# SCTE · ISBE
## STANDARDS

**Network Operations Subcommittee**

AMERICAN NATIONAL STANDARD

ANSI/SCTE 154-4 2018

MPEG Management Information Base
SCTE-HMS-MPEG MIB

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## SCOPE

This document is identical to SCTE 154-4 2008 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 provides the definition for MIB objects within the SCTE HMS MPEG MIB Tree.

## COPYRIGHT

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

## NORMATIVE REFERENCES

IETF RFC 2578 SNMPv2-SMI
IETF RFC 2580 SNMPv2-CONF
IETF RFC 2579 SNMPv2-TC
IETF RFC 2863 IF-MIB
IETF RFC 4001 INET-ADDRESS-MIB
SCTE 36 2002R2007 (formerly HMS028) SCTE-ROOT
SCTE 37 2008 (formerly HMS072) SCTE-HMS-ROOTS
SCTE 154-5 2008 SCTE-HMS-HEADENDIDENT-TC-MIB
ISO/IEC 13818-1:2007 |ITU-T H.222 Systems

## INFORMATIVE REFERENCES

MPEG2 - ISO/IEC 13818 Part 2 Video
AVC - ISO/IEC 14496-10 | ITU-T H.264 Video
ISO 639-2:1998 Part 2 – International Standard that lists short codes for language names.

## TERMS AND DEFINITIONS

This document defines the following terms:

**CA – Conditional Access -** Conditional Access systems restrict television program access to certain groups of users either because of concerns for privacy or the desire to collect revenue for the service.

**CAT – Conditional Access Table –** Tables that are designed to deny general users access to premium or otherwise restricted content, and to establish protocols and systems to grant authorized user's access

**ECM – Entitlement Control Message -** an encrypted message that is used to prevent unauthorized reception for such services as cable or satellite television.

**EMM – Entitlement Management Message -** an encrypted message that contains private conditional access information about the authority a viewer has to acquire reception for such services as cable or satellite television.

**ES – Elementary Stream -** Defined by MPEG-2 Systems (ISO/IEC 13818-1). An elementary stream contains only one kind of data, e.g. audio, video or closed caption. An elementary stream is often referred to as "elementary", "data", "audio" or "video" bit streams or streams.

**IGMP- Internet Group Management Protocol -** A protocol that hosts use to keep local routers informed of their membership in multicast groups. When all hosts leave a group, the router no longer forwards datagram's that arrive for the group.

**MPTS – Multi-Program Transport Stream -** Transport Streams are the combining (multiplexing) of multiple program channels (typically digital video channels) onto a signal communication channel (such as a satellite transponder channel). A MPEG transport stream (MPEG-TS) may also called a multi-program transport stream (MPTS) and at other times a SPTS.

**NIT – Network Information Table -** Describes how transport streams are organized on the current network, and also describes some of the physical properties of the network itself. The NIT also contains the name of the network, and the *network ID*. This is a value that uniquely identifies the network that is currently broadcasting the transport stream, and may be different from the original network ID that we discussed earlier, if the transport stream is being rebroadcast.

**PAT - Program Association Table**- Each Transport Stream contains one or more Transport Stream packets with PID value 0x0000. These Transport Stream packets together shall contain a complete Program Association Table (PAT), providing a complete list of all programs within the Transport Stream.

**PCR - Program Clock Reference) -** The program clock reference (PCR) is transmitted within a video transport stream as a time reference. A sufficiently accurate and correctly received PCR is a precondition for correct data display in the receiver.

**PID - Packet ID-** Packet identifier; a unique 13-bit value used to identify the type of data stored in the packet payload (see ITU-T H.222.0 / ISO/IEC 13818-1).

**PMT - Program Map Table -** A specific PID within a transport stream which provides the mapping between a program number and the program elements it is comprised of. It contains a minimum of a program number, PCR PID, stream types and program element PIDs.

**PSI – Program Specific Information -** Program Specific Information is metadata, part of the MPEG-2 standards. The PSI Data contains four tables: PAT (Program Association Table), CAT (Conditional Access Table), PAT (Program Map Table) and NIT(Network Information Table).

**PSIP – Program And System Information Protocol -** This is the digital information transmitted by a DTV station that includes the time and date, major and minor channel numbers, and program information.

**SDV – Switched Digital Video -** Industry term for a network scheme for distributing digital video via a cable with limited capacity.

**SPTS – Single Program Transport Stream –**
A Transport Stream which combines PES packets from only one program with a common timebase.

**SSM – Source Specific Multicast -** is a method of delivering multicast packets originating in only a specific source address S to any receiver that requests it. It limits the original multicast model to be originated from just one host, simplifiying the requirements on the network and easing security of multicast delivery.

**TS – Transport Stream –** A Transport Stream combines PES packets from one or more programs with one or more independent time bases into a single stream. The PES packets made up of elementary streams that form a program share a common timebase.

**TSID – Transport Stream Identifier –** Identifier of a Transport Stream.

**VBR- Variable Bit Rate**– Variable Bit Rate provides a specified throughput capacity but data is not sent evenly. This is a popular choice for voice and videoconferencing data.

**VOD – Video On Demand -** A service that allows subscribers to retrieve and watch a selection of movies (on video) at any time.

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

To avoid issues related to device security and possible user contention, this MIB is only read-only. Device manufacturers are expected to provide device provisioning and control as a separate "out of band" service via protocols of their choice.

The MIB syntax is given below.

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

IMPORTS
  OBJECT-TYPE, OBJECT-IDENTITY, MODULE-IDENTITY,
  enterprises, Counter32, Integer32, Unsigned32, Counter64
    FROM SNMPv2-SMI
  OBJECT-GROUP, MODULE-COMPLIANCE
    FROM SNMPv2-CONF
  DateAndTime, TruthValue, RowPointer, AutonomousType
    FROM SNMPv2-TC
  InterfaceIndex
    FROM IF-MIB
  InetAddress, InetAddressType, InetPortNumber
    FROM INET-ADDRESS-MIB
  HePIDValue, ProgDataType
    FROM SCTE-HMS-HEADENDIDENT-TC-MIB;


scteHmsMpegMIB MODULE-IDENTITY
  LAST-UPDATED "200811171700Z" -- Nov 17, 2008
  ORGANIZATION
    "SCTE HMS Subcommittee"
  CONTACT-INFO
    "SCTE HMS Subcommittee, Chairman
    mailto:standards@scte.org "
  DESCRIPTION
    "This MIB module is for representing MPEG equipment present in
    the headend and is supported by a SNMP agent. It defines both
    the MPEG input and output MIB objects for managing
    MPEG input and output transport streams, programs and elementary
    streams. It provides both input and output related statistics,
    as well as program mapping and video session information.

    All the tables, except mpegProgramMappingTable and
    mpegVideoSessionTable, capture and store the information
    related to active transport streams only. Optional
```

```
    MIB objects will have default values defined in this MIB file."
  REVISION "200811171700Z"
  DESCRIPTION
    " Finalized MPEG mib for release"
::= { enterprises scteRoot(5591) scteHmsTree(1) insidePlantIdent(11) heDigital(5)
heDigitalMPEG(4) 1 }


--
-- Textual Conventions can be found in SCTE-HMS-HEADENDIDENT-TC-MIB
--


--
-- Node definitions
--
mpegMIBObjects  OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "This branch specifies the MPEG Common MIB objects that can be common
    to any device using MPEG."
  ::= { scteHmsMpegMIB 1 }

mpegDigitalInputs  OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "This branch specifies the attributes of the incoming streams
    to the MPEG device."
  ::= { mpegMIBObjects 1 }

mpegOutputs  OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "This branch specifies the attributes of the output streams of
    the MPEG device."
  ::= { mpegMIBObjects 2 }

mpegMIBConformance  OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "This branch describes the different MPEG MIB object groups and
    the different levels of compliance."
  ::= { scteHmsMpegMIB 2 }

mpegMIBCompliances  OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "The different levels of compliance to the MPEG MIB."
  ::= { mpegMIBConformance 1 }

mpegMIBGroups  OBJECT-IDENTITY
  STATUS       current
  DESCRIPTION
    "The MPEG MIB object groups."
  ::= { mpegMIBConformance 2 }


--
```

```
-- mpegDigitalInputs
--
mpegLossOfSignalTimeout  OBJECT-TYPE
  SYNTAX     Unsigned32
  UNITS   "milliseconds"
  MAX-ACCESS read-write
  STATUS     current
  DESCRIPTION
    "This object specifies the loss of signal timeout on any
    incoming stream."
  ::= { mpegDigitalInputs 1 }

mpegInputTSTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegInputTSEntry
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "This table specifies the attributes of video sessions or SPTSs."
  ::= { mpegDigitalInputs 2 }

mpegInputTSEntry  OBJECT-TYPE
  SYNTAX    MpegInputTSEntry
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "Each entry specifies the attributes of a transport stream
    (SPTS/MPTS)."
  INDEX { mpegInputTSIndex }
  ::= { mpegInputTSTable 1 }

MpegInputTSEntry ::= SEQUENCE {
  mpegInputTSIndex
    Unsigned32,
  mpegInputTSType
    INTEGER,
  mpegInputTSConnectionType
    INTEGER,
  mpegInputTSConnection
    RowPointer,
  mpegInputTSActiveConnection
    RowPointer,
  mpegInputTSPsiDetected
    TruthValue,
  mpegInputTSStartTime
    DateAndTime,
  mpegInputTSResourceAllocated
    TruthValue,
  mpegInputTSNumPrograms
    Unsigned32,
  mpegInputTSRate
    Unsigned32,
  mpegInputTSMaxRate
    Unsigned32,
  mpegInputTSPatVersion
    Integer32,
  mpegInputTSCatVersion
    Integer32,
```

```
    mpegInputTSNitPid
      HePIDValue,
    mpegInputTSNumEmms
      Unsigned32,
    mpegInputTSTSID
      Unsigned32,
    mpegInputTSLock
      INTEGER
}

mpegInputTSIndex  OBJECT-TYPE
    SYNTAX     Unsigned32
    MAX-ACCESS not-accessible
    STATUS     current
    DESCRIPTION
      "The unique identifier of the Input TS."
    ::= { mpegInputTSEntry 1 }

mpegInputTSType  OBJECT-TYPE
    SYNTAX     INTEGER {
      spts (1),
      mpts (2)
    }
    MAX-ACCESS read-only
    STATUS     current
    DESCRIPTION
      "The type of stream, e.g., SPTS or MPTS."
    ::= { mpegInputTSEntry 2 }

mpegInputTSConnectionType  OBJECT-TYPE
    SYNTAX     INTEGER {
      other(1),
      udp(2)
    }
    MAX-ACCESS read-only
    STATUS     current
    DESCRIPTION
      "The type of input flow of the stream.
      The value 'udp' indicates either unicast or multicast
      udp origination flows."
    ::= { mpegInputTSEntry 3 }

mpegInputTSConnection  OBJECT-TYPE
    SYNTAX     RowPointer
    MAX-ACCESS read-only
    STATUS     current
    DESCRIPTION
      "The reference to the first entry in the set of data
      sources that are capable of providing content for the
      input stream.
      For the Connection Type 'udp' this object contains the
      pointer to the first entry of the UDP Origination table

      Below is an example of the value expected for a Connection Type
      'udp'.
      An input stream (mpegInputTSIndex = 8) is being feed by a udp
      Connection (mpegInputUdpOriginationIndex = 4) with 3 associated
```

```
    udp streams each one identified by
    mpegInputUdpOriginationId = 1,2,3.

    mpegInputTSEntry
    TSIndex    ConnectionType  Connection
    1          1               <any>
    2          1               <any>
            ...
    8          1               mpegInputUdpOriginationIfIndex.4.3
    9          2               <any>

    MpegInputUdpOriginationEntry
    UdpOriginationIndex             UdpOriginationId
    3                               1,4,5
    4                               1,2,3
            ..."
  ::= { mpegInputTSEntry 4 }

mpegInputTSActiveConnection  OBJECT-TYPE
  SYNTAX      RowPointer
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The reference to the selected data source for the input
    stream.
    For devices or sessions that do not support redundant
    connections this object will return the same value as
    mpegInputTSConnection.

    For the Connection Type 'udp' this object contains the
    pointer to the UDP Origination table that the input Stream is
    using.

    Below is an example of the value expected for a Connection Type
    'udp'.
    An input stream (mpegInputTSIndex = 8) is being feed by a udp
    Connection (mpegInputUdpOriginationIndex = 4) have associated 3
    udp streams each one identified by
    mpegInputUdpOriginationId = 1,2,3. The Udp stream 3 is currently
    used by the input transport stream.

    mpegInputTSEntry
    TSIndex    ConnectionType  ActiveConnection
    1          1               <any>
    2          1               <any>
            ...
    8          1               mpegInputUdpOriginationIfIndex.4.3
    9          2               <any>

    MpegInputUdpOriginationEntry
    UdpOriginationIndex             UdpOriginationId
    3                               1,4,5
    4                               1,2,3
            ...
    Note in the example that the sub oid 4
    (in mpegInputUdpOriginationIfIndex.4.3) represents the sub-oid
    that aggregates all the udp origination flows associated with the
```

```
     transport stream."
   ::= { mpegInputTSEntry 5 }

mpegInputTSPsiDetected  OBJECT-TYPE
   SYNTAX      TruthValue
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "A simple check that Program Specific Information has or has
     not been detected.
     The value 'true' indicates PSI was detected."
   ::= { mpegInputTSEntry 6 }

mpegInputTSStartTime  OBJECT-TYPE
   SYNTAX      DateAndTime
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "Specifies the time the MPEG device started receiving the
     stream, i.e., the time the entry was added to the table."
   ::= { mpegInputTSEntry 7 }

mpegInputTSResourceAllocated  OBJECT-TYPE
   SYNTAX      TruthValue
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "If true, all resources have been allocated for the stream."
   ::= { mpegInputTSEntry 8 }

mpegInputTSNumPrograms  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "The number of programs in the input transport stream."
   ::= { mpegInputTSEntry 9 }

mpegInputTSRate  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "The data rate of the incoming program or SPTS."
   ::= { mpegInputTSEntry 10 }

mpegInputTSMaxRate  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "The maximum data rate of the incoming stream for either
     a variable or constant bit rate stream (VBR/CVR)."
   ::= { mpegInputTSEntry 11 }

mpegInputTSPatVersion  OBJECT-TYPE
   SYNTAX      Integer32 (-1..31)
```

```
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "Program Association Table version of the transport stream.
    The value -1 means PAT version is not supported for input
    transport stream."
  DEFVAL { -1 }
  ::= { mpegInputTSEntry 12 }

mpegInputTSCatVersion  OBJECT-TYPE
  SYNTAX     Integer32 (-1..31)
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The Conditional Access Table version number of transport
    stream. The value -1 means CAT version is not supported
    for input transport stream."
  DEFVAL { 0 }
  ::= { mpegInputTSEntry 13 }

mpegInputTSNitPid  OBJECT-TYPE
  SYNTAX     HePIDValue
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "NIT PID of the input transport stream."
  ::= { mpegInputTSEntry 14 }

mpegInputTSNumEmms  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The number of EMMs in the input stream. The default value 9999
    means the device does not support encryption."
                      DEFVAL { 9999 }
  ::= { mpegInputTSEntry 15 }

mpegInputTSTSID  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The input TSID of the transport stream. A valid TSID is of 16
    bits length. If TSID is not supported, all 32-bits shall be set
    to 1."
  ::= { mpegInputTSEntry 16 }

mpegInputTSLock  OBJECT-TYPE
  SYNTAX     INTEGER {
    locked(1),
    notLocked(2),
    intermittent(3),
    notMonitored(4)
  }
  MAX-ACCESS read-only
  STATUS     current
```

```
   DESCRIPTION
     "Indicates the lock status of the transport stream.
     'intermittent' means the transport stream is transitioning between
     lock and unlock state over a period of time. This condition is
     vendor-specific.
     'notMonitored' means the device is not tracking the locking state."
   ::= { mpegInputTSEntry 17 }

mpegInputProgTable  OBJECT-TYPE
   SYNTAX SEQUENCE OF MpegInputProgEntry
   MAX-ACCESS not-accessible
   STATUS      current
   DESCRIPTION
     "The table describing the PSI of each incoming program."
   ::= { mpegDigitalInputs 3 }

mpegInputProgEntry  OBJECT-TYPE
   SYNTAX   MpegInputProgEntry
   MAX-ACCESS not-accessible
   STATUS      current
   DESCRIPTION
     "Each entry specifies the parameters for each incoming
     program."
   INDEX {
          mpegInputTSIndex,
          mpegInputProgIndex
        }
   ::= { mpegInputProgTable 1 }

MpegInputProgEntry ::= SEQUENCE {
   mpegInputProgIndex
     Unsigned32,
   mpegInputProgNo
     Unsigned32,
   mpegInputProgPmtVersion
     Unsigned32,
   mpegInputProgPmtPid
     HePIDValue,
   mpegInputProgPcrPid
     HePIDValue,
   mpegInputProgEcmPid
     HePIDValue,
   mpegInputProgNumElems
     Unsigned32,
   mpegInputProgNumEcms
     Unsigned32,
   mpegInputProgCaDescr
     OCTET STRING,
   mpegInputProgScte35Descr
     OCTET STRING,
   mpegInputProgScte18Descr
     OCTET STRING
}

mpegInputProgIndex  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS not-accessible
```

```
  STATUS      current
  DESCRIPTION
    "This object serves as the third index of this mib table. The
    index should uniquely identify a program given a transport
    stream index. In other words, it's unique within same transport
    stream."
  ::= { mpegInputProgEntry 1 }

mpegInputProgNo  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "This object specifies the identifier of the program present
    in the transport stream of the incoming video stream. This
    information is contained in PAT table."
  ::= { mpegInputProgEntry 2 }

mpegInputProgPmtVersion  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "This object specifies the PMT version of the program. It is a
    5-bit unsigned integer. The default value of 0 means input
    program PMT version is no supported."
                  DEFVAL { 0 }
  ::= { mpegInputProgEntry 3 }

mpegInputProgPmtPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "PMT PID of the program."
  ::= { mpegInputProgEntry 4 }

mpegInputProgPcrPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "PCR PID of the program."
  ::= { mpegInputProgEntry 5 }

mpegInputProgEcmPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "This object specifies the ECM PID of the program."
  ::= { mpegInputProgEntry 6 }

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

```
   DESCRIPTION
     "The number of elementary streams in the program."
   ::= { mpegInputProgEntry 7 }


mpegInputProgNumEcms  OBJECT-TYPE
   SYNTAX     Unsigned32
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "The number of ECMs for the program. The default value 9999
     means the device does not support encryption."
       DEFVAL { 9999 }
   ::= { mpegInputProgEntry 8 }


mpegInputProgCaDescr  OBJECT-TYPE
   SYNTAX     OCTET STRING (SIZE(0..256))
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "Conditional access descriptor is used to specify both
     system-wide conditional access management information such as
     EMMS and elementary stream-specific information such as ECMs.
     If any elementary stream is scrambled, a CA descriptor shall be
     present for the program containing that elementary stream. This
     object specifies the CA descriptor for this program.  If the
     program does not have an associated CA descriptor, then this
     object has a zero-length string."
   ::= { mpegInputProgEntry 9 }


mpegInputProgScte35Descr  OBJECT-TYPE
   SYNTAX     OCTET STRING (SIZE(0..256))
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "SCTE 35 descriptor. If not present, a zero-length string is
     returned. This field is optional for some devices that supports
     large number of input programs due to the fact that extensive
     decoding can be resource intensive and effect scalability. A
     zero-length string is returned. "
   ::= { mpegInputProgEntry 10 }


mpegInputProgScte18Descr  OBJECT-TYPE
   SYNTAX     OCTET STRING (SIZE(0..256))
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "SCTE 18 descriptor. If not present, a zero-length string is
     returned. This field is optional for some devices that supports
     large number of input programs due to the fact that extensive
     decoding can be resource intensive and effect scalability. A
     zero-length string is returned. "
   ::= { mpegInputProgEntry 11 }


mpegProgESTable  OBJECT-TYPE
   SYNTAX SEQUENCE OF MpegProgESEntry
   MAX-ACCESS not-accessible
   STATUS     current
```

```
      DESCRIPTION
        "This table contains information about the elementary streams
        in a program."
      ::= { mpegDigitalInputs 4 }

mpegProgESEntry  OBJECT-TYPE
      SYNTAX    MpegProgESEntry
      MAX-ACCESS not-accessible
      STATUS       current
      DESCRIPTION
        "A combination of mpegInputTSIndex, mpegInputProgIndex and
        mpegProgESIndex uniquely identifies an entry in the mpegProgESTable."
      INDEX {
              mpegInputTSIndex,
              mpegInputProgIndex,
              mpegProgESIndex
            }
      ::= { mpegProgESTable 1 }

MpegProgESEntry ::= SEQUENCE {
      mpegProgESIndex
        Unsigned32,
      mpegProgESPID
        Integer32,
      mpegProgESType
        ProgDataType,
      mpegProgESCaDescr
        OCTET STRING,
      mpegProgESScte35Descr
        OCTET STRING,
      mpegProgESScte18Descr
        OCTET STRING
}

mpegProgESIndex  OBJECT-TYPE
      SYNTAX       Unsigned32
      MAX-ACCESS not-accessible
      STATUS       current
      DESCRIPTION
        "The unique index of the elementary stream."
      ::= { mpegProgESEntry 1 }

mpegProgESPID  OBJECT-TYPE
      SYNTAX       Integer32
      MAX-ACCESS read-only
      STATUS       current
      DESCRIPTION
        "This is the PID for each transport stream packet which
        carries the program element."
      ::= { mpegProgESEntry 2 }

mpegProgESType  OBJECT-TYPE
          SYNTAX ProgDataType
      MAX-ACCESS read-only
      STATUS       current
      DESCRIPTION
        "The type of elementary stream(video, audio, or data) of the
```

```
      incoming video session received from the video server."
  ::= { mpegProgESEntry 3 }

mpegProgESCaDescr  OBJECT-TYPE
  SYNTAX      OCTET STRING (SIZE(0..256))
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "CA descriptor associated with the elementary stream. If there
    is no CA descriptor for the elementary stream, then this object
    has a zero-length string."
  ::= { mpegProgESEntry 4 }

mpegProgESScte35Descr  OBJECT-TYPE
  SYNTAX      OCTET STRING (SIZE(0..256))
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "SCTE 35 descriptor. If not supported or present, a zero-length
    string is returned."
  ::= { mpegProgESEntry 5 }

mpegProgESScte18Descr  OBJECT-TYPE
  SYNTAX      OCTET STRING (SIZE(0..256))
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "SCTE 18 descriptor. If not supported or present, a zero-length
    string is returned."
  ::= { mpegProgESEntry 6 }

mpegInputStatsTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegInputStatsEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Stream statistics, SPTS or MPTS."
  ::= { mpegDigitalInputs 5 }

mpegInputStatsEntry  OBJECT-TYPE
  SYNTAX    MpegInputStatsEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Each entry describes statistics for each Input TS."
  INDEX { mpegInputTSIndex }
  ::= { mpegInputStatsTable 1 }

MpegInputStatsEntry ::= SEQUENCE {
  mpegInputStatsPcrJitter
    Integer32,
  mpegInputStatsMaxPacketJitter
    Integer32,
  mpegInputStatsPcrPackets
    Counter32,
  mpegInputStatsNonPcrPackets
    Counter32,
```

```
     mpegInputStatsUnexpectedPackets
        Counter32,
     mpegInputStatsContinuityErrors
        Counter32,
     mpegInputStatsSyncLossPackets
        Counter32,
     mpegInputStatsPcrIntervalExceeds
        Counter32
}

mpegInputStatsPcrJitter OBJECT-TYPE
   SYNTAX      Integer32 (-1..2147483647)
   UNITS       "nanoseconds"
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "This object stores the difference between
     the actual value of the PCR and its expected value. It is
     expressed in nanoseconds. This object is default to -1
     if it's not supported."
   ::= { mpegInputStatsEntry 1 }

mpegInputStatsMaxPacketJitter OBJECT-TYPE
   SYNTAX      Integer32 (-1..2147483647)
   UNITS   "milliseconds"
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "This object stores the measurement of the maximum variation
      in arrival time or delay between individual packets.
      It is expressed in milliseconds. This object is default to -1
      if it's not supported."
   ::= { mpegInputStatsEntry 2 }

mpegInputStatsPcrPackets  OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "This reflects the number of MPEG transport packets, having
     PCR, received for the stream."
   ::= { mpegInputStatsEntry 3 }

mpegInputStatsNonPcrPackets  OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
     "This reflects the number of MPEG transport packets, without
     PCR, received for the stream. "
   ::= { mpegInputStatsEntry 4 }

mpegInputStatsUnexpectedPackets  OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
```

```
    "This reflects the number of transport packets whose PIDs are
    not expected."
  ::= { mpegInputStatsEntry 5 }

mpegInputStatsContinuityErrors  OBJECT-TYPE
  SYNTAX      Counter32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Transport packets have continuity counters.  Successive
    packets have contiguous values in the continuity counter.
    Continuity counter error occurs when the successive packets do
    not have contiguous value and discontinuity indicator is not
    set. This object reflects the number of continuity counter
    errors."
  ::= { mpegInputStatsEntry 6 }

mpegInputStatsSyncLossPackets  OBJECT-TYPE
  SYNTAX      Counter32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "When a sync byte is missing in a MPEG packet this value is
    incremented. This value indicates the number of MPEG packets
    that had missing sync byte per stream."
  ::= { mpegInputStatsEntry 7 }

mpegInputStatsPcrIntervalExceeds  OBJECT-TYPE
  SYNTAX      Counter32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates the number of times that the interval between two
    successive PCR packets for any program in the transport stream
    exceeds 100 milliseconds."
  ::= { mpegInputStatsEntry 8 }


mpegInputUdpOriginationTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegInputUdpOriginationEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Specifies the UDP unicast or multicast flows of an
    input transport stram.
    For unicast it represents the UDP port and optionally
    destination IP address of the input TS origination UDP IP flow.
    for Multicast it represents the set of SSM multicast groups
    of the input TS origination UDP IP flow."
  ::= { mpegDigitalInputs 6 }

mpegInputUdpOriginationEntry  OBJECT-TYPE
  SYNTAX    MpegInputUdpOriginationEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Each entry specifies the IP UDP information of the
```

```
      input TS origination."
   INDEX { mpegInputUdpOriginationIndex,
           mpegInputUdpOriginationId }
   ::= { mpegInputUdpOriginationTable 1 }

MpegInputUdpOriginationEntry ::= SEQUENCE {
  mpegInputUdpOriginationIndex
     Unsigned32,
  mpegInputUdpOriginationId
     Unsigned32,
  mpegInputUdpOriginationIfIndex
     InterfaceIndex,
  mpegInputUdpOriginationInetAddrType
     InetAddressType,
  mpegInputUdpOriginationSrcInetAddr
     InetAddress,
  mpegInputUdpOriginationDestInetAddr
     InetAddress,
  mpegInputUdpOriginationDestPort
     InetPortNumber,
 mpegInputUdpOriginationActive
     TruthValue,
  mpegInputUdpOriginationPacketsDetected
     TruthValue,
  mpegInputUdpOriginationRank
     Unsigned32,
  mpegInputUdpOriginationInputTSIndex
     Unsigned32

}

mpegInputUdpOriginationIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "The unique identifier of the UDP input TS origination
    information."
  ::= { mpegInputUdpOriginationEntry 1 }


mpegInputUdpOriginationId  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "The unique identifier of each UDP IP flow associated with the
    input TS UDP origination."
  ::= { mpegInputUdpOriginationEntry 2 }

mpegInputUdpOriginationIfIndex  OBJECT-TYPE
  SYNTAX     InterfaceIndex
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The interface index where the UDP flow is being received."
  ::= { mpegInputUdpOriginationEntry 3 }
```

```
mpegInputUdpOriginationInetAddrType   OBJECT-TYPE
  SYNTAX      InetAddressType
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The address type associated with input TS origination
    UDP IP flow. 'ipv4' and 'ipv6' are the only used types."
  ::= { mpegInputUdpOriginationEntry 4 }

mpegInputUdpOriginationSrcInetAddr   OBJECT-TYPE
  SYNTAX      InetAddress
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "For Multicast it represents the Source Specific Multicast
    IP Address of the UDP IP flow.
    For unicast UDP IP flows is either the the IP source address
    of the IP flow or the all zeros address if unknown or irrelevant
    for the input TS."
  ::= { mpegInputUdpOriginationEntry 5 }


mpegInputUdpOriginationDestInetAddr   OBJECT-TYPE
  SYNTAX      InetAddress
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "For multicast it represents the group address of the SSM
    origination input TS.
    For unicast UDP IP flows is either the IP destination address
    of the udp flow  or the all zeros address if unknown or irrelevant
    for the input TS."
  ::= { mpegInputUdpOriginationEntry 6 }

mpegInputUdpOriginationDestPort   OBJECT-TYPE
  SYNTAX      InetPortNumber
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The UDP destination port of the UDP IP flow of the input TS."
  ::= { mpegInputUdpOriginationEntry 7 }

mpegInputUdpOriginationActive   OBJECT-TYPE
  SYNTAX      TruthValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The activation state of the UDP flow.
    The value 'true' indicates the UDP flow data stream is being
    sensed or buffered for the input TS, independently of that
    flow being used for a video session.
    Otherwise the value 'false' is reported.
    For multicast UDP origination flows the value 'true' indicates
    the UDP flow was successfully joined."
  ::= { mpegInputUdpOriginationEntry 8 }
```

```
mpegInputUdpOriginationPacketsDetected  OBJECT-TYPE
  SYNTAX      TruthValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates whether UDP flow packets are being detected.
    It is vendor dependent the determination if packets for a
    UDP flow are being detected."
  ::= { mpegInputUdpOriginationEntry 9 }

mpegInputUdpOriginationRank  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates the Rank Priority used to determine the UDP flow
    selected for the input TS processing and Video Session
    assignments."
  ::= { mpegInputUdpOriginationEntry 10 }

mpegInputUdpOriginationInputTSIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The mpegInputTSIndex that this entry is associated with"
  ::= { mpegInputUdpOriginationEntry 11 }

--
-- mpegOutputs
--

mpegInsertPacketTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegInsertPacketEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "This table describes packet insertion information. Typical
    packets that are inserted at the RF output of a device are PSI,
    PSIP, and CVCT MPEG packets. These packets have their own PID.
    This table may be empty if the video device does not support
    packet insertion or do not have any packet insertion
    configured."
  ::= { mpegOutputs 1 }

mpegInsertPacketEntry  OBJECT-TYPE
  SYNTAX    MpegInsertPacketEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "An entry in the Packet Management Table."
  INDEX { mpegInsertPacketIndex }
  ::= { mpegInsertPacketTable 1 }

MpegInsertPacketEntry ::= SEQUENCE {
  mpegInsertPacketIndex
    Unsigned32,
```

```
  mpegInsertPacketListId
    Unsigned32,
  mpegInsertPacketImmediateExecution
    TruthValue,
  mpegInsertPacketStartTime
    DateAndTime,
  mpegInsertPacketRepeat
    INTEGER,
  mpegInsertPacketContinuousFlag
    TruthValue,
  mpegInsertPacketRate
    Unsigned32,
  mpegInsertPacketDeviceIfIndex
    InterfaceIndex
}

mpegInsertPacketIndex  OBJECT-TYPE
  SYNTAX      Unsigned32 (1..65536)
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Index of list of packets being inserted into all MPEG
    streams. This index is unique within the SNMP agent that
          may be managing multiple MPEG devices."
  ::= { mpegInsertPacketEntry 1 }

mpegInsertPacketListId  OBJECT-TYPE
  SYNTAX      Unsigned32 (0..65535)
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Reference number of packets being inserted into MPEG stream."
  ::= { mpegInsertPacketEntry 2 }

mpegInsertPacketImmediateExecution  OBJECT-TYPE
  SYNTAX      TruthValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "If true, packet insertion starts immediately."
  ::= { mpegInsertPacketEntry 3 }

mpegInsertPacketStartTime  OBJECT-TYPE
  SYNTAX      DateAndTime
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Unix epoch start time for insertions (if Immediate Execution
    is false)."
  ::= { mpegInsertPacketEntry 4 }

mpegInsertPacketRepeat  OBJECT-TYPE
  SYNTAX      INTEGER {
    repeat (1),
    oneTime (2)
  }
  MAX-ACCESS read-only
```

```
   STATUS     current
   DESCRIPTION
     "Indicates whether the insert packet is one-time or
     repetitive."
   ::= { mpegInsertPacketEntry 5 }

mpegInsertPacketContinuousFlag  OBJECT-TYPE
   SYNTAX     TruthValue
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "If true, packet will be sent periodically, until cancelled."
   ::= { mpegInsertPacketEntry 6 }

mpegInsertPacketRate  OBJECT-TYPE
   SYNTAX     Unsigned32
   UNITS   "milliseconds"
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "Rate at which packet list should be inserted."
   ::= { mpegInsertPacketEntry 7 }

mpegInsertPacketDeviceIfIndex  OBJECT-TYPE
   SYNTAX     InterfaceIndex
   MAX-ACCESS read-only
   STATUS     current
   DESCRIPTION
     "The ifIndex of the output device interface that the packet will
     be inserted at."
   ::= { mpegInsertPacketEntry 8 }

mpegOutputStatsTable  OBJECT-TYPE
   SYNTAX SEQUENCE OF MpegOutputStatsEntry
   MAX-ACCESS not-accessible
   STATUS     current
   DESCRIPTION
     "The table specifies the diagnostic stats objects for the
     outputs transport stream of an MPEG device."
   ::= { mpegOutputs 2 }

mpegOutputStatsEntry  OBJECT-TYPE
   SYNTAX   MpegOutputStatsEntry
   MAX-ACCESS not-accessible
   STATUS     current
   DESCRIPTION
     "Each entry specifies the diagnostics for each output TS."
   INDEX { mpegOutputTSIndex }
   ::= { mpegOutputStatsTable 1 }

MpegOutputStatsEntry ::= SEQUENCE {
   mpegOutputStatsDroppedPackets
     Counter32,
   mpegOutputStatsFifoOverflow
     Counter32,
       mpegOutputStatsFifoUnderflow
     Counter32,
```

```
   mpegOutputStatsDataRate
      Unsigned32,
   mpegOutputStatsAvailableBandwidth
      Unsigned32,
   mpegOutputStatsChannelUtilization
      Integer32,
   mpegOutputStatsTotalPackets
      Counter64
}

mpegOutputStatsDroppedPackets  OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "Number of MPEG packets dropped on this output transport stream."
   ::= { mpegOutputStatsEntry 1 }

mpegOutputStatsFifoOverflow  OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "Number of FIFO overflows on this output transport stream."
   ::= { mpegOutputStatsEntry 2 }

mpegOutputStatsFifoUnderflow  OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "Number of FIFO underflows on this output transport stream."
   ::= { mpegOutputStatsEntry 3 }

mpegOutputStatsDataRate  OBJECT-TYPE
   SYNTAX      Unsigned32
   UNITS   "bps"
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "Data rate for the content on this output transport stream."
   ::= { mpegOutputStatsEntry 4 }

mpegOutputStatsAvailableBandwidth  OBJECT-TYPE
   SYNTAX      Unsigned32
   UNITS   "bps"
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "Unused bandwidth on this port."
   ::= { mpegOutputStatsEntry 5 }

mpegOutputStatsChannelUtilization  OBJECT-TYPE
   SYNTAX      Integer32 (-1|0..1000)
   UNITS   "0.1 Percent"
   MAX-ACCESS read-only
   STATUS      current
```

```
    DESCRIPTION
      "The current utilization of a channel defined as
      (measured data rate / total bandwidth ) * 1000.
      If not applicable, a value of -1 is returned."
    ::= { mpegOutputStatsEntry 6 }

mpegOutputStatsTotalPackets  OBJECT-TYPE
  SYNTAX      Counter64
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
      "The total number of packets output for this transport stream
      since the start of the output stream."
    ::= { mpegOutputStatsEntry 7 }

mpegOutputTSTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegOutputTSEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
      "This table specifies the attributes of an outgoing transport
      stream SPTS or MPTS."
    ::= { mpegOutputs 3 }

mpegOutputTSEntry  OBJECT-TYPE
  SYNTAX    MpegOutputTSEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
      "Each entry specifies the attributes of an output transport
      stream, SPTS or MPTS."
  INDEX { mpegOutputTSIndex }
    ::= { mpegOutputTSTable 1 }

MpegOutputTSEntry ::= SEQUENCE {
  mpegOutputTSIndex
    Unsigned32,
  mpegOutputTSType
    INTEGER,
  mpegOutputTSConnectionType
    INTEGER,
  mpegOutputTSConnection
    RowPointer,
  mpegOutputTSNumPrograms
    Unsigned32,
  mpegOutputTSTSID
    Unsigned32,
  mpegOutputTSNitPid
    HePIDValue,
  mpegOutputTSCaPid
    HePIDValue,
  mpegOutputTSCatInsertRate
    Unsigned32,
  mpegOutputTSPatInsertRate
    Unsigned32,
  mpegOutputTSPmtInsertRate
    Unsigned32,
```

```
    mpegOutputTSStartTime
      DateAndTime
}

mpegOutputTSIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Table index. It uniquely identifies a mpegOutputTSEntry.
    This index is independent from mpegOutputTSTSID."
  ::= { mpegOutputTSEntry 1 }

mpegOutputTSType  OBJECT-TYPE
  SYNTAX      INTEGER {
    spts (1),
    mpts (2)
  }
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The type of stream, e.g., SPTS or MPTS."
  ::= { mpegOutputTSEntry 2 }

mpegOutputTSConnectionType  OBJECT-TYPE
  SYNTAX      INTEGER {
    other(1),
    qam(2),
    udp(3)
  }
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The type of output flow of the stream.
    The value 'qam' indicates a QAM output for the stream
    The value 'udp' indicates either unicast or multicast
    udp destination flows for the stream."
  ::= { mpegOutputTSEntry 3 }

mpegOutputTSConnection  OBJECT-TYPE
  SYNTAX      RowPointer
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The reference to the instance of the output connection for the
    output stream.
    For the Connection Type 'qam' this object contains the ifIndex object
    identifier of the QAM channel for the output stream.

    For the Connection Type 'udp' this object contains the
    pointer to the UDP Destination table being used for the output stream.
    This is similar to mpegInputTSConnection - See description for details."
  ::= { mpegOutputTSEntry 4 }


mpegOutputTSNumPrograms  OBJECT-TYPE
  SYNTAX      Unsigned32
```

```
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The number of programs in the output transport stream."
  ::= { mpegOutputTSEntry 5 }

mpegOutputTSTSID  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The TSID of the output transport stream."
  ::= { mpegOutputTSEntry 6 }

mpegOutputTSNitPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "NIT PID of the outgoing transport stream."
  ::= { mpegOutputTSEntry 7 }

mpegOutputTSCaPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The CA PID of the outgoing transport stream."
  ::= { mpegOutputTSEntry 8 }

mpegOutputTSCatInsertRate  OBJECT-TYPE
  SYNTAX      Unsigned32
  UNITS       "tables/ms"
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The CAT insertion rate."
  ::= { mpegOutputTSEntry 9 }

mpegOutputTSPatInsertRate  OBJECT-TYPE
  SYNTAX      Unsigned32
  UNITS   "tables/ms"
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The PAT table interval expressed in ms."
  ::= { mpegOutputTSEntry 10 }

mpegOutputTSPmtInsertRate  OBJECT-TYPE
  SYNTAX      Unsigned32
  UNITS   "tables/ms"
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The PMT insertion rate. This is expressed in tables/second."
  ::= { mpegOutputTSEntry 11 }
```

```
mpegOutputTSStartTime  OBJECT-TYPE
  SYNTAX     DateAndTime
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object specifies the time the MPEG device started
    transmitting the output stream, i.e., the time the entry was
    added to the table.
    The support of this object is optional. If not supported, this
    object is default to a zero length string."
  ::= { mpegOutputTSEntry 12 }

mpegOutputProgTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegOutputProgEntry
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "The table describing the PSI of each outgoing program."
  ::= { mpegOutputs 4 }

mpegOutputProgEntry  OBJECT-TYPE
  SYNTAX    MpegOutputProgEntry
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "Each entry specifies the parameters for each incoming
    program."
  INDEX {
          mpegOutputTSIndex,
         mpegOutputProgIndex
       }
  ::= { mpegOutputProgTable 1 }

MpegOutputProgEntry ::= SEQUENCE {
  mpegOutputProgIndex
    Unsigned32,
  mpegOutputProgNo
    Unsigned32,
  mpegOutputProgPmtVersion
    Unsigned32,
  mpegOutputProgPmtPid
    HePIDValue,
  mpegOutputProgPcrPid
    HePIDValue,
  mpegOutputProgEcmPid
    HePIDValue,
  mpegOutputProgNumElems
    Unsigned32,
  mpegOutputProgNumEcms
    Unsigned32,
  mpegOutputProgCaDescr
    OCTET STRING,
  mpegOutputProgScte35Descr
    OCTET STRING,
  mpegOutputProgScte18Descr
    OCTET STRING
}
```

```
mpegOutputProgIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "This object is the table index for output program."
  ::= { mpegOutputProgEntry 1 }

mpegOutputProgNo  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "This object specifies the identifier of the program present
    in the transport stream of the outgoing program."
  ::= { mpegOutputProgEntry 2 }

mpegOutputProgPmtVersion  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "This object specifies the PMT version of the outgoing
    program. The default value of 0 means output program PMT
    version is not supported."
                  DEFVAL { 0 }
  ::= { mpegOutputProgEntry 3 }

mpegOutputProgPmtPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "PMT PID of the outgoing program."
  ::= { mpegOutputProgEntry 4 }

mpegOutputProgPcrPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "PCR PID of the outgoing program."
  ::= { mpegOutputProgEntry 5 }

mpegOutputProgEcmPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "This object specifies the ECM PID of the outgoing program."
  ::= { mpegOutputProgEntry 6 }

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

```
   DESCRIPTION
      "The number of elementary streams in the outgoing program."
   ::= { mpegOutputProgEntry 7 }

mpegOutputProgNumEcms  OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "The number of ECMs for the outgoing program. The default value
      9999 means the device does not support encryption."
   DEFVAL { 9999 }
   ::= { mpegOutputProgEntry 8 }

mpegOutputProgCaDescr  OBJECT-TYPE
   SYNTAX      OCTET STRING (SIZE(0..256))
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "Conditional access descriptor is used to specify both
      system-wide conditional access management information such as
      EMMS and elementary stream-specific information such as ECMs.
      If any elementary stream is scrambled, a CA descriptor shall be
      present for the program containing that elementary stream.
      This object specifies the CA descriptor for this program. If
      the outgoing program does not have an associated CA descriptor,
      then this object has a zero-length string."
   ::= { mpegOutputProgEntry 9 }

mpegOutputProgScte35Descr  OBJECT-TYPE
   SYNTAX      OCTET STRING (SIZE(0..256))
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "SCTE 35 descriptor in the outgoing program. This object is set
      to a string of zero-length if there's no SCTE 35 descriptor in
      the outgoing program or not supported."
   ::= { mpegOutputProgEntry 10 }

mpegOutputProgScte18Descr  OBJECT-TYPE
   SYNTAX      OCTET STRING (SIZE(0..256))
   MAX-ACCESS read-only
   STATUS      current
   DESCRIPTION
      "SCTE 18 descriptor. If not present or not supported, a
      zero-length string is returned."
   ::= { mpegOutputProgEntry 11 }

mpegOutputProgElemStatsTable  OBJECT-TYPE
   SYNTAX SEQUENCE OF MpegOutputProgElemStatsEntry
   MAX-ACCESS not-accessible
   STATUS      current
   DESCRIPTION
      "The stats associated with the elementary streams of an MPEG
      program."
   ::= { mpegOutputs 5 }
```

```
mpegOutputProgElemStatsEntry  OBJECT-TYPE
  SYNTAX    MpegOutputProgElemStatsEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Each entry constitutes the stats for a program associated with
    a transport stream."
  INDEX {
          mpegOutputTSIndex,
          mpegOutputProgIndex,
          mpegOutputProgElemStatsIndex
        }
  ::= { mpegOutputProgElemStatsTable 1 }

MpegOutputProgElemStatsEntry ::= SEQUENCE {
  mpegOutputProgElemStatsIndex
    Unsigned32,
  mpegOutputProgElemStatsPid
    HePIDValue,
  mpegOutputProgElemStatsElemType
    INTEGER,
  mpegOutputProgElemStatsDataRate
    Integer32
}

mpegOutputProgElemStatsIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "The unique identifier of the elementary stream."
  ::= { mpegOutputProgElemStatsEntry 1 }

mpegOutputProgElemStatsPid  OBJECT-TYPE
  SYNTAX      HePIDValue
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "The Pid of output program elementary stream."
  ::= { mpegOutputProgElemStatsEntry 2 }

mpegOutputProgElemStatsElemType  OBJECT-TYPE
  SYNTAX      INTEGER {
    video (1),
    audio (2),
    data (3),
    scte18 (4),
    scte35 (5),
    unknown (6)
  }
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The type of elementary stream (video, audio, or data) of the
    program. Some devices, such as device, may choose not to report
    exact type due to scalability issues, in which case, this object
    shall be set to unknown."
```

```
  ::= { mpegOutputProgElemStatsEntry 3 }

mpegOutputProgElemStatsDataRate  OBJECT-TYPE
  SYNTAX      Integer32
  UNITS    "bps"
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The data rate of the elementary stream. Return -1 if not
    supported."
  ::= { mpegOutputProgElemStatsEntry 4 }

mpegOutputUdpDestinationTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegOutputUdpDestinationEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Specifies the UDP unicast or multicast of the
    output TS this entry references.
    For unicast it represents the UDP port and optionally
    destination IP address of the output TS destination UDP IP flow.
    for Multicast it represents the set of SSM multicast groups
    of the output TS destination UDP IP flow."
  ::= { mpegOutputs 6 }

mpegOutputUdpDestinationEntry  OBJECT-TYPE
  SYNTAX    MpegOutputUdpDestinationEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Each entry specifies the IP UDP information of the
    output TS destination."
  INDEX { mpegOutputUdpDestinationIndex,
    mpegOutputUdpDestinationId }
  ::= { mpegOutputUdpDestinationTable 1 }

MpegOutputUdpDestinationEntry ::= SEQUENCE {
  mpegOutputUdpDestinationIndex
    Unsigned32,
  mpegOutputUdpDestinationId
    Unsigned32,
  mpegOutputUdpDestinationIfIndex
    InterfaceIndex,
  mpegOutputUdpDestinationInetAddrType
    InetAddressType,
  mpegOutputUdpDestinationSrcInetAddr
    InetAddress,
  mpegOutputUdpDestinationDestInetAddr
    InetAddress,
  mpegOutputUdpDestinationDestPort
    InetPortNumber,
  mpegOutputUdpDestinationOutputTSIndex
    Unsigned32
  }

mpegOutputUdpDestinationIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
```

```
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "The unique identifier of the UDP output TS destination
    information."
  ::= { mpegOutputUdpDestinationEntry 1 }


  mpegOutputUdpDestinationId  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "The unique identifier of each UDP IP flow associated with the
    output TS UDP destination."
  ::= { mpegOutputUdpDestinationEntry 2 }

  mpegOutputUdpDestinationIfIndex  OBJECT-TYPE
  SYNTAX     InterfaceIndex
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The interface index where the UDP flow is being sent."
  ::= { mpegOutputUdpDestinationEntry 3 }

  mpegOutputUdpDestinationInetAddrType  OBJECT-TYPE
  SYNTAX     InetAddressType
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The address type associated with output TS destination
    UDP IP flow."
  ::= { mpegOutputUdpDestinationEntry 4 }

  mpegOutputUdpDestinationSrcInetAddr  OBJECT-TYPE
  SYNTAX     InetAddress
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "For Multicast it represents the Source Specific Multicast
    IP Address of the UDP IP flow.
    For unicast UDP IP flows is either the the IP source address
    of the IP flow or the all zeros address if unknown or irrelevant
    for the destination output TS."
  ::= { mpegOutputUdpDestinationEntry 5 }


  mpegOutputUdpDestinationDestInetAddr  OBJECT-TYPE
  SYNTAX     InetAddress
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "For multicast it represents the group address of the SSM
    destination output TS.
    For unicast UDP IP flows is either the IP destination address
    of the udp flow  or the all zeros address if unknown or irrelevant
    for the destination output TS."
```

```
  ::= { mpegOutputUdpDestinationEntry 6 }

  mpegOutputUdpDestinationDestPort   OBJECT-TYPE
  SYNTAX      InetPortNumber
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The UDP port of the UDP IP flow of the output TS."
  ::= { mpegOutputUdpDestinationEntry 7 }

  mpegOutputUdpDestinationOutputTSIndex   OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The mpegOutputTSIndex that this entry is associated with."
  ::= { mpegOutputUdpDestinationEntry 8 }

mpegProgramMappingTable   OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegProgramMappingEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "This table describes program mappings, i.e., ties the input
    destination to the output destination for every program active
    in the device."
  ::= { mpegMIBObjects 3 }

mpegProgramMappingEntry   OBJECT-TYPE
  SYNTAX   MpegProgramMappingEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Each entry describes the mapping, i.e., ties input
    destination to output destination for a given program."
  INDEX { mpegProgramMappingIndex }
  ::= { mpegProgramMappingTable 1 }

MpegProgramMappingEntry ::= SEQUENCE {
  mpegProgramMappingIndex
    Unsigned32,
  mpegProgramMappingOutputProgIndex
    Unsigned32,
  mpegProgramMappingOutputTSIndex
    Unsigned32,
  mpegProgramMappingInputProgIndex
    Unsigned32,
  mpegProgramMappingInputTSIndex
    Unsigned32
}

mpegProgramMappingIndex   OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "The table index uniquely identifies an entry in mpegProgramMappingTable.
```

```
   This index should be unique within the same SNMP agent that may be
   managing multiple MPEG devices."
 ::= { mpegProgramMappingEntry 1 }


mpegProgramMappingOutputProgIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object is set to mpegOutputProgIndex of the corresponding
    entry in mpegOutputProgTable for a given output program."
  ::= { mpegProgramMappingEntry 2 }


mpegProgramMappingOutputTSIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object is set to mpegOutputTSIndex of the
    corresponding entry in mpegOutputProgTable for a given output
    program."
  ::= { mpegProgramMappingEntry 3 }


mpegProgramMappingInputProgIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object is set to the value of mpegInputProgIndex of the
    corresponding entry in mpegInputProgTable for a given input
    program."
  ::= { mpegProgramMappingEntry 4 }


mpegProgramMappingInputTSIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object is set to the value of mpegInputTSIndex of the
    corresponding entry in mpegInputProgTable for a given input
    program."
  ::= { mpegProgramMappingEntry 5 }



mpegVideoSessionTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegVideoSessionEntry
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "This table is used to store video session information. The
    session may be of VOD, SDV or DB type. It captures logical
    information about a video stream, such as source and
    destination addresses, UDP port etc, and also ties it with its
    direct mapping of input and output programs.

    This table captures video sessions provisioned by both
    session-based and table-based method. It is capable to support
```

```
    N-M mapping of video programs that's required for redundant
    source or video stream cloning etc."
  ::= { mpegMIBObjects 4 }

mpegVideoSessionEntry  OBJECT-TYPE
  SYNTAX    MpegVideoSessionEntry
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "Each entry describes a logical video session."
  INDEX { mpegVideoSessionIndex }
  ::= { mpegVideoSessionTable 1 }

MpegVideoSessionEntry ::= SEQUENCE {
  mpegVideoSessionIndex
    Unsigned32,
  mpegVideoSessionPhyMappingIndex
    Unsigned32,
  mpegVideoSessionPIDRemap
    TruthValue,
  mpegVideoSessionMode
    INTEGER,
  mpegVideoSessionState
    INTEGER,
  mpegVideoSessionProvMethod
    INTEGER,
  mpegVideoSessionEncryptionType
    INTEGER,
  mpegVideoSessionEncryptionInfo
    AutonomousType,
  mpegVideoSessionBitRate
    Unsigned32,
  mpegVideoSessionID
    OCTET STRING,
  mpegVideoSessionSelectedInput
    RowPointer,
  mpegVideoSessionSelectedOutput
    RowPointer
}

mpegVideoSessionIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS not-accessible
  STATUS     current
  DESCRIPTION
    "The table index uniquely identifies an entry in
    mpegVideoSessionTable.
    This index should be unique within the same SNMP agent that
    may be managing multiple MPEG devices."
  ::= { mpegVideoSessionEntry 1 }

mpegVideoSessionPhyMappingIndex  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object shall be set to mpegProgramMappingIndex of the
```

```
    corresponding mpegProgramMappingEntry which contains
    physical mapping between the input and output program."
  ::= { mpegVideoSessionEntry 2 }


mpegVideoSessionPIDRemap  OBJECT-TYPE
  SYNTAX     TruthValue
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "This object value 'true' indicates that the session has PID
    remapping. The value 'false' indicates that the session has no
    PID remapping."
  ::= { mpegVideoSessionEntry 3 }


mpegVideoSessionMode  OBJECT-TYPE
  SYNTAX     INTEGER {
    other(1),
    passThrough(2),
    multiplexing(3) --explicit session
  }
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "Indicates whether the transport stream is associated
    with a multiplexed session or is pass-through.
    For pass-through type transport streams, all elementary stream
    level information in optional."
  ::= { mpegVideoSessionEntry 4 }


mpegVideoSessionState  OBJECT-TYPE
  SYNTAX     INTEGER {
    active (1),
    provisioned (2)
  }
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "active means in-use, provisioned means not-in-use or active
    such as video session provisioned for redundant source."
  ::= { mpegVideoSessionEntry 5 }


mpegVideoSessionProvMethod  OBJECT-TYPE
  SYNTAX     INTEGER {
    tableBased (1),
    sessionBased (2),
    other(3)
  }
  MAX-ACCESS read-only
  STATUS     current
  DESCRIPTION
    "The type of session, e.g., in QAM table-based or session-based."
  ::= { mpegVideoSessionEntry 6 }


mpegVideoSessionEncryptionType  OBJECT-TYPE
  SYNTAX     INTEGER {
    none(1),
    other(2),
```

```
    preencrypted(3),
    des(4),
    des3(5),
    aes(6),
    dvbCsa(7),
    pkey(8),
    mediac(9),
    dvs042(10)
  }
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates the encryption algorithm of the session."
  ::= { mpegVideoSessionEntry 7 }

mpegVideoSessionEncryptionInfo  OBJECT-TYPE
  SYNTAX      AutonomousType
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates a vendor-specific reference to information
     associated to the session encryption algorithm."
  ::= { mpegVideoSessionEntry 8 }


mpegVideoSessionBitRate  OBJECT-TYPE
  SYNTAX      Unsigned32
  UNITS       "bps"
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates a session throughtput in bps."
  ::= { mpegVideoSessionEntry 9 }

mpegVideoSessionID  OBJECT-TYPE
  SYNTAX      OCTET STRING (SIZE(0..16))
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The session ID associated with the stream in the case of a
    session-based QAM. This is not applicable to a table-based QAM.
    This ID may be used by NMS system to uniquely identify an input
    program to output program mapping."
  ::= { mpegVideoSessionEntry 10 }

mpegVideoSessionSelectedInput  OBJECT-TYPE
  SYNTAX      RowPointer
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "The reference to the entry of the input flow currently being
     used in the video session."
  ::= { mpegVideoSessionEntry 11 }

  mpegVideoSessionSelectedOutput  OBJECT-TYPE
  SYNTAX      RowPointer
  MAX-ACCESS read-only
```

```
    STATUS      current
    DESCRIPTION
      "The reference to the entry of the output flow currently being
       used in the video session."
    ::= { mpegVideoSessionEntry 12 }


mpegVideoSessionPtrTable  OBJECT-TYPE
    SYNTAX SEQUENCE OF MpegVideoSessionPtrEntry
    MAX-ACCESS not-accessible
    STATUS      current
    DESCRIPTION
      "This table is used to provide a quick reference of the
       Program Mapping and input/output TS connection information
       associated with a Video Session."
    ::= { mpegMIBObjects 5 }

mpegVideoSessionPtrEntry OBJECT-TYPE
    SYNTAX    MpegVideoSessionPtrEntry
    MAX-ACCESS not-accessible
    STATUS      current
    DESCRIPTION
      "Each entry describes the associations with ProgramMapping and
       transport stream connections."
    INDEX { mpegVideoSessionIndex,
            mpegVideoSessionPtrInputProgIndex,
            mpegVideoSessionPtrInputTSIndex,
            mpegVideoSessionPtrInputTSConnType,
            mpegVideoSessionPtrInputTSConnection,
            mpegVideoSessionPtrOutputProgIndex,
            mpegVideoSessionPtrOutputTSIndex,
            mpegVideoSessionPtrOutputTSConnType,
            mpegVideoSessionPtrOutputTSConnection
}
    ::= { mpegVideoSessionPtrTable 1 }

MpegVideoSessionPtrEntry ::= SEQUENCE {
  mpegVideoSessionPtrInputProgIndex
    Unsigned32,
  mpegVideoSessionPtrInputTSIndex
    Unsigned32,
  mpegVideoSessionPtrInputTSConnType
    Unsigned32,
  mpegVideoSessionPtrInputTSConnection
    Unsigned32,
  mpegVideoSessionPtrOutputProgIndex
    Unsigned32,
  mpegVideoSessionPtrOutputTSIndex
    Unsigned32,
  mpegVideoSessionPtrOutputTSConnType
    Unsigned32,
  mpegVideoSessionPtrOutputTSConnection
    Unsigned32,
  mpegVideoSessionPtrStatus
    INTEGER
}
```

```
mpegVideoSessionPtrInputProgIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Input Program index value of the video
     session."
  ::= { mpegVideoSessionPtrEntry 1 }


mpegVideoSessionPtrInputTSIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the input TS index value of the video
     session."
  ::= { mpegVideoSessionPtrEntry 2 }

mpegVideoSessionPtrInputTSConnType  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Input TS Connection type value of the video
     session."
  ::= { mpegVideoSessionPtrEntry 3 }

mpegVideoSessionPtrInputTSConnection  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Input TS Connection value of the video
     session."
  ::= { mpegVideoSessionPtrEntry 4 }

mpegVideoSessionPtrOutputProgIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Output Program index value of the video
     session."
  ::= { mpegVideoSessionPtrEntry 5 }

mpegVideoSessionPtrOutputTSIndex  OBJECT-TYPE
  SYNTAX      Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Output TS index value of the video
     session."
  ::= { mpegVideoSessionPtrEntry 6 }

mpegVideoSessionPtrOutputTSConnType  OBJECT-TYPE
  SYNTAX      Unsigned32
```

```
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Output TS Connection type value of the video
    session."
  ::= { mpegVideoSessionPtrEntry 7 }

mpegVideoSessionPtrOutputTSConnection  OBJECT-TYPE
  SYNTAX     Unsigned32
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Indicates the Output TS Connection value of the video
    session."
  ::= { mpegVideoSessionPtrEntry 8 }

mpegVideoSessionPtrStatus  OBJECT-TYPE
  SYNTAX     INTEGER {
                       active(1),
                       closed(2)
                      }
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates the status of the session.
    Only active sessions need to be reported."
  ::= { mpegVideoSessionPtrEntry 9 }

mpegInputTSOutputSessionTable  OBJECT-TYPE
  SYNTAX SEQUENCE OF MpegInputTSOutputSessionEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Specifies the list of Output Session indexes that the
    Input TS entry is feeding. For unicast it will typically point
    to just one output Session. For multicast, it will point to
    all the output Sessions using this internally replicated
    input TS."
  ::= { mpegMIBObjects 6 }

mpegInputTSOutputSessionEntry OBJECT-TYPE
  SYNTAX    MpegInputTSOutputSessionEntry
  MAX-ACCESS not-accessible
  STATUS      current
  DESCRIPTION
    "Each entry specifies the sessionID associated with the
    Input TS Entry Index."
  INDEX { mpegInputTSIndex,
          mpegVideoSessionIndex
}
  ::= { mpegInputTSOutputSessionTable 1 }

MpegInputTSOutputSessionEntry ::= SEQUENCE {
  mpegInputTSOutputSessionCreateTime
    DateAndTime
}
```

```
mpegInputTSOutputSessionCreateTime  OBJECT-TYPE
  SYNTAX      DateAndTime
  MAX-ACCESS read-only
  STATUS      current
  DESCRIPTION
    "Indicates the Creation Time of the session referenced by
    this entry."
  ::= { mpegInputTSOutputSessionEntry 1 }

mpegSupport  MODULE-COMPLIANCE
  STATUS      current
  DESCRIPTION
    "These objects describe the support level for MPEG."
  MODULE
    MANDATORY-GROUPS { mpegInputGroup,
         mpegOutputGroup }

    GROUP mpegMappingsGroup
    DESCRIPTION
      "The mpegMappingsGroup is unconditionally optional."

    GROUP mpegSessionsGroup
    DESCRIPTION
      "The mpegSessionsGroup is unconditionally optional."

    GROUP mpegInputProgESGroup
    DESCRIPTION
      "This group is optional for devices that only support
       'passThrough' sessions, or devices that choose not to decode
       and store extensive information which is available from other
       sources, such as video server, encoder, satellite, etc."

    GROUP mpegOutputProgElemStatsGroup
    DESCRIPTION
      "This group is optional for devices that only support'passThrough'
      sessions."

  ::= { mpegMIBCompliances 1 }

mpegInputGroup  OBJECT-GROUP
  OBJECTS {
    mpegInputTSType,
    mpegInputTSConnectionType,
    mpegInputTSConnection,
    mpegInputTSActiveConnection,
    mpegLossOfSignalTimeout,
    mpegInputTSPsiDetected,
    mpegInputTSStartTime,
    mpegInputTSResourceAllocated,
    mpegInputTSNumPrograms,
    mpegInputTSRate,
    mpegInputTSMaxRate,
    mpegInputTSPatVersion,
    mpegInputTSCatVersion,
    mpegInputTSNitPid,
    mpegInputTSNumEmms,
    mpegInputTSTSID,
```

```
      mpegInputTSLock,
      mpegInputUdpOriginationIfIndex,
      mpegInputUdpOriginationInetAddrType,
      mpegInputUdpOriginationSrcInetAddr,
      mpegInputUdpOriginationDestInetAddr,
      mpegInputUdpOriginationDestPort,
      mpegInputUdpOriginationActive,
      mpegInputUdpOriginationPacketsDetected,
      mpegInputUdpOriginationRank,
      mpegInputUdpOriginationInputTSIndex,
      mpegInputProgPmtVersion,
      mpegInputProgNo,
      mpegInputProgPmtVersion,
      mpegInputProgPmtPid,
      mpegInputProgPcrPid,
      mpegInputProgEcmPid,
      mpegInputProgNumElems,
      mpegInputProgNumEcms,
      mpegInputProgCaDescr,
      mpegInputProgScte35Descr,
      mpegInputProgScte18Descr,
      mpegInputStatsPcrPackets,
      mpegInputStatsNonPcrPackets,
      mpegInputStatsUnexpectedPackets,
      mpegInputStatsContinuityErrors,
      mpegInputStatsSyncLossPackets,
      mpegInputStatsPcrIntervalExceeds,
      mpegInputStatsPcrJitter,
      mpegInputStatsMaxPacketJitter }
    STATUS      current
    DESCRIPTION
      "The input objects of the MPEG device."
    ::= { mpegMIBGroups 1 }

mpegInputProgESGroup  OBJECT-GROUP
    OBJECTS { mpegProgESScte18Descr,
      mpegProgESScte35Descr,
      mpegProgESCaDescr,
      mpegProgESPID,
      mpegProgESType }
    STATUS      current
    DESCRIPTION
      "This table contains information about the elementary streams
      in a program. "
    ::= { mpegMIBGroups 2 }

mpegOutputGroup  OBJECT-GROUP
    OBJECTS { mpegInsertPacketListId,
      mpegInsertPacketImmediateExecution,
      mpegInsertPacketStartTime,
      mpegInsertPacketRepeat,
      mpegInsertPacketContinuousFlag,
      mpegInsertPacketRate,
      mpegInsertPacketDeviceIfIndex,
      mpegOutputStatsDroppedPackets,
      mpegOutputStatsFifoOverflow,
      mpegOutputStatsFifoUnderflow,
```

```
      mpegOutputStatsDataRate,
      mpegOutputStatsAvailableBandwidth,
      mpegOutputProgNo,
      mpegOutputProgPmtVersion,
      mpegOutputProgPmtPid,
      mpegOutputProgPcrPid,
      mpegOutputProgEcmPid,
      mpegOutputProgNumElems,
      mpegOutputProgNumEcms,
      mpegOutputProgCaDescr,
      mpegOutputProgScte35Descr,
      mpegOutputTSType,
      mpegOutputTSConnectionType,
      mpegOutputTSConnection,
      mpegOutputTSNumPrograms,
      mpegOutputTSTSID,
      mpegOutputTSNitPid,
      mpegOutputTSCaPid,
      mpegOutputTSCatInsertRate,
      mpegOutputTSPatInsertRate,
      mpegOutputProgScte18Descr,
      mpegOutputTSPmtInsertRate,
      mpegOutputTSStartTime,
      mpegOutputUdpDestinationIfIndex,
      mpegOutputUdpDestinationInetAddrType,
      mpegOutputUdpDestinationSrcInetAddr,
      mpegOutputUdpDestinationDestInetAddr,
      mpegOutputUdpDestinationDestPort,
      mpegOutputUdpDestinationOutputTSIndex,
      mpegOutputStatsChannelUtilization,
      mpegOutputStatsTotalPackets }
    STATUS      current
    DESCRIPTION
      "The output objects of the MPEG device."
    ::= { mpegMIBGroups 3 }

mpegOutputProgElemStatsGroup  OBJECT-GROUP
    OBJECTS { mpegOutputProgElemStatsDataRate,
      mpegOutputProgElemStatsElemType }
    STATUS      current
    DESCRIPTION
      "The stats associated with the elementary streams of an MPEG
      program."
    ::= { mpegMIBGroups 4 }

mpegMappingsGroup  OBJECT-GROUP
    OBJECTS { mpegProgramMappingOutputProgIndex,
      mpegProgramMappingOutputTSIndex,
      mpegProgramMappingInputProgIndex,
      mpegProgramMappingInputTSIndex }
    STATUS      current
    DESCRIPTION
      "The group of objects describing program mappings within the
      Device."
    ::= { mpegMIBGroups 5 }

mpegSessionsGroup  OBJECT-GROUP
```

```
  OBJECTS { mpegVideoSessionPhyMappingIndex,
    mpegVideoSessionPIDRemap,
    mpegVideoSessionMode,
    mpegVideoSessionState,
    mpegVideoSessionProvMethod,
    mpegVideoSessionEncryptionType,
    mpegVideoSessionEncryptionInfo,
    mpegVideoSessionBitRate,
    mpegVideoSessionID,
    mpegVideoSessionSelectedInput,
    mpegVideoSessionSelectedOutput,
    mpegVideoSessionPtrStatus,
    mpegInputTSOutputSessionCreateTime
      }
  STATUS      current
  DESCRIPTION
    "The group of objects describing program mappings within the
    Device."
  ::= { mpegMIBGroups 6 }


END
```