



## MRP Application for Class-III Access Protection

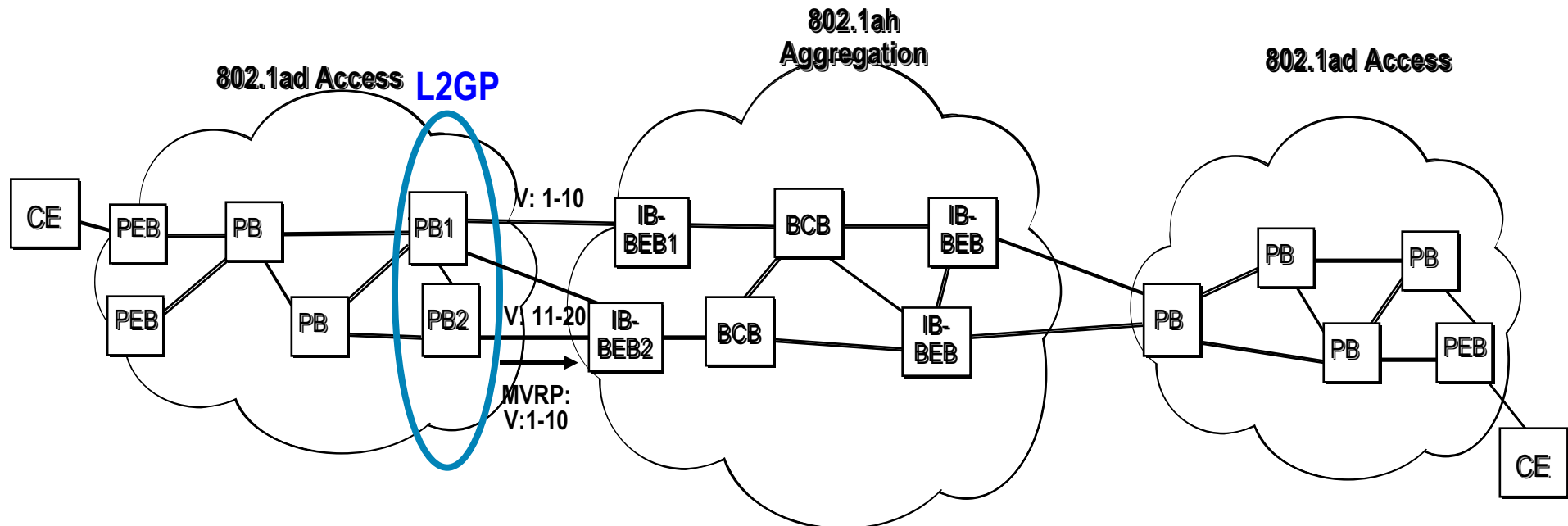


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*IEEE Meeting*

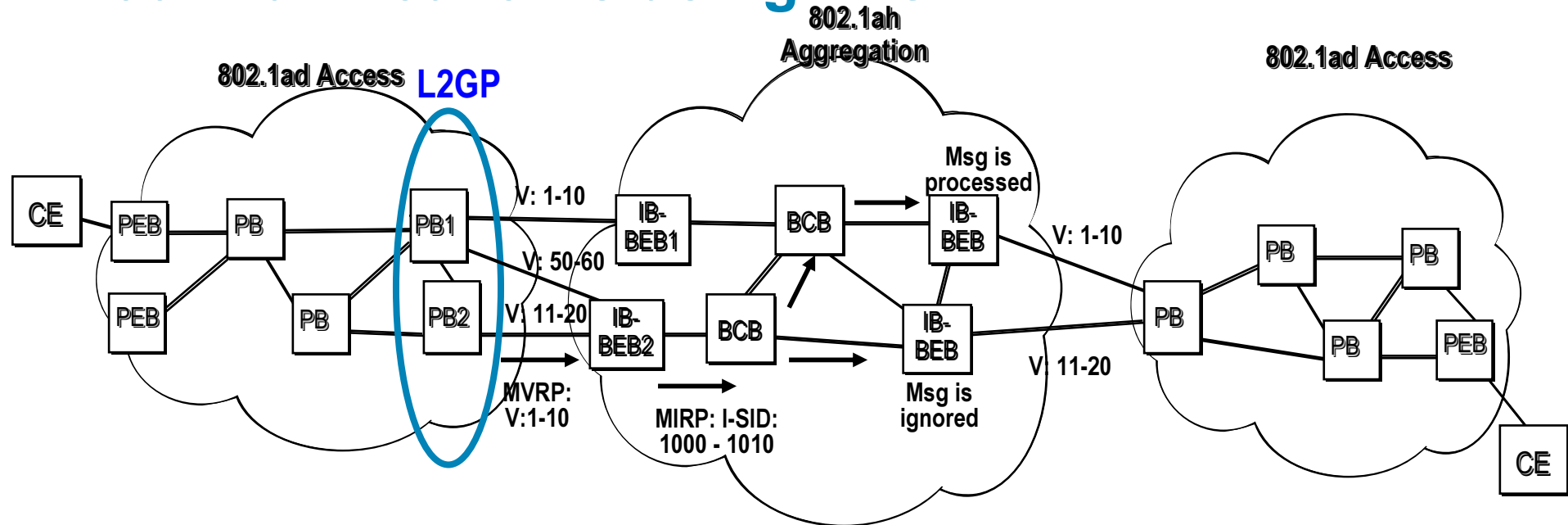
*November 13, 2007*

## Issue with Clause 25.9.2



- Customer 802.1ad network runs L2GP and PB2 notifies IB-BEB2 of newly activated S-VLANs via MVRP message
- But it doesn't specify what IB-BEB2 does with this info
- IB-BEB-2 must notify other remote IB-BEBs of this change or else traffic will get black holed !!
- The best way to notify the remote IB-BEBs is via a message that contains the effected I-SIDs (and not S-VIDs)
- It also doesn't specify how class-III protection works for I-tagged service interface

# Scenario-1: Redundancy between 802.1ad and 802.1ah networks using L2GP



1. PB devices run L2GP which is based on MSTP
2. Upon a failure, L2GP protocol on PB1, reflects the uplink port status of PB1 onto MSTP and PB2 becomes active for V: 1-10
3. PB2 uses MVRP to notify IB-BEB2 of newly activated VLANs
4. IB-BEB2 notifies other remote IB-BEB devices using MRP-based message to flush their MACs associated w/ V: 1-10

## Proposed Text for Clause 25.9.2

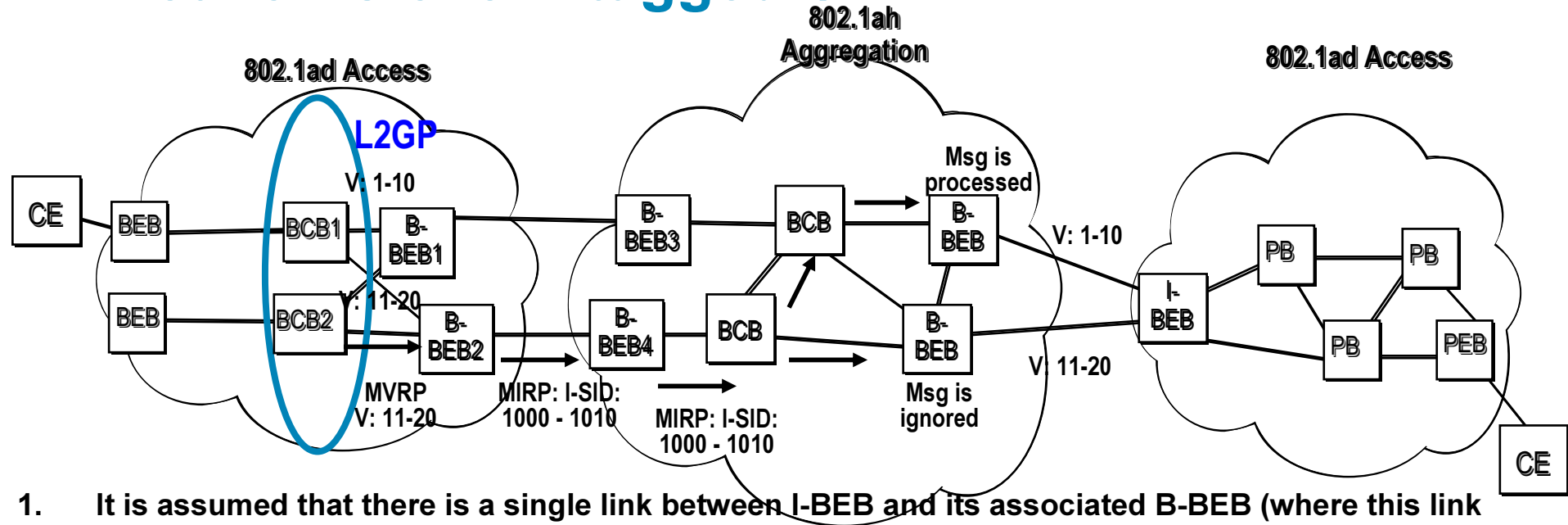
- When providing a class III protected S-tagged interface, multiple CNPs, each on a different BEB, are used to create a single S-tagged interface. Each LAN of the S-tagged interface executes PHY management, or CFM, or both at the port level to detect failures over the interface LANs. Information from PHY management and/or CFM is used by the customer to determine which LANs of the S-tagged interface are operating and which are inactive. No BPDUs from the customer network or from the Provider network are delivered over the interface LANs which form the protected S-tagged interface. The L2GP (13.37) protocol is run on the customer network which determines which S-VLANs are active on which LANs of the class III interface. Upon an active link failure between customer node and its corresponding BEB or upon the customer node failure, the customer network switches to one (or more) of the backup links and informs the PBBN which S-VLANs are active on which links using MVRP (11.2) on the access LANs. The BEB(s) upon receiving the MVRP message(s) from the customer network generate the corresponding MRP-based message(s) for the effected I-SIDs and send these messages over the associated B-VLANs. The far-end BEBs, upon receiving these messages, will flush their C-MAC entries in their filtering database corresponding to the effected I-SIDs.



## Proposed Text for Clause 25.9.2 – Cont.

- When providing a class III protected I-tagged interface, multiple Customer Backbone Ports, each on a different B-BEB, are used to create the single I-tagged interface. In this scenario, each B-BEB is connected via a single link to the customer I-BEB where the link can be class II protected. The customer I-BEB is in turn connected via multiple CNPs to the customer network. The L2GP (13.37) protocol is run on the customer network (excluding I-BEBs) which determines which S-VLANs are active on which LANs connected to CNPs of I-BEBs. In the case of an I-tagged interface, no BPDUs from the customer network or from the Provider network are delivered over the interface LANs which form the I-tagged interface. Furthermore, no customer BPDUs are exchanged over the S-tagged interface connecting the customer I-BEBs with the customer network. Each LAN of S-tagged interface executes PHY management or CFM at the port level to detect failures over the interface LANs between the customer I-BEBs and the customer network. When a failure is detected, the customer network informs the customer I-BEBs which S-VLANs are active on which links using MVRP (11.2). The customer I-BEBs in turn notify the provider B-BEBs using MRP-based messages corresponding to the effected I-SIDs. The provider B-BEBs relay this message to the other BEBs in the PBBN over the associated B-VLANs. The far-end BEBs, upon receiving these messages, will flush their C-MAC entries in their filtering database corresponding to the effected I-SIDs. Each LAN of the I-tagged interface also executes PHY management or CFM at the port level to detect failures over the I-tagged interface. In case of a complete I-tagged interface failure between the customer I-BEB and the provider B-BEB, the I-BEB uses this info to de-activate all its CNP ports toward the customer network.

# Scenario-3: Redundancy between two 802.1ah Networks over I-tagged I/F



1. It is assumed that there is a single link between I-BEB and its associated B-BEB (where this link can be protected by class-II protection)
2. BCB devices run L2GP which is based on MSTP
3. Upon an S-tagged I/F failure, L2GP protocol on BCB1 reflects the uplink port status of BCB1 onto MSTP and BCB2 becomes active for V: 1-10
4. BCB2 uses MVRP to notify B-BEB2 of newly activated VLANs
5. B-BEB2 in turn generates a MRP-based message listing the effected I-SIDs and send this message to B-BEB4
6. B-BEB4 performs the proper translation of I-SIDs if needed and then relays this message to far-end BEBs over the corresponding B-VLANs
7. The far-end BEBs upon receiving MRP-based message flush their C-MAC entries associated with the effected I-SIDs

