Port Extender Architecture

V1
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Port Extender “Baggy Pants” Model

- Controlling Bridge: Add MCID resolution and MC steering to MAC Relay
- Controlling Bridge: Add CB M-TAG layer
- Port Extender: Add PE M-TAG layer
Controlling Bridge MC & VLAN Relay

- **A**: Unicast frame passes through just like a standard VLAN Relay
- **A**: For each multicast frame resolves “all true” egress ports and an MCID for each egress port
  - “True” egress port is the ingress port for the entry PE group (reflective relay)
  - “True” egress port is the control port for any other PE group
  - “True” egress port is the port list for all ports not attached to a PE group (except ingress port)
- **B**: MCID is passed in the connection_identifier parameter of the EISS and ISS to CB M-TAG shim
- **C**: can have both C-Tagged and M-Tagged, M-TAG is outside if present
- **D**: S-Comp of controlling bridge adds S-TAG based on the ingress port 1-1 with C-comp
- **D**: always S-Tagged outside, optionally M-TAG, optionally C-TAG
Port Extender M-TAG Shim and MCID Relay

- A: Unmodified EISS for S-VLAN
- B: M-TAG layer divides processing of M-Tagged from S-Tagged frames
  - If no M-TAG present then M-TAG layer hands to S-VLAN relay
  - If M-TAG is present then M-TAG layer hands to MCID relay with MCID in EISS connection_identifier parameter and S-VID in EISS vlan_identifier parameter
- C: MCID relay replicates to egress Port Extender ports based on MCID and hands MCID and vid in connection identifier and vid EISS parameters
- D: M-TAG layer deletes the frame if this is an extended port of the vlan_identifier parameter
- D: M-TAG layer generates M-TAG if needed (based on port configuration) and hands to EISS layer
New M-TAG Format

- M-TAG does not need any echo cancellation since we have the outside S-TAG
BACKUP SLIDES
**EVB Data and Control Entities - Station**

- **MAC**: Media Access Control 802.2001 subclause 6.2.3 and 802.1Q Rev 2010 subclause 6.1
- **ISS**: Internal Sublayer Service 802.1Q Rev 2010 subclause 6.6
- **LLC**: Link Layer Control Protocol see 802.2001 subclause 6.2.2 and 802.1Q Rev 2010 subclause 6.7 (note: see 802.1AB 2009 subclause 6.7)
- **LLC-SS**: Link Layer Control Protocol Sublayer Service 802.1AB-Rev 2009 subclause 6.7
- **LLDP**: Link Layer Discovery Protocol 802.1AB Rev 2009
- **CDCP**: S-channel Discovery and Configuration Protocol is an LLDP based S-channel discovery protocol
- **EDCP**: Edge Virtual Bridge Discovery and Configuration Protocol is an LLDP based EVB discovery protocol
- **ECP**: Edge Control Protocol new link layer protocol
- **ECP-SS**: Edge Control Protocol Sublayer Service new service interface for ECP to ULP
- **S-Comp**: Draft 802.1Qbc Port mapping S-VLAN component subclause 5.10 & S-VLAN component 802.1Q Rev 2010 subclause 5.6
- **VEB/VEPA**: CVLAN component 802.1Q Rev 2010 subclause 5.5
Cascade of Port-mapping S-VLAN Comps

- LLDP from S-B hop-by-hop through cascade.