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Network Operations Subcommittee

SCTE STANDARD

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**HMS Inside Plant
HMTS Theory of Operation**

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SCOPE

This document is identical to SCTE 95 2009 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 contains information about the background of the Hybrid Management Termination System (HMTS). This document is a companion document for the HMTS MIB, and does not replace the MIB. Although this document has been written to be consistent with the HMTS MIB, in case there would be any conflicts between these two documents, the MIB is the reference.

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NORMATIVE REFERENCE

- 1) IETF RFC 2573 SNMP-NOTIFICATION-MIB.
- 2) IETF RFC 2573 SNMP-TARGET-MIB.
- 3) IETF RFC 2578 SNMPv2-SMI.
- 4) IETF RFC 2579 SNMPv2-TC.
- 5) IETF RFC 2580 SNMPv2-CONF.
- 6) IETF RFC 2737 ENTITY-MIB.
- 7) IETF RFC 3418 SNMPv2-MIB.
- 8) ANSI/SCTE 25-2 200 Hybrid Fiber/Coax Outside Plant Status Monitoring- MAC Layer.
- 9) ANSI/SCTE 36 SCTE-ROOT Management Information Base (MIB) Definitions.
- 10) ANSI/SCTE 37 Hybrid Fiber/Coax Outside Plant Status Monitoring SCTE-HMS-ROOTS Management Information Base (MIB) Definition.
- 11) ANSI/SCTE 38-1 Hybrid Fiber/Coax Outside Plant Status Monitoring SCTE-HMS-PROPERTY-MIB Management Information Base (MIB) Definition.
- 12) ANSI/SCTE 38-11 Hybrid Management Sub-layer Management Information Base (MIB) Part 11: SCTE-HMS-HEADENDIDENT-MIB.
- 13) ANSI/SCTE 84-1 HMS Common Inside Plant Management Information Base (MIB) Part 1: SCTE-HMS-HE-COMMON-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.

HMTS: Hybrid Management Termination System.

HMS: Hybrid Management System.

EMS: Element Management System.

NO-COMMS: A condition that exists when the HMTS cannot establish round trip communication with a HMS device.

XP: Abbreviation for transponder.

IP: Internet Protocol.

TCP: Transmission Control Protocol.

SNMP: Simple Network Management Protocol.

ICMP: Internet Control Message Protocol.

MAC: Media Access Control. Basically a data packet definition that provides for end to end transmission of data between two network elements.

Broadcast Address: A MAC specific address value that all devices will recognize and process requests to, but not reply to.

Multicast Address: A MAC specific address value that can be configured into multiple devices such that a group is created. Use of a multicast address will cause all members of the group to act upon the request, but none of the members will reply. This differs from the broadcast address only in that all devices are pre-configured with the broadcast address.

Unicast Address: A MAC specific unique address that is used to identify what device is to process a message and return a reply.

Round Robin: A method of processing a list of items which consists of starting with the first entry in the list and walking through the entire list in sequence, wrapping back to the first item in the list.

Forward Path / Return Path: bi-directional communication requires a forward (from HMTS to HMS device) and return (from HMS device to HMTS) path (communication connection) regardless of the type of port in use.