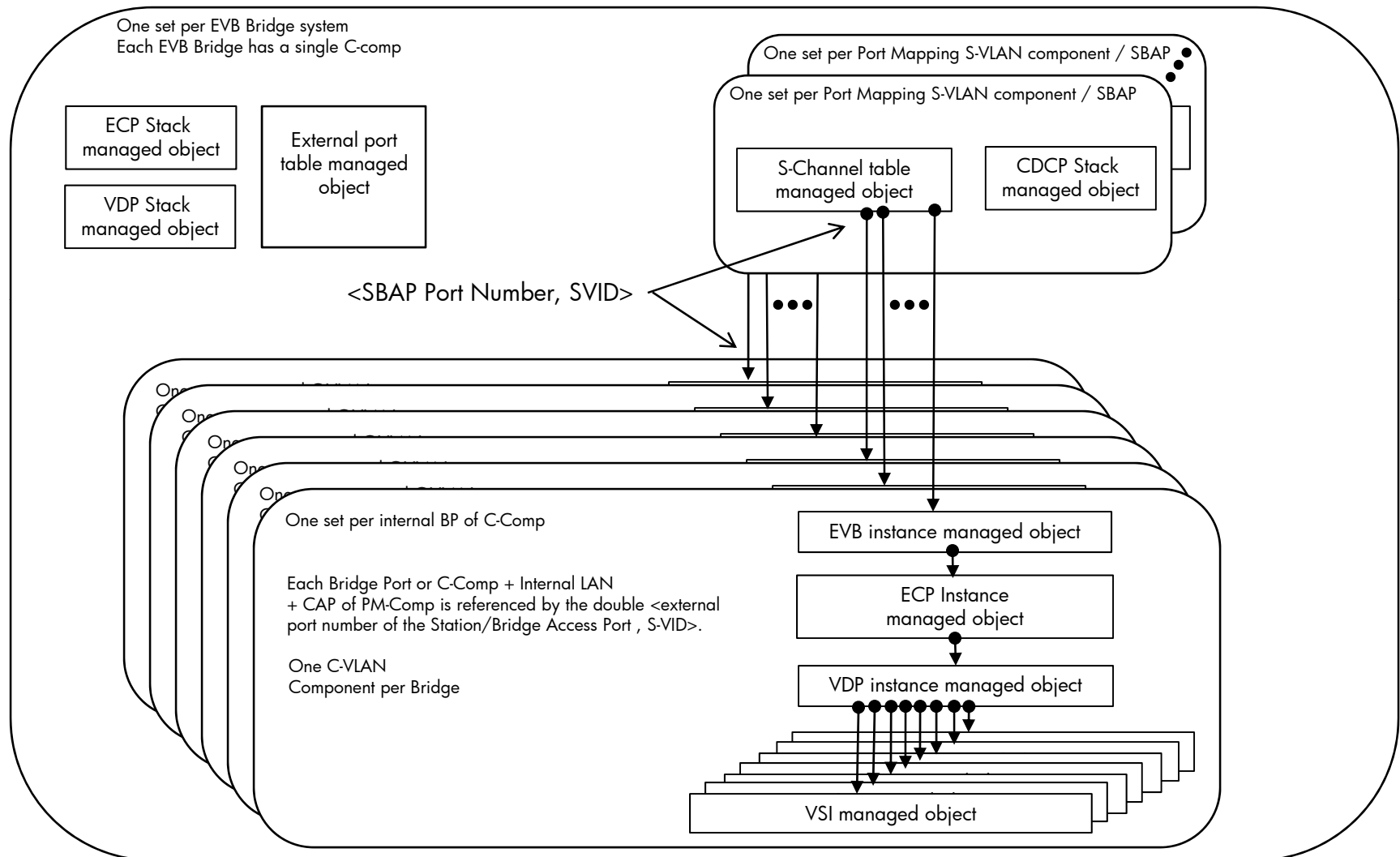# 802.1Qbg
Bridge management
Clause 12

V2

September 28, 2010
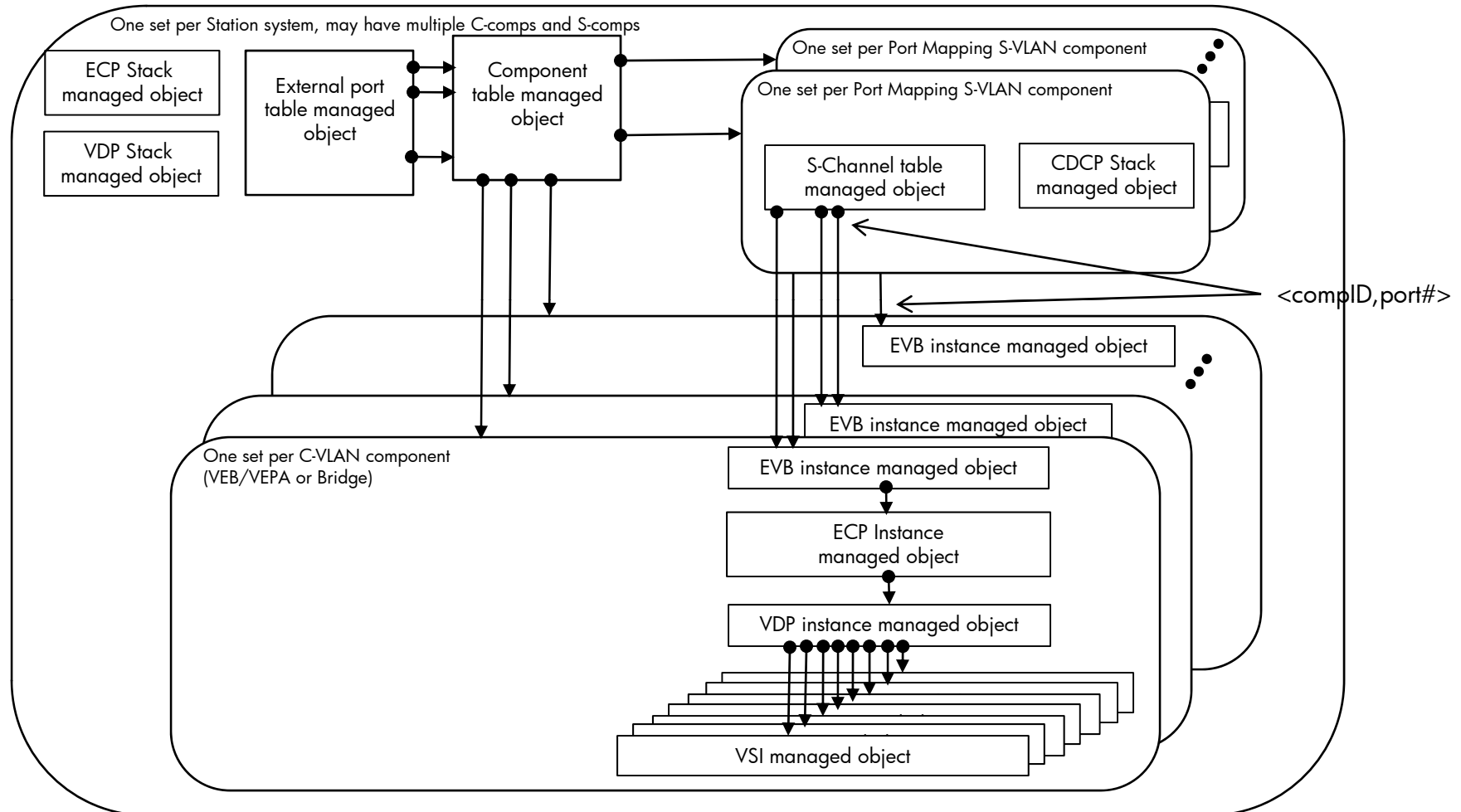
IEEE 802.1Qbg Management

- Need to complete 802.1Qbg clause 12, 17 and K.10

    - Clause 12 information model objects

    - Clause 17 Bridge SNMP MIB

    - Clause K.10 IEEE 802.1AB SNMP MIB 802.1 TLV extensions

- Clause 12 object extensions required

    - A root object for each EVB station/bridge

    - Objects for each CDCP state machine (could be multiple physical LANs)

    - Objects for the S-Channel database

    - Objects for the ECP state machines

    - Objects for the VDP state machines

    - Objects for the VSI database

Relationships among EVB objects (Bridge Port Number Model, from PB)

One set per EVB Bridge system
Each EVB Bridge has a single C-comp

ECP Stack managed object

VDP Stack managed object

External port table managed object

One set per Port Mapping S-VLAN component / SBAP

One set per Port Mapping S-VLAN component / SBAP

S-Channel table managed object

CDCP Stack managed object

<SBAP Port Number, SVID>

One set per internal BP of C-Comp

Each Bridge Port or C-Comp + Internal LAN + CAP of PM-Comp is referenced by the double <external port number of the Station/Bridge Access Port , S-VID>.

One C-VLAN Component per Bridge

EVB instance managed object

ECP Instance managed object

VDP instance managed object

VSI managed object

• How can this model work for the Station?

Relationships among EVB objects (ComponentID Model, from PBB)

One set per Station system, may have multiple C-comps and S-comps

ECP Stack managed object

VDP Stack managed object

External port table managed object

Component table managed object

One set per Port Mapping S-VLAN component

One set per Port Mapping S-VLAN component

S-Channel table managed object

CDCP Stack managed object

<compID,port#>

EVB instance managed object

EVB instance managed object

One set per C-VLAN component (VEB/VEPA or Bridge)

EVB instance managed object

ECP Instance managed object

VDP instance managed object

VSI managed object

- Per Bridge/Station contains component lists (by external port or componentID)
- If no port-mapping S-VLAN component then default S-channel in list
- VEB/VEPA are C-comp component types

Component table vs. external port table Station/Bridge system managed object

- External port lists are used to manage multi-component provider bridges. The current 802.1Qbc uses external port number to locate components.
- PB system model may references components by external port
  - each C-comp has a single CEP
  - only a single S-comp exists and therefore is attached to any PNP or CNP
  - each port-mapping component has a single RSAP
- PBB BEB system model references components by componentID
  - CNPs and PIPs do not uniquely identify an I-comp (each BEB may have many I-comps with multiple external ports per I-comp)
- EVB components – Station requires componentID
  - Station can have multiple C-comps and multiple port-mapping S-comp when using multiple uplinks
- EVB Bridge – Could use the port model provider we have a single C-Comp in the EVBCB
  - Bridge has multiple port-mapping S-comps however only a single C-comp
  - Bridge could be managed using either the port based or componentID model

EVB Bridge managed object

- Here each port of the Bridge is referenced by a bridge port number

- Internally, we use doubles of <BP#,SVID> to identify internal CAPs, internal LANs, and internal BPs of C-Comp.

- All external C-Comp BPs have a bridge port number, however internal BPs have not BP#

- Currently we don't have a way to extend this to the Station case since the station may have multiple C-comps and S-comps with generalized cross connects

EVB Station managed object

- All components have a componentID (compID)

- All component ports have a bpID

- Therefore all internal and external ports can be referenced by the double <compID,bpID>

- If we need linear external port numbers then a mapping table from BP# to <compID,pbID> can be added to the system.

- This strategy could be used for both Bridge and Station.

802.1Qbg CDCP Machine objects

- AdminRole: The role may take the value 'S' or 'B'.
- AdminVersion: May take the value 0x00 = disable S-channels or 0x10 = enable S-channels
- AdminChnCap: May take a value from 0 to xxx
- schState: May take the state RUNNING or NOTRUNNING
- S-Channel table: <SCID, VID, cap-port#, c-comp#, c-port#> pairs AdminSVIDWants is derived from this table. The table size is AdminChnCap. Entries with SCID = 0 are not requested. Entries with VID non-zero are active channels.
- Subclause 12.1.1 add after g)
  - The ability to create and delete the functional elements of CDCP and to control their operation.
- Subclause 12.2 add after j)
  - Additional objects to support CDCP protocols (12.23 and 42)
  - Additional objects to support EVB functions and the ECP and VDP protocols (12.24 and 41)

802.1Qbg VDP Machine objects

- Subclause 12.23 ? Need a number assigned
- VDP objects: One set per station
  - Station Objects (one set) New annex for station MIB? Let DMTF do station MIB? Bridge MIB in vSwitch?
    - Command response timeout
    - Keep Alive interval
    - Keep Alive response timeout
  - Bridge Objects (one set per station)
    - Resource timeout
    - Keep Alive command timeout
- ECP objects: One set per ECP instance (per S-channel)
  - ackTimer
  - TxFrame Count – Successful – Read Only - 64 bits
  - TxRetry Count – Total – Read Only – 64 bits
  - TxFailures – Total – Read Only – 64 bits
  - RxFrame Count – Successful – Read Only – 64 bits
- CDCP objects: once set per CDCP instance
  - CID table
    - S-channel state
    - S-channel VID
    - Reserve Pool of VIDs

VSI managed object

- Table of all VSIs keyed by VSI-ID (one table for station and for Bridge)
  - VSI-ID (may have multiple instance of VSI-ID active in the DC for motion)
  - Current VDP state
  - S-Channel / Port association
  - Operating Command

BACKUP SLIDES