PBB/PBB-TE Layer Stack

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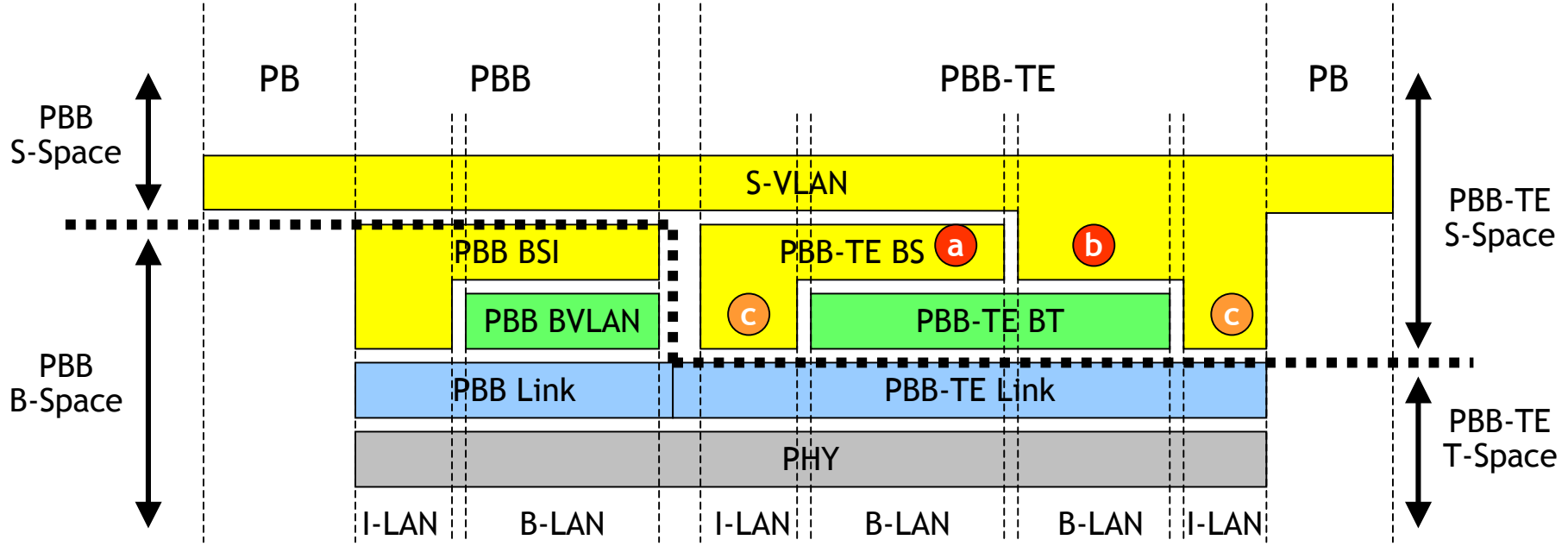
Introduction

PBB and PBB-TE coexist on

- provider backbone networks
- provider backbone LAN interfaces
- provider backbone networks network management
- I-Components
- B-Components
- BCB nodes

What will be the layer stack of such network and its interfaces

Layer Stack PBB and PBB-TE for “Alternative C2”



a c6.9 shim config’d with “Allow Only VLAN Tagged Frames” and VIP not a member of “untagged set”

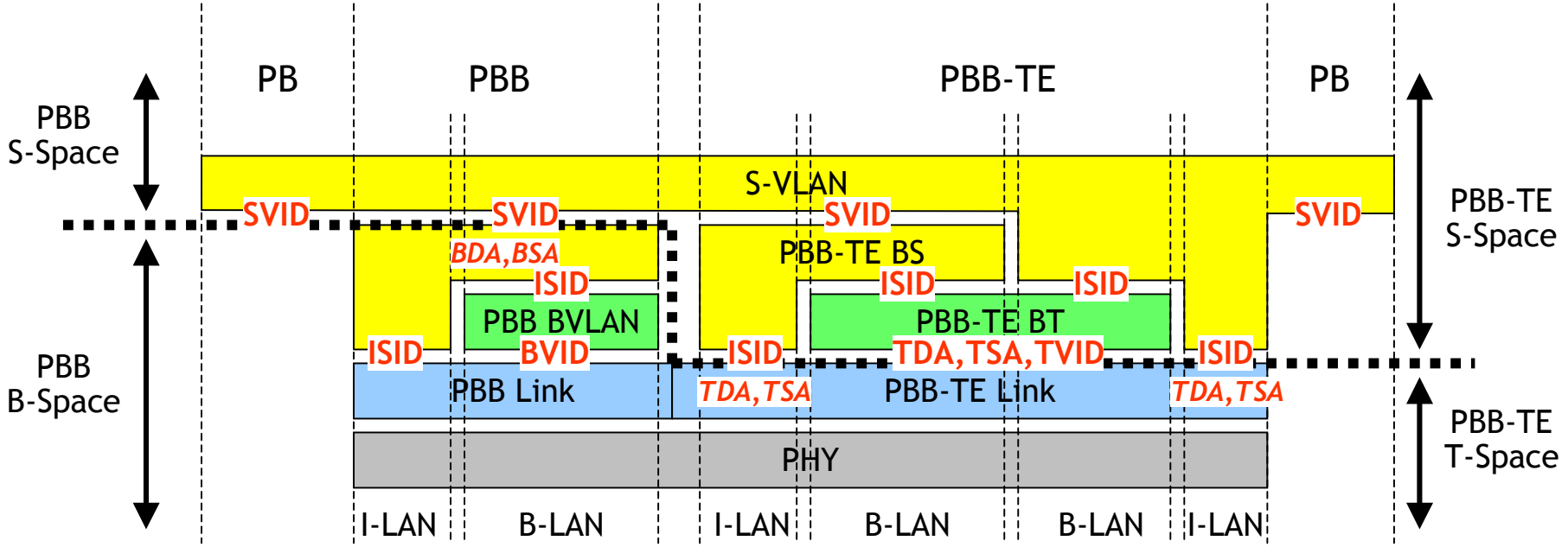
b c6.9 shim config’d with “Allow Only Untagged & Priority-Tagged Frames” and VIP member of “untagged set”

c future extension; separate I-BEB and B-BEB

PBB and PBB-TE have different S-Space domains !!

Layer Stack PBB and PBB-TE for “Alternative C2”

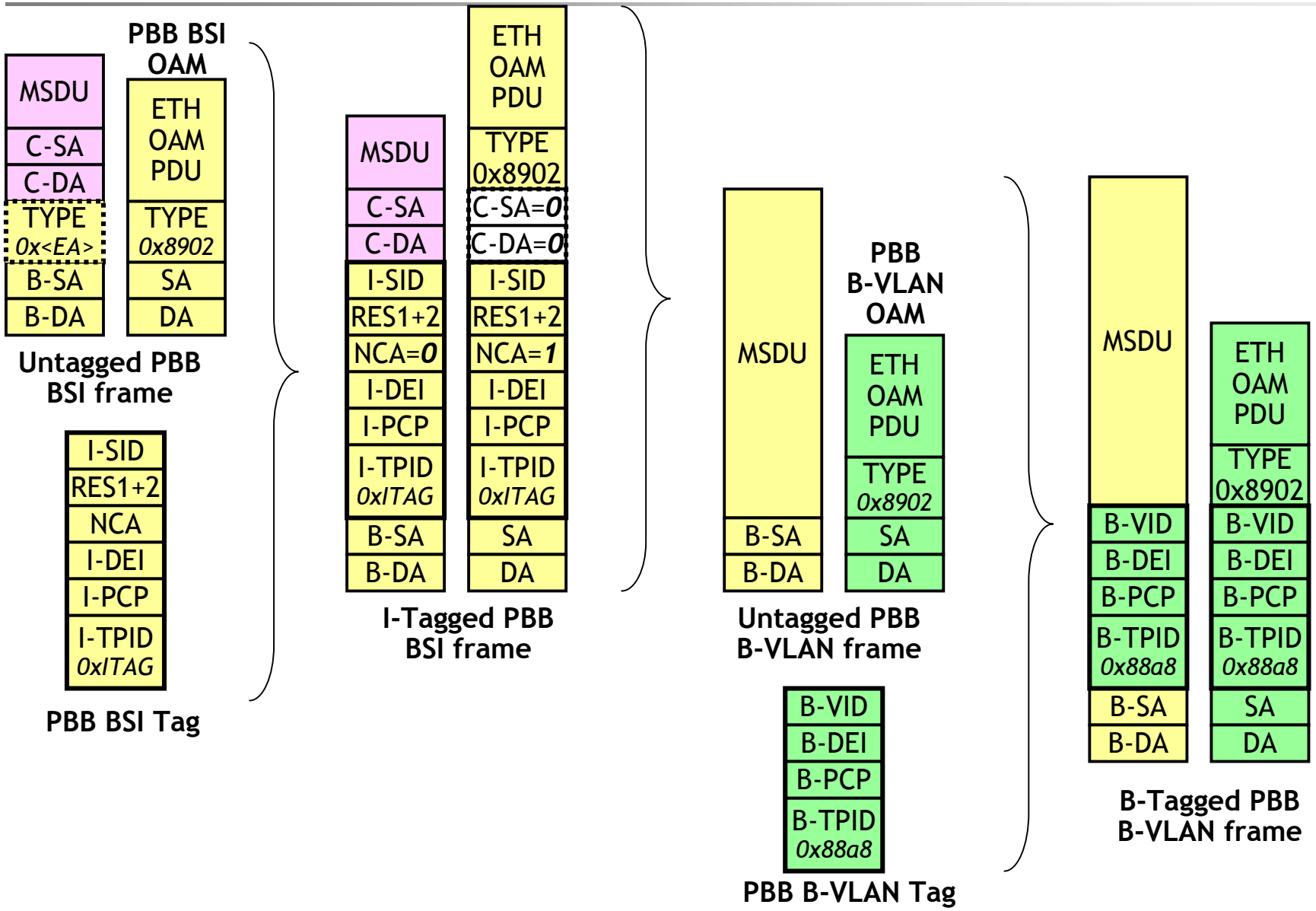
Labels



Labels			
	PB	**PBB**	**PBB-TE**
S-VLAN	S-VID	S-VID or PVID	S-VID or I-SID
PBB BSI	-	I-SID	-
PBB B-VLAN	-	B-VID	-
PBB-TE BS	-	-	I-SID
PBB-TE BT	-	-	<T-DA,T-SA,T-VID>

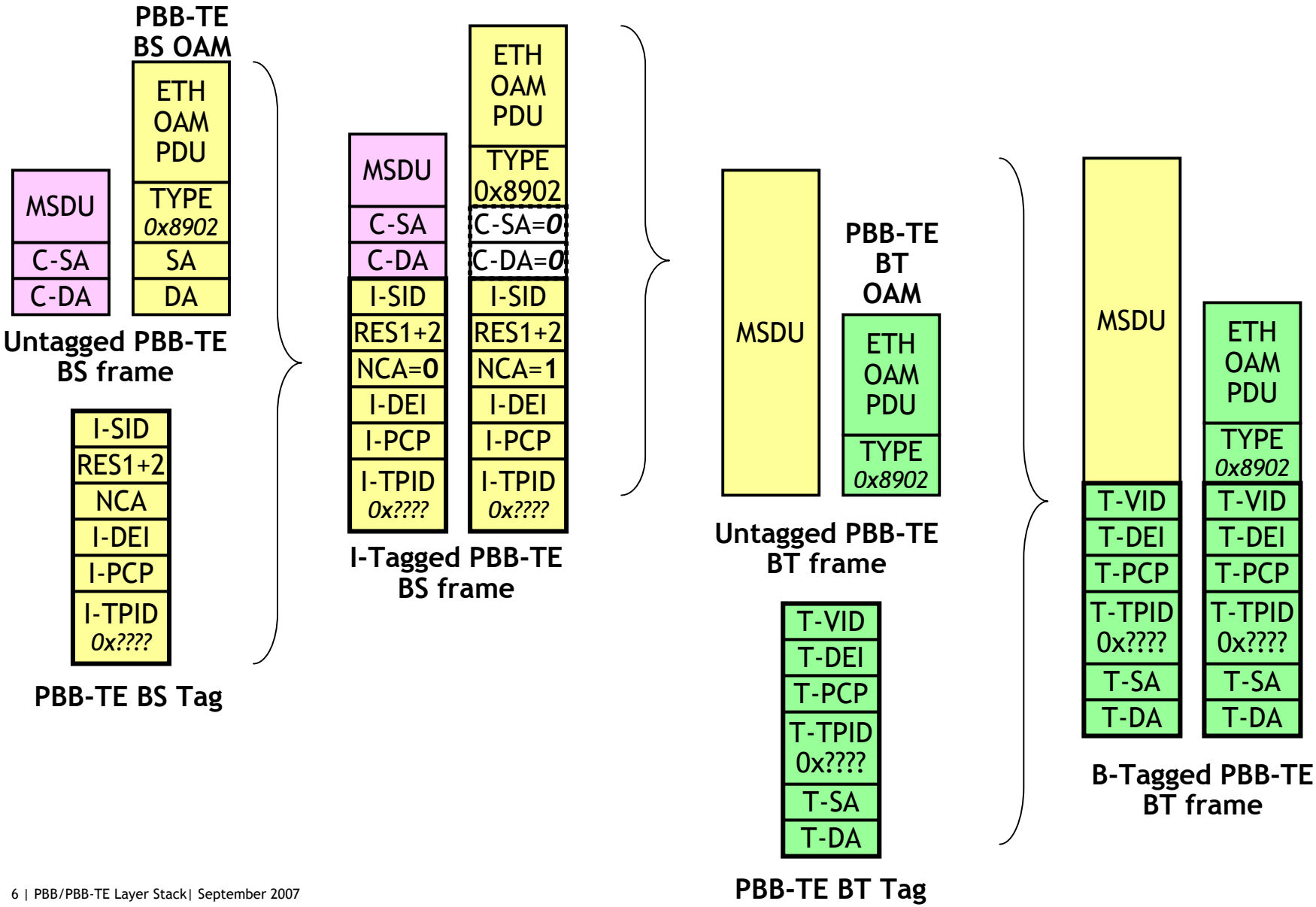
Layer Stack PBB and PBB-TE for “Alternative C2”

PBB Signals



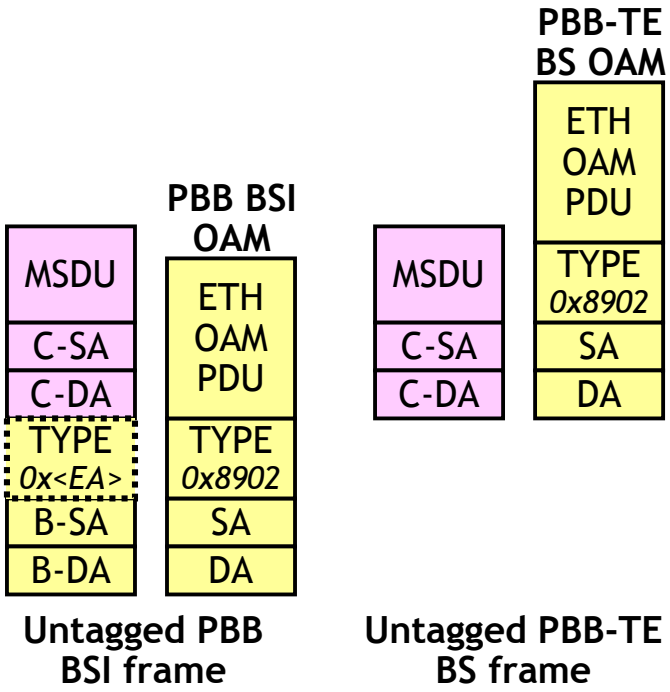
Layer Stack PBB and PBB-TE for “Alternative C2”

PBB-TE Signals



Layer Stack PBB and PBB-TE for “Alternative C2”

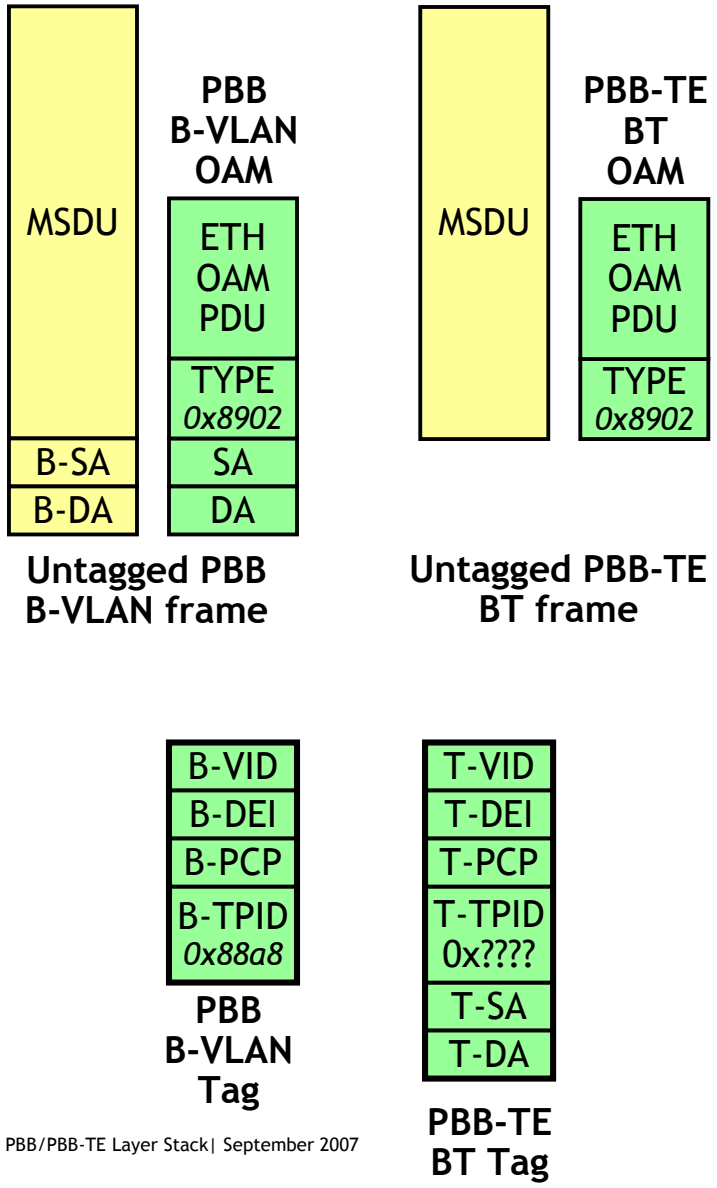
PBB and PBB-TE Signal comparison (I)



- Untagged PBB BSI frame includes B-DA, B-SA and TYPE fields
- Untagged PBB-TE BS frame does not include B-DA, B-SA and TYPE fields
- PBB MAC-in-MAC (PBB-MiM) process learns B-MAC⇔C-MAC relation
- B-DA is a function of C-DA
- PBB configures SVID⇔ISID relation
- PBB-TE configures SVID⇔ISID relation

Layer Stack PBB and PBB-TE for “Alternative C2”

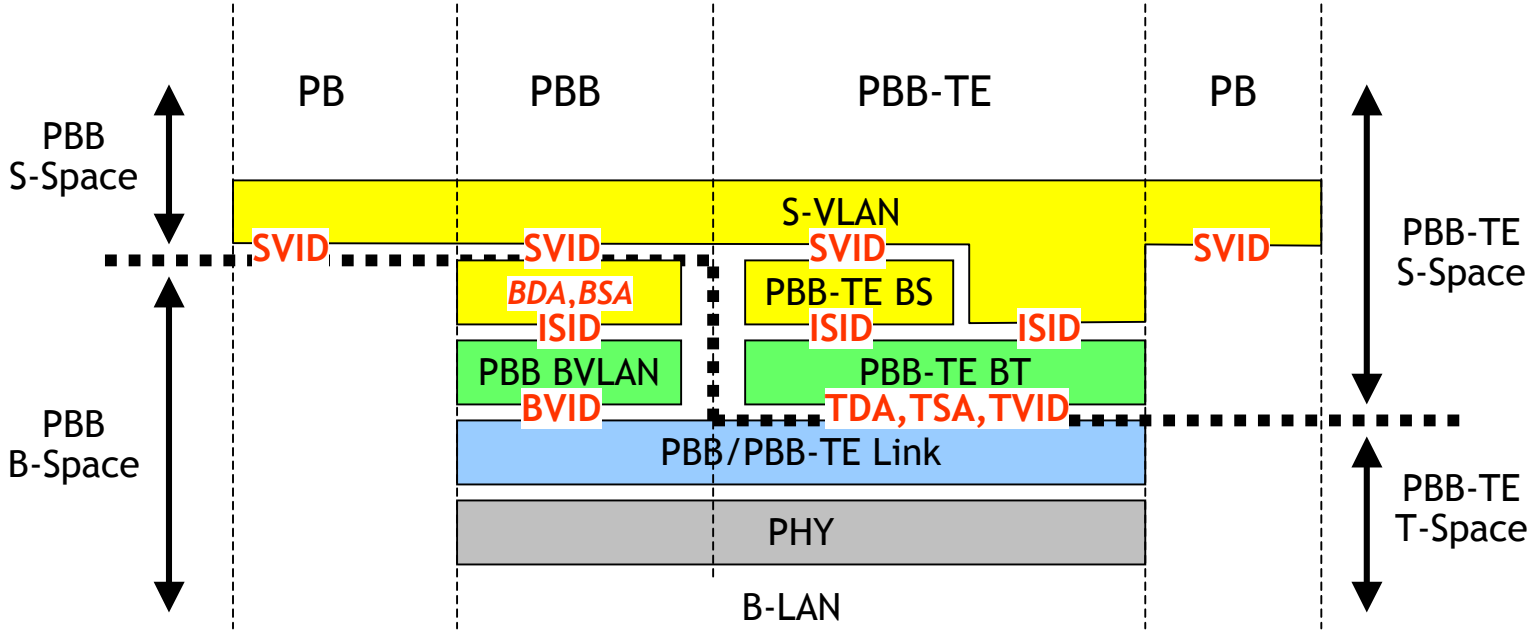
PBB and PBB-TE Signal comparison (II)



- Untagged PBB B-VLAN frame includes B-DA and B-SA fields
- Untagged PBB-TE BT frame does not include B-DA and B-SA fields
- PBB-TE BT Tag includes T-DA and T-SA fields
- PBB-TE MAC-in-MAC (PBB-TE-MiM) process does not learn B-MAC⇔C-MAC relation
- T-DA is not a function of C-DA
- PBB configures ISID⇔BVID relation
- PBB-TE configures ISID⇔TVID+TMAC relations

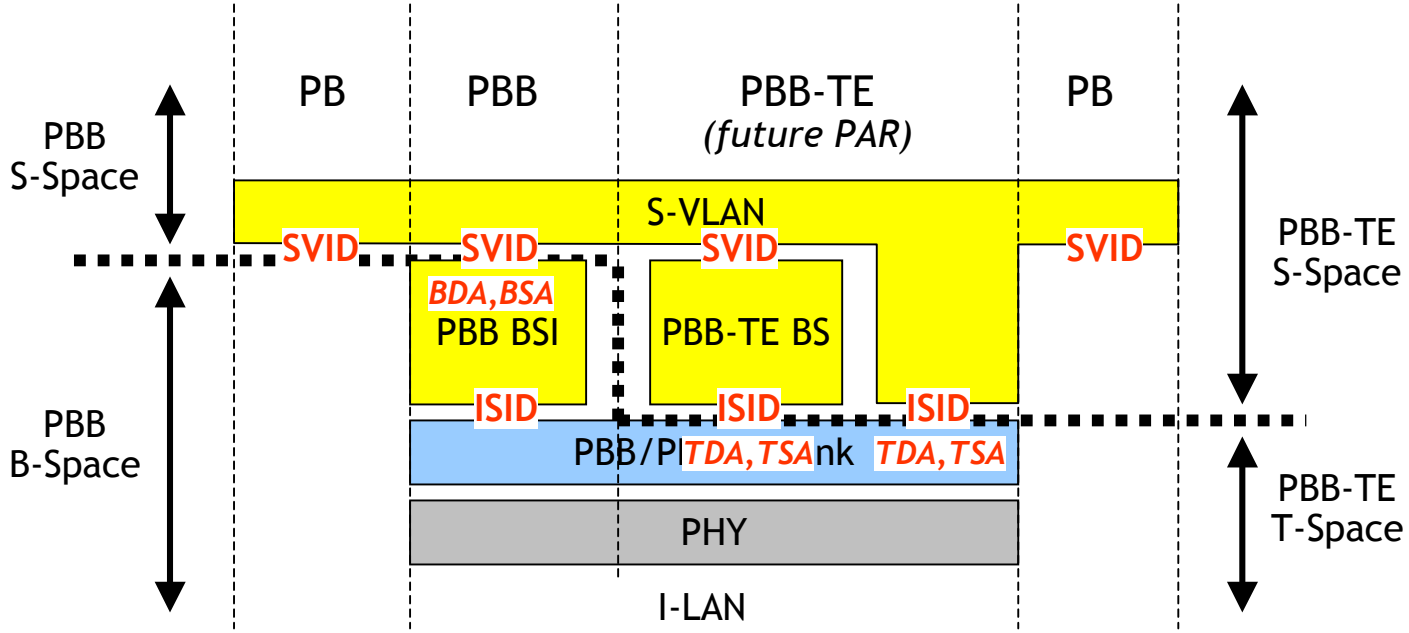
Layer Stack PBB and PBB-TE for “Alternative C2”

B-LAN



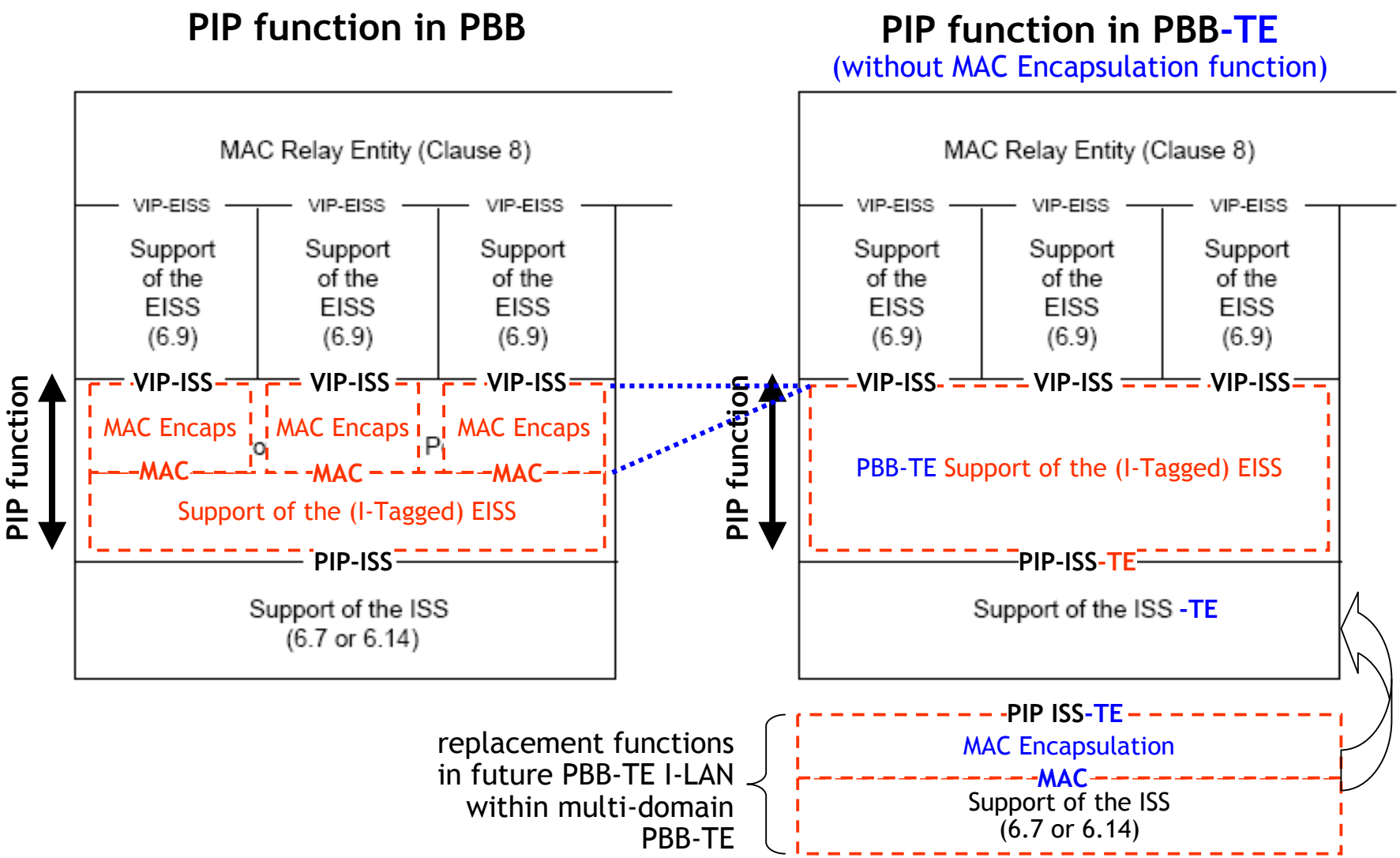
Layer Stack PBB and PBB-TE for “Alternative C2”

Future I-LAN



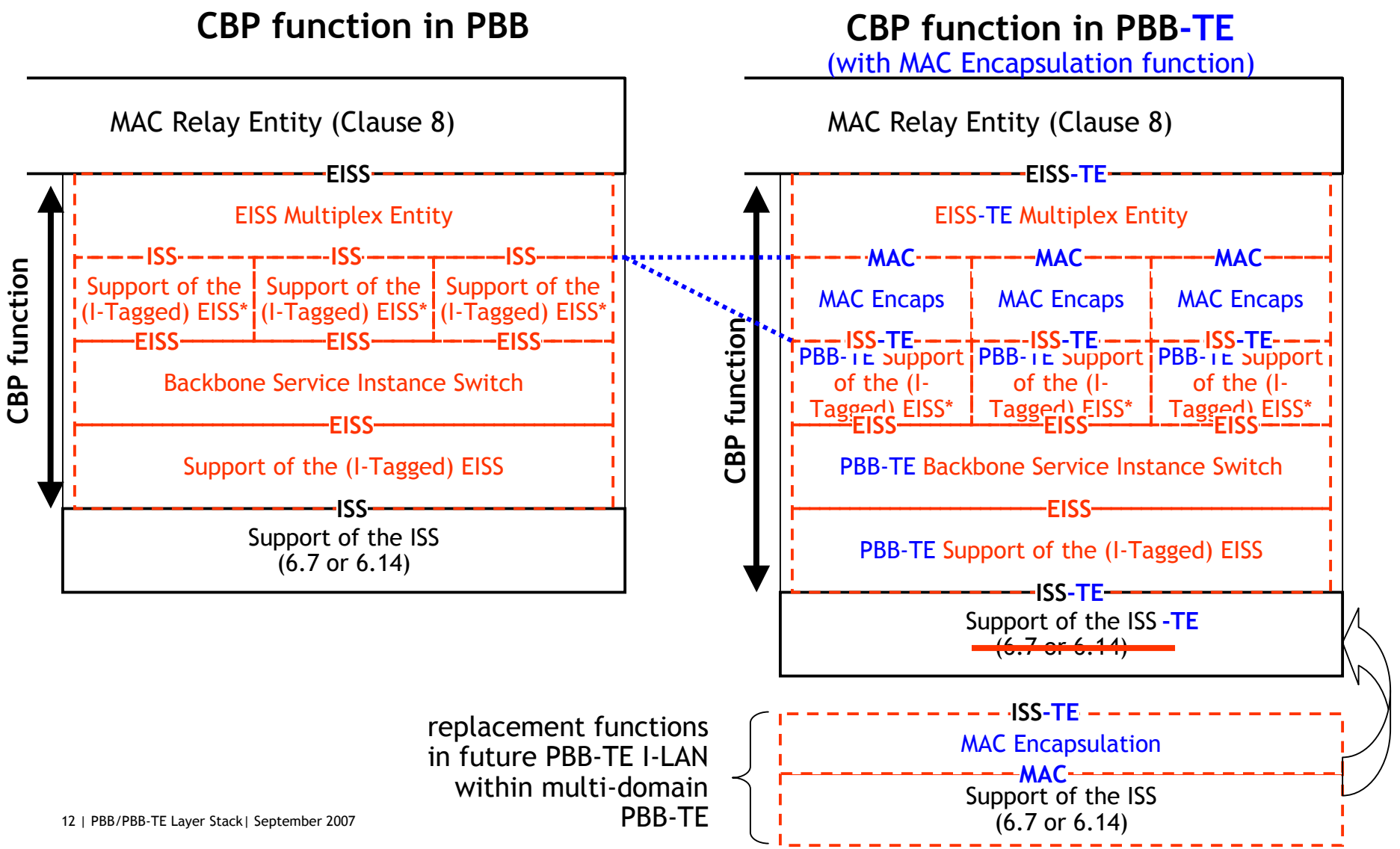
PIP function in PBB and PBB-TE for “Alternative C2”

Decomposed PIP view



CBP function in PBB and PBB-TE for “Alternative C2”

Decomposed CBP view

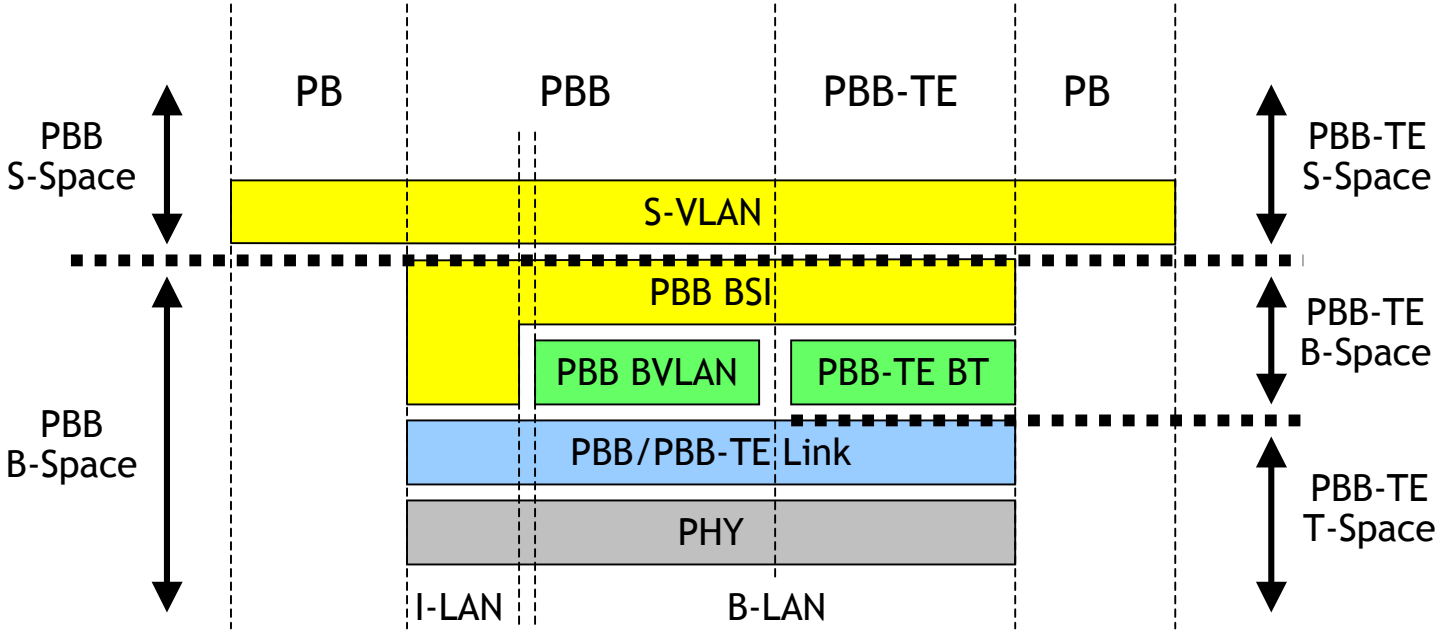


New Alternative X

PBB BSI over PBB-TE BT

Layer Stack PBB and PBB-TE for “Alternative X”

New alternative having “PBB BSI over PBB-TE BT”



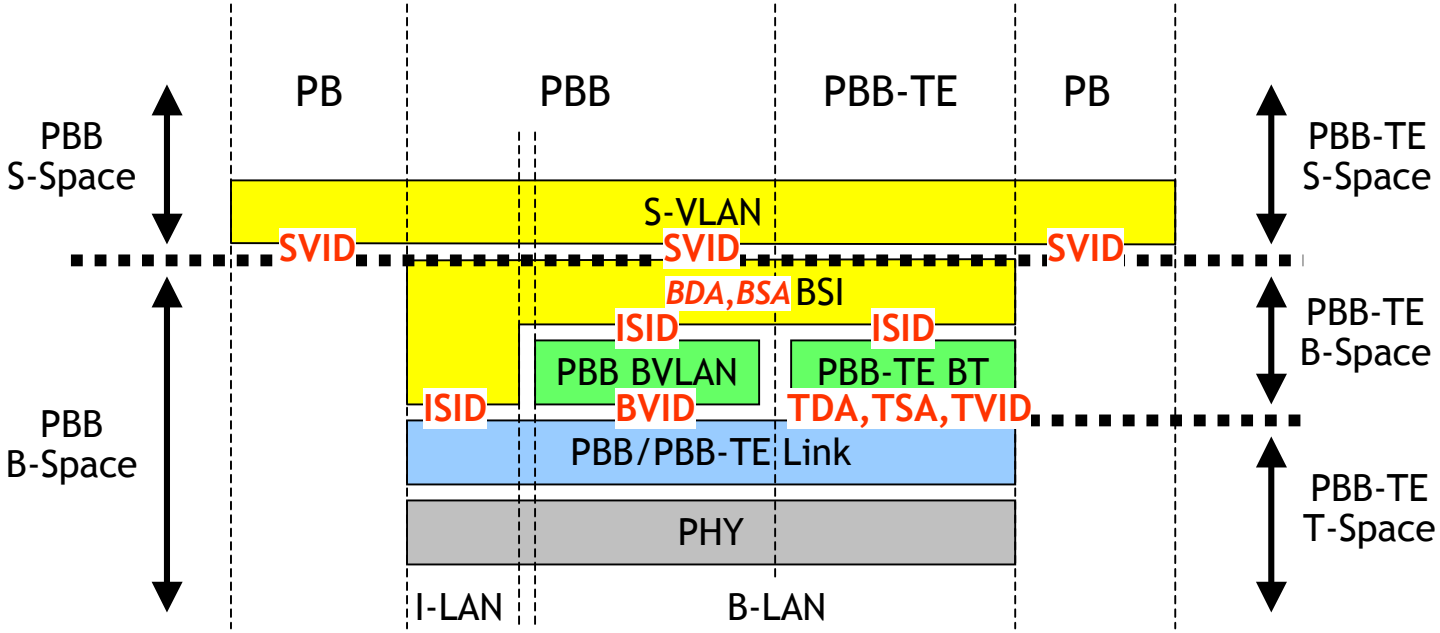
On Friday afternoon someone indicated that “Alternative C2” had not been the expected layer stack. The expected layer stack was one that contained the PBB BSI layer and the PBB-TE BT layer. This alternative layer stack is depicted.

The consequence is the presence of three MAC address Spaces: S-Space, B-Space and T-Space.

PBB and PBB-TE S-Space domains are the same !
PBB-TE has additional T-Space domain !

Layer Stack PBB and PBB-TE for “Alternative X”

Labels



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PBB B-VLAN	-	B-VID	-
PBB-TE BT	-	-	T-DA,T-SA,T-VID