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Serial Connection



E1 GROOMING MUX

TRANSMISSION TRAFFIC GROOMING

LAN Network

TCP-IP/UDP

Is utilizing your E1 connection to its full potential becoming a problem?

TCP-IP/UDP

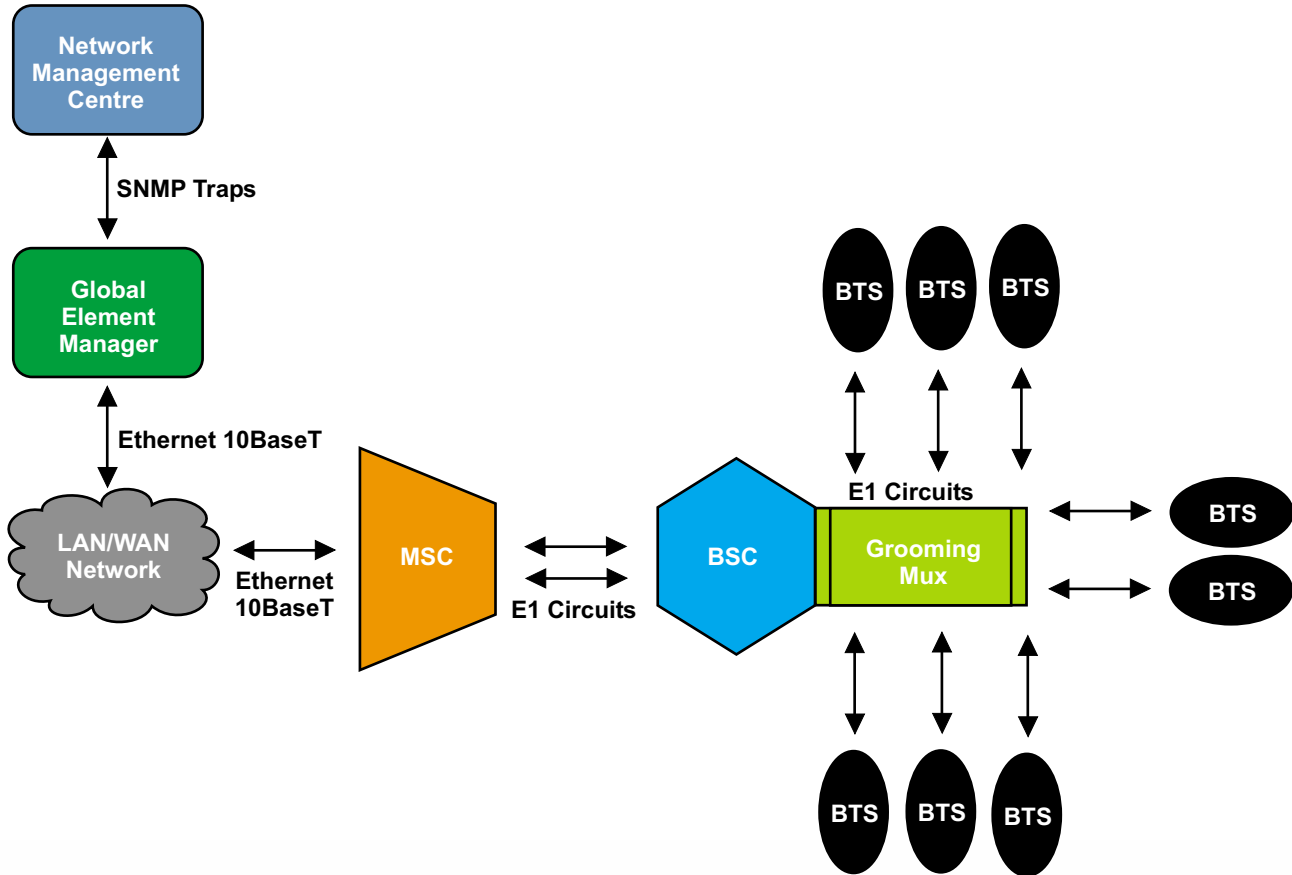


Optimization of costly transmission equipment is the issue.

Today, in a competitive telecommunications industry, the efficient optimization of costly transmission equipment in cellular Base Station Controllers (BSC) could result in the competitive edge.

The E1 Grooming Mux has been designed with just that in mind, to provide cost-effective utilization of E1 circuits through mapping various timeslots from remote Base Stations (BTS) to dedicated E1 circuits to the Mobile Switching Centre (MSC). The result is fewer E1 circuits between the MSC and BSC, but totally utilized and fully managed.

Complete BSC grooming management of all E1 circuits.



Continuous in-service real-time E1 Management

The E1 Grooming Mux is managed by the Global Element Manager via a direct UDP LAN connection or one of the E1 timeslots using a nailed up connection. All configuration in terms of timeslot mapping is done remotely from the Global Element Manager, normally located at the Network Management Centre. An optional connection to the Network Management System could be established, for alarm event reporting in the form of SNMP traps.

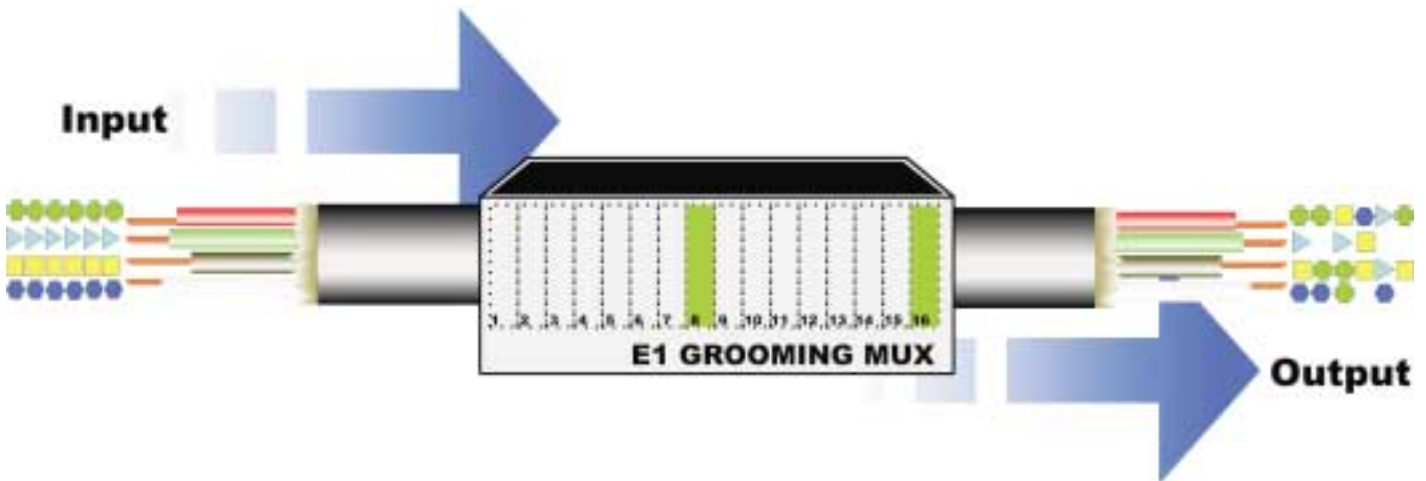
The E1 Grooming Mux consists of a standard 3U high 19" subrack divided into two halves, each half representing a system. Each system could be equipped with 7x E1 line cards and 1x controller card. Each line card has eight E1 input and eight E1 output ports, thus resulting in a monitoring capacity of eight E1 ports (4x bi-directional). Any of these input ports could be cross-connected to any of the output ports of the same line card or any other line card. The controller card has the exact features of the E1 line card, but with the added functionality of networking through a LAN connection or through one of the E1 circuits, for management via the Global Element Manager.

Due to the E1 circuits terminating on the E1 Grooming Mux, the physical layer is automatically monitored. Real time E1 alarms according to ITU-T M.2120 and continuous in service performance data according to ITU-T G.826 are reported as and when it occurs, according to user programmable pre-defined filters.

Features

- Timeslot Grooming (Switching)
Any of the 2048 input timeslots (8x ports per line card) can be switched to any of the 2048 output timeslots (8x ports per line card). Any of the incoming timeslots could also be switched to multiple outgoing timeslots, thus providing a timeslot broadcast function. The software allows switching of single directions of transmission or both TX and RX of the timeslots simultaneously. Similarly 16kbit/s subslots could also be switched using the above principle.
- Complete E1 switching
Any of the 64 input E1 ports can be switched to any of the 64 output E1 ports. Any of the incoming E1 ports could also be switched to multiple outgoing E1 ports, thus duplicated. The software allows for both timeslot or complete E1 switching on the same system.

- Continuous physical layer monitoring
Real time continuous E1 alarm reporting according to ITU-T M.2120 Recommendations through pre-defined user configurable filters.
History E1 performance measurements, as a background function, according to ITU-T G.826 Recommendations. Performance measures retrievable in 15min, 1hour or 24 hour intervals.
- Remote Configuration
All configuration is performed remotely from the Global Element Manager, directly via a UDP LAN connection or one of the E1 circuits. Alternatively configuration could also be performed via the serial port located on the controller of the Grooming Mux.
All configuration is stored in flash memory, which means all configuration is restored after a power failure or re-start.



- Global Element Manager
The Global Element Manager is a user friendly software management tool that operates on Windows NT or 2000. The Global Element Manager manages both the monitoring network (the E1 Grooming mux itself) as well as the monitored network (the E1 circuits and timeslots).

Specifications

- Hardware
 - Subrack 19" 3U in height, consists of two halves (each half represents a system)
 - E1 Line card, consists of 8 E1 input ports and 8 E1 output ports (4 Bi-Directional E1 Ports)
 - Controller card, same as E1 line card plus serial and LAN management ports
 - Wiring plugs, removable 64 way DIN connectors (rear mounted)
- Line interface
 - Receiver ports are all software configurable for high impedance, monitor mode or terminated at 120 ohms
 - Transmitter ports are all fixed at 120 ohms
 - Line code HDB3 according to ITU-T G.703 Recommendation.
 - Frame format according to ITU-T G.703 and G.706 Recommendation.

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