CMA 5000

Optical Transport Analysis Application
Tandem Connection Monitoring (TCM) Option

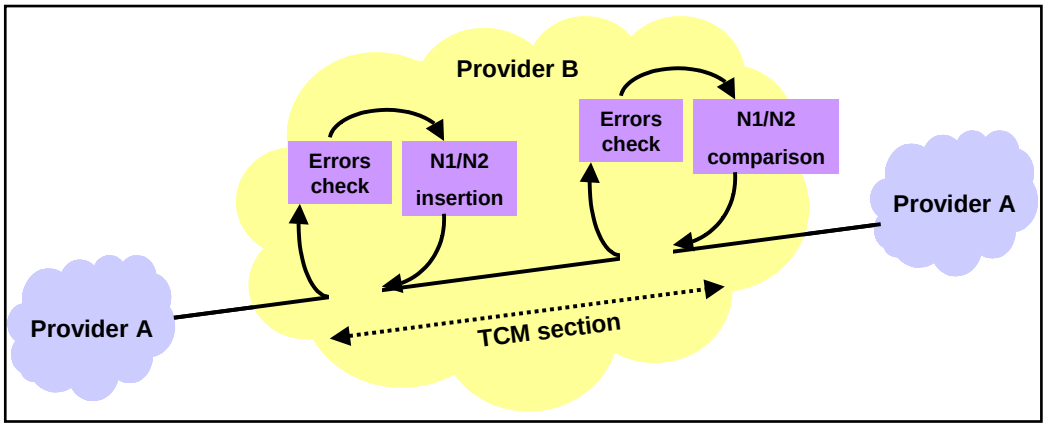
Notes:

[1] All specifications are subject to change

With the ending of the state telecommunication monopoly in many countries, the number of domestic network operators has increased. It is sometimes more economical for small network operators and service providers to lease transport capacities from competitors than to build their own networks (particularly for long haul transmission). All these factors are creating a more and more complex network environment, with an increasing number of network interconnections.

What happens when transmission problems occur? How can you identify where the problem is located? There is a simple solution: the “Tandem Connection Monitoring” protocol.

The Tandem Connection Monitoring (TCM) option of the CMA 5000 OTA application provides all the functions required to generate and analyze the parameters (N1 and N2) relating to the Tandem Connection Monitoring section of SDH/SONET networks.



General TCM Specifications[1]

TCM Frame Formats	
SONET Environment	ANSI T1.105.05
SDH Environment	ITU-T G 783

TCM Generation

N1 (VC-4 POH, VC-3 POH, STS-N[2] POH)	
TCM Access Point Identifier (TC-Apid)	Programmable 15 bytes ASCII sequence, CRC-7 added
Error	B3, TC-IEC, TC-REI, TC-OEI
Error Control	Programmable number or rate
Alarm	TC-LTC, TC-TIM, TC-UNEQ, TC-AIS, TC-RDI, TC-ODI
Alarm Control	On steady-state

N2 (VC-12 POH, VT 1.5 POH)	
TCM Access Point Identifier (TC-Apid)	Programmable 15 bytes ASCII sequence, CRC-7 added
Error	V5, TC-REI, TC-OEI
Error Control	Programmable number or rate
Alarm	TC-LTC, TC-TIM, TC-UNEQ, TC-AIS, TC-RDI, TC-ODI
Alarm Control	On steady-state

Notes:

[2] STS-N:
N=1, 3, 12, 48, 192

[3] All TCM parameters can also be displayed in temporal graphs

TCM Analysis

N1 (VC-4 POH, VC-3 POH, STS-N[2] POH)	
TCM Access Point Identifier (TC-Apid)	Display 15 bytes ASCII sequence
Error	B3, TC-IEC, TC-REI, TC-OEI
Alarm	TC-LTC, TC-TIM, TC-UNEQ, TC-AIS, TC-RDI, TC-ODI

N2 (VC-12 POH, VT 1.5 POH)	
TCM Access Point Identifier (TC-Apid)	Display 15 bytes ASCII sequence
Error	V5, TC-REI, TC-OEI
Alarm	TC-LTC, TC-TIM, TC-UNEQ, TC-AIS, TC-RDI, TC-ODI

Ordering Information

Order Number	Description
5613-200-OTA	TCM option for OTA 10G-1310 module
5615-200-OTA	TCM option for OTA 10G-1550 module
5625-200-OTA	TCM option for OTA 2.5G module
5622-200-OTA	TCM option for OTA 622 module

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