PacketCable™ 1.5 Specifications

Management Event MIB

PKT-SP-EVEMIB1.5-I01-050128

ISSUED Superseded

Notice

Document Status Sheet

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Key to Document Status Codes:

Work in Progress	An incomplete document, designed to guide discussion and generate feedback, that may include several alternative requirements for consideration.
Draft	A document in specification format considered largely complete, but lacking review by Members and vendors. Drafts are susceptible to substantial change during the review process.
Issued	A stable document, which has undergone rigorous member and vendor review and is suitable for product design and development, cross-vendor interoperability, and for certification testing.
Closed	A static document, reviewed, tested, validated, and closed to further engineering change requests to the specification through CableLabs.

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1 SCOPE

1.1 Introduction and Overview

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 PacketCable™ specified events.

1.2 Purpose of document

This document describes an SNMP MIB in SMIv2, to support the management event mechanism as described in [1]. It is intended to be implemented in the MTA and management devices.

1.3 Organization of document

The Management Event MIB defined in this document provides a set of objects required for the management of PacketCable compliant MultiMedia Terminal Adapter (MTA) devices. The mechanisms to control the event reporting are defined in this specification.

This MIB itself is structured as six groups:

- Management information that controls the event reporting (pktcDevEventControl).
- Management information that configures the reporting of the various programmable events (pktcDevEventConfig).
- Management information that configures the event throttling control (pktcDevEventThrottle).
- Management information that configures that allows the retrieval of events via SNMP (pktcDevEventLocal).
- Management information that specifies the information sent in traps and informs (pktcDevEventNotify).
- Management information that defines the trap and inform messages (pktcDevEventNotification).

1.4 Requirements

Throughout this document, the words that are used to define the significance of particular requirements are capitalized. These words are:

"MUST"	This word or the adjective "REQUIRED" means that the item is an absolute requirement of this specification.
"MUST NOT"	This phrase means that the item is an absolute prohibition of this specification.
"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.

2 REFERENCES

2.1 Normative

In order to claim compliance with this specification, it is necessary to conform to the following standards and other works as indicated, in addition to the other requirements of this specification. Notwithstanding, intellectual property rights may be required to use or implement such normative references.

[1] PacketCable 1.5 Management Event Mechanism, PKT-SP-MEM1.5-I01-040128, January 28, 2005, Cable Television Laboratories, Inc.

[2] IETF RFC 1034/STD0013, Domain names - concepts and facilities, November, 1987.

[3] IETF RFC 2578/STD0058, Structure of Management Information Version 2 (SMIv2), April 1999.

[4] IETF RFC 2579, Textual Conventions for SMIv2, April 1999.

[5] IETF RFC 2580/STD0058, Conformance Statements for SMIv2, April 1999.

[6] IETF RFC 3550, RTP: A Transport Protocol for Real-Time Applications, July 2003.

[7] PacketCable 1.5 MTA Device Provisioning Specification, PKT-SP-PROV1.5-I01-040128, January 28, 2005, Cable Television Laboratories, Inc.

2.2 Informative

[8] PacketCable 1.5 MTA MIB, PKT-SP-MIB-MTA1.5-I01-050128, January 28, 2005, Cable Television Laboratories, Inc.

[9] PacketCable 1.5 Signaling Mib, PKT-SP-MIB-SIG1.5-I01-050128, January 28, 2005, Cable Television Laboratories, Inc.

[10] PacketCable 1.5 Network-Based Call Signaling Protocol Specification**,** PKT-SP-NCS1.5-I01-050128, January 28, 2005, Cable Television Laboratories, Inc..

[11] PacketCable 1.5 Security Specification, PKT-SP-SEC1.5-I01-050128, January 28, 2005, Cable Television Laboratories, Inc.

2.3 Reference Acquisition

- Cable Television Laboratories, Inc., 858 Coal Creek Circle, Louisville, CO 80027;
  Phone 303-661-9100; Fax 303-661-9199; Internet: http://www.packetcable.com
- Internet Engineering Task Force (IETF) Secretariat c/o Corporation for National Research Initiatives, 1895 Preston White Drive, Suite 100, Reston, VA 20191-5434, Phone 703-620-8990, Fax 703-620-9071, Internet http://www.ietf.org/

3 TERMS AND DEFINITIONS

This PacketCable specification uses the following terms and definitions:

Endpoint A Terminal, Gateway or MCU

4 ABBREVIATIONS AND ACRONYMS

This PacketCable specification uses the following abbreviations:

E-MTA	Embedded MTA – a single node which contains both an MTA and a cable modem.
FQDN	Fully Qualified Domain Name. Refer to IETF RFC 1594 for details.
IANA	Internet Assigned Numbered Authority. See www.ietf.org for details.
IETF	Internet Engineering Task Force. A body responsible, among other things, for developing standards used in the Internet.
IP	Internet Protocol. An Internet network-layer protocol.
MAC	Media Access Control. It is a sublayer of the Data Link Layer. It normally runs directly over the physical layer.
MTA	Multimedia Terminal Adapter.
OSS	Operations Systems Support. The back office software used for configuration, performance, fault, accounting and security management.
SNMP	Simple Network Management Protocol.

5 PACKETCABLE MANAGEMENT EVENT MIB

The PacketCable 1.5 Management Event MIB MUST be implemented as defined below.

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

IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Unsigned32,
    NOTIFICATION-TYPE,
    BITS                              FROM SNMPv2-SMI
    DateAndTime                       FROM SNMPv2-TC
    clabProjPacketCable               FROM CLAB-DEF-MIB
    SnmpAdminString                   FROM SNMP-FRAMEWORK-MIB
    OBJECT-GROUP,
    MODULE-COMPLIANCE,
    NOTIFICATION-GROUP                FROM SNMPv2-CONF
    ifPhysAddress                     FROM IF-MIB
    InetAddressType,
    InetAddress,
    InetPortNumber                    FROM INET-ADDRESS-MIB ;

pktcEventMib MODULE-IDENTITY
    LAST-UPDATED    "200501280000Z -- 01/28/2005
    ORGANIZATION    "Cable Television Laboratories, Inc"
    CONTACT-INFO
            "Sumanth Channabasappa
            Postal: Cable Television Laboratories, Inc.
                    858 Coal Creek Circle
                    Louisville, Colorado 80027
                    U.S.A.
            Phone:  +1 303-661-9100
            Fax:    +1 303-661-9199
            E-mail: mibs@cablelabs.com"

    DESCRIPTION
            "This MIB module supplies the basic management objects
            for event reporting

            Acknowledgements:
              Eugene Nechamkin       -  Broadcom Corp
              John Berg              - CableLabs, Inc.
              Kevin Marez            - Motorola, Inc.
              Satish Kumar           - Texas Instruments
              Venkatesh Sunkad       - CableLabs, Inc."
    ::=  { clabProjPacketCable 3 }

   --
   --
    pktcDevEventControl    OBJECT IDENTIFIER ::= { pktcEventMib 1 }
    pktcDevEventThrottle   OBJECT IDENTIFIER ::= { pktcEventMib 2 }
    pktcDevEventStatus     OBJECT IDENTIFIER ::= { pktcEventMib 3 }
    pktcDevEventDescr      OBJECT IDENTIFIER ::= { pktcEventMib 4 }
    pktcDevEventLog        OBJECT IDENTIFIER ::= { pktcEventMib 5 }
    pktcDevEvNotification  OBJECT IDENTIFIER ::= { pktcEventMib 6 }
   --

   ---
   ---   Event Reporting control objects
   ---
pktcDevEvControl  OBJECT-TYPE
    SYNTAX       BITS {
                resetEventLogTable(0),
                resetEventDescrTable(1)
```

```
                }    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB object defines the actions related to the event
            log configuration.

            The MTA MUST take the appropriate action whenever
            a bit is set to a value of '1'.

            Setting the resetEventLogTable(0) bit to
            a value of '1' clears the entire event log
            (Deletes all entries in pktcDevEventLogTable).

            Setting  resetEventDescrTable(1) to a value of '1'
            resets the pktcDevEventDescrTable to the
            factory default values.

            Setting a control bit to a value of '0' MUST not result in
            any action.

            Reading this MIB object MUST always return '00'."
    ::= { pktcDevEventControl 1 }

pktcDevEvSyslogAddressType  OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object defines the address type of the
            Syslog server.
            PacketCable devices implementing this MIB MUST
            support an InetAddressType of ipv4(1).
            PacketCable devices MAY optionally implement other
            address types.

            If an unsupported InetAddressType is used to set
            this object, the PacketCable device MUST reject it
            and report an SNMP error stating 'wrong value'.

            If an SNMP SET results in a type that does not match
            the value contained in the MIB Object
            pktcDevEvSyslogAddress, the PacketCable device MUST
            reject the SNMP SET with an 'inconsistent value'
            error."
    ::= { pktcDevEventControl 2 }

pktcDevEvSyslogAddress  OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the IP address of the
            Syslog server. If this is set to either 0.0.0.0 or
            255.255.255.255 the device MUST inhibit syslog
            transmission.
            The use of FQDNs is syntactically allowed, but
            discouraged since a failure to resolve them in a
            timely manner may leave the device without access to
            the Syslog daemon during critical network events.
            The type of address this object represents is defined
            by the MIB Object pktDevEvSyslogAddressType.

            If an SNMP SET results in a type that does not match
            that indicated by the MIB Object
            pktcDevEvSyslogAddressType, the PacketCable device MUST
            reject the SNMP SET with an 'inconsistent value'
            error."
```

```
    ::= { pktcDevEventControl 3 }

pktcDevEvSyslogUdpPort  OBJECT-TYPE
    SYNTAX      InetPortNumber
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the UDP Port Number of the Syslog
             Server. The PacketCable device must send the Syslog
             messages to this port on the Syslog Server."
    DEFVAL { 514 }
    ::= { pktcDevEventControl 4 }

--
--   Event throttling control
--

pktcDevEvThrottleAdminStatus  OBJECT-TYPE
    SYNTAX      INTEGER {
                unconstrained(1),
                maintainBelowThreshold(2),
                stopAtThreshold(3),
                inhibited(4)
                }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

            "This MIB Object controls the throttling of of the
            transmitted messages upon generation of an event
            (SNMP/Syslog).

            A value of unconstrained(1) causes event messages
            to be transmitted without regard to the threshold
            settings.

            A value of maintainBelowThreshold(2) causes event
            messages to be suppressed if the number of transmissions
            would otherwise exceed the threshold.
            A value of stopAtThreshold(3) causes event message
            transmission to cease at the threshold, and not
            resume until directed to do so.

            A value of inhibited(4) causes all event message
            Transmission to be suppressed.

            An event causing both an SNMP and a Syslog message
            is still treated as a single event.

            Writing to this object resets the thresholding state.

            Refer to MIB Objects pktcDevEvThrottleThreshold and
            pktcDevEvThrottleInterval for information on throttling."
    DEFVAL { unconstrained }
    ::= { pktcDevEventThrottle 1 }


pktcDevEvThrottleThreshold  OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the number of events per
            pktcDevEvThrottleInterval to be transmitted before
            throttling.
```

```
            An event causing both a  SNMP and a syslog message is
            still treated as a single event."
    DEFVAL { 2 }
    ::= { pktcDevEventThrottle 2 }

pktcDevEvThrottleInterval  OBJECT-TYPE
    SYNTAX      Unsigned32
    UNITS       "seconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

            "This MIB Object contains the interval over which
             the throttle threshold applies."    DEFVAL { 1 }
    ::= { pktcDevEventThrottle 4 }


---
-- Status Reporting
---

pktcDevEvTransmissionStatus OBJECT-TYPE

    SYNTAX      BITS {
                syslogThrottled(0),
                snmpThrottled(1),
                validSyslogServerAbsent(2),
                validSnmpManagerAbsent(3),
                syslogTransmitError(4),
                snmpTransmitError(5)
                }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object reflects the status of the event
             transmission.

            If a bit corresponding to a state is set to a value
            of:
                '1', it indicates that the state is true
                '0', it indicates that the state is false

            'Event throttling' is based on thresholds and the current
            setting of pktcDevEvThrottleAdminStatus.

            'Server/Manager' indicators must be based on the
            availability of valid Syslog server/SNMP managers.

            'Transmit Errors' must only be used in cases where the
            PacketCable Device can identify unavailable servers."


    ::= { pktcDevEventStatus 1 }



---
-- Event Descriptions
---

pktcDevEventDescrTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PktcDevEventDescrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This MIB table contains all the possible events
            that can be generated by the device. This includes
```

```
            both PacketCable defined and vendor-specific events."
    ::= { pktcDevEventDescr 1 }

pktcDevEventDescrEntry OBJECT-TYPE
    SYNTAX      PktcDevEventDescrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "An entry in this table is created for each
            event the PacketCable Device implementing this
            MIB is capable of reporting."
    INDEX { pktcDevEventDescrId, pktcDevEventDescrEnterprise }
    ::= { pktcDevEventDescrTable 1 }

PktcDevEventDescrEntry::= SEQUENCE {
    pktcDevEventDescrId              Unsigned32,
    pktcDevEventDescrEnterprise      Unsigned32,
    pktcDevEventDescrFacility        INTEGER,
    pktcDevEventDescrLevel           INTEGER,
    pktcDevEventDescrReporting       BITS,
    pktcDevEventDescrText            SnmpAdminString
    }

pktcDevEventDescrId OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the event identifier for the
            specific event to which the priority and display
            strings belong.
            The event identifier can either be PacketCable defined
            or vendor-specific."
    ::= { pktcDevEventDescrEntry 1 }

pktcDevEventDescrEnterprise OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object provides the IANA enterprise number of
            the Organization defining the event. Thus, all PacketCable
            defined events will contain the CableLabs IANA enterprise
            number and for vendor-specific events it will contain
            the IANA enterprise number of the defining organization."
    ::= { pktcDevEventDescrEntry 2 }


pktcDevEventDescrFacility OBJECT-TYPE
    SYNTAX      INTEGER {
                kernel(0),
                user(1),
                mail(2),
                daemon(3),
                auth(4),
                syslog(5),
                lpr(6),
                news(7),
                uucp(8),
                cron(9),
                authPriv(10),
                ftp(11),
                ntp(12),
                security(13),
                console(14),
                clockDaemon(15),
                local0(16),
```

```
                local1(17),
                local2(18),
                local3(19),
                local4(20),
                local5(21),
                local6(22),
                local7(23)
                }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the facility
            for the event.
            For PacketCable events this MUST be set to
            local0(16)."
    ::= { pktcDevEventDescrEntry 3 }

pktcDevEventDescrLevel OBJECT-TYPE
    SYNTAX      INTEGER {
                emergency(0),
                alert(1),
                critical(2),
                error(3),
                warning(4),
                notice(5),
                info(6),
                debug(7)
                }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the priority level that
             is controlled by this entry.
            The levels are described as:

            emergency(0) - A condition that makes the system unusable.
            alert(1)     - A service-affecting condition for which
                           immediate action must be taken.
            critical(2)  - A service-affecting critical condition.
            error(3)     - An error condition.
            warning(4)   - A warning condition.
            notice(5)    - A normal but significant condition.
            info(6)      - An informational message.
            debug(7)     - A debug message."
    ::= { pktcDevEventDescrEntry 4 }

pktcDevEventDescrReporting OBJECT-TYPE
    SYNTAX      BITS {
                local(0),
                syslog(1),
                snmpTrap(2),
                snmpInform(3)
                }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object defines the action to be taken on
            occurrence of this event class.

            Setting a bit to a value of '1' indicates that the
            corresponding action will be taken upon occurrence of
            this event, provided the required parameters are present.
            (e.g.: Syslog Server for Syslog messages, SNMP targets for
            SNMP traps and SNMP INFORMs etc). If none of the bits
            are set then no action is taken upon occurrence of the
            event.
```

```
             The default value of this MIB OBject is dependent on the
             value of the MIB Object 'pktcDevEventDescrLevel', for the
             corresponding event.

            For the following values of 'pktcDevEventDescrLevel':
               emergency(0), alert(1), critical(2) and error(3),
            the PacketCable device MUST set the bits for local(0),
            syslog(1) and snmpInform(3) to a value of '1' and the rest
            to a value of '0'.

            For all the remaining values of 'pktcDevEventDescrLevel',
            the PacketCable device MUST set the bits for local(0) and
            syslog(1) to a value of '1' and the rest to a value of
            '0'."
    ::= { pktcDevEventDescrEntry 5 }

pktcDevEventDescrText OBJECT-TYPE
    SYNTAX      SnmpAdminString(SIZE (127))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
            "This MIB Object contains event display
            string providing a human-readable description of the
            event."
    ::= { pktcDevEventDescrEntry 6 }


---
-- Events generated
---
pktcDevEventLogTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PktcDevEventLogEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "This MIB table contains a log of the events
            generated by the PacketCable device.
            A description of all the events that can be
            generated by the device can be obtained from the
            MIB table 'pktcDevEventDescrTable'."
    ::= { pktcDevEventLog 1 }

pktcDevEventLogEntry OBJECT-TYPE
    SYNTAX      PktcDevEventLogEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
            "Each entry in this table describes an event that
            has occurred, indexed in the chronological order of
            generation. The details of the event are borrowed
            from the parameters associated with the corresponding
            event entry in 'pktcDevEventDescrTable', at the
            time of the event generation.
            While all entries created as such can be cleared using
            the MIB Object pktcDevEvControl, the Event entries
            themselves cannot be individually deleted."

    INDEX { pktcDevEvLogIndex }
    ::= { pktcDevEventLogTable 1 }

PktcDevEventLogEntry ::= SEQUENCE {
    pktcDevEvLogIndex             Unsigned32,
    pktcDevEvLogTime              DateAndTime,
    pktcDevEvLogEnterprise        Unsigned32,
    pktcDevEvLogId                Unsigned32,
    pktcDevEvLogText              SnmpAdminString,
    pktcDevEvLogEndpointName      SnmpAdminString,
```

```
    pktcDevEvLogType              BITS,
    pktcDevEvLogTargetInfo        SnmpAdminString,
    pktcDevEvLogCorrelationId     Unsigned32,
    pktcDevEvLogAdditionalInfo    SnmpAdminString
    }

pktcDevEvLogIndex OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object 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,
            (c) it reaches the value 2^31.
            The next entry for all the above cases is 0.
            This also serves as an indicator of event sequence."
    ::= { pktcDevEventLogEntry 1 }


pktcDevEvLogTime OBJECT-TYPE
    SYNTAX       DateAndTime
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
            "This MIB Object provides a human-readable description
            of the time at which the event occurred."
    ::= { pktcDevEventLogEntry 2 }


pktcDevEvLogEnterprise OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object provides the IANA enterprise number of
            the Organization defining the event. Thus, all PacketCable
            defined events will contain the CableLabs IANA enterprise
            number and for vendor-specific events it will contain
            the IANA enterprise number of the defining organization."


    ::= { pktcDevEventLogEntry 3 }

pktcDevEvLogId OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION

            "This MIB Object contains the event identifier for the
            specific event to which the priority and
            display strings belong.
            The event identifier can either be PacketCable defined
            or vendor-specific."
    ::= { pktcDevEventLogEntry 4 }

pktcDevEvLogText OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the contents of
            pktcDevEventDescrText, corresponding to the event, at
```

```
            the moment of generation."
    ::= { pktcDevEventLogEntry 5 }


pktcDevEvLogEndpointName OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object provides the endpoint identifier
             followed by the PacketCable MTA's Fully Qualified
             Domain Name (FQDN) and the IP Address (IP)
             of the PacketCable MTA device.

             This will be denoted as follows:
             aaln/n:<FQDN>/<IP>, where 'n' is the Endpoint number.
              or
             <FQDN>/<IP> if it is not specific to an endpoint."

    ::= { pktcDevEventLogEntry 6 }

pktcDevEvLogType OBJECT-TYPE
    SYNTAX      BITS {
                local(0),
                syslog (1),
                trap (2),
                inform (3)
                }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object contains the kind of actions taken by
             the PacketCable device when the event under consideration
             occurred.

             A bit with a value of 1 indicates the corresponding
             action was taken. Setting it to a value of 0 indicates
             that the corresponding action was not taken.

             An event may trigger one or more actions (e.g.: Syslog and
             SNMP) or may remain as a local event since transmissions
             could be disabled or inhibited as defined by the Throttle
             MIB Objects."

    ::= { pktcDevEventLogEntry 7 }

pktcDevEvLogTargetInfo OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object contains a comma separated list of the
            actions taken, along with the target IP address for the
            generated event.

            The syntax is as:
            <action-1/IP:port>,<action-2/IP:port>,<action-3/IP:port>

            Where <action-n/IP> is to be denoted as follows:
              For Syslog events:
                      syslog/<IP address of the Syslog Server:port>
              For SNMP traps:
                      snmpTrap/<IP address of the SNMP Server:port>
              For SNMP INFORMS:
                      snmpInform/<IP address of the SNMP Server:port>

             If there are multiple targets for the same type (SNMP
```

```
             Traps sent to multiple IP addresses) or if there are
             multiple messages sent to the same IP (Syslog and SNMP
             sent to the same IP address) they need to be reported
             individually."
    ::= { pktcDevEventLogEntry 8 }

pktcDevEvLogCorrelationId OBJECT-TYPE
    SYNTAX      Unsigned32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            " This MIB Object contains the correlation ID
            generated by the MTA as per section 5.4.5 of [3] that
            was being used by the MTA when the event
            was generated."
    ::= { pktcDevEventLogEntry 9 }

pktcDevEvLogAdditionalInfo OBJECT-TYPE
    SYNTAX      SnmpAdminString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
            "This MIB Object contains additional, useful
            information in relation to the corresponding event that a
            PacketCable device might wish to report (for example:
            parameterized data or debugging information). The format
            is vendor-specific.
            However, the PacketCable device is not required to
            implement this functionality."
    ::= { pktcDevEventLogEntry 10 }

---
-- Notifications
---

pktcDevEvNotificationIndex  OBJECT IDENTIFIER ::=
                                          { pktcDevEvNotification 0 }

pktcDevEvInform NOTIFICATION-TYPE
    OBJECTS {pktcDevEvLogIndex, pktcDevEvLogTime,
    pktcDevEvLogEnterprise,pktcDevEvLogId,
    pktcDevEvLogEndpointName,pktcDevEvLogCorrelationId,ifPhysAddress}
    STATUS      current
    DESCRIPTION
            "This Notification MIB Objects contains the Inform
             contents for event reporting "
    ::= { pktcDevEvNotificationIndex 1 }

pktcDevEvTrap NOTIFICATION-TYPE
    OBJECTS {pktcDevEvLogIndex, pktcDevEvLogTime,
    pktcDevEvLogEnterprise,pktcDevEvLogId,
    pktcDevEvLogEndpointName,pktcDevEvLogCorrelationId,ifPhysAddress}
    STATUS      current
    DESCRIPTION
            "This Notification MIB Objects contains the Trap contents
             for event reporting "
    ::= { pktcDevEvNotificationIndex 2 }

---
-- Conformance/Compliance
---

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

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


MANDATORY-GROUPS {
                 pktcEventGroup,
                 pktcEventNotificationGroup
                 }
   -- units of conformance
    ::= { pktcEventCompliances 3 }

pktcEventGroup OBJECT-GROUP
    OBJECTS {
            pktcDevEvControl,
            pktcDevEvSyslogAddressType,
            pktcDevEvSyslogAddress,
            pktcDevEvSyslogUdpPort,
            pktcDevEvThrottleAdminStatus,
            pktcDevEvThrottleThreshold,
            pktcDevEvThrottleInterval,
            pktcDevEvTransmissionStatus,
            pktcDevEventDescrEnterprise,
            pktcDevEventDescrFacility,
            pktcDevEventDescrLevel,
            pktcDevEventDescrReporting,
            pktcDevEventDescrText,
            pktcDevEvLogIndex,
            pktcDevEvLogTime,
            pktcDevEvLogEnterprise,
            pktcDevEvLogId,
            pktcDevEvLogText,
            pktcDevEvLogEndpointName,
            pktcDevEvLogType,
            pktcDevEvLogTargetInfo,
            pktcDevEvLogCorrelationId,
            pktcDevEvLogAdditionalInfo
            }

    STATUS      current
    DESCRIPTION
            "Group of MIB objects for PacketCable Management Event
            MIB."
    ::= { pktcEventGroups 1 }


pktcEventNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS { pktcDevEvInform, pktcDevEvTrap }
    STATUS      current
    DESCRIPTION
            "Group of MIB objects for notifications related to
            change in status of the MTA Device."
    ::= { pktcEventGroups 2 }
END
```

Appendix A Acknowledgements

On behalf of CableLabs and its participating member companies, we would like to extend a heartfelt thanks to all those who contributed to the development of this specification. Certainly all the participants of the provisioning focus team have added value to this effort by participating in the review and weekly conference calls. Particular thanks are given to:

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