

Local Area Networks

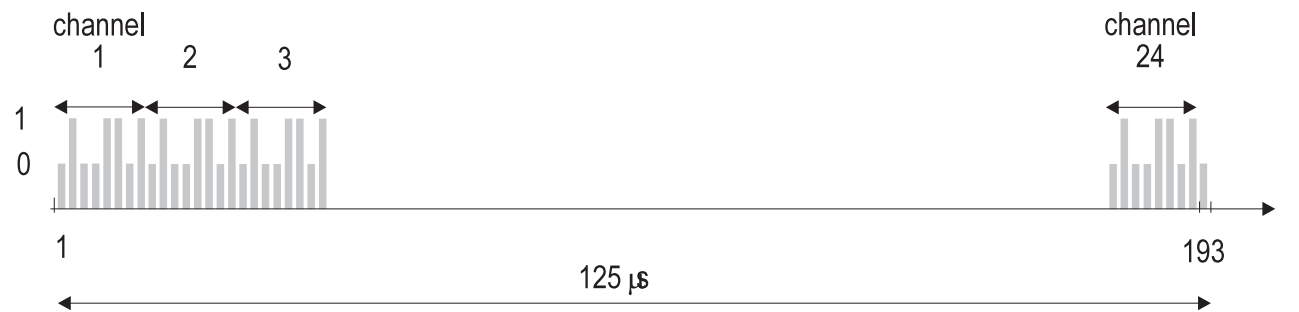
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PCM - Pulse Coded Multiplex

T1 Bell



24 channels (56 kbps data, 8kbps signalling)
1.544 Mbps (including synchronization)

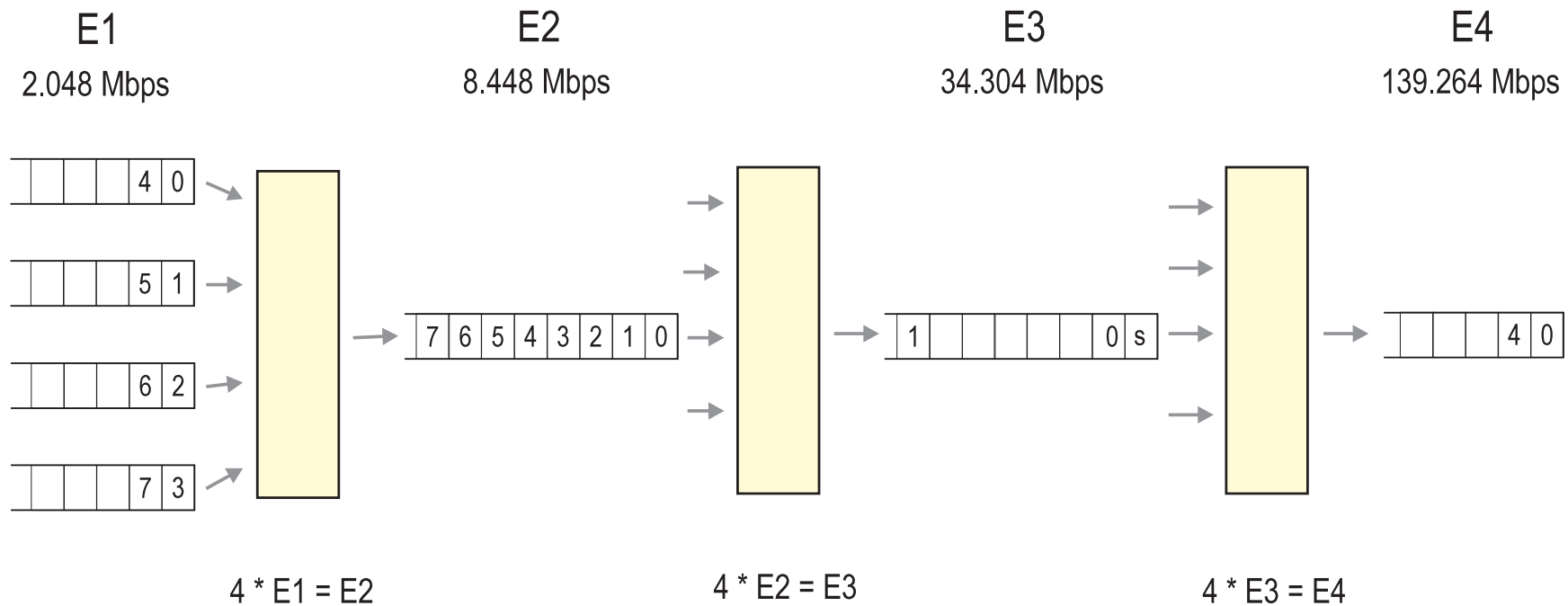
E1 CCITT

30 channels data (64 kbps)
2 channels signalling + control (64 kbps)
2.048 Mbps (including synchronization)

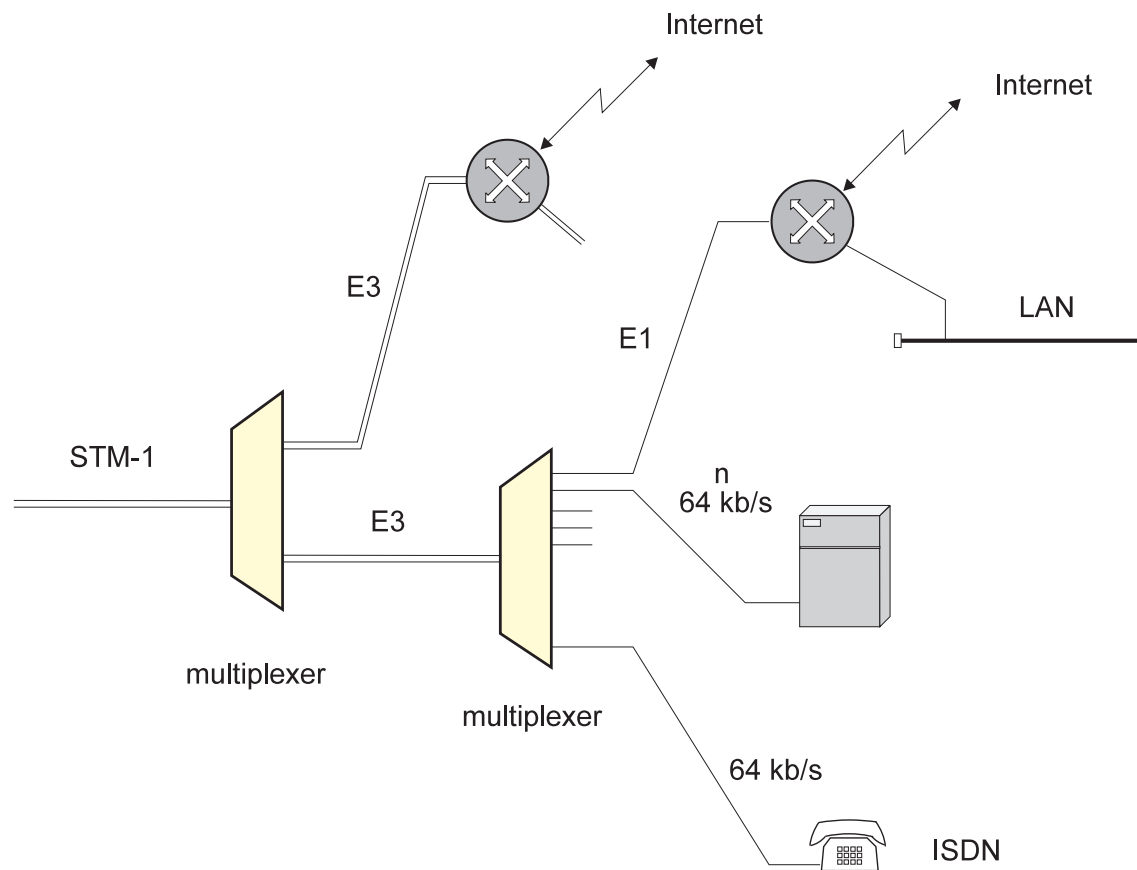


PCM - Multiplexing

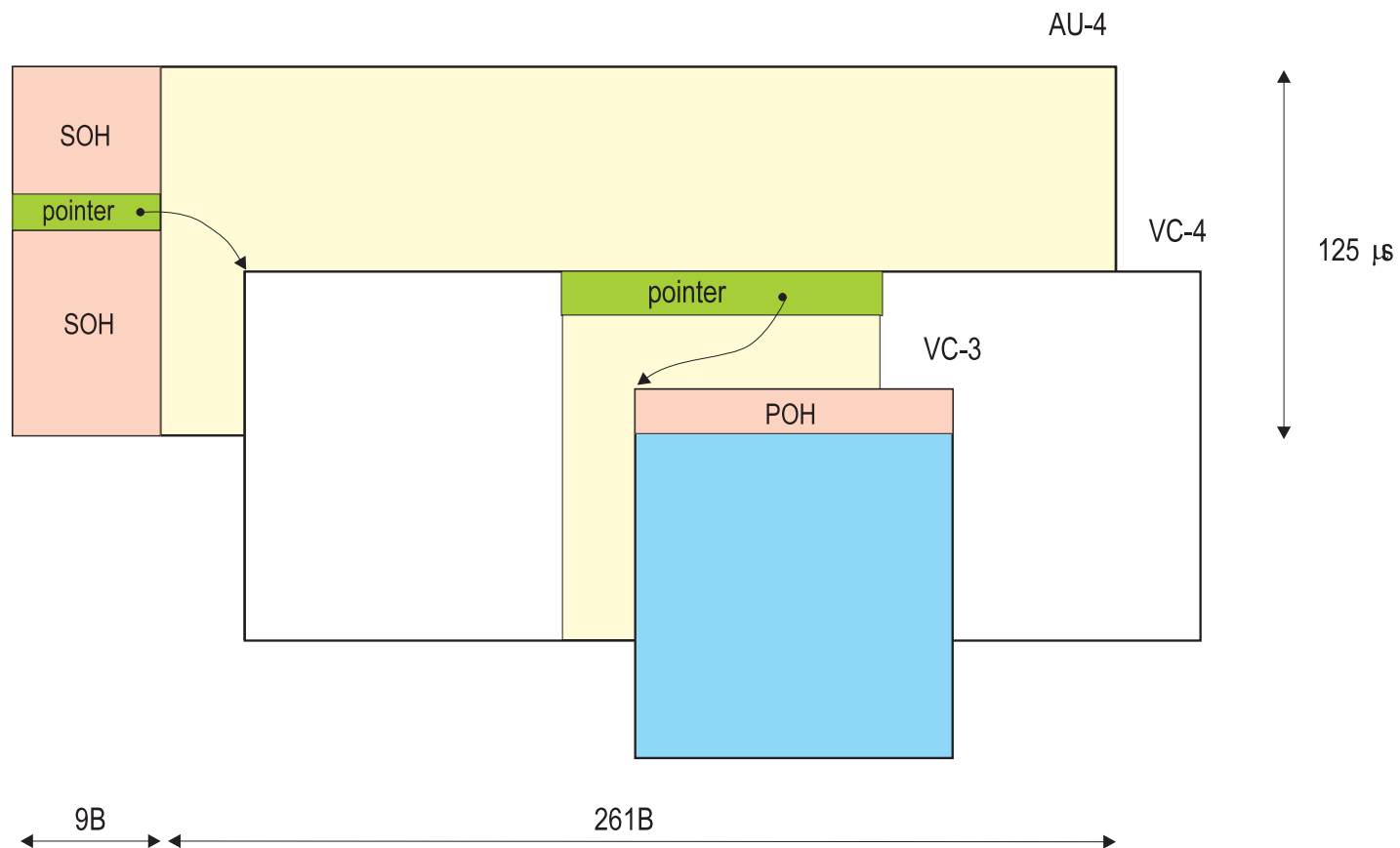
CCITT



PDH - Multiplexor network



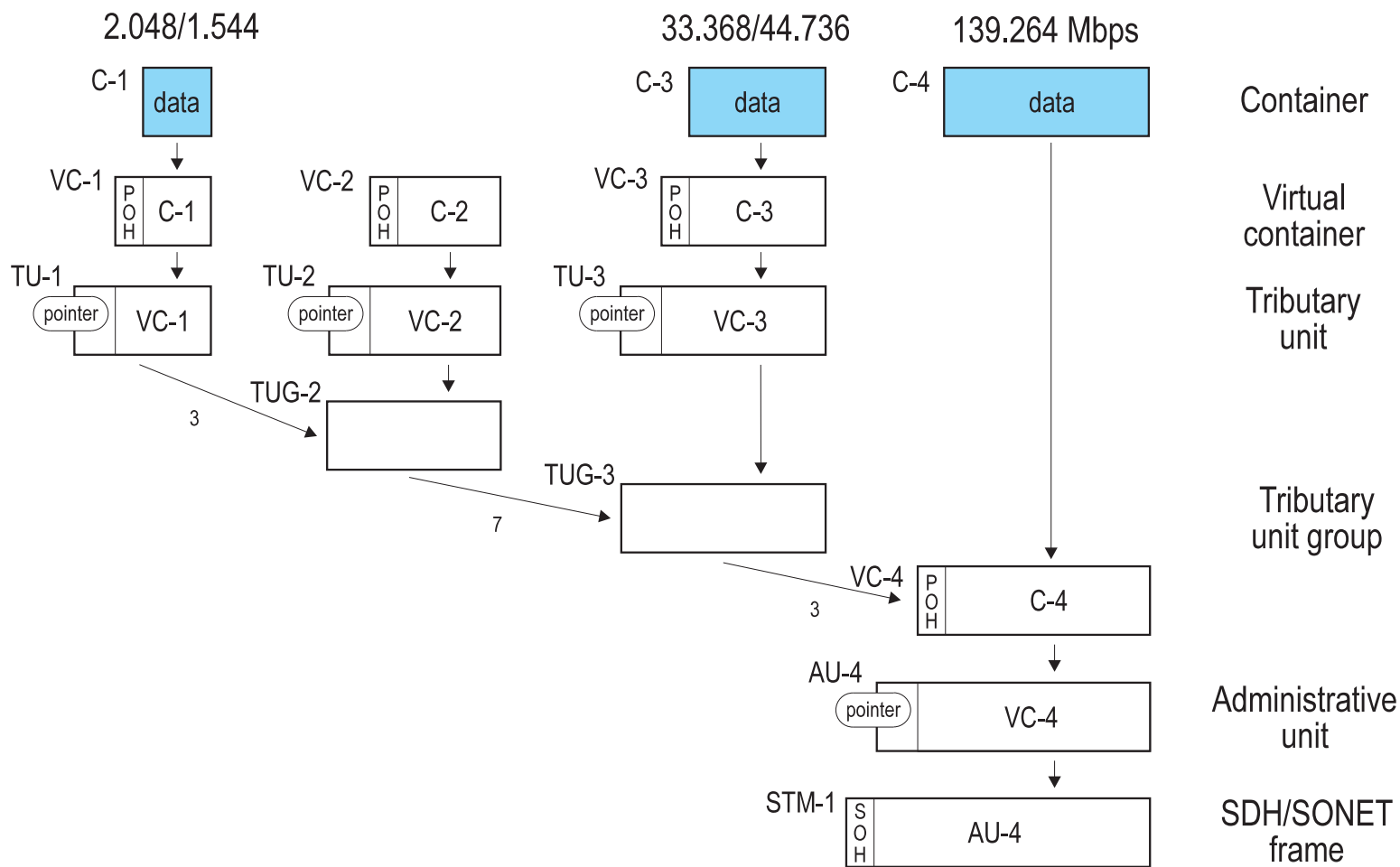
SDH - Synchronous Digital Hierarchy



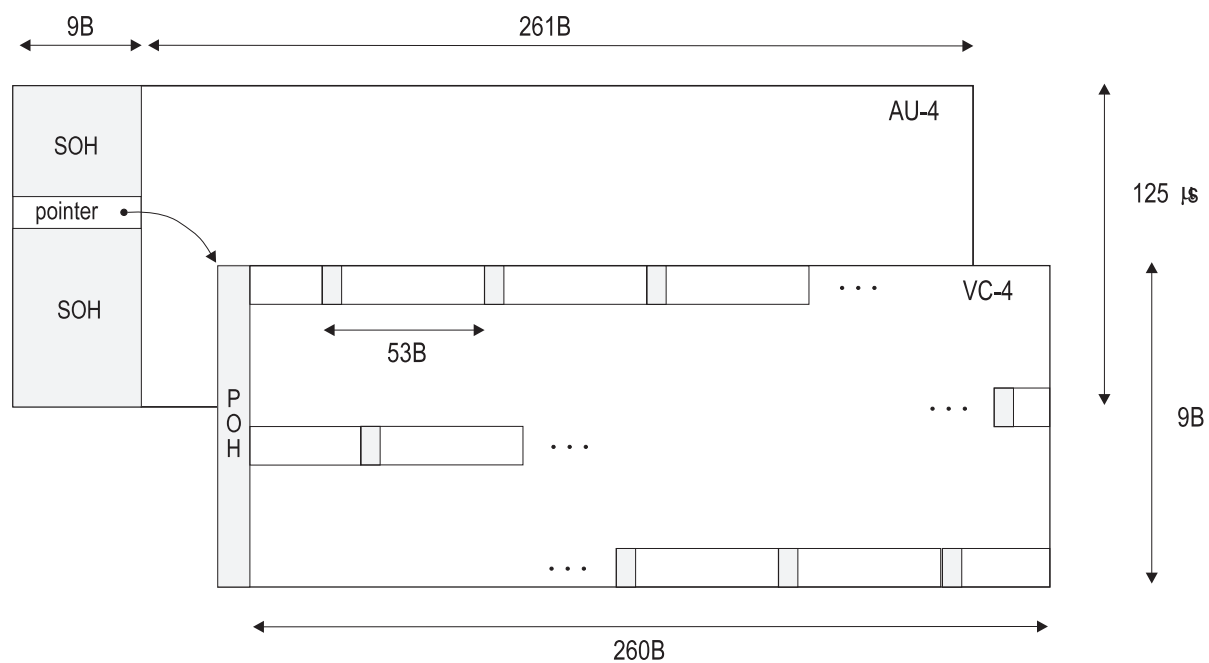
SDH - Synchronous Digital Hierarchy

SDH	SONET		Digital Rate [Mbps]		
	electrical	optical	gross	payload	user
STM-1	STS-1	OC-1	51.84	50.112	49.536
	STS-3	OC-3	155.52	150.336	148.608
	STS-9	OC-9	466.56	451.008	445.824
STM-4	STS-12	OC-12	622.08	601.344	594.432
	STS-18	OC-18	933.12	902.016	891.648
	STS-24	OC-24	1244.16	1202.688	1188.864
	STS-36	OC-36	1866.24	1804.032	1783.296
STM-16	STS-48	OC-48	2488.32	2405.376	2377.728

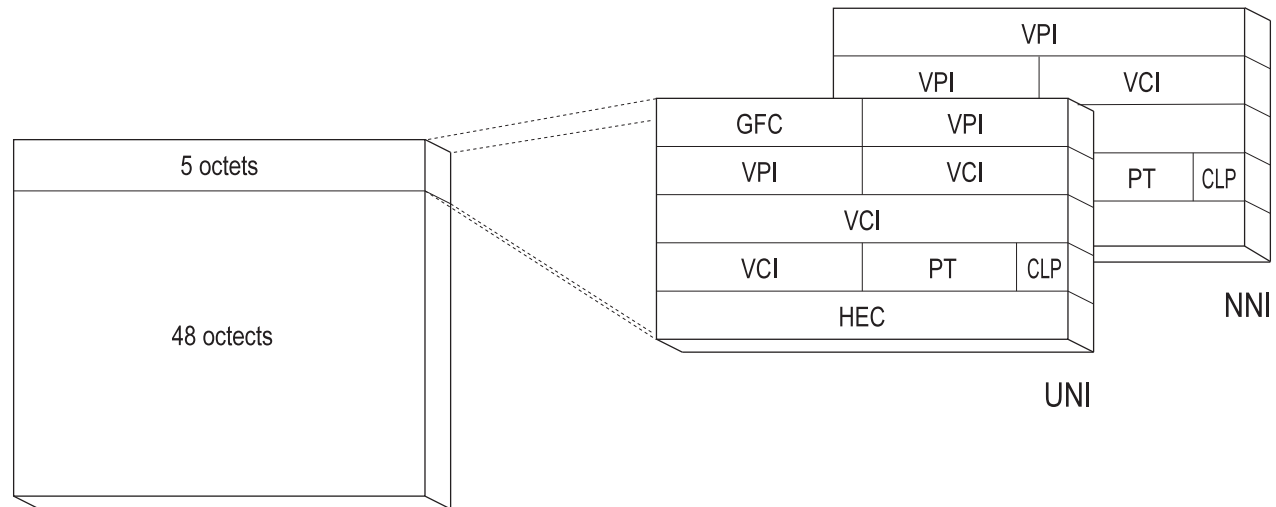




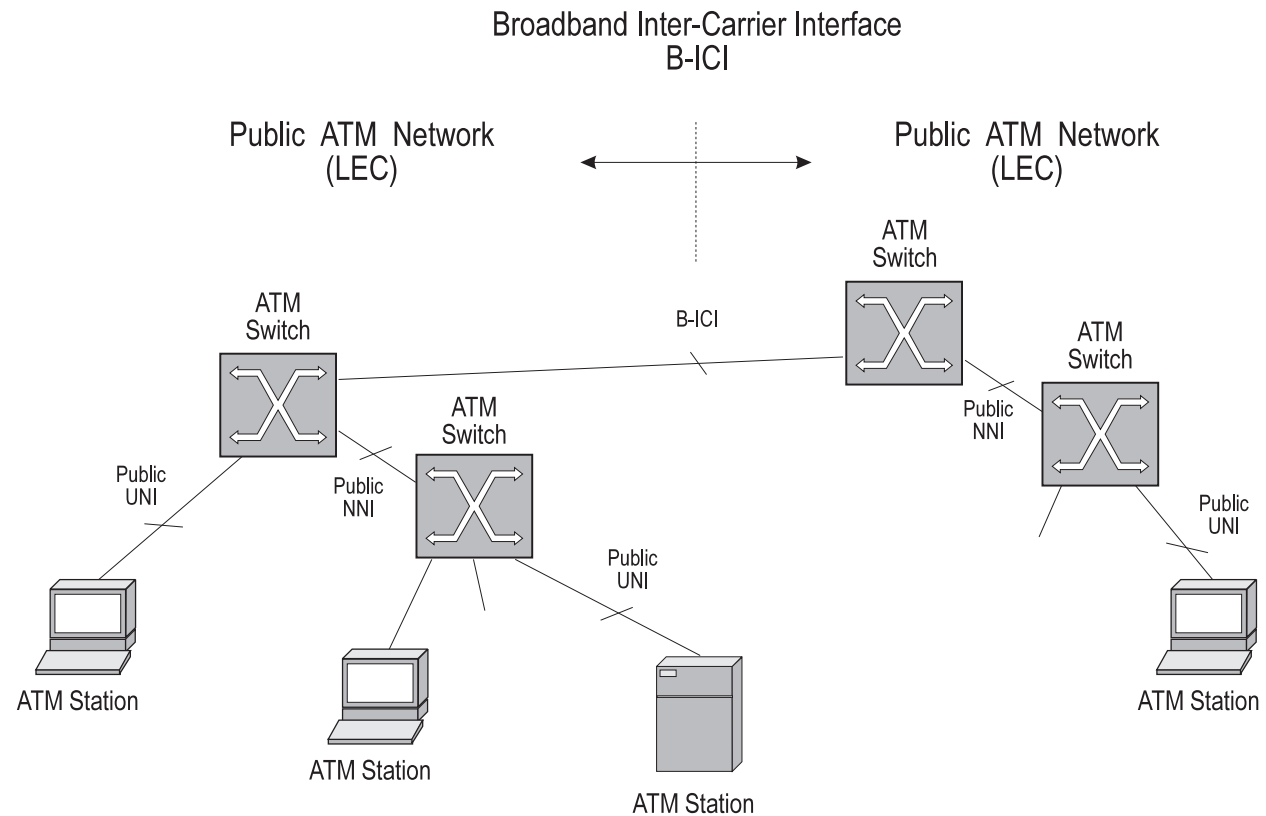
ATM - Asynchronous Transfer Mode



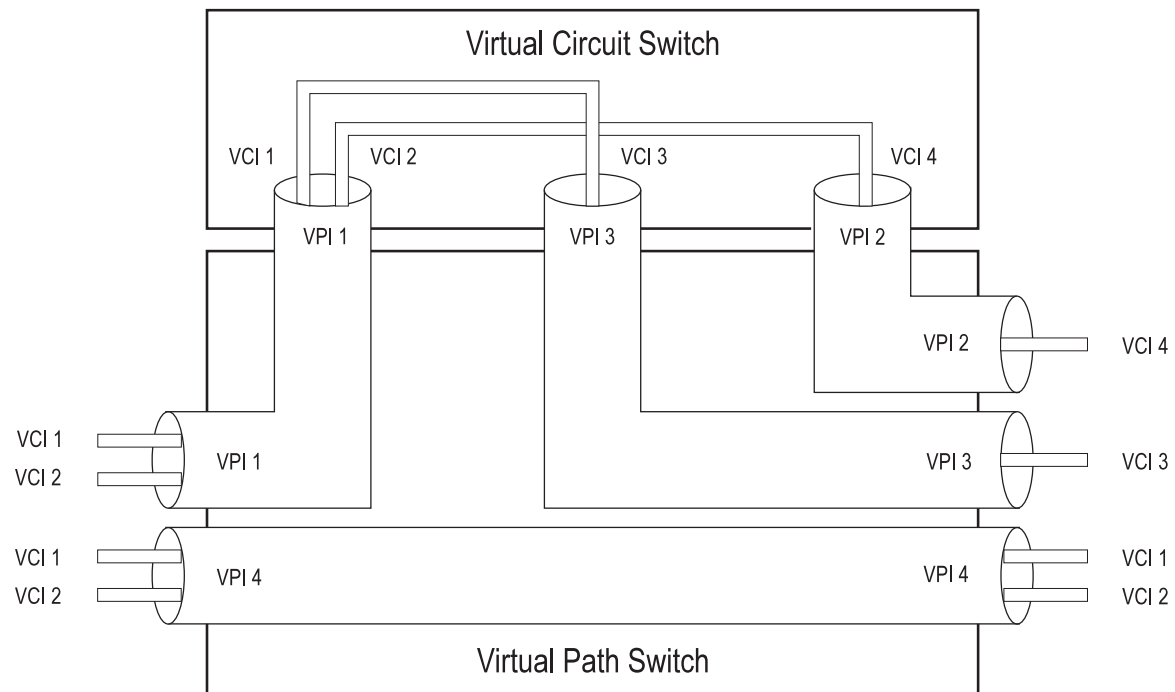
ATM - Cell



ATM - Network Topology

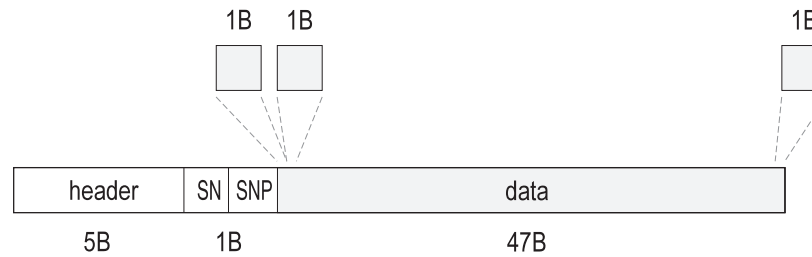


Virtual Path / Channel

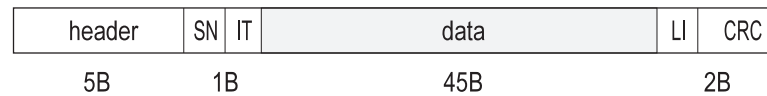


Adaptation Layers - AAL1, AAL2

AAL1 (CBR)

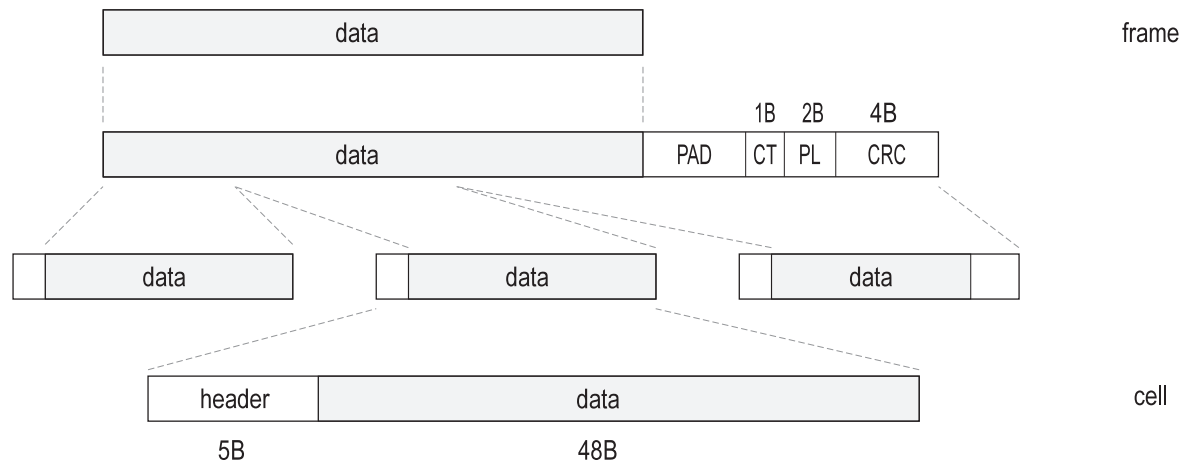


AAL2 (VBR)



Adaptation Layer - AAL5

AAL5 (UBR, ABR)



Service Classes

CBR - Constant Bit Rate

T1 circuit transfer

VBR - Variable Bit Rate

RT-VBR - video conferencing

NRT-VBR - multimedia e-mail

ABR - Available Bit Rate

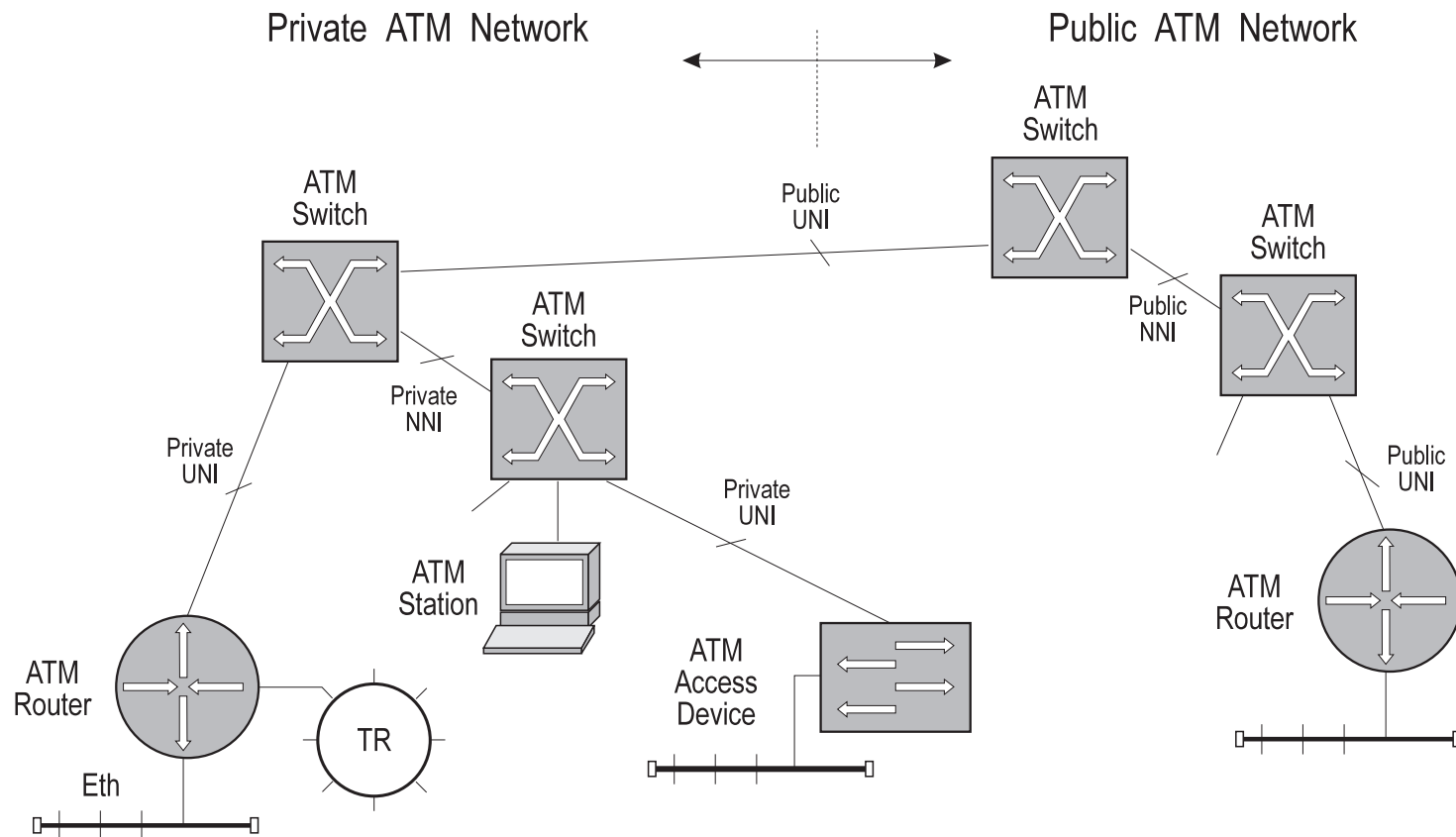
WWW access

UBR - Unspecified Bit Rate

file transfer

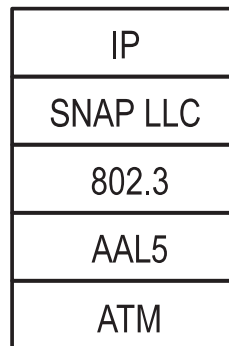


LANE - ATM Framework



LANE - IP Traffic

Packet Encapsulation

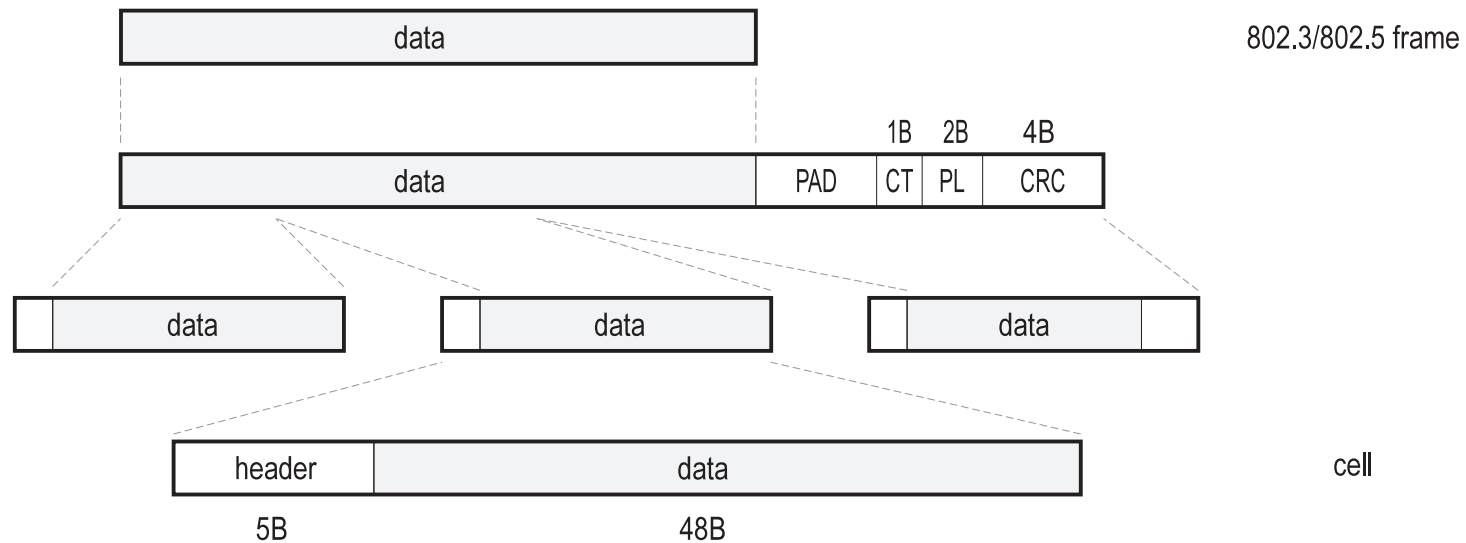


Address Resolution

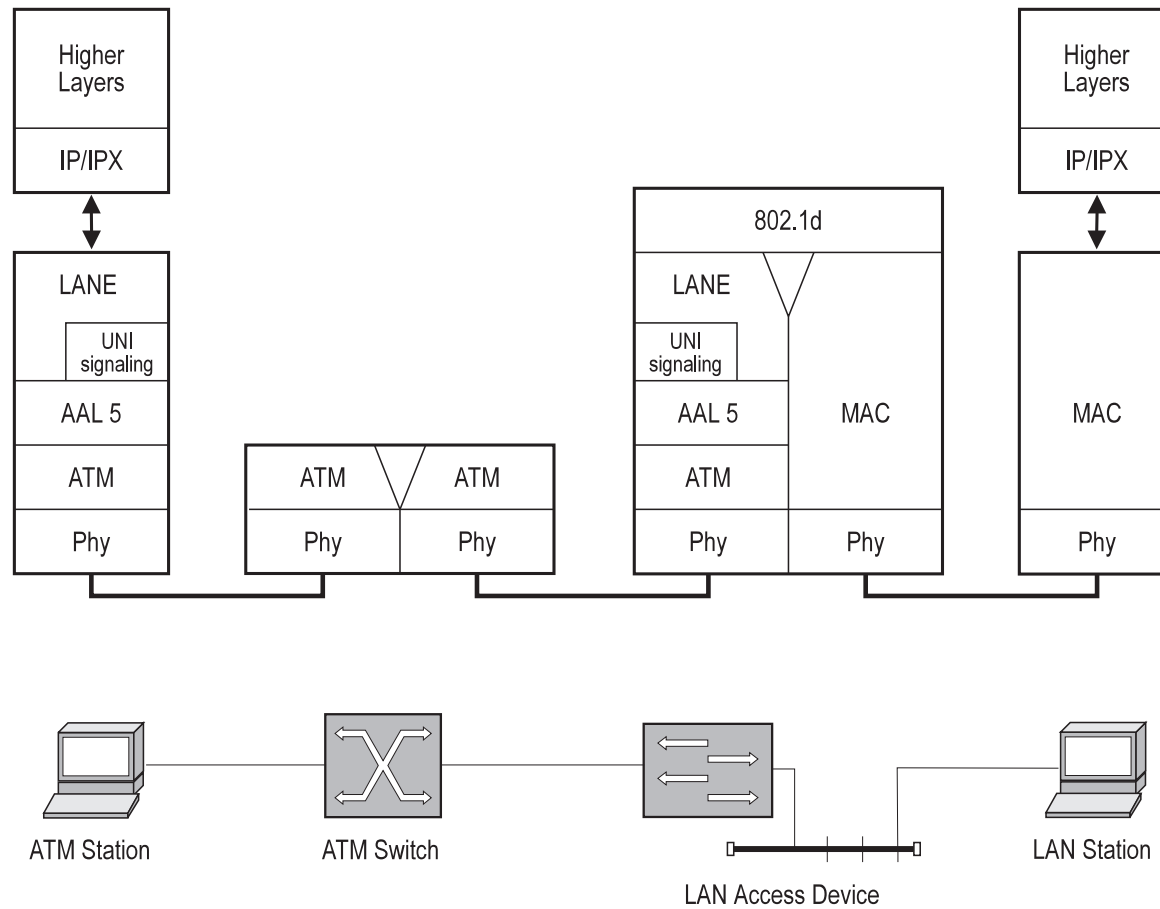
- ARP broadcasting by BUS (Broadcast / Unknown Server)



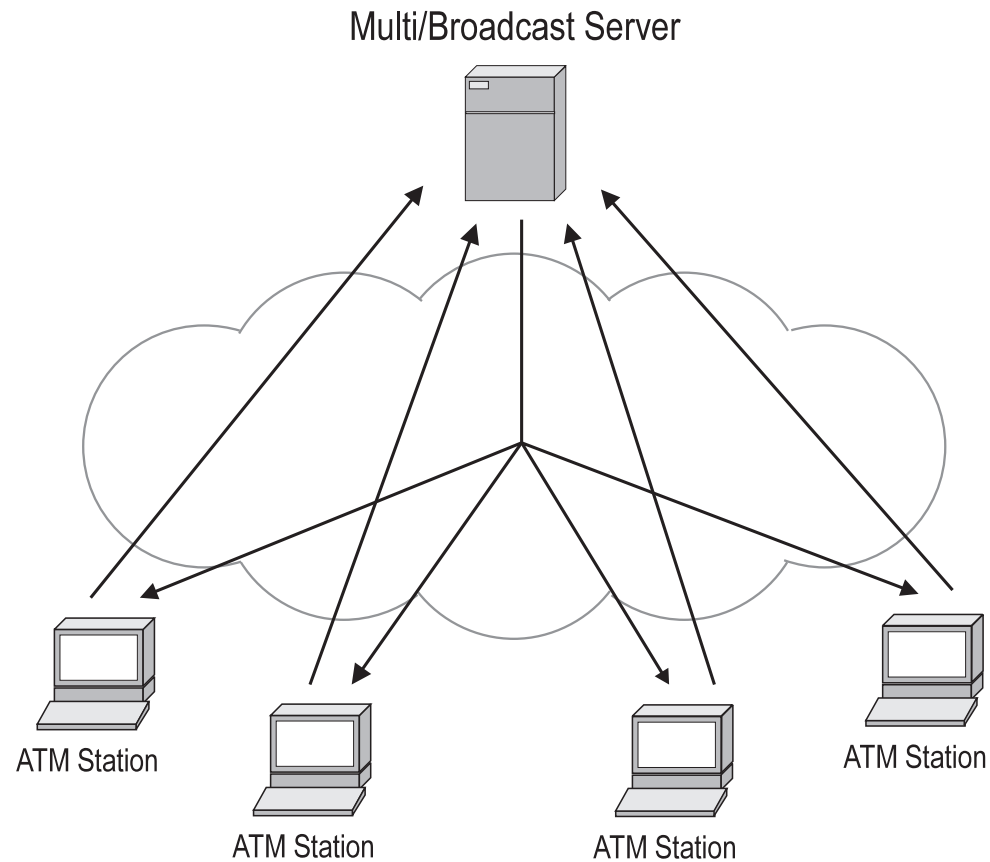
LANE - 802.3/802.5 Encapsulation



LANE - Protocol Layers



LANE - Broad/Multicasting



LANE - Servers

