Multi-pair PSE module Status

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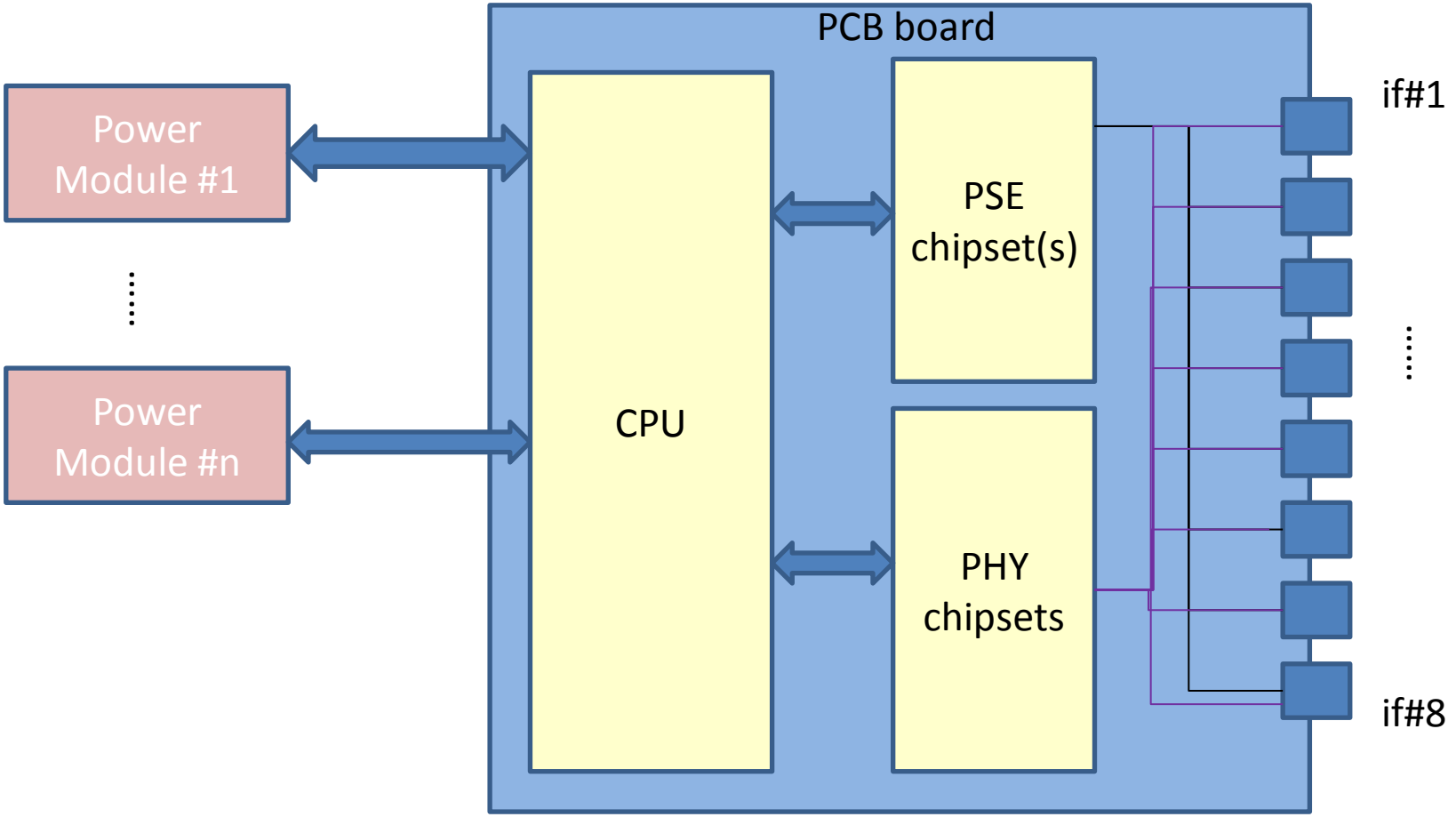
Outlines

- Update from previous version
- Modelling multi-pair PSE YANG data model
  - Selected managed objects and attributes
  - Model structure
    - Configuration
    - Operational state
    - Notifications
  - Tree hierarchy
- Other items

Updates from previous version

- Augment the ieee802-ethernet-interface module and keep consist with it
- Change the module name to multi-pair pse to distinguish from PoDL PSE

Power management for multi-pair PSE devices



The PoE power management is composed of the main power source as well as the PoE ports.

Managed objects and attributes (1)

- Configuration

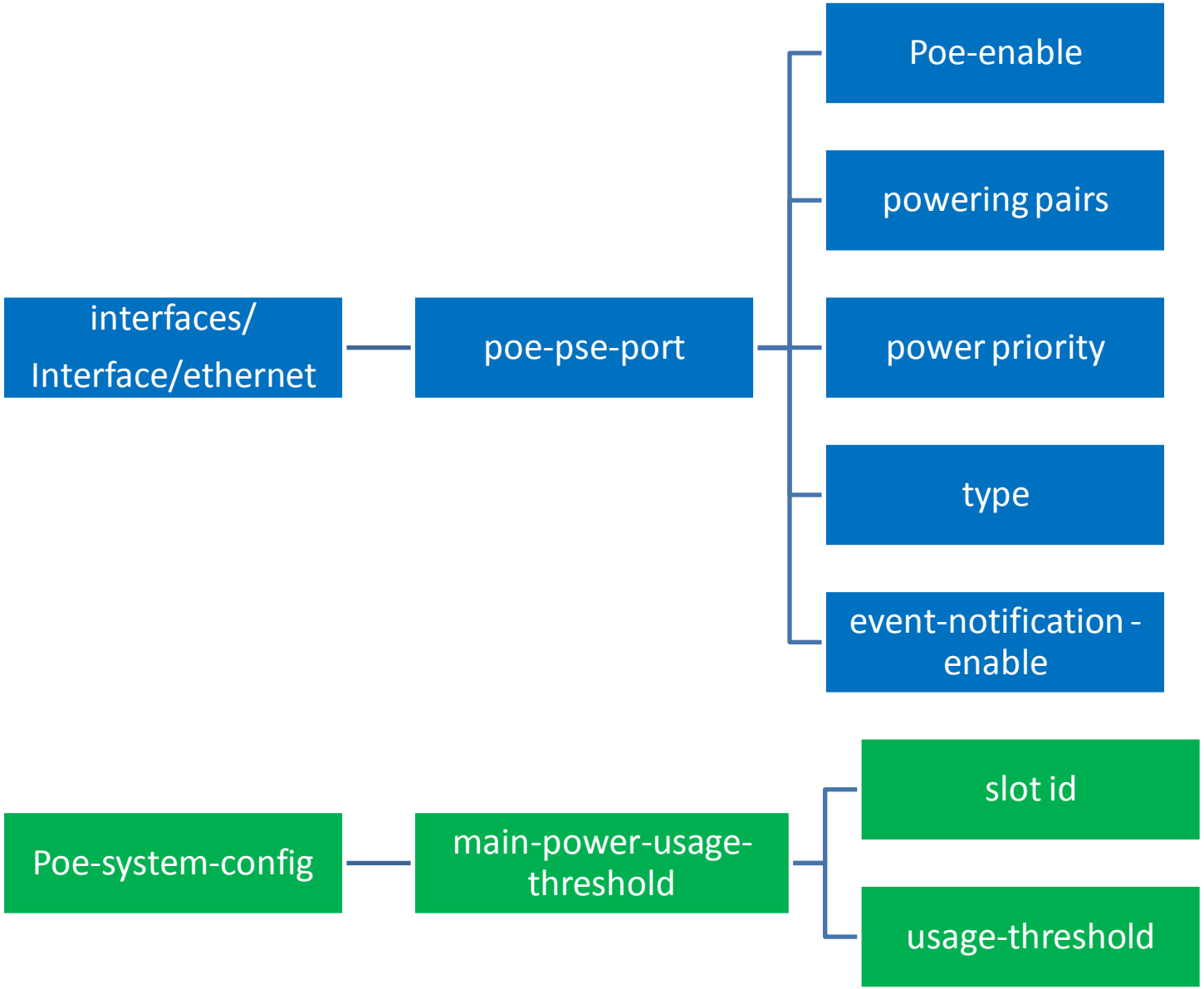
Managed Objects	attributes	r/w	description
Poe-pse-port	poe-enable	r/w	802.3 30.9.1.1.2 aPSEAdminState
	powering pairs	r/w	802.3, 30.9.1.1.4 aPSEPowerPairs
	power priority	r/w	This object controls the priority of the port from the point of view of a power management algorithm
	type	r/w	A manager will set the value of this variable to indicate the type of powered device that is connected to the port.
	event-notification - enable	r/w	Poe port event notification switch
Main power source	slot id	r/w	The slot identifies to which the main power source is connected
	usage-threshold	r/w	Power usage threshold

Managed objects and attributes (2)

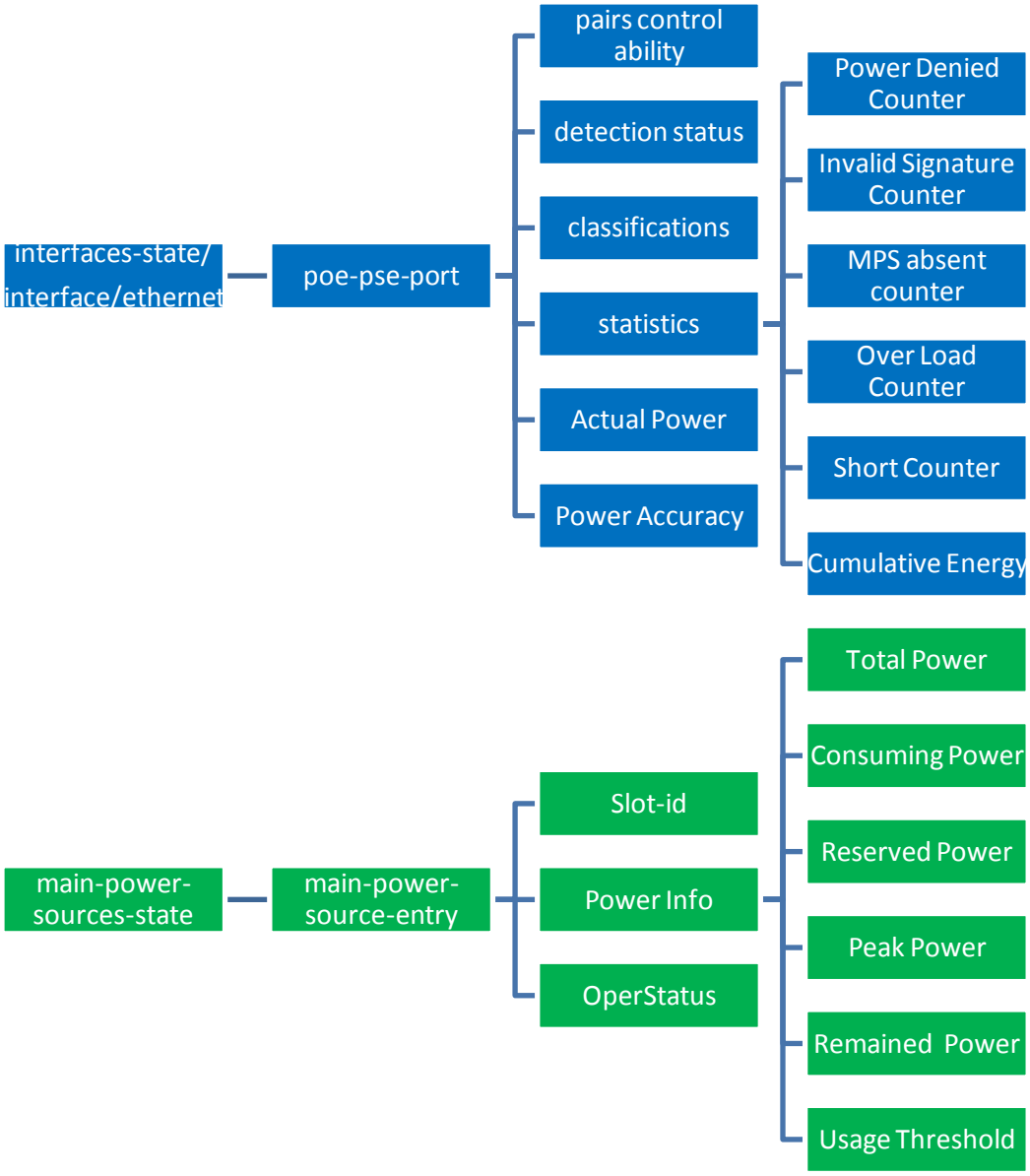
- Operational State

Managed Objects	attributes	r/w	description
Poe-pse-port	pairs control ability	ro	802.3 30.9.1.1.2 aPSEAdminState
	detection status	ro	802.3, 30.9.1.1.4 aPSEPowerPairs
	classifications	ro	802.3, 30.9.1.1.6 aPSEPowerClassfication
	statistics	ro	802.3, 30.9.1.1.8 aPSEPowerDeniedCounter; 802.3, 30.9.1.1.7 aPSEInvalidSignatureCounter 802.3, 30.9.1.1.11 aPSEMPSAbsentCounter 802.3, 30.9.1.1.9 aPSEOverLoadCounter 802.3, 30.9.1.1.10 aPSEShortCounter 802.3, 30.9.1.1.14 aPSECumulativeEnergy
	Actual Power	ro	802.3, 30.9.1.1.12 aPSEActualPower
	Power Accuracy		802.3, 30.9.1.1.13 aPSEPowerAccuracy
Main power source	slot id	ro	The slot identifies to which the main power source is connected
	Power Info	ro	Main power source information
	OperStatus	ro	

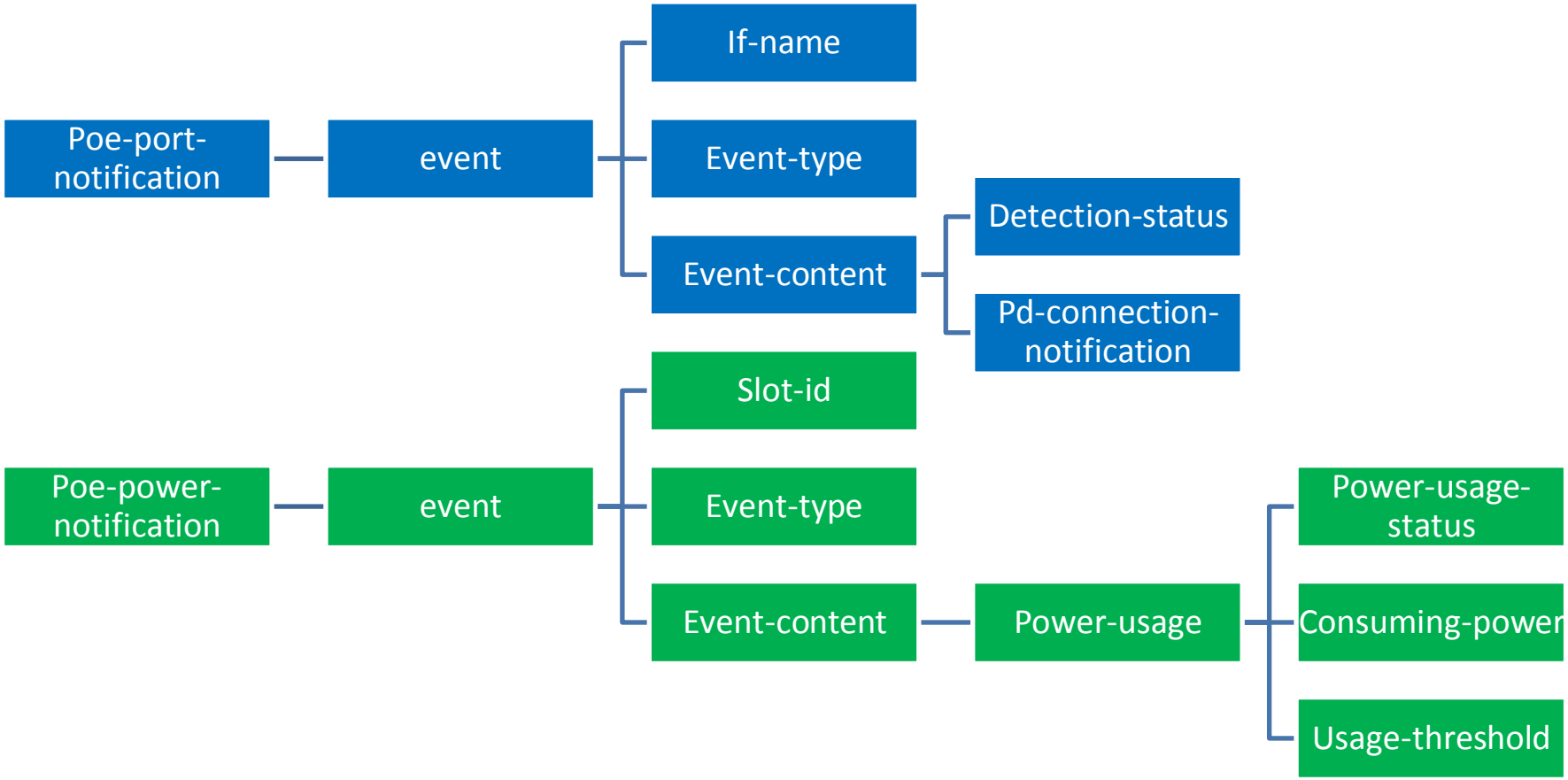
Configuration



Operational State



Notifications



Tree hierarchy

```
module: ieee802-multi-pair-pse
    +--ro main-power-sources-state
    |  +--ro main-power-source-entry* [slot-id]
    |     +--ro slot-id        uint32
    |     +--ro power-info
    |     |  +--ro total-power?        decimal64
    |     |  +--ro reserved-power?     percentage
    |     |  +--ro consuming-power?    decimal64
    |     |  +--ro remained-power?     decimal64
    |     |  +--ro peak-power?         decimal64
    |     |  +--ro usage-threshold?    percentage
    |     +--ro operStatus?    enumeration
    +--rw poe-system-config
       +--rw main-power-usage-threshold
          +--rw threhold* [slot-id]
             +--rw slot-id             uint32
             +--rw usage-threshold?    percentage
```

```
notifications:
  +---n poe-port-notification
  |  +--ro event* [if-name event-type]
  |     +--ro if-name          string
  |     +--ro event-type       identityref
  |     +--ro event-content
  |        +--ro detection-status?       detection-state
  |        +--ro pd-connection-events    identityref
  +---n poe-power-notification
     +--ro event* [slot-id event-type]
        +--ro slot-id          uint8
        +--ro event-type       identityref
        +--ro event-content
           +--ro power-usage
              +--ro consuming-power    uint32
              +--ro usage-threshold?   uint32
```

```
augment /if:interfaces/if:interface/eth-if:ethernet:
  +--rw poe-pse-port!
     +--rw poe-intf-config
        +--rw pse-enable?                  boolean
        +--rw powering-pairs?              enumeration
        +--rw power-priority?              uint32
        +--rw type?                        string
        +--rw event-notification-enable?   boolean
augment /if:interfaces-state/if:interface/eth-if:ethernet:
  +--ro poe-pse-port!
     +--ro pairs-control-ability?   boolean
     +--ro detection-status?        detection-state
     +--ro classifications?         power-class
     +--ro poe-statistics
     |  +--ro power-denied?         uint32
     |  +--ro invalid-signature?    uint32
     |  +--ro MPSabsent?            uint32
     |  +--ro overload?             uint32
     |  +--ro short?                uint32
     |  +--ro cumulative-energy?    uint32
     +--ro actual-power?             decimal64
     +--ro power-accuracy?           uint32
```

Other items

- LLDP
  - LLDP provides more functions, which should be a separate model to include all lldp features
  - Relates to 802.1ab, while 802.1 hasn't started this work
- Functions in 802.3.1
  - Provide similar functions in YANG, such as main power source management

Questions?