Energy Aware MIB
draft-ietf-eman-energy-aware-mib-02

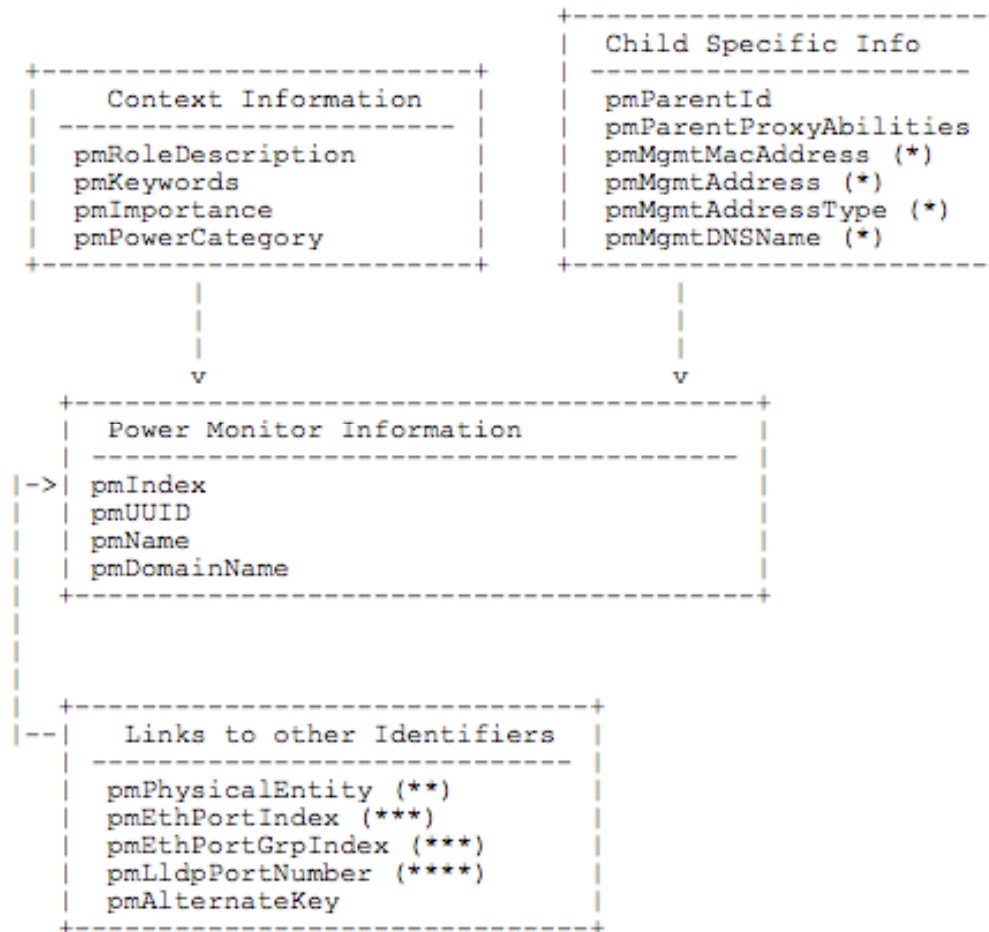John Parello, **Benoit Claise**

Charter & Abstract

- Charter
  - "3. Energy-aware Networks and Devices MIB document The EMAN WG will develop a MIB module for monitoring energy-aware networks and devices. The module will address devices identification, context information, and potential relationship between reporting devices, remote devices, and monitoring probes."

What this MIB addresses

From the Framework

Identification
  identity, classification

Context
  role, keywords, importance

Measurements
  power, energy, demand, electrical quality

State (control)
  power state sets (IEEE1621, DMTF, EMAN)

Battery

Relationship
  aggregation, metering, powering, proxy, dependency

Information Model

```
                                      +--------------------------+
                                      | Child Specific Info      |
+---------------------------+         | ------------------------ |
|   Context Information     |         |   pmParentId             |
| ------------------------- |         |   pmParentProxyAbilities |
|   pmRoleDescription       |         |   pmMgmtMacAddress  (*)   |
|   pmKeywords              |         |   pmMgmtAddress     (*)   |
|   pmImportance            |         |   pmMgmtAddressType (*)   |
|   pmPowerCategory         |         |   pmMgmtDNSName     (*)   |
+---------------------------+         +--------------------------+
              |                                   |
              |                                   |
              v                                   v
     +-------------------------------------------------+
     |   Power Monitor Information                     |
     | ----------------------------------------------- |
|->|   pmIndex                                         |
|  |   pmUUID                                          |
|  |   pmName                                          |
|  |   pmDomainName                                    |
|  +-------------------------------------------------+
|
|
|  +---------------------------------+
|--|   Links to other Identifiers    |
|  | ------------------------------- |
|  |   pmPhysicalEntity   (**)       |
|  |   pmEthPortIndex     (***)      |
|  |   pmEthPortGrpIndex  (***)      |
|  |   pmLldpPortNumber   (****)     |
|  |   pmAlternateKey                |
|  +---------------------------------+

(*)     May also be implemented by the Parent
(**)    Link with the ENTITY MIB [RFC4133]
(***)   Link with the Power over Ethernet MIB [RFC3621]
(****)  Link with LLDP MIBs [LLDP-MIB] [LLDP-MED-MIB]
```

NEW: Called out alternate ids that can link to other management systems

- Open Issue: do we want a single table, or multiple ones?
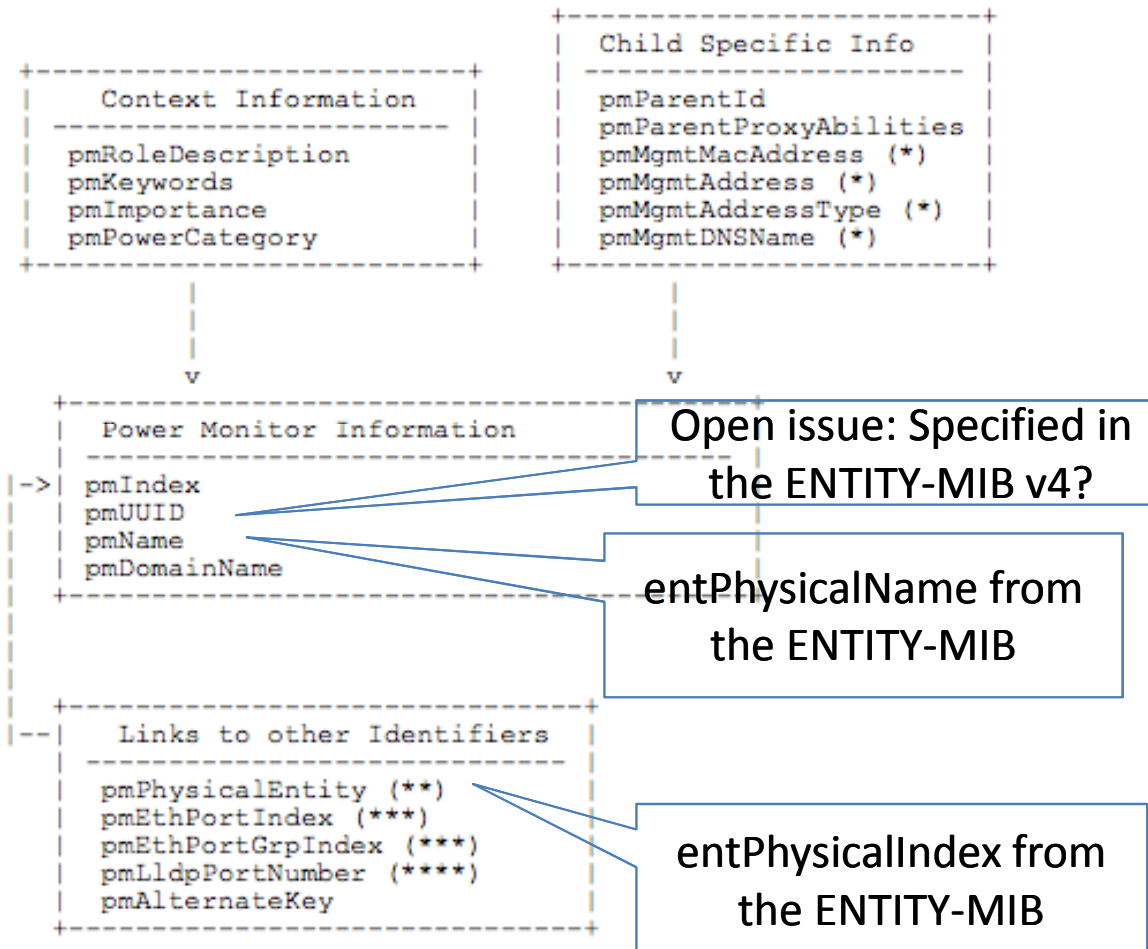 - Right now, a single table

Changes in Version 02

- ## Introduced a required UUID

  At the last IETF, presentation from Jürgen Schönwälder on SNMP context and ENTITY, with the question: Should we use the SNMP context to report on Children, linking the parent/child with <SNMP context:ID>?

  Next step at IETF80: document all use case

  Discussion at IETF81: UUIDs for any powered devices solve the issue

Open Issues: the ENTITY-MIB


```
                                            +------------------------------+
                                            | Child Specific Info          |
      +------------------------------+      | ---------------------------- |
      |  Context Information         |      |   pmParentId                 |
      | ---------------------------- |      |   pmParentProxyAbilities     |
      |   pmRoleDescription          |      |   pmMgmtMacAddress (*)        |
      |   pmKeywords                 |      |   pmMgmtAddress (*)           |
      |   pmImportance               |      |   pmMgmtAddressType (*)       |
      |   pmPowerCategory            |      |   pmMgmtDNSName (*)           |
      +------------------------------+      +------------------------------+
                     |                                     |
                     |                                     |
                     v                                     v
      +------------------------------+
      |  Power Monitor Information   |
      | ---------------------------- |
|-> |   pmIndex                     |
   |   |   pmUUID                    |
   |   |   pmName                    |
   |   |   pmDomainName              |
   |   +------------------------------+
   |
   |
   |   +------------------------------+
|-- |  Links to other Identifiers  |
    | ---------------------------- |
    |   pmPhysicalEntity (**)       |
    |   pmEthPortIndex (***)        |
    |   pmEthPortGrpIndex (***)     |
    |   pmLldpPortNumber (****)     |
    |   pmAlternateKey              |
    +------------------------------+

(*)      May also be implemented by the Parent
(**)     Link with the ENTITY MIB [RFC4133]
(***)    Link with the Power over Ethernet MIB [RFC3621]
(****)   Link with LLDP MIBs [LLDP-MIB] [LLDP-MED-MIB]
```

Open issue: Specified in the ENTITY-MIB v4?

entPhysicalName from the ENTITY-MIB

entPhysicalIndex from the ENTITY-MIB

- Open Issue: do we want to mandate the ENTITY-MIB v4, with an EMAN specific compliance statement, i.e. just a few OID?

- In other words, does it make sense to put this UUID in the generic ENTITY-MIB?

Open Issue: Multiple Parents

- How to model multiple relationships, even in the same topology?
  - Example: two "Power Source" relationships
- In the past, the assumption was one parent -> no longer true assumption

```
pmParentId OBJECT-TYPE
    SYNTAX      PowerMonitorUUID
    MAX-ACCESS   read-only
    STATUS      current
    ...
    ::= { pmEntry 18 }


pmParentProxyAbilities OBJECT-TYPE
    SYNTAX          BITS {
                none(0),
                report(1),
                configuration(2),
                wakeonlan(3)
            }
    MAX-ACCESS      read-only
    STATUS      current
    ...
    ::= { pmEntry 19 }
```

Other Open Issues

- Terminology, obviously ;-)
- UUID: for every powered device, components, battery, etc…
  - Make sure that we support everything
- Need to add guidance on role (D Prantl et al)
- How to model outlet gang? Which relationship to apply?
- Still some email threads need to be answered (Jürgen Schönwälder, Dan Romascanu)

Thank You

John Parello, **Benoit Claise**