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S T A N D A R D S

Network Operations Subcommittee

AMERICAN NATIONAL STANDARD

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**Hybrid Fiber/Coax Outside Plant Status Monitoring
SCTE-HMS-ALARMS-MIB
Management Information Base (MIB) Definition**

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1. Scope

This document is identical to SCTE 38-2 2011 except for informative components which may have been updated such as the title page, NOTICE text, headers and footers. No normative changes have been made to this document.

This document defines the historical list of alarms detected by the transponder, as well as the SNMP trap generated for these alarms.

2. Copyright

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

3. Normative Reference

IETF RFC 1155
ANSI/SCTE 37 2010

4. Informative Reference

None

5. 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.

6. Requirements

This section defines the mandatory syntax of the SCTE-HMS-ALARMS-MIB. It follows the IETF Simple Network Management Protocol (SNMP) for defining the managed objects.

The syntax is given below.

```

-- *****
-- *
-- * Module Name:   HMS023R14.MIB   SCTE-HMS-ALARMS-MIB
-- *
-- * SCTE Status:   PUBLISHED
-- *
-- * Description:   This MIB describes the historical list of alarms detected by the transponder,
-- *               as well as the SNMP trap generated for these alarms.
-- *
-- * Change:
-- * January 2005   Modify hmsAlarmEvent description to allow for additional
-- *               optional objects.
-- *****

```

```
SCTE-HMS-ALARMS-MIB DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```

    TRAP-TYPE
        FROM RFC-1215
    OBJECT-TYPE
        FROM RFC-1212
    DisplayString
        FROM RFC1213-MIB
    alarmsIdent
        FROM SCTE-HMS-ROOTS
    commonPhysAddress
        FROM SCTE-HMS-COMMON-MIB
    commonLogicalID
        FROM SCTE-HMS-COMMON-MIB
    scteHmsTree
        FROM SCTE-ROOT

```

```
;
```

```
alarmLogNumberOfEntries OBJECT-TYPE
```

```

    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "The current number of entries in the alarmLogTable."
    ::= { alarmsIdent 1 }

```

```
alarmLogLastIndex OBJECT-TYPE
```

```

    SYNTAX INTEGER
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Index of the most recent alarm entry logged in the alarmLogTable."
    ::= { alarmsIdent 2 }

```

```
alarmLogTable OBJECT-TYPE
```

```

    SYNTAX SEQUENCE OF AlarmLogEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION

```

```

        "A list of alarms that have been logged.
        Agent should generate generic SNMP HMS trap every time a new alarm entry is logged.
        This table should support a minimum of 16 entries."
 ::= { alarmsIdent 3 }

alarmLogEntry OBJECT-TYPE
    SYNTAX AlarmLogEntry
    ACCESS not-accessible
    STATUS mandatory
    DESCRIPTION
        "A set of data describing an alarm event that has
        been logged."
    INDEX { alarmLogIndex }
    ::= { alarmLogTable 1 }

AlarmLogEntry ::=
    SEQUENCE
    {
        alarmLogIndex
            INTEGER,
        alarmLogInformation
            OCTET STRING
    }

alarmLogIndex OBJECT-TYPE
    SYNTAX INTEGER (1..32767)
    ACCESS read-only
    STATUS mandatory
    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 32767. The next
        entry after 32767 is one. The agent may choose to delete the oldest
        instances of alarmLogEntry as required because of
        lack of memory. It is an implementation-specific
        matter as to when this deletion may occur."
    ::= { alarmLogEntry 1 }

alarmLogInformation OBJECT-TYPE
    SYNTAX OCTET STRING ( SIZE ( 17..255 ) )
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        "Alarm information encoded as octet string. Format of this octet is:

        Octet 1-4: POSIX Time of alarm occurrence (Most significant byte first)
        Octet 5: Alarm Type (See description below)
        Octet 6: Contents of commonNeStatus immediately after alarm occurred;
        Octet 7-m: Alarm Object Identifier (BER encoded)
        Octet n-z: Alarm value (BER encoded)

        Alarm Type(Enumerated type):
        1 NOMINAL
        2 HIHI

```

```

3 HI
4 LO
5 LOLO
6 Discrete Major
7 Discrete Minor "
 ::= { alarmLogEntry 2 }

```

```

alarmText OBJECT-TYPE
SYNTAX DisplayString
ACCESS read-only
STATUS optional
DESCRIPTION

```

"This object is mandatory for transponders that are required to report a text field with the trap. This field is a place holder for text that contains the prescribed text as identified by the object description of the item in alarm. This object is therefore volatile and shall not be expected to contain a given value at any specific time. Values returned are of no use. Access is read-only to satisfy SMIV1 requirements.

```

Those objects which should report a name shall be identified as such."
 ::= { alarmsIdent 4 }

```

```

hmsAlarmEvent TRAP-TYPE
ENTERPRISE scteHmsTree
VARIABLES { commonPhysAddress, commonLogicalID, alarmLogInformation }
DESCRIPTION

```

"The SNMP trap that is generated when an alarm event is found. At the option of the transponder, the alarmText variable may be reported as a fourth varbind, for those instances where an additional text field is indicated by the object, as noted in the alarmText object description.

Also, at the option of the transponder, additional specific varbinds MAY be added to clearly define the event that caused the trap to be sent.

In the case where the event is defined in the propertyTable, the additional varbinds (when present) MUST BE the parameterOID object & value and the currentAlarmState object & value (see HMS026) from the table entry for which the trap was generated.

In the case where the event is defined in the discretePropertyTable, the additional varbinds (when present) MUST BE the discreteParameterOID object & value and the discreteAlarmState object & value from the table entry for which the trap was generated.

The non-optional parameters of the trap (commonPhysAddress, commonLogicalID, alarmLogInformation) MUST still be filled in properly, regardless of whether additional parameters are appended.

It is highly recommended that transponders not requiring specific HMS software at the headend include these varbinds in order to assist networks that do not implement HMS-specific SNMP management software.

Additionally, though indicated as an option for the transponder, it is

recommended that transponders using HMS specified RF transmission (specifically, SCTE 25-1 aka HMS005) SHOULD NOT append these additional parameters, due to the limited bandwidth available in the return path."

::= 1

END