INTERNATIONAL TELECOMMUNICATION UNION

ITU-T J.176

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(07/2002)

SERIES J: CABLE NETWORKS AND TRANSMISSION OF TELEVISION, SOUND PROGRAMME AND OTHER MULTIMEDIA SIGNALS

IPCablecom

IPCablecom management event mechanism MIB

ITU-T Recommendation J.176

ITU-T J-SERIES RECOMMENDATIONS

CABLE NETWORKS AND TRANSMISSION OF TELEVISION, SOUND PROGRAMME AND OTHER MULTIMEDIA SIGNALS

General Recommendations	J.1–J.9
General specifications for analogue sound-programme transmission	J.10–J.19
Performance characteristics of analogue sound-programme circuits	J.20–J.29
Equipment and lines used for analogue sound-programme circuits	J.30–J.39
Digital encoders for analogue sound-programme signals	J.40–J.49
Digital transmission of sound-programme signals	J.50–J.59
Circuits for analogue television transmission	J.60–J.69
Analogue television transmission over metallic lines and interconnection with radio-relay links	J.70–J.79
Digital transmission of television signals	J.80–J.89
Ancillary digital services for television transmission	J.90–J.99
Operational requirements and methods for television transmission	J.100–J.109
Interactive systems for digital television distribution	J.110–J.129
Transport of MPEG-2 signals on packetised networks	J.130–J.139
Measurement of the quality of service	J.140–J.149
Digital television distribution through local subscriber networks	J.150–J.159
IPCablecom	**J.160–J.179**
Miscellaneous	J.180–J.199
Application for Interactive Digital Television	J.200–J.209

For further details, please refer to the list of ITU-T Recommendations.

ITU-T Recommendation J.176

IPCablecom management event mechanism MIB

Summary

This Recommendation defines the MIB for Management Event Mechanism that IPCablecom elements can use to report to management systems and/or local logs asynchronous events that indicate malfunction situations and notification about important non-fault situation.

Source

ITU-T Recommendation J.176 was prepared by ITU-T Study Group 9 (2001-2004) and approved under the WTSA Resolution 1 procedure on 29 July 2002.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

CONTENTS

ITU-T Recommendation J.176

IPCablecom management event mechanism MIB

1 Scope

The Management Event MIB provides a common data and format definition for events (informative, alarm, etc). It also specifies by what means events are transmitted. Use of a common event mechanism facilitates management of the MTA in a multi-vendor environment and provides a standard means to implement IPCablecom specified events. This Recommendation describes an SNMP MIB to support the management event mechanism as described in ITU-T Rec. J.172. It is intended to be implemented in the MTA, and management devices.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

2.1 Normative references

– ITU-T Recommendation J.172 (2002), *IPCablecom management event mechanism*.

2.2 Informative

– ITU-T Recommendation J.160 (2002), *Architectural framework for the delivery of time-critical services over cable television networks using cable modems*.

– ITU-T Recommendation J.162 (2001), *Network call signalling protocol for the delivery of time-critical services over cable television networks using cable modems*.

– ITU-T Recommendation J.167 (2001), *Media terminal adapter (MTA) device provisioning requirements for the delivery of real-time services over cable television networks using cable modems*.

– ITU-T Recommendation J.168 (2001), *IPCablecom Media Terminal Adapter (MTA) MIB requirements*.

– ITU-T Recommendation J.169 (2001), *IPCablecom network call signalling (NCS) MIB requirements*.

– ITU-T Recommendation J.170 (2002), *IPCablecom security specification*.

– IETF RFC 1906 (1996), *Transport Mappings for Version 2 of the Simple Network Management Protocol (SNMPv2)*.

– IETF RFC 2570 (1999), *Introduction to Version 3 of the Internet-standard Network Management Framework*.

– IETF RFC 2571 (1999), *An Architecture for Describing SNMP Management Frameworks*.

– IETF RFC 2572 (1999), *Message Processing and Dispatching for the Simple Network Management Protocol (SNMP)*.

– IETF RFC 2573 (1999), *SNMP Applications*.

– IETF STD0058 (RFC 2579) (1999), *Textual Conventions for SMIv2*.

3 Terms and definitions

This Recommendation defines the following term:

3.1 endpoint: A Terminal, Gateway or MCU.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations:

FQDN	Fully Qualified Domain Name
IANA	Internet Assigned Numbers Authority
IP	Internet Protocol
MAC	Media Access Control
MIB	Management Information Base
MTA	Media Terminal Adapter
SNMP	Simple Network Management Protocol

5 Conventions

If this Recommendation is implemented, the keywords "MUST" and "SHALL" as well as "REQUIRED" are to be interpreted as indicating a mandatory aspect of this Recommendation. The keywords indicating a certain level of significance of particular requirements that are used throughout this Recommendation are summarized below.

"MUST"	This word or the adjective "REQUIRED" means that the item is an absolute requirement of this Recommendation.
"MUST NOT"	This phrase means that the item is an absolute prohibition of this Recommendation.
"SHOULD"	This word or the adjective "RECOMMENDED" means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighed before choosing a different course.
"SHOULD NOT"	This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
"MAY"	This word or the adjective "OPTIONAL" means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.

6 IPCablecom Management Event MIB

The IPCablecom Management Event MIB MUST be implemented as defined below.

```
PKTC-EVENT-MIB DEFINITIONS ::= BEGIN

IMPORTS
     MODULE-IDENTITY,
     OBJECT-TYPE,
     Integer32,
     Unsigned32,
     NOTIFICATION-TYPE,
     BITS
                                                FROM SNMPv2-SMI
     TruthValue, DisplayString, DateAndTime
                                                FROM SNMPv2-TC
     OBJECT-GROUP,
     MODULE-COMPLIANCE,
     InetAddressType, InetAddress
                                                FROM INET-ADDRESS-MIB
     NOTIFICATION-GROUP
                                                FROM SNMPv2-CONF
     clabProjPacketCable
                                                FROM CLAB-DEF-MIB;
pktcEventMib MODULE-IDENTITY
     LAST-UPDATED       "0203080000Z" -- 03/08/02
     ORGANIZATION       "Packet Cable Provisioning/OSS Group"
     CONTACT-INFO
             "Matt Osman
             Postal:    Cable Television Laboratories, Inc.
                        400 Centennial Parkway
                        Louisville, Colorado 80027-1266
                        U.S.A.
             Phone:     +1 303-661-9100
             Fax:       +1 303-661-9199
             E-mail:    m.osman@cablelabs.com"
     DESCRIPTION
             "This MIB module supplies the basic management objects
             for event reporting
             Acknowledgements:
             Rick Vetter         -    Motorola
             Eugene Nechamkin    -    Broadcom"
     ::=  { clabProjPacketCable 3 }

--
--
pktcDevEventControl         OBJECT IDENTIFIER ::= { pktcEventMib 1 }
pktcDevEventConfig          OBJECT IDENTIFIER ::= { pktcEventMib 2 }
pktcDevEventThrottle        OBJECT IDENTIFIER ::= { pktcEventMib 3 }
pktcDevEventLocal           OBJECT IDENTIFIER ::= { pktcEventMib 4 }
pktcDevEventNotify          OBJECT IDENTIFIER ::= { pktcEventMib 5 }
pktcDevEvNotification       OBJECT IDENTIFIER ::= { pktcEventMib 6 0 }

--
--  Event Reporting
--

--
--   Event reporting control
--
pktcDevEvControl OBJECT-TYPE
     SYNTAX INTEGER {
             resetLog(1),
             setDefaults(2),
```

```
                useConfigured(3)
        }
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "This object defines actions related to the event log
                configuration. Setting this object to resetLog(1) empties the event
                log.
                All event log data is deleted. Setting it to setDefault(2)
                restores all event priorities to their factory-default
                reporting parameters. Setting it to useConfigured(3) reloads
                previously configured parameters."
        ::= { pktcDevEventControl 1 }

        pktcDevEvControlState OBJECT-TYPE
          SYNTAX INTEGER {
             logReset(1),
             defaultsSet(2),
             userConfigured(3),
             processing(4)
        }
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "This object reflects the state of the device as modified in
                pktcDevEvControl. Processing indicates that a state change
                is underway. This object reflects the state of the device."
        ::= { pktcDevEventControl 2 }

pktcDevEvSyslogAddressType OBJECT-TYPE
        SYNTAX      InetAddressType
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "The type of Internet address of the Syslog server.
                Not all address types may be supported."
        ::= { pktcDevEventControl 3 }

pktcDevEvSyslogAddress OBJECT-TYPE
        SYNTAX      InetAddress
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "The IP address of the Syslog server. If 0.0.0.0,
                syslog transmission is inhibited. The use of FQDNs is
                syntactically allowed but it is discouraged for syslog
                servers since not resolving them in a timely manner
                may leave the device without access to the Syslog
                daemon during critical network events."
        ::= { pktcDevEventControl 3 }

pktcDevEvSyslogUdpPort OBJECT-TYPE
        SYNTAX      Unsigned32
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
                "The UDP port number the syslog device is using to send
                requests to the syslog server."
        DEFVAL  {514}
        ::= { pktcDevEventControl 4 }

--
-- Event throttling control
--
```

```
pktcDevEvThrottleAdminStatus OBJECT-TYPE
     SYNTAX INTEGER {
             throttlingInhibited(1),
             dynamicThresholding(2),
             manualThresholding(3),
             eventsInhibited(4)
     }
     MAX-ACCESS  read-write
     STATUS      current
     DESCRIPTION
             "Controls the transmission of traps and syslog messages
             with respect to the trap pacing threshold.
             throttlingInhibited(1) causes traps and syslog messages to be
             transmitted without regard to the threshold settings.
             dynamicThresholding(2) causes trap transmission and
             syslog messages to be suppressed if the number of traps
             would otherwise exceed the threshold.
             manualThresholding(3) causes trap transmission to cease
             at the threshold, and not resume until directed to do so.
             eventsInhibited(4) causes all trap transmission and syslog
             messages to be suppressed.

             A single event is always treated as a single event for
             threshold counting. That is, an event causing both a trap
             and a syslog message is still treated as a single event.

             Writing to this object resets the thresholding state.

             At initial startup, this object has a default value of
             throttlingInhibited(1)."
     DEFVAL { throttlingInhibited }
     ::= { pktcDevEventThrottle 1 }

pktcDevEvThrottleInhibited OBJECT-TYPE
     SYNTAX      TruthValue
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
             "If true(1), trap/inform and syslog transmission is currently
             inhibited due to thresholds and/or the current setting of
             pktcDevEvThrottleAdminStatus. In addition, this is set to
             true(1) if transmission is inhibited due to no
             syslog (pktcDevEvSyslogAddress) or trap/inform
             (pktcMtaDevSnmpEntity) destinations having been set."
     ::= { pktcDevEventThrottle 2 }

pktcDevEvThrottleThreshold OBJECT-TYPE
     SYNTAX      Unsigned32
     MAX-ACCESS  read-write
     STATUS      current
     DESCRIPTION
             "Number of trap/syslog events per pktcDevEvThrottleInterval
             to be transmitted before throttling.

             A single event is always treated as a single event for
             Threshold counting. That is, an event causing both a
             trap/inform and a syslog message is still treated as a
             single event.

             At initial startup, this object returns 2."
     DEFVAL { 2 }
     ::= { pktcDevEventThrottle 3 }
```

```
pktcDevEvThrottleInterval OBJECT-TYPE
     SYNTAX      Integer32 (1..2147483647)
     UNITS       "seconds"
     MAX-ACCESS  read-write
     STATUS      current
     DESCRIPTION
             "The interval over which the throttle threshold applies.
             At initial startup, this object has a value of 1."
     DEFVAL { 1 }
     ::= { pktcDevEventThrottle 4 }

--
-- Event configuration
--
--
-- The following table configures the reporting of the various programmable
-- events.
--
pktcDevEvProgrammableTable OBJECT-TYPE
     SYNTAX      SEQUENCE OF PktcDevEvProgrammableEntry
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
             "This table allows control of the reporting of event classes.
             For each event priority, a combination of logging and
             reporting mechanisms may be chosen. The mapping of event types
             to priorities is vendor-dependent. Vendors may also choose to
             allow the user to control that mapping through proprietary means."
     ::= {  pktcDevEventConfig 1 }

pktcDevEvProgrammableEntry OBJECT-TYPE
     SYNTAX      PktcDevEvProgrammableEntry
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
             "Allows configuration of the reporting mechanisms for a
             programmable event, including level, report type, and text."
     INDEX { pktcDevEvProgrammableId, pktcDevEvProgrammableEnterprise }
     ::= { pktcDevEvProgrammableTable 1 }

PktcDevEvProgrammableEntry ::= SEQUENCE {
     pktcDevEvProgrammableId               Integer32,
     pktcDevEvProgrammableEnterprise       Integer32,
     pktcDevEvProgrammableLevel            INTEGER,
     pktcDevEvProgrammableReporting        BITS,
     pktcDevEvProgrammableText             DisplayString

    }

pktcDevEvProgrammableId OBJECT-TYPE
     SYNTAX Integer32 (1..2147483647)
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
             "ID for a specific programmable event to which the priority and
             display string are matched. These Event Ids are vendor specific or
             in the case of IPCablecom events defined in ITU-T Rec. J.172."
     ::= { pktcDevEvProgrammableEntry 1 }
```

```
pktcDevEvProgrammableEnterprise  OBJECT-TYPE
     SYNTAX      Integer32  (1..2147483647)
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
             "Provides the IANA enterprise number of the device manufacturer for
             proprietary events, and the CableLabs IANA enterprise number for
             PacketCable specified events."
     ::= { pktcDevEvProgrammableEntry 2 }

pktcDevEvProgrammableLevel OBJECT-TYPE
     SYNTAX INTEGER {
             critical(1),
             major(2),
             minor(3),
             warning(4),
             information(5)

     }
     MAX-ACCESS  read-write
     STATUS      current
     DESCRIPTION
                 "The priority level that is controlled by this entry. These are
                 ordered from most (critical) to least (information) critical.
                 Each event has a particular priority level associated with it
                 (as defined by the vendor). The levels are described as:
                 critical(1) - A service-affecting condition that requires
                 immediate corrective action.
                 major(2) - A service-affecting condition that requires urgent
                 corrective action.
                 minor(3) - A non-service-affecting fault condition which
                 warrants corrective action in order to avoid a more serious
                 fault.
                 warning(4) - A potential or impending condition which can lead
                 to a fault;  diagnostic action is suggested.
                 information(5) - Normal event meant to convey information."
     ::= { pktcDevEvProgrammableEntry 3 }

pktcDevEvProgrammableReporting OBJECT-TYPE
          SYNTAX BITS {
              local(0),
              traps(1),
              syslog(2),
               inform(3),
               none(4)
     }
          MAX-ACCESS    read-write
          STATUS current
          DESCRIPTION
                    "Defines the action to be taken on occurrence of this
                    event class. Implementations may not necessarily support
                    all options for all event classes, but at minimum must
                    allow traps and syslogging to be disabled. If the
                    local(0) bit is set, then log to the internal log, if the
                    traps(1) bit is set, then generate a trap, if the
                    syslog(2) bit is set, then send a syslog message
                    (assuming the syslog address is set) inform(3) bit is set,
                    then generate an inform, if the none(4) bit is set, then this
                    event is not generated."
--     DEFVAL { local }
          ::= { pktcDevEvProgrammableEntry 4 }
```

```
pktcDevEvProgrammableText OBJECT-TYPE
     SYNTAX DisplayString(SIZE (127))
     MAX-ACCESS  read-write
     STATUS      current
     DESCRIPTION
             "Programmable event display string providing a human-readable
             description of the event."
     ::= { pktcDevEvProgrammableEntry 5 }

-- The following table configures the reporting of the various fixed
-- events.
--
pktcDevEvFixedTable OBJECT-TYPE
     SYNTAX      SEQUENCE OF PktcDevEvFixedEntry
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
          "This table allows control of the reporting of event classes.
          For each event priority, a combination of logging and
          reporting mechanisms may be chosen. The mapping of event types
          to priorities is vendor-dependent. Vendors may also choose to
          allow the user to control that mapping through proprietary means."
     ::= {  pktcDevEventConfig 2 }

pktcDevEvFixedEntry OBJECT-TYPE
     SYNTAX      PktcDevEvFixedEntry
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
             "Allows configuration of the reporting mechanisms for a
             fixed event, including level, and report type."
     INDEX { pktcDevEvFixedId, pktcDevEvFixedEnterprise }
     ::= { pktcDevEvFixedTable 1 }

PktcDevEvFixedEntry ::= SEQUENCE {
     pktcDevEvFixedId            Integer32,
     pktcDevEvFixedEnterprise    Integer32,
     pktcDevEvFixedLevel         INTEGER,
     pktcDevEvFixedReporting     BITS,
     pktcDevEvFixedText          DisplayString
     }

pktcDevEvFixedId OBJECT-TYPE
     SYNTAX Integer32   (1..2147483647)
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
          "ID for a specific fixed event to which the priority and display
          string are matched. These Event Ids are vendor specific or in the case
          of IPCablecom events defined in ITU-T Rec. J.172."
     ::= { pktcDevEvFixedEntry 1 }

pktcDevEvFixedEnterprise    OBJECT-TYPE
     SYNTAX      Integer32  (1..2147483647)
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
          "Provides the IANA enterprise number of the device manufacturer for
          proprietary events, and the CableLabs IANA enterprise number for
          PacketCable specified events."
     ::= { pktcDevEvFixedEntry 2 }
```

```
pktcDevEvFixedLevel OBJECT-TYPE
     SYNTAX INTEGER {
             critical(1),
             major(2),
             minor(3),
             warning(4),
             information(5)

     }
     MAX-ACCESS  read-write
     STATUS      current
     DESCRIPTION
                 "The priority level that is controlled by this entry. These are
                 ordered from most (critical) to least (information) critical.
                 Each event has a particular priority level associated with it
                 (as defined by the vendor). The levels are described as:
                 critical(1) - A service-affecting condition that requires
                 immediate corrective action.
                 major(2) - A service-affecting condition that requires urgent
                 corrective action.
                 minor(3) - A non-service-affecting fault condition which
                 warrants corrective action in order to avoid a more serious
                 fault.
                 warning(4) - A potential or impending condition which can lead
                 to a fault;  diagnostic action is suggested.
                 information(5) - Normal event meant to convey information."
     ::= { pktcDevEvFixedEntry 3 }

pktcDevEvFixedReporting OBJECT-TYPE
          SYNTAX BITS {
              local(0),
              traps(1),
              syslog(2),
                 inform(3),
                 none(4)
          }
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
               "Defines the action to be taken on occurrence of this event class.
               Implementations may not necessarily support all options for all
               event classes, but at minimum must allow traps and syslogging to
               be disabled. If the local(0) bit is set, then log to the internal
               log, if the traps(1) bit is set, then generate a trap, if the
               syslog(2) bit is set, then send a syslog message (assuming the
               syslog address is set) inform(3) bit is set, then generate an
               inform, if the none(4) bit is set, then this event is not
               generated."
--        DEFVAL { local }
          ::= { pktcDevEvFixedEntry 4 }

pktcDevEvFixedText OBJECT-TYPE
     SYNTAX DisplayString(SIZE (127))
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
             "Fixed event display string providing a human-readable
             description of the event."
     ::= { pktcDevEvFixedEntry 5 }

--
-- Local event table - for retrieval of events via SNMP
--
```

```
pktcDevEventTable OBJECT-TYPE
     SYNTAX      SEQUENCE OF PktcDevEventEntry
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
             "Contains a log of network and device events that may be
             of interest in fault isolation and troubleshooting."
     ::= {  pktcDevEventLocal 1 }

pktcDevEventEntry OBJECT-TYPE
     SYNTAX      PktcDevEventEntry
     MAX-ACCESS  not-accessible
     STATUS      current
     DESCRIPTION
             "Describes a network or device event that may be of
             interest in fault isolation and troubleshooting.
             Entries are created with the first occurrence of an event.
             pktcDevEvControl can be used to clear the table.
             Individual events can not be deleted."
     INDEX { pktcDevEvIndex }
     ::= { pktcDevEventTable 1 }

PktcDevEventEntry ::= SEQUENCE {
             pktcDevEvIndex           INTEGER,
             pktcDevEvTime            DateAndTime,
             pktcDevEvLevel           INTEGER,
             pktcDevEvEnterprise      Integer32,
             pktcDevEvId              Unsigned32,
             pktcDevEvText            DisplayString,
             pktcDevEvMacAddress      OCTET STRING,
             pktcDevEvEndpointName    DisplayString
         }

pktcDevEvIndex OBJECT-TYPE
     SYNTAX      INTEGER (1..2147483647)
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
             "Provides relative ordering of the objects in the event
             log. This object will always increase except when
             a) the log is reset via pktcDevEvControl,
             b) the device reboots and does not implement non-volatile
             storage for this log; or
             c) it reaches the value 2^31.
             The next entry for all the above cases is 1. This also serves as
             a indicator of event sequence."
     ::= { pktcDevEventEntry 1 }

pktcDevEvTime OBJECT-TYPE
     SYNTAX        DateAndTime
     MAX-ACCESS    read-only
     STATUS        current
     DESCRIPTION
             "Provides a human-readable description of the
             time at which the event occurred."
     ::= { pktcDevEventEntry 2 }

pktcDevEvLevel OBJECT-TYPE
     SYNTAX INTEGER {
             critical(1),
             major(2),
             minor(3),
             warning(4),
             information(5)
```

```
    }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "The priority level of this event as defined by the
            vendor.  These are ordered from most serious (critical)
            to least serious (debug)."
    ::= { pktcDevEventEntry 3 }

pktcDevEvEnterprise     OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
         "Provides the IANA enterprise number of the device manufacturer for
         proprietary events, and the CableLabs IANA enterprise number for
         PacketCable specified events."
    ::= { pktcDevEventEntry 4 }

pktcDevEvId OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
         "ID for a specific event to which the priority and display string are
         matched. These Event Ids are vendor specific or in the case of
         IPCablecom events defined in ITU-T Rec. J.172."
    ::= { pktcDevEventEntry 5 }

pktcDevEvText OBJECT-TYPE
    SYNTAX      DisplayString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "Provides a human-readable description of the event,
            including all relevant context (interface numbers,
            etc.)."
    ::= { pktcDevEventEntry 6 }

    pktcDevEvMacAddress          OBJECT-TYPE
    SYNTAX                  OCTET STRING
    MAX-ACCESS              read-only
    STATUS                  current
    DESCRIPTION
            "Provides the MAC address of the device generating the event."
    ::= { pktcDevEventEntry 7 }

    pktcDevEvEndpointName    OBJECT-TYPE
    SYNTAX        DisplayString
    MAX-ACCESS    read-only
    STATUS        current
    DESCRIPTION
            "This is the endpoint identifier followed by the FQDN/IP Address
            of the device. This is in the form - AALN/X:FQDN/IP Address.
            If the event is not specific to an endpoint, then the contents
            is just the FQDN/IP address."
    ::= { pktcDevEventEntry 8 }

--
--   Event Data for Traps - Informs
--
```

```
pktcDevEvReportIndex             OBJECT-TYPE
SYNTAX      Integer32  (1..2147483647)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Integer value starting at one that increases by one
        for each event generated. Used for sequencing of events."
::= { pktcDevEventNotify 1 }

pktcDevEvReportTime          OBJECT-TYPE
SYNTAX      DateAndTime
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Provides a human-readable description of the time at
        which the event occurred."
::= { pktcDevEventNotify 2 }

pktcDevEvReportLevel             OBJECT-TYPE
SYNTAX      INTEGER {
  critical(1),
  major(2),
  minor(3),
  warning(4),
  information(5)
}
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "The priority level of this event as defined by the
        vendor.  These are ordered from most serious (critical)
        to least serious (debug)."
::= { pktcDevEventNotify 3 }

pktcDevEvReportEnterprise   OBJECT-TYPE
SYNTAX      Integer32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Provides the IANA enterprise number of the device
        manufacturer for proprietary events, and the CableLabs
        IANA enterprise number for PacketCable specified events."
::= { pktcDevEventNotify 4 }

pktcDevEvReportId  OBJECT-TYPE
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "ID for a specific event to which the priority and display string
        are matched. These Event Ids are vendor specific or in the case of
        IPCablecom events defined in ITU-T Rec. J.172."
::= { pktcDevEventNotify 5 }

pktcDevEvReportText              OBJECT-TYPE
SYNTAX      DisplayString
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
        "Provides a human-readable description of the event,
        including all relevant context (interface numbers, etc.)."
::= { pktcDevEventNotify 6 }
```

```
     pktcDevEvReportMacAddress   OBJECT-TYPE
     SYNTAX      OCTET STRING
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
          "Provides the MAC address of the device generating the event."
     ::= { pktcDevEventNotify 7 }

     pktcDevEvReportEndpointName OBJECT-TYPE
     SYNTAX      DisplayString
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
             "This is the endpoint identifier followed by the FQDN/IP Address of
             the device. This identifier is in the form - AALN/X:FQDN/IP
             Address. If the event is not specific to an endpoint, then the
             contents is just the FQDN/IP address."
     ::= { pktcDevEventNotify 8 }

     pktcDevEvInform NOTIFICATION-TYPE
       OBJECTS { pktcDevEvReportIndex, pktcDevEvReportTime,pktcDevEvReportLevel,
          pktcDevEvReportEnterprise,pktcDevEvReportId,pktcDevEvReportText,
          pktcDevEvReportMacAddress,pktcDevEvReportEndpointName }
       STATUS    current
       DESCRIPTION
          "Inform for event reporting"
     ::= { pktcDevEvNotification 1 }

     pktcDevEvTrap NOTIFICATION-TYPE
       OBJECTS { pktcDevEvReportIndex, pktcDevEvReportTime,pktcDevEvReportLevel,
          pktcDevEvReportEnterprise,pktcDevEvReportId,pktcDevEvReportText,
          pktcDevEvReportMacAddress,pktcDevEvReportEndpointName }
       STATUS current
       DESCRIPTION
          "Trap for event reporting"
     ::= { pktcDevEvNotification 2 }

pktcEventConformance    OBJECT IDENTIFIER ::= { pktcEventMib 7 }
pktcEventCompliances    OBJECT IDENTIFIER ::= { pktcEventConformance 1 }
pktcEventGroups         OBJECT IDENTIFIER ::= { pktcEventConformance 2 }

-- compliance statements

pktcEventBasicCompliance MODULE-COMPLIANCE
     STATUS      current
     DESCRIPTION
             "The compliance statement for devices that implement
             Event reporting feature."
     MODULE   -- pktcEventMib

-- unconditionally mandatory groups

     MANDATORY-GROUPS {
             pktcEventGroup
     }

-- units of conformance

::= { pktcEventCompliances 3 }

pktcEventGroup OBJECT-GROUP
     OBJECTS {
          pktcDevEvControl,
          pktcDevEvControlState,
```

```
          pktcDevEvSyslogAddressType,
          pktcDevEvSyslogAddress,
          pktcDevEvSyslogUdpPort,
          pktcDevEvThrottleAdminStatus,
          pktcDevEvThrottleInhibited,
          pktcDevEvThrottleThreshold,
          pktcDevEvThrottleInterval,
          pktcDevEvProgrammableEnterprise,
          pktcDevEvProgrammableLevel,
          pktcDevEvProgrammableReporting,
          pktcDevEvProgrammableText,
          pktcDevEvFixedEnterprise,
          pktcDevEvFixedLevel,
          pktcDevEvFixedReporting,
          pktcDevEvFixedText,
          pktcDevEvIndex,
          pktcDevEvTime,
          pktcDevEvLevel,
          pktcDevEvEnterprise,
          pktcDevEvId,
          pktcDevEvText,
          pktcDevEvMacAddress,
          pktcDevEvEndpointName,
          pktcDevEvReportIndex,
          pktcDevEvReportTime,
          pktcDevEvReportLevel,
          pktcDevEvReportEnterprise,
          pktcDevEvReportId,
          pktcDevEvReportText,
          pktcDevEvReportMacAddress,
          pktcDevEvReportEndpointName
     }
     STATUS   current
     DESCRIPTION
          "Group of objects for PacketCable Event MIB."
     ::= { pktcEventGroups 1 }

-- Notification Group Added

pktcEventNotificationGroup       NOTIFICATION-GROUP
     NOTIFICATIONS { pktcDevEvInform, pktcDevEvTrap }
     STATUS   current
     DESCRIPTION
       "These notifications deal with change in status of
       MTA Device."
     ::= { pktcEventGroups 2 }

END
```

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	**Cable networks and transmission of television, sound programme and other multimedia signals**
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems

Printed in Switzerland
Geneva, 2002