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NComm TMS™ T3 / E3 Trunk Management Software

Trunk Management

The NComm T3/E3 Trunk Management Software provides a complete software solution for the implementation of T3 (also known as DS3) and E3 systems. Each package consists of a set of software modules that perform all aspects of low and mid-level T3 and E3 support, from span alarming and maintenance to the collection and reporting of performance data as specified in ANSI T1.231, G.747, and G.704 for T3, and G.751, G.832 and G.826 for E3. Additionally, the T3/E3 software is completely data driven, allowing operating mode, alarm timers, and thresholds to be configurable on a static or run time basis. The suite includes 2 levels of ANSI-C Application Programming Interfaces (APIs), encapsulating the details of T3/E3 operation and the underlying hardware elements, and providing a clean integration to the target system's operating environment.

Main Features

- "Off-the-shelf" T3/E3 interface software providing multiple levels of functionality in support of product applications
- Supports 1 to N T3/E3 spans, making it ideal for multi-span applications
- Provides full T3/E3 span maintenance and alarming support, with configurable timers and thresholds for alarm detection, loopback activation, and other span conditions
- Full support for T3 PMDL processing per ANSI T1.107, T1.107a and T1.404, Performance Monitoring per T1.231 and FEAC codes for T3.
- Full support for E3 G.751 and G.832 framing including timing mark, trail trace messages, and performance monitoring per G.826.
- Supports user choice of framer, Drivers are immediately available for Agere Systems, Dallas, Infineon, and PMC-Sierra parts. Call or check the web site for others.
- Runs with or without Real Time Operating System (RTOS) on virtually any processor and host environment. Currently ported to VxWorks, Nucleus Plus and pSOS.
- Simple Application Programming Interfaces (APIs)
- Processor independent ANSI-C source code
- Fully customizable

Target Applications

- Single and Multiple-span T3 & E3 DSU/CSUs, T3/E3 and M13 multiplexers, PBX and Channel Bank, Central Office Switching, Router/Gateways



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T3/E3 Trunk Management Software (TMS) Architecture

The figure below illustrates the TMS software module architecture. Each software component performs specific functions that represent a part of the total T3 or E3 software solution. The T3/E3 Software API is comprised of a set of ANSI C functions and macros that encapsulate all functionality and data of the T3/E3 TMS Software. The API provides a clean interface simplifying the integration of the TMS Software to the target application. The target application is implemented on top of the T3/E3 TMS API layer using the API to access all functionality provided within the TMS Software.

The T3/E3 Configuration & Alarm Manager Module (CAMP) provides the interface points for administering and configuring any of the T3 and E3 spans being controlled by the T3/E3 -Software. The CAMP maintains the configuration data for the spans, providing a clean interface to configuration data for the other software components, and controlling how span data is updated at runtime. Further, the CAMP maintains and controls the operating state of the individual spans, processing alarm conditions and responses, and other runtime conditions as they occur.

Full T3 support is provided for FEAC codes per ANSI T1.107 and T1.107a and T1.404 Path Maintenance Data Link. It supports detection and reception of standard trunk alarms (LOS/OOF/Red, RAI/Yellow, Idle and AIS/ Blue). Full E3 support is provided per G.751 and G.832. Timers for declaration and clearing of alarms are configurable via the CAMP. The CAMP also communicates with the T3/E3 PMMM for processing performance reports.

The optional Performance Monitoring Manager Module (PMM) will collect T3 performance data as specified in ANSI T1.231 and G.704. E3 performance data is collected per G.826. The PMMM will collect performance statistics for both the near end, and in C-bit parity format, the far end of the T3 Interface. Performance data is collected in 24 hour intervals with 15 minute buckets and summary information. In addition, the PMMM supports collections of data locked to the time of day. The application can retrieve performance information upon request to the PMMM.

The Device Driver and its associated API provides the interface between the T3/E3 TMS Software and the device driver. The T3/E3 Driver API is comprised of a set of ANSI C functions and macros that handle the interaction with the device driver. NComm provides the driver for the users choice of device.

