ITU-T Compromised Solution on ATM – MPLS NETWORK INTERWORKING (Pseudo Wire Emulation)

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ITU-T ATM-MPLS Network Interworking

Provides network interworking between ATM cells and AAL5 frames with MPLS:

Cell mode Encapsulations, two modes:

- **One ATM connection to one Interworking LSP (one-to-one mode)**
- **n ATM connections to one Interworking LSP (n-to-one mode)**

Frame mode Encapsulations, two modes:

- **AAL5 PDU**
- **AAL5 SDU**

0	1	2	3
0 1 2 3 4 5 6 7	8 9 0 1 2 3 4 5	6 7 8 9 0 1 2 3	4 5 6 7 8 9 0 1
MPLS transport label= PSN Transport Header in PWE3			
Interworking label=Pseudo Wire Header in PWE3			
Common interworking indicators* ~ ATM Control Word in PWE3			
ATM-MPLS interworking specific header*			
Payload			

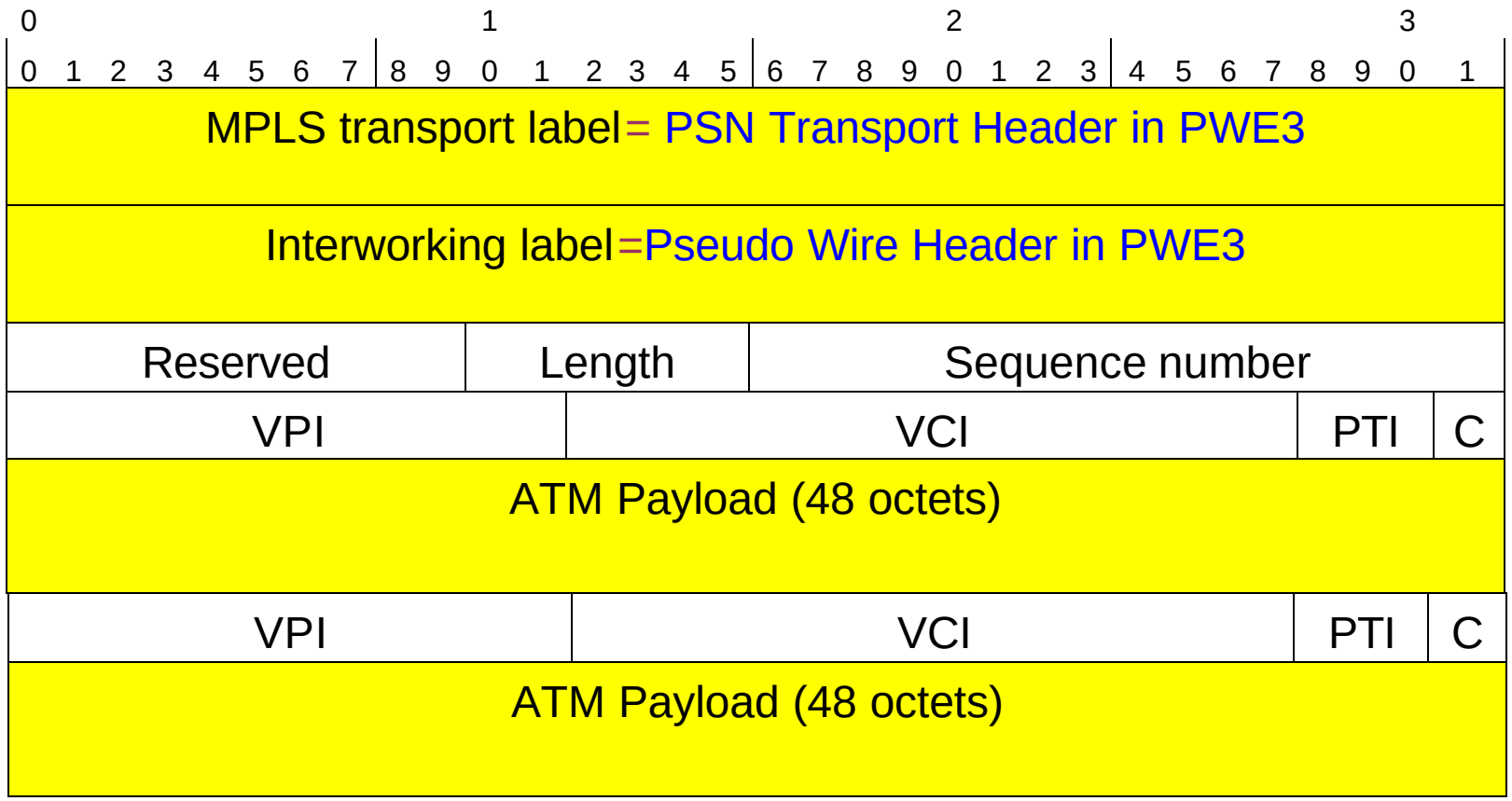
General Encapsulation Format

*** Not four octets for all cases**

Cell mode encapsulation (one-to-one mode)

0								1								2								3							
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
MPLS transport label= PSN Transport Header in PWE3																															
Interworking label=Pseudo Wire Header in PWE3																															
Length								Sequence Number																M	V	Res			PTI		C
ATM Payload (48 octets)																															

One ATM connection to one Interworking LSP (one-to-one mode) for a single cell (VCC)



n ATM connections to one Interworking LSP (n-to-one mode)

AAL5 PDU

0								1								2								3							
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
MPLS transport label= PSN Transport Header in PWE3																															
Interworking label=Pseudo Wire Header in PWE3																															
Length								Sequence Number																M	V	Res			FRG	E	C
16 bits VCI + Payload																															

AAL5 SDU

0								1								2								3							
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
MPLS transport label= PSN Transport Header in PWE3																															
Interworking label=Pseudo Wire Header in PWE3																															
Reserved				T	E	L	C	Res		Length						Sequence number															
Payload																															

Cell mode encapsulations are explained in ITU-T draft Recommendation Y.atmplsC

AAL5 mode encapsulations are explained in ITU-T draft Recommendation Y.atmplsF

These documents can be found at:

http://www.itu.int/itu-t/studygroups/com13/ip/sg13-ietf-ftp.html