Remote Replication issue of EVB using E-channel
Multicast Remote Replication problem

- Source filtering scheme works well when each end station occupies one E-channel.

- When EVB is used, multiple VMs share one E-channel, one VM of the E-channel may NOT be able to receive multicast data from another VM which uses the same E-channel.
One End Station per E-channel

- Each End Station consumes one E-channel
- Support Remote Replication when multicast

Replication Group
- Ports in VLAN-aware Bridge Component connected to one Port Extender (PE1)

Suppose:
- End Station 2, 3, 4 construct a multicast group
- End Station 4 sends frames to other members of this group
Multicast of One End Station per E-channel

1. Data is forwarded to VLAN-aware bridge component by PEs.

2. VLAN-aware Bridge Component determines egress ports and E-CID, and forwards the data to egress ports with E-CID. Ingress port 3 and egress ports 3,4,5 are in the same Replication Group, so Ingress E-CID is also sent to PE1.

3. PE1 generates E-tag according to E-CID, Ingress E-CID sent from VLAN-aware Bridge Component.

4. PEs forward frames according to the E-tag.

5. Extended ports compare Ingress_E-CID and PCID of themselves. If match, filter the frame from this port.
Multiple end stations in one E-channel

There are situations that one E-channel carries data from multiple End Stations

- VM1,2,3 share one E-channel allocated to PE3 port2
- Port3 on VLAN-aware Bridge Component corresponding to the E-channel should enable Reflective Relay function. It supports VM1,2,3 communicate to each other
Multicast of Multiple end stations in one E-channel

- End Station 2, End Station 3, and VM1, VM3 in End Station 4 construct a multicast group.

- When VM1 sends multicast frames to other group members, End station 2 and End station 3 will receive the frames. How about VM3?
Multicast of Multiple end stations in one E-channel (Cont.)

**Step 1:** ……

**Step 2:** Ingress port (P3) and egress ports (P3, P4, P5) are in the same Replication Group. C-VLAN Component passes Ingress E-CID to PE1.

**Step 3:** PE1 puts ingress E-CID in E-tag Ingress_E-CID field

**Step 4:** ……

**Step 5:** PE3 finds out Ingress_E-CID value is the same with P2’s PCID. The multicast frames are filtered on P2

VM3 can’t receive multicast frames from VM1!
Propose: C-VLAN Component does not pass Ingress_E-CID to internal PE if:

- Ingress and egress ports are in the same Replication Group, and
- One of the egress ports is the ingress port, and it has enabled Reflective Relay function.

Ingress E-CID is not passed to PE1, so Ingress_E-CID field in E-tag is 0. P2 of PE3 will not filtering this frame. VEPA will filter data to VM1.

VM3 will receive multicast frames from VM1!
Thank you