Element Management

TNCS
Transmission Network Control System

TAKE CONTROL OF YOUR HFC NETWORK
When network reliability is critical, you need to be informed and in control of your network’s performance at all times. Fortunately, Scientific-Atlanta has the answer: The TNCS™ Transmission Network Control System is the feature-packed Windows NT-based client/server software package that puts you in control of your hybrid fiber/coax (HFC) network. New, comprehensive, and fitted with a rich graphical user interface, TNCS is easy to use and navigate and offers full remote or local configurability, control and status of monitored elements. A simple network management protocol (SNMP) interface allows seamless connection to a network management system. Total network control is now within your reach.

SYSTEM DESCRIPTION
TNCS is deployed in a technically efficient and flexible client/multi-server architecture that’s tailor-made for cable transmission and headend system operators. Client-side computers can be placed anywhere within a network where there is a need for control or monitoring while server-side computers can be placed wherever there is a need for local control and element interface.

Scalable System Architecture
Some broadband transmission networks can be difficult to manage due to size, geography and number of elements deployed. Other networks require only moderate management support. TNCS has the right tools to deal with both scenarios, effectively capable of managing a large element base and yet always ready to be scaled down to a portable computer for occasional interface to a single rack of equipment if needed.

Simple User Interface
A simple, intuitive and network-mapped user interface is available at both the client and server computers. The operator can drill down to specific network elements quickly and easily while information about the network elements is displayed in a straightforward manner. Items that can be controlled are clearly depicted. Up to 32 windows can be displayed simultaneously, each dynamically updated to allow the system operator to work on several tasks concurrently.

The TNCS program represents the network as a hierarchical list. Using the standard Windows NT tree control, the operator can view the network at any level of abstraction — from a network-wide view at the top to individual status points at the edge of the network. TNCS also provides user-defined display windows. Typically, the top level of the network is represented as a schematic, a block diagram, a map, or any combination. Graphics are automatically generated from the equipment configuration for lower levels of the network. As the network grows, the display screens don’t require editing as the TNCS software generates the automatic displays at run-time.

FEATURES
- Complete coverage and support for Scientific-Atlanta’s transmission products including Continuum® Headend Systems, Prisma™ Optical Networks and Prisma DT Digital Transport
- Automatic notification of failures and out-of-spec conditions via numeric or alphanumeric pagers and/or e-mail
- Automatic backup of failed components
- System logging records operator actions, alarms and status changes
- Graphical tree hierarchy for easy drill-down to network elements
- User configurable graphic display of system and sub-systems
- Network management system connectivity using SNMP
- Easy addition of third-party devices
**Multi-User/Multi-Access**

The TNCS software allows simultaneous access by multiple users from various points within the network. The system ensures that all users see the same current status and data for configured devices. Any changes that occur are immediately seen by every user or attached system.

**Intelligent Alarm Handling**

The operator can specify alarm characteristics for various fault levels on a device-by-device basis. Assignments of warning, minor, major and critical alarm severity are possible. The operator can assign color codes and sound files (.wav) to be associated with alarm levels. Moreover, the operator can configure the system to promote alarms to higher levels within the system. Items in alarm flash until acknowledged by the operator.

**Open Standards SNMP Connectivity**

SNMP allows industry-standard network management software to communicate with TNCS using any server or client connected using Internet protocol. Pseudo-devices such as hubs and nodes are created for entities in the hierarchical device list to preserve topology awareness at the network management system.
**Easy-to-Add Device Interfaces**
While the TNCS Transmission Network Control System has device support for nearly the entire Scientific-Atlanta transmission product line, a growing number of third-party devices are also supported. This includes device interfaces for the DGH Series 1000, 1700, 2000 and 5000 for general data acquisition and supervisory control purposes. New protocols are added via separate, independent DLL (dynamic link library) programs. Support for specific devices is implemented through a single text file and customers can easily add their own device support as required.

**Technical Support**
The TNCS Transmission Network Control System is designed and written by experienced Scientific-Atlanta engineers and fully supported by trained software experts. You won’t have to go far should questions ever arise. From quick start-up to upgrade and support, Scientific-Atlanta offers a wide variety of installation, training and support services.

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**SPECIFICATIONS**

**Server & Client**

**Operating System**
Windows® NT 4.0

**Computer (minimum specifications)**
Pentium III 500 MHz processor with 512 KB integrated L2 Cache
128 MB 100 MHz SDRAM
19 in. 0.2 6dp color monitor
9.1 GB hard drive
1.44 MB floppy drive, 10/100 network card, 500 VA UPS, modem, sound card, speakers, network card, mouse, & keyboard

**Network Management**
SNMP

**TNCS Supported Devices**

**Continuum Headend Systems Products**
9810 Controller
9813 Controller
9820 Modulator
9821 Modulator
9860 Upconverter
9861 Upconverter
9890 BTSC Encoder

**Series 2000**
VM-2000 Modulator
VM-IFIF Modulator
UC-2000 Upconverter
PS-2000 Power Supply
SU-2000 Agile Upconverter
AS-2000 Active Splitter

**Other Headend Equipment**
9660 Satellite Receiver with Integrated Descrambler
9661 International Satellite Receiver
6270 Television Demodulator
9280 Agile Modulator
9145 Antenna Controller

**Prisma DT Digital Transport**
Chassis Summary
Common Control Unit
Power Supply
Optical Transmitter

**Optical Receiver**
CC3 Transcoder
DS3 Transcoder
Baseband Video/4,2,0-Audio Encoder
Baseband Video/4,2,0-Audio Decoder
Composite IF Encoder
Composite IF Decoder
Baseband Video/BTSC Encoder
Baseband Video/BTSC Decoder

**Prisma Optical Networks**
6473-8,10,12,NC,R, Low RF Transmitter
6971DR Dual Reverse Receiver
6476-22/25, 16/19 EDFA Amplifier
6475 Externally Modulated Transmitter
AT22 YEDFA Amplifier
6474 Optical Switch
6974 Switch
6971SF Single Forward Receiver

**Digital Reverse1**
6982 Receiver
6480 Laser
6482 Digital Module

**System 60**
6960 Fiber Receiver
6960R Reverse Receiver
6460 Fiber Transmitter
6460R Reverse Transmitter

**Scientific-Atlanta Europe Headend Devices**
69000 PSU Router
69001 PSU Switch
91070 HFC Modem
91071 HE Interface
94186 SAT Receiver
94194 Dual IF Modulator
94195 Dual IF Modulator
94312 VHF Upconverter
94313 UHF Upconverter
94321 MPEG-2 Transcoder
94330 QAM Modulator
99076 I/O Controller

**Scientific-Atlanta Europe HFC Network Devices**
90072 Optical Node
90062/63/64 Optical Node
TNCS Transmission Network Control System

**Transponders**
- SAI/III-System Amplifier II and III
- 6920 Node
- Advanced Adaptis® -Amplifier and Node
- Standard Adaptis-Amplifier
- Alpha Power Supply
- SMIU-Status Monitoring Interface Unit

**Third-Party Support**
- DGH D1000 and D2000 Series
- DGH 1700 Series
- DGH D5000 Series
- MX64® 8-Maddox Matrix Switch
- ShomanOff-air Down-converter
- CSA-19-Naval Cable Signal Analyzer
- Tandberg MPEG Host
- Zander Mosaic Generator

**ORDERING INFORMATION**

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<tr>
<th>TNCS Bundled Products</th>
<th>Part #</th>
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<tbody>
<tr>
<td>North American Site License which includes TNCS Server/client software license, computer, documentation, installation, support for all implemented devices, and two 6225 SMC translators</td>
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<tr>
<td>Additional Server or Client licenses (quantity discounts available) includes TNCS Server/client software license, computer, installation, support for all implemented devices, and two 6225 SMC translators</td>
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<tr>
<th>TNCS Hardware and Accessories</th>
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<td>Ten Chassis Continuum Cable Kit</td>
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<td>Ten Chassis Continuum Backup Cable Kit</td>
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<td>Ten Chassis 9660 Cable Kit</td>
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<td>Ten Chassis 6270 Cable Kit</td>
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<td>Eight Chassis Prisma DT Cable Kit includes 8-port 10 Base-T Hub</td>
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<th>TNCS Support Programs</th>
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<td>TNCS Onsite Installation/Configuration</td>
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<td>TNCS Basic Support (1 year)</td>
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<td>TNCS Standard Support (1 year)</td>
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<td>7 x 24 Telephone Support (1 year)</td>
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Specifications and product availability are subject to change without notice.

1. This product under development at the time of this printing. Contact Scientific-Atlanta for availability.

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