PROPOSAL for comment 13

```
+--rw remote-mib-retrieval {remote-mib-retrieval-initiate or remote-mib-
retrieval-respond}?

|  +--rw response-timeout?        uint8

|  +--ro mac-objects-retrieval

|  |  +---x request-mac-objects

|  |  +--ro status

|  |  |  +--ro state?        identityref

|  |  |  +--ro timestamp?    yang:date-and-time

|  |  +--ro mac-objects

|  |     +--ro mac-object* [mac-id]

|  |        +--ro mac-id                              uint32

|  |        +--ro frames-transmitted-ok?              yang:counter64

|  |        +--ro single-collision-frames?            yang:counter64

|  |        +--ro multiple-collision-frames?          yang:counter64

|  |        +--ro frames-received-ok?                 yang:counter64

|  |        +--ro frame-check-sequence-errors?        yang:counter64

|  |        +--ro alignment-errors?                   yang:counter64

|  |        +--ro octets-transmitted-ok?              yang:counter64

|  |        +--ro frames-with-deferred-xmissions?     yang:counter64

|  |        +--ro late-collisions?                    yang:counter64

|  |        +--ro frames-aborted-due-to-xs-colls?     yang:counter64

|  |        +--ro frames-lost-due-to-int-mac-xmit-error? yang:counter64

|  |        +--ro carrier-sense-errors?               yang:counter64

|  |        +--ro octets-received-ok?                 yang:counter64

|  |        +--ro frames-lost-due-to-int-mac-rcv-error? yang:counter64

|  |        +--ro promiscuous-status?                 boolean

|  |        +--ro read-multicast-address-list*        yang:mac-address

|  |        +--ro multicast-frames-xmitted-ok?        yang:counter64

|  |        +--ro broadcast-frames-xmitted-ok?        yang:counter64

|  |        +--ro frames-with-excessive-deferral?     yang:counter64

|  |        +--ro multicast-frames-received-ok?       yang:counter64
```

```
|  |          +--ro broadcast-frames-received-ok?     yang:counter64
|  |          +--ro in-range-length-errors?           yang:counter64
|  |          +--ro out-of-range-length-field?        yang:counter64
|  |          +--ro frame-too-long-errors?            yang:counter64
|  |          +--ro mac-enable-status?                boolean
|  |          +--ro transmit-enable-status?           boolean
|  |          +--ro multicast-receive-status?         boolean
|  |          +--ro read-mac-address?                 yang:mac-address
|  |          +--ro collision-frames*                 yang:counter64
|  |          +--ro mac-capabilities?                 bits
|  |          +--ro duplex-status?                    enumeration
|  |          +--ro rate-control-ability?             boolean
|  |          +--ro rate-control-status?              enumeration
|  |          +--ro defer-control-ability?            boolean
|  |          +--ro defer-control-status?             enumeration
|  |          +--ro max-frame-length?                 enumeration
|  |          +--ro slow-protocol-frame-limit?        uint64
|  +--ro pme-objects-retrieval
|     +---x request-pme-objects
|     +--ro status
|     |  +--ro state?       identityref
|     |  +--ro timestamp?   yang:date-and-time
|     +--ro pme-objects
|        +--ro pme-objects* [pmeid]
|           +--ro pmeid                         uint64
|           +--ro adminstate?                   admin-state
|           +--ro status?                       identityref
|           +--ro signal-to-noise-ratio-margin? uint64
|           +--ro TCCodingViolations?           yang:counter64
|           +--ro profile-number*               uint32
|           +--ro pme-profile-state?            identityref
|           +--ro operating-profile?            uint32
```

```
|          +--ro PMEFECCorrectedBlocks?        yang:counter64
|          +--ro PMEFECUncorrectableBlocks?    yang:counter64
|          +--ro TCCRCErrors?                  yang:counter64
```

PROPOSAL for comment 17:

```
augment '/if:interfaces/if:interface/link-oam' {

  description

    "Augments the interface model with nodes for PME managed objects retrieval.";

  container remote-mib-retrieval {

    if-feature "remote-mib-retrieval-initiate or remote-mib-retrieval-respond";

    description

    "Ethernet link oam - remote-mib retrieval.";

  leaf response-timeout {

    type uint8 {

      range "2..10";

    }

    default 5;

    units seconds;

    description

      "This is the maximum time to get the response/responses (in case of bonding group) from the CPE
for the remote-mib retrieval request.";

  }

          container mac-objects-retrieval {

    description

      "Remote mib - MAC Statistics.";

    config false;

    action request-mac-objects {

      description

        "Request MAC Statistics from the peer DTE.";

      reference

        "IEEE Std 802.3, 57.1.2:c(2)";

    }
```

```
container status {

 description

   "Status of the mac-objects retrieval.";

  leaf state {

   type identityref {

     base mib-retrieval-state;

    }

   description

     "The state of the mac-stats retrieval.";

   reference

     ";

  }


  leaf timestamp {

   type yang:date-and-time;

   description

     "The time at which mac stats retrieval entered its state.";

   }

  }


 container mac-objects {

  description

   "Peer DTE - MAC Objects. The counters display is based on the Peer DTE support. For the peer DTE
unsupported counters no output shall be displayed";

   list mac-object {

    key "mac-id";

    description

     "This list has the attributes managed by a particular MAC entity";
```

```
leaf mac-id {

 type uint32;

 description

   "The value of mac-id is assigned so as to uniquely identify a MAC among the subordinate
managed objects of the containing object.";

  reference

   "30.3.1.1.1 of IEEE Std 802.3-2022";

 }


leaf frames-transmitted-ok {

 type yang:counter64;

 description

   "A count of frames that are successfully transmitted.";

 reference

   "30.3.1.1.2 of IEEE Std 802.3-2022";

 }

leaf single-collision-frames {

 type yang:counter64;

 description

   "A count of frames that are involved in a single collision and are subsequently transmitted
successfully.";

  reference

   "30.3.1.1.3 of IEEE Std 802.3-2022";

 }

leaf multiple-collision-frames {

 type yang:counter64;

 description

   "A count of frames that are involved in more than one collision and are subsequently
transmitted successfully.";

  reference
```

```
        "30.3.1.1.4 of IEEE Std 802.3-2022";

      }

      leaf frames-received-ok {

        type yang:counter64;

        description

          "A count of frames that are successfully received.  This does not include frames received
with frame-too-long, FCS,length or alignment errors, or frames lost due to internal MAC sublayer error.";

        reference

          "30.3.1.1.5 of IEEE Std 802.3-2022";

      }

      leaf frame-check-sequence-errors {

        type yang:counter64;

        description

          "A count of frames that are an integral number of octets in length and do not pass the FCS
check.";

        reference

          "30.3.1.1.6 of IEEE Std 802.3-2022";

      }

      leaf alignment-errors {

        type yang:counter64;

        description

          "A Count of frames that are not an integral number of octets in length and do not pass the FCS
check.";

        reference

          "30.3.1.1.7 of IEEE Std 802.3-2022";

      }

      leaf octets-transmitted-ok {

        type yang:counter64;

        description

          "A count of data and padding octets of frames that are successfully transmitted.";
```

```
    reference

      "30.3.1.1.8 of IEEE Std 802.3-2022";

  }

  leaf frames-with-deferred-xmissions {

   type yang:counter64;

   description

      "A count of frames whose transmission was delayed on its first attempt because the medium
was busy.";

    reference

      "30.3.1.1.9 of IEEE Std 802.3-2022";

  }

  leaf late-collisions {

   type yang:counter64;

   description

      "A count of the times that a collision has been detected later than 512 bit times into the
transmitted packet. A late collision is counted twice, i.e., both as a collision and as a late-collision.";

    reference

      "30.3.1.1.10 of IEEE Std 802.3-2022";

  }

  leaf frames-aborted-due-to-xs-colls {

   type yang:counter64;

   description

      "A count of the frames that due to excessive collisions are not transmitted successfully.";

    reference

      "30.3.1.1.11 of IEEE Std 802.3-2022";

  }

  leaf frames-lost-due-to-int-mac-xmit-error {

   type yang:counter64;

   description
```

```
      "A count of frames that would otherwise be transmitted by the station, but could not be sent
due to an internal MAC sublayer transmit error.";

      reference

        "30.3.1.1.12 of IEEE Std 802.3-2022";

      }

      leaf carrier-sense-errors {

        type yang:counter64;

        description

          "A count of times that the carrierSense functionality was not asserted or was deasserted
during the transmission of a frame without collision.";

        reference

          "30.3.1.1.13 and 7.2.4.6 of IEEE Std 802.3-2022";

      }

      leaf octets-received-ok {

        type yang:counter64;

        description

          "A count of data and padding octets in frames that are successfully received. This does not
include octets in frames received with frame-too-long, FCS, length or alignment errors, or frames lost
due to internal MAC sublayer error.";

        reference

          "30.3.1.1.14 of IEEE Std 802.3-2022";

      }

      leaf frames-lost-due-to-int-mac-rcv-error {

        type yang:counter64;

        description

          "A count of frames that would otherwise be received by the station, but could not be accepted
due to an internal MAC sublayer receive error.";

        reference

          "30.3.1.1.15 of IEEE Std 802.3-2022";

      }
```

```
leaf promiscuous-status {

  type boolean;

  description

    "True for promiscuous mode enabled, and false otherwise.";

  reference

    "30.3.1.1.16 of IEEE Std 802.3-2022";

}

leaf-list read-multicast-address-list {

  type yang:mac-address;

  description

    "Return the current multicast address list.";

  reference

    "30.3.1.1.17 of IEEE Std 802.3-2022";

}

leaf multicast-frames-xmitted-ok {

  type yang:counter64;

  description

    "A count of frames that are successfully transmitted, to a group destination address other than
broadcast.";

  reference

    "30.3.1.1.18 of IEEE Std 802.3-2022";

}

leaf broadcast-frames-xmitted-ok {

  type yang:counter64;

  description

    "A count of the frames that were successfully transmitted, to the broadcast address. Frames
transmitted to multicast addresses are not broadcast frames and are excluded.";

  reference

    "30.3.1.1.19 of IEEE Std 802.3-2022";
```

```
        }
        leaf frames-with-excessive-deferral {
          type yang:counter64;
          description
            "A count of frames that deferred for an excessive period of time.";
          reference
            "30.3.1.1.20 of IEEE Std 802.3-2022";
        }
        leaf multicast-frames-received-ok {
          type yang:counter64;
          description
            "A count of frames that are successfully received and are directed to an active nonbroadcast
group address. This does not include frames received with frame-too-long, FCS, length, or alignment
error, or frames lost due to internal MAC sublayer error.";
          reference
            "30.3.1.1.21 of IEEE Std 802.3-2022";
        }
        leaf broadcast-frames-received-ok {
          type yang:counter64;
          description
            "A count of frames that are successfully received and are directed to the broadcast group
address. This does not include frames received with frame-too-long ,FCS, length, or alignment errors, or
frames lost due to internal MAC sublayer error.";
          reference
            "30.3.1.1.22 of IEEE Std 802.3-2022";
        }
        leaf in-range-length-errors {
          type yang:counter64;
          description
```

"A count of frames with a length field value between the minimum unpadded LLC data size and the maximum allowed LLC data size,inclusive, that does not match the number of LLC data octets received. The counter also contains frames with a length field value less than the minimum unpadded LLC data size.";

   reference

     "30.3.1.1.23 of IEEE Std 802.3-2022";

   }

   leaf out-of-range-length-field {

    type yang:counter64;

    description

      "A count of frames with a length field value greater than the maximum allowed LLC data size.";

    reference

      "30.3.1.1.24 of IEEE Std 802.3-2022";

   }

   leaf frame-too-long-errors {

    type yang:counter64;

    description

      "A count of frames that are received and exceed the maximum permitted frame size.";

    reference

      "30.3.1.1.25 of IEEE Std 802.3-2022";

   }

   leaf mac-enable-status { //TODO : check if this leaf needs to be ro or rw because it is marked to be GET-SET in standard.

    type boolean;

    description

      "True if MAC sublayer is enabled, and false if disabled.";

    reference

      "30.3.1.1.26 of IEEE Std 802.3-2022";

   }

```
leaf transmit-enable-status { //TODO : check if this leaf needs to be ro or rw because it is marked
to be GET-SET in standard.

    type boolean;

    description

      "True if transmission is enabled, and false otherwise.";

    reference

      "30.3.1.1.27 of IEEE Std 802.3-2022";

  }

    leaf multicast-receive-status { //TODO : check if this leaf needs to be ro or rw because it is marked
to be GET-SET in standard.

    type boolean;

    description

      "True if multicast receive is enabled, and false otherwise.";

    reference

      "30.3.1.1.28 of IEEE Std 802.3-2022";

  }

    leaf read-mac-address { //TODO : check if this leaf needs to be ro or rw because it is marked to be
GET-SET in standard.

    type yang:mac-address;

    description

      "Read the MAC station address.";

    reference

      "30.3.1.1.29 of IEEE Std 802.3-2022";

  }

  leaf-list collision-frames {

   type yang:counter64;

   max-elements 32;

   description
```

"A histogram of collision activity. The indices of this array (1 to attemptLimit–1) denote the number of collisions experienced in transmitting a frame. Each element of this array contains a counter that denotes the number of frames that have experienced a specific number of collisions. ";

        reference

          "30.3.1.1.30 of IEEE Std 802.3-2022";

      }

      leaf mac-capabilities {

       type bits {

         bit half-duplex {

           position 0;

           description

             "Capable of operating in half duplex mode.";

         }

         bit full-duplex {

           position 1;

           description

             "Capable of operating in full duplex mode.";

         }

       }

       description

         "This indicates the duplex capabilities of the MAC.";

       reference

         "30.3.1.1.31 of IEEE Std 802.3-2022";

      }

      leaf duplex-status { //TODO : check if this leaf needs to be ro or rw because it is marked to be GET-SET in standard.

        type enumeration {

         enum "full-duplex" {

           description "Full duplex mode";

         }

```
      enum "half-duplex" {

        description  "Half duplex mode";

      }

      enum "unknown" {

        description  "Duplex status unknown";

      }

    }

    description

      "The current mode of operation of the MAC entity, either half duplex, full duplex, or unknown";

    reference

      "30.3.1.1.32 of IEEE Std 802.3-2022";

  }

  leaf rate-control-ability {

    type boolean;

    description

      "True for operating speeds above 1000 Mb/s where Rate Control through lowering the average
data rate of the MAC sublayer, with frame granularity, is supported, and false otherwise.";

    reference

      "30.3.1.1.33 of IEEE Std 802.3-2022";

  }

  leaf rate-control-status { //TODO : check if this leaf needs to be ro or rw because it is marked to be
GET-SET in standard.

    type enumeration {

      enum "rate-control-off" {

        description

          "Rate control mode disabled";

      }

      enum "rate-control-on" {

        description
```

```
        "Rate control mode enabled";

      }

      enum "unknown" {

       description

         "Rate control mode unknown";

      }

     }

     description

       "The current Rate Control mode of operation of the MAC sublayer.";

     reference

       "30.3.1.1.34 of IEEE Std 802.3-2022";

    }

    leaf defer-control-ability {

     type boolean;

     description

        "The enumeration "true" is returned when the interframe spacing is accomplished within the
MAC sublayer, the enumeration "false" is returned  otherwise.";

     reference

       "30.3.1.1.35 of IEEE Std 802.3-2022";

    }

    leaf defer-control-status { //TODO : check if this leaf needs to be ro or rw because it is marked to
be GET-SET in standard.

     type enumeration {

      enum "defer-control-off" {

       description

         "Defer control mode disabled";

      }

      enum "defer-control-on" {

       description
```

```
        "Defer control mode enabled";

    }

    enum "unknown" {

      description

        "Defer control mode unknown";

    }

  }

  description

    "The current Rate Control mode of operation of the MAC sublayer.";

  reference

    "30.3.1.1.36 of IEEE Std 802.3-2022";

}

leaf max-frame-length {

  type enumeration {

    enum "unknown"

    {

      description

        "Frame length capability unknown";

    }

    enum "basicFrame"

    {

      description

        "Capable of supporting maxBasicFrameSize

        (1518 octet frames)";

    }

    enum "qTaggedFrame"

    {

      description

        "Capable of supporting maxBasicFrameSize +  qTagPrefixSize (1522 octet frames)";
```

```
      }
      enum "envelopeFrame"
      {
       description
         "Capable of supporting maxEnvelopeFrameSize (2000 octet frames)";
      }
     }
     description
       "This indicates the MAC frame length at which  the aFramesTooLong counter is incremented.";
     reference
       "30.3.1.1.37 of IEEE Std 802.3-2022";
    }
    leaf slow-protocol-frame-limit {
     type uint64;
     default 10;
     description
        "The maximum number of Slow Protocol frames of a given subtype that can be transmitted in a
one-second period.";
     reference
       "30.3.1.1.38 of IEEE Std 802.3-2022";
    }
   } //mac-object
  } //mac-objects
 } //mac-objects-retrieval


     container pme-objects-retrieval {
  description
    "Remote mib retrieval - PME Managed objects.";
  reference
```

```
        "57.1.2 of IEEE Std 802.3-2022

  30.3.1.1 of IEEE Std 802.3-2022";


config false;
action request-pme-objects {
 description
   "Request PME managed object attributes from the peer DTE.";
 reference
   "IEEE Std 802.3, 57.1.2:c(2)";
}


container status {
 description
   "Status of the PME mangaged objects retrieval.";


 leaf state {
  type identityref {
    base mib-retrieval-state;
  }
  description
    "The state of the pme objects retrieval.";
  reference
    "";
 }


 leaf timestamp {
  type yang:date-and-time;
  description
    "The time at which pme managed objects are retrieved.";
```

```
    }

    }


    container pme-objects {

      description

        "PME Managed objects.PME objects displayed is based on the Peer DTE support. For the peer DTE
unsupported objects no ouput shall be displayed";


      list pme-object {

        key "pmeid";


        description

          "The list of PME Responses received for the PME variable request.Incase of multi-link Bonding
group, for each physical interface which is part of the Bonding group 1 response is expected. The list
shall contain list of PME responses.For the PME variable request on single link, the list shall contain 1
response.";


        leaf pmeid {

          type uint64;

          description

            " The value of aPMEID value. it is assigned so as to uniquely identify a PME among the
subordinate managed objects of the containing object (oPAF).";

          reference

            "30.11.2.1.1 of IEEE Std 802.3-2018";

        }

        leaf adminstate {

          type admin-state;

          description

            "This leaf indicates the state of the PME. The enumeration "disabled" indicates that the PME is
disabled, the enumeration "enabled" indicates that the PME is enabled..";

          reference
```

```
                    "30.11.2.1.2 of IEEE Std 802.3-2018";

        }

        leaf status {

                            type identityref {

              base pme-status;

            }

            description

                    "This leaf indicates the PME status. Value "not ready" indicates that the link is down and
handshake tones are not being  received from the peer device, the value "ready" indicates that the link is
down and that handshake tones are being received from a peer device, the value "initializing" indicates
that the link is initializing.";

            reference

              "30.11.2.1.3 of IEEE Std 802.3-2018";

        }

        leaf signal-to-noise-ratio-margin {

          type uint64;

          description

            "This leaf indicates the PME current  signal to noise ratio (SNR) Margin.";

          reference

            "30.11.2.1.4 of IEEE Std 802.3-2018";

        }

        leaf TCCodingViolations {

          type yang:counter64;

          description

              "A count of 64/65-octet encapsulation error. Increment the counter by one for each 64/65-octet
encapsulation error detected by the 64/65-octet receive function.";

          reference

            "30.11.2.1.5 of IEEE Std 802.3-2018";

        }

        leaf-list profile-number {
```

```
        type uint32;

                        max-elements 6;

        description

          "This leaf indicates the PME current signal to noise ratio (SNR) Margin.";

        reference

          "30.11.2.1.6 of IEEE Std 802.3-2018";

      }

      leaf pme-profile-state {

                        type identityref {

          base pme-prof-state;

        }

        description

          "This leaf indicates the first instance of aOperatingProfile and it indicates the pme profile state
and it has following values:

          no link which means link is down

          match which means link up using a profile

          no match which means link up not using a profile

          activate failure which mean link activate failure.";

        reference

          "30.11.2.1.7 of IEEE Std 802.3-2018";

      }

      leaf operating-profile {

        type uint32;

        description

          "This leaf indicates the second instance of aOperatingProfile and it indicates the operating
profile number.";

        reference

          "30.11.2.1.7 of IEEE Std 802.3-2018";

      }
```

```
leaf PMEFECCorrectedBlocks {

  type yang:counter64;

  description

    "For a 10PASS-TS PME, a count of corrected FEC blocks. This counter will not increment for other PHY types. Increment the counter by one for each received block that is corrected by the FEC function in the PME.";

  reference

    "30.11.2.1.8 of IEEE Std 802.3-2018";

}

leaf PMEFECUncorrectableBlocks {

  type yang:counter64;

  description

    "For a 10PASS-TS PME, a count of uncorrectable FEC blocks. This counter will not increment for other PME types. Increment the counter by one for each FEC block that is determined to be uncorrectable by the FEC function in the PME.";

  reference

    "30.11.2.1.9 of IEEE Std 802.3-2018";

}

leaf TCCRCErrors {

  type yang:counter64;

  description

    "A count of TC-CRC errors. Increment the counter by one for each TC-CRC error detected by the 64/65-octet receive function.";

  reference

    "30.11.2.1.10 of IEEE Std 802.3-2018";

}

} // pme-objects.

} // pme-objects.

} // pme-objects-retrieval.

}                               }                                    2. Proposed-
change  - add new identity          identity pme-status {
```

description

    "Base identity to represent the state of a pme status.";

  }

  identity not-ready {

   base pme-status;

   description

     "This value indicates that the link is down and handshake tones are not being received from the peer device.";

  }

  identity ready {

   base pme-status;

   description

     "This value indicates that the link is down and that handshake tones are being received from a peer device.";

  }

  identity initializing {

   base pme-status;

   description

     "This value indicates that the link is initializing.";

  }

  identity pme-prof-state {

   description

     "Base identity to represent the state of a pme profile state.";

  }

```
identity no-link {

  base pme-prof-state;

  description

    "link is down.";

}


identity match {

  base pme-prof-state;

  description

    "link up using a profile.";

}


identity no-match {

  base pme-prof-state;

  description

    "link up not using a profile.";

}


identity activate-failure {

  base pme-prof-state;

  description

    "link activate failure.";

}                                                    "
```