



## T3/E3 Trunk Management Software

### Key Features

- Provides standard compliant alarm processing
- Full support for Performance Monitoring both T1.231 and G.826 for near end and far end
- Provides loopback control – Both manual and automatic control over loopback activation
- For T3, 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
- For E3, Full support for E3 G.751 and G.832 framing including timing mark, trail trace messages, and performance monitoring per G.826
- Includes driver for framing device

### Standard Compliance

- ANSI T1.231
- ANSI T1.231.03
- ANSI T1.404 and ANSI T1.404a
- ITU-T G.704
- ITU-T G.747
- ITU-T G.751
- ITU-T G.826

### Key Benefits

- Fully Standards Compliant
- Turnkey solution
- OS independent
- Pre-ported to Linux 2.4 and 2.6
- Easy to use APIs
- Sample application included
- ANSI C Source Code
- Driver Included
- Field proven by multiple customers
- Software deployed worldwide
- Zero defect policy

With NComm's proven source code and protocol stack, you have the quality and standard compliance interfaces that you need for less cost than you can do it yourself.

### Product Overview

NComm's T3/E3 Trunk Management Software provides a complete software solution for the implementation of a T3 (also known as DS3) and/or E3 system.

Each package consists of a set of software modules that perform all aspects of low and mid-level T3 and E3 support, from line 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. Processing at T2/E2 and T1/E1 levels of a multiplexer is also provided.

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 two 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 systems' operating environment.

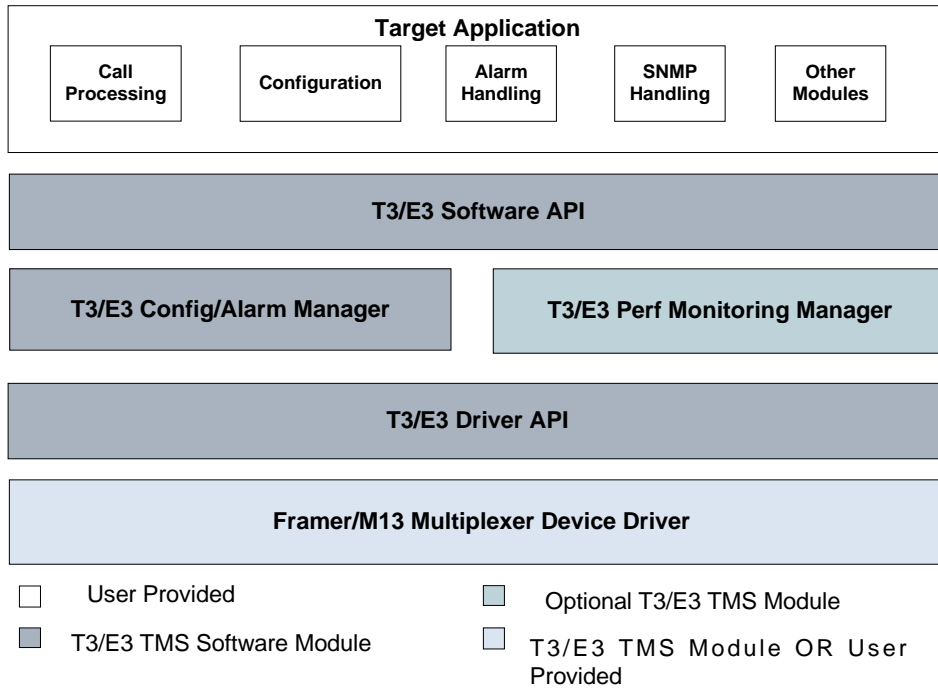
NComm's T3/E3 TMS is supplied as ANSI C source code. User manuals, implementation training and technical support are also included with each license. A sample demo application provides functionality very quickly. This sample application also functions as a guide for integration of the T3/E3 TMS API into the upper management or control systems of your choice.

### Applications

- Single and Multiple-span T3 and E3 DSU/CSUs
- T3/E3 and M13 Multiplexers
- PBXs
- Channel Banks
- Central Office Switches
- Routers
- Gateways

### T3/E3 OAM TMS Architecture

As in the entire TMS family of OAM software, T3/E3 TMS is architected to be hardware and operating system independent. Well-defined APIs are employed for faster first time integration and ease of reuse.



### OAM TMS Software Architecture

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 (**CAMM**) provides the interface points for administering and configuring any of the T3 and E3 lines being controlled by the T3/E3 TMS. The CAMM maintains the configuration data for the lines, providing a clean interface to configuration data for the other software components, and controlling how line data is updated at runtime. Further, the CAMM maintains and controls the operating state of the individual lines, 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 CAMM. The CAMM also communicates with the T3/E3 PMMM for processing performance reports.

The optional Performance Monitoring Manager Module (**PMMM**) 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 CBit 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 device of your choice.

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*Specifications subject to change without notice 20111024*