Battery MIB Module

draft-quittek-eman-battery-mib-00

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Objectives: What to monitor?

- number of batteries in a device
- current charge
- age (charging cycles)
- state of batteries (e.g. being re-charged)
- last usage
- nominal and actual capacity
- notifications
  - low battery
  - battery replacement

Battery table

```
batteryTable(1)
 +--batteryEntry(1) [batteryIndex]
    +-- --- Unsigned32  batteryIndex(1)
    +-- r-n Enumeration batteryType(2)
    +-- r-n Enumeration batteryTechnology(3)
    +-- r-n Unsigned32  batteryNominalVoltage(4)
    +-- r-n Unsigned32  batteryNumberOfCells(5)
    +-- r-n Unsigned32  batteryNominalCapacity(6)
    +-- r-n Unsigned32  batteryRemainingCapacity(7)
    +-- r-n Counter32   batteryChargingCycleCount(8)
    +-- r-n DateAndTime batteryLastChargingCycleTime(9)
    +-- r-n Enumeration batteryState(10)
    +-- r-n Unsigned32  batteryCurrentCharge(11)
    +-- r-n Unsigned32  batteryCurrentChargePercentage(12)
    +-- r-n Unsigned32  batteryCurrentVoltage(13)
    +-- r-n Integer32   batteryCurrentCurrent(14)
    +-- r-n Unsigned32  batteryLowAlarmPercentage(15)
    +-- r-n Unsigned32  batteryLowAlarmVoltage(16)
    +-- r-n Unsigned32  batteryReplacementAlarmCapacity(17)
    +-- r-n Unsigned32  batteryReplacementAlarmCycles(18)
```

Battery states, types, technologies

- States
- full(1),
- partiallyCharged(2),
- empty(3),
- charging(4),
- discharging(5),
- unknown(6)

- Types
- primary(1),
- rechargeable(2),
- capacitor(3),
- other(4),
- unknown(5)

- Technologies
- zincCarbon(1),
- zincChloride(2),
- oxyNickelHydroxide(3),
- lithiumCopper(4),
- lithiumIron(5),
- lithiumManganese(6),
- zincAir(7),
- silverOxide(8),
- alcaline(9),
- leadAcid(10),
- nickelCadmium(12),
- nickelMetalHybride(13),
- nickelZinc(14),
- lithiumIon(15),
- lithiumPolymer(16),
- doubleLayerCapacitor(17),
- other(18),
- unknown(19)

Open issues

- Received three reviews
  - Thank you!
- Several issues raised
  - architecture
  - MIB details
  - editorial / clarifications

Open issues: Architecture

- relationship to eman framework
  - currently very loosely coupled
  - still modeling of batteries possible with Power-Monitor-MIB
    - in addition to Battery MIB
- battery table indexing
  - MUST or SHOULD use Entity MIB/Power-Aware MIB?
  - battery in a device: how to model for eman?
    - device as black box containing battery?
    - battery as separate entity within a PC?
    - support both?
- are the states the right ones?
  - are they power states?
- relationship to UPS MIB?

Open issues: MIB details

- definition of charging cycle
  - reset for low battery notification
- definition of states “empty” and “full”
  - thresholds? how to set them?
  - “full” compared to nominal or actual capacity?
- do we need a battery ID?
- do we need to report battery temperature?
- IANA registry for battery technologies?

Final question

Do you think this draft should be accepted as eman WG draft?