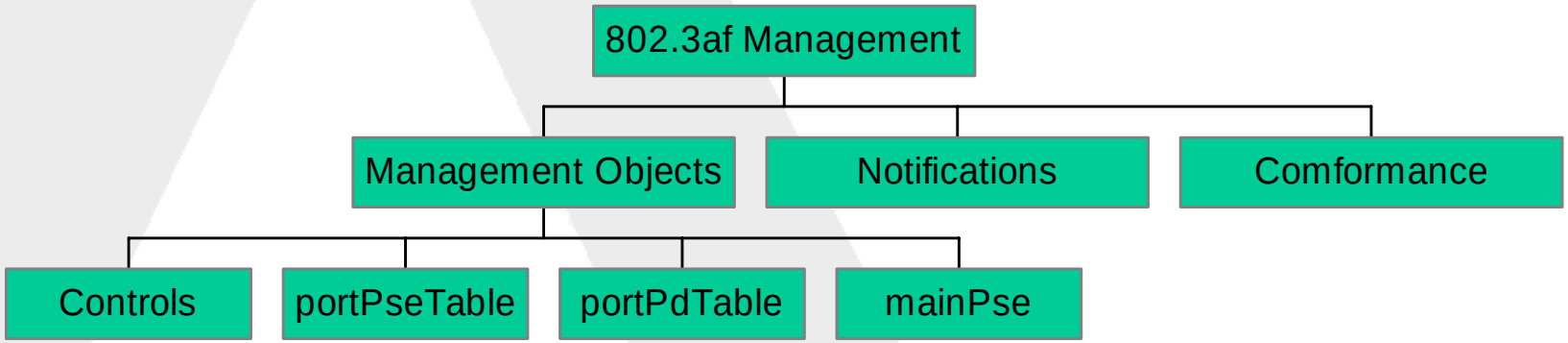
802.3af Management Objects

Dan Romascanu

Avaya Inc.

Management Objects Structure



Control Objects

- *dtePowerAdminStatus*
  - defines the admin status of the management entity
  - read-write
  - enumerated - *enable, disable*
- *dtePowerOperationalStatus*
  - defines the operational (functional) status of the management entity
  - read-only
  - enumerated - *on, off, fault*
- *dtePowerEnableNotifications*
  - enables/disables 802.3af notifications from the management entity
  - read-write
  - enumerated - *enable, disable*
  - default - *disable*

PSE Port Table

- To be implemented in switches and mid-spans
- indexed by group and port - as other 802.3 objects
- *portPsePowerIdPairsControl*
  - describes the capability of controlling the power pairs functionality
  - read-only
  - enumerated - *true, false*
- *portPsePowerIdPairs*
  - controls / describes pairs in use
  - read-write or read-only according to value of *portPsePowerIdPairsControl*
  - enumerated - *signal, spare, both*

PSE Port Table - 2

- *portPsePowerDetectionStatus*
  - controls the power detection mechanism of the port
  - read-write
  - enumerated - *off*, *auto*
- *portPseDetectionOperStatus*
  - describes the operational status of the port detection
  - read-only
  - enumerated - *off*, *delivering_power*, *searching*, *fault*
- *portPsePowerPriority*
  - controls the priority of the port. The set priority could be used by a control mechanism that prevents over_current situations by disconnecting first ports with lower power priority
  - read-write
  - enumerated - *critical*, *high*, *low*

PSE Port Table - 3

- *portPseDenyError*
  - describes an error resulted by the power management mechanism disabling a low priority port
  - read-only
  - enumerated - *other*, *low priority*
- *portPseFaultError*
  - describes a current fault error
  - read-only
  - enumerated - *under_current*, *over_current*
- *portPseDetectionError*
  - describes a detection error
  - read-only
  - enumerated - *over_resistance*, *under_resistance*, *big_capacity*

PSE Port Table - 4

- *portPseType*
  - port type - information stored by an application into a switch or mid-span, allows for more complex power management algorithms
  - read-write
  - enumerated - *other*, *telephone*, *webcam*, *wireless*
- *portPseUsagePower*
  - measured usage power per port
  - optional
  - read-only
  - integer [mW]
- *portPseUsageCurrent*
  - measured usage current per port
  - optional
  - read-only
  - integer [mA]

PD Port Table

- To be implemented on terminals receiving power
- Table indexed by port
- *portPdPowerPairs*
  - describes pairs in use
  - read-only
  - enumerated - *signal*, *spare*, *both*
- *portPdPowerDetectionStatus*
  - controls the port detection mechanism
  - read-write
  - enumerated - *off*, *auto*
- *portPdDetectionOperStatus*
  - describes the operational status of the port detection
  - read-only
  - enumerated - *off*, *receiving_power*, *providing_signature*, *fault*

PD Port Table - 2

- *portPdType*
  - describes the port type
  - read-only
  - enumerated - *other*, *telephone*, *webcam*, *wireless*

Main Pse Group

- *mainPsePower*
  - defines the nominal power of the PSE
  - read-write
  - integer [W]
- *mainPseMaxVoltage*
  - maximal admitted voltage
  - read-write
  - integer [mV]
- *mainPseMinVoltage*
  - minimal admitted voltage
  - read-write
  - integer [mV]
- *mainPseOperStatus*
  - operational status of the PSE
  - read-only
  - enumerated - *on, off, faulty*

Main PSE Group - 2

- *mainPseUsagePower*
  - measured usage power
  - read-only
  - integer [mW]
- *mainPseUsageCurrent*
  - measured usage current
  - read-only
  - integer [mA]
- *mainPseUsageThreshold*
  - programmable usage threshold - defines the alarm and/or disconnection threshold for a PSE
  - read-write
  - integer [%]

Main PSE Group - 3

- *mainPseBackupPresent*
  - reflects the presence of a backup PSE
  - optional
  - read-only
  - enumerated - *not_present*, *present*
- *mainPseBackupActivated*
  - reflects the activation status of the backup PSE
  - optional
  - read-only
  - enumerated - *not_activated*, *activated*

Notifications

- *psePortDenyNotification*
- *psePortFaultNotification*
- *psePortDetectionNotification*

- *pseUsageNotification*

- *pseBackUpActivatedNotification* - optional

Conformance

- A switch will support control objects, PSE port table, and main PSE group
- A mid-span will support control objects, and PSE port table
- A terminal will support control objects and PD port table
- measurement of usage power and current per port is optional
- backup PSE management is optional