are indexed by ifIndex. Remaining are 'profile' tables which may be accessed by the profileIndex. This is explained in more detail in section 5.4 Profiles.

4.1.1 ADSL Interface Types

As shown below, three ADSL interface types are defined in this document, namely physical, interleaved channel, and fast channel. The physical interface represents characteristics of the physical media associated with both the ATUC and ATUR. The interleaved and fast channel interface represent the characteristics of the two types of ADSL channels.

For each ADSL Line, a physical interface always exists. Depending on which ADSL operational configuration is present (as listed in Figure 5), the channel interfaces (fast or interleaved) may or may not exist.

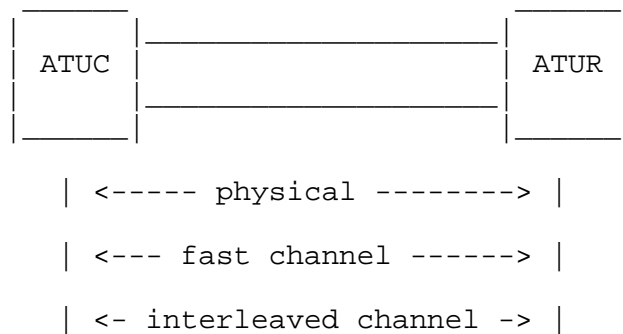


Figure 1: ADSL Model

4.1.2 Use of IF-MIB (Interface MIB RFC 2233) [5]

The following attributes are part of the required ifGeneralInformationGroup object group specified in RFC 2233 [5], and are not duplicated in the ADSL MIB. Keep in mind that these objects apply to the agent's view of the line.

ifTable Object	Use for ADSL
=====	=====
ifIndex	Interface index.
ifDescr	See interfaces MIB [5]
ifType	physical - adsl(94) fast - adslFast(125) interleaved - adslInterleave(124)
ifSpeed	Transmit rate from the perspective of the agent. physical - line rate fast - channel rate interleaved - channel rate
ifPhysAddress	This object should have an octet string with zero length.
ifAdminStatus	See interfaces MIB [5]
ifOperStatus	See interfaces MIB [5] Supplemented by adslAturCurrStatus and adslAturCurrStatus
ifLastChange	See interfaces MIB [5]
ifName	See interfaces MIB [5]
ifLinkUpDownTrapEnable	See interfaces MIB [5] Default set as follows: physical - enabled(1) fast - disabled(2) interleaved - disabled(2)
ifHighSpeed	Speed of line in Mega-bits per second (ifSpeed/1,000,000)
ifConnectorPresent	See interfaces MIB [5] Default set as follows: physical - true(1) fast - false(2)

```

interleaved    - false(2)

ifAlias        See interfaces MIB [5]

ifTableLastChange See interfaces MIB [5]

```

=====

Figure 2: Use of ifTable Objects: ifGeneralInformationGroup

Use of the ifStackTable to associate the entries for physical, fast, interleaved channels, and higher layers (e.g., ATM) is shown below in figure 3. Use of ifStackTable is necessary, because configuration information is stored in profile tables associated with the physical-layer ifEntry only. The channels' ifEntry's need the ifStackTable to find their associated physical-layer entry and thus their configuration parameters. (See Profile section, 5.4).

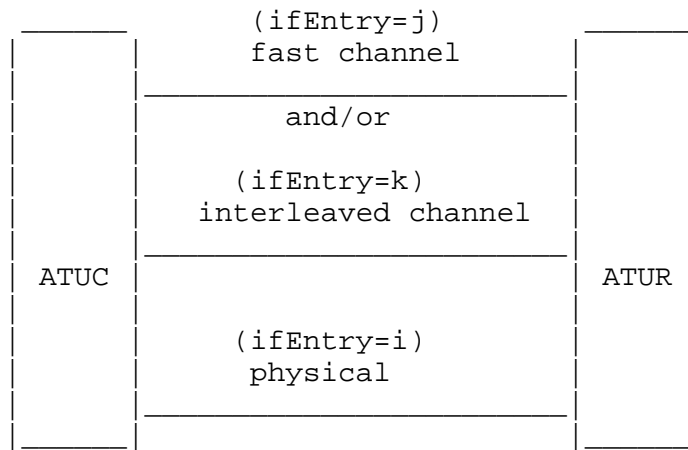


Figure 3: Use of ifStackTable (part 1)

The ifStackTable is then used to show the relationships between the various ADSL interfaces, as illustrated below in figure 4.

HigherLayer	LowerLayer
j	i
k	i

Figure 4: Use of ifStackTable (part 2)

The ifRcvAddressTable is not applicable for ADSL interfaces.

4.2 Relationship with RFC 2037 [25]

Implementation of the Entity MIB [25] is optional. It in no way alters the information required in the `adslLineMib`, nor does it alter the relationship with IF-MIB.

The Entity MIB introduces a standardized way of presenting the components of complex systems, such as a Digital Subscriber Line Access Multiplexer (DSLAM), that may contain multiple racks, shelves, line cards, and/or ports. The Entity MIB's main goal is to present these system components, their containment relationship, and mapping information with other MIBs such as the Interface MIB and the `adslLineMib`.

If ATU-C agent is implemented, the Entity MIB should include entities for the ATU-C in the `entPhysicalTable`. The MIB's `entAliasMappingTable` would contain mapping information identifying the 'ifIndex' object associated with each ATU-C. However, if ATU-R agent is implemented, the Entity MIB should include entities for the ATU-R in the `entPhysicalTable`. In this case, the MIB's `entAliasMappingTable` would contain mapping information identifying the 'ifIndex' object associated with each ATU-R.

Also associating the relationship between the `ifTable` and Entity MIB, the `entPhysicalTable` contains an 'entPhysicalName' object, which approximates the semantics of the 'ifName' object from the Interface MIB.

5. Conventions used in the MIB

5.1 Naming Conventions

- A. `Atuc/Atur` are used for the ATU-C and ATU-R. In other RFCs, these are sometimes referred to as the Near End (Ne) and Far End (Fe) respectively, but not in this document.
- B. The terms, "transmit" and "receive", are from the perspective of the corresponding table's end of the line. For example, in the case of Fast channels, `adslAtucChanConfFastMaxTxRate` defines the "downstream" rate, while `adslAturChanConfFastMaxTxRate` defines the "upstream" rate for a particular channel.
- C. There are two possible channels: fast, and interleaved. None, one or both may be implemented on a particular ADSL Line. Figure 5 illustrates all possible operational configurations.

- D. Lof, Lol, Los, Lpr mean Loss of Framing, Link, Signal, and Power, respectively. Lpr is used by T1E1, so it is used for consistency (rather than Lop).

A Loss of Link condition is declared at the ATU-C if a Loss of Signal is not preceded by a 'dying-gasp' message from the ATU-R. Note that Loss of Link is only supported by the ATU-C.

- E. ES means errored second. An Errored Second is any second containing one or more CRC anomaly, or one or more Los(s) or Severely Errored Frame (Sef) defect(s).

- F. A "block" is a physical-layer 'data buffer' over which CRCs are calculated. For example, in DMT, the block is defined as the ADSL superframe. The block duration is 250 micro-seconds so the block length in bytes, as defined in `adslAtu*ChanCrcBlockLength`, varies with data rate. See Line Code Specific MIBs [11] [12] for more line code specific information.

- G. Atn means Attenuation, Psd is Power Spectral Density and Snr is Signal to Noise Ratio.

- H. LCS means line code specific, e.g.,

- o DMT = Discrete MultiTone
- o CAP = Carrierless Amplitude and Phase modulation and
- o QAM = Quadrature Amplitude Modulation

- I. Vendor (in the Inventory objects) refers to the manufacturer of the ATU-C or ATU-R assembly, not the modem chip vendor. When in doubt, use the manufacturer of the smallest field replaceable unit (e.g., stand-alone modem box, plug-in board).

- J. RADSL - Rate Adaptive Asymmetric Digital Subscriber Loop

5.2 Structure

The MIB has multiple parallel tables. There are tables for:

- o line - common attributes
- o atuc and atur status

- o atuc and atur performance

- Current and up to 96 buckets of 15 min performance history
- Current and Previous 1-day bucket performance history

- o profiles - configuration parameters and alarm parameters

There are separate tables for Physical and Channel layers. Since their attributes are similar, only one set of "channel" tables are defined to be used for both fast and interleaved channels. The corresponding ifType gives the proper interpretation for that ifEntry.

It is intended that Line Code Specific MIBs be located under adslLCSMib. These MIBs will be defined in separate modules.

There could have been fewer tables by combining the ATU-C and ATU-R information into shared tables. However, the tables are more easily read when there are two identical sets of data.

The figure below lists the five possible ADSL operational configurations. (indicated by the value of the adslLineType). In all configurations, the physical line interface entry will exist. However, the existence of the ADSL channel varies in each case, as shown below.

Table	Phys	Fast	Interleaved
No Channels (1)	Y		
Fast Only (2)	Y	Y	
Interleaved Only (3)	Y		Y
Fast or Interleaved (4)	Y	Y	Y
Fast and Interleaved (5)	Y	Y	Y

Figure 5: ADSL Operational configurations

NOTE: In (4), channel exists of either Fast or Interleaved type, but not both. The Manager may select the type of channel to be used.

Depending on which operation configuration exists, some or all ADSL MIB tables could be supported, as shown in below. See Conformance Statements for more information on which objects are mandatory.

Table	Phys	Fast	Interleaved
adslLineTable	Y		
adslAtucPhysTable	Y		
adslAturPhysTable	Y		
adslAtucChanTable		Y	Y
adslAturChanTable		Y	Y
adslAtucPerfDataTable	Y		
adslAturPerfDataTable	Y		
adslAtucIntervalTable	Y		
adslAturIntervalTable	Y		
adslAtucChanPerfDataTable		Y	Y
adslAturChanPerfDataTable		Y	Y
adslAtucChanIntervalTable		Y	Y
adslAturChanIntervalTable		Y	Y

Figure 6: Use of ADSL MIB Tables with various ifIndex values

NOTE: The adslLineConfProfileTable and adslLineAlarmConfProfileTable will be present for all scenarios. See Profile Section of this document for implementation details such as profile creation, assignment, and indexing.

5.2.1 Structure of Conformance Groups

The MIB is organized to cover both ends of the ADSL line, ATU-C and ATU-R. Objects defined can be categorized into two groups: the ATU-C group which provides objects that are supported by ATU-C agents and the ATU-R group which provides objects that are supported by ATU-R agents. These two groups are defined by the conformance section of the MIB. All objects defined in the MIB module are supported by the ATU-C agent and only portions of the objects are supported by the ATU-R agent. Figure 7 lists all tables/objects that are supported by the ATU-R agent.

Table	Objects
adslLineTable	adslLineCoding
adslAtucPhysTable	adslAtucInvVendorID adslAtucInvVersionNumber adslAtucCurrStatus (Partial) adslAtucCurrOutputPwr adslAtucCurrAttainableRate
adslAturPhysTable	all are supported
adslAtucChanTable	all except adslAtucChanCrcBlockLength are supported
adslAtucPerfDataTable	all except adslAtucPerfLols,
adslAtucPerfLprs	adslAtucPerfCurrl5MinLols, adslAtucPerfCurrl5MinLprs, adslAtucPerfCurrlDayLols, adslAtucPerfCurrlDayLprs, adslAtucPerfPrev1DayLols and adslAtucPerfPrev1DayLprs are supported
adslAturPerfDataTable	all are supported
adslAtucIntervalTable	adslAtucIntervalLofs adslAtucIntervalLoss adslAtucIntervalESS adslAtucIntervalInits adslAtucIntervalValidData
adslAturIntervalTable	all are supported
adslAtucChanPerfDataTable	all are supported
adslAturChanPerfDataTable	all are supported
adslAtucChanIntervalTable	all are supported
adslAturChanIntervalTable	all are supported
adslLineConfProfileTable	not supported
adslLineAlarmConfProfileTable	all are supported except adslAtucThresh15MinLols and adslAtucThresh15MinLprs

Figure 7: MIB Tables and Objects Supported by the ATU-R Agent

All traps supported by the ATU-R agent are also listed:

```
adslAtucPerfLofsThreshTrap
adslAtucPerfLossThreshTrap
adslAtucPerfESsThreshTrap
adslAtucRateChangeTrap
adslAturPerfLofsThreshTrap
adslAturPerfLossThreshTrap
adslAturPerfLprsThreshTrap
adslAturPerfESsThreshTrap
adslAturRateChangeTrap
```

5.3 Counters, Interval Buckets and Thresholds

For physical-level ES, Los, Lof, Lol, Lpr and line initialization attempts, there are event counters, current 15-minute and one (up to 96) 15-minute history bucket(s) of "interval-counters", as well as current and previous 1-day interval-counters. Each physical-layer current 15-minute event bucket has threshold trap.

At the channel level, there are counters for total received blocks, received-and-corrected blocks, received-but-uncorrectable blocks, and transmitted blocks. There are the same set of 15-minute and 1-day buckets as at the physical-layer.

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

Separate tables are provided for the 96 interval-counters. They are indexed by {ifIndex, AdslAtu*IntervalNumber}.

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

The 15-minute event counters are of type PerfCurrentCount and PerfIntervalCount. The 1-day event counters are of type AdslPerfCurrDayCount and AdslPerfPrevDayCount. Both 15-minute and 1-day time elapsed counters are of type AdslPerfTimeElapsed.

5.4 Profiles

As a managed node can handle a large number of ATU-Cs (e.g., hundreds or perhaps thousands of ADSL lines), provisioning every parameter on every ATU-C may become burdensome. In response, two MIB tables have been created to define ADSL equipment configuration data profiles, as well as a mechanism to associate the equipment to these profiles.

Profile tables may be implemented in one of two ways, but not simultaneously:

- o MODE-I: Dynamic Profiles - one profile shared by one or multiple ADSL lines.
- o MODE-II: Static Profiles - one profile per ADSL physical line always.

5.4.1 MODE-I : Dynamic Profiles

Implementations using this mode will enable the manager to dynamically create and delete profiles as needed. The index of the profile is an locally-unique administratively assigned name for the profile having the textual convention 'SnmpAdminString' (RFC2571 [13]).

One or more ADSL lines may be configured to share parameters of a single profile (e.g., `adslLineConfProfileName = 'silver'`) by setting its `adslLineConfProfile` objects to the index value of this profile. If a change is made to the profile, all lines that refer to it will be re-configured to the changed parameters. Before a profile can be deleted or taken out of service it must be first unreferenced from all associated lines.

This figure below shows an example of how this mode can be implemented. In the example, ADSL lines '1' and 'x' share the configuration of the 'silver' profile, while line '2' uses the 'platinum' profile. The 'gold' profile has no lines associated with it.

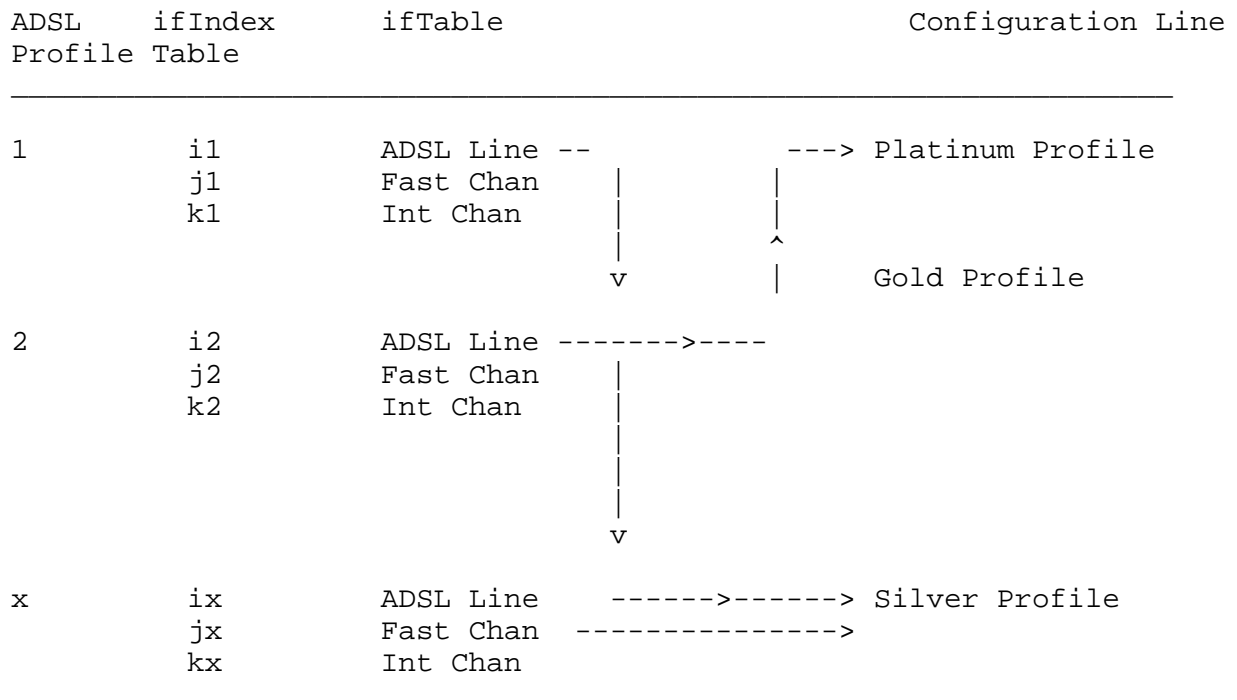


Figure 8: Use of Dynamic Profiles: MODE-I

In the figure above, note that three interface entries of an ADSL line, physical, fast channel, and interleaved channel, are represented by 'i', 'j', and 'k'. Only the physical-layer entry 'i' contains an `adslLineTable` entry, therefore only those entries contain pointers to the `adslLineConfProfileTable`. The `ifStackTable` (see [rfc2233 \[5\]](#)) can be used to link the channel entries to the corresponding physical-layer entry to get the channel's configuration parameters. See figure 4 for use of the `ifStackTable`.

The same characteristics and mechanisms are present for the alarm profile type. There is no requirement that its index be the same as the configuration profile.

Implementations of this mode, must provide a default profile whose name is 'DEFVAL' for each profile type: Configuration and Alarm. The values of the associated parameters will be vendor specific unless otherwise indicated in this document. Before a line's profiles have been set, these profiles will be automatically used by setting `adslLineConfProfile` and `adslLineAlarmConfProfile` to 'DEFVAL'.

In this mode, profiles are created, assigned, and deleted dynamically using these four objects: `adslLineConfProfile`, `adslLineConfProfileRowStatus`, `adslLineAlarmConfProfile`, and `adslLineAlarmConfProfileRowStatus`.

5.4.2 MODE-II : Static Profiles

Implementations with this mode will automatically create a profile one-for-one with each ADSL line physical entry. The name of this profile is a system generated read-only object whose value is equivalent to the index of the physical line. The Agent will not allow a Manager to create/delete profiles in this mode. Therefore, `adslLineConfProfile`, `adslLineConfProfileRowStatus`, `adslLineAlarmConfProfile`, and `adslLineAlarmConfProfileRowStatus` objects have minimal value in this mode and are read-only.

The figure below shows an example of this mode. In the example, ADSL lines '1', '2', and 'x' each have their own profiles.

ADSL Profile	ifIndex Table	ifTable	Configuration Line
1	i1 j1 k1	ADSL Line Fast Chan Int Chan	-----> Profile
2	i2 j2 k2	ADSL Line Fast Chan Int Chan	-----> Profile
x	ix jx kx	ADSL Line Fast Chan Int Chan	-----> Profile

Figure 9: Use of Static Profiles: MODE II

5.5 Traps

These SNMP traps are required: `coldStart` / `warmStart` (per [6]) -- which are per agent (e.g., per DSLAM in such a device), and `linkUp` / `linkDown` (per [5]) -- which are per interface (i.e., ADSL line). Note: RFC 2233 [5] recommends that `linkUp` / `linkDown` only be used at a physical-layer `ifEntry`, as discussed above.

A linkDown trap is generated whenever any of Lof, Los, Lol, Loss of Signal Quality, or Lpr events occurs. At this operational point, a manager can use adslAtu*CurrStatus for additional detailed information. The corresponding linkUp trap is sent when all link failure conditions are cleared.

The traps defined in this MIB are for initialization failure, rate change, and for the threshold crossings associated with the following events: Lofs, Lols, Loss, Lprs, and ESs. Each threshold has its own enable/threshold value. When that value is 0, the trap is disabled.

The current status objects (adslAtu*CurrStatus) indicate, through a bitmask, all outstanding error conditions or that the line is operational. Note that each object claims to represent the status of the modem at that end of the line. However, since the SNMP agent likely co-resides with only one end of the line, the corresponding far-end current status object may be incomplete. For example, when there are errors on the line, the far-end ATU may not be able to correctly report this condition. Therefore, not all conditions are included in its current status.

A threshold trap occurs whenever the corresponding current 15-minute interval error counter becomes equal and/or exceeds to the threshold value. One trap will be sent per interval per interface. Since the current 15-minute counter are reset to 0 every 15 minutes, if the condition persists, the trap may recur as often as every 15 minutes. For example, to get a trap whenever a "loss of" event occurs (but at most once every 15 minutes), set the corresponding "Thresh15Min" to 1. The agent will generate a trap when the event originally occurs.

Note that the NMS will get a linkDown trap, as well, if enabled. 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 trap will be sent again.

The rate change trap is invoked when the transmit rate on a channel either increases by adsl(x)Thresh(y)RateUp or decreases by adsl(x)Thresh(y)RateDown. The trap is per direction:(x) == Atuc or Atur, and per channel: (y) == Fast or Interleave. In other words, the trap is sent whenever the rate changes in either direction on either channel and:

$$\text{CurrTxRate} \geq \text{PrevTxRate} \text{ plus ThreshRateUp}$$

or

$$\text{CurrTxRate} \leq \text{PrevTxRate} \text{ minus ThreshRateDown}$$

No trap is sent on initialization.

It can be disabled by setting the Up (and/or) Down threshold rates to 0.

The PrevTxRate object is set to the current value at initialization and when a trap is sent. Thus rate changes are cumulative until the total change reaches the threshold.

6. Conformance and Compliance

See the conformance and compliance statements within the information module.

7. Definitions

ADSL-TC-MIB DEFINITIONS ::= BEGIN

IMPORTS

transmission,	
MODULE-IDENTITY, Gauge32	FROM SNMPv2-SMI
TEXTUAL-CONVENTION	FROM SNMPv2-TC;

adsltcMIB MODULE-IDENTITY

LAST-UPDATED "9908190000Z"

ORGANIZATION "IETF ADSL MIB Working Group"

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DESCRIPTION

"The MIB module which provides a ADSL
Line Coding Textual Convention to be used
by ADSL Lines."

-- Revision history

REVISION "9908190000Z" -- 19 August 1999, midnight

DESCRIPTION "Initial Version, published as RFC 2662"

::= { transmission 94 2 } -- adslMIB 2

AdslLineCodingType ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"This data type is used as the syntax for the ADSL
Line Code."

SYNTAX INTEGER {
other(1), -- none of the following
dmt (2), -- Discrete MultiTone
cap (3), -- Carrierless Amplitude & Phase modulation
qam (4) -- Quadrature Amplitude Modulation
}

AdslPerfCurrDayCount ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A counter associated with interface performance
measurements in a current 1-day (24 hour) measurement
interval."

The value of this counter starts at zero at the
beginning of an interval and is increased when
associated events occur, until the end of the
1-day interval. At that time the value of the
counter is stored in the previous 1-day history
interval, if available, and the current interval
counter is restarted at zero.

In the case where the agent has no valid data available
for this interval the corresponding object
instance is not available and upon a retrieval
request a corresponding error message shall be
returned to indicate that this instance does
not exist (for example, a noSuchName error for
SNMPv1 and a noSuchInstance for SNMPv2 GET
operation)."

SYNTAX Gauge32

AdslPerfPrevDayCount ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"A counter associated with interface performance measurements during the most previous 1-day (24 hour) measurement interval. The value of this counter is equal to the value of the current day counter at the end of its most recent interval.

In the case where the agent has no valid data available for this interval the corresponding object instance is not available and upon a retrieval request a corresponding error message shall be returned to indicate that this instance does not exist (for example, a noSuchName error for SNMPv1 and a noSuchInstance for SNMPv2 GET operation)."

SYNTAX Gauge32

AdslPerfTimeElapsed ::= TEXTUAL-CONVENTION

STATUS current

DESCRIPTION

"The number of seconds that have elapsed since the beginning of the current measurement period. If, for some reason, such as an adjustment in the system's time-of-day clock, the current interval exceeds the maximum value, the agent will return the maximum value."

SYNTAX Gauge32

END

ADSL-LINE-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE,	
Counter32, Gauge32,	
NOTIFICATION-TYPE,	
transmission, Unsigned32	FROM SNMPv2-SMI
RowStatus,	
TruthValue, VariablePointer	FROM SNMPv2-TC
MODULE-COMPLIANCE, OBJECT-GROUP,	
NOTIFICATION-GROUP	FROM SNMPv2-CONF
ifIndex	FROM IF-MIB
PerfCurrentCount,	
PerfIntervalCount	FROM PerfHist-TC-MIB

```
SnmpAdminString                               FROM SNMP-FRAMEWORK-MIB
AdslPerfCurrDayCount,
AdslPerfPrevDayCount,
AdslPerfTimeElapsed,
AdslLineCodingType                             FROM ADSL-TC-MIB
;
```

adslMIB MODULE-IDENTITY

LAST-UPDATED "9908190000Z"

ORGANIZATION "IETF ADSL MIB Working Group"

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IETF ADSL MIB Working Group (adsl@xlist.agcs.com)
"

DESCRIPTION

"The MIB module defining objects for the management of a pair of
ADSL modems at each end of the ADSL line. Each such line has

an entry in an ifTable which may include multiple modem lines. An agent may reside at either end of the ADSL line however the MIB is designed to require no management communication between them beyond that inherent in the low-level ADSL line protocol. The agent may monitor and control this protocol for its needs.

ADSL lines may support optional Fast or Interleaved channels. If these are supported, additional entries corresponding to the supported channels must be created in the ifTable. Thus an ADSL line that supports both channels will have three entries in the ifTable, one for each physical, fast, and interleaved, whose ifType values are equal to adsl(94), fast(125), and interleaved(124), respectively. The ifStackTable is used to represent the relationship between the entries.

Naming Conventions:

```

    Atuc -- (ATUC) modem at near (Central) end of line
    Atur -- (ATUR) modem at Remote end of line
    Curr -- Current
    Prev -- Previous
    Atn -- Attenuation
    ES -- Errored Second.
    LCS -- Line Code Specific
    Lof -- Loss of Frame
    Lol -- Loss of Link
    Los -- Loss of Signal
    Lpr -- Loss of Power
    xxxs-- interval of Seconds in which xxx occurs
           (e.g., xxx=Lof, Los, Lpr)
    Max -- Maximum
    Mgn -- Margin
    Min -- Minimum
    Psd -- Power Spectral Density
    Snr -- Signal to Noise Ratio
    Tx  -- Transmit
    Blks-- Blocks, a data unit, see
           adslAtuXChanCrcBlockLength

```

"

```

-- Revision history
REVISION      "9908190000Z"  -- 19 August 1999, midnight
DESCRIPTION    "Initial Version, published as RFC 2662"

```

```
::= { transmission 94 }
```

```
adslLineMib OBJECT IDENTIFIER ::= { adslMIB 1 }
```

```
adslMibObjects OBJECT IDENTIFIER ::= { adslLineMib 1 }
```

```

-- objects
  adslLineTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF AdslLineEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
      "This table includes common attributes describing
       both ends of the line. It is required for all ADSL
       physical interfaces. ADSL physical interfaces are
       those ifEntries where ifType is equal to adsl(94)."
```

::= { adslMibObjects 1 }

```

  adslLineEntry OBJECT-TYPE
    SYNTAX      AdslLineEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION   "An entry in adslLineTable."
    INDEX        { ifIndex }
```

::= { adslLineTable 1 }

```

AdslLineEntry ::=
  SEQUENCE {
    adslLineCoding      AdslLineCodingType,
    adslLineType         INTEGER,
    adslLineSpecific     VariablePointer,
    adslLineConfProfile  SnmpAdminString,
    adslLineAlarmConfProfile SnmpAdminString
  }
```

```

  adslLineCoding OBJECT-TYPE
    SYNTAX      AdslLineCodingType
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
      "Specifies the ADSL coding type used on this
       line."
```

::= { adslLineEntry 1 }

```

  adslLineType OBJECT-TYPE
    SYNTAX      INTEGER {
      noChannel (1),           -- no channels exist
      fastOnly (2),           -- fast channel exists only
      interleavedOnly (3),    -- interleaved channel exists
                               -- only
      fastOrInterleaved (4),  -- either fast or interleaved
                               -- channels can exist, but
                               -- only one at any time
      fastAndInterleaved (5)  -- both fast or interleaved
```

```

-- channels exist
}
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
    "Defines the type of ADSL physical line
    entity that exists, by defining whether and how
    the line is channelized.  If the line is channelized,
    the value will be other than noChannel(1).  This
    object defines which channel type(s) are supported.

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

```

 ::= { adslLineEntry 2 }

adslLineSpecific OBJECT-TYPE
    SYNTAX      VariablePointer
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "OID instance in vendor-specific MIB. The Instance may
        be used to determine shelf/slot/port of the ATUC
        interface in a DSLAM."
 ::= { adslLineEntry 3 }

adslLineConfProfile OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (1..32))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The value of this object identifies the row
        in the ADSL Line Configuration Profile Table,
        (adslLineConfProfileTable), which applies for this
        ADSL line, and channels if applicable.

        For 'dynamic' mode, in the case which the
        configuration profile has not been set, the
        value will be set to 'DEFVAL'.

        If the implementator of this MIB has chosen not
        to implement 'dynamic assignment' of profiles, this
        object's MIN-ACCESS is read-only."
 ::= { adslLineEntry 4 }

adslLineAlarmConfProfile OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (1..32))
    MAX-ACCESS  read-write
```

```

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

    For 'dynamic' mode, in the case which the
    alarm profile has not been set, the
    value will be set to 'DEFVAL'.

    If the implementator of this MIB has chosen not
    to implement 'dynamic assignment' of profiles, this
    object's MIN-ACCESS is read-only."
::= { adslLineEntry 5 }

adslAtucPhysTable          OBJECT-TYPE
    SYNTAX                  SEQUENCE OF AdslAtucPhysEntry
    MAX-ACCESS              not-accessible
    STATUS                  current
    DESCRIPTION
        "This table provides one row for each ATUC.
        Each row contains the Physical Layer Parameters
        table for that ATUC. ADSL physical interfaces are
        those ifEntries where ifType is equal to adsl(94).
    ::= { adslMibObjects 2 }

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

AdslAtucPhysEntry ::=
    SEQUENCE {
        adslAtucInvSerialNumber      SnmpAdminString,
        adslAtucInvVendorID          SnmpAdminString,
        adslAtucInvVersionNumber     SnmpAdminString,
        adslAtucCurrSnrMgn           INTEGER,
        adslAtucCurrAtn              Gauge32,
        adslAtucCurrStatus           BITS,
        adslAtucCurrOutputPwr        INTEGER,
        adslAtucCurrAttainableRate   Gauge32
    }

-- inventory group

```



```

--
-- These items should describe the lowest level identifiable
-- component, be it a stand-alone modem, a card in a rack,
-- a child-board, etc.
--
adslAtucInvSerialNumber OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (0..32))
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The vendor specific string that identifies the
        vendor equipment."
    ::= { adslAtucPhysEntry 1 }

adslAtucInvVendorID OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (0..16))
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The vendor ID code is a copy of the binary
        vendor identification field defined by the
        PHY[10] and expressed as readable characters."

    REFERENCE "ANSI T1.413[10]"
    ::= { adslAtucPhysEntry 2 }

adslAtucInvVersionNumber OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (0..16))
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The vendor specific version number sent by this ATU
        as part of the initialization messages. It is a copy
        of the binary version number field defined by the
        PHY[10] and expressed as readable characters."
    REFERENCE "ANSI T1.413[10]"
    ::= { adslAtucPhysEntry 3 }

-- current status group
--
adslAtucCurrSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (-640..640)
    UNITS        "tenth dB"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Noise Margin as seen by this ATU with respect to its
        received signal in tenth dB."

```

```

 ::= { adslAtucPhysEntry 4 }

adslAtucCurrAtn OBJECT-TYPE
    SYNTAX      Gauge32(0..630)
    UNITS        "tenth dB"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Measured difference in the total power transmitted by
         the peer ATU and the total power received by this ATU."
 ::= { adslAtucPhysEntry 5 }

adslAtucCurrStatus OBJECT-TYPE
    SYNTAX      BITS {
        noDefect(0),
        lossOfFraming(1),
        lossOfSignal(2),
        lossOfPower(3),
        lossOfSignalQuality(4),
        lossOfLink(5),
        dataInitFailure(6),
        configInitFailure(7),
        protocolInitFailure(8),
        noPeerAtuPresent(9)
    }
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Indicates current state of the ATUC line.  This is a
         bit-map of possible conditions.  The various bit
         positions are:

0         noDefect                There no defects on the line

1         lossOfFraming            ATUC failure due to not
                                   receiving valid frame.

2         lossOfSignal             ATUC failure due to not
                                   receiving signal.

3         lossOfPower              ATUC failure due to loss of
                                   power.
                                   Note: the Agent may still
                                   function.

4         lossOfSignalQuality      Loss of Signal Quality is
                                   declared when the Noise Margin
                                   falls below the Minimum Noise

```

		Margin, or the bit-error-rate exceeds 10^{-7} .
5	lossOfLink	ATUC failure due to inability to link with ATUR.
6	dataInitFailure	ATUC failure during initialization due to bit errors corrupting startup exchange data.
7	configInitFailure	ATUC failure during initialization due to peer ATU not able to support requested configuration
8	protocolInitFailure	ATUC failure during initialization due to incompatible protocol used by the peer ATU.
9	noPeerAtuPresent	ATUC failure during initialization due to no activation sequence detected from peer ATU.

This is intended to supplement ifOperStatus."
 ::= { adslAtucPhysEntry 6 }

adslAtucCurrOutputPwr OBJECT-TYPE

SYNTAX INTEGER (-310..310)

UNITS "tenth dBm"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

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

::= { adslAtucPhysEntry 7 }

adslAtucCurrAttainableRate OBJECT-TYPE

SYNTAX Gauge32

UNITS "bps"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Indicates the maximum currently attainable data rate
 by the ATU. This value will be equal or greater than

```

        the current line rate."
 ::= { adslAtucPhysEntry 8 }

adslAturPhysTable          OBJECT-TYPE
    SYNTAX                  SEQUENCE OF AdslAturPhysEntry
    MAX-ACCESS              not-accessible
    STATUS                  current
    DESCRIPTION
        "This table provides one row for each ATUR
        Each row contains the Physical Layer Parameters
        table for that ATUR. ADSL physical interfaces are
        those ifEntries where ifType is equal to adsl(94)."
```

```

 ::= { adslMibObjects 3 }

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

AdslAturPhysEntry ::=
    SEQUENCE {
        adslAturInvSerialNumber      SnmpAdminString,
        adslAturInvVendorID          SnmpAdminString,
        adslAturInvVersionNumber     SnmpAdminString,
        adslAturCurrSnrMgn           INTEGER,
        adslAturCurrAtn              Gauge32,
        adslAturCurrStatus            BITS,
        adslAturCurrOutputPwr        INTEGER,
        adslAturCurrAttainableRate   Gauge32
    }

-- inventory group
--
adslAturInvSerialNumber OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (0..32))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The vendor specific string that identifies the
        vendor equipment."
 ::= { adslAturPhysEntry 1 }

adslAturInvVendorID OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (0..16))
    MAX-ACCESS  read-only
```

```

        STATUS      current
        DESCRIPTION
            "The vendor ID code is a copy of the binary
            vendor identification field defined by the
            PHY[10] and expressed as readable characters."
        REFERENCE "ANSI T1.413"
    ::= { adslAturPhysEntry 2 }

adslAturInvVersionNumber OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE (0..16))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The vendor specific version number sent by this ATU
        as part of the initialization messages. It is a copy
        of the binary version number field defined by the
        PHY[10] and expressed as readable characters."
    REFERENCE "ANSI T1.413"
    ::= { adslAturPhysEntry 3 }

-- current status group
--
adslAturCurrSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (-640..640)
    UNITS        "tenth dB"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Noise Margin as seen by this ATU with respect to its
        received signal in tenth dB."
    ::= { adslAturPhysEntry 4 }

adslAturCurrAtn OBJECT-TYPE
    SYNTAX      Gauge32(0..630)
    UNITS        "tenth dB"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Measured difference in the total power transmitted by
        the peer ATU and the total power received by this ATU."
    ::= { adslAturPhysEntry 5 }

adslAturCurrStatus OBJECT-TYPE
    SYNTAX      BITS {
        noDefect(0),
        lossOfFraming(1),
        lossOfSignal(2),
        lossOfPower(3),

```

```

        lossOfSignalQuality(4)
    }
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
    "Indicates current state of the ATUR line. This is a
    bit-map of possible conditions. Due to the isolation
    of the ATUR when line problems occur, many state
    conditions like loss of power, loss of quality signal,
    and initialization errors, can not be determined.
    While trouble shooting ATUR, also use object,
    adslAturCurrStatus. The various bit positions are:

0      noDefect          There no defects on the line

1      lossOfFraming      ATUR failure due to not
                          receiving valid frame

2      lossOfSignal       ATUR failure due to not
                          receiving signal

3      lossOfPower        ATUR failure due to loss of
                          power

4      lossOfSignalQuality Loss of Signal Quality is
                          declared when the Noise Margin
                          falls below the Minimum Noise
                          Margin, or the
                          bit-error-rate exceeds 10^-7.

    This is intended to supplement ifOperStatus."
 ::= { adslAturPhysEntry 6 }

adslAturCurrOutputPwr OBJECT-TYPE
    SYNTAX      INTEGER (-310..310)
    UNITS        "tenth dBm"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Measured total output power transmitted by this ATU.
        This is the measurement that was reported during
        the last activation sequence."
 ::= { adslAturPhysEntry 7 }

adslAturCurrAttainableRate OBJECT-TYPE
    SYNTAX      Gauge32
    UNITS        "bps"
    MAX-ACCESS   read-only

```

```

STATUS          current
DESCRIPTION
    "Indicates the maximum currently attainable data rate
    by the ATU.  This value will be equal or greater than
    the current line rate."
::= { adslAturPhysEntry 8 }

adslAtucChanTable      OBJECT-TYPE
    SYNTAX             SEQUENCE OF AdslAtucChanEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION
        "This table provides one row for each ATUC channel.
        ADSL channel interfaces are those ifEntries
        where ifType is equal to adslInterleave(124)
        or adslFast(125)."
```

```

::= { adslMibObjects 4 }

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

AdslAtucChanEntry ::=
    SEQUENCE {
        adslAtucChanInterleaveDelay      Gauge32,
        adslAtucChanCurrTxRate           Gauge32,
        adslAtucChanPrevTxRate           Gauge32,
        adslAtucChanCrcBlockLength       Gauge32
    }

-- current group
--
adslAtucChanInterleaveDelay OBJECT-TYPE
    SYNTAX              Gauge32
    UNITS                "milli-seconds"
    MAX-ACCESS          read-only
    STATUS              current
    DESCRIPTION
        "Interleave Delay for this channel.

        Interleave delay applies only to the
        interleave channel and defines the mapping
        (relative spacing) between subsequent input
        bytes at the interleaver input and their placement
```

in the bit stream at the interleaver output. Larger numbers provide greater separation between consecutive input bytes in the output bit stream allowing for improved impulse noise immunity at the expense of payload latency.

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

```
::= { adslAtucChanEntry 1 }
```

```
adslAtucChanCurrTxRate OBJECT-TYPE
```

```
SYNTAX      Gauge32
```

```
UNITS       "bps"
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

"Actual transmit rate on this channel."

```
::= { adslAtucChanEntry 2 }
```

```
adslAtucChanPrevTxRate OBJECT-TYPE
```

```
SYNTAX      Gauge32
```

```
UNITS       "bps"
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

"The rate at the time of the last adslAtucRateChangeTrap event. It is also set at initialization to prevent a trap being sent.

Rate changes less than adslAtucThresh(*)RateDown or less than adslAtucThresh(*)RateUp will not cause a trap or cause this object to change.

(*) == Fast or Interleave.

See AdslLineAlarmConfProfileEntry."

```
::= { adslAtucChanEntry 3 }
```

```
adslAtucChanCrcBlockLength OBJECT-TYPE
```

```
SYNTAX      Gauge32
```

```
UNITS       "byte"
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

"Indicates the length of the channel data-block on which the CRC operates. Refer to Line Code Specific MIBs, [11] and [12] for more information."

```
::= { adslAtucChanEntry 4 }
```



```

adslAturChanTable      OBJECT-TYPE
    SYNTAX              SEQUENCE OF AdslAturChanEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION
        "This table provides one row for each ATUR channel.
        ADSL channel interfaces are those ifEntries
        where ifType is equal to adslInterleave(124)
        or adslFast(125)."
```

::= { adslMibObjects 5 }

```

adslAturChanEntry      OBJECT-TYPE
    SYNTAX              AdslAturChanEntry
    MAX-ACCESS          not-accessible
    STATUS              current
    DESCRIPTION          "An entry in the adslAturChanTable."
    INDEX               { ifIndex }
```

::= { adslAturChanTable 1 }

```

AdslAturChanEntry ::=
    SEQUENCE {
        adslAturChanInterleaveDelay      Gauge32,
        adslAturChanCurrTxRate           Gauge32,
        adslAturChanPrevTxRate           Gauge32,
        adslAturChanCrcBlockLength       Gauge32
    }
```

-- current group

--

```

adslAturChanInterleaveDelay OBJECT-TYPE
    SYNTAX              Gauge32
    UNITS                "milli-seconds"
    MAX-ACCESS          read-only
    STATUS              current
    DESCRIPTION
        "Interleave Delay for this channel.
```

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

In the case where the ifType is Fast(125), use

```

        noSuchObject."
 ::= { adslAturChanEntry 1 }

adslAturChanCurrTxRate OBJECT-TYPE
    SYNTAX      Gauge32
    UNITS        "bps"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Actual transmit rate on this channel."
 ::= { adslAturChanEntry 2 }

adslAturChanPrevTxRate OBJECT-TYPE
    SYNTAX      Gauge32
    UNITS        "bps"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The rate at the time of the last
         adslAturRateChangeTrap event. It is also set at
         initialization to prevent a trap being sent.
         Rate changes less than adslAturThresh(*)RateDown
         or less than adslAturThresh(*)RateUp will not
         cause a trap or cause this object to change.
         (*) == Fast or Interleave.
         See AdslLineAlarmConfProfileEntry."
 ::= { adslAturChanEntry 3 }

adslAturChanCrcBlockLength OBJECT-TYPE
    SYNTAX      Gauge32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Indicates the length of the channel data-block
         on which the CRC operates. Refer to Line Code
         Specific MIBs, [11] and [12] for more
         information."
 ::= { adslAturChanEntry 4 }

adslAtucPerfDataTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF AdslAtucPerfDataEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table provides one row for each ATUC.
         ADSL physical interfaces are
         those ifEntries where ifType is equal to adsl(94)."
 ::= { adslMibObjects 6 }

```

```

adslAtucPerfDataEntry      OBJECT-TYPE
    SYNTAX                  AdslAtucPerfDataEntry
    MAX-ACCESS              not-accessible
    STATUS                  current
    DESCRIPTION              "An entry in adslAtucPerfDataTable."
    INDEX                   { ifIndex }
 ::= { adslAtucPerfDataTable 1 }

AdslAtucPerfDataEntry ::=
    SEQUENCE {
        adslAtucPerfLofs          Counter32,
        adslAtucPerfLoss          Counter32,
        adslAtucPerfLols          Counter32,
        adslAtucPerfLprs          Counter32,
        adslAtucPerfESS           Counter32,
        adslAtucPerfInits         Counter32,
        adslAtucPerfValidIntervals INTEGER,
        adslAtucPerfInvalidIntervals INTEGER,
        adslAtucPerfCurr15MinTimeElapsed AdslPerfTimeElapsed,
        adslAtucPerfCurr15MinLofs      PerfCurrentCount,
        adslAtucPerfCurr15MinLoss      PerfCurrentCount,
        adslAtucPerfCurr15MinLols      PerfCurrentCount,
        adslAtucPerfCurr15MinLprs      PerfCurrentCount,
        adslAtucPerfCurr15MinESS       PerfCurrentCount,
        adslAtucPerfCurr15MinInits     PerfCurrentCount,
        adslAtucPerfCurr1DayTimeElapsed AdslPerfTimeElapsed,
        adslAtucPerfCurr1DayLofs       AdslPerfCurrDayCount,
        adslAtucPerfCurr1DayLoss       AdslPerfCurrDayCount,
        adslAtucPerfCurr1DayLols       AdslPerfCurrDayCount,
        adslAtucPerfCurr1DayLprs       AdslPerfCurrDayCount,
        adslAtucPerfCurr1DayESS        AdslPerfCurrDayCount,
        adslAtucPerfCurr1DayInits      AdslPerfCurrDayCount,
        adslAtucPerfPrev1DayMoniSecs   INTEGER,
        adslAtucPerfPrev1DayLofs       AdslPerfPrevDayCount,
        adslAtucPerfPrev1DayLoss       AdslPerfPrevDayCount,
        adslAtucPerfPrev1DayLols       AdslPerfPrevDayCount,
        adslAtucPerfPrev1DayLprs       AdslPerfPrevDayCount,
        adslAtucPerfPrev1DayESS        AdslPerfPrevDayCount,
        adslAtucPerfPrev1DayInits      AdslPerfPrevDayCount
    }

-- Event Counters
--
-- Also see adslAtucIntervalTable for 15 minute interval
-- elapsed counters.
--
adslAtucPerfLofs OBJECT-TYPE
    SYNTAX          Counter32

```

```
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
    "Count of the number of Loss of Framing failures since
    agent reset."
::= { adslAtucPerfDataEntry 1 }

adslAtucPerfLoss OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Loss of Signal failures since
        agent reset."
    ::= { adslAtucPerfDataEntry 2 }

adslAtucPerfLols OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Loss of Link failures since
        agent reset."
    ::= { adslAtucPerfDataEntry 3 }

adslAtucPerfLprs OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Loss of Power failures since
        agent reset."
    ::= { adslAtucPerfDataEntry 4 }

adslAtucPerfESs OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Errored Seconds since agent
        reset. The errored second parameter is a count of
        one-second intervals containing one or more crc
        anomalies, or one or more los or sef defects."
    ::= { adslAtucPerfDataEntry 5 }

adslAtucPerfInits OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS   read-only
```

```

        STATUS      current
        DESCRIPTION
            "Count of the line initialization attempts since
            agent reset. Includes both successful and failed
            attempts."
 ::= { adslAtucPerfDataEntry 6 }

-- general 15 min interval information
--

adslAtucPerfValidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of previous 15-minute intervals in the
        interval table for which data was collected.  Given
        that <n> is the maximum # of intervals supported.
        The value will be <n> unless the measurement was
        (re-)started within the last (<n>*15) minutes, in which
        case the value will be the number of complete 15
        minute intervals for which the agent has at least
        some data.  In certain cases (e.g., in the case
        where the agent is a proxy) it is possible that some
        intervals are unavailable.  In this case, this
        interval is the maximum interval number for
        which data is available."
 ::= { adslAtucPerfDataEntry 7 }

adslAtucPerfInvalidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of intervals in the range from
        0 to the value of adslAtucPerfValidIntervals
        for which no data is available.  This object
        will typically be zero except in cases where
        the data for some intervals are not available
        (e.g., in proxy situations)."
 ::= { adslAtucPerfDataEntry 8 }

-- 15 min current performance group
--

adslAtucPerfCurr15MinTimeElapsed OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..899)
    UNITS       "seconds"
    MAX-ACCESS  read-only

```

```

        STATUS      current
        DESCRIPTION
            "Total elapsed seconds in this interval."
 ::= { adslAtucPerfDataEntry 9 }

adslAtucPerfCurrl5MinLofs OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the current 15 minute interval
         when there was Loss of Framing."
 ::= { adslAtucPerfDataEntry 10 }

adslAtucPerfCurrl5MinLoss OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the current 15 minute interval
         when there was Loss of Signal."
 ::= { adslAtucPerfDataEntry 11 }

adslAtucPerfCurrl5MinLols OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the current 15 minute interval
         when there was Loss of Link."
 ::= { adslAtucPerfDataEntry 12 }

adslAtucPerfCurrl5MinLprs OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the current 15 minute interval
         when there was Loss of Power."
 ::= { adslAtucPerfDataEntry 13 }

adslAtucPerfCurrl5MinESs OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"

```

```

MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
    "Count of Errored Seconds in the current 15 minute
    interval. The errored second parameter is a count of
    one-second intervals containing one or more crc
    anomalies, or one or more los or sef defects."
::= { adslAtucPerfDataEntry 14 }

adslAtucPerfCurrl5MinInits OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the line initialization attempts in the
        current 15 minute interval. Includes both successful
        and failed attempts."
    ::= { adslAtucPerfDataEntry 15 }

-- 1-day current and previous performance group
--
adslAtucPerfCurrlDayTimeElapsed OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..86399)
    UNITS        "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of seconds that have elapsed since the
        beginning of the current 1-day interval."
    ::= { adslAtucPerfDataEntry 16 }

adslAtucPerfCurrlDayLofs OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS        "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the number of seconds when there was Loss of
        Framing during the current day as measured by
        adslAtucPerfCurrlDayTimeElapsed."
    ::= { adslAtucPerfDataEntry 17 }

adslAtucPerfCurrlDayLoss OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS        "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION

```

```

        "Count of the number of seconds when there was Loss of
        Signal during the current day as measured by
        adslAtucPerfCurr1DayTimeElapsed."
 ::= { adslAtucPerfDataEntry 18 }

adslAtucPerfCurr1DayLols OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the number of seconds when there was Loss of
        Link during the current day as measured by
        adslAtucPerfCurr1DayTimeElapsed."
 ::= { adslAtucPerfDataEntry 19 }

adslAtucPerfCurr1DayLprs OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the number of seconds when there was Loss of
        Power during the current day as measured by
        adslAtucPerfCurr1DayTimeElapsed."
 ::= { adslAtucPerfDataEntry 20 }

adslAtucPerfCurr1DayESs OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds during the current day as
        measured by adslAtucPerfCurr1DayTimeElapsed.
        The errored second parameter is a count of
        one-second intervals containing one or more crc
        anomalies, or one or more los or sef defects."
 ::= { adslAtucPerfDataEntry 21 }

adslAtucPerfCurr1DayInits OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the line initialization attempts in the
        day as measured by adslAtucPerfCurr1DayTimeElapsed.
        Includes both successful and failed attempts."

```



```

 ::= { adslAtucPerfDataEntry 22 }

adslAtucPerfPrev1DayMoniSecs OBJECT-TYPE
    SYNTAX      INTEGER(0..86400)
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The amount of time in the previous 1-day interval
         over which the performance monitoring information
         is actually counted. This value will be the same as
         the interval duration except in a situation where
         performance monitoring data could not be collected
         for any reason."
 ::= { adslAtucPerfDataEntry 23 }

adslAtucPerfPrev1DayLofs OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Framing within the most recent previous
         1-day period."
 ::= { adslAtucPerfDataEntry 24 }

adslAtucPerfPrev1DayLoss OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Signal within the most recent previous
         1-day period."
 ::= { adslAtucPerfDataEntry 25 }

adslAtucPerfPrev1DayLols OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Link within the most recent previous
         1-day period."
 ::= { adslAtucPerfDataEntry 26 }

```

```

adslAtucPerfPrev1DayLprs OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Power within the most recent previous
         1-day period."
 ::= { adslAtucPerfDataEntry 27 }

adslAtucPerfPrev1DayESs OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds within the most recent
         previous 1-day period. The errored second parameter is
         a count of one-second intervals containing one or more
         crc anomalies, or one or more los or sef defects."
 ::= { adslAtucPerfDataEntry 28 }

adslAtucPerfPrev1DayInits OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the line initialization attempts in the most
         recent previous 1-day period. Includes both successful
         and failed attempts."
 ::= { adslAtucPerfDataEntry 29 }

adslAturPerfDataTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF AdslAturPerfDataEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table provides one row for each ATUR.
         ADSL physical interfaces are
         those ifEntries where ifType is equal to adsl(94)."
```

```

 ::= { adslMibObjects 7 }

adslAturPerfDataEntry OBJECT-TYPE
    SYNTAX      AdslAturPerfDataEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An entry in adslAturPerfDataTable."
```

```

    INDEX          { ifIndex }
 ::= { adslAturPerfDataTable 1 }

AdslAturPerfDataEntry ::=
    SEQUENCE {
        adslAturPerfLofs          Counter32,
        adslAturPerfLoss          Counter32,
        adslAturPerfLprs          Counter32,
        adslAturPerfESS           Counter32,
        adslAturPerfValidIntervals INTEGER,
        adslAturPerfInvalidIntervals INTEGER,
        adslAturPerfCurr15MinTimeElapsed AdslPerfTimeElapsed,
        adslAturPerfCurr15MinLofs        PerfCurrentCount,
        adslAturPerfCurr15MinLoss        PerfCurrentCount,
        adslAturPerfCurr15MinLprs        PerfCurrentCount,
        adslAturPerfCurr15MinESS         PerfCurrentCount,
        adslAturPerfCurr1DayTimeElapsed AdslPerfTimeElapsed,
        adslAturPerfCurr1DayLofs         AdslPerfCurrDayCount,
        adslAturPerfCurr1DayLoss         AdslPerfCurrDayCount,
        adslAturPerfCurr1DayLprs         AdslPerfCurrDayCount,
        adslAturPerfCurr1DayESS          AdslPerfCurrDayCount,
        adslAturPerfPrev1DayMoniSecs     INTEGER,
        adslAturPerfPrev1DayLofs         AdslPerfPrevDayCount,
        adslAturPerfPrev1DayLoss         AdslPerfPrevDayCount,
        adslAturPerfPrev1DayLprs         AdslPerfPrevDayCount,
        adslAturPerfPrev1DayESS          AdslPerfPrevDayCount
    }

-- Event (Raw) Counters
--
-- Also see adslAturIntervalTable for 15 minute interval
-- elapsed counters.
--
adslAturPerfLofs OBJECT-TYPE
    SYNTAX      Counter32
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Loss of Framing failures since
         agent reset."
 ::= { adslAturPerfDataEntry 1 }

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

```

```

        DESCRIPTION
            "Count of the number of Loss of Signal failures since
            agent reset."
 ::= { adslAturPerfDataEntry 2 }

adslAturPerfLprs OBJECT-TYPE
    SYNTAX      Counter32
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Loss of Power failures since
        agent reset."
 ::= { adslAturPerfDataEntry 3 }

adslAturPerfESS OBJECT-TYPE
    SYNTAX      Counter32
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of the number of Errored Seconds since agent
        reset. The errored second parameter is a count of
        one-second intervals containing one or more crc
        anomalies, or one or more los or sef defects."
 ::= { adslAturPerfDataEntry 4 }

-- general 15 min interval information
--
adslAturPerfValidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The number of previous 15-minute intervals in the
        interval table for which data was collected. Given
        that <n> is the maximum # of intervals supported.
        The value will be <n> unless the measurement was
        (re-)started within the last (<n>*15) minutes, in which
        case the value will be the number of complete 15
        minute intervals for which the agent has at least
        some data. In certain cases (e.g., in the case
        where the agent is a proxy) it is possible that some
        intervals are unavailable. In this case, this
        interval is the maximum interval number for
        which data is available."
 ::= { adslAturPerfDataEntry 5 }

```

```

adslAturPerfInvalidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The number of intervals in the range from
         0 to the value of adslAturPerfValidIntervals
         for which no data is available. This object
         will typically be zero except in cases where
         the data for some intervals are not available
         (e.g., in proxy situations)."
```

::= { adslAturPerfDataEntry 6 }

```

-- 15 min current performance group
--
adslAturPerfCurrl5MinTimeElapsed OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..899)
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Total elapsed seconds in this interval."
```

::= { adslAturPerfDataEntry 7 }

```

adslAturPerfCurrl5MinLofs OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the current 15 minute interval
         when there was Loss of Framing."
```

::= { adslAturPerfDataEntry 8 }

```

adslAturPerfCurrl5MinLoss  OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of seconds in the current 15 minute interval
         when there was Loss of Signal."
```

::= { adslAturPerfDataEntry 9 }

```

adslAturPerfCurrl5MinLprs  OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS        "seconds"
    MAX-ACCESS   read-only
```

```

        STATUS          current
        DESCRIPTION
            "Count of seconds in the current 15 minute interval
            when there was Loss of Power."
 ::= { adslAturPerfDataEntry 10 }

adslAturPerfCurrl5MinESs OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds in the current 15 minute
        interval.  The errored second parameter is a count of
        one-second intervals containing one or more crc
        anomalies, or one or more los or sef defects."

 ::= { adslAturPerfDataEntry 11 }

-- 1-day current and previous performance group
--
adslAturPerfCurrlDayTimeElapsed OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..86399)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of seconds that have elapsed since the
        beginning of the current 1-day interval."
 ::= { adslAturPerfDataEntry 12 }

adslAturPerfCurrlDayLofs OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the number of seconds when there was Loss
        of Framing during the current day as measured by
        adslAturPerfCurrlDayTimeElapsed."
 ::= { adslAturPerfDataEntry 13 }

adslAturPerfCurrlDayLoss OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION

```

```

        "Count of the number of seconds when there was Loss
        of Signal during the current day as measured by
        adslAturPerfCurr1DayTimeElapsed."
 ::= { adslAturPerfDataEntry 14 }

```

```

adslAturPerfCurr1DayLprs OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "Count of the number of seconds when there was Loss
        of Power during the current day as measured by
        adslAturPerfCurr1DayTimeElapsed."
 ::= { adslAturPerfDataEntry 15 }

```

```

adslAturPerfCurr1DayESS OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    UNITS       "seconds"
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds during the current day as
        measured by adslAturPerfCurr1DayTimeElapsed.
        The errored second parameter is a count of
        one-second intervals containing one or more crc
        anomalies, or one or more los or sef defects."
 ::= { adslAturPerfDataEntry 16 }

```

```

adslAturPerfPrev1DayMoniSecs OBJECT-TYPE
    SYNTAX      INTEGER(0..86400)
    UNITS       "seconds"
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "The amount of time in the previous 1-day interval
        over which the performance monitoring information
        is actually counted. This value will be the same as
        the interval duration except in a situation where
        performance monitoring data could not be collected
        for any reason."
 ::= { adslAturPerfDataEntry 17 }

```

```

adslAturPerfPrev1DayLofs OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS       "seconds"
    MAX-ACCESS   read-only
    STATUS      current

```

```

DESCRIPTION
    "Count of seconds in the interval when there was
    Loss of Framing within the most recent previous
    1-day period."
::= { adslAturPerfDataEntry 18 }

adslAturPerfPrev1DayLoss OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was
        Loss of Signal within the most recent previous
        1-day period."
    ::= { adslAturPerfDataEntry 19 }

adslAturPerfPrev1DayLprs OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was
        Loss of Power within the most recent previous
        1-day period."
    ::= { adslAturPerfDataEntry 20 }

adslAturPerfPrev1DayESs OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds within the most recent
        previous 1-day period. The errored second parameter is
        a count of one-second intervals containing one or more
        crc anomalies, or one or more los or sef defects."
    ::= { adslAturPerfDataEntry 21 }

adslAtucIntervalTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF AdslAtucIntervalEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table provides one row for each ATUC
        performance data collection interval.
        ADSL physical interfaces are

```



```

        those ifEntries where ifType is equal to adsl(94)."
 ::= { adslMibObjects 8 }

adslAtucIntervalEntry    OBJECT-TYPE
    SYNTAX                AdslAtucIntervalEntry
    MAX-ACCESS             not-accessible
    STATUS                 current
    DESCRIPTION            "An entry in the adslAtucIntervalTable."
    INDEX                  { ifIndex, adslAtucIntervalNumber }
 ::= { adslAtucIntervalTable 1 }

AdslAtucIntervalEntry ::=
    SEQUENCE {
        adslAtucIntervalNumber          INTEGER,
        adslAtucIntervalLofs            PerfIntervalCount,
        adslAtucIntervalLoss            PerfIntervalCount,
        adslAtucIntervalLols            PerfIntervalCount,
        adslAtucIntervalLprs            PerfIntervalCount,
        adslAtucIntervalESS             PerfIntervalCount,
        adslAtucIntervalInits           PerfIntervalCount,
        adslAtucIntervalValidData       TruthValue
    }

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

adslAtucIntervalLofs OBJECT-TYPE
    SYNTAX                PerfIntervalCount
    UNITS                  "seconds"
    MAX-ACCESS             read-only
    STATUS                 current
    DESCRIPTION            "Count of seconds in the interval when there was Loss
        of Framing."
 ::= { adslAtucIntervalEntry 2 }

adslAtucIntervalLoss OBJECT-TYPE
    SYNTAX                PerfIntervalCount
    UNITS                  "seconds"
    MAX-ACCESS             read-only

```

```

        STATUS      current
        DESCRIPTION
            "Count of seconds in the interval when there was Loss
            of Signal."
 ::= { adslAtucIntervalEntry 3 }

adslAtucIntervalLols OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was Loss
        of Link."
 ::= { adslAtucIntervalEntry 4 }

adslAtucIntervalLprs OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was Loss
        of Power."
 ::= { adslAtucIntervalEntry 5 }

adslAtucIntervaleSSs OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds in the interval.
        The errored second parameter is a count of
        one-second intervals containing one or more crc
        anomalies, or one or more los or sef defects."
 ::= { adslAtucIntervalEntry 6 }

adslAtucIntervalInits OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of the line initialization attempts
        during the interval. Includes both successful
        and failed attempts."
 ::= { adslAtucIntervalEntry 7 }

```

```

adslAtucIntervalValidData OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "This variable indicates if the data for this
        interval is valid."
    ::= { adslAtucIntervalEntry 8 }

adslAturIntervalTable OBJECT-TYPE
    SYNTAX SEQUENCE OF AdslAturIntervalEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "This table provides one row for each ATUR
        performance data collection interval.
        ADSL physical interfaces are those
        ifEntries where ifType is equal to adsl(94)."
    ::= { adslMibObjects 9 }

adslAturIntervalEntry OBJECT-TYPE
    SYNTAX AdslAturIntervalEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION "An entry in the adslAturIntervalTable."
    INDEX { ifIndex, adslAturIntervalNumber }
    ::= { adslAturIntervalTable 1 }

AdslAturIntervalEntry ::=
    SEQUENCE {
        adslAturIntervalNumber          INTEGER,
        adslAturIntervalLoFs            PerfIntervalCount,
        adslAturIntervalLoss            PerfIntervalCount,
        adslAturIntervalLprs            PerfIntervalCount,
        adslAturIntervalESS             PerfIntervalCount,
        adslAturIntervalValidData      TruthValue
    }

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

```

```
adslAturIntervalLofs OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Framing."
 ::= { adslAturIntervalEntry 2 }

adslAturIntervalLoss OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Signal."
 ::= { adslAturIntervalEntry 3 }

adslAturIntervalLprs OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of seconds in the interval when there was
         Loss of Power."
 ::= { adslAturIntervalEntry 4 }

adslAturIntervaleSSs OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of Errored Seconds in the interval.
         The errored second parameter is a count of
         one-second intervals containing one or more crc
         anomalies, or one or more los or sef defects."
 ::= { adslAturIntervalEntry 5 }

adslAturIntervalValidData OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This variable indicates if the data for this
```

```

        interval is valid."
 ::= { adslAturIntervalEntry 6 }

adslAtucChanPerfDataTable          OBJECT-TYPE
    SYNTAX          SEQUENCE OF AdslAtucChanPerfDataEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table provides one row for each ATUC channel.
        ADSL channel interfaces are those ifEntries
        where ifType is equal to adslInterleave(124)
        or adslFast(125)."
```

```

 ::= { adslMibObjects 10 }

adslAtucChanPerfDataEntry          OBJECT-TYPE

    SYNTAX          AdslAtucChanPerfDataEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION      "An entry in adslAtucChanPerfDataTable."
    INDEX           { ifIndex }
 ::= { adslAtucChanPerfDataTable 1 }

AdslAtucChanPerfDataEntry ::=
    SEQUENCE {
        adslAtucChanReceivedBlks          Counter32,
        adslAtucChanTransmittedBlks       Counter32,
        adslAtucChanCorrectedBlks         Counter32,
        adslAtucChanUncorrectBlks         Counter32,
        adslAtucChanPerfValidIntervals    INTEGER,
        adslAtucChanPerfInvalidIntervals  INTEGER,
        adslAtucChanPerfCurr15MinTimeElapsed AdslPerfTimeElapsed,
        adslAtucChanPerfCurr15MinReceivedBlks PerfCurrentCount,
        adslAtucChanPerfCurr15MinTransmittedBlks PerfCurrentCount,
        adslAtucChanPerfCurr15MinCorrectedBlks PerfCurrentCount,
        adslAtucChanPerfCurr15MinUncorrectBlks PerfCurrentCount,
        adslAtucChanPerfCurr1DayTimeElapsed AdslPerfTimeElapsed,
        adslAtucChanPerfCurr1DayReceivedBlks AdslPerfCurrDayCount,
        adslAtucChanPerfCurr1DayTransmittedBlks AdslPerfCurrDayCount,
        adslAtucChanPerfCurr1DayCorrectedBlks AdslPerfCurrDayCount,
        adslAtucChanPerfCurr1DayUncorrectBlks AdslPerfCurrDayCount,
        adslAtucChanPerfPrev1DayMoniSecs   INTEGER,
        adslAtucChanPerfPrev1DayReceivedBlks AdslPerfPrevDayCount,
        adslAtucChanPerfPrev1DayTransmittedBlks AdslPerfPrevDayCount,
        adslAtucChanPerfPrev1DayCorrectedBlks AdslPerfPrevDayCount,
        adslAtucChanPerfPrev1DayUncorrectBlks AdslPerfPrevDayCount
    }
-- performance group

```

```
--
-- Note: block is intended to be the length of the channel
--       data-block on which the CRC operates. See
--       adslAtucChanCrcBlockLength for more information.
--
adslAtucChanReceivedBlks OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks received on this channel
        since agent reset."
    ::= { adslAtucChanPerfDataEntry 1 }

adslAtucChanTransmittedBlks OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
        channel since agent reset."
    ::= { adslAtucChanPerfDataEntry 2 }

adslAtucChanCorrectedBlks OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with errors that were
        corrected since agent reset. These blocks are passed
        on as good data."
    ::= { adslAtucChanPerfDataEntry 3 }

adslAtucChanUncorrectBlks OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
        errors since agent reset."
    ::= { adslAtucChanPerfDataEntry 4 }

-- general 15 min interval information
--
adslAtucChanPerfValidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS  read-only
    STATUS      current
```

DESCRIPTION

"The number of previous 15-minute intervals in the interval table for which data was collected. Given that <n> is the maximum # of intervals supported. The value will be <n> unless the measurement was (re-)started within the last (<n>*15) minutes, in which case the value will be the number of complete 15 minute intervals for which the agent has at least some data. In certain cases (e.g., in the case where the agent is a proxy) it is possible that some intervals are unavailable. In this case, this interval is the maximum interval number for which data is available."

```
::= { adslAtucChanPerfDataEntry 5 }
```

adslAtucChanPerfInvalidIntervals OBJECT-TYPE

SYNTAX INTEGER(0..96)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of intervals in the range from 0 to the value of adslAtucChanPerfValidIntervals for which no data is available. This object will typically be zero except in cases where the data for some intervals are not available (e.g., in proxy situations)."

```
::= { adslAtucChanPerfDataEntry 6 }
```

```
-- 15 min current performance group
```

```
--
```

adslAtucChanPerfCurr15MinTimeElapsed OBJECT-TYPE

SYNTAX AdslPerfTimeElapsed(0..899)

UNITS "seconds"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Total elapsed seconds in this interval."

```
::= { adslAtucChanPerfDataEntry 7 }
```

adslAtucChanPerfCurr15MinReceivedBlks OBJECT-TYPE

SYNTAX PerfCurrentCount

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of all encoded blocks received on this channel within the current 15 minute interval."

```
::= { adslAtucChanPerfDataEntry 8 }
```

```

adslAtucChanPerfCurr15MinTransmittedBlks OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
        channel within the current 15 minute interval."
    ::= { adslAtucChanPerfDataEntry 9 }

adslAtucChanPerfCurr15MinCorrectedBlks  OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with errors that were
        corrected on this channel within the current 15 minute
        interval."
    ::= { adslAtucChanPerfDataEntry 10 }

adslAtucChanPerfCurr15MinUncorrectBlks  OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
        errors on this channel within the current 15 minute
        interval."
    ::= { adslAtucChanPerfDataEntry 11 }

-- 1-day current and previous performance group
--
adslAtucChanPerfCurr1DayTimeElapsed OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..86399)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of seconds that have elapsed since the
        beginning of the current 1-day interval."
    ::= { adslAtucChanPerfDataEntry 12 }

adslAtucChanPerfCurr1DayReceivedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks received on this
        channel during the current day as measured by

```



```

        adslAtucChanPerfCurr1DayTimeElapsed."
 ::= { adslAtucChanPerfDataEntry 13 }

adslAtucChanPerfCurr1DayTransmittedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
         channel during the current day as measured by
         adslAtucChanPerfCurr1DayTimeElapsed."
 ::= { adslAtucChanPerfDataEntry 14 }

adslAtucChanPerfCurr1DayCorrectedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with errors that were
         corrected on this channel during the current day as
         measured by adslAtucChanPerfCurr1DayTimeElapsed."
 ::= { adslAtucChanPerfDataEntry 15 }

adslAtucChanPerfCurr1DayUncorrectBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
         errors on this channel during the current day as
         measured by adslAtucChanPerfCurr1DayTimeElapsed."
 ::= { adslAtucChanPerfDataEntry 16 }

adslAtucChanPerfPrev1DayMoniSecs  OBJECT-TYPE
    SYNTAX      INTEGER(0..86400)
    UNITS       "seconds"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The amount of time in the previous 1-day interval
         over which the performance monitoring information
         is actually counted. This value will be the same as
         the interval duration except in a situation where
         performance monitoring data could not be collected
         for any reason."
 ::= { adslAtucChanPerfDataEntry 17 }

adslAtucChanPerfPrev1DayReceivedBlks  OBJECT-TYPE

```

```

SYNTAX      AdslPerfPrevDayCount
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of all encoded blocks received on this
    channel within the most recent previous 1-day
    period."
::= { adslAtucChanPerfDataEntry 18 }

adslAtucChanPerfPrev1DayTransmittedBlks  OBJECT-TYPE
SYNTAX      AdslPerfPrevDayCount
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of all encoded blocks transmitted on this
    channel within the most recent previous 1-day
    period."
::= { adslAtucChanPerfDataEntry 19 }

adslAtucChanPerfPrev1DayCorrectedBlks  OBJECT-TYPE
SYNTAX      AdslPerfPrevDayCount
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of all blocks received with errors that were
    corrected on this channel within the most recent
    previous 1-day period."
::= { adslAtucChanPerfDataEntry 20 }

adslAtucChanPerfPrev1DayUncorrectBlks  OBJECT-TYPE
SYNTAX      AdslPerfPrevDayCount
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Count of all blocks received with uncorrectable
    errors on this channel within the most recent previous
    1-day period."
::= { adslAtucChanPerfDataEntry 21 }

adslAturChanPerfDataTable  OBJECT-TYPE
SYNTAX      SEQUENCE OF AdslAturChanPerfDataEntry
MAX-ACCESS  not-accessible
STATUS      current
DESCRIPTION
    "This table provides one row for each ATUR channel.
    ADSL channel interfaces are those ifEntries
    where ifType is equal to adslInterleave(124)
    or adslFast(125)."
```

```

 ::= { adslMibObjects 11 }

adslAturChanPerfDataEntry      OBJECT-TYPE
    SYNTAX                     AdslAturChanPerfDataEntry
    MAX-ACCESS                 not-accessible
    STATUS                     current
    DESCRIPTION                 "An entry in adslAturChanPerfDataTable."
    INDEX                      { ifIndex }
 ::= { adslAturChanPerfDataTable 1 }

AdslAturChanPerfDataEntry ::=
    SEQUENCE {
        adslAturChanReceivedBlks          Counter32,
        adslAturChanTransmittedBlks       Counter32,
        adslAturChanCorrectedBlks         Counter32,
        adslAturChanUncorrectBlks         Counter32,
        adslAturChanPerfValidIntervals    INTEGER,
        adslAturChanPerfInvalidIntervals  INTEGER,
        adslAturChanPerfCurr15MinTimeElapsed AdslPerfTimeElapsed,
        adslAturChanPerfCurr15MinReceivedBlks PerfCurrentCount,
        adslAturChanPerfCurr15MinTransmittedBlks PerfCurrentCount,
        adslAturChanPerfCurr15MinCorrectedBlks PerfCurrentCount,
        adslAturChanPerfCurr15MinUncorrectBlks PerfCurrentCount,
        adslAturChanPerfCurr1DayTimeElapsed AdslPerfTimeElapsed,
        adslAturChanPerfCurr1DayReceivedBlks AdslPerfCurrDayCount,
        adslAturChanPerfCurr1DayTransmittedBlks AdslPerfCurrDayCount,
        adslAturChanPerfCurr1DayCorrectedBlks AdslPerfCurrDayCount,
        adslAturChanPerfCurr1DayUncorrectBlks AdslPerfCurrDayCount,
        adslAturChanPerfPrev1DayMoniSecs    INTEGER,
        adslAturChanPerfPrev1DayReceivedBlks AdslPerfPrevDayCount,
        adslAturChanPerfPrev1DayTransmittedBlks AdslPerfPrevDayCount,
        adslAturChanPerfPrev1DayCorrectedBlks AdslPerfPrevDayCount,
        adslAturChanPerfPrev1DayUncorrectBlks AdslPerfPrevDayCount
    }
-- performance group
--
-- Note: block is intended to be the length of the channel
--       data-block on which the CRC operates. See
--       adslAturChanCrcBlockLength for more information.
--
adslAturChanReceivedBlks OBJECT-TYPE
    SYNTAX          Counter32
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        "Count of all encoded blocks received on this channel
         since agent reset."
 ::= { adslAturChanPerfDataEntry 1 }

```

```
adslAturChanTransmittedBlks  OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
        channel since agent reset."
    ::= { adslAturChanPerfDataEntry 2 }

adslAturChanCorrectedBlks  OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with errors that were
        corrected since agent reset.  These blocks are passed
        on as good data."
    ::= { adslAturChanPerfDataEntry 3 }

adslAturChanUncorrectBlks  OBJECT-TYPE
    SYNTAX      Counter32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
        errors since agent reset."
    ::= { adslAturChanPerfDataEntry 4 }

-- general 15 min interval information
--
adslAturChanPerfValidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of previous 15-minute intervals in the
        interval table for which data was collected.  Given
        that <n> is the maximum # of intervals supported.
        The value will be <n> unless the measurement was
        (re-)started within the last (<n>*15) minutes, in which
        case the value will be the number of complete 15
        minute intervals for which the agent has at least
        some data.  In certain cases (e.g., in the case
        where the agent is a proxy) it is possible that some
        intervals are unavailable.  In this case, this
        interval is the maximum interval number for
        which data is available."
    ::= { adslAturChanPerfDataEntry 5 }
```

```

adslAturChanPerfInvalidIntervals OBJECT-TYPE
    SYNTAX      INTEGER(0..96)
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "The number of intervals in the range from
         0 to the value of adslAturChanPerfValidIntervals
         for which no data is available. This object
         will typically be zero except in cases where
         the data for some intervals are not available
         (e.g., in proxy situations)."
```

::= { adslAturChanPerfDataEntry 6 }

```

-- 15 min current performance group
--
adslAturChanPerfCurr15MinTimeElapsed OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..899)
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Total elapsed seconds in this interval.
         A full interval is 900 seconds."
```

::= { adslAturChanPerfDataEntry 7 }

```

adslAturChanPerfCurr15MinReceivedBlks OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all encoded blocks received on this
         channel within the current 15 minute interval."
```

::= { adslAturChanPerfDataEntry 8 }

```

adslAturChanPerfCurr15MinTransmittedBlks OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
         channel within the current 15 minute interval."
```

::= { adslAturChanPerfDataEntry 9 }

```

adslAturChanPerfCurr15MinCorrectedBlks  OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
```

```

        "Count of all blocks received with errors that were
        corrected on this channel within the current 15 minute
        interval."
 ::= { adslAturChanPerfDataEntry 10 }

adslAturChanPerfCurr15MinUncorrectBlks  OBJECT-TYPE
    SYNTAX      PerfCurrentCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
        errors on this channel within the current 15 minute
        interval."
 ::= { adslAturChanPerfDataEntry 11 }

-- 1-day current and previous performance group
--
adslAturChanPerfCurr1DayTimeElapsedd OBJECT-TYPE
    SYNTAX      AdslPerfTimeElapsed(0..86399)
    UNITS        "seconds"
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Number of seconds that have elapsed since the
        beginning of the current 1-day interval."
 ::= { adslAturChanPerfDataEntry 12 }

adslAturChanPerfCurr1DayReceivedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all encoded blocks received on this
        channel during the current day as measured by
        adslAturChanPerfCurr1DayTimeElapsedd."
 ::= { adslAturChanPerfDataEntry 13 }

adslAturChanPerfCurr1DayTransmittedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
        channel during the current day as measured by
        adslAturChanPerfCurr1DayTimeElapsedd."
 ::= { adslAturChanPerfDataEntry 14 }

```

```
adslAturChanPerfCurr1DayCorrectedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with errors that were
         corrected on this channel during the current day as
         measured by adslAturChanPerfCurr1DayTimeElapsed."
 ::= { adslAturChanPerfDataEntry 15 }

adslAturChanPerfCurr1DayUncorrectBlks  OBJECT-TYPE
    SYNTAX      AdslPerfCurrDayCount
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
         errors on this channel during the current day as
         measured by adslAturChanPerfCurr1DayTimeElapsed."
 ::= { adslAturChanPerfDataEntry 16 }

adslAturChanPerfPrev1DayMoniSecs  OBJECT-TYPE
    SYNTAX      INTEGER(0..86400)
    UNITS       "seconds"
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "The amount of time in the previous 1-day interval
         over which the performance monitoring information
         is actually counted. This value will be the same as
         the interval duration except in a situation where
         performance monitoring data could not be collected
         for any reason."
 ::= { adslAturChanPerfDataEntry 17 }

adslAturChanPerfPrev1DayReceivedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks received on this
         channel within the most recent previous 1-day
         period."
 ::= { adslAturChanPerfDataEntry 18 }

adslAturChanPerfPrev1DayTransmittedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    MAX-ACCESS   read-only
    STATUS      current
```

```

DESCRIPTION
    "Count of all encoded blocks transmitted on this
    channel within the most recent previous 1-day
    period."
 ::= { adslAturChanPerfDataEntry 19 }

adslAturChanPerfPrev1DayCorrectedBlks  OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all blocks received with errors that were
        corrected on this channel within the most recent
        previous 1-day period."
 ::= { adslAturChanPerfDataEntry 20 }

adslAturChanPerfPrev1DayUncorrectBlks  OBJECT-TYPE
    SYNTAX      AdslPerfPrevDayCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
        errors on this channel within the most recent previous
        1-day period."
 ::= { adslAturChanPerfDataEntry 21 }

adslAtucChanIntervalTable  OBJECT-TYPE
    SYNTAX      SEQUENCE OF AdslAtucChanIntervalEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table provides one row for each ATUC channel's
        performance data collection interval.
        ADSL channel interfaces are those ifEntries
        where ifType is equal to adslInterleave(124)
        or adslFast(125)."
```

```

 ::= { adslMibObjects 12 }

adslAtucChanIntervalEntry  OBJECT-TYPE
    SYNTAX      AdslAtucChanIntervalEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION   "An entry in the adslAtucIntervalTable."
    INDEX        { ifIndex, adslAtucChanIntervalNumber }
 ::= { adslAtucChanIntervalTable 1 }

AdslAtucChanIntervalEntry ::=
    SEQUENCE {
```



```

        adslAtucChanIntervalNumber          INTEGER,
        adslAtucChanIntervalReceivedBlks    PerfIntervalCount,
        adslAtucChanIntervalTransmittedBlks PerfIntervalCount,
        adslAtucChanIntervalCorrectedBlks   PerfIntervalCount,
        adslAtucChanIntervalUncorrectBlks   PerfIntervalCount,
        adslAtucChanIntervalValidData       TruthValue
    }
adslAtucChanIntervalNumber OBJECT-TYPE
    SYNTAX      INTEGER(1..96)
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "Performance Data Interval number 1 is the
         the most recent previous interval; interval
         96 is 24 hours ago.  Intervals 2..96 are
         optional."
 ::= { adslAtucChanIntervalEntry 1 }

adslAtucChanIntervalReceivedBlks OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all encoded blocks received on this channel
         during this interval."
 ::= { adslAtucChanIntervalEntry 2 }

adslAtucChanIntervalTransmittedBlks  OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
         channel during this interval."
 ::= { adslAtucChanIntervalEntry 3 }

adslAtucChanIntervalCorrectedBlks  OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
        "Count of all blocks received with errors that were
         corrected on this channel during this interval."
 ::= { adslAtucChanIntervalEntry 4 }

adslAtucChanIntervalUncorrectBlks  OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS   read-only

```

```

        STATUS      current
        DESCRIPTION
            "Count of all blocks received with uncorrectable
            errors on this channel during this interval."
 ::= { adslAtucChanIntervalEntry 5 }

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

adslAturChanIntervalTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF AdslAturChanIntervalEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
        "This table provides one row for each ATUR channel's
        performance data collection interval.
        ADSL channel interfaces are those ifEntries
        where ifType is equal to adslInterleave(124)
        or adslFast(125)."
```

```

 ::= { adslMibObjects 13 }

adslAturChanIntervalEntry OBJECT-TYPE
    SYNTAX      AdslAturChanIntervalEntry
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION  "An entry in the adslAturIntervalTable."
    INDEX        { ifIndex, adslAturChanIntervalNumber }
 ::= { adslAturChanIntervalTable 1 }

AdslAturChanIntervalEntry ::=
    SEQUENCE {
        adslAturChanIntervalNumber          INTEGER,
        adslAturChanIntervalReceivedBlks    PerfIntervalCount,
        adslAturChanIntervalTransmittedBlks PerfIntervalCount,
        adslAturChanIntervalCorrectedBlks   PerfIntervalCount,
        adslAturChanIntervalUncorrectBlks   PerfIntervalCount,
        adslAturChanIntervalValidData       TruthValue
    }

adslAturChanIntervalNumber OBJECT-TYPE
    SYNTAX      INTEGER(1..96)
    MAX-ACCESS   not-accessible
    STATUS       current

```

```
DESCRIPTION
    "Performance Data Interval number 1 is the
    the most recent previous interval; interval
    96 is 24 hours ago.  Intervals 2..96 are
    optional."
::= { adslAturChanIntervalEntry 1 }

adslAturChanIntervalReceivedBlks OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks received on this channel
        during this interval."
    ::= { adslAturChanIntervalEntry 2 }

adslAturChanIntervalTransmittedBlks OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all encoded blocks transmitted on this
        channel during this interval."
    ::= { adslAturChanIntervalEntry 3 }

adslAturChanIntervalCorrectedBlks OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with errors that were
        corrected on this channel during this interval."
    ::= { adslAturChanIntervalEntry 4 }

adslAturChanIntervalUncorrectBlks OBJECT-TYPE
    SYNTAX      PerfIntervalCount
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Count of all blocks received with uncorrectable
        errors on this channel during this interval."
    ::= { adslAturChanIntervalEntry 5 }

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

```

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

-- Profile Group
--

adslLineConfProfileTable      OBJECT-TYPE
    SYNTAX                     SEQUENCE OF AdslLineConfProfileEntry
    MAX-ACCESS                 not-accessible
    STATUS                     current
    DESCRIPTION
        "This table contains information on the ADSL line
        configuration. One entry in this table reflects a
        profile defined by a manager which can be used to
        configure the ADSL line."
 ::= { adslMibObjects 14}

adslLineConfProfileEntry      OBJECT-TYPE
    SYNTAX                     AdslLineConfProfileEntry
    MAX-ACCESS                 not-accessible
    STATUS                     current
    DESCRIPTION
        "Each entry consists of a list of parameters that
        represents the configuration of an ADSL modem.

        When 'dynamic' profiles are implemented, a default
        profile will always exist. This profile's name will
        be set to 'DEFVAL' and its parameters will be set
        to vendor specific values, unless otherwise specified
        in this document.

        When 'static' profiles are implemented, profiles
        are automatically created or destroyed as ADSL
        physical lines are discovered and removed by
        the system. The name of the profile will be
        equivalent to the decimal value of the line's
        interface index.
        "
    INDEX { IMPLIED adslLineConfProfileName}
 ::= { adslLineConfProfileTable 1}

AdslLineConfProfileEntry ::=
    SEQUENCE {
        adslLineConfProfileName                SnmpAdminString,
        adslAtucConfRateMode                   INTEGER,
        adslAtucConfRateChanRatio              INTEGER,
        adslAtucConfTargetSnrMgn               INTEGER,

```

```

adslAtucConfMaxSnrMgn                INTEGER,
adslAtucConfMinSnrMgn                INTEGER,
adslAtucConfDownshiftSnrMgn          INTEGER,
adslAtucConfUpshiftSnrMgn            INTEGER,
adslAtucConfMinUpshiftTime            INTEGER,
adslAtucConfMinDownshiftTime          INTEGER,
adslAtucChanConfFastMinTxRate         Unsigned32,
adslAtucChanConfInterleaveMinTxRate   Unsigned32,
adslAtucChanConfFastMaxTxRate         Unsigned32,
adslAtucChanConfInterleaveMaxTxRate   Unsigned32,
adslAtucChanConfMaxInterleaveDelay    INTEGER,
adslAturConfRateMode                  INTEGER,
adslAturConfRateChanRatio              INTEGER,
adslAturConfTargetSnrMgn              INTEGER,
adslAturConfMaxSnrMgn                 INTEGER,
adslAturConfMinSnrMgn                 INTEGER,
adslAturConfDownshiftSnrMgn           INTEGER,
adslAturConfUpshiftSnrMgn             INTEGER,
adslAturConfMinUpshiftTime            INTEGER,
adslAturConfMinDownshiftTime          INTEGER,
adslAturChanConfFastMinTxRate         Unsigned32,
adslAturChanConfInterleaveMinTxRate   Unsigned32,
adslAturChanConfFastMaxTxRate         Unsigned32,
adslAturChanConfInterleaveMaxTxRate   Unsigned32,
adslAturChanConfMaxInterleaveDelay    INTEGER,
adslLineConfProfileRowStatus          RowStatus
}

```

```

adslLineConfProfileName      OBJECT-TYPE
    SYNTAX                     SnmpAdminString (SIZE (1..32))
    MAX-ACCESS                  not-accessible
    STATUS                      current
    DESCRIPTION
        "This object is used by the line configuration table
        in order to identify a row of this table.

```

When 'dynamic' profiles are implemented, the profile name is user specified. Also, the system will always provide a default profile whose name is 'DEFVAL'.

When 'static' profiles are implemented, there is an one-to-one relationship between each line and its profile. In which case, the profile name will need to algorithmically represent the Line's ifIndex. Therefore, the profile's name is a decimalized string of the ifIndex that is fixed-length (i.e., 10) with leading zero(s). For example, the profile name for ifIndex which equals '15' will be '0000000015'."

```
::= { adslLineConfProfileEntry 1 }
```

```
adslAtucConfRateMode OBJECT-TYPE
```

```
SYNTAX          INTEGER {
```

```
    fixed (1),           -- no rate adaptation
    adaptAtStartup (2),   -- perform rate adaptation
                           -- only at initialization
    adaptAtRuntime (3)    -- perform rate adaptation at
                           -- any time
}
```

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

```
STATUS          current
```

```
DESCRIPTION
```

```
    "Defines what form of transmit rate adaptation is
    configured on this modem.  See ADSL Forum TR-005 [3]
    for more information."
```

```
::= { adslLineConfProfileEntry 2 }
```

```
adslAtucConfRateChanRatio OBJECT-TYPE
```

```
SYNTAX          INTEGER(0..100)
```

```
UNITS           "%"
```

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

```
STATUS          current
```

```
DESCRIPTION
```

```
    "Configured allocation ratio of excess transmit
    bandwidth between fast and interleaved channels.  Only
    applies when two channel mode and RADSL are supported.
    Distribute bandwidth on each channel in excess of the
    corresponding ChanConfMinTxRate so that:
    adslAtucConfRateChanRatio =
```

$$[\text{Fast} / (\text{Fast} + \text{Interleaved})] * 100$$

```
    In other words this value is the fast channel
    percentage."
```

```
::= { adslLineConfProfileEntry 3 }
```

```
adslAtucConfTargetSnrMgn OBJECT-TYPE
```

```
SYNTAX          INTEGER (0..310)
```

```
UNITS           "tenth dB"
```

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

```
STATUS          current
```

```
DESCRIPTION
```

```
    "Configured Target Signal/Noise Margin.
    This is the Noise Margin the modem must achieve
    with a BER of 10-7 or better to successfully complete
    initialization."
```

```
::= { adslLineConfProfileEntry 4 }
```

```
adslAtucConfMaxSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (0..310)
    UNITS        "tenth dB"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Configured Maximum acceptable Signal/Noise Margin.
         If the Noise Margin is above this the modem should
         attempt to reduce its power output to optimize its
         operation."
    ::= { adslLineConfProfileEntry 5 }

adslAtucConfMinSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (0..310)
    UNITS        "tenth dB"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Configured Minimum acceptable Signal/Noise Margin.
         If the noise margin falls below this level, the modem
         should attempt to increase its power output.  If that
         is not possible the modem will attempt to
         re-initialize or shut down."
    ::= { adslLineConfProfileEntry 6 }

adslAtucConfDownshiftSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (0..310)
    UNITS        "tenth dB"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Configured Signal/Noise Margin for rate downshift.
         If the noise margin falls below this level, the modem
         should attempt to decrease its transmit rate.  In
         the case that RADSL mode is not present,
         the value will be '0'."
    ::= { adslLineConfProfileEntry 7 }

adslAtucConfUpshiftSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (0..310)
    UNITS        "tenth dB"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Configured Signal/Noise Margin for rate upshift.
         If the noise margin rises above this level, the modem
         should attempt to increase its transmit rate.  In
         the case that RADSL is not present, the value will
```

```

        be '0'."
 ::= { adslLineConfProfileEntry 8 }

adslAtucConfMinUpshiftTime OBJECT-TYPE
    SYNTAX      INTEGER(0..16383)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Minimum time that the current margin is above
        UpshiftSnrMgn before an upshift occurs.
        In the case that RADSL is not present, the value will
        be '0'."
 ::= { adslLineConfProfileEntry 9 }
adslAtucConfMinDownshiftTime OBJECT-TYPE
    SYNTAX      INTEGER(0..16383)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Minimum time that the current margin is below
        DownshiftSnrMgn before a downshift occurs.
        In the case that RADSL mode is not present,
        the value will be '0'."
 ::= { adslLineConfProfileEntry 10 }

adslAtucChanConfFastMinTxRate  OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS        "bps"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Configured Minimum Transmit rate for 'Fast' channels,
        in bps.  See adslAtucConfRateChanRatio for information
        regarding RADSL mode and ATUR transmit rate for
        ATUC receive rates."
 ::= { adslLineConfProfileEntry 11 }

adslAtucChanConfInterleaveMinTxRate OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS        "bps"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "Configured Minimum Transmit rate for 'Interleave'
        channels, in bps.  See adslAtucConfRateChanRatio for
        information regarding RADSL mode and see
        ATUR transmit rate for receive rates."

```



```

 ::= { adslLineConfProfileEntry 12 }

adslAtucChanConfFastMaxTxRate OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "bps"
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Configured Maximum Transmit rate for 'Fast' channels,
         in bps.  See adslAtucConfRateChanRatio for information
         regarding RADSL mode and see ATUR transmit rate for
         ATUC receive rates."
 ::= { adslLineConfProfileEntry 13 }

adslAtucChanConfInterleaveMaxTxRate OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "bps"
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Configured Maximum Transmit rate for 'Interleave'
         channels, in bps.  See adslAtucConfRateChanRatio for
         information regarding RADSL mode and ATUR transmit
         rate for ATUC receive rates."
 ::= { adslLineConfProfileEntry 14 }

adslAtucChanConfMaxInterleaveDelay OBJECT-TYPE
    SYNTAX      INTEGER(0..255)
    UNITS       "milli-seconds"
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Configured maximum Interleave Delay for this channel.

        Interleave delay applies only to the interleave channel
        and defines the mapping (relative spacing) between
        subsequent input bytes at the interleaver input and
        their placement in the bit stream at the interleaver
        output.  Larger numbers provide greater separation
        between consecutive input bytes in the output bit
        stream allowing for improved impulse noise immunity
        at the expense of payload latency."
 ::= { adslLineConfProfileEntry 15 }

adslAturConfRateMode OBJECT-TYPE
    SYNTAX      INTEGER {
        fixed (1),          -- no rate adaptation
        adaptAtStartup (2), -- perform rate adaptation
    }

```

```

                                -- only at initialization
                                -- perform rate adaptation at
                                -- any time
                                adaptAtRuntime (3)
                                }
                                MAX-ACCESS read-create
                                STATUS      current
                                DESCRIPTION
                                    "Defines what form of transmit rate adaptation is
                                    configured on this modem.  See ADSL Forum TR-005 [3]
                                    for more information."
                                ::= { adslLineConfProfileEntry 16 }

adslAturConfRateChanRatio OBJECT-TYPE
    SYNTAX      INTEGER(0..100)
    UNITS       "%"
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Configured allocation ratio of excess transmit
        bandwidth between fast and interleaved channels.  Only
        applies when two channel mode and RADSL are supported.
        Distribute bandwidth on each channel in excess of the
        corresponding ChanConfMinTxRate so that:
        adslAturConfRateChanRatio =

                                [Fast / (Fast + Interleaved)] * 100

        In other words this value is the fast channel
        percentage."
    ::= { adslLineConfProfileEntry 17 }

adslAturConfTargetSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (0..310)
    UNITS       "tenth dB"
    MAX-ACCESS   read-create
    STATUS      current
    DESCRIPTION
        "Configured Target Signal/Noise Margin.
        This is the Noise Margin the modem must achieve
        with a BER of 10-7 or better to successfully complete
        initialization."
    ::= { adslLineConfProfileEntry 18 }

adslAturConfMaxSnrMgn OBJECT-TYPE
    SYNTAX      INTEGER (0..310)
    UNITS       "tenth dB"
    MAX-ACCESS   read-create
    STATUS      current

```

DESCRIPTION

"Configured Maximum acceptable Signal/Noise Margin.
If the Noise Margin is above this the modem should
attempt to reduce its power output to optimize its
operation."

::= { adslLineConfProfileEntry 19 }

adslAturConfMinSnrMgn OBJECT-TYPE

SYNTAX INTEGER (0..310)

UNITS "tenth dB"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Configured Minimum acceptable Signal/Noise Margin.
If the noise margin falls below this level, the modem
should attempt to increase its power output. If that
is not possible the modem will attempt to
re-initialize or shut down."

::= { adslLineConfProfileEntry 20 }

adslAturConfDownshiftSnrMgn OBJECT-TYPE

SYNTAX INTEGER (0..310)

UNITS "tenth dB"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Configured Signal/Noise Margin for rate downshift.
If the noise margin falls below this level, the modem
should attempt to decrease its transmit rate.
In the case that RADSL mode is not present,
the value will be '0'."

::= { adslLineConfProfileEntry 21 }

adslAturConfUpshiftSnrMgn OBJECT-TYPE

SYNTAX INTEGER (0..310)

UNITS "tenth dB"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Configured Signal/Noise Margin for rate upshift.
If the noise margin rises above this level, the modem
should attempt to increase its transmit rate.
In the case that RADSL is not present,
the value will be '0'."

::= { adslLineConfProfileEntry 22 }

adslAturConfMinUpshiftTime OBJECT-TYPE

SYNTAX INTEGER(0..16383)

```

    UNITS          "seconds"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Minimum time that the current margin is above
        UpshiftSnrMgn before an upshift occurs.
        In the case that RADSL is not present, the value will
        be '0'."
 ::= { adslLineConfProfileEntry 23 }

adslAturConfMinDownshiftTime OBJECT-TYPE
    SYNTAX         INTEGER(0..16383)
    UNITS          "seconds"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Minimum time that the current margin is below
        DownshiftSnrMgn before a downshift occurs.
        In the case that RADSL mode is not present,
        the value will be '0'."
 ::= { adslLineConfProfileEntry 24 }

adslAturChanConfFastMinTxRate  OBJECT-TYPE
    SYNTAX         Unsigned32
    UNITS          "bps"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Configured Minimum Transmit rate for 'Fast' channels,
        in bps.  See adslAturConfRateChanRatio for information
        regarding RADSL mode and ATUC transmit rate
        for ATUR receive rates."
 ::= { adslLineConfProfileEntry 25 }

adslAturChanConfInterleaveMinTxRate OBJECT-TYPE
    SYNTAX         Unsigned32
    UNITS          "bps"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Configured Minimum Transmit rate for 'Interleave'
        channels, in bps.  See adslAturConfRateChanRatio for
        information regarding RADSL mode and ATUC transmit rate
        for ATUR receive rates."
 ::= { adslLineConfProfileEntry 26 }

adslAturChanConfFastMaxTxRate  OBJECT-TYPE
    SYNTAX         Unsigned32

```

```

    UNITS          "bps"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Configured Maximum Transmit rate for 'Fast' channels,
        in bps.  See adslAturConfRateChanRatio for information
        regarding RADSL mode and ATUC transmit rate
        for ATUR receive rates."
 ::= { adslLineConfProfileEntry 27 }

adslAturChanConfInterleaveMaxTxRate OBJECT-TYPE
    SYNTAX         Unsigned32
    UNITS          "bps"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Configured Maximum Transmit rate for 'Interleave'
        channels, in bps.  See adslAturConfRateChanRatio for
        information regarding RADSL mode and see
        ATUC transmit rate for ATUR receive rates."
 ::= { adslLineConfProfileEntry 28 }

adslAturChanConfMaxInterleaveDelay OBJECT-TYPE
    SYNTAX         INTEGER(0..255)
    UNITS          "milli-seconds"
    MAX-ACCESS     read-create
    STATUS         current
    DESCRIPTION
        "Configured maximum Interleave Delay for this channel.

        Interleave delay applies only to the interleave channel
        and defines the mapping (relative spacing) between
        subsequent input bytes at the interleaver input and
        their placement in the bit stream at the interleaver
        output.  Larger numbers provide greater separation
        between consecutive input bytes in the output bit
        stream allowing for improved impulse noise immunity
        at the expense of payload latency."
 ::= { adslLineConfProfileEntry 29 }

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

```

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

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

If the implementator of this MIB has chosen not to implement 'dynamic assignment' of profiles, this object's MIN-ACCESS is read-only and its value is always to be 'active'."

```
::= { adslLineConfProfileEntry 30 }
```

```
adslLineAlarmConfProfileTable      OBJECT-TYPE
    SYNTAX          SEQUENCE OF AdslLineAlarmConfProfileEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "This table contains information on the ADSL line
        configuration. One entry in this table reflects a
        profile defined by a manager which can be used to
        configure the modem for a physical line"
 ::= { adslMibObjects 15}
```

```
adslLineAlarmConfProfileEntry      OBJECT-TYPE
    SYNTAX          AdslLineAlarmConfProfileEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "Each entry consists of a list of parameters that
        represents the configuration of an ADSL modem.

        When 'dynamic' profiles are implemented, a default
        profile will always exist. This profile's name will
        be set to 'DEFVAL' and its parameters will be set to
        vendor specific values, unless otherwise specified
        in this document.
```

When 'static' profiles are implemented, profiles are automatically created or destroyed as ADSL physical lines are discovered and removed by the system. The name of the profile will be equivalent to the decimal value of the line's interface index.

"

```
INDEX { IMPLIED adslLineAlarmConfProfileName}
```

```
::= { adslLineAlarmConfProfileTable 1}
```

```
AdslLineAlarmConfProfileEntry ::=
```

```
SEQUENCE {
    adslLineAlarmConfProfileName          SnmpAdminString,
    adslAtucThresh15MinLofs               INTEGER,
    adslAtucThresh15MinLoss               INTEGER,
    adslAtucThresh15MinLols               INTEGER,
    adslAtucThresh15MinLprs               INTEGER,
    adslAtucThresh15MinESS                INTEGER,
    adslAtucThreshFastRateUp              Unsigned32,
    adslAtucThreshInterleaveRateUp        Unsigned32,
    adslAtucThreshFastRateDown            Unsigned32,
    adslAtucThreshInterleaveRateDown      Unsigned32,
    adslAtucInitFailureTrapEnable         INTEGER,
    adslAturThresh15MinLofs               INTEGER,
    adslAturThresh15MinLoss               INTEGER,
    adslAturThresh15MinLprs               INTEGER,
    adslAturThresh15MinESS                INTEGER,
    adslAturThreshFastRateUp              Unsigned32,
    adslAturThreshInterleaveRateUp        Unsigned32,
    adslAturThreshFastRateDown            Unsigned32,
    adslAturThreshInterleaveRateDown      Unsigned32,
    adslLineAlarmConfProfileRowStatus     RowStatus
}
```

```
adslLineAlarmConfProfileName    OBJECT-TYPE
```

```
SYNTAX          SnmpAdminString (SIZE (1..32))
```

```
MAX-ACCESS      not-accessible
```

```
STATUS          current
```

```
DESCRIPTION
```

"This object is used by the line alarm configuration table in order to identify a row of this table.

When 'dynamic' profiles are implemented, the profile name is user specified. Also, the system will always provide a default profile whose name is 'DEFVAL'.

When 'static' profiles are implemented, there is an one-to-one relationship between each line and its profile. In which case, the profile name will need to algorithmically represent the Line's ifIndex. Therefore, the profile's name is a decimalized string of the ifIndex that is fixed-length (i.e., 10) with leading zero(s). For example, the profile name for ifIndex which equals '15' will be '0000000015'."

```
::= { adslLineAlarmConfProfileEntry 1}
```

```
adslAtucThresh15MinLofs OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The number of Loss of Frame Seconds
        encountered by an ADSL interface within any given 15
        minutes performance data collection period, which
        causes the SNMP agent to send an
        adslAtucPerfLofsThreshTrap.
        One trap will be sent per interval per interface.
        A value of '0' will disable the trap."
 ::= { adslLineAlarmConfProfileEntry 2}

adslAtucThresh15MinLoss OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The number of Loss of Signal Seconds
        encountered by an ADSL interface within any given 15
        minutes performance data collection period, which
        causes the SNMP agent to send an
        adslAtucPerfLossThreshTrap.
        One trap will be sent per interval per interface.
        A value of '0' will disable the trap."
 ::= { adslLineAlarmConfProfileEntry 3}

adslAtucThresh15MinLols OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The number of Loss of Link Seconds
        encountered by an ADSL interface within any given 15
        minutes performance data collection period, which
        causes the SNMP agent to send an
        adslAtucPerfLolsThreshTrap.
        One trap will be sent per interval per interface.
        A value of '0' will disable the trap."
 ::= { adslLineAlarmConfProfileEntry 4}

adslAtucThresh15MinLprs OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
```



```

MAX-ACCESS    read-create
STATUS        current
DESCRIPTION
    "The number of Loss of Power Seconds
    encountered by an ADSL interface within any given 15
    minutes performance data collection period, which
    causes the SNMP agent to send an
    adslAtucPerfLprsThreshTrap.
    One trap will be sent per interval per interface.
    A value of '0' will disable the trap."
::= { adslLineAlarmConfProfileEntry 5}

adslAtucThresh15MinESs OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS       "seconds"
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The number of Errored Seconds
        encountered by an ADSL interface within any given 15
        minutes performance data collection period, which
        causes the SNMP agent to send an
        adslAtucPerfESsThreshTrap.
        One trap will be sent per interval per interface.
        A value of '0' will disable the trap."
    ::= { adslLineAlarmConfProfileEntry 6}

adslAtucThreshFastRateUp OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "bps"
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "Applies to 'Fast' channels only.
        Configured change in rate causing an
        adslAtucRateChangeTrap. A trap is produced when:
        ChanCurrTxRate >= ChanPrevTxRate plus the value of
        this object. A value of '0' will disable the trap."
    ::= { adslLineAlarmConfProfileEntry 7}

adslAtucThreshInterleaveRateUp OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "bps"
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "Applies to 'Interleave' channels only.
        Configured change in rate causing an

```

adslAtucRateChangeTrap. A trap is produced when:
 ChanCurrTxRate >= ChanPrevTxRate plus the value of
 this object. A value of '0' will disable the trap."
 ::= { adslLineAlarmConfProfileEntry 8 }

adslAtucThreshFastRateDown OBJECT-TYPE

SYNTAX Unsigned32

UNITS "bps"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Applies to 'Fast' channels only.

Configured change in rate causing an

adslAtucRateChangeTrap. A trap is produced when:

ChanCurrTxRate <= ChanPrevTxRate minus the value of
 this object. A value of '0' will disable the trap."

::= { adslLineAlarmConfProfileEntry 9 }

adslAtucThreshInterleaveRateDown OBJECT-TYPE

SYNTAX Unsigned32

UNITS "bps"

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Applies to 'Interleave' channels only.

Configured change in rate causing an

adslAtucRateChangeTrap. A trap is produced when:

ChanCurrTxRate <= ChanPrevTxRate minus the value of
 this object. A value of '0' will disable the trap."

::= { adslLineAlarmConfProfileEntry 10 }

adslAtucInitFailureTrapEnable OBJECT-TYPE

SYNTAX INTEGER {

enable (1),

disable (2)

}

MAX-ACCESS read-create

STATUS current

DESCRIPTION

"Enables and disables the InitFailureTrap. This
 object is defaulted disable(2)."

DEFVAL { disable }

::= { adslLineAlarmConfProfileEntry 11 }

adslAturThresh15MinLofs OBJECT-TYPE

SYNTAX INTEGER(0..900)

UNITS "seconds"

MAX-ACCESS read-create

```

STATUS      current
DESCRIPTION
    "The number of Loss of Frame Seconds
    encountered by an ADSL interface within any given 15
    minutes performance data collection period, which
    causes the SNMP agent to send an
    adslAturPerfLofsThreshTrap.
    One trap will be sent per interval per interface.
    A value of '0' will disable the trap."
::= { adslLineAlarmConfProfileEntry 12 }

adslAturThresh15MinLoss OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The number of Loss of Signal Seconds
        encountered by an ADSL interface within any given 15
        minutes performance data collection period, which
        causes the SNMP agent to send an
        adslAturPerfLossThreshTrap.
        One trap will be sent per interval per interface.
        A value of '0' will disable the trap."
    ::= { adslLineAlarmConfProfileEntry 13 }

adslAturThresh15MinLprs OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The number of Loss of Power Seconds
        encountered by an ADSL interface within any given 15
        minutes performance data collection period, which
        causes the SNMP agent to send an
        adslAturPerfLprsThreshTrap.
        One trap will be sent per interval per interface.
        A value of '0' will disable the trap."
    ::= { adslLineAlarmConfProfileEntry 14 }

adslAturThresh15MinESS OBJECT-TYPE
    SYNTAX      INTEGER(0..900)
    UNITS        "seconds"
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The number of Errored Seconds

```

encountered by an ADSL interface within any given 15 minutes performance data collection period, which causes the SNMP agent to send an adslAturPerfESSthreshTrap.
 One trap will be sent per interval per interface.
 A value of '0' will disable the trap."

```
::= { adslLineAlarmConfProfileEntry 15 }
```

adslAturThreshFastRateUp OBJECT-TYPE
 SYNTAX Unsigned32
 UNITS "bps"
 MAX-ACCESS read-create
 STATUS current
 DESCRIPTION
 "Applies to 'Fast' channels only.
 Configured change in rate causing an
 adslAturRateChangeTrap. A trap is produced when:
 ChanCurrTxRate >= ChanPrevTxRate plus the value of
 this object. A value of '0' will disable the trap."

```
::= { adslLineAlarmConfProfileEntry 16 }
```

adslAturThreshInterleaveRateUp OBJECT-TYPE
 SYNTAX Unsigned32
 UNITS "bps"
 MAX-ACCESS read-create
 STATUS current
 DESCRIPTION
 "Applies to 'Interleave' channels only.
 configured change in rate causing an
 adslAturRateChangeTrap. A trap is produced when:
 ChanCurrTxRate >= ChanPrevTxRate plus the value of
 this object. A value of '0' will disable the trap."

```
::= { adslLineAlarmConfProfileEntry 17 }
```

adslAturThreshFastRateDown OBJECT-TYPE
 SYNTAX Unsigned32
 UNITS "bps"
 MAX-ACCESS read-create
 STATUS current
 DESCRIPTION
 "Applies to 'Fast' channels only.
 Configured change in rate causing an
 adslAturRateChangeTrap. A trap is produced when:
 ChanCurrTxRate <= ChanPrevTxRate minus the value of
 this object. A value of '0' will disable the trap."

```
::= { adslLineAlarmConfProfileEntry 18 }
```

adslAturThreshInterleaveRateDown OBJECT-TYPE

```

SYNTAX      Unsigned32
UNITS       "bps"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "Applies to 'Interleave' channels only.
    Configured change in rate causing an
    adslAturRateChangeTrap. A trap is produced when:
    ChanCurrTxRate <= ChanPrevTxRate minus the value of
    this object. A value of '0' will disable the trap."
::= { adslLineAlarmConfProfileEntry 19 }

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

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

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

        If the implementator of this MIB has chosen not
        to implement 'dynamic assignment' of profiles, this
        object's MIN-ACCESS is read-only and its value
        is always to be 'active'."
::= { adslLineAlarmConfProfileEntry 20 }

-- Line Code Specific Tables

-- These are place holders for the Line Code Specific MIBs
-- once they become available.

adslLCSMib OBJECT IDENTIFIER ::= { adslMibObjects 16 }

-- trap definitions

adslTraps OBJECT IDENTIFIER ::= { adslLineMib 2 }

adslAtucTraps OBJECT IDENTIFIER ::= { adslTraps 1 }

```

```
adslAtucPerfLofsThreshTrap      NOTIFICATION-TYPE
    OBJECTS { adslAtucPerfCurr15MinLofs,
               adslAtucThresh15MinLofs }
    STATUS    current
    DESCRIPTION
        "Loss of Framing 15-minute interval threshold reached."
 ::= { adslAtucTraps 0 1 }

adslAtucPerfLossThreshTrap      NOTIFICATION-TYPE
    OBJECTS { adslAtucPerfCurr15MinLoss,
               adslAtucThresh15MinLoss }
    STATUS    current
    DESCRIPTION
        "Loss of Signal 15-minute interval threshold reached."
 ::= { adslAtucTraps 0 2 }

adslAtucPerfLprsThreshTrap      NOTIFICATION-TYPE
    OBJECTS { adslAtucPerfCurr15MinLprs,
               adslAtucThresh15MinLprs }
    STATUS    current
    DESCRIPTION
        "Loss of Power 15-minute interval threshold reached."
 ::= { adslAtucTraps 0 3 }

adslAtucPerfESsThreshTrap       NOTIFICATION-TYPE
    OBJECTS { adslAtucPerfCurr15MinESs,
               adslAtucThresh15MinESs }
    STATUS    current
    DESCRIPTION
        "Errored Second 15-minute interval threshold reached."
 ::= { adslAtucTraps 0 4 }

adslAtucRateChangeTrap          NOTIFICATION-TYPE
    OBJECTS { adslAtucChanCurrTxRate,
               adslAtucChanPrevTxRate }
    STATUS    current
    DESCRIPTION
        "The ATUCs transmit rate has changed (RADSL mode only)"
 ::= { adslAtucTraps 0 5 }

adslAtucPerfLolsThreshTrap      NOTIFICATION-TYPE
    OBJECTS { adslAtucPerfCurr15MinLols,
               adslAtucThresh15MinLols }
    STATUS    current
    DESCRIPTION
        "Loss of Link 15-minute interval threshold reached."
 ::= { adslAtucTraps 0 6 }
```

```

adslAtucInitFailureTrap NOTIFICATION-TYPE
  OBJECTS { adslAtucCurrStatus }
  STATUS current
  DESCRIPTION
    "ATUC initialization failed. See adslAtucCurrStatus
    for potential reasons."
  ::= { adslAtucTraps 0 7 }

```

```

adslAturTraps OBJECT IDENTIFIER ::= { adslTraps 2 }

```

```

adslAturPerfLofsThreshTrap      NOTIFICATION-TYPE
  OBJECTS { adslAturPerfCurr15MinLofs,
            adslAturThresh15MinLofs }
  STATUS current
  DESCRIPTION
    "Loss of Framing 15-minute interval threshold reached."
  ::= { adslAturTraps 0 1 }

```

```

adslAturPerfLossThreshTrap      NOTIFICATION-TYPE
  OBJECTS { adslAturPerfCurr15MinLoss,
            adslAturThresh15MinLoss }
  STATUS current
  DESCRIPTION
    "Loss of Signal 15-minute interval threshold reached."
  ::= { adslAturTraps 0 2 }

```

```

adslAturPerfLprsThreshTrap      NOTIFICATION-TYPE
  OBJECTS { adslAturPerfCurr15MinLprs,
            adslAturThresh15MinLprs }
  STATUS current
  DESCRIPTION
    "Loss of Power 15-minute interval threshold reached."
  ::= { adslAturTraps 0 3 }

```

```

adslAturPerfESsThreshTrap      NOTIFICATION-TYPE
  OBJECTS { adslAturPerfCurr15MinESs,
            adslAturThresh15MinESs }
  STATUS current
  DESCRIPTION
    "Errored Second 15-minute interval threshold reached."
  ::= { adslAturTraps 0 4 }

```

```

adslAturRateChangeTrap NOTIFICATION-TYPE
  OBJECTS { adslAturChanCurrTxRate,
            adslAturChanPrevTxRate }
  STATUS current
  DESCRIPTION
    "The ATURs transmit rate has changed (RADSL mode only)"

```

```

 ::= { adslAturTraps 0 5 }

-- no adslAturPerfLolsThreshTrap possible { 0 6 }

-- no adslAturInitFailureTrap possible { 0 7 }

-- conformance information

adslConformance OBJECT IDENTIFIER ::= { adslLineMib 3 }

adslGroups OBJECT IDENTIFIER ::= { adslConformance 1 }
adslCompliances OBJECT IDENTIFIER ::= { adslConformance 2 }

-- ATU-C agent compliance statements

adslLineMibAtucCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for SNMP entities
         which manage ADSL ATU-C interfaces."

MODULE -- this module
MANDATORY-GROUPS
    {
        adslLineGroup, adslPhysicalGroup, adslChannelGroup,
        adslAtucPhysPerfIntervalGroup,
        adslAturPhysPerfIntervalGroup, adslLineConfProfileGroup,
        adslLineAlarmConfProfileGroup,
        adslLineConfProfileControlGroup
    }

GROUP          adslAtucPhysPerfRawCounterGroup
DESCRIPTION
    "This group is optional. Implementations which
     require continuous ATU-C physical event counters
     should implement this group."

GROUP          adslAturPhysPerfRawCounterGroup
DESCRIPTION
    "This group is optional. Implementations which
     require continuous ATU-R physical event counters
     should implement this group."

GROUP          adslAtucChanPerformanceGroup
DESCRIPTION
    "This group is optional. Implementations which
     require ATU-C channel block event counters should
     implement this group."

```


GROUP adslAturChanPerformanceGroup
DESCRIPTION
 "This group is optional. Implementations which
 require ATU-R channel block event counters should
 implement this group."

OBJECT adslLineConfProfile
MIN-ACCESS read-only
DESCRIPTION
 "Read-only access is applicable when static
 profiles are implemented."

OBJECT adslAtucConfRateMode
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfRateChanRatio
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfTargetSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfMaxSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfMinSnrMgn
MIN-ACCESS read-wr
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfDownshiftSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfUpshiftSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfMinUpshiftTime
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucConfMinDownshiftTime
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucChanConfFastMinTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucChanConfInterleaveMinTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucChanConfFastMaxTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucChanConfInterleaveMaxTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucChanConfMaxInterleaveDelay
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfRateMode
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfRateChanRatio
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfTargetSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfMaxSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfMinSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfDownshiftSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfUpshiftSnrMgn
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfMinUpshiftTime
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturConfMinDownshiftTime
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturChanConfFastMinTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturChanConfInterleaveMinTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturChanConfFastMaxTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturChanConfInterleaveMaxTxRate
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturChanConfMaxInterleaveDelay
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslLineConfProfileRowStatus
MIN-ACCESS read-only
DESCRIPTION
 "Read-only access is applicable only when static
 profiles are implemented."

OBJECT adslLineAlarmConfProfile
MIN-ACCESS read-only
DESCRIPTION
 "Read-only access is applicable only when static
 profiles are implemented."

OBJECT adslAtucThresh15MinLofs
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThresh15MinLoss
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThresh15MinLols
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThresh15MinLprs
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThresh15MinESS
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThreshFastRateUp
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThreshInterleaveRateUp
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThreshFastRateDown
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucThreshInterleaveRateDown
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAtucInitFailureTrapEnable
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThresh15MinLofs
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThresh15MinLoss
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThresh15MinLprs
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThresh15MinESs
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThreshFastRateUp
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThreshInterleaveRateUp
MIN-ACCESS read-write
DESCRIPTION
 "Read-write access is applicable when
 static profiles are implemented."

OBJECT adslAturThreshFastRateDown

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when
static profiles are implemented."

OBJECT adslAturThreshInterleaveRateDown

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when
static profiles are implemented."

OBJECT adslLineAlarmConfProfileRowStatus

MIN-ACCESS read-only

DESCRIPTION

"Read-only access is applicable only when static
profiles are implemented."

::= { adslCompliances 1 }

-- ATU-R agent compliance statements

adslLineMibAturCompliance MODULE-COMPLIANCE

STATUS current

DESCRIPTION

"The compliance statement for SNMP entities
which manage ADSL ATU-R interfaces."

MODULE -- this module

MANDATORY-GROUPS

```
{
  adslAturLineGroup, adslAturPhysicalGroup,
  adslAturChannelGroup,
  adslAturAtucPhysPerfIntervalGroup,
  adslAturAturPhysPerfIntervalGroup,
  adslAturLineAlarmConfProfileGroup,
  adslAturLineConfProfileControlGroup
}
```

GROUP adslAturAtucPhysPerfRawCounterGroup

DESCRIPTION

"This group is optional. Implementations which
require continuous ATU-C physical event counters
should implement this group."

GROUP adslAturAturPhysPerfRawCounterGroup

DESCRIPTION

"This group is optional. Implementations which

require continuous ATU-R physical event counters should implement this group."

GROUP adslAturAtucChanPerformanceGroup

DESCRIPTION

"This group is optional. Implementations which require ATU-C channel block event counters should implement this group."

GROUP adslAturAturChanPerformanceGroup

DESCRIPTION

"This group is optional. Implementations which require ATU-R channel block event counters should implement this group."

OBJECT adslLineAlarmConfProfile

MIN-ACCESS read-only

DESCRIPTION

"Read-only access is applicable only when static profiles are implemented."

OBJECT adslAtucThresh15MinLofs

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAtucThresh15MinLoss

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAtucThresh15MinESS

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAtucThreshFastRateUp

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAtucThreshInterleaveRateUp

MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAtucThreshFastRateDown
MIN-ACCESS read-write
DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAtucInitFailureTrapEnable
MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThresh15MinLofs
MIN-ACCESS read-write
DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThresh15MinLoss
MIN-ACCESS read-write
DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThresh15MinLprs
MIN-ACCESS read-write
DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThresh15MinESS
MIN-ACCESS read-write
DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThreshFastRateUp
MIN-ACCESS read-write
DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThreshInterleaveRateUp
MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThreshFastRateDown
MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslAturThreshInterleaveRateDown
MIN-ACCESS read-write

DESCRIPTION

"Read-write access is applicable when static profiles are implemented."

OBJECT adslLineAlarmConfProfileRowStatus
MIN-ACCESS read-only

DESCRIPTION

"Read-only access is applicable only when static profiles are implemented."

OBJECT adslAtucCurrStatus

SYNTAX BITS {
 noDefect(0),
 lossOfFraming(1),
 lossOfSignal(2)
 }

DESCRIPTION

"It is allowable to implement only noDefect(0), lossOfFraming(1) and lossOfSignal(2) by the ATU-R agent."

::= { adslCompliances 2 }

-- units of conformance

adslLineGroup OBJECT-GROUP

OBJECTS {
 adslLineCoding, adslLineType, adslLineSpecific
}

STATUS current

DESCRIPTION

"A collection of objects providing configuration information about an ADSL Line."

::= { adslGroups 1 }

adslPhysicalGroup OBJECT-GROUP

OBJECTS {

```

        adslAtucInvSerialNumber, adslAtucInvVendorID,
        adslAtucInvVersionNumber, adslAtucCurrSnrMgn,
        adslAtucCurrAtn, adslAtucCurrStatus,
        adslAtucCurrOutputPwr, adslAtucCurrAttainableRate,
        adslAturInvSerialNumber, adslAturInvVendorID,
        adslAturInvVersionNumber, adslAturCurrSnrMgn,
        adslAturCurrAtn, adslAturCurrStatus,
        adslAturCurrOutputPwr, adslAturCurrAttainableRate
    }
    STATUS          current
    DESCRIPTION
        "A collection of objects providing physical
        configuration information of the ADSL Line."
 ::= { adslGroups 2 }

adslChannelGroup      OBJECT-GROUP
    OBJECTS {
        adslAtucChanInterleaveDelay, adslAtucChanCurrTxRate,
        adslAtucChanPrevTxRate, adslAtucChanCrcBlockLength,
        adslAturChanInterleaveDelay, adslAturChanCurrTxRate,
        adslAturChanPrevTxRate, adslAturChanCrcBlockLength
    }
    STATUS          current
    DESCRIPTION
        "A collection of objects providing configuration
        information about an ADSL channel."
 ::= { adslGroups 3 }

adslAtucPhysPerfRawCounterGroup OBJECT-GROUP
    OBJECTS {
        adslAtucPerfLofs, adslAtucPerfLoss,
        adslAtucPerfLols, adslAtucPerfLprs,
        adslAtucPerfESS, adslAtucPerfInits
    }
    STATUS          current
    DESCRIPTION
        "A collection of objects providing raw performance
        counts on an ADSL Line (ATU-C end)."
 ::= { adslGroups 4 }

adslAtucPhysPerfIntervalGroup OBJECT-GROUP
    OBJECTS {
        adslAtucPerfValidIntervals,
        adslAtucPerfInvalidIntervals,
        adslAtucPerfCurr15MinTimeElapsed,
        adslAtucPerfCurr15MinLofs, adslAtucPerfCurr15MinLoss,
        adslAtucPerfCurr15MinLols, adslAtucPerfCurr15MinLprs,
        adslAtucPerfCurr15MinESS, adslAtucPerfCurr15MinInits,

```

```

adslAtucPerfCurr1DayLofs, adslAtucPerfCurr1DayLoss,
adslAtucPerfCurr1DayLols, adslAtucPerfCurr1DayLprs,
adslAtucPerfCurr1DayESs, adslAtucPerfCurr1DayInits,
adslAtucPerfPrev1DayMoniSecs,
adslAtucPerfPrev1DayLofs, adslAtucPerfPrev1DayLoss,
adslAtucPerfPrev1DayLols, adslAtucPerfPrev1DayLprs,
adslAtucPerfPrev1DayESs, adslAtucPerfPrev1DayInits,
adslAtucIntervalLofs, adslAtucIntervalLoss,
adslAtucIntervalLols, adslAtucIntervalLprs,
adslAtucIntervalESs, adslAtucIntervalInits,
adslAtucIntervalValidData
}

```

STATUS current

DESCRIPTION

"A collection of objects providing current 15-minute,
1-day; and previous 1-day performance counts on
ADSL Line (ATU-C end) ."

::= { adslGroups 5 }

adslAturPhysPerfRawCounterGroup OBJECT-GROUP

OBJECTS {

```

    adslAturPerfLofs, adslAturPerfLoss,
    adslAturPerfLprs, adslAturPerfESs
}

```

STATUS current

DESCRIPTION

"A collection of objects providing raw performance
counts on an ADSL Line (ATU-R end)."

::= { adslGroups 6 }

adslAturPhysPerfIntervalGroup OBJECT-GROUP

OBJECTS {

```

    adslAturPerfValidIntervals,
    adslAturPerfInvalidIntervals,
    adslAturPerfCurr15MinTimeElapsed,
    adslAturPerfCurr15MinLofs, adslAturPerfCurr15MinLoss,
    adslAturPerfCurr15MinLprs, adslAturPerfCurr15MinESs,
    adslAturPerfCurr1DayTimeElapsed,
    adslAturPerfCurr1DayLofs, adslAturPerfCurr1DayLoss,
    adslAturPerfCurr1DayLprs, adslAturPerfCurr1DayESs,
    adslAturPerfPrev1DayMoniSecs,
    adslAturPerfPrev1DayLofs, adslAturPerfPrev1DayLoss,
    adslAturPerfPrev1DayLprs, adslAturPerfPrev1DayESs,
    adslAturIntervalLofs,
    adslAturIntervalLoss, adslAturIntervalLprs,
    adslAturIntervalESs, adslAturIntervalValidData
}

```

```

STATUS      current
DESCRIPTION
    "A collection of objects providing current 15-minute,
    1-day; and previous 1-day performance counts on
    ADSL Line (ATU-R end)."
```

::= { adslGroups 7 }

adslAtucChanPerformanceGroup OBJECT-GROUP

```

OBJECTS {
    adslAtucChanReceivedBlks,
    adslAtucChanTransmittedBlks,
    adslAtucChanCorrectedBlks,
    adslAtucChanUncorrectBlks,
    adslAtucChanPerfValidIntervals,
    adslAtucChanPerfInvalidIntervals,
    adslAtucChanPerfCurr15MinTimeElapsed,
    adslAtucChanPerfCurr15MinReceivedBlks,
    adslAtucChanPerfCurr15MinTransmittedBlks,
    adslAtucChanPerfCurr15MinCorrectedBlks,
    adslAtucChanPerfCurr15MinUncorrectBlks,
    adslAtucChanPerfCurr1DayTimeElapsed,
    adslAtucChanPerfCurr1DayReceivedBlks,
    adslAtucChanPerfCurr1DayTransmittedBlks,
    adslAtucChanPerfCurr1DayCorrectedBlks,
    adslAtucChanPerfCurr1DayUncorrectBlks,
    adslAtucChanPerfPrev1DayMoniSecs,
    adslAtucChanPerfPrev1DayReceivedBlks,
    adslAtucChanPerfPrev1DayTransmittedBlks,
    adslAtucChanPerfPrev1DayCorrectedBlks,
    adslAtucChanPerfPrev1DayUncorrectBlks,
    adslAtucChanIntervalReceivedBlks,
    adslAtucChanIntervalTransmittedBlks,
    adslAtucChanIntervalCorrectedBlks,
    adslAtucChanIntervalUncorrectBlks,
    adslAtucChanIntervalValidData
}
STATUS      current
DESCRIPTION
    "A collection of objects providing channel block
    performance information on an ADSL channel
    (ATU-C end)."
```

::= { adslGroups 8 }

adslAturChanPerformanceGroup OBJECT-GROUP

```

OBJECTS {
    adslAturChanReceivedBlks,
    adslAturChanTransmittedBlks,
    adslAturChanCorrectedBlks,
```

```

    adslAturChanUncorrectBlks,
    adslAturChanPerfValidIntervals,
    adslAturChanPerfInvalidIntervals,
    adslAturChanPerfCurr15MinTimeElapsed,
    adslAturChanPerfCurr15MinReceivedBlks,
    adslAturChanPerfCurr15MinTransmittedBlks,
    adslAturChanPerfCurr15MinCorrectedBlks,
    adslAturChanPerfCurr15MinUncorrectBlks,
    adslAturChanPerfCurr1DayTimeElapsed,
    adslAturChanPerfCurr1DayReceivedBlks,
    adslAturChanPerfCurr1DayTransmittedBlks,
    adslAturChanPerfCurr1DayCorrectedBlks,
    adslAturChanPerfCurr1DayUncorrectBlks,
    adslAturChanPerfPrev1DayMoniSecs,
    adslAturChanPerfPrev1DayReceivedBlks,
    adslAturChanPerfPrev1DayTransmittedBlks,
    adslAturChanPerfPrev1DayCorrectedBlks,
    adslAturChanPerfPrev1DayUncorrectBlks,
    adslAturChanIntervalReceivedBlks,
    adslAturChanIntervalTransmittedBlks,
    adslAturChanIntervalCorrectedBlks,
    adslAturChanIntervalUncorrectBlks,
    adslAturChanIntervalValidData
  }
  STATUS      current
  DESCRIPTION
    "A collection of objects providing channel block
    performance information on an ADSL channel
    (ATU-C end)."
```

::= { adslGroups 9 }

```

adslLineConfProfileGroup OBJECT-GROUP
  OBJECTS {
    adslAtucConfRateMode, adslAtucConfRateChanRatio,
    adslAtucConfTargetSnrMgn, adslAtucConfMaxSnrMgn,
    adslAtucConfMinSnrMgn,
    adslAtucConfDownshiftSnrMgn,
    adslAtucConfUpshiftSnrMgn,
    adslAtucConfMinUpshiftTime,
    adslAtucConfMinDownshiftTime,
    adslAtucChanConfFastMinTxRate,
    adslAtucChanConfInterleaveMinTxRate,
    adslAtucChanConfFastMaxTxRate,
    adslAtucChanConfInterleaveMaxTxRate,
    adslAtucChanConfMaxInterleaveDelay,
    adslAturConfRateMode, adslAturConfRateChanRatio,
    adslAturConfTargetSnrMgn, adslAturConfMaxSnrMgn,
    adslAturConfMinSnrMgn, adslAturConfDownshiftSnrMgn,
```

```

        adslAturConfUpshiftSnrMgn,
        adslAturConfMinUpshiftTime,
        adslAturConfMinDownshiftTime,
        adslAturChanConfFastMinTxRate,
        adslAturChanConfInterleaveMinTxRate,
        adslAturChanConfFastMaxTxRate,
        adslAturChanConfInterleaveMaxTxRate,
        adslAturChanConfMaxInterleaveDelay
    }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing provisioning
        information about an ADSL Line."
 ::= { adslGroups 10 }

adslLineAlarmConfProfileGroup OBJECT-GROUP
    OBJECTS {
        adslAtucThresh15MinLofs, adslAtucThresh15MinLoss,
        adslAtucThresh15MinLols, adslAtucThresh15MinLprs,
        adslAtucThresh15MinESS, adslAtucThreshFastRateUp,
        adslAtucThreshInterleaveRateUp,
        adslAtucThreshFastRateDown,
        adslAtucThreshInterleaveRateDown,
        adslAtucInitFailureTrapEnable,
        adslAturThresh15MinLofs, adslAturThresh15MinLoss,
        adslAturThresh15MinLprs, adslAturThresh15MinESS,
        adslAturThreshFastRateUp,
        adslAturThreshInterleaveRateUp,
        adslAturThreshFastRateDown,
        adslAturThreshInterleaveRateDown
    }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing alarm provisioning
        information about an ADSL Line."
 ::= { adslGroups 11 }

adslLineConfProfileControlGroup OBJECT-GROUP
    OBJECTS {
        adslLineConfProfile, adslLineAlarmConfProfile,
        adslLineConfProfileRowStatus,
        adslLineAlarmConfProfileRowStatus
    }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing profile
        control for the ADSL system."
 ::= { adslGroups 12 }

```

```

adslNotificationsGroup NOTIFICATION-GROUP
  NOTIFICATIONS {
    adslAtucPerfLofsThreshTrap,
    adslAtucPerfLossThreshTrap,
    adslAtucPerfLprsThreshTrap,
    adslAtucPerfESsThreshTrap,
    adslAtucRateChangeTrap,
    adslAtucPerfLolsThreshTrap,
    adslAtucInitFailureTrap,
    adslAturPerfLofsThreshTrap,
    adslAturPerfLossThreshTrap,
    adslAturPerfLprsThreshTrap,
    adslAturPerfESsThreshTrap,
    adslAturRateChangeTrap
  }
  STATUS          current
  DESCRIPTION
    "The collection of adsl notifications."
  ::= { adslGroups 13 }

-- units of conformance for ATU-R agent

adslAturLineGroup      OBJECT-GROUP
  OBJECTS {
    adslLineCoding
  }
  STATUS          current
  DESCRIPTION
    "A collection of objects providing configuration
    information about an ADSL Line on the ATU-R side."
  ::= { adslGroups 14 }

adslAturPhysicalGroup  OBJECT-GROUP
  OBJECTS {
    adslAtucInvVendorID,
    adslAtucInvVersionNumber,
    adslAtucCurrOutputPwr, adslAtucCurrAttainableRate,
    adslAturInvSerialNumber, adslAturInvVendorID,
    adslAturInvVersionNumber, adslAturCurrSnrMgn,
    adslAturCurrAtn, adslAturCurrStatus,
    adslAturCurrOutputPwr, adslAturCurrAttainableRate,
    adslAtucCurrStatus
  }
  STATUS          current
  DESCRIPTION
    "A collection of objects providing physical
    configuration information of the ADSL Line on the
    ATU-R side."

```



```
::= { adslGroups 15 }
```

```
adslAturChannelGroup      OBJECT-GROUP
```

```
  OBJECTS {
```

```
    adslAtucChanInterleaveDelay, adslAtucChanCurrTxRate,
    adslAtucChanPrevTxRate,
    adslAturChanInterleaveDelay, adslAturChanCurrTxRate,
    adslAturChanPrevTxRate, adslAturChanCrcBlockLength
  }
```

```
  STATUS      current
```

```
  DESCRIPTION
```

```
    "A collection of objects providing configuration
    information about an ADSL channel on the ATU-R
    side."
```

```
::= { adslGroups 16 }
```

```
adslAturAtucPhysPerfRawCounterGroup OBJECT-GROUP
```

```
  OBJECTS {
```

```
    adslAtucPerfLofs, adslAtucPerfLoss,
    adslAtucPerfESS, adslAtucPerfInits
  }
```

```
  STATUS      current
```

```
  DESCRIPTION
```

```
    "A collection of objects providing raw performance
    counts on an ADSL Line (ATU-C end) provided by the
    ATU-R agent."
```

```
::= { adslGroups 17 }
```

```
adslAturAtucPhysPerfIntervalGroup OBJECT-GROUP
```

```
  OBJECTS {
```

```
    adslAtucPerfValidIntervals,
    adslAtucPerfInvalidIntervals,
    adslAtucPerfCurr15MinTimeElapsed,
    adslAtucPerfCurr15MinLofs, adslAtucPerfCurr15MinLoss,
    adslAtucPerfCurr15MinESS, adslAtucPerfCurr15MinInits,
    adslAtucPerfCurr1DayTimeElapsed,
    adslAtucPerfCurr1DayLofs, adslAtucPerfCurr1DayLoss,
    adslAtucPerfCurr1DayESS, adslAtucPerfCurr1DayInits,
    adslAtucPerfPrev1DayMoniSecs,
    adslAtucPerfPrev1DayLofs, adslAtucPerfPrev1DayLoss,
    adslAtucPerfPrev1DayESS, adslAtucPerfPrev1DayInits,
    adslAtucIntervalLofs, adslAtucIntervalLoss,
    adslAtucIntervalESS, adslAtucIntervalInits,
    adslAtucIntervalValidData
  }
```

```
  STATUS      current
```

```
  DESCRIPTION
```

```
    "A collection of objects providing current
```

```

        15-minute, 1-day; and previous 1-day performance
        counts on ADSL Line (ATU-C end) provided by the
        ATU-R agent."
 ::= { adslGroups 18 }

```

```

adslAturAturPhysPerfRawCounterGroup OBJECT-GROUP

```

```

    OBJECTS {
        adslAturPerfLofs, adslAturPerfLoss,
        adslAturPerfLprs, adslAturPerfESS
    }

```

```

    STATUS      current

```

```

    DESCRIPTION

```

```

        "A collection of objects providing raw performance
        counts on an ADSL Line (ATU-R end) provided by the
        ATU-R agent."

```

```

 ::= { adslGroups 19 }

```

```

adslAturAturPhysPerfIntervalGroup OBJECT-GROUP

```

```

    OBJECTS {
        adslAturPerfValidIntervals,
        adslAturPerfInvalidIntervals,
        adslAturPerfCurr15MinTimeElapsed,
        adslAturPerfCurr15MinLofs, adslAturPerfCurr15MinLoss,
        adslAturPerfCurr15MinLprs, adslAturPerfCurr15MinESS,
        adslAturPerfCurr1DayTimeElapsed,
        adslAturPerfCurr1DayLofs, adslAturPerfCurr1DayLoss,
        adslAturPerfCurr1DayLprs, adslAturPerfCurr1DayESS,
        adslAturPerfPrev1DayMoniSecs,
        adslAturPerfPrev1DayLofs, adslAturPerfPrev1DayLoss,
        adslAturPerfPrev1DayLprs, adslAturPerfPrev1DayESS,
        adslAturIntervalLofs,
        adslAturIntervalLoss, adslAturIntervalLprs,
        adslAturIntervalESS, adslAturIntervalValidData
    }

```

```

    STATUS      current

```

```

    DESCRIPTION

```

```

        "A collection of objects providing current
        15-minute, 1-day; and previous 1-day performance
        counts on ADSL Line (ATU-R end) provided by the
        ATU-R agent."

```

```

 ::= { adslGroups 20 }

```

```

adslAturAtucChanPerformanceGroup OBJECT-GROUP

```

```

    OBJECTS {
        adslAtucChanReceivedBlks,
        adslAtucChanTransmittedBlks,
        adslAtucChanCorrectedBlks,
        adslAtucChanUncorrectBlks,

```

```

    adslAtucChanPerfCurr15MinTimeElapsed,
    adslAtucChanPerfCurr15MinReceivedBlks,
    adslAtucChanPerfCurr15MinTransmittedBlks,
    adslAtucChanPerfCurr15MinCorrectedBlks,
    adslAtucChanPerfCurr15MinUncorrectBlks,
    adslAtucChanPerfCurr1DayTimeElapsed,
    adslAtucChanPerfCurr1DayReceivedBlks,
    adslAtucChanPerfCurr1DayTransmittedBlks,
    adslAtucChanPerfCurr1DayCorrectedBlks,
    adslAtucChanPerfCurr1DayUncorrectBlks,
    adslAtucChanPerfPrev1DayMoniSecs,
    adslAtucChanPerfPrev1DayReceivedBlks,
    adslAtucChanPerfPrev1DayTransmittedBlks,
    adslAtucChanPerfPrev1DayCorrectedBlks,
    adslAtucChanPerfPrev1DayUncorrectBlks,
    adslAtucChanPerfValidIntervals,
    adslAtucChanPerfInvalidIntervals,
    adslAtucChanIntervalReceivedBlks,
    adslAtucChanIntervalTransmittedBlks,
    adslAtucChanIntervalCorrectedBlks,
    adslAtucChanIntervalUncorrectBlks,
    adslAtucChanIntervalValidData
  }
  STATUS      current
  DESCRIPTION
    "A collection of objects providing channel block
    performance information on an ADSL channel
    (ATU-C end) provided by the ATU-R agent."
 ::= { adslGroups 21 }

```

```

adslAturChanPerformanceGroup OBJECT-GROUP
  OBJECTS {
    adslAturChanReceivedBlks,
    adslAturChanTransmittedBlks,
    adslAturChanCorrectedBlks,
    adslAturChanUncorrectBlks,
    adslAturChanPerfValidIntervals,
    adslAturChanPerfInvalidIntervals,
    adslAturChanPerfCurr15MinTimeElapsed,
    adslAturChanPerfCurr15MinReceivedBlks,
    adslAturChanPerfCurr15MinTransmittedBlks,
    adslAturChanPerfCurr15MinCorrectedBlks,
    adslAturChanPerfCurr15MinUncorrectBlks,
    adslAturChanPerfCurr1DayTimeElapsed,
    adslAturChanPerfCurr1DayReceivedBlks,
    adslAturChanPerfCurr1DayTransmittedBlks,
    adslAturChanPerfCurr1DayCorrectedBlks,
    adslAturChanPerfCurr1DayUncorrectBlks,

```

```

        adslAturChanPerfPrev1DayMoniSecs,
        adslAturChanPerfPrev1DayReceivedBlks,
        adslAturChanPerfPrev1DayTransmittedBlks,
        adslAturChanPerfPrev1DayCorrectedBlks,
        adslAturChanPerfPrev1DayUncorrectBlks,
        adslAturChanIntervalReceivedBlks,
        adslAturChanIntervalTransmittedBlks,
        adslAturChanIntervalCorrectedBlks,
        adslAturChanIntervalUncorrectBlks,
        adslAturChanIntervalValidData
    }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing channel block
        performance information on an ADSL channel
        (ATU-R end) provided by the ATU-R agent."
 ::= { adslGroups 22 }

adslAturLineAlarmConfProfileGroup OBJECT-GROUP
    OBJECTS {
        adslAtucThresh15MinLofs, adslAtucThresh15MinLoss,
        adslAtucThresh15MinESS, adslAtucThreshFastRateUp,
        adslAtucThreshInterleaveRateUp,
        adslAtucThreshFastRateDown,
        adslAtucThreshInterleaveRateDown,
        adslAtucInitFailureTrapEnable,
        adslAturThresh15MinLofs, adslAturThresh15MinLoss,
        adslAturThresh15MinLprs, adslAturThresh15MinESS,
        adslAturThreshFastRateUp,
        adslAturThreshInterleaveRateUp,
        adslAturThreshFastRateDown,
        adslAturThreshInterleaveRateDown
    }
    STATUS      current
    DESCRIPTION
        "A collection of objects providing alarm
provisioning
        information about an ADSL Line provided by the
        ATU-R agent."
 ::= { adslGroups 23 }

adslAturLineConfProfileControlGroup OBJECT-GROUP
    OBJECTS {
        adslLineAlarmConfProfile,
        adslLineAlarmConfProfileRowStatus
    }
    STATUS      current
    DESCRIPTION

```

```
        "A collection of objects providing profile
        control for the ADSL system by the ATU-R agent."
 ::= { adslGroups 24 }

adslAturNotificationsGroup NOTIFICATION-GROUP
    NOTIFICATIONS {
        adslAtucPerfLofsThreshTrap,
        adslAtucPerfLossThreshTrap,
        adslAtucPerfESsThreshTrap,
        adslAtucRateChangeTrap,
        adslAturPerfLofsThreshTrap,
        adslAturPerfLossThreshTrap,
        adslAturPerfLprsThreshTrap,
        adslAturPerfESsThreshTrap,
        adslAturRateChangeTrap
    }
    STATUS          current
    DESCRIPTION
        "The collection of ADSL notifications implemented by
        the ATU-R agent."
 ::= { adslGroups 25 }
```

END

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9. References

- [1] McCloghrie K., Perkins D. and J. Schoenwaelder, "Structure of Management Information Version 2 (SMIv2)", STD 58, RFC 2578, April 1999.
- [2] McCloghrie K., Perkins D. and J. Schoenwaelder, "Textual Conventions for SMIv2", STD 58, RFC 2579, April 1999.
- [3] ADSL Forum TR-005, "Network Management Element Management", March 1998.
- [4] McCloghrie, K. and M. Rose, Editors, "Management Information Base for Network Management of TCP/IP-based internets: MIB-II", STD 17, RFC 1213, March 1991.
- [5] McCloghrie, K. and F. Kastenholz, "The Interfaces Group MIB using SMIv2", RFC 2233, November 1997.
- [6] Case, J., McCloghrie, K., Rose, M. and S. Waldbusser, "Management Information Base for version 2 of the Simple Network Management Protocol (SNMPv2)", RFC 1907, January 1996.
- [7] Case, J., Fedor, M., Schoffstall, M. and J. Davin. " A Simple Network Management Protocol (SNMP)", STD 15, RFC 1157, May 1990.
- [8] Case, J., McCloghrie, K., Rose, M. and S. Waldbusser, "Protocol Operations for Version 2 of the Simple Network Management Protocol (SNMPv2)", RFC 1905, January 1996.
- [9] ADSL Forum TR-006, "SNMP-based ADSL Line MIB", March 1998.
- [10] American National Standards Institute, ANSI T1.413-1995, August 1995.
- [11] ADSL Forum WT-014, "DMT Line Code Specific MIB", February 1999.
- [12] ADSL Forum WT-015, "CAP Line Code Specific MIB", February 1999.
- [13] Wijnen, B., Harrington, D. and R. Presuhn, "An Architecture for Describing SNMP Management Frameworks", RFC 2571, April 1999.
- [14] Rose, M. and K. McCloghrie, "Structure and Identification of Management Information for TCP/IP-based Internets", STD 16, RFC 1155, May 1990.

- [15] Rose, M. and K. McCloghrie, "Concise MIB Definitions", STD 16, RFC 1212, March 1991.
- [16] Rose, M., "A Convention for Defining Traps for use with the SNMP", RFC 1215, March 1991.
- [17] McCloghrie K., Perkins D. and J. Schoenwaelder, "Conformance Statements for SMIV2", RFC 2580, April 1999.
- [18] Case, J., McCloghrie, K., Rose, M. and S. Waldbusser, "Introduction to Community-based SNMPv2", RFC 1901, January 1996.
- [19] Case, J., McCloghrie, K., Rose, M. and S. Waldbusser, "Transport Mappings for Version 2 of the Simple Network Management Protocol (SNMPv2)", RFC 1906, January 1996.
- [20] Case, J., Harrington D., Presuhn R. and B. Wijnen, "Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)", RFC 2572, April 1999.
- [21] Blumenthal, U. and B. Wijnen, "User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)", RFC 2574, April 1999.
- [22] Levi, D., Meyer, P. and B. Stewart, "SNMP Applications", RFC 2573, April 1999.
- [23] Wijnen, B., Presuhn, R. and K. McCloghrie, "View-based Access Control Model (VACM) for the Simple Network Management Protocol (SNMP)", RFC 2575, April 1999.
- [24] Ahmed, M. and K. Tesink, Editors, "Definitions of Managed Objects for ATM Management Version 8.0 using SMIV2", RFC 1695, August 1994.
- [25] McCloghrie, K. and A. Bierman, "Entity MIB", RFC 2037, October 1996.
- [26] Yergeau, F., "UTF-8, a transformation format of ISO 10646", RFC 2279, January 1998.

10. Security Considerations

1) Blocking unauthorized access to the ADSL MIB via the element management system is outside the scope of this document. It should be noted that access to the MIB permits the unauthorized entity to modify the profiles (sect 6.4) such that both subscriber service and network operations can be interfered with. Subscriber service can be altered by modifying any of a number of service characteristics such as rate partitioning and maximum transmission rates. Network operations can be impacted by modification of trap thresholds such as SNR margins.

2) There are a number of managed objects in this MIB that may be considered to contain sensitive information. In particular, the certain objects may be considered sensitive in many environments, since it would allow an intruder to obtain information about which vendor's equipment is in use on the network. Therefore, it may be important in some environments to control read access to these objects and possibly to even encrypt the values of these object when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.

SNMPv1 by itself is such an insecure environment. Even if the network itself is secure (for example by using IPSec), even then, there is no control as to who on the secure network is allowed to access and GET (read) the objects in this MIB. It is recommended that the implementors consider the security features as provided by the SNMPv3 framework. Specifically, the use of the User-based Security Model RFC 2574 [21] and the View-based Access Control Model RFC 2575 [23] is recommended.

It is then a customer/user responsibility to ensure that the SNMP entity giving access to an instance of this MIB, is properly configured to give access to those objects only to those principals (users) that have legitimate rights to access them.

3) ADSL layer connectivity from the ATU-R will permit the subscriber to manipulate both the ADSL link directly and the AOC/EOC channels for their own loop. For example, unchecked or unfiltered fluctuations initiated by the subscriber could generate sufficient traps to potentially overwhelm either the management interface to the network or the element manager. Other attacks affecting the ATU-R portions of the MIB may also be possible.

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