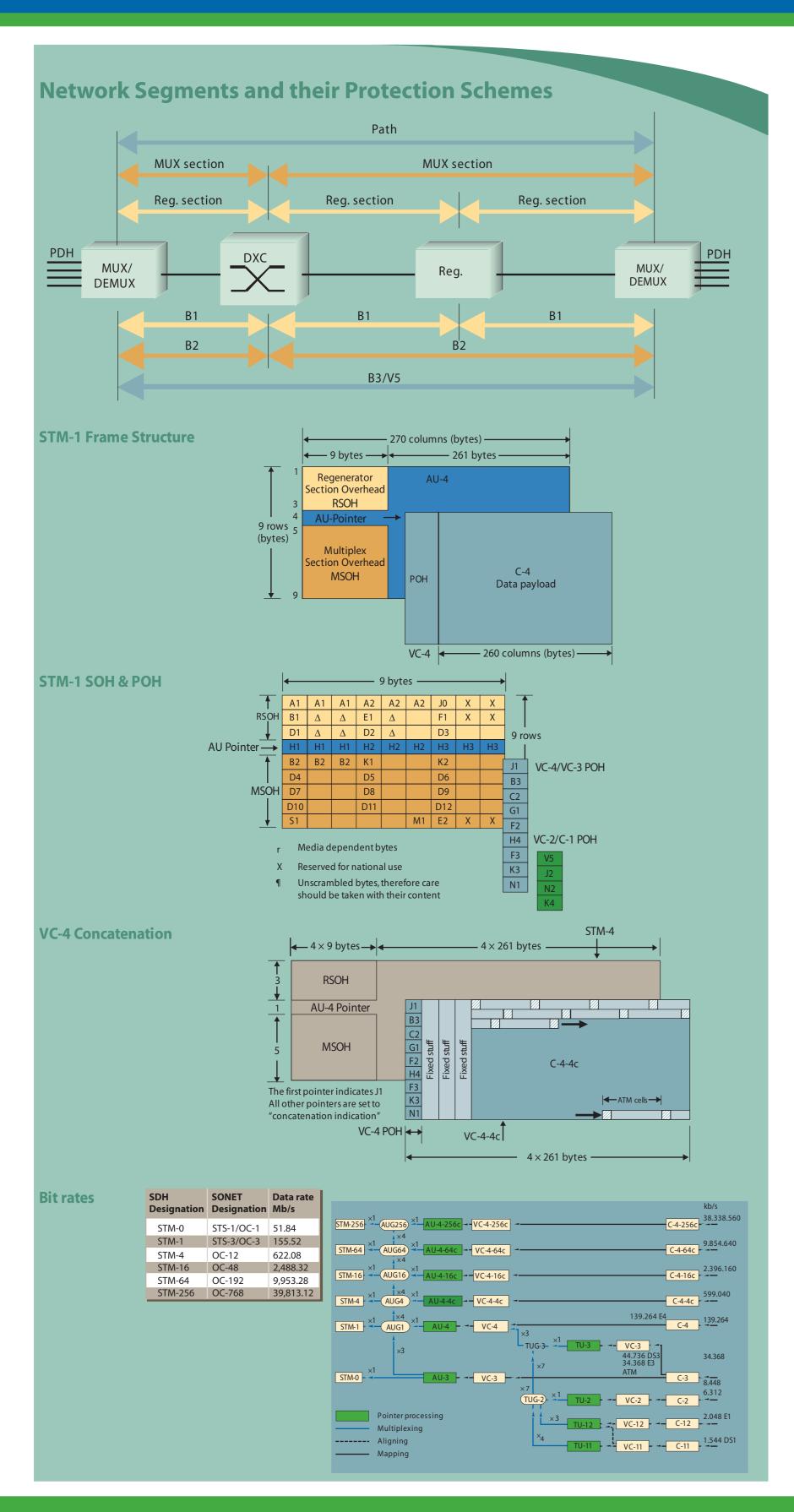
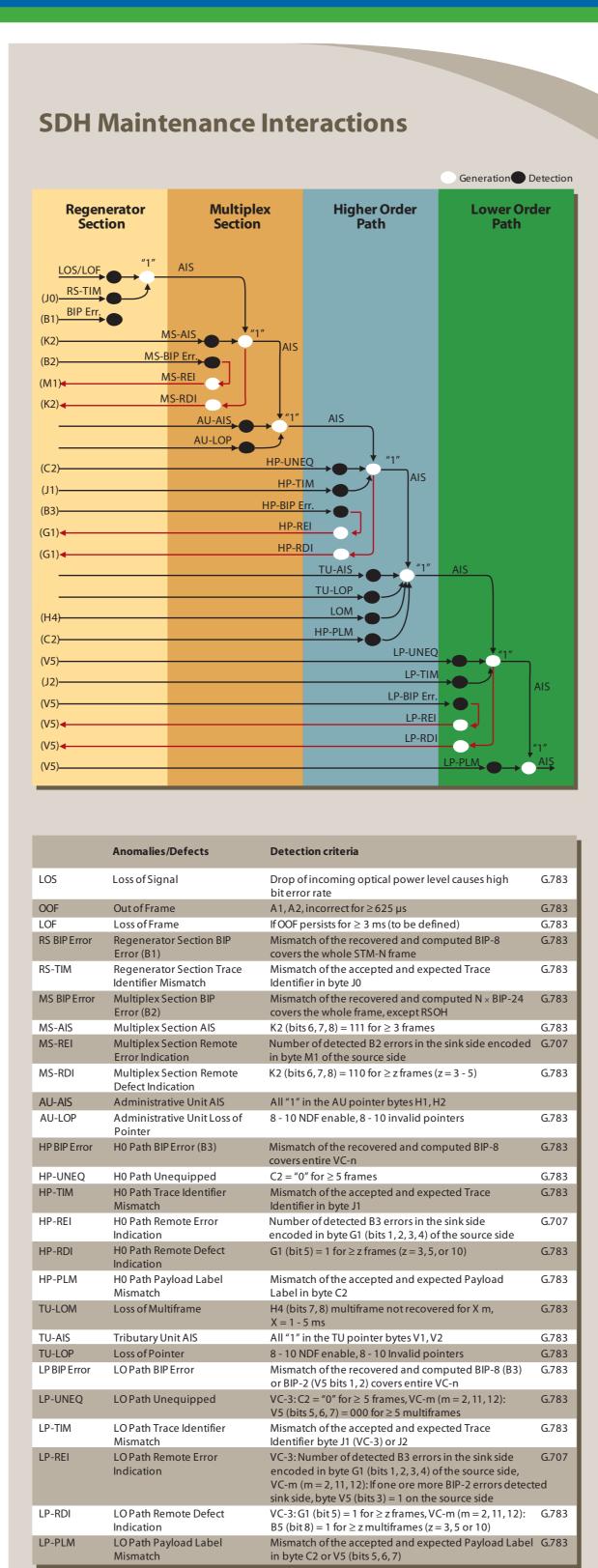
Speed up your SDH Analysis





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RSOH Regenerator Section Overhead

A1, A2: Indicates the beginning of the STM-1 (A1: 11110110, A2: 00101000). The frame alignment word of an STM-N (N \leq 64) frame is composed of 3 \times N A1 bytes followed by 3 × N A2 bytes. The frame alignment word of an STM-256 frame is composed 64 A1 bytes (byte No. 705 to No. 768) followed by 64 A2 bytes. A1 and A2 bytes are always unscrambled. The other bytes are reserved for future international standardization.

JO: Regenerator section trace. Used to transmit a section access point identifier so that a section receiver can verify its continued connection to the intended transmitter.

Z0: Spare. Reserved for future international standardization.

B1: Regenerator section error monitoring. The BIP-8 is computed over all bits of the previous STM-N frame after scrambling and is placed in the B1 byte of the current frame before scrambling.

E1: Provides orderwire channels for voice communication between regenerators. **F1:** Reserved for user purposes (e.g. temporary data/voice channel connections for special maintenance purposes).

D1 - D3: Data communication channels (DCC). A 192 kb/s channel used from a central location for alarms, control, monitoring and administration functions.

AU Pointers

H1, H2: Pointer bytes. The pointer contained in these bytes designates the location of the VC-n frame. The last ten bits (b7 to b16) carry the pointer value (binary number with a range of 0 to 782).

H3: Pointer action byte. Is used for frequency justification. Depending on the pointer value, this byte is used to adjust the fill input buffers. It only carries valid information in the event of negative justification, otherwise it is not defined.

MSOH Multiplex Section Overhead

B2: Multiplex section error monitoring. The BIP-N * 24 is used to determine if a transmission error has occurred over a multiplex section. It is computed over all bits of the previous STM-N frame except for the first three rows and is placed in the B2 byte of the current frame.

K1, K2: Allocated for APS (Automatic Protection Switching) signaling for the protection of the multiplex section.

ITUT G.841 protection switching protocol		Ring APS messages ITU-T G.841 protection switching protocol	
K1 byte	Condition	K1 byte	Condition
b1-b4 1111 1110 1101 1100 1011 1010 1001 1000 0111 0110 0101 0011	Lockout of protection Forced switch Signal fail high priority Signal fail low priority Signal degrade high priority Signal degrade low priority Unused Manual switch Unused Wait-to-restore Unused Exercise Unused Reserve request	b1-b4 1111 1110 1101 1100 1011 1010 1001 1000 0111 0110 0101 0011	Lockout of protection (span) or signal fail (protection) Forced switch (span) Forced switch (ring) Signal fail (span) Signal fail (ring) Signal degrade (protection) Signal degrade (span) Signal degrade (ring) Manual switch (span) Manual switch (ring) Wait-to-restore Exerciser (span) Exerciser (ring) Reserve request (span)
0010 0001 0000	Do not revert No request	0001 0000	Reserve request (ring) No request
b5-b8	Selects channel used by APS messages	b5-b8	Destination node ID
K2 byte	Condition	K2 byte	Condition
b1-b4	Selects bridged channel used	b1-b4	Source node ID
b5	Determines automatic protection switch architecture	b5	Path code: 0 = short path; 1 = long path
b6-b8	000 = Reserved for future use 001 = Reserved for future use 010 = Reserved for future use 011 = Reserved for future use 100 = Reserved for future use 101 = Reserved for future use 110 = MS-RDI 111 = MS-AIS	b6-b8	000 = Idle 001 = Bridged 010 = Bridged and switched 011 = Reserved for future use 100 = Reserved for future use 101 = Reserved for future use 110 = MS-RDI

a central location for alarms, control monitoring and administration functions. **\$1:** Synchronization status. Bits 5 - 8 are used to carry the synchronization messages. The following is an assignment of bit patterns to the four synchroni-

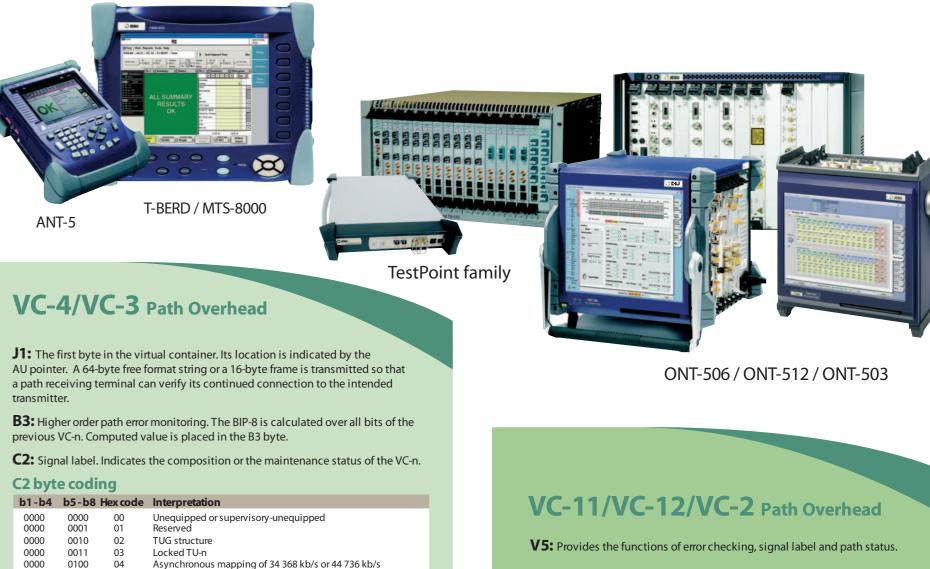
D4 - D12: Data communication channels (DCC). A 576 kb/s channel is used from

ation levels agreed to within ITU-T.			
S1 byte b5-b8	SDH sychronization quality level description		
0000	Quality unknown (existing synchronization network)		
0001	Reserved		
0010	Rec. G.811		
0011	Reserved		
0100	SSU-A		
0101	Reserved		
0110	Reserved		
0111	Reserved		
1000	SSU-B		
1001	Reserved		
1010	Reserved		
1011	(SEC) SDH Equipment Clock G.813		
1100	Reserved		
1101	Reserved		

Do not use for synchronization M1: Allocated for use as a mulitplex section REI. Conveys the count of interleaved bit blocks detected in error by B2.

E2: Provides orderwire channels for voice communication between multiplexers.

Speed up Your SDH Analysis



into container 3

MAN DODB mapping

Mapping of HDLC/PPP framed signals

Mapping of HDLC/APS framed signals

Mapping of 10 Gb/s Ethernet frames

Test signal, 0.181 specific mapping

Mapping of 10 Gb/s fiber channel frames

ATM mapping

FDDI mapping

GFP mapping

termination source as detected by a trail termination sink.

b1 b2 b3 b4

G1 (b5 - b7) coding and interpretation

000 No remote defect

001 No remote defect

011 No remote defect

100 Remote defect

010 E-RDI payload defec

101 E-RDI server defect

Remote defect

E-RDI connectivity defect

path elements and are payload dependent.

b5 - b7 Meaning

ignore their content.

N1 byte structure

b7 - b8 multiframe structure

Frame # b7 - b8 definition

1 - 8 Frame alignment signal: 1111 1111 11 9 - 12 TC-APId byte # 1 [1 C₁C₂C₃C₄C₅C₆C₇]

13 - 16 TC-APId byte # 2 [0 XXXXXXX]

17 - 20 TC-APId byte # 3 [0 XXXXXXX]

65 - 68 TC-APId byte # 15 [0 XXXXXXX]

69 - 72 TC-APId byte # 16 [0 XXXXXXX]

TC-RDI, ODI and reserved capacity

Frame # b7 definition

73 - 76 TC-RDI, ODI and reserved 11 1110 Structure of frames #73-76 of the b7-b8 multiframe

Reserved (default = "0")

Reserved (default = "0")

Reserved (default = "0")

(TCM) function.

G1: Path status. Conveys the path status and performance back to the trail

Asynchronous mapping of 139 364 kb/s into container 4

Mapping of simple data link with SDH self synchronization

Mapping of simple data link with SDH self synchronization

No remote defect

No remote defect

No remote defect

AIS, LOP, TIM, UNEQ

AIS, LOP, TIM, UNEO

TC-REI OEI

Reserved (default = "0")

Reserved (default = "0")

Reserved (default = "0")

F2, F3: Path user channels. Allocated for user communication purposes between

for virtual concatenation and a generalized position indicator for payloads.

H4: Position and sequence indicator. Provides a multiframe and sequence indicator

K3: (b1 - b4) are allocated for higher order path Automatic Protection Switching (APS).

(b5 - b8) are allocated for future use. Have no defined value. The receiver is required to

N1: Network operator byte. Allocated to provide a Tandem Connection Monitoring

0001 0010

0001 0011

0001 0100

0001 0101

