Society of Cable Telecommunications Engineers

ENGINEERING COMMITTEE
HFC Management Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 84-1 2009

HMS Common Inside Plant Management Information Base (MIB)
Part 1: SCTE-HMS-HE-COMMON-MIB
NOTICE

The Society of Cable Telecommunications Engineers (SCTE) Standards are intended to serve the public interest by providing specifications, test methods and procedures that promote uniformity of product, interchangeability and ultimately the long term reliability of broadband communications facilities. These documents shall not in any way preclude any member or nonmember of SCTE from manufacturing or selling products not conforming to such documents, nor shall the existence of such standards preclude their voluntary use by those other than SCTE members, whether used domestically or internationally.

SCTE assumes no obligations or liability whatsoever to any party who may adopt the Standards. Such adopting party assumes all risks associated with adoption of these Standards or Recommended Practices, and accepts full responsibility for any damage and/or claims arising from the adoption of such Standards or Recommended Practices.

Attention is called to the possibility that implementation of this standard may require use of subject matter covered by patent rights. By publication of this standard, no position is taken with respect to the existence or validity of any patent rights in connection therewith. SCTE shall not be responsible for identifying patents for which a license may be required or for conducting inquires into the legal validity or scope of those patents that are brought to its attention.

Patent holders who believe that they hold patents which are essential to the implementation of this standard have been requested to provide information about those patents and any related licensing terms and conditions. Any such declarations made before or after publication of this document are available on the SCTE web site at http://www.scte.org.

All Rights Reserved
© Society of Cable Telecommunications Engineers, Inc. 2009
140 Philips Road
Exton, PA 19341
CONTENTS

SCOPE ....................................................................................................................................................................... 1
COPYRIGHT ........................................................................................................................................................... 1
NORMATIVE REFERENCE ................................................................................................................................ 1
INFORMATIVE REFERENCE ............................................................................................................................ 1
TERMS AND DEFINITIONS ................................................................................................................................ 1
REQUIREMENTS ................................................................................................................................................... 2
SCOPE
The MIB module is for representing general information about optical equipment present in the headend (or indoor) and is supported by an SNMP agent.

COPYRIGHT
The MIB definition found in this document may be incorporated directly in products without further permission from the copyright owner, SCTE.

NORMATIVE REFERENCE
IETF RFC2578, Structure of Management Information Version 2 (SMIv2)
IETF RFC2579, Textual Conventions for SMIv2
IETF RFC2580, Conformance Statements for SMIv2
IETF RFC2737, Entity MIB (Version 2)
ANSI/SCTE 36 ,SCTE Root Management Information Block (MIB)
SCTE 38-11, Hybrid Management Sub-layer Management Information Base (MIB) Part 11: SCTE-HMS-HEADENDIDENT-MIB
IETF RFC2573, SNMP Applications
IETF RFC1907, Management Information Base for Version 2 of the Simple Network Management Protocol (SNMPv2)
ANSI/SCTE 38-1, Hybrid Management Sublayer Management Information Blocks (MIB) Part 1: Property MIB

INFORMATIVE REFERENCE
None

TERMS AND DEFINITIONS
This document defines the following terms:

Management Information Base (MIB) - the specification of information in a manner that allows standard access through a network management protocol.
REQUIREMENTS
This section defines the mandatory syntax of the SCTE-HMS-HE-COMMON-MIB. It follows the IETF Simple Network Management Protocol (SNMP) for defining managed objects.

The syntax is given below:
SCTE-HMS-HE-COMMON-MIB DEFINITIONS ::= BEGIN

IMPORTS
  Integer32, MODULE-IDENTITY, OBJECT-TYPE, NOTIFICATION-TYPE
  FROM SNMPv2-SMI
  DisplayString, DateAndTime
  FROM SNMPv2-TC
  MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP
  FROM SNMPv2-CONF
  entPhysicalIndex
  FROM ENTITY-MIB
  scetehmsTree
  FROM SCTE-ROOT -- see SCTE 36 (formerly HMS028)
  heCommon, HeTenthCentigrade
  FROM SCTE-HMS-HEADENDIDENT-MIB; -- see SCTE 38-11 (formerly HMS114)

heCommonMib MODULE-IDENTITY
  LAST-UPDATED "200302170000Z" -- February 17, 2003
  ORGANIZATION "SCTE HMS Working Group"
  CONTACT-INFO
    " SCTE HMS Subcommittee, Chairman
    mailto:standards@scte.org"

DESCRIPTION
  "The MIB module is for representing general information
   about optical equipment present in the headend (or indoor)
   and is supported by an SNMP agent."

REVISION "200302170000Z" -- February 17, 2003
DESCRIPTION
  "
  "

-- Module Name: HMS111R9.MIB (SCTE 84-1)
-- SCTE Status: Adopted
heCommonObjects OBJECT IDENTIFIER ::= { heCommonMib 1 }

-- MIB contains 2 groups
heCommonParams OBJECT IDENTIFIER ::= { heCommonObjects 1 }
heCommonLog OBJECT IDENTIFIER ::= { heCommonObjects 2 }

-- The Common Table
heCommonTable OBJECT-TYPE
SYNTAX SEQUENCE OF HeCommonEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A table containing information about headend (or indoor)
equipment."
::= { heCommonParams 1 }

HeCommonEntry OBJECT-TYPE
SYNTAX HeCommonEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"Information about particular headend equipment."
INDEX { entPhysicalIndex }
::= { heCommonTable 1 }

HeCommonEntry ::= SEQUENCE {
  heCommonTime DateAndTime,
  heCommonTemperature HeTenthCentigrade,
  heCommonSoftwareReset INTEGER,
  heCommonAlarmDetectionControl INTEGER
}

heCommonTime OBJECT-TYPE
SYNTAX DateAndTime
MAX-ACCESS read-write
heCommonTemperature OBJECT-TYPE
SYNTAX HeTenthCentigrade
MAX-ACCESS read-only
STATUS current
DESCRIPTION "Temperature measured inside the headend equipment."

This object must provide for the alarm management capabilities with a corresponding entry in the propertyTable of SCTE-HMS-PROPERTY-MIB (HMS026).

An alarm shall be recorded as an entry in the currentAlarmTable of SCTE-HMS-PROPERTY-MIB (HMS026).

A log record shall be added as an entry in the heCommonLogTable.

An heCommonAlarmEvent notification shall be sent.

::= { heCommonEntry 2 }

heCommonSoftwareReset OBJECT-TYPE
SYNTAX INTEGER { reset(1) }
MAX-ACCESS read-write
STATUS current
DESCRIPTION "This object is used to reset software of the headend physical entity."

A SET request with the value reset(1) only shall reset the software application. The reset implementation is vendor specific.

A GET request shall always return the value reset(1) and
shall have no effect on the entity."
 ::= { heCommonEntry 3 }

heCommonAlarmDetectionControl OBJECT-TYPE
 SYNTAX INTEGER {
   detectionDisabled(1),
   detectionEnabled(2),
   detectionEnabledAndRegenerate(3)
 }
 MAX-ACCESS read-write
 STATUS current
 DESCRIPTION
 "This object is used to control the detection of alarms in
 this headend entity.

 Each headend entity may provide for the alarm management
 capabilities. The provisions shall be done by means of
 the propertyTable and/or the discretePropertyTable of
 SCTE-HMS-PROPERTY-MIB (HMS026).

 When a threshold from either the propertyTable or the
 discretePropertyTable is crossed in a manner described by
 SCTE-HMS-PROPERTY-MIB (HMS026), then an alarm is said to have
 occurred. When the alarm is detected, then

 (1) an entry is placed in the heCommonLogTable, which serves
     as a log of the most recent alarm events;

 (2) an heCommonAlarmEvent trap is generated;

 (3) a property which is not in the nominal state will have
     an entry in the currentAlarmTable of SCTE-HMS-PROPERTY-MIB.

 The detectionDisabled(1) value prevents the threshold detection
 process associated with the property table and discrete property
 table from running. The headend entity shall not generate alarms.
 The contents of the heCommonLogTable, currentAlarmTable, each
instance of discreteAlarmState, and each instance of
currentAlarmState shall remain in the state prior to
detectionDisabled(1) being applied.

The detectionEnabled(2) value permits alarm detection to run.
The detection process continues from the state the headend entity
was in prior to detectionEnabled(2) being set.

The detectionEnabledAndRegenerate(3) value clears all alarm
information and permits alarm detection to run. All alarm
properties, both discrete and analog, are restored to the
nominal value before alarm detection runs. Any properties
that are in an alarm state SHALL NOT produce a 'return to
normal' alarm as part of the process. Setting this value
clears the heCommonLogTable and the currentAlarmTable.

The detectionEnabledAndRegenerate(3) value is transient, that is
a SET request with a value detectionEnabledAndRegenerate(3) shall
return the same value detectionEnabledAndRegenerate(3). Subsequent
GET requests shall return a value detectionEnabled(2).

The detectionDisabled(1) value shall affect the generation
of heCommonAlarmEvent trap only. Traps added in
the future are assumed to be unaffected by this object,
unless stated in the description of that trap.

This object has a default value of detectionEnabled(2).

The value shall be maintained in non-volatile memory.

::= { heCommonEntry 4 }

-- The Common Log Group and Table
heCommonLogNumberOfEntries OBJECT-TYPE
SYNTAX        Integer32 (0..65535)
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
"The current number of entries in the heCommonLogTable.
Before the very first wrap-around condition occurs
for heCommonLogIndex, heCommonLogNumberOfEntries will
return the total number of entries logged in heCommonLogTable,
since the unit was powered up.
After the first wrap-around condition has occurred for
for the value of the MIB variable heCommonLogIndex,
heCommonLogNumberOfEntries will return the maximum
number of rows the heCommonLogTable can hold.
"

::= { heCommonLog 1 }

heCommonLogLastIndex OBJECT-TYPE
SYNTAX   Integer32 (0..65535)
MAX-ACCESS read-only
STATUS    current
DESCRIPTION
"Index of the most recent alarm entry logged in the
heCommonLogTable. The value of this variable can be
used as the value of heCommonLogIndex to retrieve the
most recent logged entry."

::= { heCommonLog 2 }

heCommonLogTable OBJECT-TYPE
SYNTAX   SEQUENCE OF HeCommonLogEntry
MAX-ACCESS not-accessible
STATUS    current
DESCRIPTION
"A list of alarms that have been logged.
Agent should generate the SNMP HMS notification every time a
new alarm entry is logged.
This table should support a minimum of 16 entries."

::= { heCommonLog 3 }

heCommonLogEntry OBJECT-TYPE
SYNTAX   HeCommonLogEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A set of data describing an alarm event that has
been logged."
INDEX  { heCommonLogIndex }
 ::= { heCommonLogTable 1 }

HeCommonLogEntry ::= SEQUENCE {
 heCommonLogIndex  Integer32,
 heCommonLogOID   OBJECT IDENTIFIER,
 heCommonLogValue Integer32,
 heCommonLogState INTEGER,
 heCommonLogTime  DateAndTime,
 heCommonLogText  DisplayString
}

heCommonLogIndex OBJECT-TYPE
 SYNTAX      Integer32 (1..65535)
 MAX-ACCESS  not-accessible
 STATUS      current
 DESCRIPTION
 "An index that uniquely identifies an entry
 in the log table. Indexes are assigned beginning with 1
 and increased by one with each new log entry up to 65535.
 The next entry after 65535 is one. The agent may choose to
 delete the oldest instances of heCommonLogEntry as required
 because of lack of memory. It is an implementation-specific
 matter as to when this deletion may occur.
 Note - The wrap-around for the heCommonLogIndex variable
 MUST occur after 65535 regardless of the implementation
 specific size of the hlCommonLogTable."
 ::= { heCommonLogEntry 1 }

heCommonLogOID OBJECT-TYPE
 SYNTAX      OBJECT IDENTIFIER
 MAX-ACCESS  read-only
 STATUS      current
DESCRIPTION
"This is the OID of the object that has changed alarm state."
::= { heCommonLogEntry 2 }

heCommonLogValue OBJECT-TYPE
SYNTAX Integer32 (-2147483648..2147483647)
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This is the value of the object at the time it changed alarm state."
::= { heCommonLogEntry 3 }

heCommonLogState OBJECT-TYPE
SYNTAX INTEGER {
  heCommonNominal(1),
  heCommonHIHI(2),
  heCommonHI(3),
  heCommonLO(4),
  heCommonLOLO(5),
  heCommonDiscreteMajor(6),
  heCommonDiscreteMinor(7)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The new alarm state of the object which caused the event to be recorded into the log."
::= { heCommonLogEntry 4 }

heCommonLogTime OBJECT-TYPE
SYNTAX DateAndTime
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"This is the time when the alarm change for the object ocurred."
::= { heCommonLogEntry 5 }

heCommonLogText OBJECT-TYPE
SYNTAX       DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION             "This is a text field describing the alarm. This
field could be a zero length string in certain
agent implementations."
 ::= { heCommonLogEntry 6 }

-- Headend Common MIB Trap Definitions
heCommonTraps   OBJECT IDENTIFIER ::= { heCommonMib 2 }
heCommonTrapPrefix OBJECT IDENTIFIER ::= { scteHmsTree 0 }

heCommonAlarmEvent NOTIFICATION-TYPE
OBJECTS {          heCommonLogOID,          heCommonLogValue,          heCommonLogState,          heCommonLogTime         }
} STATUS  current     DESCRIPTION
 "The SNMP trap that is generated when an alarm event is found. At the option of the unit, the heCommonLogText variable may be reported as a fifth varbind, for those instances where an additional text field is supported."
 ::= { heCommonTrapPrefix 5 }

-- Conformance information
heCommonConformance OBJECT IDENTIFIER ::= { heCommonMib 3 }

heCommonCompliances OBJECT IDENTIFIER ::= { heCommonConformance 1 }
heCommonGroups     OBJECT IDENTIFIER ::= { heCommonConformance 2 }
-- Compliance statements
heCommonCompliance MODULE-COMPLIANCE
   STATUS current
   DESCRIPTION "The compliance statement for SNMP entities which implement this MIB."
MODULE -- this module
   MANDATORY-GROUPS { heCommonLogGroup,
      heCommonNotificationsGroup
   }

MODULE ENTITY-MIB
   MANDATORY-GROUPS { entityPhysicalGroup,
      entityPhysical2Group,
      entityGeneralGroup,
      entityNotificationsGroup
   }

MODULE SNMP-TARGET-MIB
   MANDATORY-GROUPS { snmpTargetBasicGroup }

MODULE SNMP-NOTIFICATION-MIB
   MANDATORY-GROUPS { snmpNotifyGroup }

MODULE SNMPv2-MIB
   MANDATORY-GROUPS { systemGroup }

-- The OBJECT clauses below indicate the optional objects of
-- the systemGroup. They also imply that other objects of
-- the group must be implemented:
-- sysDeser,
-- sysObjectID,
-- sysUpTime,
-- sysContact,
-- sysName,
-- sysLocation,
-- sysServices.
OBJECT  sysORDescr
MIN-ACCESS  not-accessible
DESCRIPTION
   "Implementation of this object is optional."

OBJECT  sysORID
MIN-ACCESS  not-accessible
DESCRIPTION
   "Implementation of this object is optional."

OBJECT  sysORLastChange
MIN-ACCESS  not-accessible
DESCRIPTION
   "Implementation of this object is optional."

OBJECT  sysORUpTime
MIN-ACCESS  not-accessible
DESCRIPTION
   "Implementation of this object is optional."

MODULE  SCTE-HMS-PROPERTY-MIB
MANDATORY-GROUPS { analogAlarmsGroup,
                        discreteAlarmsGroup,
                        currentAlarmsGroup
                    }

::= { heCommonCompliances 1 }

-- MIB groupings
heCommonParamsGroup OBJECT-GROUP
  OBJECTS {
    heCommonTime,
    heCommonTemperature,
    heCommonSoftwareReset,
    heCommonAlarmDetectionControl
  }
STATUS current
DESCRIPTION
"The collection of objects which are used to represent the
common parameters of the headend managed entities."
::= { heCommonGroups 1 }

heCommonLogGroup OBJECT-GROUP
  OBJECTS {
    heCommonLogNumberOfEntries,
    heCommonLogLastIndex,
    heCommonLogOID,
    heCommonLogValue,
    heCommonLogState,
    heCommonLogTime,
    heCommonLogText
  }
STATUS current
DESCRIPTION
"The collection of objects which are used to record
an alarm event into the headend agent log."
::= { heCommonGroups 2 }

heCommonNotificationsGroup NOTIFICATION-GROUP
  NOTIFICATIONS { heCommonAlarmEvent }
STATUS current
DESCRIPTION
"The collection of notifications used by the headend agent
to report the exceptional conditions to the management
application."
::= { heCommonGroups 3 }

END