IEEE 802.1ah: Distribution of Encapsulation Functions

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802.1ah Encap

802.1ah encapsulation function can be decomposed into three sub-functions:

1. I-tag encap.
2. mac-in-mac
3. B-tag encap

I-tag encap

MAC-in-MAC

B-tag encap
Encap. Functions

I-tag Encap Function

MAC-in-MAC Function

B-tag Encap Function
PBB: Model A

B - Comp

I - Comp

Relay

MIF

MIF

B-encap

MAC

MCF

Virtual MAC

MIF

I-tag encap

MAC-in-MAC

MCF

MCF

MAC
PBB: Model B

B - Comp

I - Comp

Relay

MIF

MIF

B-encap

MAC-in-MAC

MCF

MCF

Virtual MAC

MCF

MCF

MAC

MAC

I-tag encap
Applications: PBBN & PBN connectivities

- PBBN - 1
- PBBN - 2

NNI - Internal

NNI - External
Application A: PBBN to PBBN connection

Do we need I-tag Translation table?
Application B: PBBN to PBN Connection

PBB

I - Comp

PB

NNI – Internal
(S-tag Srv I/F &
Transparent Srv I/F)

B - Comp

Virtual MAC

MAC-in-MAC

B-encap

I-tag encap

Relay

MCF

MIF

MCF

MIF

MCF

MAC

S-VLAN bridge

Relay

MIF

MIF

MIF

MIF

MAC

MAC

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Application B: PBBN to PBN Connection - Continue

Distribution of MAC-in-MAC function between I-Comp and B-Comp doesn’t matter because of virtual MAC.

NNI – Internal
(S-tag Srv I/F & Transparent Srv I/F)
Application C: PBB to End-station connection
Application C: PBB to End-Station Connection

End-Stations:
1. DSLAMs
2. Servers
3. MPLS PEs
Application D: PBB to PBN Connection - Continue

End-station w/ Relay Func. (w/ I-comp.)

B - Comp

End-Stations:
1. DSLAMs
2. Servers
3. MPLS PEs