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Symmetricom

TimeScan NMS

Release 6.0

User's Guide

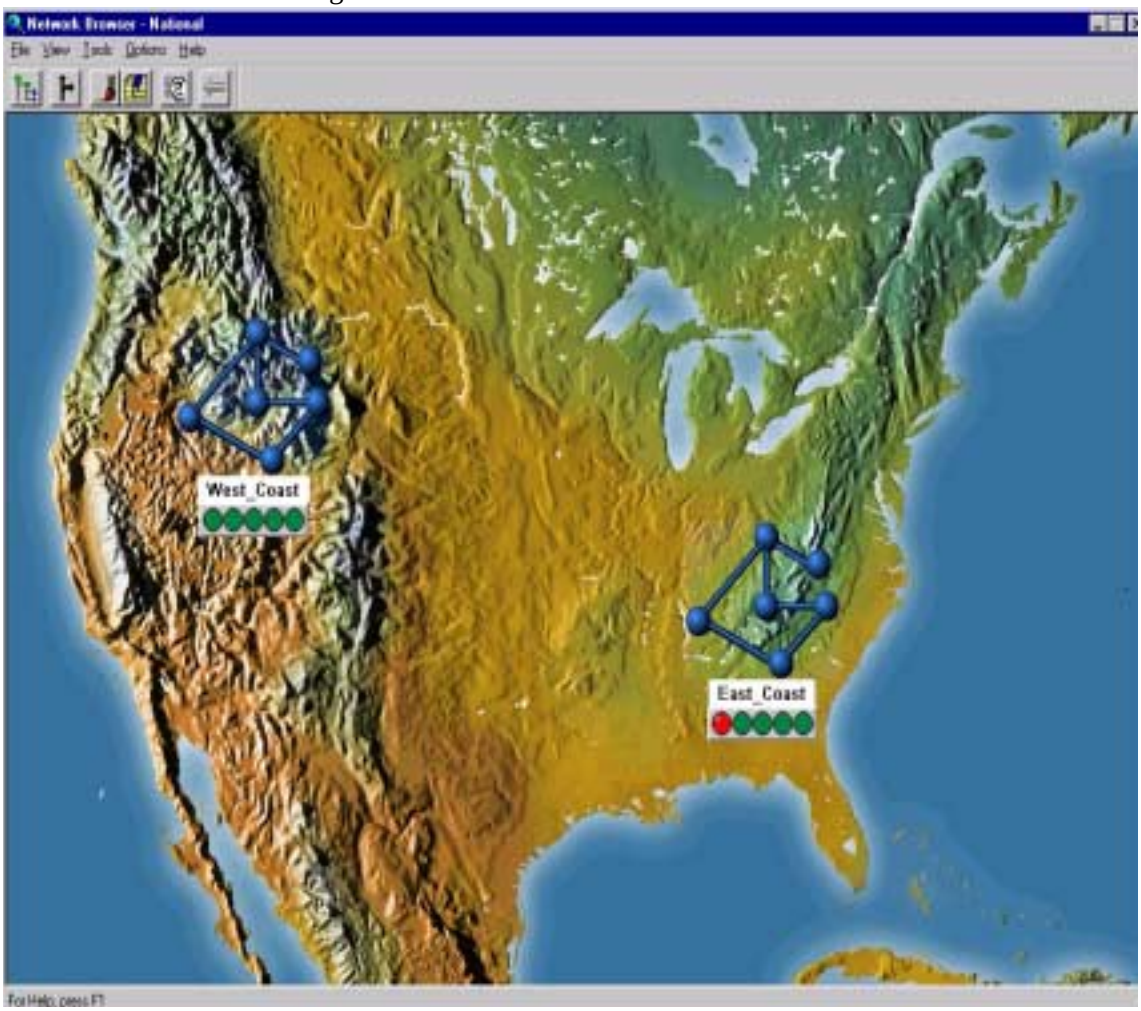
Chapter 1 Introduction

Chapter Contents

Welcome to the TimeScan NMS suite of applications. This introduction describes all the applications within the suite and what they are used for.

Network Browser

The Network Browser application provides a flexible graphical representation of the status of the managed network.

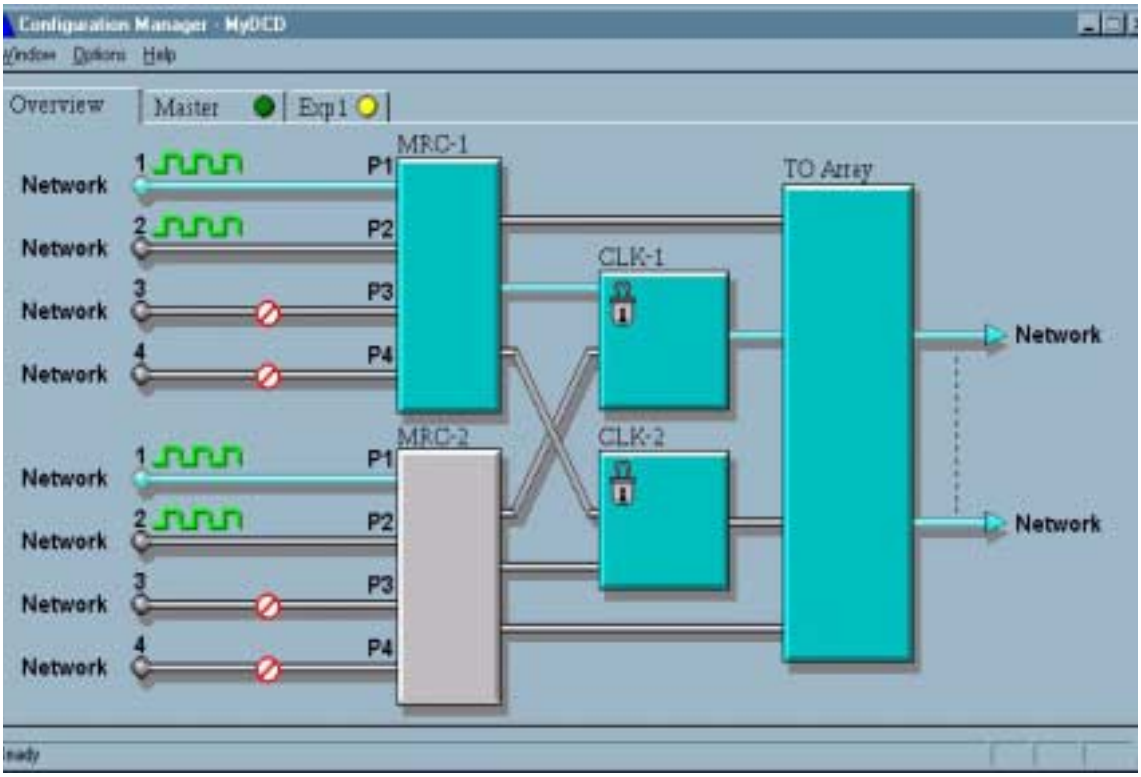


The TimeScan NMS System presents Network status overviews capable of depicting any scope of network topology, from the highest network view down to sub-equipment or port level. It is the Network Browser Application that provides this flexible network topology and graphical human-computer interface.

You can find Network Browser either in the *TimeScan NMS user program* items on the WindowsNT *Start* menu, or from the Unix *CDE Front Panel*, both shown below.

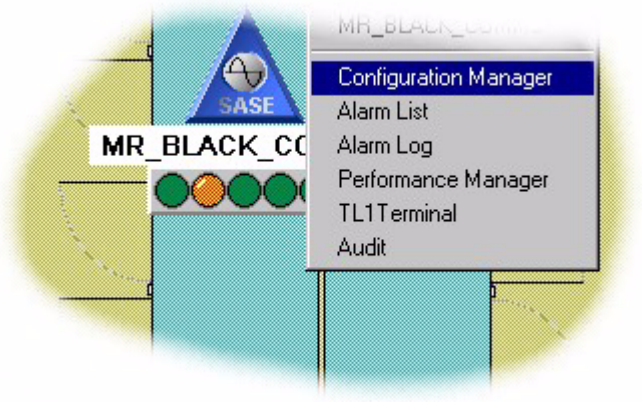
Configuration Manager

The Configuration Manager is an application that will provide you with a real-time picture of the internal state of the DCD and simple point and click controls to configure the DCD.



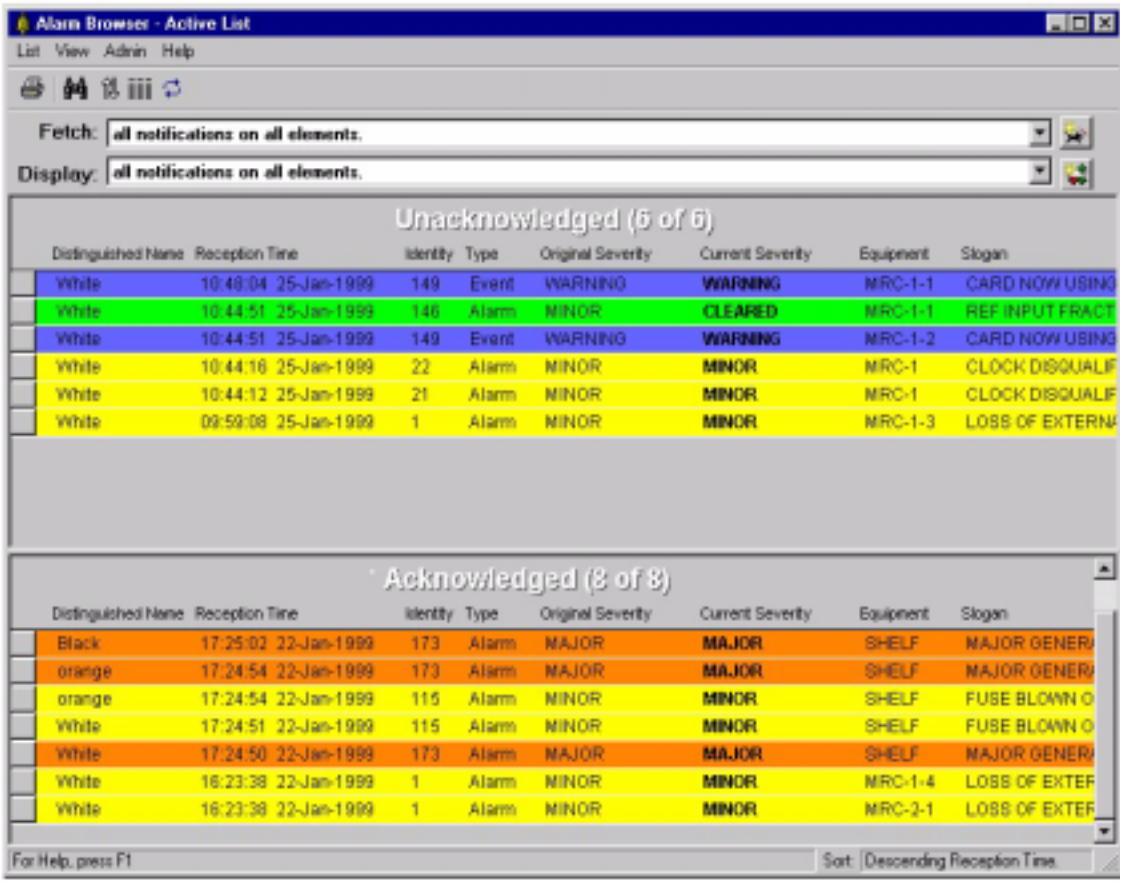
Use Configuration Manager if you need to quickly see exactly how the DCD is managing the synchronisation signals. You can use it to configure all the signal processing functionality of the DCD without typing a single TL1 command.

You would normally launch Configuration Manager through Network Browser by selecting the managed element, right clicking on it, then selecting the *Configuration Manager* menu item.



Alarm List

The Alarm List provides access to all the current (uncleared or unacknowledged) notification records maintained by the TimeScan NMSTimeScan NMS database.

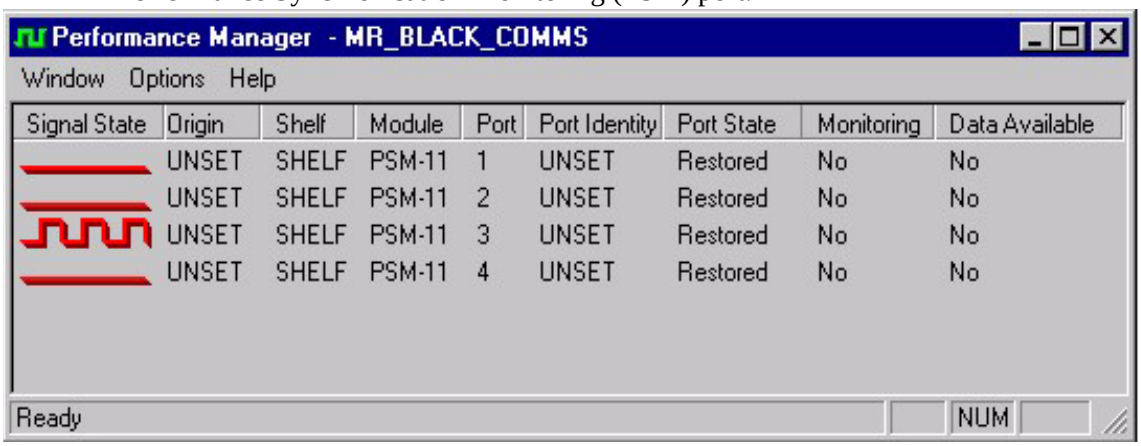


The TimeScan NMS system is capable of automatically accepting, classifying and storing notification messages generated by the managed elements. Records pertaining to each notification are maintained in the TimeScan NMS database. The Alarm List provides the human-computer-interface for the review of uncleared (active), or unacknowledged notification records.

The Alarm List is launched by right clicking the element in Network Browser *or* (for a list of all alarms) launching from the Windows NT *Start* menu or the Unix *CDE front panel*.

Performance Manager

Performance Manager is a tool that provides a graphical representation of each Performance Synchronisation Monitoring (PSM) port.



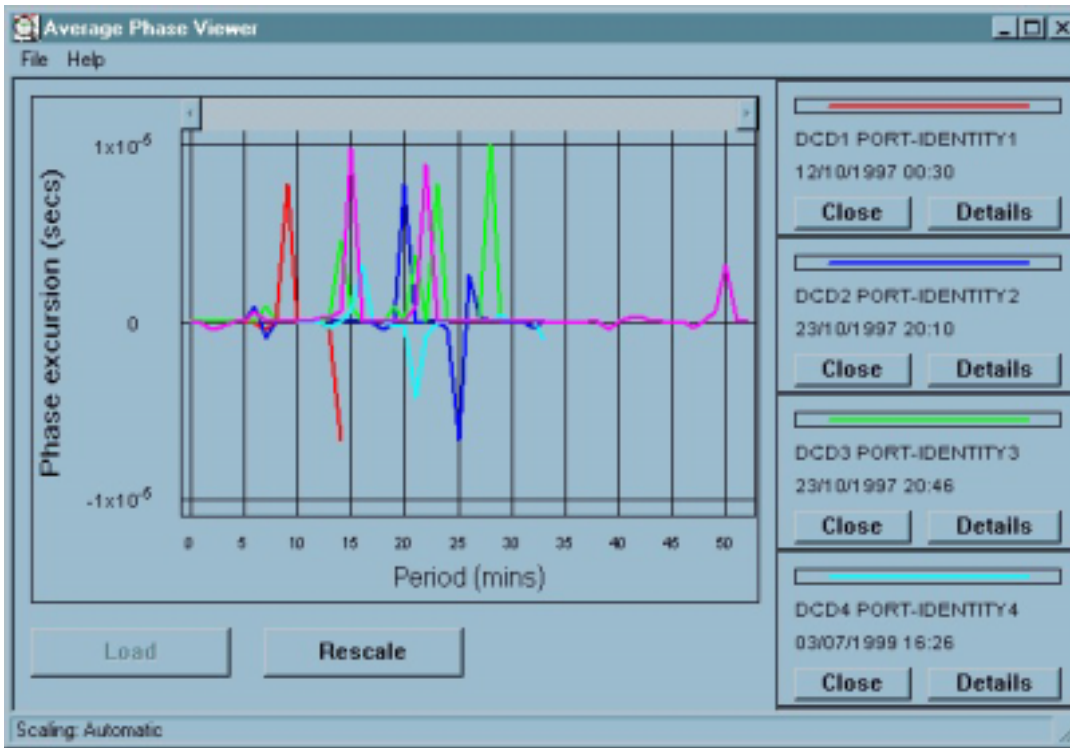
The two major functions of Performance Manager are

- Configuration of PSM module(s)
- PSM module Performance Data Retrieval.

You would normally launch Performance Manager through Network Browser by selecting the managed element, right clicking on it, then selecting the *Performance Manager* menu item.

Average Phase Viewer

The Phase Viewer application provides a visual representation of the average phase information maintained within the Performance data.

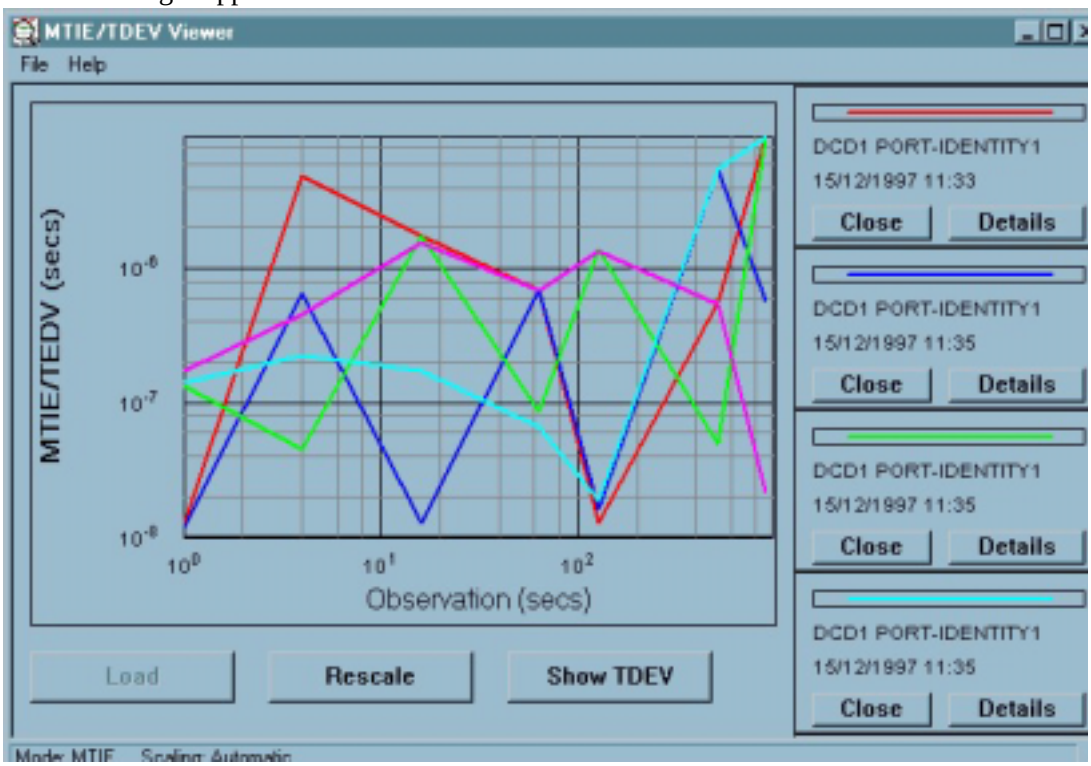


This tool provides a visual representation of the Average Phase curves collected by the Precision Synchronisation TimeScan NMS (PSM) Modules located within the DCD elements.

Average Phase Viewer is launched either from the Windows *Start* menu or the Unix *CDE front panel*.

MTIE/TDEV Viewer

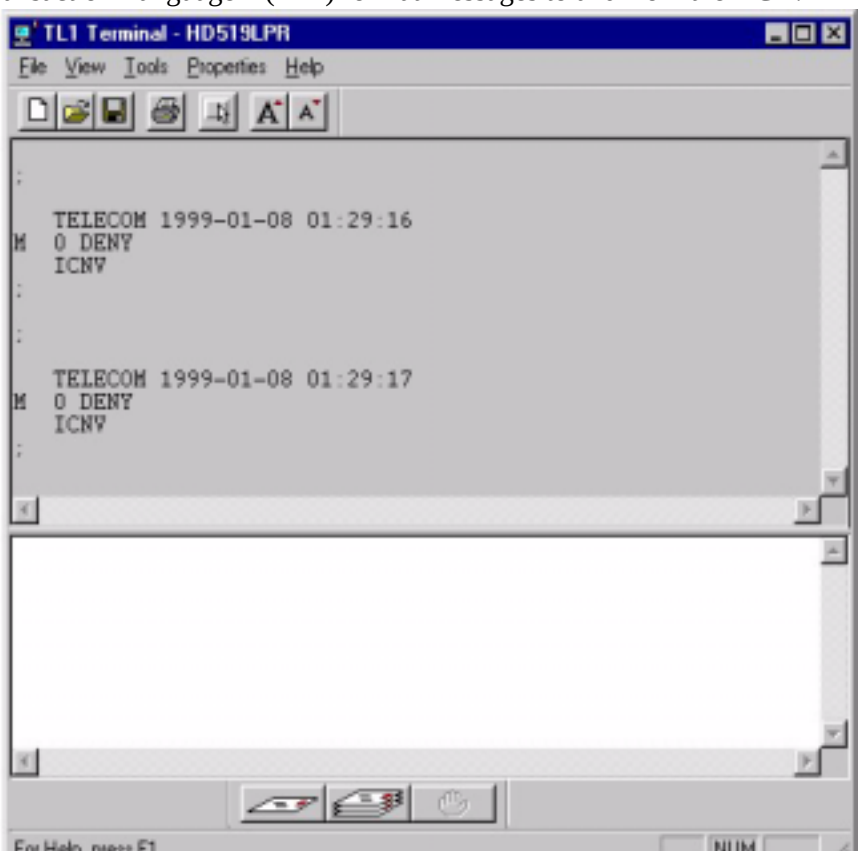
Mean Time Interval Error (MTIE), Time Deviation (TDEV) are standard measurements of synchronisation performance. The MTIE/TDEV Viewer is a graphing tool which may be used to view the MTIE and TDEV data recovered and stored by the Performance Manager application.



MTIE/TDEV Viewer is launched either from the Windows *Start* menu or the Unix *CDE front panel*.

TL1 Terminal

TL1 Terminal is a tool provided with this suite that enables you to send and Receive Transaction Language 1 (TL1) format messages to and from the DCD.

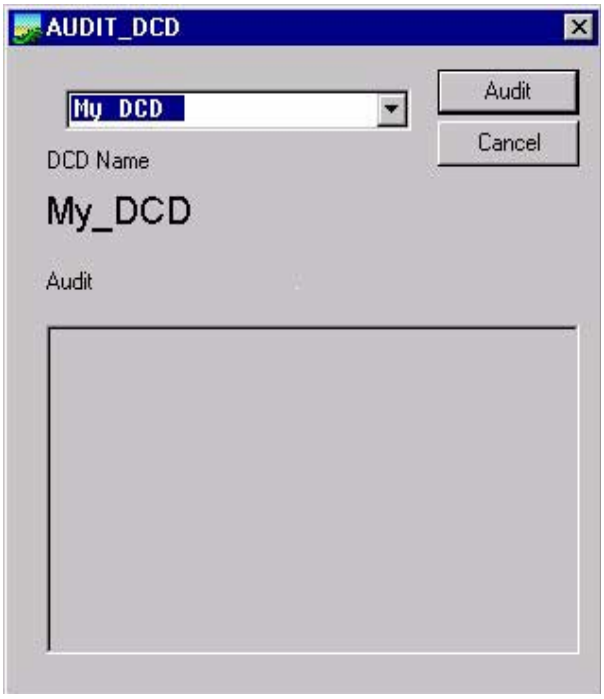


This is useful if you prefer to use the native command language of the DCD or if you need to capture textual representations of DCD behaviour, for example alarm lists or alarm logs.

TL1 Terminal is launched either from the Windows *Start* menu or the Unix *CDE front panel*.

Alarm Audit

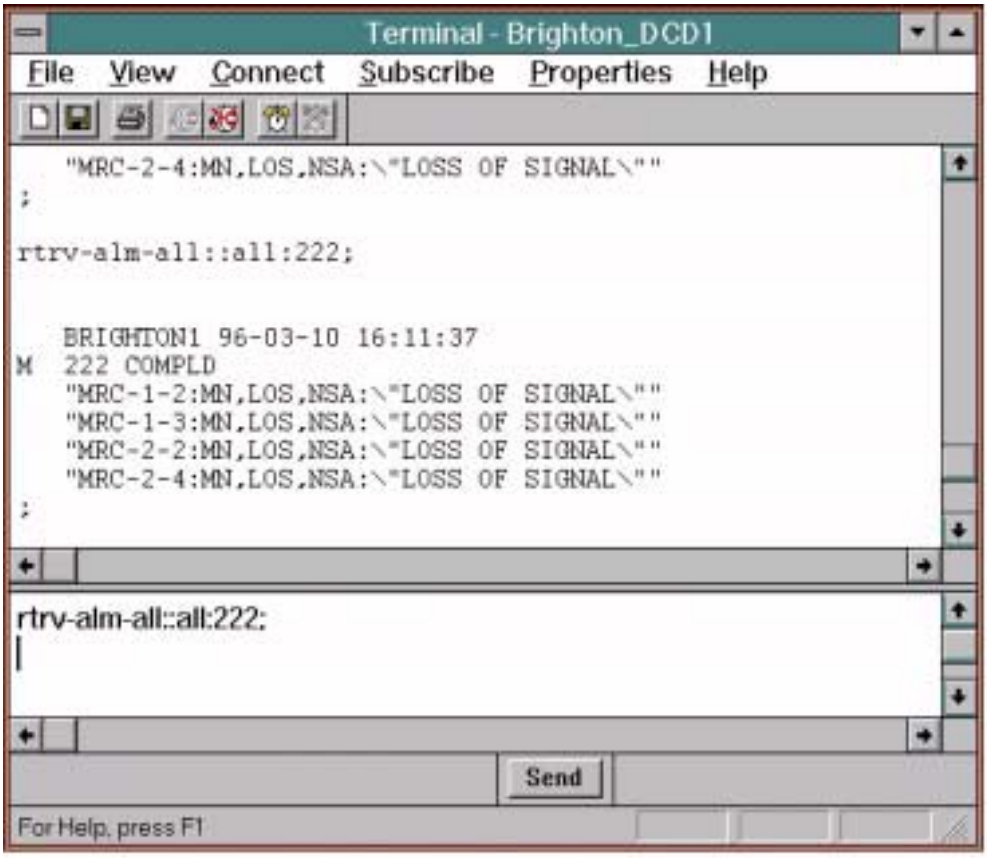
The Alarm Audit application provides a mechanism to ensure alignment of the current alarm state of a managed element and the TimeScan NMS database. For example, an equipment module fails in service. An alarm is generated by the element and is stored in the TimeScan NMS database. The element is taken off-line from the communication network as a result of the maintenance activity necessary to rectify the fault. During this off-line period the element generates a *Clear* message for the original alarm. This message fails to reach the TimeScan NMS server.



Alarm Audit is launched by right clicking on the element in Network Browser.

Terminal

Terminal is a versatile application. It is capable of providing command access and event Monitoring for any element type ASCII based command protocol. This application has not been optimised for TL1 and is useful for isolating specific communications protocol problems.



Terminal is launched either from the Windows *Start* menu, or from the Unix *CDE front panel*, shown on page 2.

Chapter 2 Network Browser

The Network Browser Application provides a flexible graphical representation of the status of the managed network.

Why would I use the Network Browser?

The TimeScan NMS System presents Network status overviews capable of depicting any scope of network topology, from the highest network view down to sub-equipment or port level. It is the Network Browser Application that provides this flexible network topology and a graphical human-computer-interface.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Network Browser. If you need to use the chapter as a quick reference guide, there is an index at the end.

Chapter Contents

Network Visualisation - Network View Ports

In order to provide a flexible and context representative view of the managed network status the system supports *Network View Ports* or *Views*.

Each view may depict physical, logical or abstract network properties. They may represent either the entire managed network or a small portion. The system is capable of supporting any number of views, arranged as stand alone views or associated into single or multiple hierarchies.

These features combined with the fact that views may be created, modified or destroyed at run time make the Network Status Presentation offered by this system extremely flexible.

This chapter describes how existing views may be used and interpreted from a user's perspective. The administrative aspects of *Network View Ports* are described in the System Administration Guide, Managed Object Configuration Chapter.

Network Views and the Network Browser Application

In effect, views are data structures maintained by the system. It is the Network Browser Application that interprets the view data and provides the human computer interface.

Let's see what a typical Network Browser view might look like...

Figure 1 A Network Browser View

We can immediately see from this Network Browser that the open view represents part of the United Kingdom, (the name of the view is given in the window title, not shown in Figure 1).

The view shows five molecular (supposedly network region) icons superimposed over a geographical map. Each icon on the browser has the same three components: an illustration or *Icon*, a *Distinguished Name* tag and a *Status Indicator Bar* (five Light Emitting Diodes *LEDs*). We shall look at these components shortly.

In this example the United Kingdom view is associated with other views in a hierarchy structured following a geographical theme. The five network region icons represent five network region views. In turn these views contain other views representing lower levels in the hierarchy. Ultimately the views at the foot of the hierarchy contain icons representing managed elements.

We shall look at this hierarchy property of views a little later, but first, let's look at the icon components:

Icon

The TimeScan NMS System does not impose any limits upon size, shape or colour of the illustrations used as object icons.

Distinguished Name

Each icon has a small banner showing the Distinguished Name of the object represented by the icon. If, as an operator, you have authorisation to manipulate this object then the name will appear as black text. However, if you have no such authorisation, the name will appear as grey text.

The Status Indicator Bar

Every icon has a status indicator associated with it...

Figure 2 The Status Indicator Bar

The Status Indicator Bar provides a real-time representation of the five levels of perceived severity as identified by the standard X.721 colours. Each notification of perceived severity is represented by a distinctly coloured *LED*.

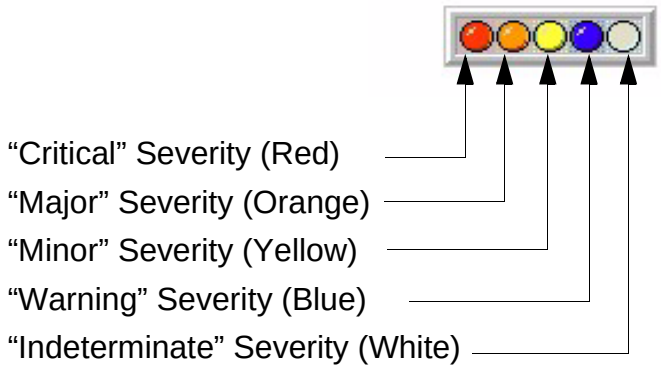


Figure 3 The Status Indicator Bar, detail

Each LED may occupy one of three states; Clear, Asserted Unacknowledged or Asserted Acknowledged.

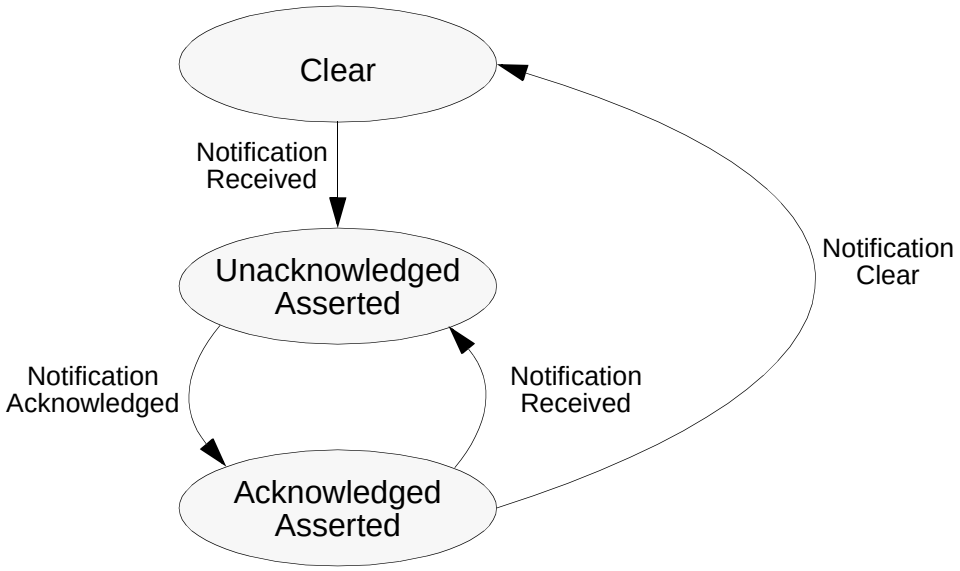


Figure 4 State diagram, showing how the states are related

On receiving a notification from a Managed Element the state will become Unacknowledged Asserted. This state will be occupied while *any* notifications remain unacknowledged, even if the notifications have been cleared. This behaviour serves to *latch* notifications in the Current (Active) Alarm List so any transient notifications are not missed.

If all notifications are acknowledged and *any* remain asserted the state becomes Acknowledged Asserted. If all are cleared then the state becomes Cleared.

We will use the *Critical* LED to illustrate the appearance of each state:

Clear

There are currently no critical notifications associated with this object. This state is denoted by a solid green LED in the first position of the Status Indicator Bar.

Asserted Unacknowledged

There are currently critical notification[s] associated with this object. The notification[s] have not been acknowledged by an operator via the Current (Active) Alarm List. This state is denoted by a flashing red/green LED in the first position of the Status Indicator Bar.

The flash period is user configurable, see *User Preferences* on page 15.

Asserted Acknowledged 

There are currently critical notification[s] associated with this managed object. The notification[s] have been acknowledged by an operator via the Current (Active) Alarm List. This state is denoted by a solid red LED in the first position of the Status Indicator Bar.

The Status Indicator Bar, Figure 2, conveys the current notification status of the object represented by the icon. For icons representing Managed Elements the association is simple, but for objects that represent views, such as “North East” in our previous example, the Status Indicator conveys the summation of the notification status of every object contained within the view.

Let's take a look at another example:

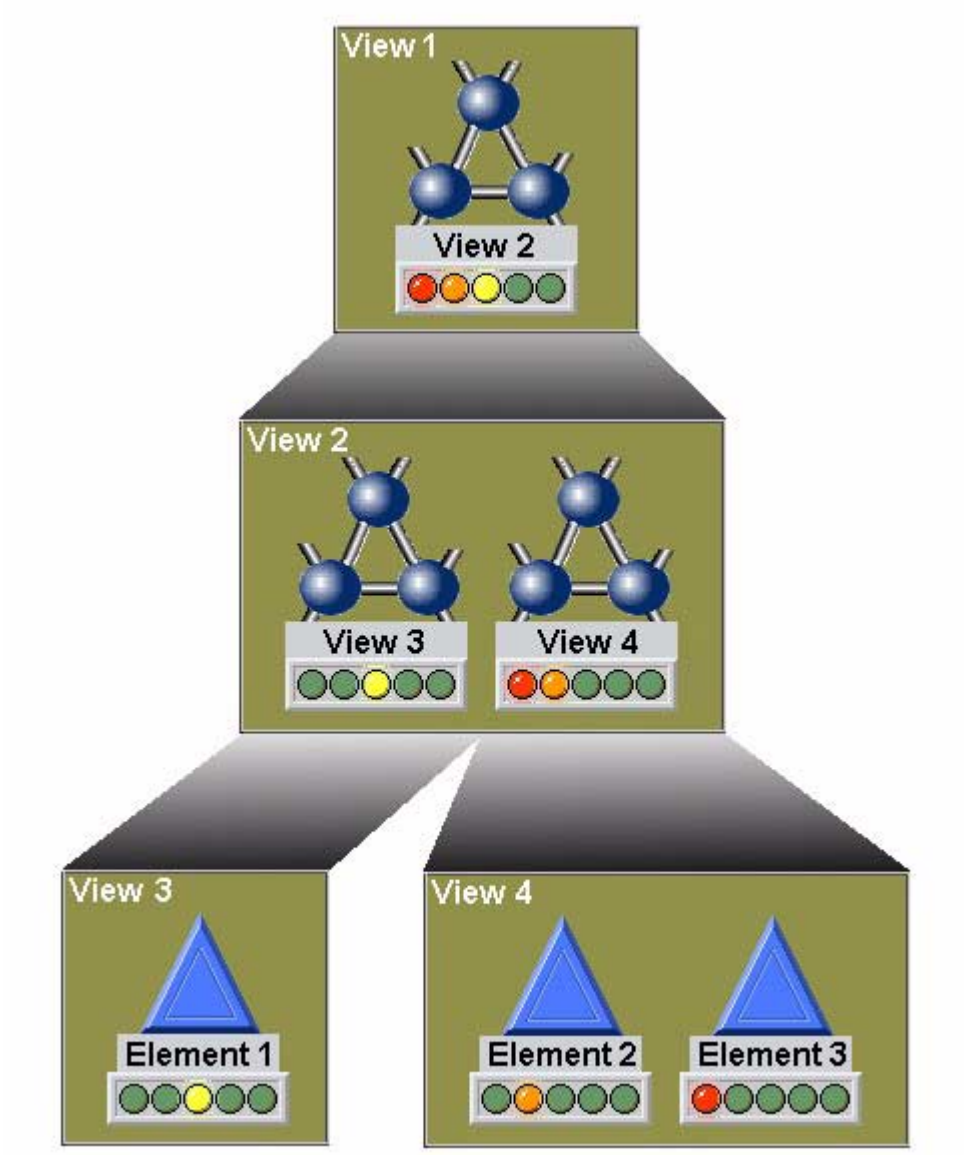


Figure 5 The Summed Status View

In this simple example there are only three Managed Elements:
Elements 1, 2 & 3.

Four views, (view 1, 2, 3 & 4), have been created to provide some context for the user.

Unfortunately all three elements have reported standing notifications to the management platform:
Element 1 - *Minor*, Element 2 - *Major* and Element 3 - *Critical*.

The icons drawn in views 3 & 4 represent the Managed Elements and hence show their respective element's notification state. However, the icons drawn in view 2 do not represent elements, rather they represent views 3 & 4.

The notification state of view 3 is taken to be the summation of the notification states of all the objects contained within view 3, i.e. Element 1. Hence, the Status Indicator Bar of view 3 shows a minor notification.

Applying the same rule again, the notification state of view 4 is taken to be the summation of the notification states of all the objects contained within view 4, i.e. Elements 2 & 3. Hence, the Status Indicator Bar of view 4 shows a critical *and* major notification.

Just to underline the point, view 1 contains an icon representing view 2. Again, the notification state of view 2 is taken to be the summation of the notification states of all the objects contained within it, i.e. view 3 (Element 1) and view 4 (Elements 2 & 3). Hence, the Status Indicator Bar of view 2 shows a critical, major and minor notification, in fact the summation of the notification states of *all* the Managed Elements.

In the previous paragraphs we touched upon the use of views in a hierarchical structure. Let's explore why this may be a good idea.

View Hierarchies

Consider we have a large network to manage with many hundreds of elements, how can we define a management view? One method would be to create a single view containing hundreds of element icons. This approach *is* supported by this system but it would be extremely difficult to make the view look anything other than a confusing mess - given the display screen area wasn't the size of a tennis court.

A much better way of defining a management view would be to sort the managed elements into groups, the nature of the grouping is entirely up to you. A view can then be defined to contain each group, and finally a *master view* can be defined to contain all the groups. No compromise has been made in functionality, the notification state of each element can still be seen, but the cognitive skills of the operator are not stretched beyond their limits.

We will now look at a practical, and popular, example of this multiple view layer concept.:

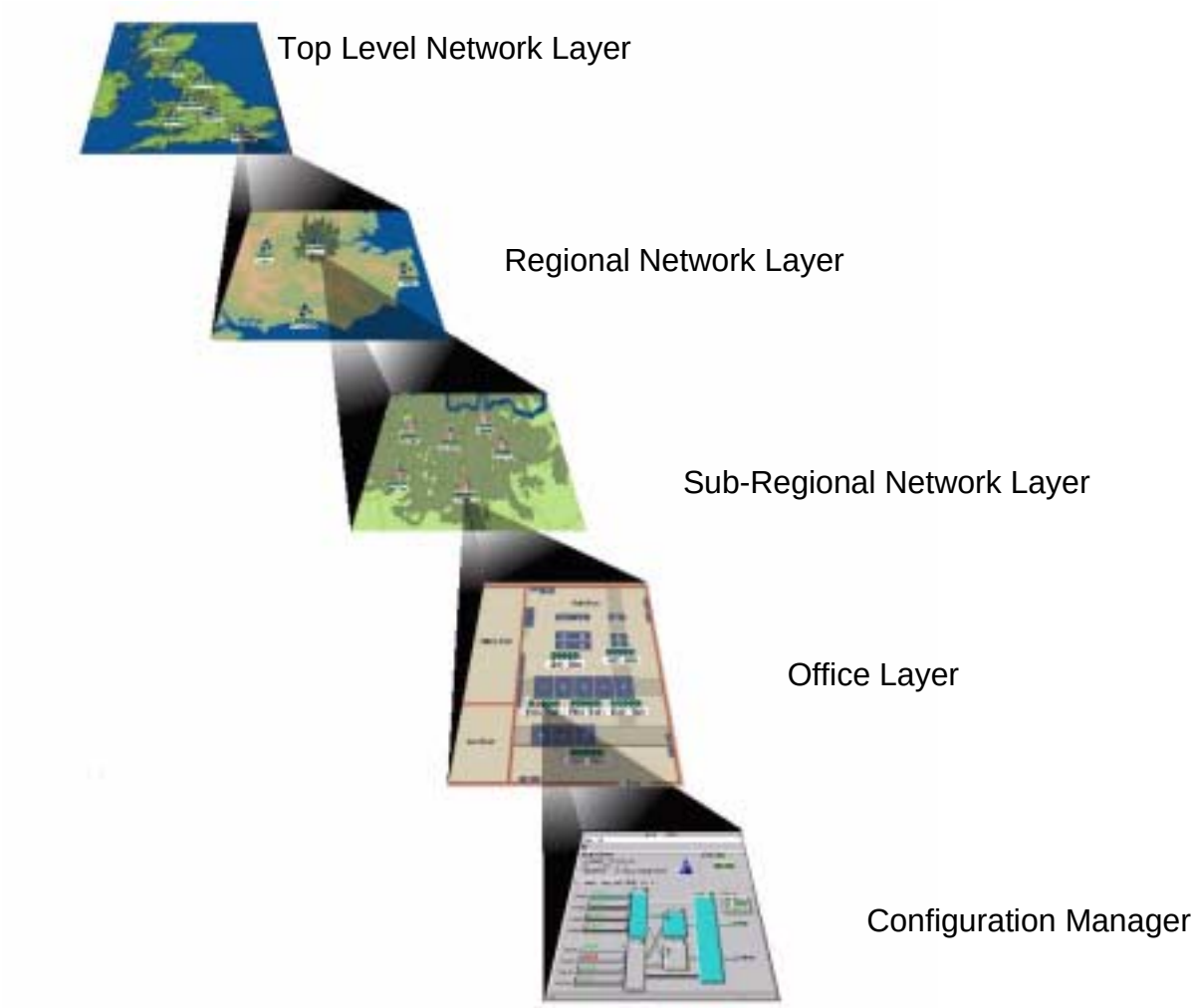


Figure 6 A Branch of the Network, showing multi-layer view hierarchy based upon geographical distribution

At the pinnacle of the hierarchy is a view illustrating the United Kingdom. The second layer represents the network grouped into regions. The third layer represents regions broken down into sub-regions. The fourth layer actually illustrates office or exchange floor layout. The final layer represents an intra-element view provided by the appropriate Element Browser application.

By using only four layers an extremely complex network can be decomposed into relatively simple views. Obviously this approach may not suit all network/element management applications - grouping criteria other than geographical can be used. For example, network layering, element type, etc. have all been used to build view structures. Of course there is no reason why only one structure should be defined, as the system can support multiple concurrent structures. You are free to manage the network using a range of view structures - even the *tennis court* view if so desired.

Now we've looked at the conceptual side of network views and the Network Browser Application let's do some practical work...

Next Page

Opening a View with the Network Browser

The TimeScan NMS System is extremely flexible and may be configured in many different ways, but in general the Network Browser is accessed from icons within a program group.

WINDOWS NT: In the following example a Network Browser icon has been setup in the TimeScan NMS User program group on the WindowsNT *Start* menu:

Figure 7 The Unix CDE Front Panel / WindowsNT Start Bar

Access icon creation is discussed in Notes for Administrators (Page 20).

UNIX: Network Browser can be accessed from the Unix *CDE front panel*.

Accessing Network Object Tools and Facilities

So far we have seen how the Network Browser Application can convey the alarm status of a whole or just a portion of a network. Now we will look at another useful facility provided by the Network Browser - Tool Access.

Objects depicted as icons within views not only have alarm status associated with them, they can also have software tools linked or *bound* to them. This binding will enable you to do more *interesting* things than just view the TimeScan NMS alarm status.

To access the tool binding for an object simply click the right mouse button with the cursor over the icon for that object. If there are any tools bound to this object, a menu list will be automatically generated. The tool binding mechanism supported by the TimeScan NMS System is extremely flexible and has probably been configured by your System Administrator. Hence, your system may differ from that described in this document.

However, let's look at an example...

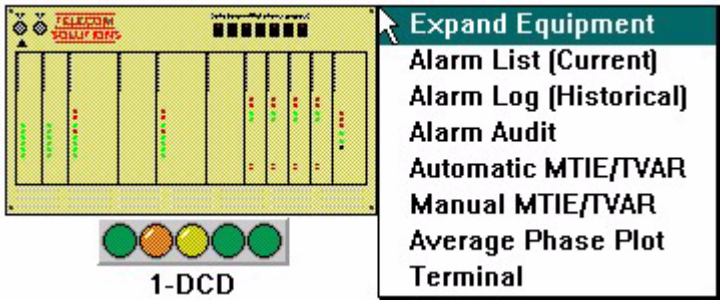


Figure 8 Tools Available For A Given Object

Selecting this icon, representing an equipment front panel, produces a list of eight tools. Hopefully the names assigned to the tools in your system should be self explanatory. To start a tool simply select it from the list.

At this point we will look at the security features supported by the Network Browser. It is possible for users to be barred access to tools bound to objects. Taking the example given above. If you do not have authorisation to use the "Terminal" tool then this entry in the tool list would still appear, but the name would appear in grey text to denote it is not available. Selecting it will have no effect.

Another feature of the Network Browser is the ability to immediately zoom down to a subordinate view by double clicking the left mouse button while the cursor is over an object's icon. This facility is provided by the tool binding mechanism and hence may be reconfigured or disabled by your System Administrator.

If you do not have the authority to zoom into an object then the Distinguished Name of the object will appear in grey text.

The Network Browser Tool Bar

On start-up the Network Browser has a tool bar, just above the view illustration, containing six tool buttons:

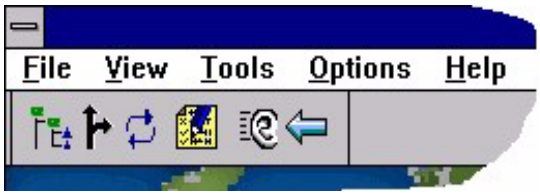


Figure 9 The Network Browser Tool Bar

This tool bar is dockable so if you are not happy with its position you can pick it up with the mouse and position it where you want around the view. If you drop it outside the window, or place it in the centre, it will transform itself in to a *fly-off* window:

This may be useful if you have a particularly large view and you need the few pixels the tool bar takes up within the window.

Let's take a brief look at each tool.

Hierarchy Tree Tool 

In the introduction sections of this chapter we discussed arranging many views in a hierarchical structure. The *Hierarchy Tree Tool* provides a readily recognisable illustration of the view hierarchy, if any, below the view the Network Browser was opened with. This is illustrated in Figure 10.

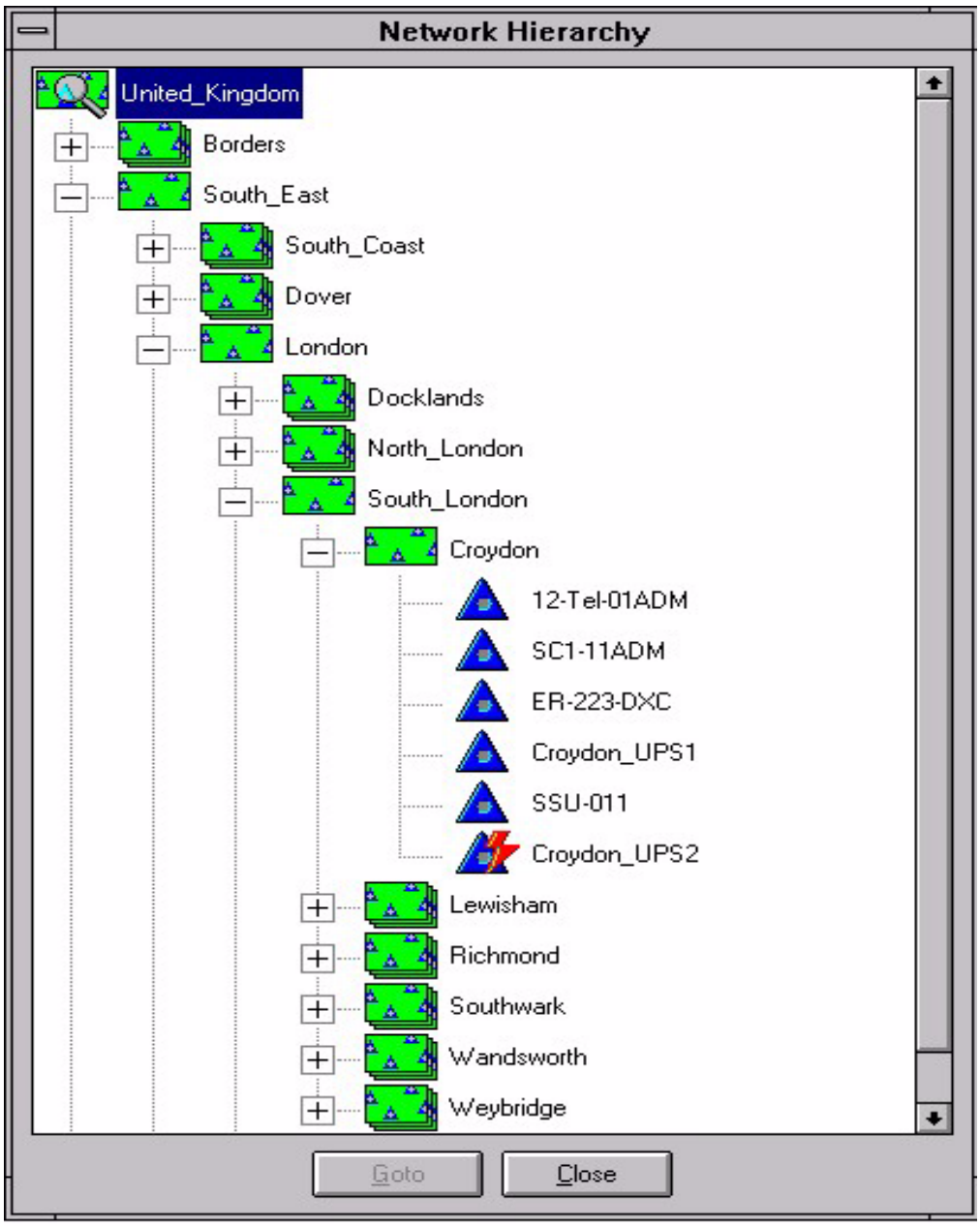


Figure 10 The Network View

Figure Figure 10, we see a schematic of the structure we saw in the United Kingdom network example. The hierarchy is draw in the form of a tree, similar to that used by disk explorer applications.

Views are depicted on the tree as small frames... 

Managed Elements are depicted as small triangles... 

The tree is particularly useful in traversing around the views in the hierarchy. For example, let's assume we have the United Kingdom view open and we want to open the Croydon view. We could do it by double clicking the South East icon... the London icon... the South London icon and finally the Croydon icon, but wow wouldn't that be tedious - and that's assuming we know where Croydon is!

With the tree we can simply double click on the Croydon view icon with the left mouse button and go straight there. As Managed Elements are not views and hence can not be displayed by the Network Browser, this *go to* feature is only valid for view icons.

Larger trees can be made more manageable by selecting the appropriate tree control...

Collapse branch...  Expand branch... 

Another nice feature of the tree is that it can show us exactly which elements are in alarm.

If an element currently has a acknowledged alarm associated with it, it is depicted as a triangle with a lightning strike... 

If the alarm is unacknowledged the lightning strike will flash.

A popular method of using this feature is to open the view at the top of a hierarchy. When an alarm occurs on an element within the hierarchy, the indicator status bar of an icon on the view will change state. By fully expanding the tree the offending element or elements will be apparent. You can then zoom to the appropriate view, access the tools bound to the element and take appropriate remedial action.

Spawn Network Browser Tool 

This tool has been provided for the situations where you may want to view two or more views simultaneously. On selecting this tool, the button will appear depressed but no other actions will be apparent until another view is expanded. (Expand a view either by double clicking an icon on the existing view or from the hierarchy tree). At that point, instead of adopting the new view, another instance of the Network Browser Application will be started with the new view. Now you will have two views open.

This tool should be selected every time you wish to start another Network Browser in this way. Remember the new Network Browser will only display the tree hierarchy from its original starting position. So if you open a Network Browser with the South London view, for example, then the tree illustrated by the *Hierarchy Tree Tool* will only show the views and elements contained under South London. You will not be able to look at the United Kingdom view.

Refresh Tool 

Invoking the *Refresh Tool* causes the Network Browser Application to refresh its internal data from the database. This is particularly useful if another user is making configuration changes to the view or view structure you are currently working with.

On refresh, the Network Browser will redraw itself and update where necessary. The Network Browser may be refreshed as many times as you like. It is not necessary to use the *Refresh Tool* to update icon status indicators, as these are automatically refreshed in real-time.

User Preference Tool

There are a number of properties of the Network Browser Application that may be modified by the user at run time. Access to these properties is provided by the *User Preference Tool*.

Invoking this tool results in the following preferences note pad...

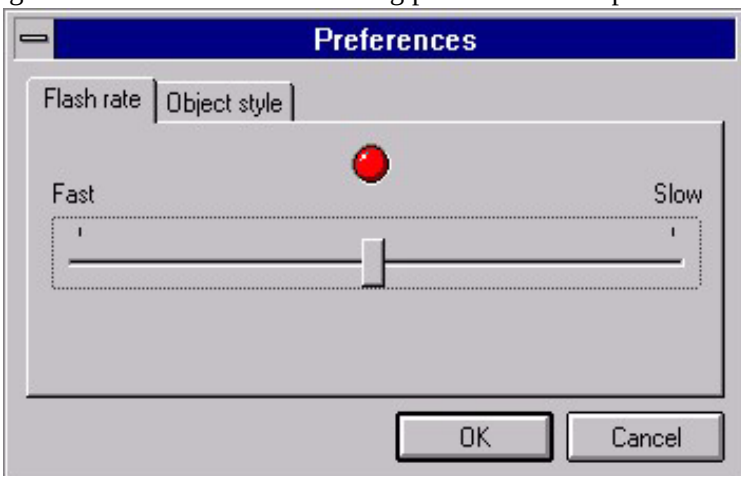


Figure 11 Flash Rate Page Of The Preferences Dialogue Box

Flash Rate Page: This enables the user to set the flash rate of the Status Indicator Bar LEDs. To increase the flash rate move the slider to the left. To decrease, move it to the right. The LED in the centre of the page will illustrate the flash rate resulting from the slider position.

Click on the tab labelled *Object Style* to move to the other page of the dialogue box.

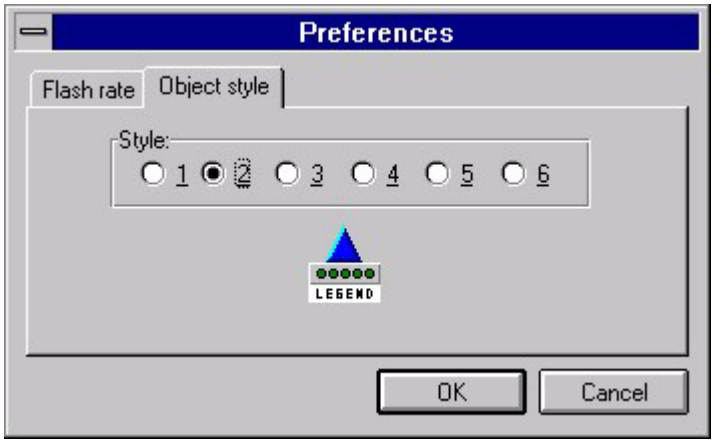


Figure 12 Object Style Page Of The Preferences Dialogue Box

Object Style Page: This enables the user to set the arrangement of the Icon, Distinguished Name and Indicator Status Bar of each object illustrated on a view. Six styles are supported. To examine a style select the appropriate radio button. The illustration in the centre of the page will illustrate the style selected.

When you are happy with the flash rate and object style, select the *OK* button at the foot of the dialogue window to apply your selections and close the dialogue window. To discard your selections and close the dialogue select the *Cancel* button.

Audio Warning Tool

Another feature of the Network Browser Application is audio warnings.

If required the Network Browser can alert the user to the existence of an unacknowledged notification within the open view by generating an audible alarm. The audible warnings may be controlled via a dialogue window generated from the *Audio Warning* tool or from the *Audio Warning...* option in the *Options* menu.

Figure 13 The Audio Warning Dialogue

If no sound reproduction hardware is detected within the host work station, the Network Browser will generate a beep (via the host's internal speaker) every ten seconds. However, if sound reproduction hardware is detected, then the Network Browser will use user definable audio recordings.

Windows Only: As discussed earlier the system supports the five standard categories of notification perceived severity; Critical, Major, Minor, Warning and Indeterminate. The Network Browser Application enables the user to *bind* an audio recording, in the form of a wave file (*.wav), against each of the five levels of perceived severity, as described in the next section.

Previous Views Tool  (inactive)

The Previous Views Tool will initially be disabled. Once you have changed the view to a new location the button will become active, as shown on the left.

Once the tool is active it will take you back to the previous view selected. Using this tool repeatedly will go back through all the views selected until you reach the view that you started with. At this point, the tool will again become disabled.

Customizing the Network Browser

It is possible to define a degree of customization for the Network Browsers. On start-up each Network Browser looks for an initialisation file, *browser.ini*, located as follows: *c:\net-monitor\bin* (Windows), *$MONITORHOME/configs* (Unix).

This initialisation file may be used to configure user preferences. Here is an example initialisation file:

```
[INIT]
Style = 1
Period = 600

[Sounds]
Enabled = 0
Critical = c:\audio\critical.wav
Major    = c:\audio\major.wav
Minor    = c:\audio\minor.wav
Warning  = c:\audio\warning.wav
Unknown  = c:\audio\unknown.wav

[Tools]
MenuItem1 = Bit Error Rate TimeScan NMS
Executable1 = c:\tele-measure\bert.exe -d -e2*10-6
MenuItem2 = System Event Log
Executable2 = eventvwr.exe
```

The **Style** parameter allows the arrangement of icons, managed object status indication and managed object name to be changed. There are six variations,
1 - 6.

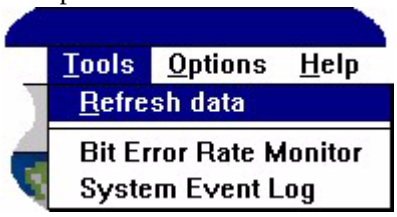
Period defines the status bar LED flash rate, in milli-seconds, at start-up.

The **Enable** parameter defines the default state of the audio notification, 0 = off, 1 = on.

Windows Only: The **Critical**, **Major**, **Minor**, **Warning** and **Unknown** parameters allow the path and file name of audio recording files, (*.wav), to be defined against the appropriate notification severities for use by the Network Browser audio system. If no files are defined then a beep will be generated as default.

It should be noted that if no sound system is installed in the host work station then no audio files should be defined.

The **MenuItem*n*** and **Executable*n*** parameters allow entries to be defined in the Tool Menu:



MenuItem dictates the menu string and **Executable** defines the path and file name of the application to launch if this menu item is selected. In this example a *Bit Error Rate Monitor Application* and the *System Event Log* have been defined.

If the *browser.ini* file is not found, then a dummy is created and the Network Browser will use factory set defaults.

The Network Browser application must be closed while the .ini file is being edited.

Frequently Asked Questions...

1 Q. **When I select a browser icon, an empty menu is generated... why?**

A. There are no tools bound against this managed object.

2 Q. **When I double click a browser icon, nothing happens... why?**

A. (i) If the name of the managed object is drawn in grey and not black then unfortunately you do not have authorisation to perform actions toward the object represented by the icon. Contact your System Administrator.

(ii) There is no double click action defined against this managed object. Contact your System Administrator.

3 Q. **I have defined audio recordings against notification severities, but I can't hear anything... why?**

A. (i) Audio warnings are only given when there are unacknowledged notifications (flashing LEDs) contained within the browser.

(ii) Check your work station has a properly installed sound system. Contact your System Administrator.

(iii) You are using a Unix based system. This feature is not available in Unix.

Notes for Administrators

Location

The correct path and file name of the Network Browser Application is given below:

WINDOWS *C:\Net-Monitor\bin\BROWSER.exe*

UNIX *$MONITORHOME/bin/Network Browser*

The correct path and file name of the Network Browser Application initialisation file is given below:

WINDOWS *C:\Net-Monitor\bin\BROWSER.ini*

UNIX *$MONITORHOME/configs/browser.ini*

Creating a Network Browser Access Icon

In order to create a program manager icon for a specific network view, simply create a new program item. Enter a meaningful description, including the view name. The command line should consist of the application path and executable name given above with the distinguished name of the start-up view appended as a launch parameter. The working directory should be set to the Network Browser's home directory, given above.

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Chapter 3 Alarm List

The Alarm List application provides access to all the notification records (current and historic) maintained in the TimeScan NMS database.

Why would I use the Alarm List Application?

The TimeScan NMS System is capable of automatically accepting, classifying and storing notification messages generated by the managed elements. Each notification record is maintained in the TimeScan NMS database. The Alarm List window provides the human-computer-interface for the review and manipulation of these notification records.

What's in this Chapter

This chapter contains all you need to know to exploit the easy to use features of the Alarm List application. There is a quick tour section, on page 47, followed by sections outlining how to use the Alarm List (see Contents, page 42). If you want to use this chapter as a quick reference guide, there is a keyword index at the end (page 82).

Chapter Contents

Opening The Alarm List Application

The TimeScan NMS System is extremely flexible and may be configured in many different ways. The simplest way to open the alarm list is from the right click menu produced when the icon representing a DCD element is selected in the *Network*

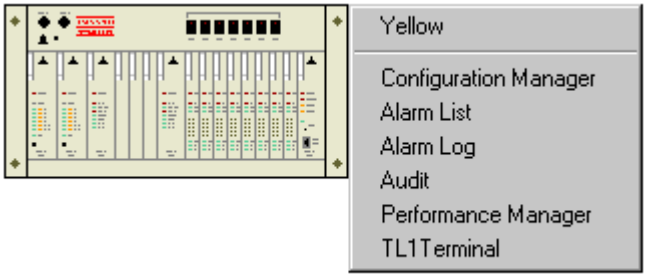


Figure 14 Opening Alarm List from the Network Browser

Alarm List can also be opened from the command line, by the usual method. One reason for opening it in this way would to allow you to specify Command Line Parameters.

Command Line Parameters

To specify the a parameter, type in the application address followed by the relevant code:

-help	brings up a message box outlining the possible command line parameters without starting the application.
/?	brings up a message box outlining the possible command line parameters without starting the application.
-log	displays a list of all historical (acknowledged or logged) alarms.
-list	displays a list of all current (either unacknowledged or uncleared) alarms. This is the default setting.
-colour	colours alarms according to their severity. The default setting is for the alarm list to be shown in grey.

-fields: determine which fields to display in the alarm list. This needs to be followed by the field name code, as follows. (To remove default field preface with an exclamation mark, as discussed at the end of this section).

-DN: Distinguished Name Field (present as default)

-RN: Reception Time Field (present as default)

-AN: Alarm Number Field

-AI: Alarm Identity Field

-AT: Alarm Type Field (present as default)

-OS: Original Severity Field

-CS: Current Severity Field (present as default)

-AS: Alarm State Field

-EQ: Equipment Field

-SL: Slogan Field (present as default)

-RI: Record Identity Field

Field names should be separated by colons.

-sort: field to sort list on. The default is on the Reception Time, descending. Should be followed by a single field code, from the list above.

-nls: See “Native Language Support” on page 46.

<*source*>: specifies the source from which to fetch alarms, where *source* is the source name.

An exclamation mark(!) reverses the sense of the field. For example, the following command line parameter opens the current alarm list, displaying the Record Identity field, but not the Alarm Type field, and sorting it in descending order based on the Distinguished Name field.

AlarmListAddress -list -fields RI:!AT -sort !DN

If no parameters are given, the last used configuration will be restored.

Native Language Support

The Alarm List application can be viewed in languages other than English, when an appropriate translation file is provided.

Security Authorisation

The NMS Security Manager will check to see that you have the correct security clearance to start the Alarm List Application. If you do not, a dialogue box will appear, advising you of this. Contact your System Administrator about changing your security clearance.

A Tour of the Alarm List Window

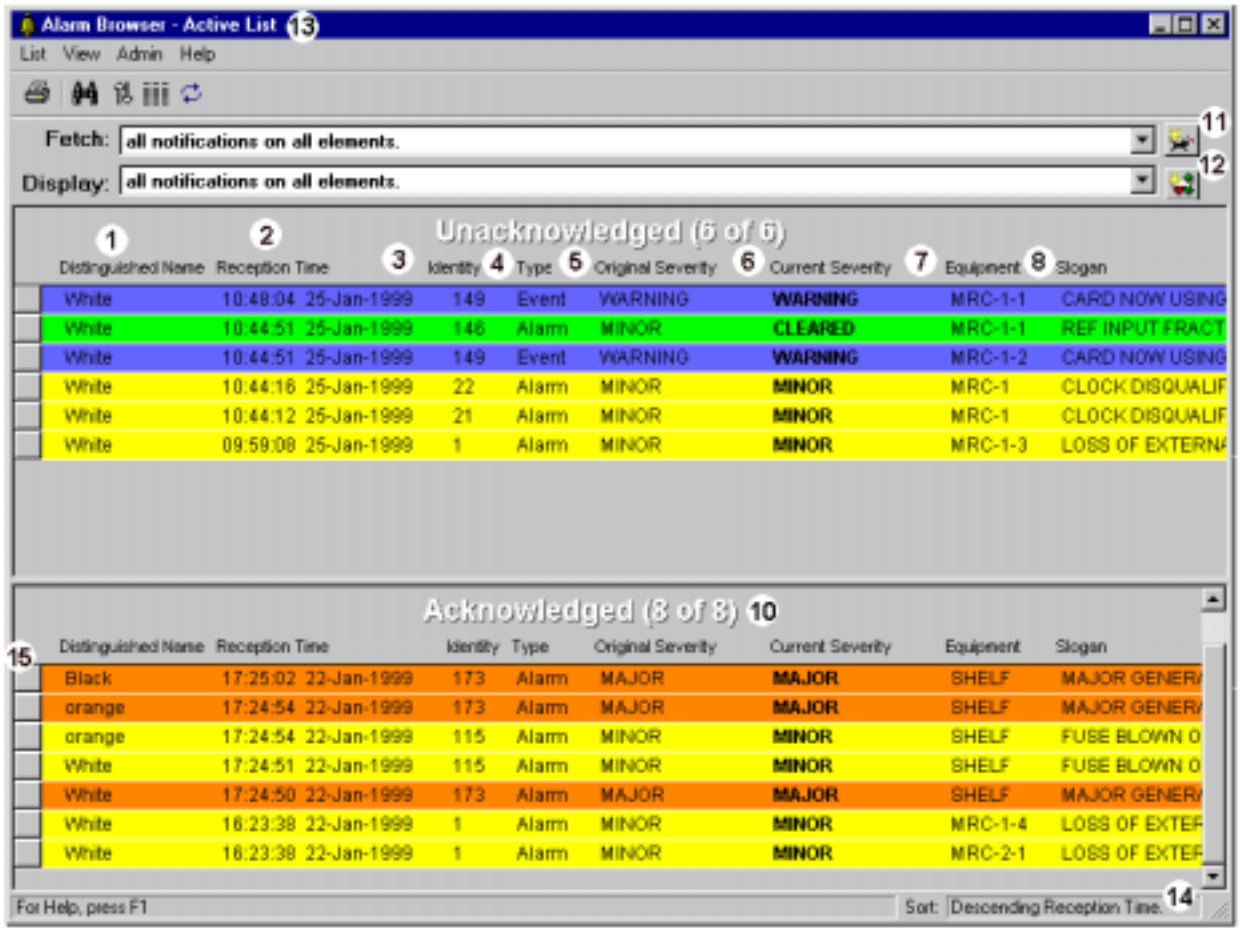


Figure 15 A Typical Alarm List Window

In its basic form, the Alarm List is composed of scrollable list of the alarm and event records, either current or historic. These are known simply as alarm records. Each record entry contains a number of fields. These fields, and the other key points of the Alarm List window, are described below. The numbers refer to those shown in Figure 2.

4 The **Distinguished Name Field** displays the unique identifier of the object that is the source of the alarm shown in this record.

5 The **Reception Date and Time Field** shows the time stamp of the record creation. We will see in Viewing Alarm Details, on page 20, that other time stamps are maintained by the TimeScan NMS database.

Number Field (not shown) is an ordering number derived from a spontaneously received alarm or event message.

6 The **Identity Field** represents a unique code for each alarm condition type.

7 The **Type Field** signifies whether the record pertains to an event or an alarm.

8 The **Original Severity Field** the severity of the condition associated with the alarm or event at the time *it was received* by the Alarm List application. The supported severities follow those defined in X.721; Critical, Major, Minor, Warning, Cleared (condition cleared) and Unknown (indeterminate).

9 The **Current Severity Field** show the severity level of the alarm as it is currently stored in the NMS/TimeScan database.

10 The **Equipment Field** displays the type of equipment or module exhibiting the condition associated with the alarm or event.

11 The **Slogan Field** gives a brief description of the condition associated with the alarm or event.

The **Record Identity Field** (not shown) is a unique database assigned value for each alarm record.

12 This lower section of the screen shows **Acknowledged Notifications**. The upper section of the screen shows the **Unacknowledged Notifications**.

13 **Record Display Information Line**. The numbers in brackets show how many, of the records which have been **fetched,** are currently being **displayed**. The upper section of the screen also contains one of these for the Unacknowledged Alarms.

14 This whole line relates to fetching alarm list records. The text box shows the criteria that was applied to the current fetch. (It stores “all notifications on all elements”, as shown, plus the nine other most recent sets of criteria). The Fetch icon  starts the fetch process. For more information see the “Fetch Alarm List Records” section, page 51.

15 This whole line relates to filtering alarm list records for display. The text box shows the criteria being applied to the display.(It stores “all notifications on all elements”, as shown, plus the nine other most recent sets of criteria). The Filter icon 

shows a dialogue box that allows you to apply various sets of criteria to the Alarm List. For more information see the “Filtering Alarm List Records For Display section”, page 57.

16 The title bar shows whether an **active** or **historical** set of records is currently being displayed.

17 The right-most pane of the Status Bar shows which, if any, criteria the list is currently **sorted** by.

18 The *Selection* button, which expands the record in that row, enables you to see the Alarm Information page, containing all of the Alarm details.

You can view the full text of any field by clicking in at and using the arrow keys to scroll backwards and forwards.

The Alarm List Toolbar

Figure 16 The Alarm List Toolbar

The Alarm List Toolbar is dockable, i.e. if selected the tool bar may be detached from its start up position and relocated to the side, top or bottom of the Alarm Record list, or maintained as a floating window. It contains five tools, each discussed below.

The Print Tool

This tool will print a copy of the currently displayed alarm list, using the current print setup. For more information, see “Printing The Alarm List”, page 75.

The Find Tool

This tool will cause a search box to be displayed, which will allow you to find text in the currently displayed alarm list. For more information see “Finding An Entry in the Alarm List”, page 64.

The Sort Tool

This tool will display the sort dialogue box, which allows you to specify exactly how you would like to sort the currently displayed records. For more information, see “Sorting Displayed Alarm Records” on page 63.

The Field View Tool

This tool brings up a dialogue box allowing you to add and remove the fields (columns) displayed in the Alarm List window. For more information, see “Selecting Fields To Display” on page 76.

The Refresh Tool

An open Alarm List is periodically refreshed automatically, and always after some change has been made, but this tool may be used to force a refresh of the displayed list if an immediate update is required.

Fetching Alarm List Records

On opening, the default behaviour of the Alarm List is to display all active (either non-acknowledged or non-cleared) alarms. This is likely to be the most common type of list that is required.

Whichever kind of Fetch you do, a box containing a progress bar appears, which gradually fills from left to right, indicating approximately how long it will take to load all of the Alarm Records. There is a *Cancel* button, which enables you to stop fetching the Alarm Records.

If you need to review the alarms which have been acknowledged and (usually) cleared and are no longer active, select the *Historic Log* item from the *List* menu.

However, if you need to view a more specific subset of alarms, you can use the Alarm List application to apply a set of criteria to the records contained within the TimeScan NMS database. Let us see how...

First, select either the *Fetch* Tool  (Figure 2, Item 11) or the *Fetch* item from the *List* menu. This will bring up the Fetch Data Control box, shown in Figure 4.

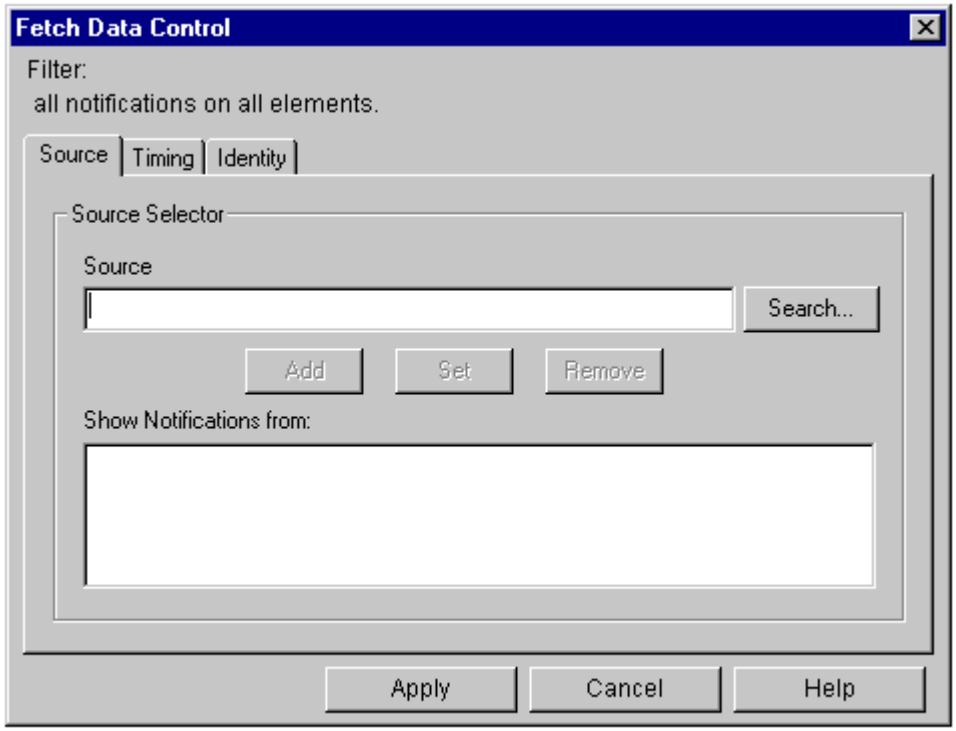


Figure 17 The Fetch Data Control Source Page

As you can see this box has three buttons along the bottom, *Apply*, *Cancel* and *Help*. These stay present whichever part of the box you are dealing with, and have the normal meanings:

Apply:	Closes the dialogue box and uses the information supplied to select a new set of data from the TimeScan NMS database
Cancel:	Closes the dialogue box without using the data collected to fetch a new set of data
Help:	Displays the online help files

nb: You cannot use wildcard characters to specify fetch criteria.

The Source Page

The first page, or tab, of the box is shown in Figure 4. This allows you to select the *Source* of the alarms and events which you will be fetching. *Source* refers to the equipment which originates these notifications, for example a Managed Element. There are three ways to select a source element:

1 Type its *Distinguished Name* in the box where the cursor is shown in Figure 4,

2 Press the *Search* button to the right of it. This will display the Source Selector dialogue box as shown in Figure 5. This allows point and click selection of the Managed Element: use the *Object Type* and *Object Class* drop down boxes at the top to restrict the data sources displayed, then use the drop down list in the *Source* box (highlighted in Figure 5) to select the source you require. As usual, press *OK* to accept this choice and return to the main Fetch Data Control box, *Cancel* to close the dialogue box without selecting this data source and *Help* to display the online help files. If you pressed *OK*, you will see when you return to the Select Data Source page (Figure 4) that the name has now been placed in the *Source* box.

3 In the main Alarm List Window, click on the item you want to select in the *Distinguished Name* field. This will input the name into the *Source* box in the Select Data Source page (Figure 4)

.

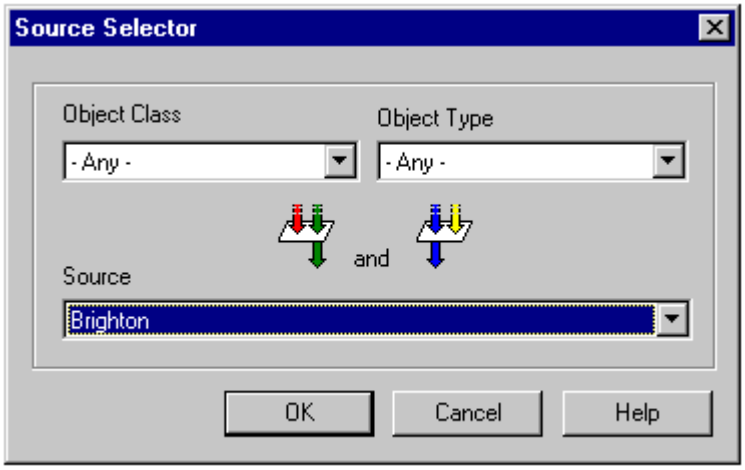


Figure 18 The Source Selector Dialogue Box

Notice, on returning to the Select Data source page, that once you have a name in the *Source* box, the *Add* and *Set* buttons are enabled.

Pressing *Add* appends the selected source to the list in the *Show Notifications From* box which takes up the lower part of the screen. This shows all currently selected data sources in a list, and you can now add more data sources clicking back in the *Source* box and repeating these steps.

Pressing *Set* replaces any items in the *Show Notifications From* box with the new data source.

Once a source in the *Show Notifications From* box, it can be removed by highlighting it and pressing the *Remove* button.

Add and remove data sources until you are sure you have the combination you want- you can review the currently selected set by looking in the *Show Notifications From* box or looking at the line underneath the *Filter* label at the top of the box, which shows all the criteria selected so far. (To see all the values in the line, click in it and use your arrow keys to move backwards and forwards).

Either press *Apply* to start your fetch, if these are the only criteria you want used to select your data, or move on to another page to set more values.

The Timing Page

Press the label marked *Timing*, sticking from behind the top of the Source Page (see Figure 4) to move to the Timing Page.

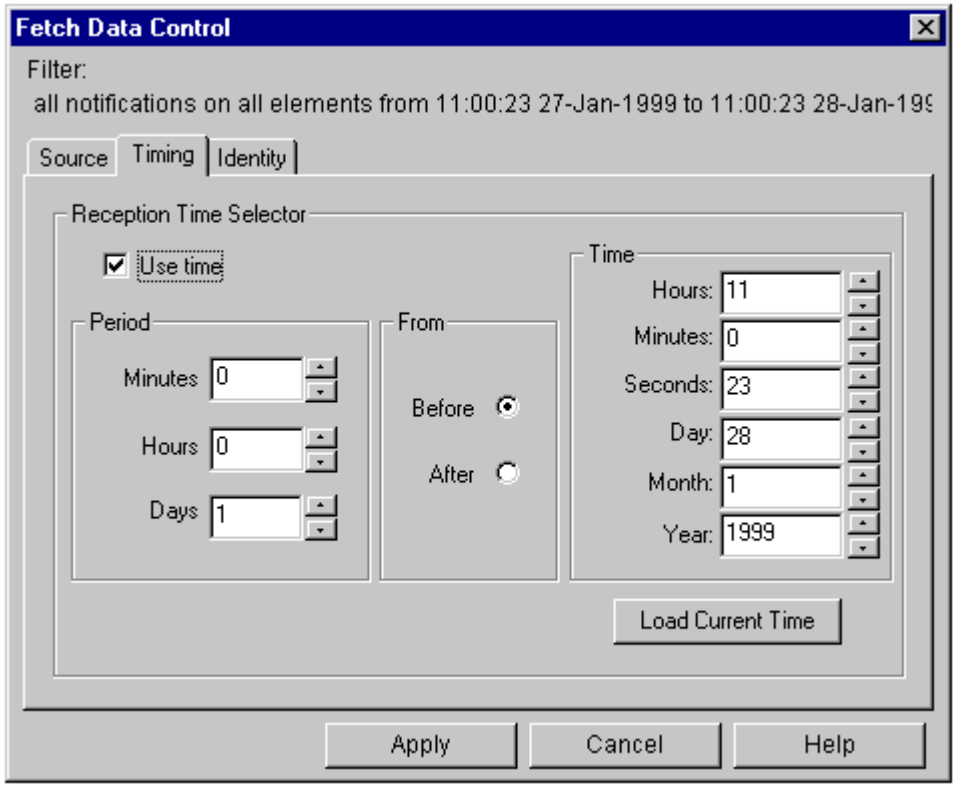


Figure 19 The Fetch Data Control Timing Page

If you wish to limit the scope of your fetched data to a given time period, use this page. Click in the *Use Time* box to enable all the other fields on the page. If there is no tick in this box, any values shown on this page will not be applied.

As you can see, you use the rightmost portion (labelled *Time*) of the box to define a base time, the middle area (labelled *From*) to choose whether you are interested in the period *Before* or *After* the base time, and the leftmost part (labelled *Period*) to define the duration of interest.

You can input values into the Timing Page in four ways:

1 Type directly into the boxes.

2 Use the *Load Current Time* button to quickly input the present time and date.

3 Use the up and down arrows to the right of each box to scroll through list of times and dates.

4 Click on a value in the *Reception Time* field in the main Alarm List window.

The added values will also be shown in the line underneath the *Filter* label at the top of the Select Data Control. You can click in this list and scroll along it to view all the criteria.

Once the Time Page is set to your satisfaction, press *Apply* to start the fetch with the values set on all of the current pages, *Cancel* to close the dialogue box without starting a fetch, or *Help* to call up the online help pages.

The Identity Page

Press the tab sticking out from behind the Timing Page to move to the Identity Page.

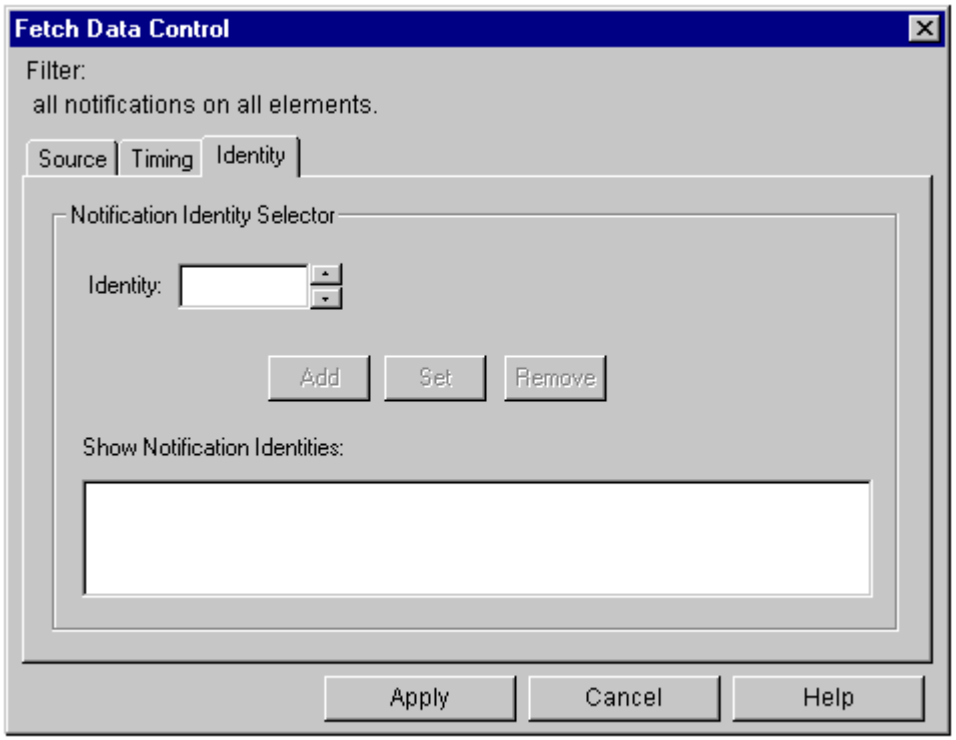


Figure 20 The Fetch Data Control Identity Page

The Identity Page allows you to input a code for the type of alarms / events that you wish to select from the database. There are three ways to put a value in the *identity* box:

1 Type a value in directly.

2 Use the up and down arrows to select from a list.

3 Click on a value in the *Identity* field of the main Alarm List window

You can build up a set of values in the *Show Notification Identities* box using the *Add*, *Set* and *Remove* buttons in exactly the same way as you did on the Source Page (see page 11). The added values will also be shown in the line underneath the *Filter* label at the top of the Select Data Control. You can click in this list and scroll along it to view all the criteria.

Once you are satisfied with the values on the three pages in the Fetch Data Control, press *Apply* to start retrieving the data or *Cancel* to close the box without fetching a new dataset. It may take a few minutes to load in a new dataset.

Once the data is successfully loaded, the total number of records retrieved will be shown in either of the *Record Display Information Line* (Figure 2, Item 10). It is the final number which shows how many records have been fetched.

The criteria applied to record selection will be shown clearly in the drop down *Fetch* list box, (Figure 2, Item 11). This list box will store the nine most recently used criteria plus the default range, *All Notifications on All Elements*. Selecting another set of criteria into this list box will cause the data currently displayed to be replaced by the newly selected set. If you wish to return to the current Alarm List, the simplest way to do this is to select the *Active List* item from the *List* menu.

The Alarm List is capable of showing many thousands of alarm records. In order to enable you to identify trends or suppress unimportant records, the Alarm list also provides comprehensive filtering facilities. Let us see how to filter records of interest for display from a set which has already been fetched...

Filtering Alarm List Records For Display

In some cases it may be useful to filter the contents of the Alarm List so only records of a certain type are displayed. For example, if only alarms of *Minor* severity are of interest, the list may be filtered to display only those alarms. The Alarm List filters records using

very similar techniques to those learned in the “Fetching Alarm List Records” section, starting on page 51.

To start filtering records, either press the *Filter* icon,  (Figure 2, Item 12) or select the *Filter* item from the *List* Menu. The Filter Control box (Figure 8) will be displayed. It is similar in appearance to the Fetch Data Control (Figure 4). Again, you move through the pages by selecting the tabs sticking out from behind the sheets. The *Apply, Cancel* and *Help* buttons also work in the usual fashion...

Apply:	Closes the dialogue box and uses the information supplied to sort the current dataset
Cancel:	Closes the dialogue box without using the data collected to sort the dataset
Help:	Displays the online help files

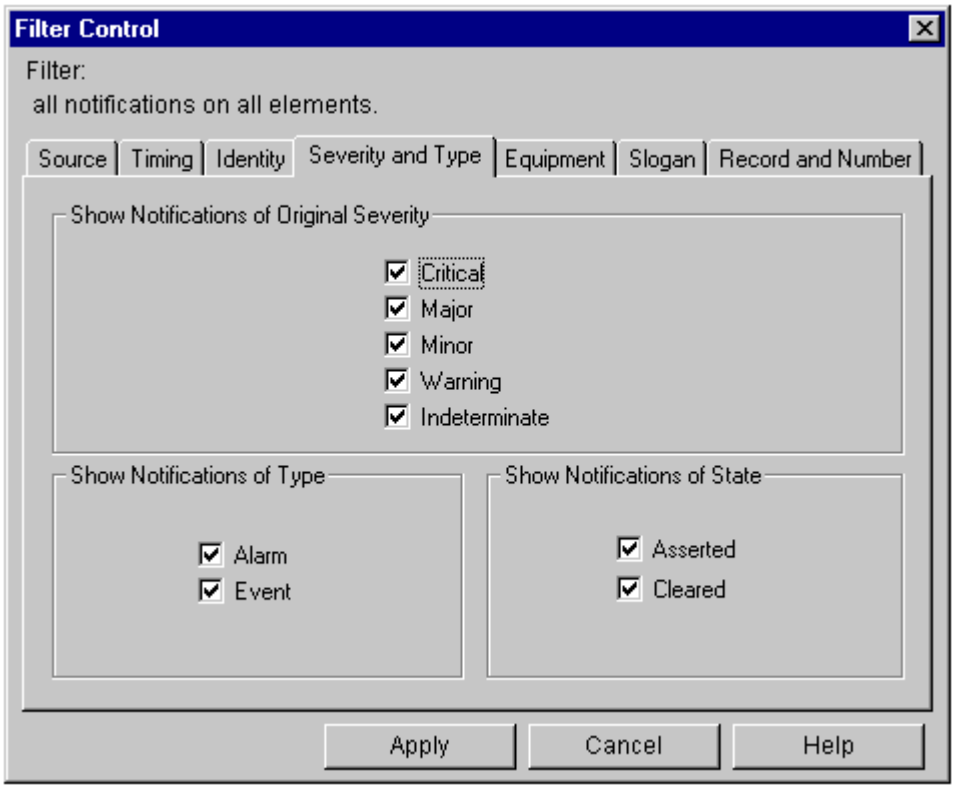


Figure 21 The Filter Control Severity and Type Page

Any filter criteria that have been selected on any of the pages will be shown in the *Filter* line at the top of the box.

nb: You cannot use wildcard characters to specify filter criteria.

Let's look at each of the pages in turn...

The Source Page

This works in exactly the same way as the Source Page on the Fetch Data Control. For more information, see page 53.

The Timing Page

Again, this works in exactly the same way as the Timing Page on the Fetch Data Control. For more information see page 55.

The Identity Page

Again, this works in exactly the same way as the Identity Page of the Fetch Data Control. For more information see page 56

The Severity And Type Page

This is shown in Figure 8. It refers only to the Original Severity of the alarm, that is the severity of the condition associated with the alarm or event at the time *it was received* by the alarm list application.

In the *Show Notifications Of Original Severity* section, put ticks next to the severity values for which you wish to view alarms, and remove ticks for those which you do not want to see at the moment.

In the *Show Notifications Of Type* section, you can choose to view either *Alarms* or *Events* (or both) by placing a tick next the required notification type.

The *Show Notifications Of State* allows to choose to view either only *Asserted*, or only *Cleared* Notifications, or both, by placing a tick next to the required state.

The Equipment Page

The Equipment Page is shown in Figure 9. This page allows you to choose which type of equipment you would like to view Notifications for. There are two ways to input values into the *Equipment* text box:

1 Type the full name of the equipment directly into the box.

2 In the main Alarm List window, click on an alarm record, in its *Equipment* field.

The *Add*, *Set* and *Remove* buttons function exactly as they do in the Fetch Control Source Page. See page 54 for further details.

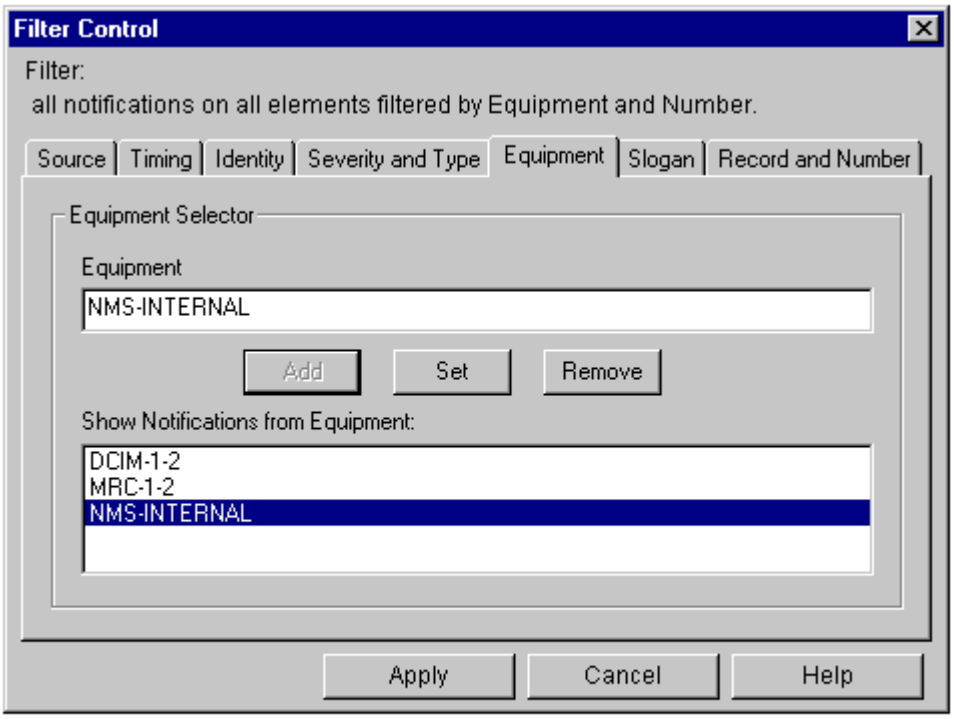


Figure 22 The Filter Control Equipment Page

The Slogan Page

This page, shown in Figure 10, allows you to specify the slogan which will be attached to the alarms that you wish to view. There are two ways to input text into the *Slogan* box:

1 Type the full slogan directly into the *Equipment* text box.

2 Click on the *Slogan* field of an item in the main Alarm List window.

The *Add*, *Set* and *Remove* buttons function exactly as they do in the Fetch Control Source Page. See page 10 for further details.

All filtering criteria will be shown in the line at the top of the Filter Control box.

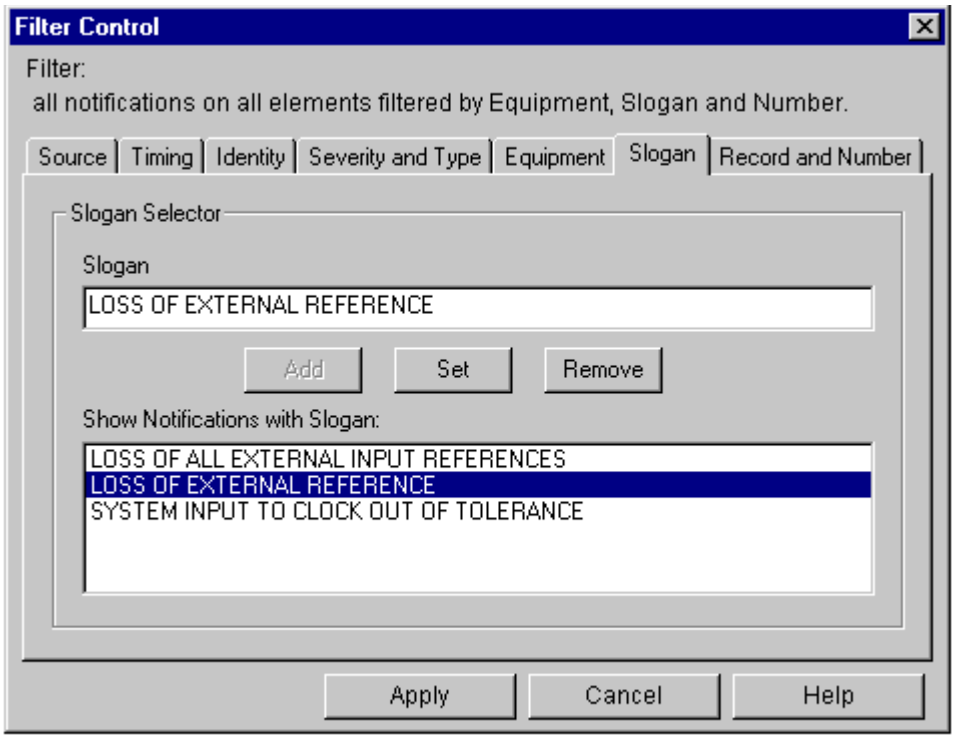


Figure 23 The Filter Control Slogan Page

The Record And Number Page

The final Filter Control page (Figure 11) allows you to set a range of Record Identities (see page 48) and / or Alarm Numbers (see page 48) for the Notification Records that you wish to view.

The box work in a similar way to the Timing Page (see page 55). You use the rightmost portion of the box to input a base value for either the *Record Identity* or *Alarm Number* in the respective text boxes. Then you click on the *From* buttons in the centre of the box to indicate whether you wish to view records *Before* or *After* this number. Finally, use the *Range* box in the leftmost part of the box to indicate how many records you would like displayed.

There are three ways to input values into the various text fields on this page:

1 Type directly into any of the fields

2 Use the arrow controls next to the *Range* boxes to increase or decrease the number shown in there

3 For the *Record ID* or *Alarm Number* text boxes, click in this field in the main Alarm List window.

All filtering criteria will be shown in the line at the top of the Filter control box.

.

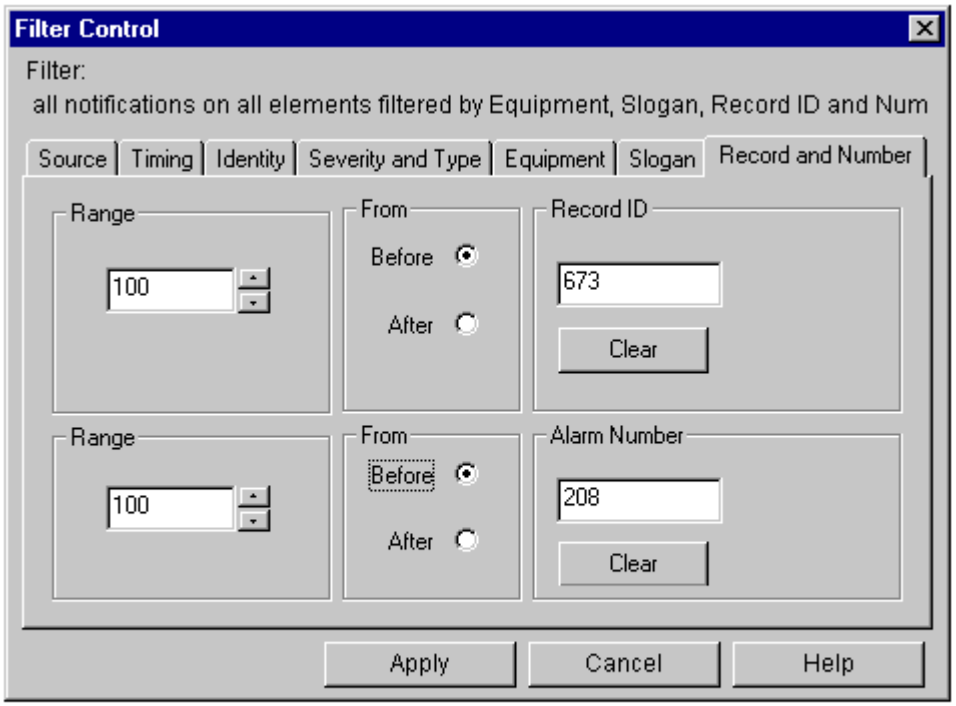


Figure 24 The Filter Control Record and Number Page

Once you have set the criteria on all the pages as required, press the *Apply* button to start filtering the records. This will be faster than fetching records, because there is no accessing of the database required.

Once the data is successfully loaded, the total number of records displayed will be shown in either of the *Record Display Information Lines* (Figure 2, Item 10). It is the first number which shows the number of records displayed.

The criteria applied to record filtering will be shown clearly in the drop down *Filter* list box, (Figure 2, Item 11). This list box will store the nine most recently used criteria plus

the default range, *All Notifications on All Elements*. To return to an unfiltered set of records, select this range. Selecting another set of criteria into this list box will cause the data currently displayed to be replaced by the filtered set.

n.b. Filtering is performed on records which have already been fetched. If you did not initially fetch a record of interest from the database, however you filter this set of records, it will not appear on the list.

Once you have fetched and filtered your data, you can use the sorting facilities in Alarm List to make it even easier to find relevant information. Let us look at how...

Sorting Displayed Alarm Records

Start the sorting process by selecting the *Sort* item from the *List* menu, or the Sort icon from the toolbar. This will bring up the Sort dialogue box, shown in Figure 12.

Figure 25 The Sort Dialogue Box

This box allows you to select which field you would like the records sorted by (one at a time). You can sort the records by any of its fields, even if it is not currently displayed. You can choose whether the sort is performed in *Ascending* (A-Z, 0-9 or *Descending* (Z-A, 9-0) order.

Press *OK* when you have made the appropriate selections and the newly sorted data set will be displayed. Press *Cancel* to leave the dialogue box without changing the order in which the data is sorted.

Any sort criteria currently applied to the data can be seen in the bottom right hand pane of the *Status Bar* (Figure 2, Item 14).

Let us now explore yet another method of extracting information from the alarm list...

Finding An Entry in the Alarm List

To start a search, either select the *Find* item from the *List* menu, or click on the *Find* icon :This will bring up the Find Dialogue box in Figure 13:.

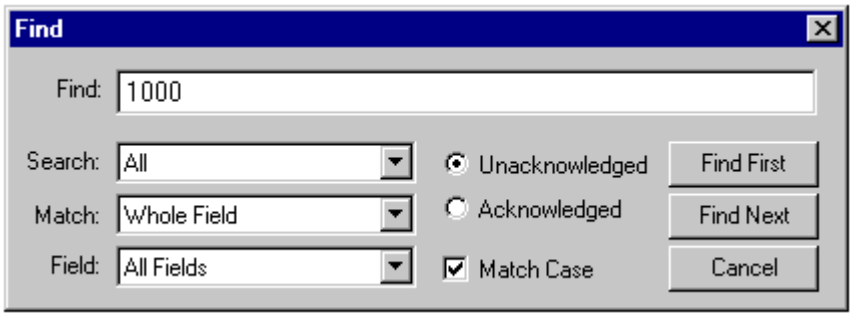


Figure 26 The Find Dialogue Box

There are two ways to enter search criteria into the box:

1 Type the text to be searched for directly into the *Find* text box.

2 Before opening the Find Dialogue box, click in the field that contains the value that you would like to search for. This will automatically input that value into the *Find* text box on opening. It will also change the value in the Field drop down list box, so that only the field selected is searched.

n.b. The Find box does not support searching with wildcard characters.

Use the drop down list boxes to set other values for the search. The *Search* list box lets you choose to only look *Up* or *Down* from the current position in the list, or to search *All* of it.

The *Match* list box lets you set whether to match the text fully or partly with your search string.

The *Field* list box will let you choose whether to search one or all of the fields.

Find First will highlight the first matching record, *Find Next* will continue to the next match and so on.

Having used the various fetch, filter and search facilities to find a particular record, or set of them, you may wish to view all the attributes of that record. Let us see how to do this...

Viewing Alarm Details

Each record entry displayed in the list has a *Selection* Button towards the far left of the record. This is shown in Figure 14:

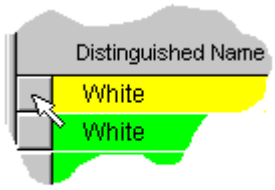


Figure 27 The Selection Button

By clicking the *Selection* button (Figure 2, Item 15) or choosing *Details* item from the *View* menu, the Alarm Information box (Figure 15) will be generated, providing a more detailed view of an individual alarm record.

More than one Alarm Information dialogue can be opened at a time, making it easy to compare records.

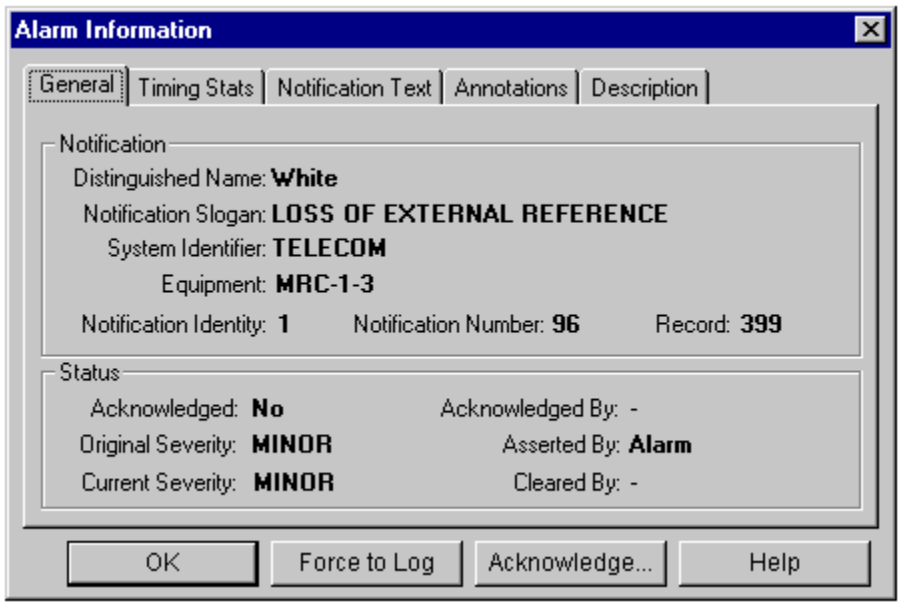


Figure 28 The Alarm Information General Page

The Alarm Information Window conveys a great deal of information, so it has been divided into a set of tabbed pages for clearer viewing. The buttons along the bottom stay present whichever page you are in. They perform the following functions:

OK:	Closes the Alarm Information box, without making any changes to the status of the record.
Force To Log:	Places a notification in the Alarm Log, accessed through the *Historic* Item on the *List* menu, where its status will not be further updated. A notification which is forced to the log is also automatically acknowledged.
Acknowledge / Annotate:	This button displays *Acknowledge* for an unacknowledged notification, and *Annotate* for other alarms and events. The page shown in Figure 15 is for an unacknowledged alarm. These will be discussed more fully in the sections: Annotating A Notification (page 72) and Acknowledging A Notification, page 71.
Help:	Calls up the online help files.

The General Page

This page can be seen in Figure 15. The top part of the box, the *Notification* section, shows the *Distinguished Name* (page 47), *Slogan* (page 48), *Identity* (page 48), *Number* (page 48) and *Record Identity* (see Record ID, page 48) of the selected Notification.The *System Identifier* field conveys the Source Identifier derived from communications with the source of the notification.

The *Status* section shows whether or not the alarm has been *Acknowledged* i.e. registered by somebody, and if so, the login name of the person who it was *Acknowledged By*.

The *Original Severity* Field conveys the original condition severity. If a clearing message is received but no matching assertion can be found in the TimeScan NMS Database, then a record will still be generated. This field will be set to *Clear* to indicate this record represents a clearing without assertion.

The *Current Severity* Field conveys the current condition severity. If the condition is still active then this field will convey the perceived severity derived from the assertion text. If the condition has cleared then this field will be marked as *Cleared*. If the alarm condition is not cleared, i.e. is currently active, then this field will be blank.

The *Asserted By* field provides an indication of the cause of the record creation. There are five possible causes:

Alarm/Event/Clearable A spontaneous message was generated by the managed *Event/ Internal Condition:*object and was accepted by the TimeScan NMS Database.

Audit: The existence of the alarm condition was derived from an alarm audit of the managed object.

The *Cleared By* field provides an indication of the reason why the alarm condition is cleared. There are four possible values for this field:

Reception Message/Element A spontaneous message was generated by the managed *Restart/Manual Operation:*object and was accepted by the TimeScan NMS Database.

Audit: The absence of the alarm condition was derived from an alarm audit of the managed object.

The Timing Stats Page

This page provides all the information contained about times in the individual alarm record. It can be seen below.

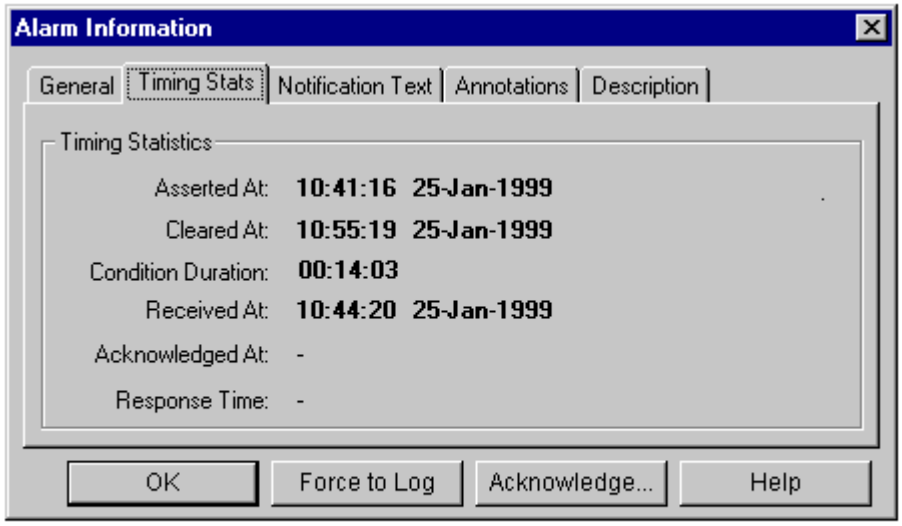


Figure 29 The Alarm Information Timing Stats Page

Asserted At shows the time stamp derived from the assertion message generated by the managed object. If the record was created as the result of an alarm audit then this time stamp will represent the time at which the audit was performed.

Received At displays the time stamp of record creation. The difference between the *Asserted At* time and *Received At* time represents the cumulative effects of data communications network propagation delay and managed object real time clock error.

Cleared At provides the time stamp of the reception of the clearing message generated by the managed object. If the condition was cleared as the result of an alarm audit then this time stamp will represent the time at which the audit was performed.

The *Condition Duration* Field shows the difference between the *Asserted At* time and *Cleared At* time.

The *Acknowledged At* time shows the time at which an operator registered the notification.

The *Response Time* box displays the difference between the *Received At* and *Acknowledged At* times.

The Notification Text Page

This page contains two text areas, labelled *Assertion Text* and *Clearing Text*. They can be seen in Figure 17.

The *Assertion Text* box contains the actual message string transmitted by the managed object that caused the record to be created. If the record was derived from a spontaneous message, i.e. an alarm or event then this field will contain the alarm or event message text. If the record was derived from an alarm audit then this field will contain the portion of the audit response that generated the record. This field supports vertical scrolling for large printout texts.

The *Clearing Text* box contains the actual message string transmitted by the managed object that resulted in the alarm being marked as cleared. If the clearing was derived from a spontaneous message, i.e. an alarm or event then this field will contain the alarm clearing message text. If the record was derived from an alarm audit or the alarm is not cleared then this field will be empty. This field supports vertical scrolling for large clearing texts.

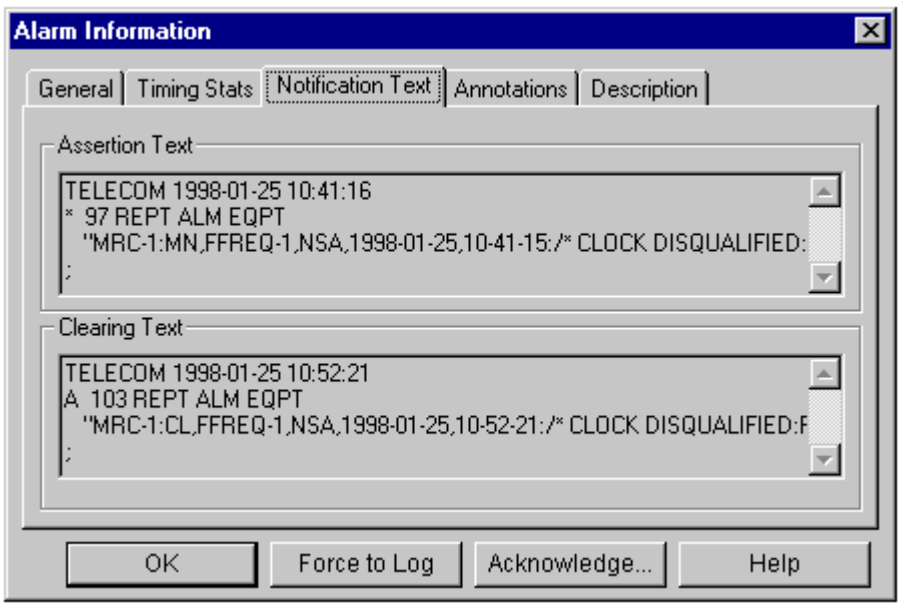


Figure 30 The Alarm Information Notification Text Page

The Annotations Page

Using this page, you can look any notes made about this alarm. An annotation (note) will automatically be created when the alarm or event is first acknowledged, and there may also be notes written subsequently. The page, shown in Figure 18, consists of an *Annotation Records* box at the top, and an *Annotations* text box below. When you click on an item in the *Annotation*

Records list, the text of that item is displayed in the *Annotations* box below. If no comment was made at a time when an annotations box was presented to a user, the text in the Annotations box reads “No Comment”.

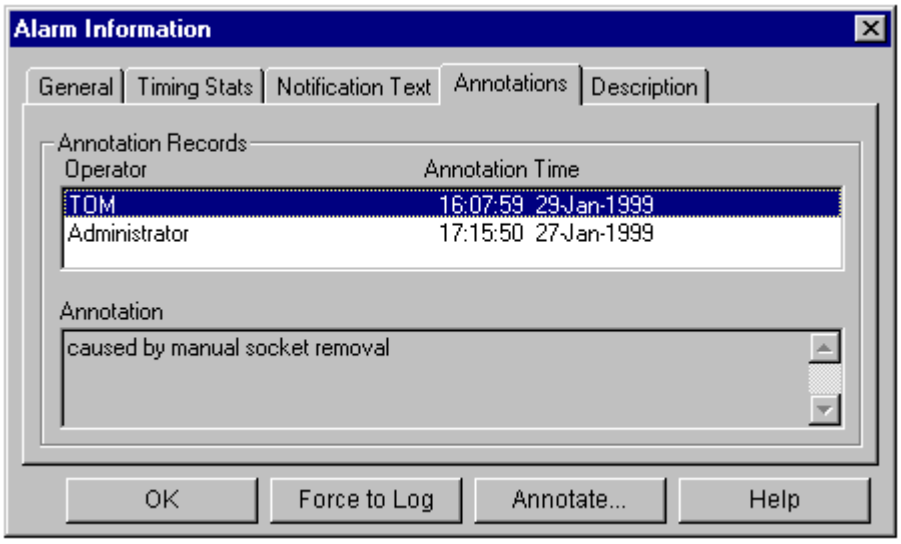


Figure 31 The Alarm Information Annotation Page

Let us assume a condition arises on a managed element. If you have not seen it before, you may not know what to do. By searching the Alarm Log (select the *Historic* item from the *List* menu) for previous occurrences of that particular condition, you will be able to view the actions of previous users. You can then take advice about the most appropriate course of action.

To do this, first use the filtering (page 57), sorting (page 63) and searching (page 64) facilities to find records which may be helpful. Then click the *Selection* button (Figure 2, Item 15) to the right of that record to view the Alarm Information dialogue. Click on its *Annotations* tab to see that page. Now, by clicking on each record on the top part of the screen, you can view the comment associated with it.

Spending time maintaining these records will be generate a useful set of data which could be of great benefit, particularly to inexperienced users.

The Description Page

This page is reserved for future usage.

Acknowledging A Notification

Acknowledging All Alarms

As we saw in the section “A Tour of the Alarm List Window” (page 47), the top half of the window contains only *Unacknowledged Alarms*. To acknowledge these alarms altogether, select the *Acknowledge All* item from the *Acknowledge* menu. The Acknowledge All dialogue box (Figure 19)will be displayed.

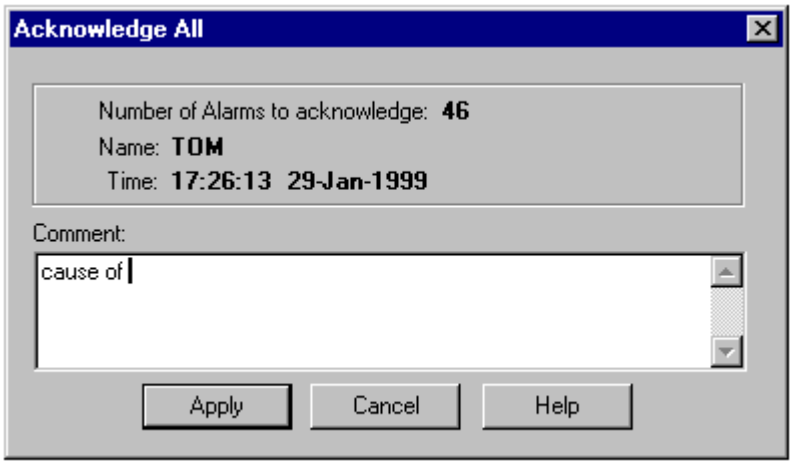


Figure 32 The Acknowledge All Dialogue Box

It contains a field showing the *Number of Alarms To Acknowledge*, one showing the user *Name* of the person acknowledging them, and a field showing the acknowledgement *Time*.

Click in the *Comment* box to record a comment about alarm acknowledgement. Then click the *Apply bu*tton and this comment will be applied to all of the alarms acknowledged in this set. The Acknowledge All dialogue box will be closed, you will return to the main Alarm List screen. There will no longer be any alarms showing in the *Unacknowledged Alarms* section of the screen, they will all have been moved to the *Acknowledged Alarms* area (Figure 2, Item 9).

To view annotations and acknowledgement status for an alarm, see Viewing Alarm Details, page 65.

Acknowledging Individual Alarms

Sometimes, you may wish to acknowledge alarms or events individually, rather than in a group. An advantage of this is that you can add different annotations to each notification. You do this as follows...

First, bring up the Alarm Information dialogue by clicking the *Selection* button (Figure 2, Item 15) to the right of the selected record. At the foot of the Alarm Information dialogue window is an *Acknowledge* button. Pressing this will bring up the Acknowledge dialogue, which is very similar to the Acknowledge All dialogue box shown in Figure 19. Again, you have the option of typing something in the *Comment* box, or leaving it blank. Click *Apply* to close the box and move the notification to the *Acknowledged Alarms* area in the main Alarm List screen, or *Cancel* to close the box.

To view annotations and acknowledgement status for an alarm, see Viewing Alarm Details, page 65.

Now you have added useful information to the notification record, but what if, after the original acknowledgement, you wish to add more to the record. For example, it might be that the cause of the alarm in not confirmed until after the time you initially acknowledge the alarm. Let us see how to add further comments to an alarm record...

Annotating A Notification

A notification record may be annotated many times and hence a history can be built of the actions performed in response to an alarm or event. These comments can be extremely useful and, if used diligently, a knowledge base can be built up in your Alarm List which may be of considerable help to inexperienced users.

You are automatically prompted to annotate a record when acknowledging it, but to add further comments after this time, take the following steps...

First, bring up the Alarm Information dialogue for a selected (previously acknowledged) record by clicking on its *Selection* button (Figure 2, Item 15). Then press the *Annotate* button at the bottom of this box. This will bring up a box like the one shown in Figure 20.

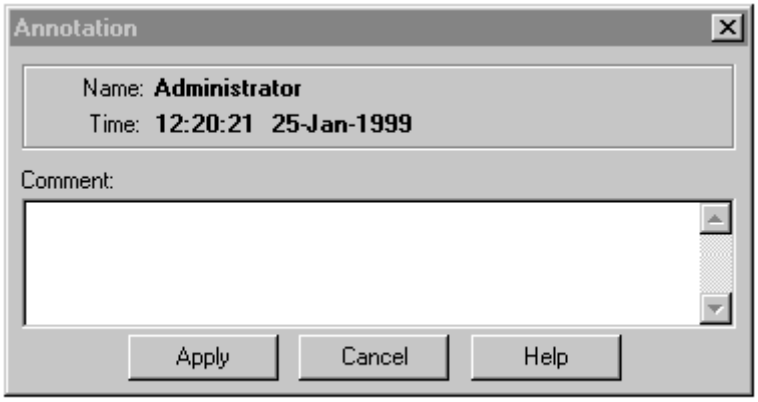


Figure 33 The Annotation Dialogue Box

Your login *Name*, and the present *Date* and *Time* will be showing in the top. These will automatically be appended to the annotation. Click in the *Comment* box and start typing in the annotation text. Press *Apply* to close the box and bind the text to the record, or *Cancel* to just close the box.

Auditing The Alarm List

Occasionally the information in the TimeScan NMS database may not be the reflect the most recent developments within a managed element. A common scenario is that an alarm has been raised on a Managed Element, and registered in the database, but there has been a subsequent period offline, so the clearance of that alarm has not been registered. The *Audit* facility provides a simple method of updating the database with the current state of an element.

First, decide which Managed Element you would like to update. Every record for this element will be checked and updated if necessary. Select the *Alarm Audit* item from the *Administration* menu. You will see a dialogue box like the one shown in Figure 21.

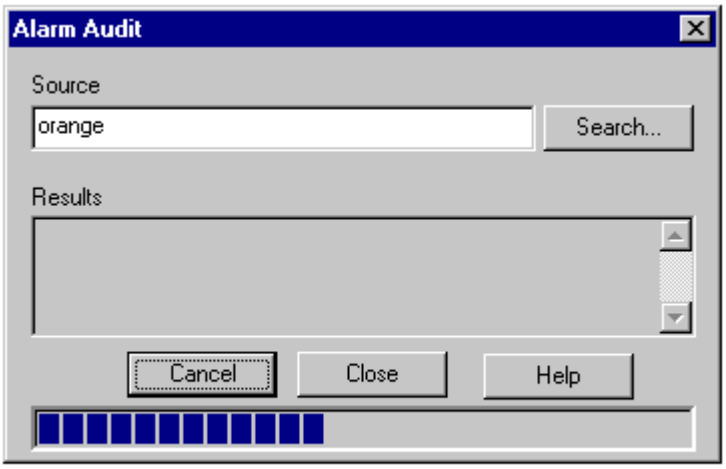


Figure 34 The Alarm Audit Dialogue Box

Either type the *Distinguished Name* of the Managed Element that you wish to audit in the *Source* box, or click on the *Search...* button to display the Source Selector box (Figure 5, page 54) and choose a name from there. Once you have a *Distinguished Name* in the *Source* box, press the *Start Audit* button. The text on the button will then change to *Cancel* (as shown in Figure 21) and a bar along the bottom will gradually be filled to indicate roughly the progress of the audit.

When the audit on an element is completed, those records which have been updated will be shown in the *Results* area, in the centre part of the Alarm Audit box.

Press *Cancel* to stop an Audit midway through, *Close* when you have finished with the Audit box or *Help* to call up the online help files.

Printing The Alarm List

The Alarm List also supports hardcopy. To print the complete contents of a list, simply select the *Print* tool  or the *Print* item from the *List* menu. A standard dialogue box will be shown, allowing you to confirm your choice of printer. This will print out the whole list, in a columnar format. There is likely to be some clipping of text, especially in the fields containing longer entries. Only the records currently displayed will be printed, and only the fields currently being viewed will be shown.

To print out details of just one alarm or event, and hence avoid field text being clipped, open the Alarm Information box (see Viewing Alarm Details, page 65) and then select the *Print* item from the *List* menu. This will print out all the information shown in the Alarm Information box.

Printer selection and configuration can be performed via the *Print Setup* item in the *List* menu. You can see how an item (either the whole list or an individual record) will be printed out by using the *Print Preview* item, in the *List* menu.

Getting OnLine Help

To see the online help files, click on one of the Help buttons in the various dialogue boxes, or select the *Help Topics* item from the *Help* Menu.

Changing The Appearance Of The Alarm List Window

Colour Coding Alarms

The default for the Alarm List is to display all the notification records in background grey, but they can be viewed in colour (with a different colour for each *Current Severity*) by selecting the *Colour* item from the *View* menu. A tick will be placed next to the *Colour* item, and all the notification records will be change accordingly. To return to grey, remove the tick from the *Colour* item.

Selecting Fields To Display

To add or remove fields from the current display, either choose the *Fields...* item from the *View* menu or the *Field View* tool . The box shown in Figure 22 will be displayed. Place ticks next to the fields or columns which you want to see, and remove ticks from those you don't want to include. Click *OK* to apply your choice, or *Cancel* to close the box without changing the displayed columns.

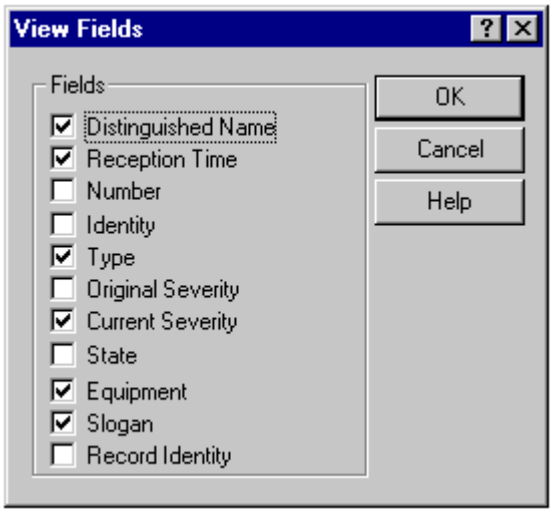


Figure 35 The View Fields Dialogue Box

Showing More Information In The Main Window

You cannot resize the columns in the Alarm List main window. To see more of the text in each field, choose one or more of the following actions:

1 Remove some of the columns in the current list (see "Selecting Fields To Display" page 76).

2 Increase the total size of the window by dragging in its bottom right hand corner.

3 Click in the entry field and use the arrow keys to scroll through the text.

4 Look at the information in the Alarm Information box (see Viewing Alarm Details, page 65).

You could see more items in the list by removing the *Status Bar* and *Toolbar* items from the window. Select the *Toolbar* or *Status Bar* items from the View menu to toggle their display on and off.

Saving Alarm List Preferences

The last used set of preferences (displayed fields, colour and so on) is automatically reloaded at start up, unless overridden by the use of Command Line Parameters.

Exiting Alarm List

Leave the Alarm List Application by selecting the Exit item from the List menu. The currently used set of preferences will be saved to be reloaded next time the application is started, unless overridden by a set of Command Line Parameters.

Frequently Asked Questions...

1 Q. **There is a notification record with both the Original Severity and Current Severity set to Clear... is this valid?**

A. Yes - for some reason the assertion message for this alarm failed to reach the TimeScan NMS Server platform. When the clear message was received a notification record was created so the condition would not be lost. Obviously the correct severity could not be determined. If you notice a problem like this, it may be a good idea to run an Audit, as described on page 74.

2 Q. **I can't see a notification record that I know must be in the TimeScan NMS database, however I filter the list. Why not?**

A. Filtering the list only affects records which have been fetched. Therefore, if the particular record you are looking for was not fetched (have a look at the Fetch line, to see the criteria applied), however you filter your view of the data, you will not be able to find it.

3 Q. **Why are some uncleared notification records in the Fetch when I look at historic data which is no longer active?**

A. This record was probably 'Forced To Log' using the button in the Alarm Information box. See Revertive and Non Revertitive Notifications on page 79 for a fuller explanation of different alarm types in the Alarm List application.

4 Q. **Why does a notification not have the value in the Severity Field that I expect to see?**

A. This value is determined by the Severity Mapping, set up in the Fault Management Configuration System Administration application. This will be managed by your System Administrator. Contact them to suggest changes to the present configuration.

5 Q. **How can I avoid typing lengthy values into the Fetch and Filter boxes?**

A. Click in a record that contains the value that you are interested, and this value will be automatically input in the appropriate page in the Find or Filter tabbed dialogue boxes. (This does not apply to the Severity and Type values.

6 Q. **How can I see the whole text of a field?**

A. Click inside the field that you are interested in, then move along with your arrow keys to view the complete text.

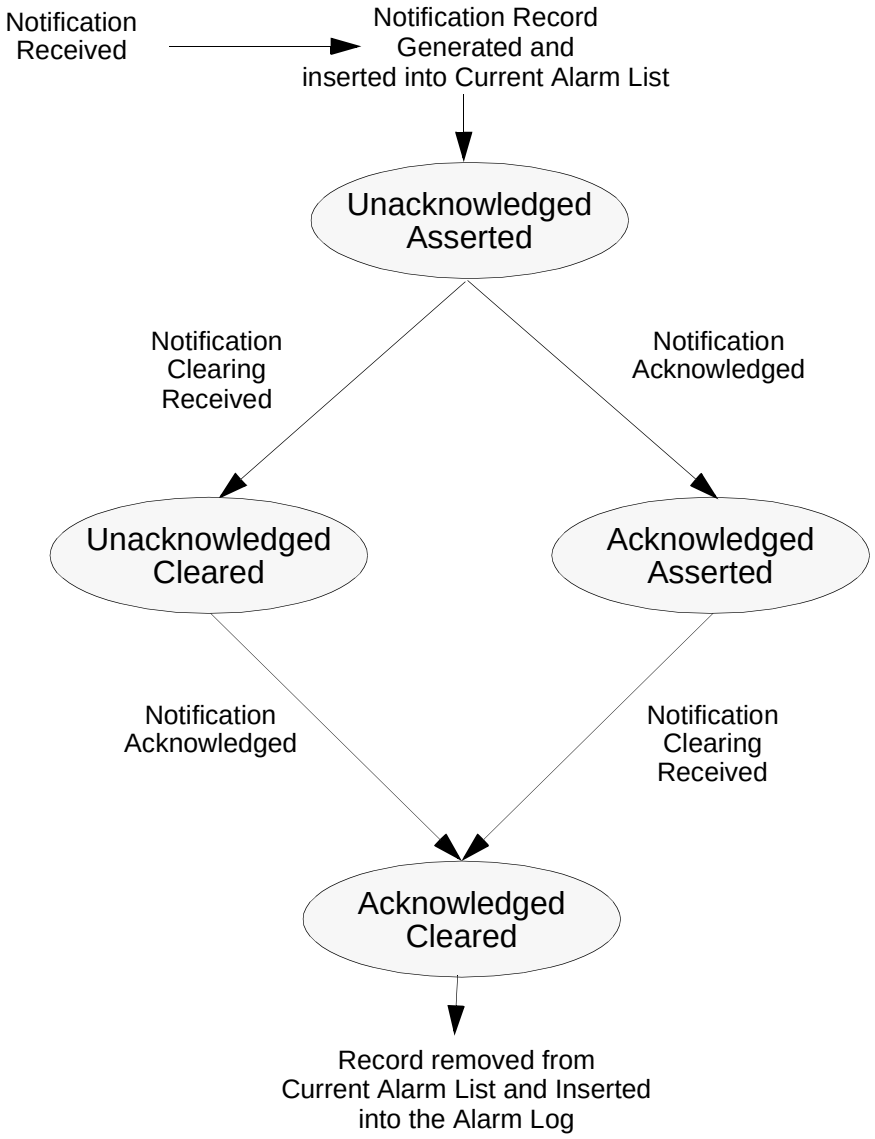
Notes for Users

Revertive and Non Revertitive Notifications

Notifications (alarms or events) fall into two categories: Revertive Notifications and Non Revertive Notifications.

Revertive Notifications have an assertion and a clearing, for example, power failure. Non Revertive Notifications only have an assertion, for example active input switch. In order to maintain a meaningful currently active alarm list the TimeScan NMS Database must provide appropriate handling for both types of notification.

The following figure illustrates the handling of Revertive Notifications:



These diagrams illustrate a key facility of the Alarm List - Notification Acknowledgement. A notification will not be removed from the Alarm List, even if the notification has cleared, until a user has acknowledged the existence of the record. This behaviour serves to *latch* notifications in the Alarm List so any transient notifications are not missed.

Notifications which have not been acknowledged or cleared can be placed in the Alarm Log (accessed through the *Historic* Item on the *List* menu) by using the *Force To Log*

button in the Alarm Information dialogue box. Notifications are automatically acknowledged as they are moved to the Alarm Log.

More information can be found about Alarm Conditions in the “Fault Management Configuration” chapter of the System Administrator’s Guide.

Chapter Index

Symbols

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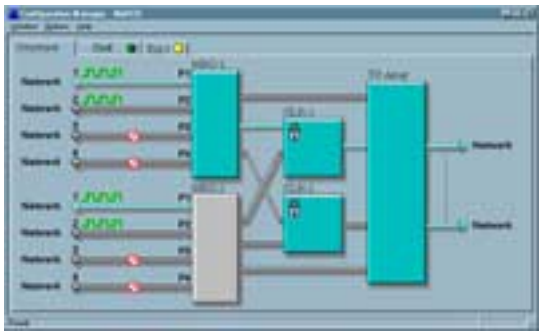
Chapter 4 Configuration Manager



The Configuration Manager is an application which is part of the TimeScan suite of applications. It will provide you with a real-time picture of the internal state of a DCD and simple point and click controls to configure the DCD.

Why would I need to use the Configuration Manager?

The Configuration Manager is useful if you need to quickly see exactly how the DCD is managing the synchronisation signals. You can use it to configure all the signal processing functionality of the DCD without typing a single TL1 command.

What's in this Chapter?

This chapter contains all the information you need to know to fully exploit the potential of the Configuration Manager. The "Configuration Manager Tour" (page 93), provides a quick description of the features and facilities of the Configuration Manager. The "How To.." section (page 121) explains how to configure the facilities of the DCD.

There is a section with specific instructions for the 3000 element (page 112).

If you need to use the chapter as a quick reference guide, there is an index at the end (page 152).

If you have any queries regarding the Configuration Manager try the Frequently Asked Question section (page 151).

Chapter Contents

Opening the Configuration Manager

The Configuration Manager is launched either from the TimeScan/Craft ToolPalette or by double clicking on an icon in the Network Browser.

Configuration Manager Tour

The first thing to notice about the Configuration Manager is that it provides a number of tabbed note book pages. In later sections of this tour we will look at each page in detail. First we will look at functions which are common to each page.

The Menu Bar

Configuration Manager supports a number of useful facilities accessed from the Menu Bar at the top of the window.

Window Menu

The Window Menu provides a list of the standard facilities: *Print, Print Preview* and *Print Setup* which allow you to configure and review hardcopy generated by Configuration Manager. *Exit* will terminate this session of Configuration Manager use.

Options

As we shall see later, you can use Configuration Manager to configure the DCD. By default, every time you request a configuration change, Configuration Manager will require you to provide confirmation. This behaviour can be turned off by removing the *Confirm* tick in this menu. Conversely it can be turned on by re-checking *Confirm*.

Help

This menu provides access to an about box containing author and version number information for Configuration Manager.

The Status Bar

Towards the bottom left hand corner of the main window is a panel known as the *Status Bar*

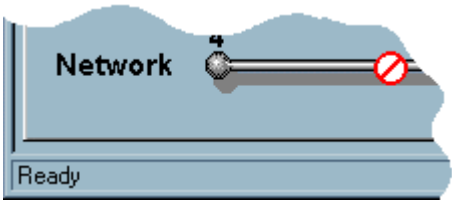


Figure 36 Configuration Manager Status Bar

The Status Bar provides an insight into the operation of the Configuration Manager.

On start up, the Configuration Manager must perform a range of tasks in order to determine the correct configuration and status of the DCD. The following paragraphs give the sequence and meaning of the Status Bar messages produced at start-up:

Attempting to connect to [DCD distinguished name]

The Configuration Manager is attempting to establish a connection. This step will normally take a fraction of a second. On connection the status will change to:

Connected to [DCD distinguished name]

Once connected Configuration Manager will start to collect the information it requires to correctly depict the state of the DCD and the status will change to:

Fetching initial data

This phase normally takes a few seconds and is dependent on the number of shelves and equipment modules that compose the DCD. Once the DCD state is determined the status will again change to:

Ready

This is the idle state of the Configuration Manager. In this state the communication path towards the DCD is functioning correctly and the status information currently displayed is correct. Configuration Manager is ready to accept any operator actions.

We shall see later in this chapter that it is possible to use the Configuration Manager to set the configuration of the DCD. When a change in configuration is requested the status is set to:

Sending command

This indicates that the Configuration Manager is busy performing the action you have requested and will not accept another.

The Overview Page

Let's look at the first page of the tabbed set of pages.

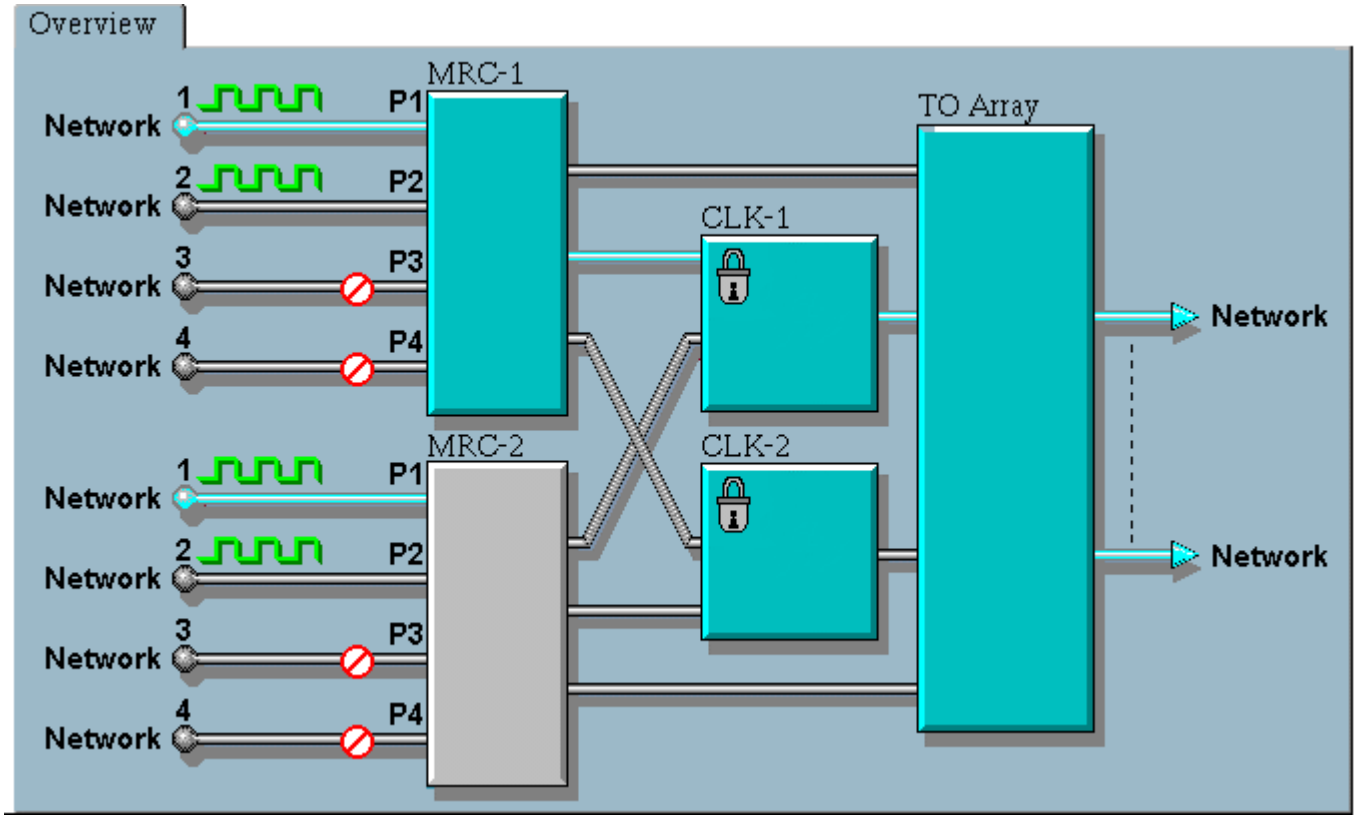


Figure 37 The Overview Page

This page depicts the current synchronisation status of the DCD. The structure of the page has been purposely designed to instantly convey a great deal of information in a readily understandable format. The following paragraphs provide an in-depth description of this page.

Interpreting the Overview

The main structure of the graphic is based upon the conceptual skeleton of the DCD:

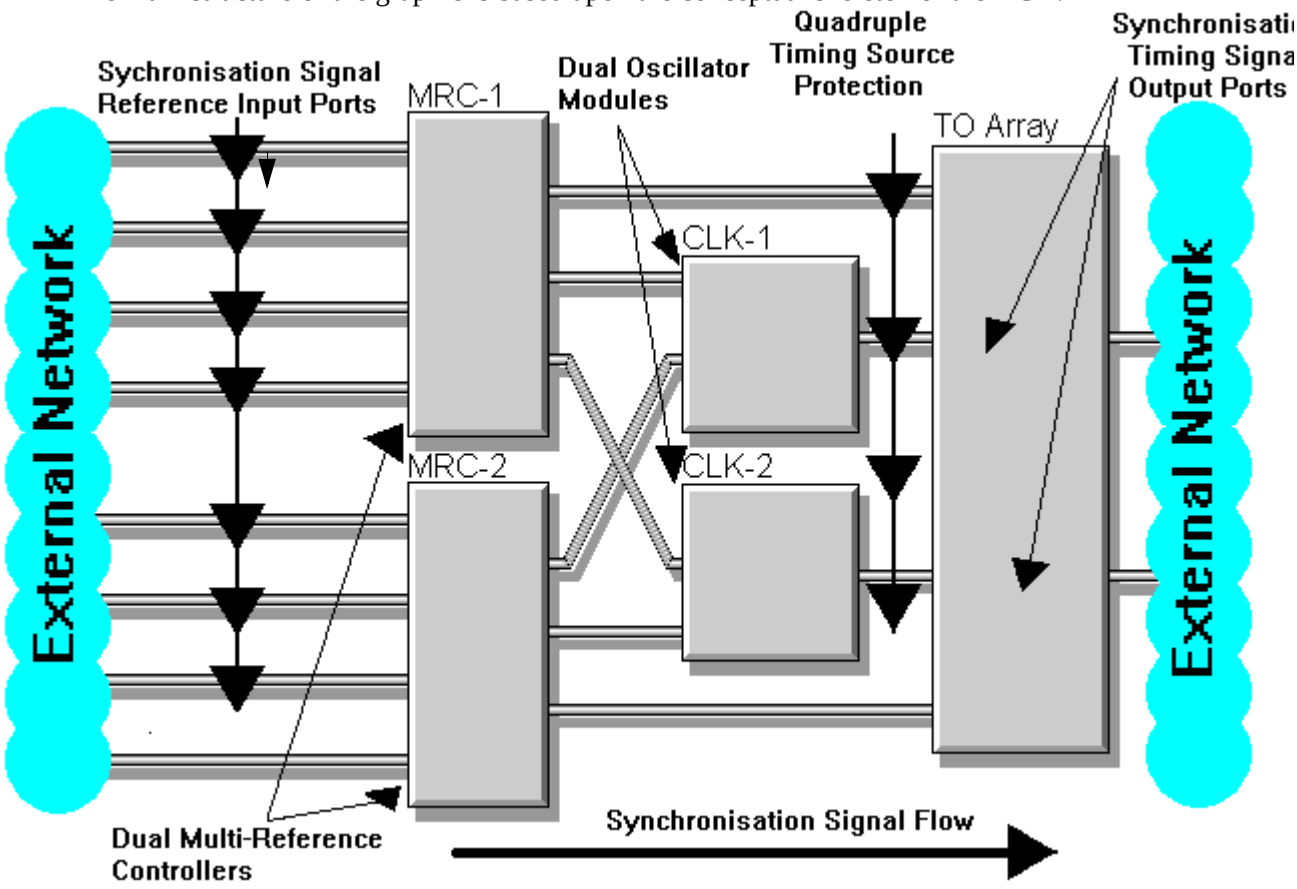


Figure 38 Conceptual Diagram Of A DCD (Digital Clock Device)

Let's examine the graphics in more detail. We will start with the synchronisation signal reference input ports, shown to the left and work through the DCD architecture to the timing (TO) output ports, shown to the right.

Each DCD is capable of incorporating two Multi-Reference Controllers, (MRC 1 & 2), each with up to four external signal reference input ports. Each input port is depicted as a *pipe* along which a signal can flow to the respective reference controller functional block. The MRCs feed signals to two Clock Oscillator Modules (CLK 1 & 2) and directly to an array of synchronisation timing signal output ports (TO array).

The CLK modules are depicted as function blocks capable of accepting signals from either of the MRCs, and feeding signals to the TO array. At this point in the diagram, the quadruple timing source protection is quite apparent.

The TO array, although depicted as a single functional block, actually represents all the timing signal output ports supported by the DCD within the Master *and* any Expansion shelves. There are potentially too many output ports to be depicted individually, hence the existence of many ports is implied.

Once the basic skeleton is understood, interpreting this page becomes much easier. As you can see, normally the skeleton is augmented with a range of graphics conveying information on signals, activity and equipment states, etc. The following sections will look at the areas we have just examined in some depth, and explain the significance of each graphic.

Synchronisation Reference Input Ports

As mentioned earlier each DCD may support up to eight reference signal input ports, up to four per MRC. The status of each port can be broken down into several components as illustrated below:

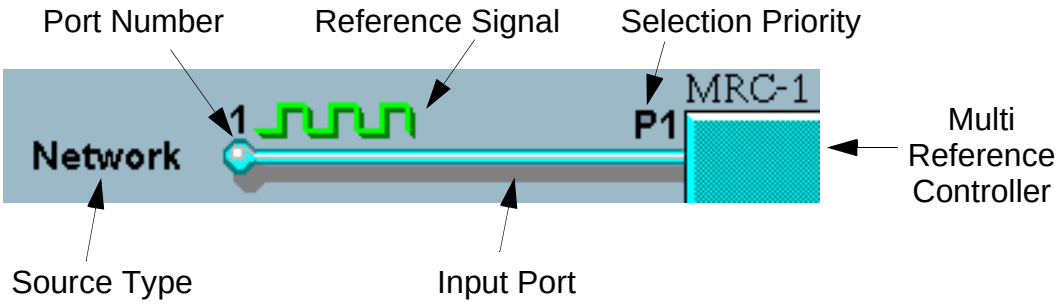


Figure 39 Input Port (detail)

Let's look at each component:

Input Port

Each input port is depicted as a *pipe* feeding a reference signal into its Multi Reference Controller. There are several states associated with input ports:

Active - The input port is currently selected to provide the reference signal to its MRC.

An active input port is shown as a light blue pipe:

Stand-by - The input port is *not* currently selected to provide the reference signal to its MRC.

A stand-by input port is shown as a light grey pipe:

Removed - The input port has been conceptually removed. The port still exists but it has been temporarily removed from the pool of ports from which the MRC may select its reference. The port is effectively barred.

An input port in this state is shown as a light grey pipe with a barring symbol:

Deleted - The input port has been conceptually deleted. The port still exists but it has been deleted from the pool of ports from which the MRC may select its reference.

An input port in this state is shown as a silhouette:

Port Number

Each reference input port has a *Port Number* associated with it for ease of identification. Port numbering is relative to the host MRC card.

For example, the correct identity of the port drawn at the top of the Overview Page (Figure 37 on page 95) is:
Port 1 - MRC1.

Source Type

Each reference input port has a *Source* attribute associated with it. This attribute defines the source of the reference signal applied to the port. The possible source types are:

- Network
- GPS
- LORAN
- Caesium

Reference Signal

Each *Reference Signal* is depicted as a wave form appropriate to the current state of the signal. There are several states associated with reference signals:

Digital Signal Present and Satisfactory - There is currently a digital reference signal available at this input port. The signal itself is deemed to be a valid synchronisation reference as it has not violated any of the performance thresholds currently set on this port.

A digital reference signal in this state is shown as train of green square

waves:

Analogue Signal Present and Satisfactory - There is currently an analogue reference signal available at this input port. The signal itself is deemed to be a valid synchronisation reference as it has not violated the Fractional Frequency performance threshold currently set on this port.

An analogue reference signal in this state is shown as train of green sinusoidal waves:

Digital Signal Present but Thresholds Violated - There is currently a digital reference signal available at this input port. The signal itself is deemed to be an unsuitable synchronisation reference as it may have violated one or more of the performance thresholds currently set on this port, (Alarm Indication Signal, Cyclic Redundancy Check, Out Of Frame, Bi-polar Violation or Fractional Frequency).

A digital reference signal in this state is shown as train of red square waves:

Analogue Signal Present but Thresholds Violated - There is currently an analogue reference signal available at this input port. The signal itself is deemed to be an unsuitable synchronisation reference as it may have violated the Fractional Frequency performance threshold currently set on this port.

An analogue reference signal in this state is shown as train of red sinusoidal waves:

No Signal Present - There is currently no reference signal available at this input port. A reference signal in this state is shown as flat red line:

Input Reference Modules

The DCD supports a range of Input Reference Modules. In general all such modules fall into two groups: Clock Input (CI) (single input) modules and Multi Reference Controllers (MRC) (up to four inputs).

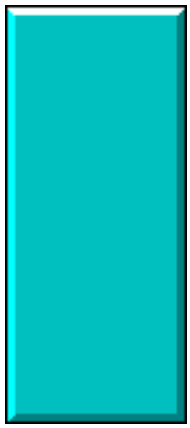
For the purposes of this document we will concentrate on MRCs. The functionality of CIs may be considered a subset of that of MRCs.

The DCD is normally equipped with two *Input Reference Modules*, illustrated on the graphic as two panels. For an MRC the panel is fed by four reference input ports. For a CI or ACI the panel is fed by a single reference input port.

There are several states associated with *Input Reference Controllers*:

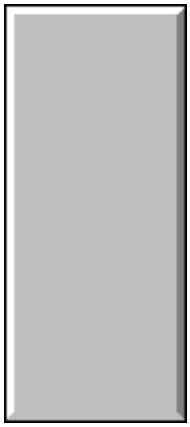
Active - The module is currently selected to provide the reference signal to the *Clock Modules* or directly to the *Timing Outputs*.

An active module is shown as a light blue panel:

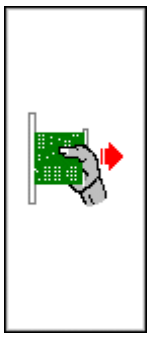


Stand-by - The module is *not* currently selected to provide the reference signal to the Clock Modules or directly to the Timing Outputs.

A module in stand-by mode is shown as a light grey panel:



Not Equipped - The module is not physically present or has not been entered into the DCD inventory. A not equipped module is shown as a transparent panel with an illustration showing module removal:



Clock Modules (CLKs)

The DCD is normally equipped with two *Clock Modules* each fed from the *MRC Modules*. The clocks are illustrated as two panels to the right of the MRCs. There are several states associated with Clock Modules:

Active - The Clock Module is currently selected to provide the reference signal directly to the Timing Outputs. An active Clock Module is shown as a light blue panel.

Stand-by - The Clock Module is not currently selected to provide the reference signal to the Timing Outputs. A Clock Module in stand-by mode is shown as a light grey panel.

Not Available - The Clock Module is not physically present or has not been entered into the DCD inventory. A not equipped module is shown as a transparent panel with an illustration showing module removal.

Another important attribute associated with Clock Modules is their lock state. Each

equipped Clock Module, whether active or in stand-by mode, has a small graphic of a padlock drawn towards the top left hand corner of the module panel. This padlock represents the lock state of Clock Module.

 Clock Module locked

 Clock Module unlocked (holdover, freerun or fast converge)

Timing Output Array (TO Array)

Towards the right of the graphic is a large panel labelled *TO Array*. This panel represents all the Timing Outputs (TO) in the DCD including the master and any expansion shelves. There are two states associated with the TO Array:

Active - The Timing Output Array is currently providing output timing signals. An active Timing Output Array is shown as a light blue panel.

Not Active - The Timing Output Array not is currently providing output timing signals. An non-active Timing Output Array is shown as a light grey panel.

DCD Internal Signal Distribution

As well as depicting the state of the functional blocks, the Overview page graphic (Figure 37 on page 95) also shows the active signal paths between the functional blocks.

Under normal conditions, and especially under fault conditions, it is important the user can identify the active signal path through the DCD element. All the significant signal paths between the functional blocks are shown on the user interface as grey pipes. Pipes providing the active signal path are shaded.

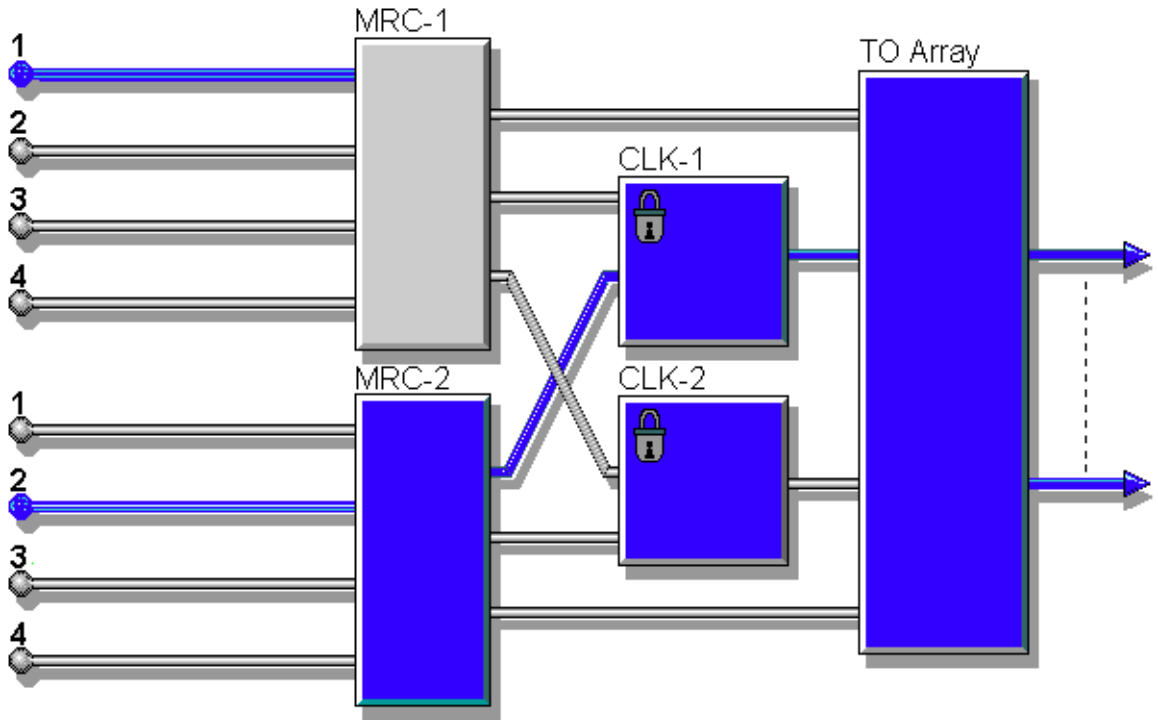


Figure 40 The Active Path Through A DCD Element (shaded)

The overall effect is demonstrated in the illustration above. The active signal path is:

MRC-2 input 2 → MRC-2 → CLK-1 → TO Array

Although input 1 of MRC-1 does not form part of the active path it is also depicted as active. This is simply to denote that if the MRC function were to switch from MRC-2 to MRC-1 then this input would instantly become part of the active path.

Now we have looked at interpreting the state of the DCD, we will now look at how to configure the synchronisation functionality of the DCD from the Overview page.

Configuring the DCD from the Overview

As we have seen the Overview page provides a graphical presentation of the current state of the DCD. However, it is capable of providing a means of configuring the synchronisation attributes of the DCD.

Configuring the synchronisation functionality of the DCD could not be easier. Simply place the mouse over the item you wish to configure and press the right mouse button! A pull-down menu will be provided which will list all the configuration actions appropriate to that item.

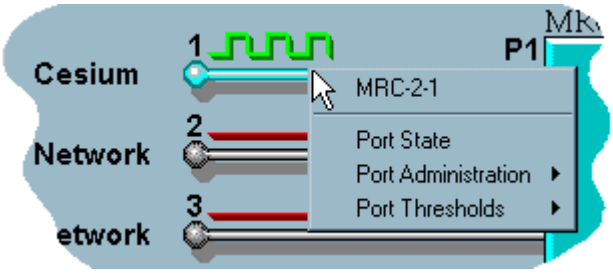


Figure 41 A Typical Pull-down Menu

Menu items followed by arrows denote that there is a sub-menu.

On selecting an action from a pull-down menu a dialogue window will appear. There are two basic types of dialogue window, Informational and Configuration Dialogue Windows.

Informational Dialogue Windows

Informational dialogues, as their name suggests, provide information only and do not perform configuration actions.

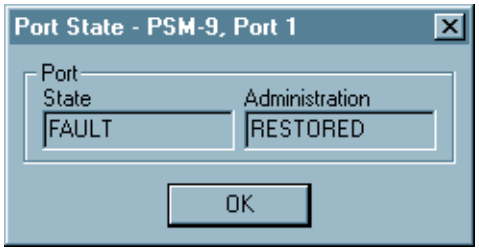


Figure 42 A Typical Informational Dialogue Window

The title bar of an informational dialogue identifies the subject of the information, in this case The Port State of MRC 2 port 1. The body of the window contains short informational text messages. The window can be closed by pressing the *OK* button or pressing the *Return* key.

Configuration Dialogue Windows

Configuration dialogue windows are more complex than the informational dialogues and provide controls to manipulate the configuration of the DCD.

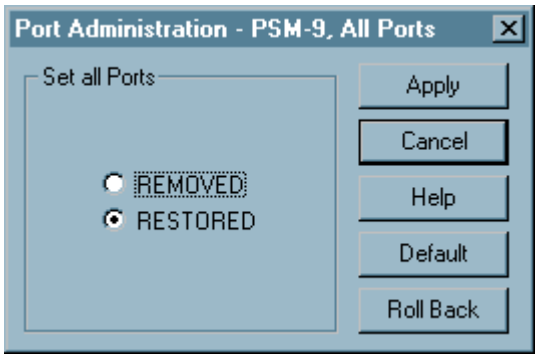


Figure 43 A Typical Configuration Dialogue Window

All Configuration Dialogues follow the same generic format and provide features designed to make configuration easier and safer.

Each configuration dialogue window is made up of an action area and five action buttons.

In general the action area portion of the window contains fields and controls which allow the user to read and modify the attributes which are the subject of the configuration dialogue. There are many different types of fields and controls.

To the right of the action area are five buttons:

Pressing the *Apply* button will cause modifications made to the configuration in the action area to be applied to the DCD. The *Apply* button can be pressed by selection with the mouse or with the Alt-A key combination.

As mentioned earlier the configuration mechanism has been designed to be as safe as possible, vastly reducing the likelihood of user error. Modifying the configuration of a DCD is not as simple as pressing the *Apply* button. By default, before a configuration modification is applied to the DCD the action must be confirmed.

Pressing the *Apply* Button from any configuration dialogue window will generate a confirmation window similar to that shown below:

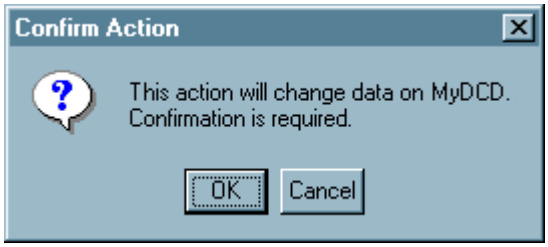


Figure 44 A Typical Confirmation Dialogue Box

If the action is mistaken then it can be cancelled by pressing the *Cancel* button.

The confirmation check can be disabled by un-checking *Confirm* in the *Options* menu, but this is not advised.

On completion of the action a dialogue will open which inform you of the outcome of the operation. If successful, the window shown in Figure 45 will be displayed.

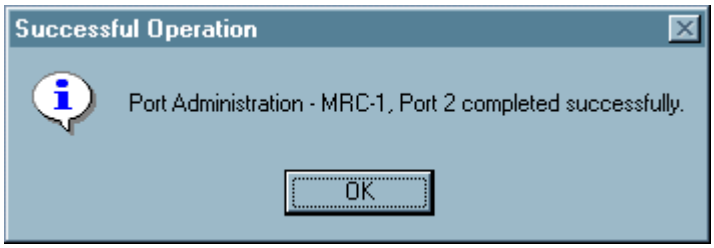


Figure 45 . The Configuration Successful Window

If unsuccessful, the window message will indicate this, and also give the nature of the action and the nature of the failure.

Once the conclusion of the action is acknowledged, access will be restored to the configuration items temporarily barred during the operation.

Back to the description of the configuration dialogue window components...

The *Cancel* button provides a way to quit out of a configuration dialogue window without modifying an attribute. On Cancelling, any un-applied attribute values set up within the action area will be discarded. This button is selected as default so that the window may be closed by simply pressing the return key.

The *Help* button will be shown in grey, inactive, signifying that this facility is not available in this release.

The *Default* button provides access to recommended default attribute values. On pressing the *Default* button, the default values will be displayed as if you had entered them. These values can be edited, applied or discarded.

Due to the nature of some configuration actions, default values may be inappropriate. In these cases the *Default* button legend will be shown in grey, inactive, signifying that this facility is not available.

The *Roll Back* button also provides a degree of security while performing configuration operations. It provides a mechanism to restore previously set attributes, similar to an undo feature.

On start-up, Configuration Manager retrieves all the current attributes of the DCD. These attributes are used to configure the views and populate the configuration dialogue windows. When an attribute is modified by the user, the previous value is not lost, rather it is maintained as the *roll back value.* The *Roll Back* button provides access to the roll back value.

It should be noted that roll back values are maintained only during the execution of Configuration Manager. If attributes are modified and Configuration Manager is shut-down, then the roll back values will be lost.

Due to the nature of some configuration actions, roll back values may be inappropriate. In these cases the *Roll Back* button legend will be shown in grey, inactive, signifying that this facility is not available.

The Shelf Pages

The other note book pages, shown initially behind the Overview page, provide more status and configuration access. Each page may be brought to the front by selecting its tab.

These pages are the *Shelf* pages. Each shelf of your DCD will have its own page. For a fully equipped DCD you may have five Shelf pages:

- Master - the Master Shelf.
- Exp1, Exp2, Exp3 - Expansion Shelves 1, 2 and 3.
- LPR - a Local Primary Reference Shelf.

You will notice that the tab of each shelf page has an *LED*. This provides an indication of the highest severity condition currently associated with that shelf.

It follows the standard colour convention:

(Red) Critical Condition

(Orange) Major Condition

(Yellow) Minor Condition

(Blue) Warning Condition

(White) Indeterminate Condition

(Green) No Condition

Figure 46 The Standard Alarm Colours

The Shelf pages differ from the Overview page in that, where the Overview depicts the conceptual state of the DCD, the Shelf pages depict the actual front panel appearance of the DCD.

The Shelf pages have been provided for those who are already familiar and comfortable with the front panel status indication of the DCD.

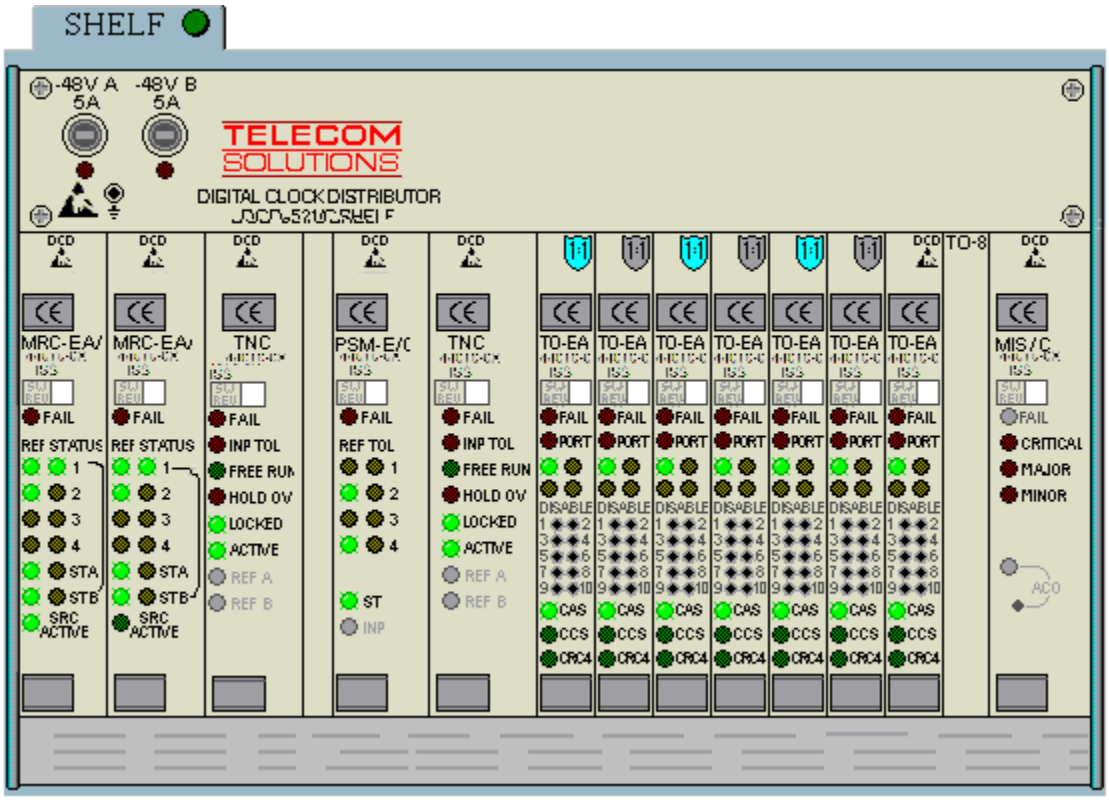


Figure 47 The Shelf Page

As you can see from the screen-shot above, the display is quite realistic. As with the Overview page, the status represented by the LEDs on the Shelf pages is maintained in real-time.

For instructions on interpreting the front panel indicators you should consult the appropriate Telecom Solutions Equipment Module Descriptions.

An attempt has been made to present as much information as possible on these pages, but unfortunately some LED states can not be derived from the management interface of the DCD. To avoid confusion these LEDs are depicted as grey.

As well as LED status the shelf pages also provide other status information.

Output Protection

If a protection scheme is activated on a Timing Output Module then the module is displayed with a shield denoting the protection scheme to which the module belongs to, i.e. 1:1, 1:N, 1+1. There are several states associated with protected Timing Output Modules:

Active - The Timing Output Module is currently selected to provide the reference signal. An active Timing Output Module is denoted by a light blue shield

Stand-by - The Timing Output Module is not currently selected to provide the reference signal. A Timing Output Module in stand-by mode is denoted by a light grey shield:

Protection Failure - The Timing Output Module is unable to function in the protection scheme due to a failure or mis-match with its protection partner modules. A Timing Output Module in Protection Failure mode is denoted by a red shield:

Removed (Disabled) Modules

If a module is removed (disabled) then the module will be shown as barred:

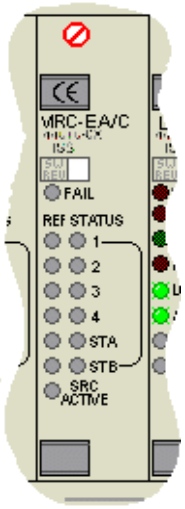


Figure 48 A Removed Module

All LEDs are shown grey as their states can not be derived.

Missing Modules

If a module is physically removed from the DCD shelf but is still provisioned within the DCD inventory then the module will be shown as missing.

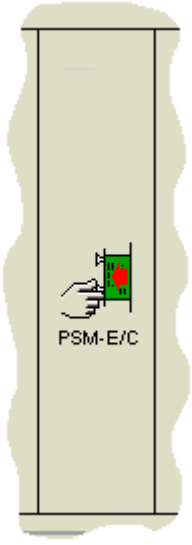


Figure 49 A Physically Missing (Non-Removed) Module

The graphic shows the type of module removed and acts as a reminder that another module can not be entered into the DCD inventory until this one is deleted.

Configuring the DCD from the Shelf Pages

As well as providing front panel status the Shelf pages also provide another method of configuring DCD attributes. Again configuration is via simple point and click actions.

By simply placing the mouse over the module, shelf or even empty slot you wish to configure, and pressing the right mouse button, a pull-down menu will be provided which will list all the configuration actions appropriate to that item.:

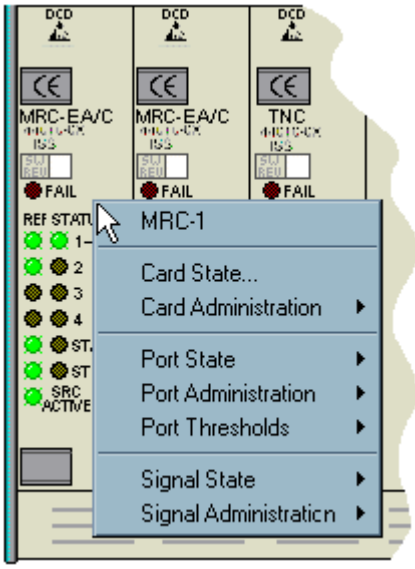


Figure 50 A Typical Pull-down Menu On The Shelf Page

These menus and resulting dialogue windows work in exactly the same manner as those produced by the Overview page.

TimeSource 3000/3100

There are two pages, the Overview page and the Shelf page. They are outlined below.

The Overview Page

The Overview page provides a simplified logical overview of TimeSource 3000/3100. The Overview page shows the received external inputs and the generated system outputs.

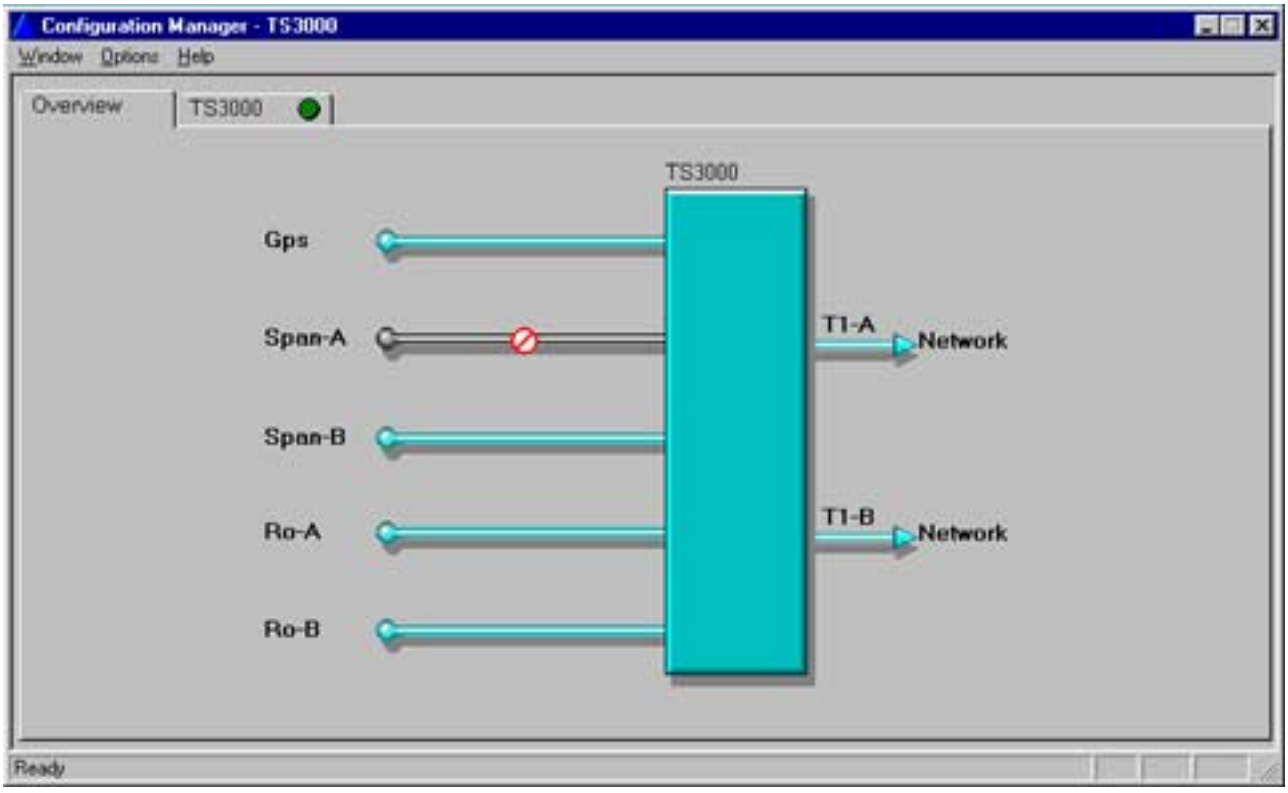


Figure 51 The TimeScan 3000 Overview Page

The Overview Page depicts the current status of the TimeSource 3000 / 3100. The structure of the page has been purposely designed to instantly convey a great deal of information in a readily understandable format. The following paragraphs provide an in-depth description of this page.

The TimeSource equipment is depicted as the main block, shown in blue in the illustration above. The main block will always remain blue because if the equipment becomes in-active then all communication will be lost with the unit.

The TimeSource 3000 / 3100 accepts five inputs. The equipment inputs are GPS, Span A, Span B, Remote Oscillator A, and Remote Oscillator B and are depicted by input pipes. The TimeSource unit provides two equipment outputs. In the case of the

TimeSource 3000, the two outputs are of T1 type and in the case of the TimeSource 3100, the two outputs are of E1 type.

The TimeSource 3000 / 3100 equipment may also have a daughter board providing eight optional outputs. The above illustration shows the optional outputs as grey as the setup above does not have the daughter board attached.

Once the basic skeleton is understood, interpreting this page becomes much easier. As you can see, normally the skeleton is augmented with a range of graphics conveying information on equipment and activity, etc. The following sections will look at the areas we have just examined in some depth, and explain the significance of each graphic.

Interpreting The Overview

The external inputs can each show one of three states. They are as follows:

Provisioned and Ensembled -This is shown as a blue pipe:

Provisioned but Not Ensembled -This is shown as grey pipe:

Not Provisioned and Not Ensembled -This is shown as a grey pipe with a barring symbol:

Each equipment input is labelled with an equipment label associated with it for ease of identification. Equipment labelling is relative to the five inputs and their various features. The labels are as follows:

GPS
Span-A
Span-B
Ro-A
Ro-B

The Span Inputs on the Overview Page depict the Signal Type as a wave form indicating the current type of the signal. There are several states associated with these signals:

Digital Signal Present and Satisfactory - There is currently a digital signal available at this Span input. A digital signal in this state is shown as a train of green square waves:

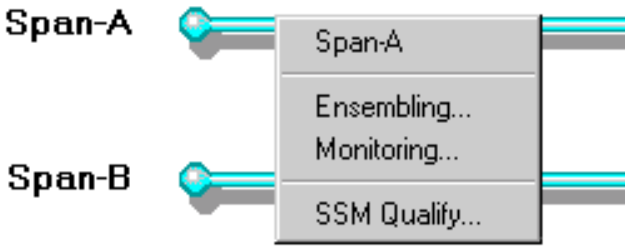
Analogue Signal Present and Satisfactory - There is currently a analogue signal available at this Span input An analogue signal in this state is shown as a train of green sinusoidal waves:

No Signal Present - There is currently no reference signal available at this equipment input. A signal in this state is shown as a flat red line.

Configuring the Overview

As we have seen the Overview page provides a graphical presentation of the current state of the TimeSource 3000 / 3100. However, it is capable of providing a means of configuring the attributes of the TimeSource 3000 / 3100.

Configuring the functionality of the TimeSource 3000 / 3100 could not be easier. Simply place the mouse over the item you wish to configure and press the right mouse button! A pull-down menu will be provided which will list all the configuration actions



appropriate to that item.

Menu items followed by arrows denote that there is a sub-menu.

On selecting an action from a pull-down menu, a dialogue window will appear. Informational and Configuration Dialogue Windows form the two basic types of dialogue window.

The Shelf Page

The Shelf pages differ from the Overview page in that, where the Overview depicts the conceptual state of the DCD, the Shelf pages depict the actual front panel appearance of the DCD.

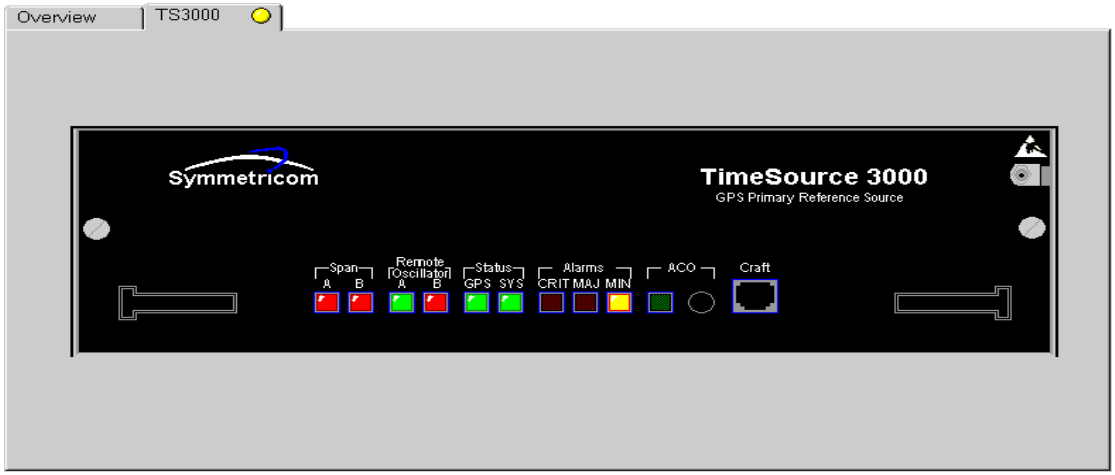


Figure 52 The TimeSource 3000/3100 Shelf Page (detail)

The Shelf page depicts the actual front panel appearance of TimeSource 3000/3100. The LED status shown on the Shelf page is maintained in real time.

Configuring the TimeSource 3000/3100 From The Shelf Page

The Shelf page provides full configuration access. Configuration is via simple point and click actions.

Place the mouse over the LED representing the equipment that you wish to configure, and press the right mouse button. A menu will appear, listing all the configuration actions which are appropriate to that equipment.

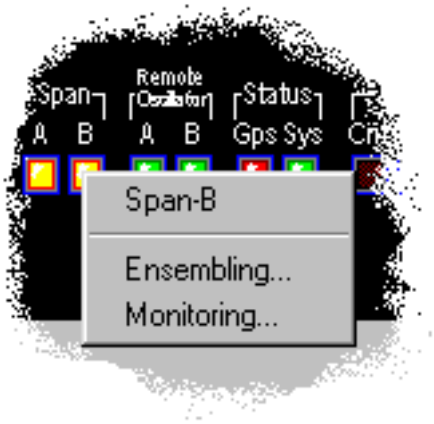


Figure 53 An Example LED Menu

When you place the mouse over any part of the Shelf page which does *not* show an LED, when you right click, the following menu will be displayed:

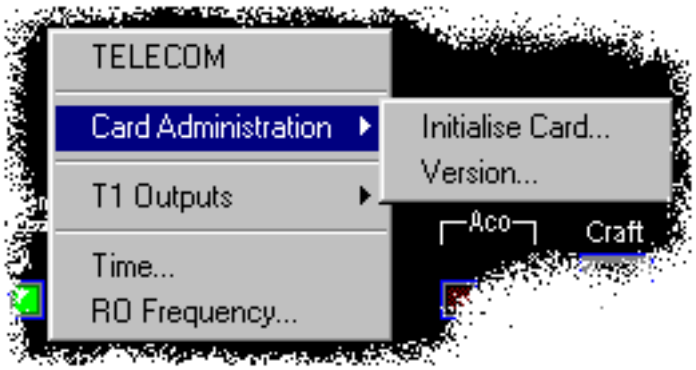


Figure 54 The Non-LED Menu

n.b. The menus provided are context sensitive, that is, the menu shown depends on where you right click. If you do not see the menu options that you expect, check that you have clicked in the correct place.

The TimeSource 3000/3100 Menus

The following menus items are available from both TimeSource 3000 pages:

Window

Exit- exits the application.

Options

Confirm- this item toggles on and off the option which displays a confirmation dialogue box when the changes to the database are requested.

Help

Help- this item brings up the online version of this help

About- this item displays a dialogue box with information about this application.

Confirmation Dialogue Boxes

When you follow the instructions in the *How To* section (below), you may be presented with Confirmation dialogue boxes. These work in exactly the same way as those for the generic Configuration Manager, as outlined on page 117

E1 Synchronous Clock Insertion Unit (ESCIU) Option Board

If a TimeSource 3100 is equipped with an ESCIU option board, the Shelf and Overview pages will display information about the status of the ESCIU

Figure 55 TimeSource 3100 with ESCIU - Shelf Page (detail)

As you can see from the screen shot above, the shelf page now displays an additional 3 LEDs - Retimed Span-A, Retimed Span-B and BYP (Bypass). As with the other LEDs on the Shelf page, they are maintained in real-time and support context sensitive menus.

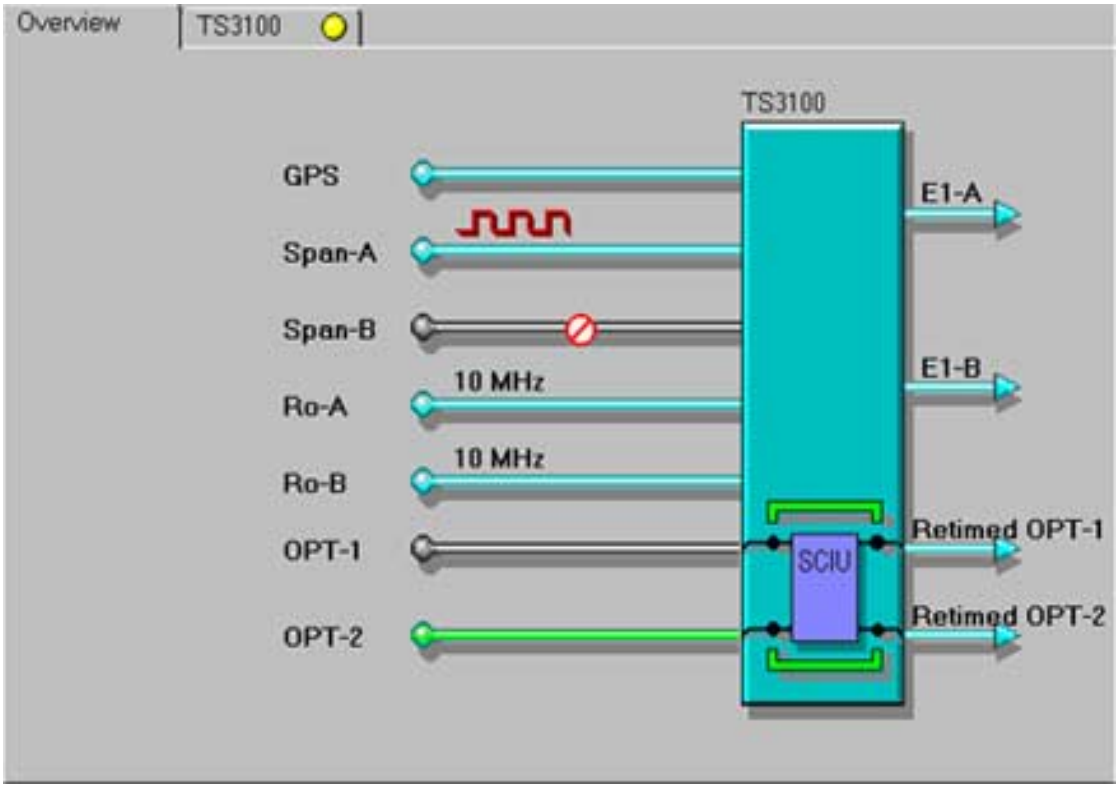


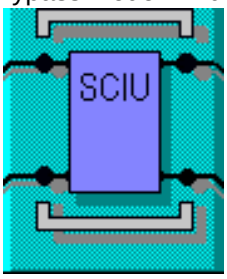
Figure 56 TimeSource 3100 with ESCIU - Overview Page

As you can see from the screen shot above, the Overview page now depicts the ESCIU inputs ("OPT-1" and "OPT-2") together with it's outputs ("Retimed OPT-1" and "Retimed OPT-2").

The ESCIU status will be depicted on the Overview page with one of the following graphical indicators:

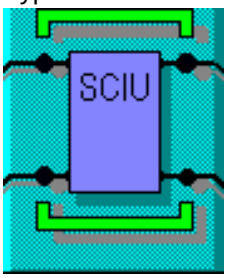
The ESCIU has been configured so that Bypass Mode is inhibited. The bypass relays are depicted as a pair of grey pipes and have not been operated.

Figure 57 Bypass Mode Inhibited (detail)



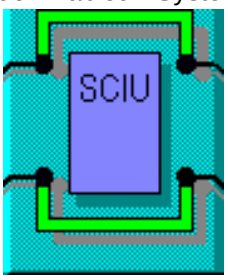
The ESCIU has been configured so that, when the system is in holdover, input signals will bypass the board. The bypass relays are depicted as a pair of green pipes, providing a potential path around the ESCIU for the input signals. The system is not in holdover and, therefore, the bypass relays have not been operated.

Figure 58 Bypass Mode Enabled (detail)



The ESCIU has been configured so that, when the system is in holdover, input signals will bypass the board. The bypass relays are depicted as green pipes providing a path for the input signals around the ESCIU. The system is in holdover and, consequently, the bypass relays have been operated.

Figure 59 Bypass Mode Enabled - System in Holdover (detail)



How To...

The following sections describe how to use the Configuration Manager to perform some common activities:

Entering Equipment Modules into a Shelf

Before you can configure or monitor equipment in a DCD you must first enter the module into the DCD inventory.

To enter equipment modules:

- Ensure slot is shown as empty on the appropriate Shelf page. If not then you must delete the existing module before you can enter a new one.
- Physically place the module into the slot.
- Select the responding empty slot on the appropriate Shelf page. A list of all the modules which may be inserted into that slot will be produced. Simply select correct module from the list
- Follow the dialogue instructions and your new module will be automatically entered and will appear in the shelf.

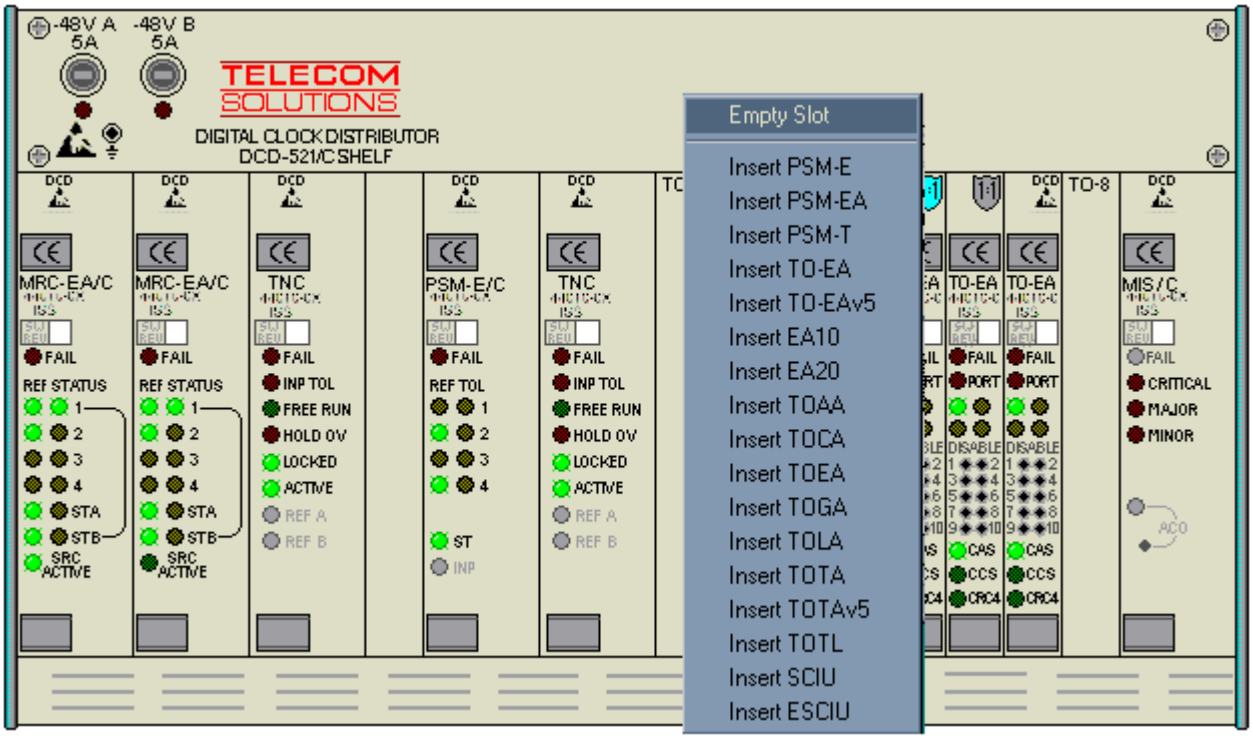


Figure 60 A Module List On The Shelf Page

If the module does not appear in the list then you are attempting to insert the module in an incorrect slot.

Deleting Equipment Modules from a Shelf

In order correctly physically remove equipment modules from a shelf the module must be deleted from the DCD inventory. It is only possible to delete modules that are have first had their ports removed (disabled), the module removed (disabled) and finally their ports deleted.

To delete equipment modules:

- Select the appropriate shelf page.
- Select the appropriate equipment module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Delete* menu item.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been accepted. If successful the card graphic will disappear.

On entering equipment modules into the DCD inventory, some modules will default to a removed (disabled) state. This is denoted by a barring symbol on the top of the module.

Removing or restoring equipment modules

- Select the appropriate shelf page. Select the appropriate equipment module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Remove/Restore* menu item.
- A dialogue box will be opened. The button highlights represents the current value adopted by the DCD. Selection of another state may be made selecting alternative button.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been accepted.

Reading Card Versions

All Cards contain an Inventory that holds:

Part Number, CLEI, Serial Number, Hardware Revision, Software Revision, Software Version.

To open this dialogue:

- Choose the *Card Administration* menu item.
- Choose the *Version* menu item.

MIS modules, however, contain the following:

Part Number, CLEI, Serial Number, Hardware Revision
State, Software Revision, Software Version (High Bank)
State, Software Revision, Software Version (Low Bank)

To open this dialogue:

- Choose the *Version* menu item.

Saving/Loading Configurations

To read all data from the cards to the MIS module

- Select *Read All Data from Card*s

To write all data from the MIS module to the cards

- Select *Write All Data to Cards*

To read all data from the MIS module to the cards

- Select *Card Administration*
- Select *Read Data from MIS*

To write all data from the cards to the MIS module

- Select *Card Administration*
- Select *Write Data to MIS*

Removing/ Restoring Input Ports

TimeScan supports many types of input reference modules. The MRC-EA and MRC-T input reference modules provide a facility where their inputs can be removed (disabled) or restored (enabled) remotely.

To remove or restore input ports:

From the Overview page:

- Select the appropriate port *pipe*.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Remove/Restore* menu item....

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Remove/Restore* menu item.
- From the resultant sub-menu choose the appropriate port or all ports...

...

- A dialogue box will be opened. The button highlights represents the current value adopted by the DCD. Selection of another state may be made selecting alternative button.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been accepted.

Reading / Setting the Priority of an Input Port

Multi reference controllers (MRCs) support the prioritizing of input ports. The input with the highest priority (1) will be selected as the reference source to its MRC provided, that reference is deemed to be fit for use. If the priority (1) reference is lost or is deemed not fit for use then the MRC will automatically select the next suitable input in order of priority 2-3-4.

n.b. DCIM card allow different input ports to have the same priority

To read / set the priority of an input port:

From the Overview page:

- Select the appropriate port *pipe*.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Priority* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Port Administratio*n menu item.
- From the resultant sub-menu choose the *Priority* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made using the spin control.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new priority has been accepted.

It should be noted that setting a new selection priority on a given port may cause the selection priority of the other inputs to be modified by the MRC. This priority re-ordering may take several seconds.

Reading / Setting the Identity of an Input Port

TimeScan supports a port identity field for all ports of the input reference modules (MRC or CI). The port identity is a text string which is intended to be used to uniquely identify the port.

To read / set the identity of an input port:

From the Overview page:

- Select the appropriate port *pipe*.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Identity* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Port Administration* menu item.
- Form the resultant sub-menu choose the *Identity* menu item.
- Form the resultant sub-menu choose the appropriate port *or* all ports for an MRC.

...

- A dialogue box will be generated providing an edit box containing the current port identity. Note: if the identity has not been set the word *UNSET* will appear.
  The port identity may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The port identity may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new port identity has been accepted.

Reading / Setting the Source of an Input Signal

n.b. This section (Reading / Setting the Source of an Input Signal) does not apply to DCIM cards.

Each reference input port has an attribute, *source*, associated with it. This attribute defines the source of the synchronisation reference signal applied to that port and dictates the qualification threshold applied to the reference signal.

Source may take one of four values:

Network
GPS
LORAN
Cesium

To read / set the source of an input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Source* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Source* menu item.
- From the resultant sub-menu choose the appropriate port *or* all ports for an MRC.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal source has been accepted.

Reading / Setting the Type of Input Signal

TimeScan supports many types of input reference modules. The MRC-EA input reference modules provide a facility where the type of signal, digital or analogue, accepted by its ports may be controlled remotely.

To read / set the type of input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the ‘Type’ menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Type* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal type has been accepted.

Reading / Setting the Framing Mode of an Input Signal

TimeScan supports many types of input reference modules. The MRC-EA and MRC-T input reference modules provide a facility where the framing mode, accepted by their ports may be controlled remotely.

To read / set the framing mode of an input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Framing* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Framing* menu item.
- From the resultant sub-menu choose the appropriate port *or* all ports.

...

- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal framing mode has been accepted.

Reading / Setting the Origin of an Input Signal

TimeScan supports a signal origin field for all ports of the input reference modules (MRC or CI). The signal origin is a text string which is intended to be used to uniquely identify the path or source of the reference signal.

If used properly this attribute can be extremely useful. For example, if the signal applied to an input port is lost due to a bearer cut or the failure of the up-stream source then it may be necessary to quickly identify the bearer or source. To do this manually by attempting to trace through the Network Connection Plan may be very time consuming. However, if the signal origin is already defined then you need only select this facility.

To read / set the origin of an input signal:

From the Overview page:

- Select the appropriate signal wave form.
- Choose the *Signal Administration* menu item.
- From the resultant sub-menu choose the *Origin* menu item.

From the Master Shelf page:

- Select the appropriate input module.
- Choose the *Signal Administration* menu item.
- Form the resultant sub-menu choose the *Origin* menu item.
- Form the resultant sub-menu choose the appropriate port *or* all ports for an MRC.

...

- A dialogue box will be generated providing an edit box containing the current signal origin. Note: if the origin has not been set the word *UNSET* will appear.
  The signal origin may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The origin may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new origin has been accepted.

Reading/ Setting the Identity of an Output Port

TimeScan supports a port identity field for all ports of the Timing Output (TO) modules. The port identity is a text string which is intended to be used to uniquely identify the port.

To read / set the identity of an output port:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Port Administration* menu item.
- From the resultant sub-menu choose the *Identity* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.
- A dialogue box will be generated providing an edit box containing the current port identity. Note: if the identity has not been set the word *UNSET* will appear.
  The port identity may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The port identity may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new port identity has been accepted.

Reading / Setting the Type of Oscillator

MRC modules can have different types of Oscillators, Rubidium and Quartz. To set the type

- Select *Card Administration*
- Select *Oscillator Types*'

Reading / Setting the Type of Output Signal

TimeScan supports many types of Timing Output modules. The TO-EA modules provides a facility where the type of signal, digital or analogue, generated by its ports may be controlled remotely.

To read / set the type of output signal:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Signal Type* menu item.
- From the resultant sub-menu choose the *Type* menu item.
- From the resultant sub-menu choose the appropriate port or all ports.
- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal type has been accepted.

Reading / Setting the Protection Mode of a Timing Output Module

TimeScan supports many types of Timing Output modules. The TO-EA modules provides a facility where the protection mode employed for its output signals may be controlled remotely.

To read / set the protection mode of a Timing Output module:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Protection Type* menu item.
- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new protection mode has been accepted.

Reading / Setting the Framing Mode of a Timing Output Module

TimeScan supports many types of Timing Output modules. The TO-EA modules provides a facility where the framing mode employed for its output signals may be controlled remotely.

To read / set the framing mode of a Timing Output module:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Card Administration* menu item.
- From the resultant sub-menu choose the *Framing* menu item.
- A dialogue box will be opened. The value displayed represents the current value adopted by the DCD. Selection of another value may be made selecting a value from the drop list.
- Make your modification and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new signal framing mode has been accepted.

Reading / Setting the Destination of an Output Signal

TimeScan supports a signal destination field for all ports of the Timing Output modules. The signal destination is a text string which is intended to be used to uniquely identify the path or down-stream target of the output signal.

To read / set the destination of an output signal:

- Select the appropriate shelf page.
- Select the appropriate TO module.
- Choose the *Signal Destination* menu item.
- Form the resultant sub-menu choose the appropriate port or all ports.
- A dialogue box will be generated providing an edit box containing the current signal destination. Note: if the destination has not been set the word *UNSET* will appear.
  The signal destination may contain up to fifty printable characters. No composition rules are imposed on this attribute, it is free text, so it can follow any naming convention adopted by the Network Administration.

  The destination may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new destination has been accepted.

Reading/ Setting the Real Time Clock of the DCD

The Master Shelf MIS module maintains the real time clock for the entire DCD.

To read / set the DCD real time:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Time* menu item.
- A dialogue box will be opened providing a snap shot of the real time current measured by the DCD.
- All fields may be edited directly or by using the spin controls.
- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new time setting has been accepted.

Reading the Current Alarm State of a Shelf

The MIS module of each shelf an Alarm List which lists all the current alarm conditions outstanding on that shelf.

To view an Alarm List:

- Select the appropriate Shelf page.
- Select the *MIS* menu.
- Choose the *Alarm List* menu item.
- An information dialogue box will be opened listing the contents of the Alarm List.

Reading the Alarm History of the DCD

The Master shelf MIS provides an Alarm History for the entire DCD in the form of a log.

To view the log:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Alarm Log* menu item.
- An information dialogue box will be opened listing the contents of the *Alarm Log*.

Clearing the Alarm History of the DCD

The Master shelf MIS provides an Alarm History for the entire DCD in the form of a log.

To clear the Alarm History:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Clear Log* menu item.
- Confirm action if required.
- A result dialogue box will inform you of the result.

Operating the Alarm Cutoff

This dialogue enables you to silence all local audible alarms on the DCD.

To operate the Alarm Cutoff:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Operate Alarm Cutoff* menu item.
- Confirm action if required.
- A result dialogue box will inform you whether alarm cutoff as operated.

Setting the System Identifier (SID) of the DCD

The Master shelf MIS provides an identifying string known as the System Identifier (SID). This string forms the basis of the header for all command responses and notifications generated by the DCD.

To read or set the SID:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *System Identifier* menu item.
- A dialogue box will be generated providing an edit box containing the current System Identifier. The SID may be edited by using the conventional line editing facilities:
  Left/right arrow keys.
  Backspace.
  Forward delete.
  Shift left/right arrow to highlight text.
  Control-x to delete highlighted text.
  Control-c to copy highlighted text.
  Control-v to paste.
  Control-z to undo last edit action.
- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your new SID has been accepted.

Note a quick method of viewing the System Identity is to invoke the Master shelf menu by clicking on the top panel of the shelf. The resulting menu will display the System Identifier has its title.

Reading / Setting the Communication Parameters of the DCD

The MIS module of the DCD Master shelf provides three serial communication ports for management facilities. Each communication port has a host of configurable attributes which control its behaviour.

To read or set communication parameters of the DCD:

- Select the Master shelf page.
- Select the *MIS* menu.
- Choose the *Communications* menu item.
- From the sub-menu select the communication port you wish to modify.

- A dialogue box will be generated providing a control for each attribute of that port. The values displayed in the controls are the current attribute settings.

The following list provides a brief description of each attribute:

Baud Rate - This is the data transfer rate of the port. Two values may be selected form the drop list 9600 / 1200. It should be noted that if the baud rate of the port currently used by TimeScan is changed then TimeScan should be closed. The baud rate set in the Shortcut window should be modified accordingly and the Tool Palette re-launched. It is not possible to modify the baud rate of communication port 2.

Monitor - This check box controls the ability of the port to monitor the activity on other ports. It should be noted that Monitor must be turned off, un-checked, for the port currently used by TimeScan.

Keep Alive - This check box controls the ability of the port to send spontaneous messages.

Com Type - Each communication port supports four communication types:

X.25 - for direct connection to an X.25 PAD.
Modem - for direct connection to a PSTN modem.
Terminal - for direct connection to a Terminal.
Remote - for direct connection to a remote expansion shelf.

It should be noted that Com Type must be set to *Term*, for the port currently used by TimeScan.

End of Text - This attribute represents the numeric value of the ASCII character to be used as an additional terminating character. Zero indicates no additional terminating character. It should be noted that End of Text must be set to zero, ‘00’, for the port currently used by TimeScan.

Echo - This check box controls the ability of the port to echo received characters. It is recommended that Echo should be turned off, un-checked, for the port currently used by TimeScan.

Report Alarms - This check box controls the ability of the port to send spontaneous alarm messages. It is recommended that Report Alarms should be turned on, checked, for the port currently used by TimeScan.

Hardware flow control - This check box controls whether the port uses hardware flow control.

Software flow control - This check box controls whether the port uses software flow control.

Back to the procedure:

- Make your modifications and select *Apply*.
- Confirm action if required.
- A result dialogue box will inform you whether your modifications have been successful made.

Note: All modifications on communication port 2 will result in a partially executed response due to the inability to set the baud rate of this port.

Re-initializing an MIS module

It is possible to re-initialize the software of an MIS module. This action may be necessary on installation and does not affect the synchronisation performance of the shelf or DCD.

To re-initialize an MIS module:

- Select the Shelf page of the MIS to be re-initialized.
- Select the *MIS* menu.
- Choose the *Re-initialize...* menu item.
- A dialogue box will be generated providing a warning.
- If you intend to proceed, select *Apply*.
- Confirm action if required.
- Configuration Manager will send the appropriate commands and provide a dialogue with the result of the re-initialisation. If successful the MIS module will restart. All communications with the MIS will cease for approximately thirty seconds. At this point TimeScan **must** be closed and restarted. Close the Configuration Manager, any other TimeScan tools and finally the Tool Palette.

Adding, Amending and Deleting User Security

The MIS card supports up to 17 Users in its security features. The range of features available to individual Users depends upon their Access Level. The DCD determines what access level allows what feature.

Adding a User:

- Select the *MIS* menu
- Choose the *Security*, *Add User...* menu items.
- A dialogue box will be generated. Enter the required *User Name*, *Password* and *Security Level*.
- If you intend to proceed, select *Apply*.
- Confirm action if required.

Editing a User:

- Select the *MIS* menu
- Choose the *Security*, *Edit Users...* menu items.
- A dialogue box will be generated. Listing the Current User *ID*s as well as box to hold the new user *ID*s, *Password*s and *Security Level*s. This dialogue will also allow you to enter a new user
- If you intend to proceed, select *Apply*.
- Confirm action if required.

Deleting a User:

- Select the *MIS* menu
- Choose the *Security, Delete User*.' menu items.
- A dialogue box will be generated. Enter the *User Name* for the User you wish to delete.
- If you intend to proceed, select *Apply*.
- Confirm action if required.

Changing SSM Support

n.b. This section (Changing SSM Support) only applies to MIS Version 5.04 and above.

- Select the *MIS* menu.
- Choose the *Select SSM* support item.
- A dialogue box will be generated. Choose the type of SSM support which you require.
- Press *Apply* to keep your changes or *Cancel* to close the box without keeping the changes.

Reading the Satellite Statistics from a GTI module

To read the satellite statistics from a GTI module:

- Select the LPR Shelf page.
- Select the appropriate GTI menu.
- Choose the *GPS Stats* menu item.
- An information dialogue box will be opened listing GPS statistics including a snap shot of UTC time, location, satellites in view and their co-ordinates.

TimeSource 3000/3100 - Ensemble / Unensemble a Span

To ensemble or unensemble as span, go to the TimeSource 3000 shelf page and:

- Right click on a span LED on the shelf page.
- Select the *Ensembling*. menu item to bring up the Ensembling dialogue box.
- Click on the *Allow* button to enable ensembling, or the *Inhibit* button to disable it.
- Click *Apply* to close the box and save your changes.
- Confirm action if required.

- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Enable / Disable Monitoring for a Span

To enable or disable monitoring for a span:

- Right click on a span LED on the shelf page.
- Select the *Monitoring*.. item from a popup menu. This will bring up the Monitoring dialogue box.
- Click on either the *Disable* or *Enable* button, as appropriate.
- Click *Apply* to close the box and save changes.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Ensemble / Unensemble a Remote Oscillator (RO)

To Ensemble or Unensemble a Remote Oscillator:

- Right click on an RO LED on the shelf page.
- Select the *Ensembling*.. menu item to bring up the Ensembling dialogue box.
- Click on the *Allow* button to enable ensembling, or the *Inhibit* button to disable it.
- Click *Apply* to close the box and save any changes.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Enable / Disable Monitoring for a Remote Oscillator (RO)

To Enable or disable monitoring for a Remote Oscillator:

- Right click on an RO LED on the shelf page.
- Select the *Monitoring*.. item from a popup menu. This will bring up the Monitoring dialogue box.
- Click on either the *Disable* or *Enable* button, as appropriate.
- Press *Apply* to close the dialogue box and save your changes.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000- Read / Set Cable Delay for a Global Positioning System (GPS)

- Right click on the GPS LED on the shelf page.
- Select *Antenna Administration* for the popup menu, then select *Cable Delay*.. from the sub-menu to display the Cable Delay dialogue box.
- Either type directly into the text box, or use the arrows, to input the required value. It is in metres, and must be in the range 0-330.
- Press *Apply* to close the dialogue box and save your changes. Click *Cancel* to simply close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Read / Set Elevation Mask for a Global Positioning System (GPS)

To set the elevation mask angle for a global positioning system:

- Right click on the GPS LED on the shelf page.
- Select *Antenna Administration* from the popup menu, and *Elevation Mask*.. from the resulting sub-menu. This will bring up the Elevation Mask dialogue box.
- Either type in the required new value, or use the arrows. The unit is degrees, and the value must be in the range 0-45.
- Click *Apply* to close the dialogue box and save your changes. Click *Cancel* to simply close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Initialise a Global Positioning System (GPS)

To initialise a global positioning system:

- Right click on the GPS LED on the shelf page.
- Select *Initialise GPS*.. from the drop down menu.This will bring up the Initialise GPS dialogue box.
- Click either the *Reset Receiver* or *Reset Entire Database to default settings* button.

- Click *Apply* to begin the initialisation and close the dialogue box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - View Current Alarm State of a shelf

nb: All 3 alarm buttons will provide you with the same information.

To view the current the alarms for a shelf:

- Right click on any of the alarm LEDs on the shelf page.
- Select *Alarm List*.. from the drop down menu.
- A list of currently active alarms for that particular shelf will be displayed. It will be in TL1 response format.
- Press *OK* to close the Alarm List window and return to the Shelf page.

TimeSource 3000/3100 - Operating the Alarm Cutoff

To silence audible alarms on a shelf:

- Right click on the Aco LED.
- Select the *Alarm Cutoff* item from the popup menu.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Read / Set Alarm Output for an Output Port

To read or set the Alarm Output for a given port:

- Right click anywhere on the shelf page EXCEPT one of the LEDs.
- Select *TI Output* from the popup menu.
- From the resulting sub-menu, select the output port (*TI-A*.. or *T1-B*..) whose alarm output you want to read or set. The Alarm Outputs dialogue will appear.
- Select the required Alarm Output from the drop down list box. The options are *SSM*, *SQUELCH* or *AIS*.

- Click *Apply* to close the dialogue box and save any changes that you have made. Click *Cancel* to simply close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

nb. You cannot set the Alarm Output value to SSM unless the Frame Type value is set to ESF. (See the following section, How to Read / Set the Frame Type for an Output Port.)

TimeSource 3000/3100 - Read / Set Frame Types for an Output Port

To read or set the frame type for an output port:

- Right click anywhere on the shelf page EXCEPT one of the LEDs.
- Select the *Frame Type*.. item from the popup menu. This will bring up the Frame Type dialogue box.
- Chose an option from the drop down list box. The options are *ESF* and *D4*.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Set Time Stamp for a Shelf

To set the Time Stamp for a shelf:

- Right click anywhere on the shelf page EXCEPT one on the LEDs.
- Select *Time*.. from the popup menu. The time dialogue box will be displayed.
- Either type the required values directly into each time field, or use the arrow keys to enter them.
- Click *Apply* to close the dialogue box and save your changes.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

TimeSource 3000/3100 - Read / Set Remote Oscillator (RO) Frequency for a Clock

To read or set the frequency of a remote oscillator:

- Right click anywhere on the shelf page EXCEPT one of the LEDs
- Select *RO Frequency*.. from the popup menu. This will display the Remote Oscillator Frequency dialogue box.
- Select a frequency from those in the drop down list box. The options are either *5* or *10 MHz*.
- Click *Apply* to close the box and save changes, or *Cancel* to just close the box.
- Confirm action if required.
- A result dialogue box will inform you whether your action has been successful.

nb. Since both oscillators must be set to the same value, they are set simultaneously.

TimeSource 3000/3100 - Reinitialise a TimeSource 3000 Card

To reset a card to its default values:

- Right click anywhere on the shelf page EXCEPT on one of the LEDs.
- Select the *Card Administration* item from the drop down menu. Select the *Initialise Card* item from the resulting sub-menu.
- Confirm action if required.
- There may be a short delay during the initialisation. The card will be reconnected after initialisation is complete.

TimeSource 3000/3100 - Read Card Version Details

To find version information for a given card:

- Right click anywhere on the shelf page EXCEPT on one of the LEDs.
- Select the *Card Administration* item from the popup menu.
- Select the *Version* item from the resulting sub-menu.
- A dialogue will be displayed which shows the all the available version information for the card.
- Click *OK* to close the window and return to the shelf page.

Frequently Asked Questions...

7 Q. **I have tried to delete a module form a shelf but I keep getting the error message, “Invalid sequence”... why?**

A. The module is not in the correct state for deletion. In general for modules with input or output ports the following procedure must be followed:

5 Remove all ports.

6 Remove module.

7 Delete all ports.

8 Delete module.

8 Q. **I have physically removed a module from a shelf. Can I delete it form the DCD inventory without putting it back?**

A. Yes... although the module is shown has missing, if you select this graphic it will still provide the configuration menus for that module so you can still delete it.

9 Q. **There is a module shown on a shelf page. The module is not removed (disabled) but all of the LEDs are shown grey... why?**

A. Unfortunately TimeScan can not accurately determine the state of the LEDs.

10 Q. **When I open Configuration Manager the shelves shown are different to my actual DCD shelves. Is this a fault?**

A. No. you have not selected the correct Element Type when you created the shortcut with the TimeScan Shortcut tool.

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Chapter 5 Performance Manager

Performance Manager is a tool that provides a graphical representation of each Performance Synchronisation Monitoring (PSM) port. Performance Manager has two major functions

- *Configuration of PSM module(s)*
- *PSM module Performance data retrieval*

Why would I need to use the Performance Manager?

When you need a concise interface for information regarding the functional state of the ports and configuration actions.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Performance Manager. If you need to use the chapter as a quick reference guide, there is a keyword index at the end.

Chapter Contents

Opening the Performance Manager Application

Start this application from Network Browser.

A Tour of Performance Manager

As you can see below, Performance Manager is composed of a number of controls:

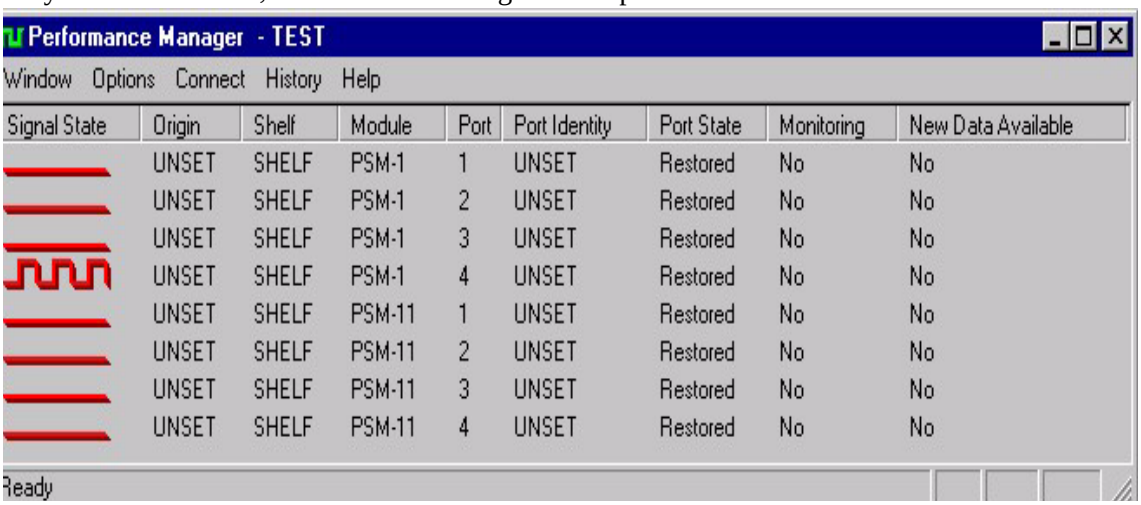

Figure 61 The Performance Manager Main Window

The following sections will discuss each one in turn.

The PSM Port Table

The table is a list of all the PSM ports and related data

- **Signal State**: Describes graphically the current state of the signal applied to the port.
- **Origin:** The description of the signal origin, a text string that is intended to be used as a unique identifier of the path or source of the reference signal.
- **Shelf**: The shelf that holds the module i.e. Master, Expansion1.
- **Module**: The unique module name i.e. PSM-4, PSM-6
- **Port**: The port number that the row refers to.
- **Port State**: The current state of the port i.e. removed, restored.
- **Monitoring**: Indicates whether or not a collection schedule has been activated for the port and the frequency.
- **Data Available**: Indicates whether or not data has been collected for the port since the current Schedule was activated.

Signal state graphical indicators:

- *Signal Present and satisfactory* -a train of green square waves

- *Signal present but Thresholds violated* - a train of red square waves

- *Loss of Signal* - a flat red line

- *Signal manually removed* - blank

Each column of a data type has its own context menu which can be activated by clicking the right mouse button over the required attribute. Further information on the commands that can be performed can be found in the next section of this guide.

Retrieving Performance Data Immediately

By clicking the right mouse button over the Monitoring column a menu will appear for the particular port. Select the *Retrieve Data* option.

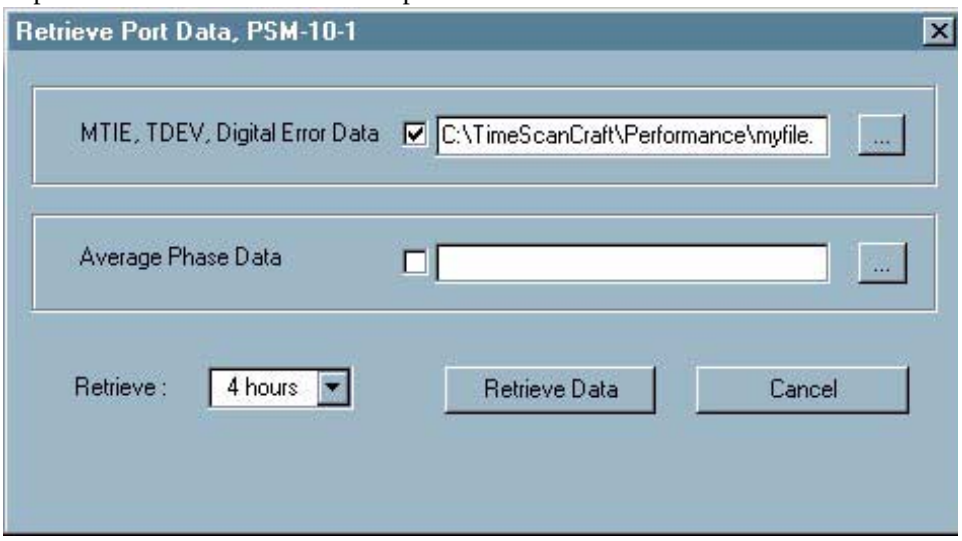

Figure 62 The Retrieve Port Data Dialogue Box

The Retrieve Port Data dialogue box will appear with the name of the port in the title bar.

To retrieve MTIE, TDEV and Digital Error Data, specify the file name in which the data is to be stored. The button with the three dots will allow you to browse for a file location and specify a file name. The extension for these files is *.PMT. You may also choose the amount of data that you wish to collect: four, eight, twelve or twenty four hours' worth.The *Retrieve Data* button will then be activated.

To retrieve Average Phase Data, follow the same procedure as above, with the exception that the file extension is *.PMP.

The default directory for these files is ‘ \Performance’ relative to the installation directory.

Use the *Retrieve Data* button to retrieve the data immediately.

While the data is being retrieved, a dialogue box will be displayed which will provide feedback on the status of the operation. Retrieval operations may take several minutes to complete.

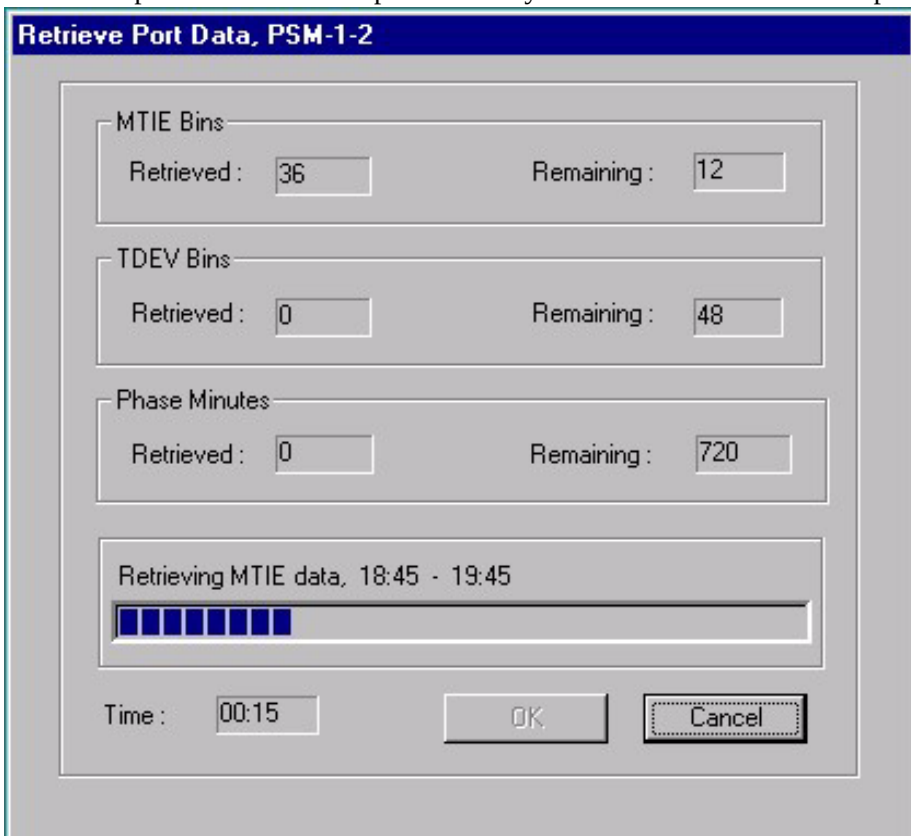

Figure 63 The Retrieval Progress Dialogue Box

If a fault occurs while data is being retrieved, the Performance Manager will write diagnostic information to the error log.

Note: This information is only designed to alert the user that a fault has occurred, not to provide a comprehensive explanation.

Activating a Schedule

By clicking the right mouse button over the *Monitoring* column a menu will appear for the particular port. Select the Scheduling option.

The Scheduling dialogue box will appear.

.

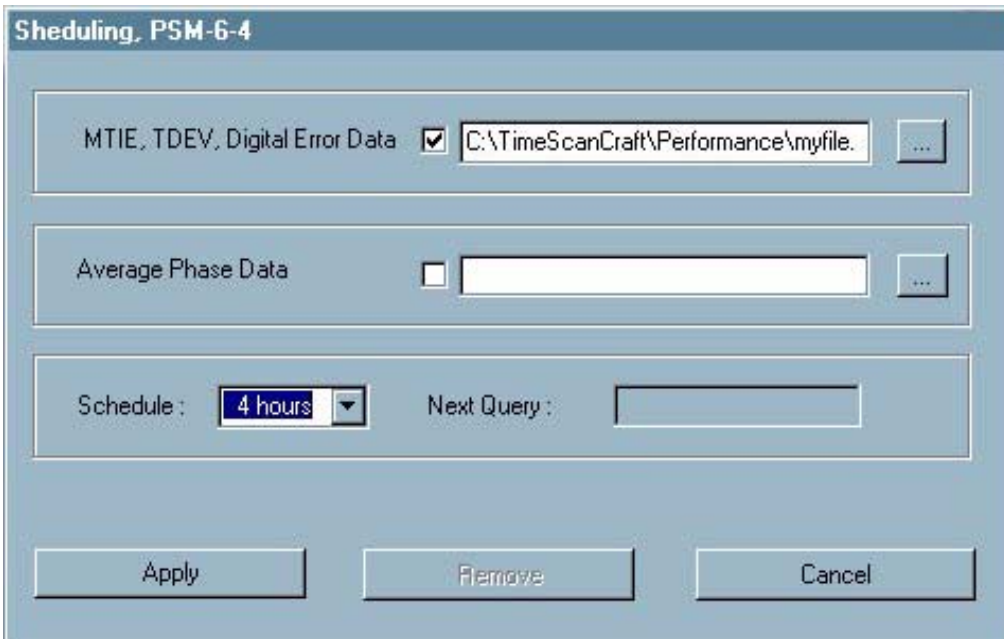

Figure 64 The Scheduling Dialogue Box, Showing Port Name In Title Bar

To retrieve MTIE, TDEV and Digital Error Data, specify the file name in which the data is to be stored. The button with the three dots will allow you to browse for a file location and specify a file name. To retrieve Average Phase data follow the same procedure as above. The extension for these files is *.PMT. You may also choose the amount of data that you wish to collect: four, eight, twelve or twenty four hours' worth. The Apply button will now be activated. The default directory for these files is '\Performance' from the installation directory.

Press the *Apply* button and the Schedule will be activated.

You will now return to the original window and you will notice that the table row of the port on which you wanted performance data has changed. It now states that monitoring is active and displays the frequency of that monitoring.

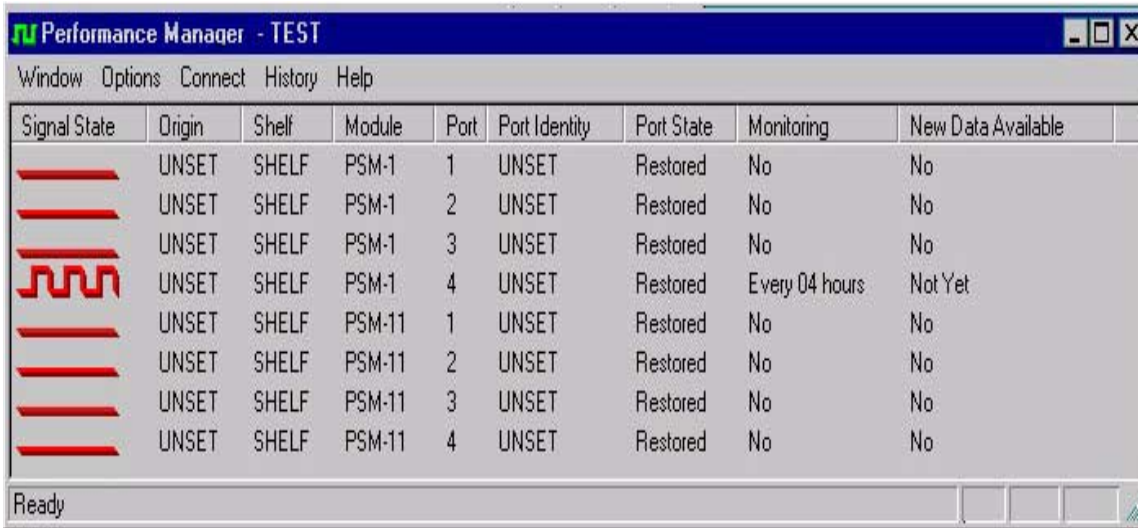

Figure 65 The Main Screen, Showing Active Monitoring On Port PSM-1

n.b. Performance Manager will be unable to gather data if it is closed down. Once you have activated a schedule, leave the application open until all the required data is collected.

Deactivating a Schedule

Clicking the right mouse button over the *Monitoring* column will cause a menu to appear for the particular port. Select the *Scheduling* option.

The Scheduling dialogue box will appear with the name of the port in the title bar.

Press the *Stop* button and the Schedule will be deactivated.

Configuring Ports

Performance manager allows you to configure PSM Ports in the same way that the application Configuration Manager does.

If you click the right mouse button over the various columns you can access the configuration dialogue boxes. For example, the *Origin* column has a context menu containing *Signal State* and *Signal Administration* options. The *Shelf* and *Module* columns have *Card State* and *Card Administration* options.

For full information on how to use these configuring options see the user guide for Configuration Manager.

Disconnect/ Connect

A useful feature of Performance Manager is that it allows you to manually connect or disconnect from the DCD. This is ideal when the connection is via a modem. You can close a connection by selecting *Connect* or *Disconnect* from the program menu. If a schedule is running, Performance Manager will automatically re-connect to the DCD collect the necessary data and then disconnect. This will reduce the amount of time on-line. When the application is not connected to the DCD, the column text will be greyed out, as shown in Figure 66.

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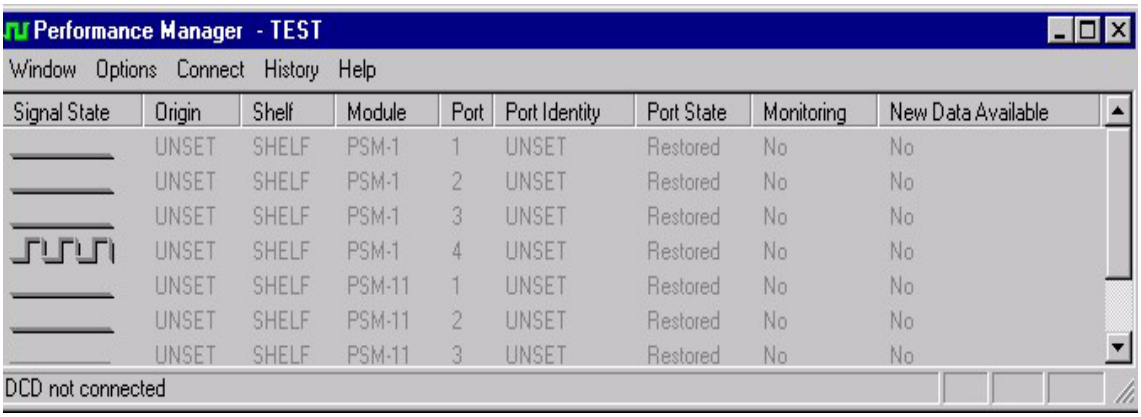

Figure 66 Performance Manager, Currently Disconnected From DCD

Diagnostics Log

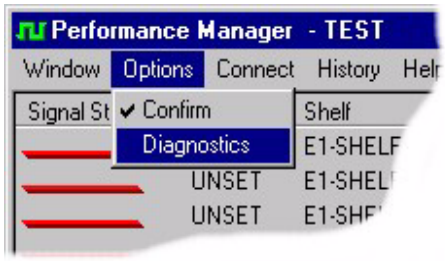

Figure 67 The Diagnostics Menu Item

If performance data has not been successfully retrieved, the Diagnostics Log can be activated in order to provide diagnostic information during subsequent retrieval attempts.

The Diagnostics Log will store any commands sent from the Performance Manager to the DCD that fail. The Diagnostics Log will be written to the *Performance* directory.

View the *Diagnostics Log* by selecting the *Diagnostics* item from the Options menu, as shown in Figure 67.

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Chapter 6 Average Phase Viewer

What is the Average Phase Viewer?

The Average Phase Viewer Application provides a visual representation of the average phase information maintained within the Performance Data.

Why would I need to use Average Phase Viewer?

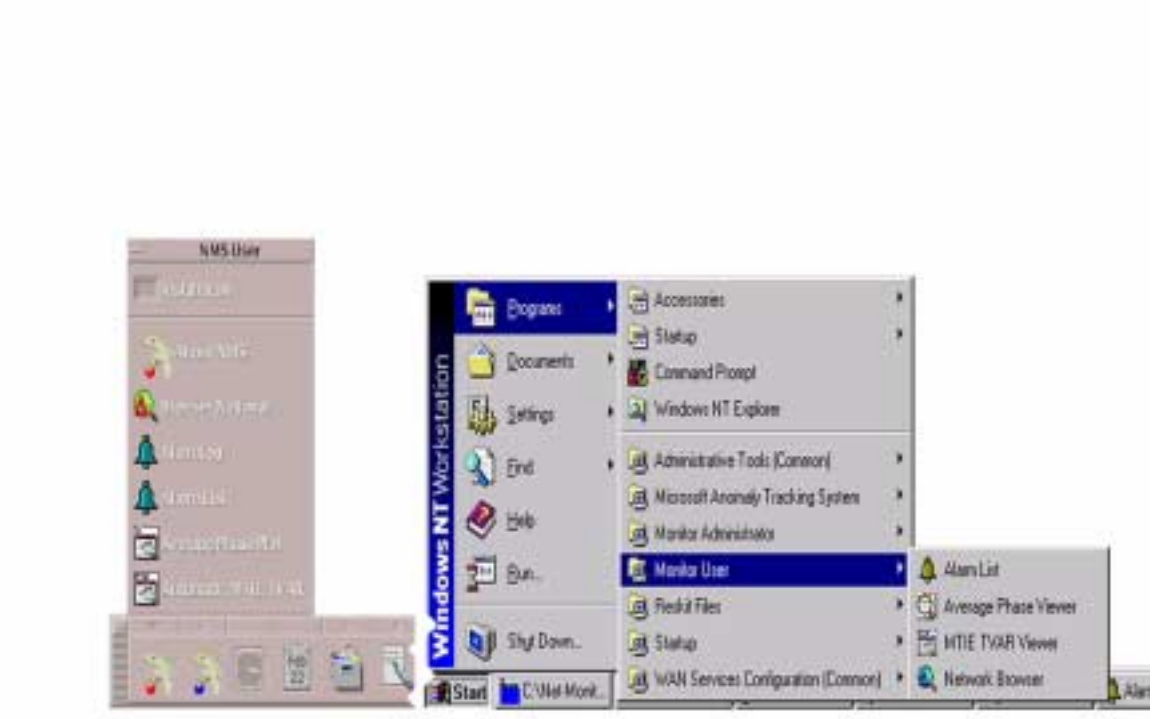
This tool provides a visual representation of the Average phase curves collected by the Precision Synchronisation Monitor (PSM) Modules located within the DCD elements.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Average Phase Viewer. There is a table of contents below. If you need to use the chapter as a quick reference guide, there is a keyword index at the end and How to section. The Tour section will give a brief account of each control on the main window. If you have any problems or queries regarding Average Phase Viewer try the Frequently Asked Question section.

Chapter Contents

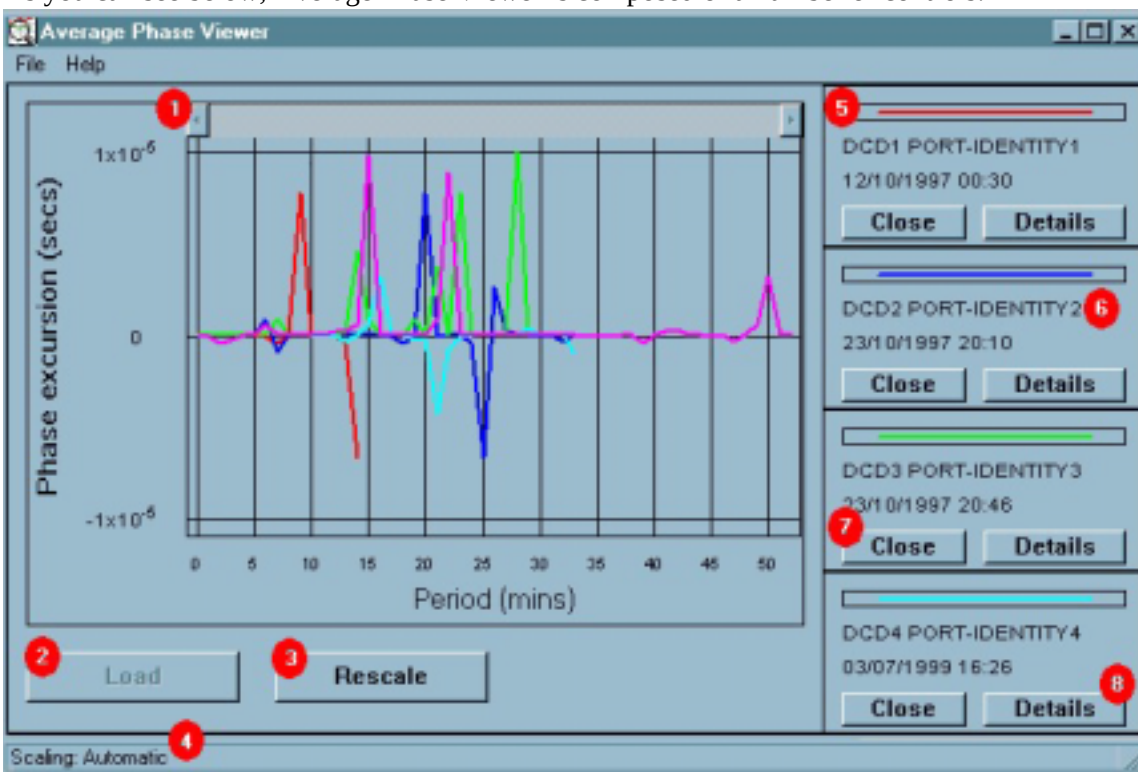
Opening Average Phase Viewer



Average Phase Viewer can be opened by clicking on the appropriate icon on the Tool Palette, or by selecting the Phase Viewer item from the Window *Start* menu, or the Unix *CDE Front* Panel.

A Tour of Average Phase Viewer

As you can see below, Average Phase Viewer is composed of a number of controls.



The following list will detail each one in turn.

7 **Scroll Bar**, enables scrolling of curves too long to fit in the window inset.

8 **Load Button**, use to load an average phase curve.

9 **Rescale Button**, opens plot rescale options Dailog.

10 **Status Bar**, displays the current scale mode (Automatic or Manual).

11 **Legend Bar**, displays the colour that represents the relevant phase curve.

12 **Curve Identity**, displays the Distinguished name and the port identity of the curve.

13 **Time Stamp**, displays the time when the file was first created.

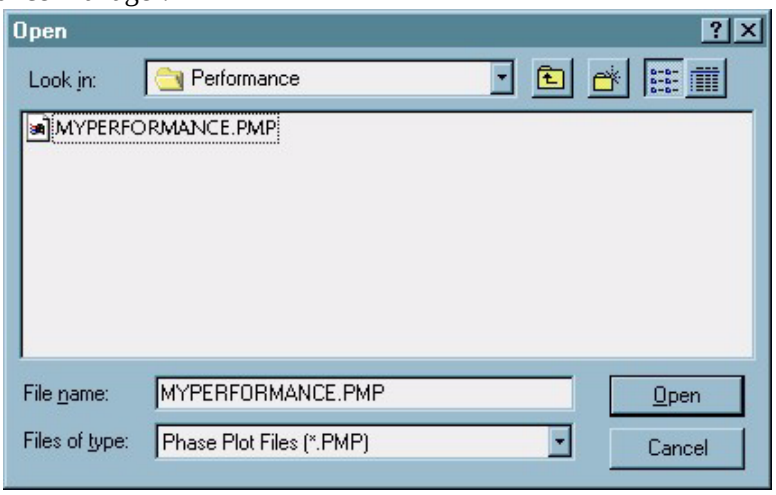
14 **Close Curve Button**, removes the legend and plot from the window.

15 **Curve Details Button**, displays the phase curve details dialogue.

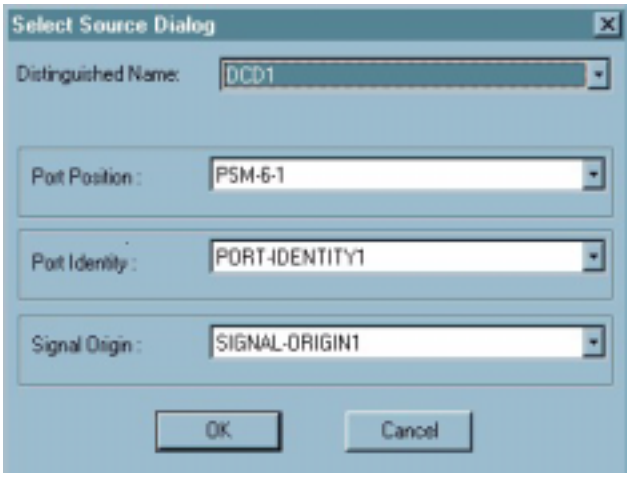
How to...

View a Performance File

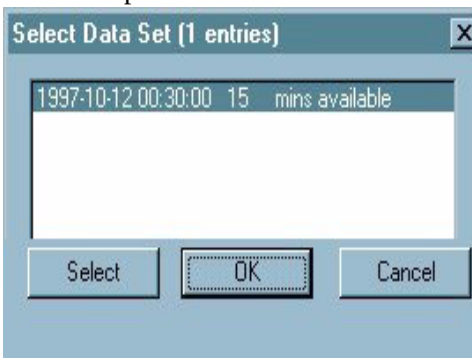
To view performance files first the appropriate file(s) needs to be opened. Click the *Load* button. This will display a standard Open File dialogue which will display Performance records created by the Performance Manager.



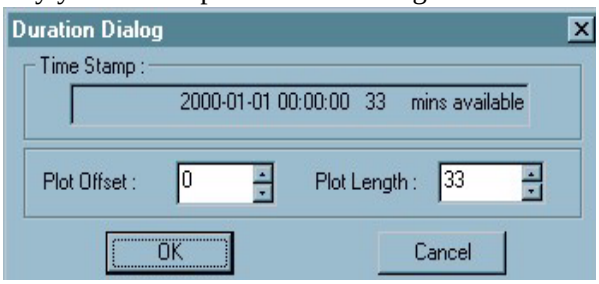
On opening an appropriate file the Select Source dialogue will appear. This dialogue allows you to select phase data for display. The *Distinguished Name* list contains the names of each source DCD found in your selected file. Choose a *Distinguished Name*. The *Port Position*, *Port Identity* and *Signal Origin* will contain appropriate references to the source ports available in your selected file. Choose a port.



Press *OK* to continue or *Cancel* to quit loading. The Select Data Set dialogue window below will be produced, listing periods for which phase data is available.



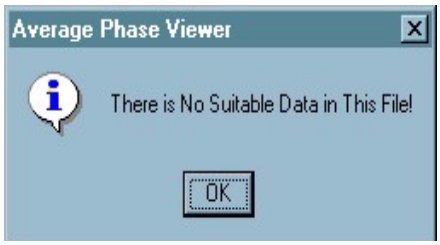
Clicking the *OK* button will immediately display the selected phase data set. For data sets greater than 10 080 points (one weeks worth) you will need to use the Duration dialogue launched from the *Select* button to specify you desired plot offset and length.



This dialogue allows you to control the plot offset and plot length for the selected data set. *Plot offset* represents number of points to be discarded from the beginning of the data set. *Plot length* represents the number of points to be plotted.

The curve plot window is capable of displaying phase curves on a linear graph.

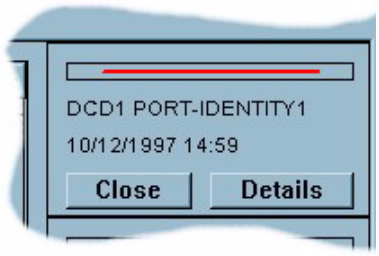
If you attempt to load a file that does not contain average phase data then the following warning will be provided.



The graph is capable of displaying up to five curves.

Find More Information About A Phase Curve

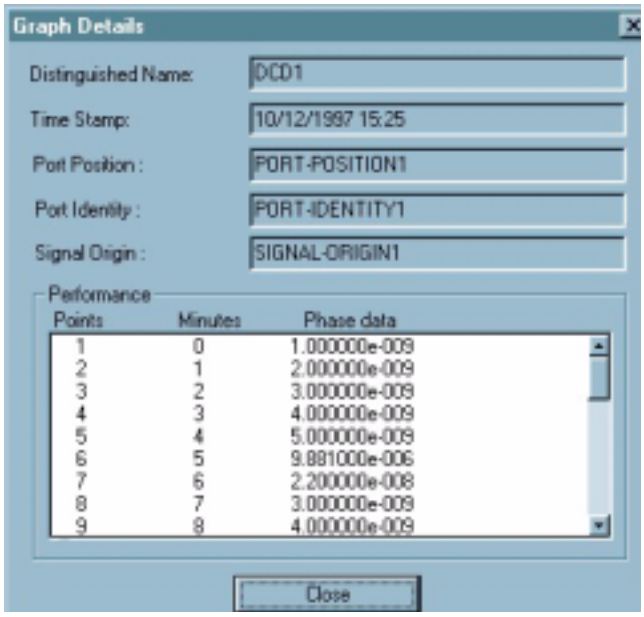
On loading a phase curve you will see, not only a coloured curve drawn in the plot window, but a small legend panel is drawn to the right of the plot window.



This and other legend panels provide the key for the plot window. You will see each legend panel contains a coloured line so you can match it with a curve on the plot; red, blue, green, yellow and purple. No two curves will have the same colour, so there is never ambiguity in either the plot or the plot key.

If a plot becomes obscured by the other plots it is possible to bring it to the front by selecting the legend bar of the obscured plot.

By selecting the *Details* button, a dialogue box will appear that lists all of the information related to the individual plot.



The *Points* field represents the first and subsequent points on the plot. The *Minutes* field represents the offset from the time stamp for each point. The *Phase Data* field represents the measured average phase value in seconds.

Analyse the Average Phase

The Average Phase Viewer application is very versatile and supports phase data visual analysis in both real time and relative time.

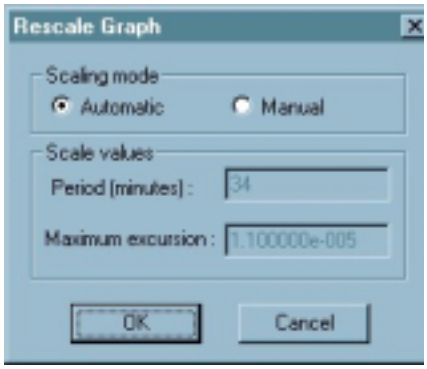
In order to analyse the effect of an external event on the phase performance of several synchronisation signals, it is necessary to compare historical phase curves over the ageing period. To do this you need only choose a range of starting times for each sample of the same curve you wish to analyse. This will provide a number of traces which will immediately highlight any ageing trends. Using this technique it is possible to provide continuous phase performance analysis of a given synchronisation signal over a period of up to five weeks. If continuous analysis is not required then the period is unlimited.

Of course the application will also support a combination of both techniques on a single plot.

Once a plot has been produced it may be apparent from the shape of the phase curves that there is a portion of the curve which is of some interest and a closer look is in order. This application provides plot re-scaling facility which will allow you to zoom in, or out, of a given portion of the plot.

Rescale a Phase Plot

By selecting the *Rescale* button at the foot of the main window the following dialogue window will be produced...



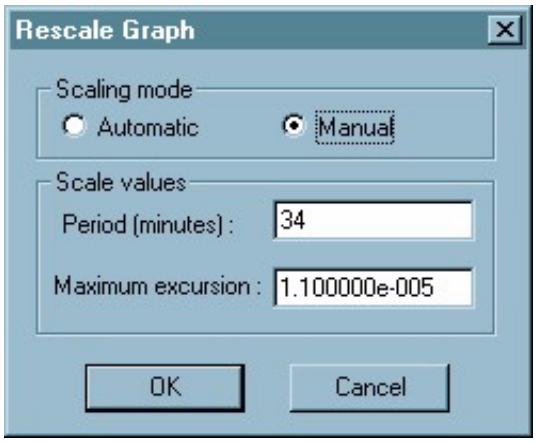
This window provides access to the two plot scaling modes provided by this application.

Automatic Plot Scaling Mode is the default mode. In automatic mode the application will select the maximum values of x-axis (phase excursion [seconds]) and y-axis (Period [minutes]) according to the following rules:

- All the curves currently plotted are entirely contained within the plot window.
- All curves are plotted to provide the maximum definition.

Automatic mode is useful when loading curves as you can always be assured that no matter how large or small the curve may be it will always be visible. However, you may wish to manually modify the ranges of the x and y axes in order to change the perspective of the plot...

Manual Plot Scaling Mode provides the means of dictating the ranges of the x and y axes. When the manual radio button is selected from the rescale dialogue window the controls below it become active.



Period dictates the width of the plot window in minutes. The permissible period range is between 2 minutes and 10080 minutes (1 week).

Maximum Excursion dictates the plus/minus phase excursion from the central zero point in seconds - effectively the height of the plot window. The permissible maximum excursion range is between $1.9e^{-99}$ and $1.0e^{+99}$ seconds!

The *Scaling Mode* can be changed at any time. The current mode is shown in the right hand column of the status bar on the main window.

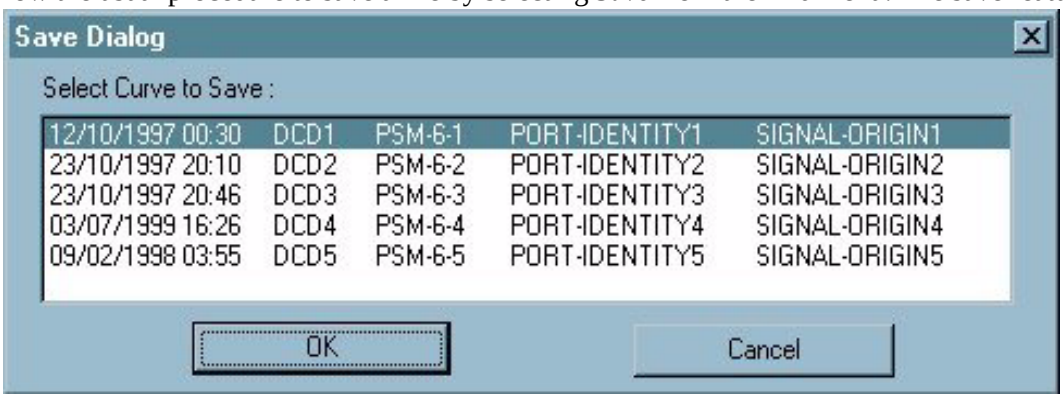
If you feel that the plot window itself is too small then simply pick up the frame of the application window and drag it to the size you want. Alternatively the application can assume full screen size by pressing the maximise / minimise button in the top right hand corner of the window frame.

Print the Plot

Select *Print* from the *File* menu, the page will show the extent of data displayed on the main Window. *Print* will also generate a hard copy of the graph area including user commands. Print setup provides access to local and network Printer configuration.

Save Files

Follow the usual procedure to save a file by selecting *Save* from the *File* menu. The save feature



enables a performance bin to be selected and saved to file. You can re-load files saved in this manner by selecting the *Open Saved File* command from the *File* menu item.

Frequently Asked Questions

11 Q. **I would like to load another curve, but the load button, or option, is not active (grey)... why?**

A. This application supports a maximum of five phase curves open at any one time. If there are already five curves open then you will have to close one in order to load another.

12 Q. **I have loaded a curve. The data seems to have loaded fine, there were no error messages, but I can't see the curve on the plot... why?**

A. (i) If the plot is in manual re-scale mode then the curve you have loaded does not enter the region you have specified in the manual re-scale parameters. Select automatic re-scale mode and the plot window will adjust itself to display the curve you have just loaded.

A. (ii) The bin you have loaded does not contain sufficient data points to generate the curve for the current graph mode. Open the details window for this bin and see what data points are listed

13 Q. **I have loaded several phase curves. There is a legend panel with apparently no corresponding phase curve... what has happened to it?**

A. You have loaded a phase curve which exactly overlays the apparently missing curve. This can happen if you, inadvertently, load the same curve twice. If you select the legend of the curve that has apparently disappeared then this curve will be brought to the front.

14 Q. **I have loaded the maximum number of phase curves (5) but I cannot see the fifth one on the legend panel. Why?**

A. The default window size only shows four legends. Use the resize region to make the window larger.

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Chapter 7 MTIE/TDEV Viewer

Mean Time Interval Error (MTIE), Time Deviation (TDEV) are standard measurements of synchronisation performance. The MTIE / TDEV Viewer is a graphing tool which may be used to view the MTIE and TDEV data recovered and stored by the TimeScan NMS Performance Manager.

Why would I need to use the MTIE / TDEV Viewer?

This tool provides a visual representation of the Maximum Time Interval Error (MTIE) and Time Deviation (TDEV) performance measurements automatically calculated by the Precision Synchronisation Monitor (PSM) Modules located within the DCD elements.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the MTIE/TDEV Viewer. There is a table of contents on page 2. If you need to use the chapter as a quick reference guide, there is a keyword index on page 11. If you have any problems or queries regarding MTIE/TDEV Viewer try the Frequently Asked Question section, page 10.

Chapter Contents

Opening the MTIE/TDEV Viewer Application

This application is opened from the Monitor User item on either the Windows *Start* Menu or the Unix *CDE Front Panel*.

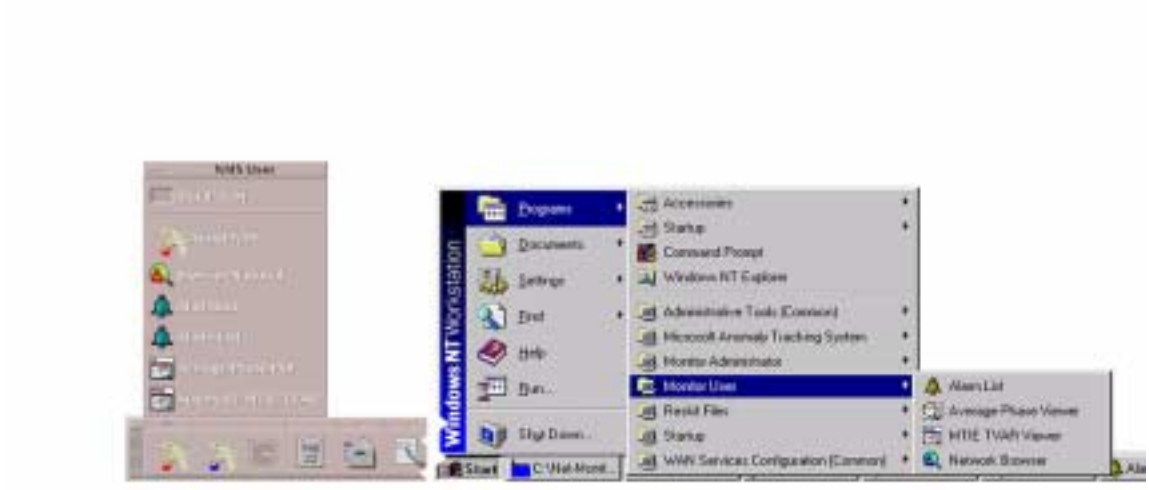

Figure 68 The Unix CDE Front Panel / Windows Start Menu

A Tour of the MTIE/TDEV Viewer

As you can see in Figure 2, MTIE/TDEV Viewer is composed of a number of controls.

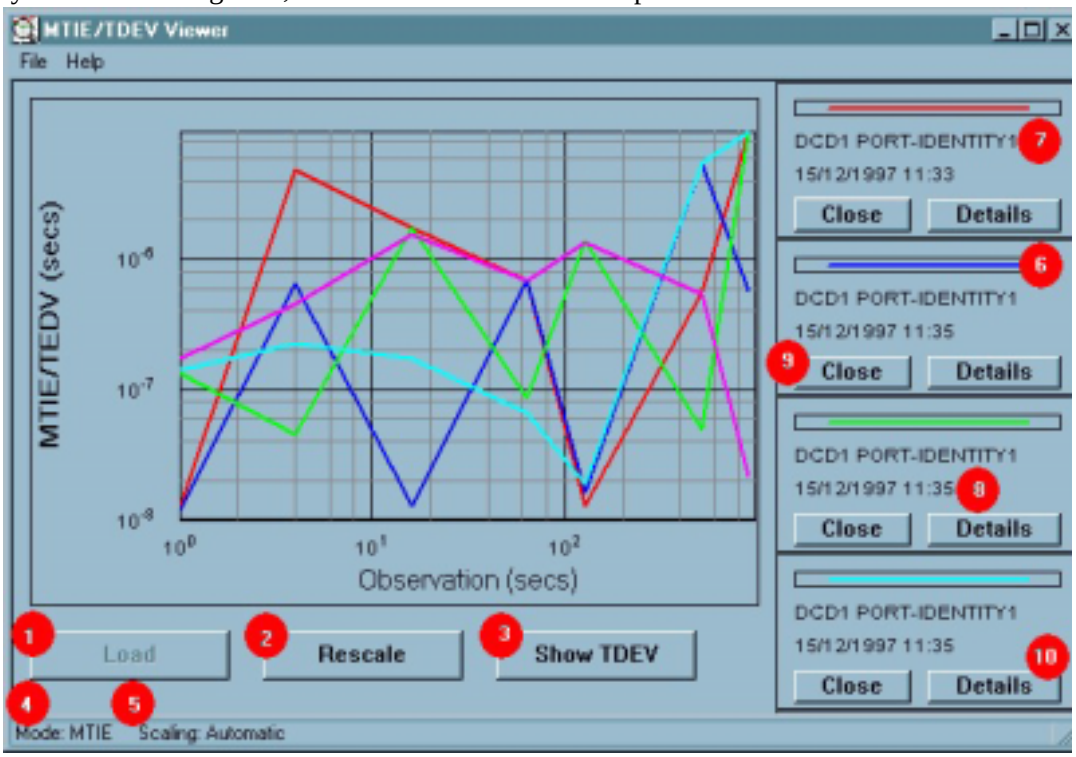

Figure 69 The Main MTIE / TDEV Viewer Window

The following list will identify each one in turn.

8 *Load* Button, use to load a MTIE/TDEV curve.

9 *Rescale* Button, opens plot rescale options Dailog.

10 *MTIE TDEV Toggle*, displays the curve for MTIE/TDEV.

11 *Mode Status*, displays the current curve mode, MTIE or TDEV.

12 *Scaling Status*, displays the current scale mode.

13 *Legend Bar*, displays the colour that represents the relevant phase curve.

14 *Curve Identity*, displays the Distinguished name and the port identity of the curve.

15 *Time Stamp*, displays the time when the file was first created.

16 *Close Curve* Button, removes the legend and plot from the window.

17 *Details* Button, displays the phase curve details dialogue.

Viewing A Performance File

To view Performance data, first click the *Load* button. This will display a standard *Open File* dialogue box which will display Performance records created by the Performance Manager.

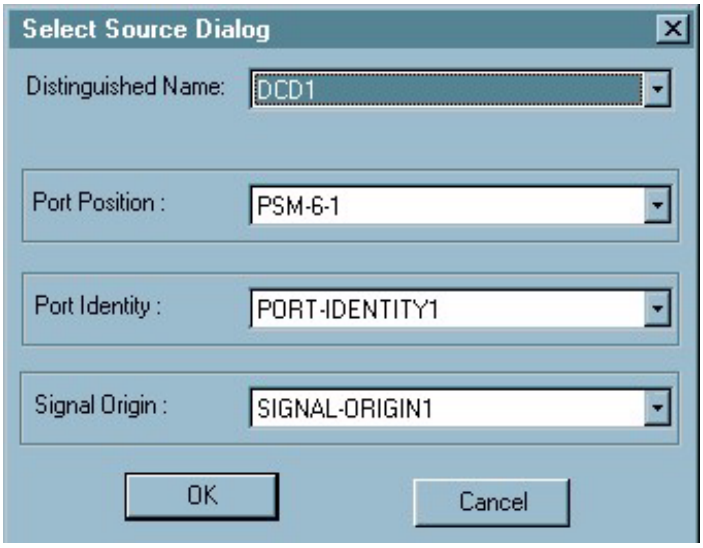

Figure 70 The Select Source Dialogue Box

On opening an appropriate file, the Select Source dialogue (Figure 3) will appear. This dialogue allows you to select MTIE/TDEV data for display. The *Distinguished Name* list contains the names of each source DCD found in your selected file. Choose one from the drop down list.

The *Port Position*, *Port Identity* and *Signal Origin* will contain appropriate references to the source ports available in your selected file. Choose a port.

Press *OK* to continue or *Cancel* to quit loading. The Select Data Set Dialogue window (Figure 3) will be produced, listing periods for which MTIE/TDEV data is available.

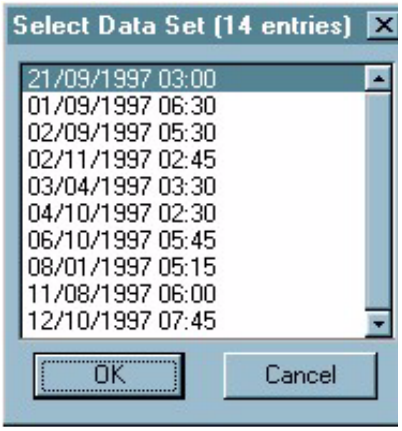

Figure 71 The Select Data Set Dialogue

Clicking the *OK* button will immediately display the selected data set, as shown in Figure 5.

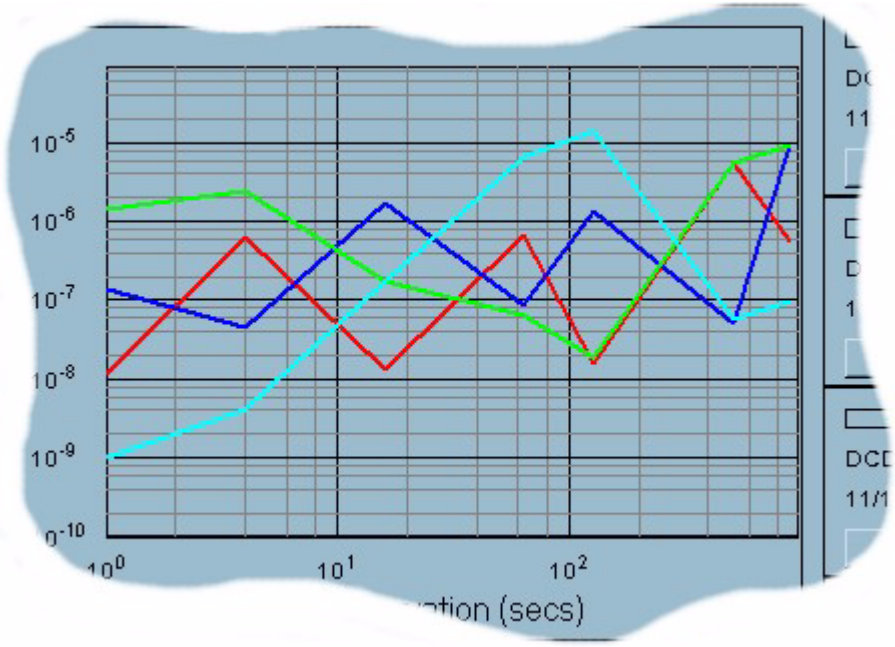

Figure 72 The Graph Curves (detail)

The curve plot window is capable of displaying MTIE or TDEV curves on a logarithmic graph.

On start up the application defaults to TDEV mode. The mode may be swapped by simply selecting the *Show TDEV* button on MTIE graph or *Show MTIE* on the TDEV graph. A performance bin represents approximately 15 minutes worth of data. On loading a performance bin you will see a small *Legend Panel* to the right of the plot window. This provides the key for the curve plot window.

If you attempt to load a file that does not contain data then the following warning will be displayed.

Figure 73 Incorrect File Loaded Warning

The graph is capable of displaying up to five curves simultaneously.

Getting More information about MTIE/TDEV Curves

On loading a phase curve you will see a coloured curve drawn in the plot window and a small *Legend Panel* (Figure 7) drawn to the right of the plot window.

Figure 74 The Legend Panel

This and other legend panels provide the key for the plot window. You will see each legend panel contains a coloured line so you can match it with a curve on the plot. The key colours are: red, blue, green, yellow and purple. No two curves will have the same colour, so there is never ambiguity in either the plot or the plot key.

If a plot becomes obscured by the other plots, it is possible to bring it to the front by selecting the *legend bar* (Figure 8) of the obscured plot.

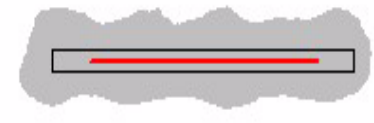

Figure 75 The Legend Bar

Selecting the *Details* button will display a dialogue box which contains all of the information related to the currently selected plot.

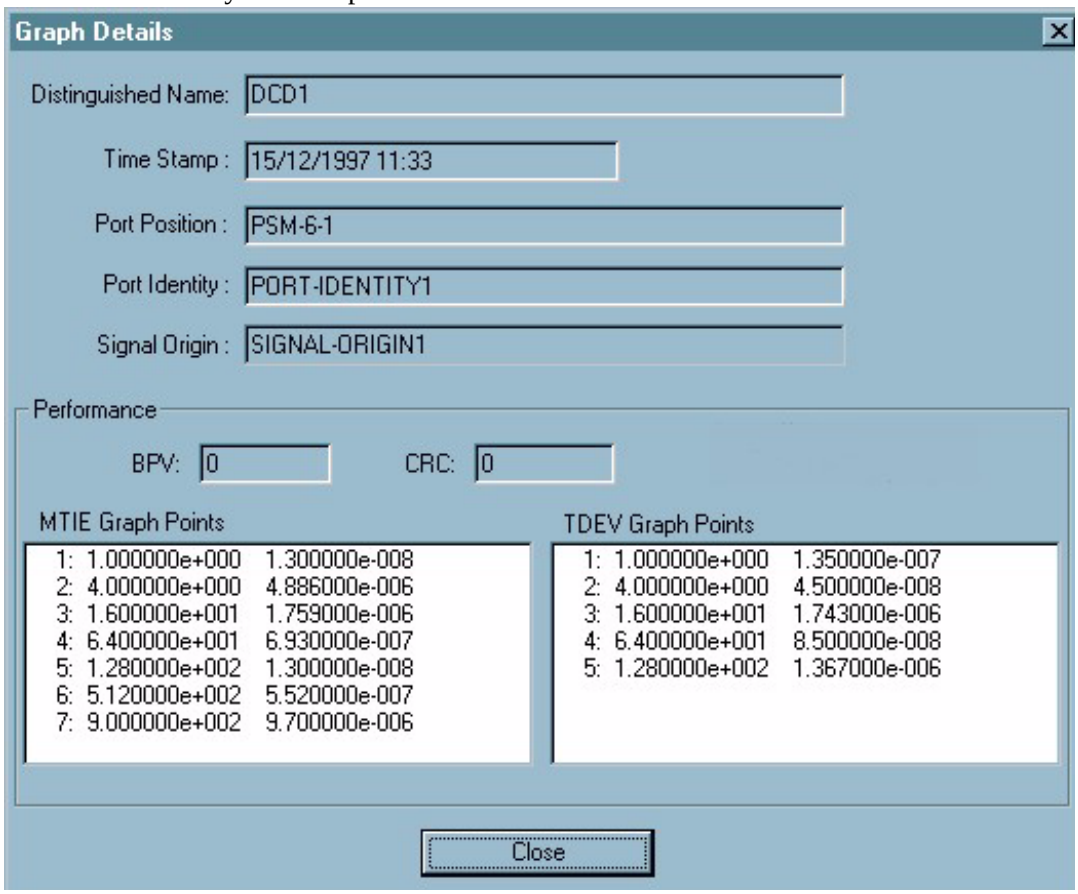

Figure 76 Graph Details Dialogue Box

Each input port supports two Digital Signal Error Performance measurements. These are:

BPV *Bi-Polar Violation* since the previous 15 Minute reset.

CRC *Cyclic Redundancy Check Error*, since the previous 15 minute reset.

These measurements represent the actual event count over the Bin period.

Rescaling The Plot

To rescale the plot click the *Rescale* button. The Rescale Dialogue box (below) will be displayed.

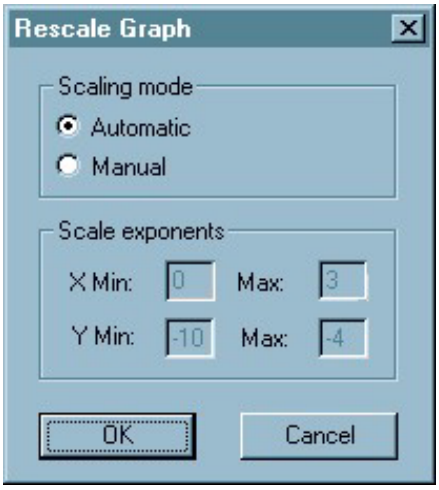

Figure 77 The Rescale Dialogue Box

The Rescale dialogue box allows you to scale in two ways automatically or manually. Automatic scaling is performed to the following criteria:

- All curves currently plotted are entirely contained within the plot window
- All curves are plotted to provide the maximum definition.

It is also possible to rescale manually. To do this, select the *Manual* radio button.

The *X Min* and *X Max* boxes are used to define the minimum and maximum x-axis values to be included. This values units are 10 seconds, so an input value of 3 will give 30 second worth of data. The X values determine the width of the plot window. The permissible range is 1.0e-99 and 1.0e+99 seconds.

The *Y Min* and *Y Max* boxes define the minimum and maximum y-axis values to be included. Again, the value units are each 10 seconds, to an input value of 3 will produce a 30 seconds range of data. The Y values determine the height of the plot window in seconds. The permissible period range is 1.0e-99 and 1.0e+99 seconds.

Printing the plot

Select *Print* from the *File* menu, the page will show the extent of data displayed on the main screen. *Print* will also generate a hard copy of the graph area, including user commands. *Print Setup* provides access to local and network printer configuration.

Saving files

Follow the usual procedure to save a file by selecting *Save* from the *File* menu. A box enabling you to select the data to save will be shown.

The save feature enables a performance bin to be selected and saved to file. The resultant file will have an *.AMT extension. All bin data will be maintained.

Frequently Asked Questions

15 Q. **I would like to load another curve, but the load button, or option, is not active (grey)... why?**

A. This application supports a maximum of five performance bins open at any one time. If there are already five bins open then you will have to close one in order to load another.

16 Q. **I have loaded a curve. The data seems to have loaded fine, there were no error messages, but I cannot see the curve on the graph...why?**

A. (i) If the plot is in manual re-scale mode, the curve you have loaded may not enter the region you have specified in the manual re-scale parameters. Select automatic re-scale mode and the graph window will adjust itself to display the curve you have just loaded.

A. (ii) The bin you have loaded does not contain sufficient data points to generate the curve for the current graph mode. Open the details window for this bin and see what data points are listed

17 Q. **I have loaded several curves. There is a legend panel with apparently no corresponding curve... what has happened to it?**

A. (i) You have loaded a curve which exactly overlays the apparently missing curve. If you select the legend of the curve that has apparently disappeared then this curve will be brought to the front.

A. (ii) The bin you have loaded does not contain sufficient data points to generate the curve for the current graph mode. Open the details window for this bin and see what data points are listed.

18 Q. **I have loaded the maximum number of phase curves (5) but I cannot see the fifth one on the legend panel. Why?**

A. The default window size only shows four legends. Use the resize region to make the window larger.

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Chapter 8 TL1 Terminal

TL1 Terminal is a tool provided with TimeScan Craft which enables you to send and receive Transaction Language 1 (TL1) format messages to and from the DCD.

Why would I need to use TL1 Terminal?

TL1 Terminal is useful If you prefer to use the native command language of the DCD or if you need to capture textual representations of DCD behaviour, for example, alarm lists or logs.

What's in this chapter?

This User Guide chapter contains all the information you need to know to use the features of TL1 Terminal. Below there is a table of contents for this chapter. If you need to use the chapter as a quick reference guide, there is an index at the end.

Chapter Contents

Opening the TL1-Terminal Application

The TL1-Terminal Application can be opened by double clicking on its icon  .

When successfully opened the screen shown in Figure 1 will appear

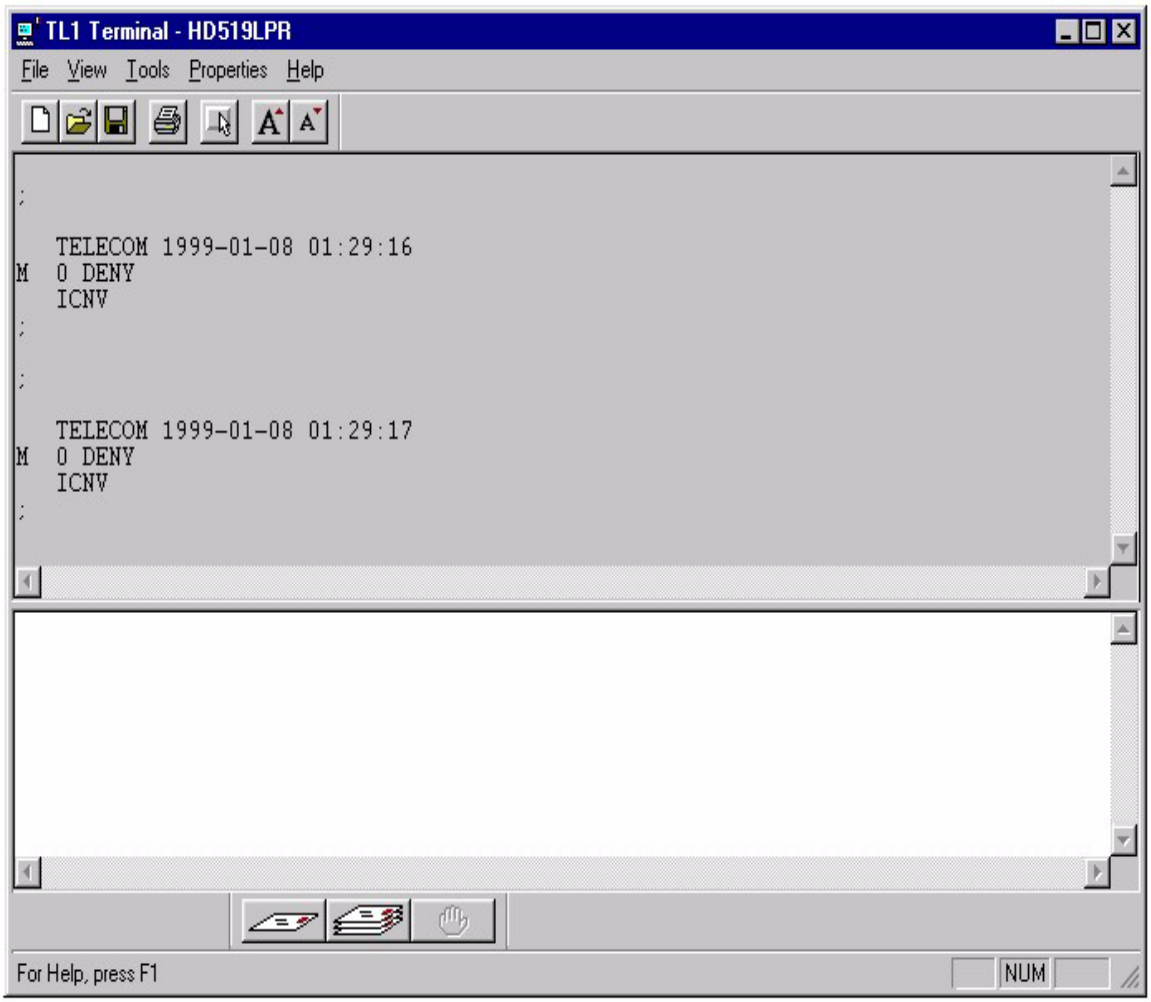

Figure 78 The Main TL1_Terminal Application

Sending Single Commands

Sending a command to the DCD is quick and easy. Click the mouse over the command area (the lower region of the screen) and an edit cursor will appear. Type the command you wish to send. The command is only sent at your request, so typing errors can be corrected at any time. To send the command either hit the *Return* key or press the *Send* button . The response to your command will appear in the response area.

If you wish to repeat a command, move the edit cursor onto the line of the command and hit return or the *Send* button. Command strings may be edited by using conventional editing facilities:

Left / right arrow keys

Backspace / forward delete

Shift left / right arrow to highlight text

Control -x to delete highlighted text

Control -c to copy highlighted text

Control -v to paste

Control -z to undo last edit

Making Shortcuts to Regularly Used Commands

You may find that during the course of your work you are using the same TL1 commands on a regular basis. It can be tedious re-typing commands so TL1 Terminal provides user definable *Shortcuts.*

Shortcuts are simply recordings of commands which can be replayed by a single button press. To define your own shortcuts, select the *Shortcut Tool* from the toolbar. The dialogue shown in Figure 9 on page 10 will appear, listing the shortcuts already defined, if any.

Let's add one. Select the *Add* button. The Edit Shortcut dialogue, shown below, allows you to type the full command string to be invoked by this shortcut.

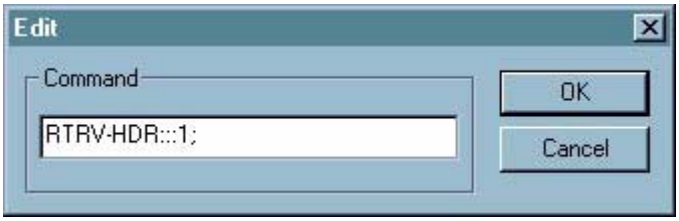

Figure 79 The Edit Shortcut Dialogue Box

The command string may be edited by using conventional editing facilities:

Left / right arrow keys

Backspace / forward delete

Shift left / right arrow to highlight text

Control -x to delete highlighted text

Control -c to copy highlighted text

Control -v to paste

Control -z to undo last edit

A good tip for creating shortcuts is to use commands entered in the command window. Simply highlight the command and press *Control-c*. This will copy the command into the paste buffer. Open the shortcut dialogue and select *Add*. If you then press *Control-v* the command will be pasted into the edit field. This method is much quicker than re-typing the command and is not prone to typing errors.

If you are happy with the command you've defined, press the *OK* button to save it or *Cancel* to scrub it.

It is possible to define up to ten shortcuts, all listed within the Shortcut dialogue:

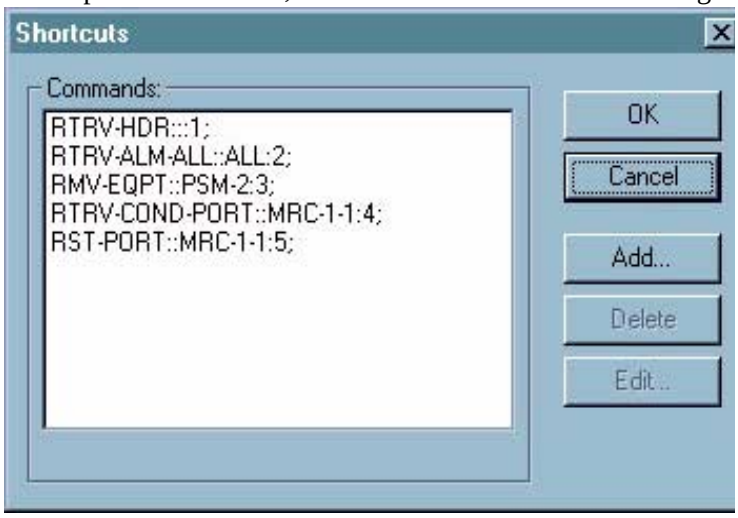

Figure 80 The Shortcuts Dialogue

To edit an existing shortcut, double click the shortcut in the list or select it and press the *Edit* button.

To delete a shortcut, select it from the list and press the *Delete* button.

Any modifications to the Shortcut List may be accepted by pressing the *OK* button or scrubbed by pressing *Cancel*.

Now that we've created a few shortcuts how do we use them? At the foot of the TL1 Terminal window a bar will appear containing a number of buttons - one for each shortcut defined. If the bar isn't there, it has been turned off - check the *Shortcuts* entry in the *View* menu list.

Figure 81 The Shortcut Buttons

To use a shortcut ensure the cursor in the command window is on a new line and press the desired shortcut button - the recorded shortcut command is replayed at the cursor position. The command can be sent using the *Send* button or *Return* key, or it can be edited in the command area before despatch.

When TL1 Terminal is closed the shortcuts are automatically saved and restored the next time you use it.

Shortcuts are useful when you need to recall single commands but what if you need to record and replay lists of commands? TL1 Terminal is also capable of creating and using *Command Files...*

Recording and Re-Playing a Command File

Let's assume we want to use TL1 Terminal to perform a certain configuration task. The task is composed of several commands and its likely that we may need to perform the same task many times over. The best solution would be to enter the command sequence once, ensure that it works and then record it so we can play it back the next time we need it. This is exactly what TL1 Terminal allows you to do.

The first step is to ensure the command window is clear, see "Clearing a Text Area" on page 8.. Now perform the configuration task as you have done previously. When you've finished we need to save all the commands you have just executed, to do this select the *Save* tool from the toolbar. The Save Area dialogue, shown in Figure 5, will be displayed. Select the *Command Area* control from the Save Area dialogue:

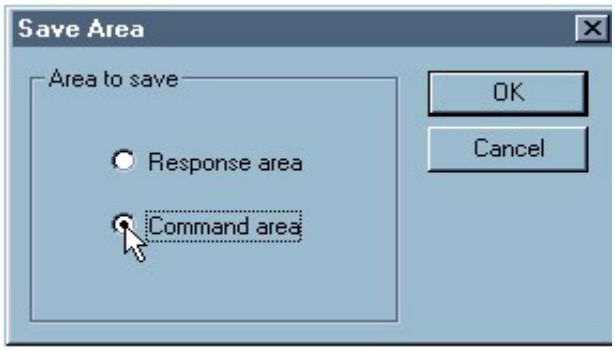

Figure 82 The Save Area Dialogue Box

Press *OK* to accept the choice. A standard *Save* dialogue will appear which will enable you to select a file name and a directory location for your command recording.

Save will write the file, *Cancel* will scrub the save procedure. Now your configuration task is recorded ready for the next time you require it.

Let's now look at how to re-play a command file. The first step is to ensure the command window cursor is on a new line as the commands will be re-written starting from the cursor position. Select the *Open* tool from the toolbar. This will generate a standard *File Open* box, from which you may choose the command file to open.

On opening a command file, the contents will be automatically written in to the command area, ready for execution. To execute the contents of the command file, place the cursor at the position of the first command and either select the *Send* button to execute each command one at a time, or select the *Multiple Send* button to automatically execute all commands one after another. If you need to stop sending, press the *Stop* button , which will become enabled once you have started sending.

Of course, as they are written into the command window, you can edit the commands in the usual manner before executing them.

A good tip is to use the default file type *Text files (*.txt)* when creating command files. Then, if you want to edit a command file without using the TL1 Terminal, simply double click the command file's icon in Windows Explorer, and it will be automatically opened in the default text editor.

A Tour of the Toolbar

At start-up TL1 Terminal provides a toolbar at the top left of the main window containing some useful tools.

Figure 83 The Terminal Toolbar

In the following sections we will look at the purpose of each tool, but first we will look at the toolbar itself. The toolbar is a *dockable toolbar* - that is to say you can move it about. By selecting the edge of the toolbar it can be repositioned anywhere around the rim of the main window. It can even be dragged off to form its own window, which will always remain on top of the working screen area.

If you need to maximize the available screen area, you can hide the toolbar by clicking off the check against *Toolbar* in the list in the *View* menu.

Clearing a Text Area

The first tool on the toolbar is the *Text Clear* tool. This enables you to clear contents of either the response area, the command area or both. Selecting this tool generates the clear area dialogue.

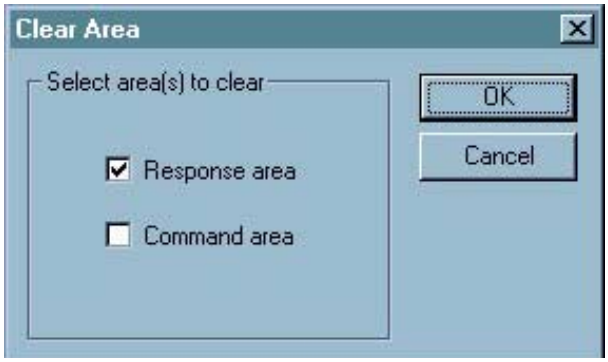

Figure 84 The Clear Area Dialogue Box

Simply click in the Check Box of the area you want to clear and press *OK*. This facility can also be invoked from the *Clear Area* entry in the *File* menu.

Opening a Command File

The *Open Command File* tool  enables you to select a command file. For a full explanation of command files, see see “Recording and Re-Playing a Command File” on page 6.. This facility can also be invoked from the *Open Command File* entry in the *File* menu.

Saving a Text Area to File

The *Save* tool  provides a method of saving the contents of a text area to file. Selecting this tool generates the Save Area dialogue, shown in Figure 5.

We have already touched on this facility in ‘Recording and Re-Playing a Command File’ on page 6, where we saved the contents of the *Command Area*.

Simply select the desired area control in the Save Area dialogue box, and press *OK*. A file selector dialogue will be generated which will enable you to define the name and location of the file to be created. This facility can also be invoked from the *Save Area* entry in the *File* menu.

Printing a Text Area to Hardcopy

The *Print* tool  provides a method of saving the contents of a text area to hardcopy. Selecting this tool generates the print area dialogue

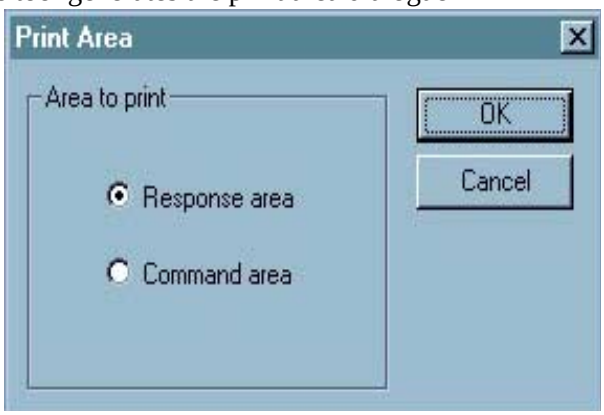

Figure 85 The Print Area Dialogue Box

This is similar to the *Save Area* tool mentioned earlier. Select either the *Response Area* or *Command Area* button in dialogue box, and press *OK*. A Print / Print Properties dialogue box will be displayed which will enable you to chose the name of the printer to be used, the number of copies, etc.

It should be noted that this tool may only be used if the host computer is connected to a properly installed printer. This facility can also be invoked from the *Print* entry in the *File* menu.

Controlling Command Shortcuts

The *Shortcut* tool  provides access to the list of shortcuts in the shortcut dialogue, shown in Figure 9.

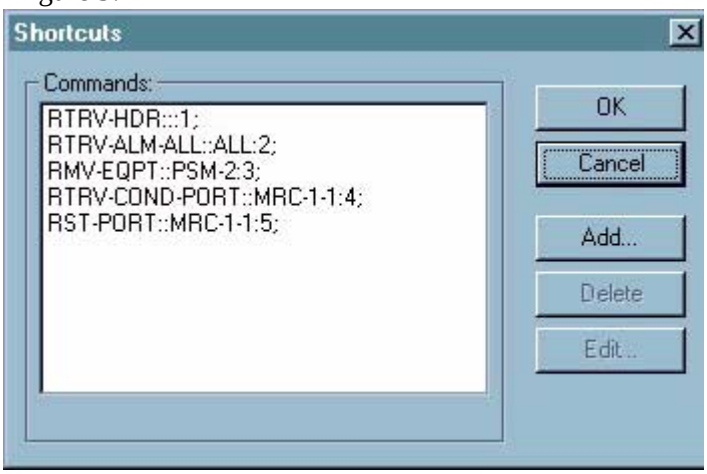

Figure 86 The Shortcuts Dialogue Box

Managing shortcuts is discussed in ‘Making Shortcuts to Regularly Used Commands’, page 4. This facility can also be invoked from the *Shortcuts* entry in the *Tools* menu.

Zooming Into The Text Areas

 final two tools in the toolbar provide a method of increasing  and decreasing the text size in either the response area or command area. To change the text size, click the mouse within the area to be modified and select the appropriate tool. Each tool may be used repeatedly to provide a wide range of text sizes.

TL1 Terminal Properties

TL1 Terminal has some useful properties which you can control to make command - response interchanges easier. Selecting the *Properties* item from the menu bar will result in the following dialogue window:

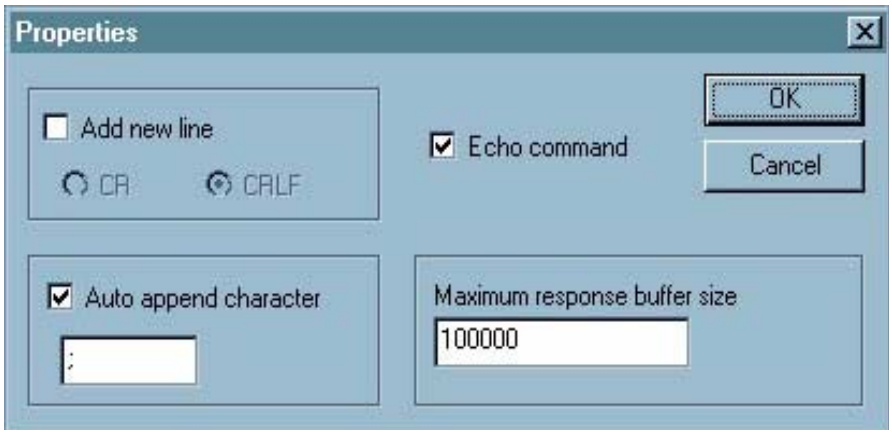

Figure 87 The Properties Dialogue

Under normal circumstances, the default properties adopted by TL1 Terminal have been selected for optimum performance towards the DCD. Let's look at each property:

Add new line

If the *Add New Line* check box is selected, then the control character combination selected, either *Carriage Return (CR)* or *Carriage Return - Line Feed (CRLF)* will be automatically appended to all commands. This property should not be used for the DCD.

Auto Append Characters

If the *Auto Append Characters* check box is selected, (default) then the ASCII characters entered in the text box below it will be automatically appended to all commands, if they are not already present.

For TL1, semi colon (;) is defined as the terminating character, i.e. no commands strings are actioned until a semi colon is encountered. The default for TL1 Terminal is that this property is enabled and a semi colon is the automatically appended character. This means that if you send a command but forget to type the terminating semi colon (a common error), TL1 Terminal will detect the absence of the semi colon and automatically add one.

Echo Command

If the Echo Command check box is selected (default), then the commands you enter will automatically be shown in the response area in the appropriate positions. This property is useful for generating action logs as the commands and responses are recorded in sequence.

Maximum Response Buffer

The value in the *Maximum Response Buffer Size* text box represents the number of characters stored by TL1 Terminal in the response buffer. When the buffer is filled, the oldest information will be discarded to make space for new information, and a warning message will appear at the top of the scrolled response area.

Frequently Asked Questions...

19 Q. **I sent a TL1 command. The cursor was replaced by an hour-glass for a few seconds and the message 'Send command operation failed' appeared in the response window... why?**

A. TL1 Terminal waited for a short time but did not receive a response to your command. Check that you terminated the command string with a semi-colon (;).

A good tip is to ensure that the auto append character property (see Auto Append Characters, page 11) is enabled and set to semi-colon (;). If so, even if you forget to terminate a command properly, TL1 Terminal will do it automatically.

20 Q. **I want to enter a new command into the command area. The cursor is sat at the end of the last command I sent. I can't make it go onto the next line without pressing Return.**

A. Yes you can, try Shift - Return. This will act in the same way as Return but will not cause the last command to be sent again.

21 Q. **I have tried to print an area to hardcopy but nothing is printed... what can I do?**

A. The printer you have chosen is setup to only produce simple text. You must use a printer which is set up to provide graphic support.

22 Q. **There is no Toolbar displayed... how can I get it back?**

A. The presence of the toolbar is controlled via the *Toolbar* item listed in the *View* menu from the menu bar.

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Chapter 9 Alarm Audit and Heartbeat

The Alarm Audit Application provides a mechanism to ensure alignment of the current alarm state of a managed element and the TimeScan NMS database of the TimeScan NMS Platform.

The TimeScan NMS platform is capable of accepting notification messages, (Alarms and Events) spontaneously generated by the managed elements. Records of these notifications are maintained in the TimeScan NMS database (also known at the Fault MIB).

Why would I need to use the Alarm Audit Application

Under certain conditions the notification state maintained in the TimeScan NMS database may fall out of alignment with the notification state of a given managed element. For example when an element is temporarily offline, new messages concerning it will fail to reach the TimeScan NMS Server.

The TimeScan NMS database will become out of alignment with the element. Alarm Audit provides a tool to realign the two.

What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of the Alarm Audit application. If you need to use the chapter as a quick reference guide, there is a keyword index at the end.

Chapter Contents

Opening Alarm Audit

An Alarm Audit can be initiated in two ways:

- Manually from a Network Browser.
- Automatically after restoration of a communication failure condition.

You can also open the Alarm Audit application from the Alarm List application. For more information on this, see the help for that programme.

Performing a Manual Alarm Audit

The TimeScan NMS System is extremely flexible and may be configured in many different ways, but in general Alarm Audit is accessed from a Network Browser which depicts DCD elements. The following figure illustrates a typical method of accessing the Alarm Audit. In this example DCDs are depicted as icons of front panels. In your system DCDs may have different icons. On selecting the DCD icon a menu (known as the *MIS* menu) is generated containing several items:

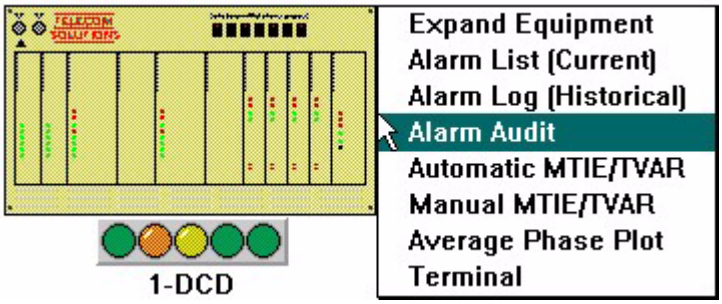

Figure 88 Opening Alarm Audit from the Network Browser

Again, the configuration of this menu is flexible and the menu text may differ from this example. In this case, selecting the item *Alarm Audit* will automatically initiate an Alarm Audit for this DCD.

Automatic Alarm Audit

The TimeScan NMS System supports a feature known as Heartbeat. Heartbeat is a mechanism which may be used to periodically test the integrity of the communication path towards, and functionality of, the managed elements.

The Managed Object Configuration TimeScan NMS database provides a mechanism to define the following attributes for each managed element:

- Whether the Heartbeat facility should be applied to a the element.
- The maximum period between communication verifications.
- Whether the element should be automatically audited for alarms on restoration of communications after failure.

If set, the Heartbeat facility will automatically monitor the period which has elapsed since communications were last established with the element. If this period exceeds the defined Heartbeat period, an attempt will be made to verify the communication path and functionality of the DCD by establishing communications with the element.

If this attempt fails then a Heartbeat *alarm* will be raised on this element. The Heartbeat functionality will attempt to establish communications with the element at sixty second intervals until the fault is cleared. On clearing the element may be automatically audited for alarms.

A detailed description of Heartbeat configuration is provided in the *System Administors Guide*.

The Result of an Alarm Audit

If an audit is manually initiated **from a Network Browser**, a window is generated which shows the progress of the audit. If initiated **automatically** no window is generated.

On completion, all alarm conditions currently asserted on the audited element will be reflected in the Alarm List. All cleared alarms and all events will be cleared from the list and inserted into the Alarm Log.

Frequently Asked Questions...

23 Q. **When I attempt to perform a manual audit on a DCD the audit window tells me it can not connect to the element... why?**

A. The DCD configuration will only support one communication path towards a DCD. If another application is communicating with the DCD then audit will be prevented from establishing a connection.

Notes for Administrators

Location

The correct path and file name of the Alarm Audit Application is given below:

C:\Net-Monitor\bin\AUDIT-DCD.exe

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Chapter 10 Terminal Application

Terminal is a versatile application. It is capable of providing command access and event monitoring for any element type supporting an ASCII based command protocol.

What would I need to use the Terminal Application

Terminal can only be run as part of the NMS suite of programmes.

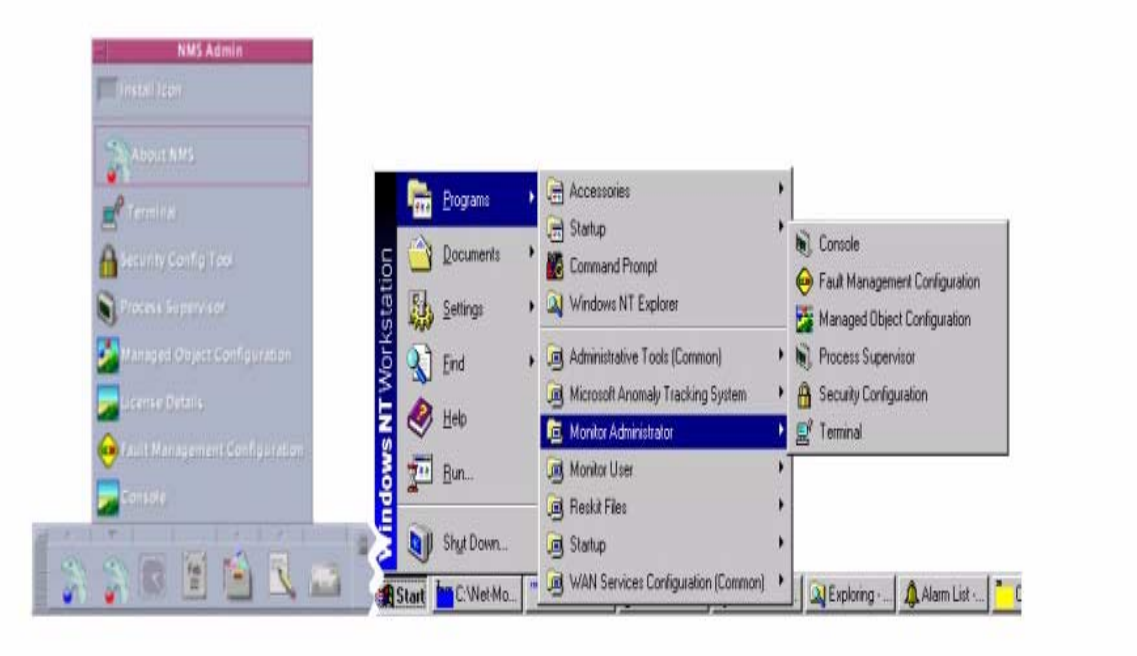
What's in this chapter?

This User Guide chapter contains all the information you need to know to exploit the features of Terminal. If you need to use the chapter as a quick reference guide, there is a keyword index at the end.

Chapter Contents

Opening the Terminal Application

The TimeScan NMS System is extremely flexible and may be set up in many different ways, but in general the Terminal Application may be accessed from the *Start Menu* of Windows NT or the Unix *CDE Front Panel*. These are both shown below



A Quick Tour Of The Terminal Window

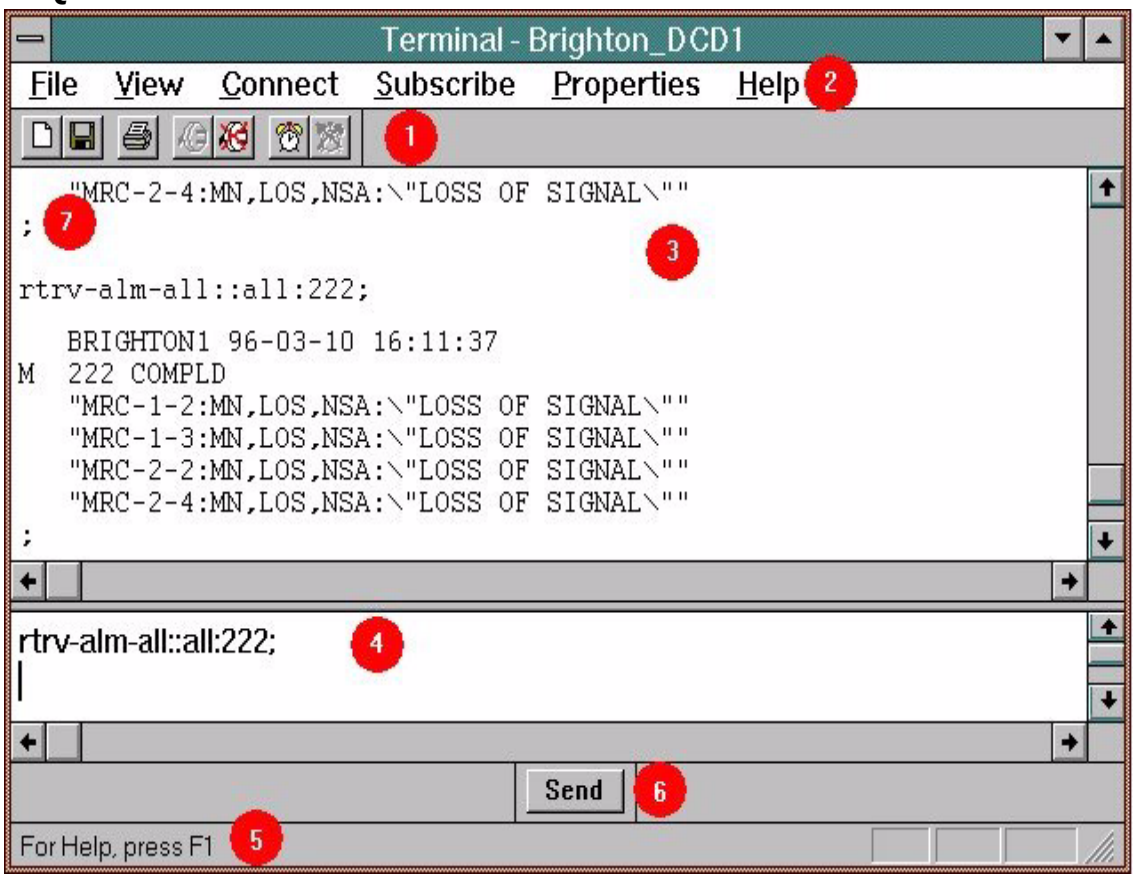


Figure 89 A typical Terminal window

11. *Menu Bar*
12. *Tool Bar*
13. *Response Window*
14. *Command Window*
15. *Status Bar*
16. *Send Button*
17. *Managed Element Distinguished Name*

The *Command Window* accepts input from the console. The *Response Window* displays all responses generated by the element.

Terminal Tool Bar Items

Clear Response  - deletes the contents of the response window.

Save Response  -enables the user to save a snap shot of the response window to file.

Print Response  - enables the user to print a hardcopy of the current response buffer.

Connect to Element  -makes the request to establish a communication path to the target element.

Disconnect from Element  - This tool makes the request to close an established a communication path with the target element.

Subscribe to Alarms  - This tool makes the request to establish a subscription on alarms and events sent by the target element.

Un-subscribe to Alarms  - This tool makes the request to terminate an alarm subscription on the target element.

Communicating With An Element Via Terminal

When the Terminal Application is started from a Network Browser, the Terminal Application will automatically be given the distinguished name of the element to communicate with, and any options appropriate to that element type.

If an attempt is made to start a Terminal while there is already a Terminal active towards the same target element on the same work station, the dialogue in Figure 2 is shown.

:

Figure 90 Communications Failure Dialogue

Selecting *Show Existing Terminal* button will restore the original Terminal if iconized and will bring that Terminal window to the front. Selecting the *Open New Terminal* button will start another Terminal window.

On start up, the command and response windows will both be blank. To send a command to the element a communication session must first be established. This can be achieved by selecting the *Connect* option from the *Connect* menu, or by selecting the *Connect* tool from the tool bar (page 227). To establish a communication session, the platform will automatically invoke the correct transport method appropriate to an element, for example: *X.25*, *RS232*, etc. It will also perform a user login operation appropriate to the element type, with any access passwords automatically derived.

When a connection is established the message:

`Connected to Managed Element Distinguished Name`

will appear in the Response Window. Clicking the mouse in the command window will cause an edit cursor to appear. Type a command at the flashing cursor.

It should be noted that commands are not transported to the managed element until the *Send* button is pressed. Therefore protocols with character echo will not echo key strokes. Rather, the entire command string will be echoed once the command has been sent. For protocols that do not support dynamic command line editing, this facility enables you to correct typing errors using backspace etc.

On completion of the command string, press the *Send* button, or *Return* key. The command string will be sent to the element. Since only one command can be sent at a time, Terminal will disable any further command transmission until a response is received or the response timeout period elapses, (see Terminal Properties, page 227).

All command response text returned from the element will be displayed in the Response Window. To enable the viewing of large response printouts, the Terminal window may be resized. The proportions of the command and response regions may be altered by selecting the dividing bar and dragging in the desired direction.

For protocols that do not support command echo, this feature can be emulated by Terminal. With the *Echo Command* item selected from within the properties window (Figure 3 on page 7), the contents of the command line will automatically be echoed to the Response Window.

It is possible to re-transmit a command to the element by placing the cursor on the same line as the command in the command window and pressing the *Send* button or *Return* key. It is also possible to cut strings from either the command or response windows and paste them into the command window as new commands.

Once a command sequence has been completed you may close the communication session to the element by selecting the *Disconnect* option from the *Connect* menu or by selecting the *Disconnect* tool from the tool bar (page 227). This action will result in a user logout operation appropriate to the element type. If Terminal is left idle with an active communication session then the session will be automatically closed after an idle timeout period.

It should be noted that an active communication session blocks other communication sessions to the same distinguished name and hence, prevents command contention.

Using Terminal to Collect Alarm Messages

The Terminal Application may be used to collect and display alarm and event messages from a managed element. To collect alarm messages, an *alarm subscription* must first be established. This can be achieved by selecting the *Subscribe* option under the *Subscribe* menu or by selecting the *Subscription* tool from the tool bar.

When a subscription is established the message:

```
Started subscription to Distinguished Name
```

will appear in the Response Window.

On setting up an alarm subscription the *TimeScan NMS* System will automatically present alarm messages from the managed element to the Terminal Application. The alarm text will displayed in real time in the response window, with a banner:

```
Report from Distinguished Name
```

An alarm subscription can be established at any time and is independent of the existence of a communication session. Alarm subscription does impede the alarm functionality of the *TimeScan NMS* System.

Terminal Properties

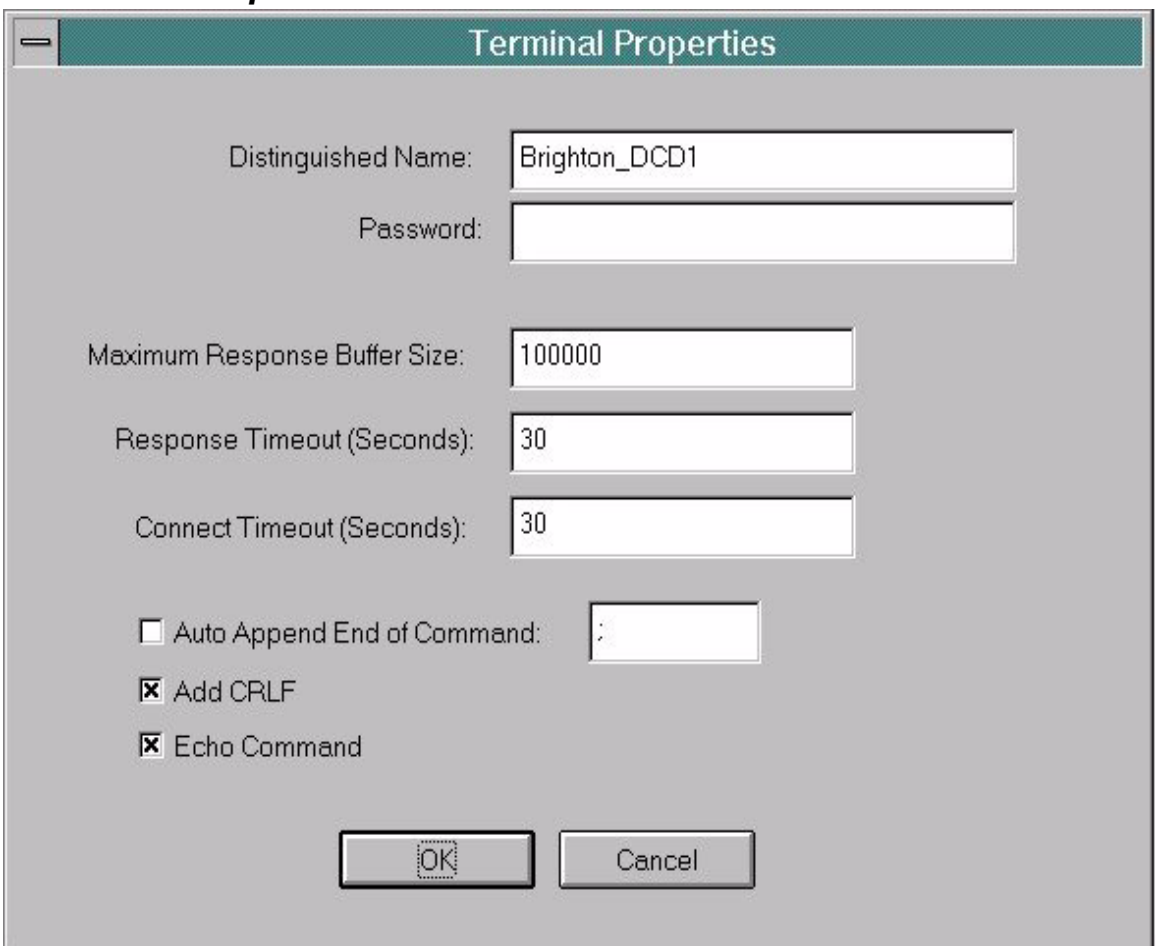


Figure 91 Terminal Application Properties Window

The Terminal Application Properties Window provides access to many configurable parameters:

The first field, *Distinguished Name*, specifies the unique identifier of the target element. The field may be edited in order to provide access to another element.

A *Password* field has been made available so that it is possible force the communication system to use an alternative password to that defined in the TimeScan NMS database.

Maximum Response Buffer Size defines the maximum size of the response buffer.

The *Response Timeout* field defines how many seconds the Terminal Application should allow before a command is considered to have failed due to timeout.

The *Connect Timeout* field defines how many seconds the Terminal Application should allow before an attempt to establish a communication with the target element is considered to have failed due to timeout.

The *Auto Append End of Command* field enables the user to define a character that should be automatically appended to the end of a command buffer if not appended by the user. This facility is particularly useful with the TL1 protocol which relies on a terminating semi-colon character. If a semi-colon is defined in this field, it will be added to the end of all commands unless it is already present.

Add CRLF automatically appends a carriage return / line feed character pair to the end of every command.

Echo Command automatically inserts the command into the response buffer. This makes the Response Window easier to read and understand.

Notes for System Administrators

Location

The correct path and file name of the Terminal Application is as follows:

C:\Net-Monitor\bin\TERM.exe

Command Line Options

-nc	Suppress appending carriage return, line feed pair to command strings. (Default: append CRLF).
-a "string"	Automatically append *string* to end of all commands if omitted by user. Note *string* may be single character. (Default: no auto append).
-p "password"	Use *password* to establish communication session. (Default: use TimeScan NMS database password).
DistinguishedName	Distinguished name of managed element. (Default: None - use name provided in Properties Dialogue box.).

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