SIEMENS

USER'S MANUAL

GEOMCF MANAGER

MARCH 2003, REVISED JULY 2014

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DOCUMENT HISTORY

Version	Release Date	Sections Changed	Details of Change
A	03-13-03		Initial release
A.1	June 2014		Rebrand for Siemens

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March 2003, Revised July 2014

NOTES, CAUTIONS, AND WARNINGS

Throughout this manual, notes, cautions, and warnings are frequently used to direct the reader's attention to specific information. Use of the three terms is defined as follows:

⚠ WARNING	**WARNING** **INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY. WARNINGS ALWAYS TAKE PRECEDENCE OVER NOTES, CAUTIONS, AND ALL OTHER INFORMATION.**

⚠ CAUTION	**CAUTION** REFERS TO PROPER PROCEDURES OR PRACTICES WHICH IF NOT STRICTLY OBSERVED, COULD RESULT IN A POTENTIALLY HAZARDOUS SITUATION AND/OR POSSIBLE DAMAGE TO EQUIPMENT. CAUTIONS TAKE PRECEDENCE OVER NOTES AND ALL OTHER INFORMATION, EXCEPT WARNINGS.

NOTE	**NOTE** Generally used to highlight certain information relating to the topic under discussion.

If there are any questions, contact Siemens Industry Inc., Rail Automation Application Engineering.

ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS

Static electricity can damage electronic circuitry, particularly low voltage components such as the integrated circuits commonly used throughout the electronics industry. Therefore, procedures have been adopted industry-wide which make it possible to avoid the sometimes invisible damage caused by electrostatic discharge (ESD) during the handling, shipping, and storage of electronic modules and components. Siemens Industry, Inc., Rail Automation has instituted these practices at its manufacturing facility and encourages its customers to adopt them as well to lessen the likelihood of equipment damage in the field due to ESD. Some of the basic protective practices include the following:

- Ground yourself before touching card cages, assemblies, modules, or components.

- Remove power from card cages and assemblies before removing or installing modules.

- Remove circuit boards (modules) from card cages by the ejector lever only. If an ejector lever is not provided, grasp the edge of the circuit board but avoid touching circuit traces or components.

- Handle circuit boards by the edges only.

- Never physically touch circuit board or connector contact fingers or allow these fingers to come in contact with an insulator (e.g., plastic, rubber, etc.).

- When not in use, place circuit boards in approved static-shielding bags, contact fingers first. Remove circuit boards from static-shielding bags by grasping the ejector lever or the edge of the board only. Each bag should include a caution label on the outside indicating static-sensitive contents.

- Cover workbench surfaces used for repair of electronic equipment with static dissipative workbench matting.

- Use integrated circuit extractor/inserter tools designed to remove and install electrostatic-sensitive integrated circuit devices such as PROM's (OK Industries, Inc., Model EX-2 Extractor and Model MOS-40 Inserter (or equivalent) are highly recommended).

- Utilize only anti-static cushioning material in equipment shipping and storage containers.

For information concerning ESD material applications, please contact the Technical Support Staff at 1-800-793-7233. ESD Awareness Classes and additional ESD product information are also available through the Technical Support Staff.

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INTRODUCTION AND INSTALLATION

1.0 INTRODUCTION AND INSTALLATION

The GEOMCF Manager application is an extension to the GEO$^\circledR$ Configuration Suite (GCS) to manage Module Configuration File (MCF) installations, select field-configurable parameters, assign Advanced Train Control System (ATCS) addresses, generate Unique Check Numbers (UCNs), generate GEO Installation Listings, and record In-Service / Out-of-Service check numbers.

The relationships between GEOMCF Manager, the GEOMCF Manager database, printer, and the GWE are shown in the Flow Diagram of figure 1-1.
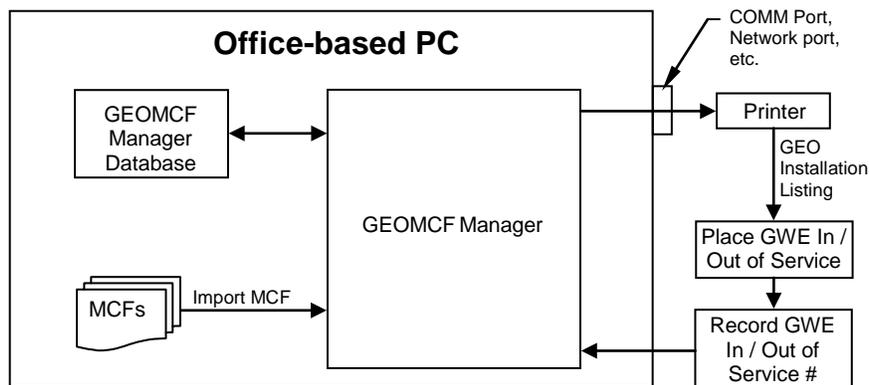
Figure 1-1. GEOMCF Manager Flow Diagram

Typically, this utility is used at the office to generate the GEO Installation Listing for use by the Maintainer at the field site (refer to Appendix A for a sample GEO Installation Listing). The Maintainer uses the listing to set GWE parameters, SIN (Site Identification Number), and enter the UCN to put the GWE In-Service.

All of the configurable installation settings are saved to a database. The GEO Installation Listing is used to configure GWE units in the field.

GEOMCF Manager provides tools for selecting configuration data for a specific site. Each site has one or more pieces of GWE, each requiring installation of an MCF for operation. The utility allows selection of the MCF(s), setting specific vital or non-vital parameters, assigning the ATCS address (SIN), and generating a Unique Check Number (UCN), calculated over the MCF, vital parameters, and the SIN. The end result of using the utility is a hard-copy of the GEO Installation Listing, which is a set of instructions for use by the Maintainer at the site.

The GEO Installation Listing enables a Maintainer to perform installation of MCF(s) and/or set parameters into non-volatile memory of GWE. It also provides the unique check number (UCN) and the SIN that must be entered and transferred to non-volatile memory of the GWE. Without the proper UCN, the Maintainer cannot make any changes to the configuration or change In-Service/Out-Of-Service status of the GWE. The UCN guarantees that only the configuration data listed can be set into the GWE, thus preventing improper configuration.

1.1   INSTALLATION

The installation refers to the site where the MCFs are installed in GWE. Each installation is given a name, which appears on the GEO Installation Listing under "Safetran Systems Corporation GEO Installation Listing". The MCF name, creation date, and MCF CRC appear under the installation name on the GEO Installation Listing. Refer to Appendix A for a sample GEO Installation Listing.

1.2   MODULE CONFIGURATION FILE (MCF)

A Module Configuration File (MCF) for each GWE at a site must be installed in non-volatile memory. The MCF was created using GCS. The MCFs must be available on the PC in order to be used by GEOMCF Manager.

GEOMCF Manager keeps track of the installations on one tab and the imported MCFs on a separate tab, viewable on the left side of the main screen (see detail below).
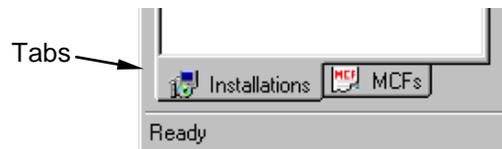
Clicking on the **Installations** tab displays the installation trees. Right-clicking on the icons in a tree displays pop-up menus of options that can be performed (figure 1-2).

Figure 1-2. Installations Tab Pop-up Menus

For example, from the **Installations** tab, a selected installation may be deleted or renamed, an MCF installed, the ATCS parameters viewed, or a new installation may be added. Also from the **Installations** tab, a selected MCF may be uninstalled, the UCN may be calculated or viewed, the In-Service number may be entered to indicate In-Service, or the GEO Installation Listing may be viewed.

Clicking on the **MCFs** tab displays a list of imported MCFs. Right-clicking on an MCF icon in the list displays a pop-up menu of options that can be performed (figure 1-3).
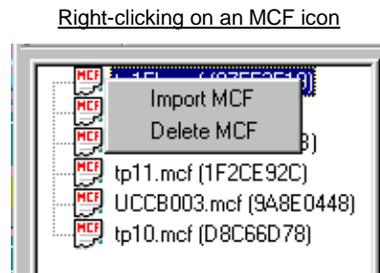
Figure 1-3. MCFs Tab Pop-up Menu

From the **MCFs** tab, a selected MCF may be deleted, or another MCF may be imported.

1.3   **ATCS ADDRESS**

Each GWE at a site can be given a 12-digit identification number (SIN) which is stored in non-volatile memory in the GWE, in the format: **7.RRR.LLL.GGG.SS**, where **7** is the designation for ATCS wayside type addressing, **RRR** is the Railroad number, **LLL** is the Line number, **GGG** is the Group number, and **SS** is the subnode number. All GWE at a site must have the same Railroad, Line, and Group number, only the subnode number is different. This SIN is used as the ATCS Address for communications with a device, if communication is required.

NOTE	**NOTE**
	Office equipment type addressing differs from wayside type addressing in that the format is 10-digits as follows: **2.RRR.NN.DDDD**, where **2** is the designation for office equipment address type, **RRR** is the Railroad number, **NN** is the specific unit in the office (e.g., CTC computer), and **DDDD** is the application in the office (e.g., dispatching).

Depending on the application, an MCF may assign a SIN, or a default SIN of 700000000000 may be imposed (where Railroad, Line, Group, and Subnode are not assigned). If ATCS communications is not required for the GWE, the default SIN may be acceptable, however it is preferable to assign the SIN that represents the ATCS address, since the SIN is included in the calculation of the UCN. If the MCF that was created by GCS imposes the default MCF, and a SIN must be assigned to the GWE, GEOMCF Manager assigns the SIN which can then be entered into the GWE by the

Maintainer at the site <u>using the GEO Installation Listing</u>. There are specific rules concerning assigning ATCS addresses, and GEOMCF Manager will detect an invalid SIN.

Devices at a site communicate using the ATCS addresses. The ATCS communication parameters for installed MCFs may be viewed from the **Installations** tab. Right-click on the Installation icon to display the pop-up menu (refer back to figure 1-2), then click on **ATCS View** (see figure 1-4).

TP15A	TP15B	TP10		
Connection	**Device**	**Remote MCF**	**Remote Connection**	**Remote Device**
D5	05	TP15B	D4	04
D6	06	TP15B	D3	03

SIN: 710010010003

TP15A	TP15B	TP10		
Connection	**Device**	**Remote MCF**	**Remote Connection**	**Remote Device**
D4	04	TP15A	D5	05
D3	03	TP15A	D6	06

SIN: 710010010004

NUM
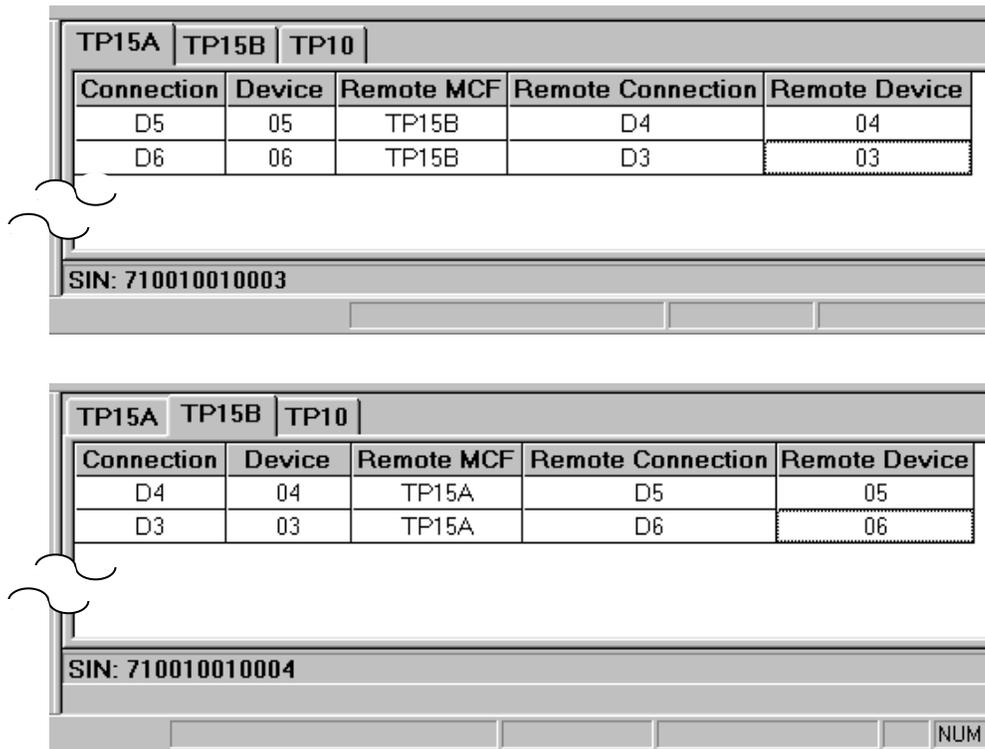
Figure 1-4. Example ATCS Tab Views

In the example above, two MCFs (MCF TP15A and MCF TP15B) allow 2 devices at each end to communicate. MCF TP15A has a SIN of 710010010003 and MCF TP15B has a SIN of 710010010004. At this location, the Railroad is assigned 100, the Line is assigned 100, and the Group is assigned 100. The subnodes are 03 and 04.

MCF TP15A has devices 05 and 06) and MCF TP15B has devices 04 and 03. The remote connections and devices are shown for each device. TP15A device 05 communicates with TP15B device 04 and TP15A device 06 communicates with TP15B device 03, as determined by the MCF.

1.4 USER CONFIGURABLE PARAMETERS

The MCF sets the default parameters for a GWE. However, vital or non-vital parameters such as Configuration Parameters, Operating Parameters, User Options, User I/O, and User Timers may be field-configurable. This feature allows a common MCF to be used at multiple locations, with certain site-specific parameters set for each device in the field. GEOMCF Manager can be used to indicate the parameter value to be set for the GWE. The Maintainer uses the GEO Installation Listing to set these parameters and values (refer to Appendix A for a sample GEO Installation Listing).

For example, a GEO unit at a specific site may require setting parameters for one or more of its modules. Below is an example for setting Operating Parameters.

1. From the **Installations** tab, expand the desired Installation icon to display the installed MCFs, then right-click on the desired MCF to display the **MCF pop-up** menu (see detail below).

Select UCN Calculator to display the GEO UCN Calculator window
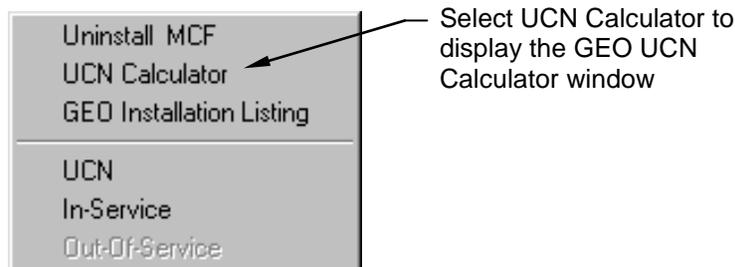
2. From the pop-up menu, select **UCN Calculator**. The GEO UCN Calculator window is displayed (figure 1-5).
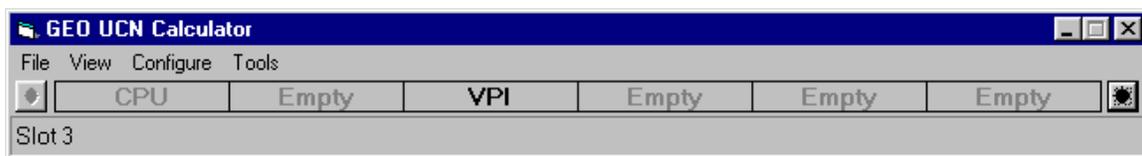
Figure 1-5. GEO UCN Calculator Window

3. For the desired module parameters, right-click on the module header (e.g., **VPI**) to display the options (see detail below).

1-5
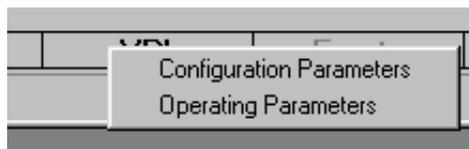
4. Click on "Operating Parameters". The **Operating Parameters** window is displayed (see example for **VPI Slot 3** in figure 1-6).
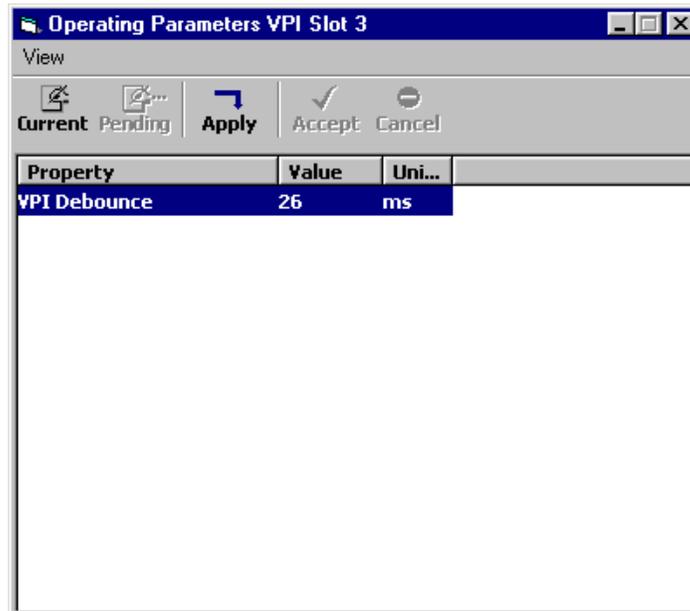
Figure 1-6. Typical Operating Parameters Window

By bringing up the Operating Parameters window (see the details below for the input debounce adjustment), GEOMCF Manager can set the proper value to be entered at the site (e.g., 26 ms).
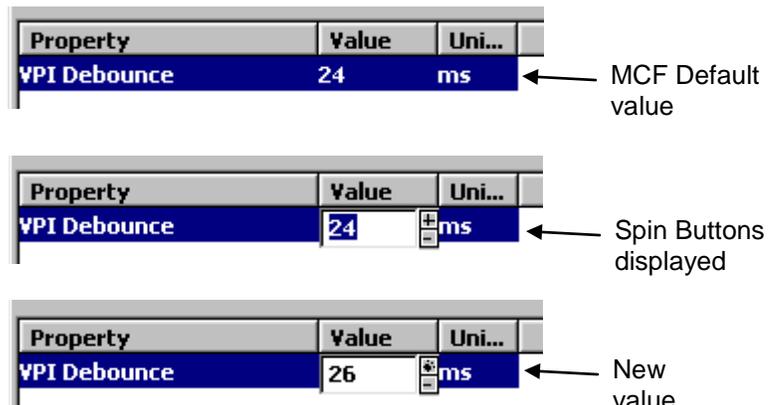
This is the value (e.g., 26 ms) the Maintainer will set into the GWE at the site.

1.5   **UCN**

GEOMCF Manager calculates the UCN on Installed MCFs. This check number is calculated over the MCF, SIN, vital parameters, and in some cases over the MEF. After being calculated, the UCN is added to the GEO Installation Listing for the Maintainer to enter into the GWE. The UCN is like a key to unlock the GWE and place it in service.

1-6

1.6   IN-SERVICE / OUT-OF-SERVICE

When GWE is rebooted, an entry is made in the event log that the module has rebooted. The reboot entry is generally followed by a 4–digit hexadecimal In-Service Check Number (if in service) or an Out-Of-Service Check Number (if out of service). See example In-Service log entry for GEO® below.

GEO® In Service Check Number Log Entry

```
1E0 03/07/01 11:47:35.4 Reboot Occurred (RSR 128),      VLP
1E7 03/07/01 11:48:03.1 Default Cfg Parms Used: ATCS CTC IF , Slot 1, Non-Vital
1E0 03/07/01 11:48:30.0 UCN Calculated over the MCF only
1E0 03/07/01 11:48:30.0 Fully Operational, In Service ChkNum : C9D5
```

The Maintainer at the site must review the event log after the GWE has rebooted so that the In / Out of Service check number can be recorded on the GEO Installation Listing and given back to the office to be entered into GEOMCF Manager (see figure 1-7).

Figure 1-7. GEOMCF Manager In-Service Dialog Box

When GEOMCF Manager has the correct In-Service check number entered, the utility considers the GWE as being properly in service. On the **Installation**s tab, installed MCFs display red, in-service MCFs display green, and out-in-service MCFs display gray.

NOTE	**NOTE**
	When the GWE is taken out of service after having been in service, the Out-of-Service check number is recorded in the GEO Installation Listing, but not required for GEOMCF Manager to indicate Out-of-Service.

1-7

1.7   SYSTEM REQUIREMENTS

The GEOMCF Manager software requires the following minimum computer configuration:

- VGA monitor
- Pentium II® or equivalent processor, 266 MHz or higher
- 128 MB of RAM
- Hard disk with sufficient space to install the required options and maintain database files
- CD-ROM drive
- 3 ¼" floppy diskette drive (for loading MCFs)
- Printer
- Microsoft® Windows 98, NT 4.0 with Service pack 3 or later, 2000 or XP Operating System
- Microsoft Internet Explorer Version 5.5 or later installed
- Microsoft Word 97 or later installed

NOTE	
NOTE	
GEOMCF Manager must not be installed on the same PC where GDT version 1.1.19 or earlier resides, as there might be a conflict between shared files.	

NOTE	
NOTE	
GEOMCF Manager must not be installed on the same PC where GCS version 1.3.3 or earlier is installed, as there might be a conflict between shared files.	

1.8   ORDERING INFORMATION

To order GEOMCF Manager, specify the following number:

Application	• Part Number
GEOMCF Manager (on CD–ROM)	Z224–9V603–A010

1.9   PROGRAM INSTALLATION

GEOMCF Manager software is distributed on Compact Disc (CD). To install, use the following procedure:

1. Insert the Installation CD into the CD-ROM drive of the host computer.

    The installation program should start automatically.

If the installation program does not start automatically, locate the CD-ROM using *Start>Run>Browse*, *Windows Explorer*, or *My Computer*, and run the installation file **Setup.exe** located on the disc.

2. The "GEOMCF Manager Setup Wizard" window is displayed on the screen (figure 1-8).
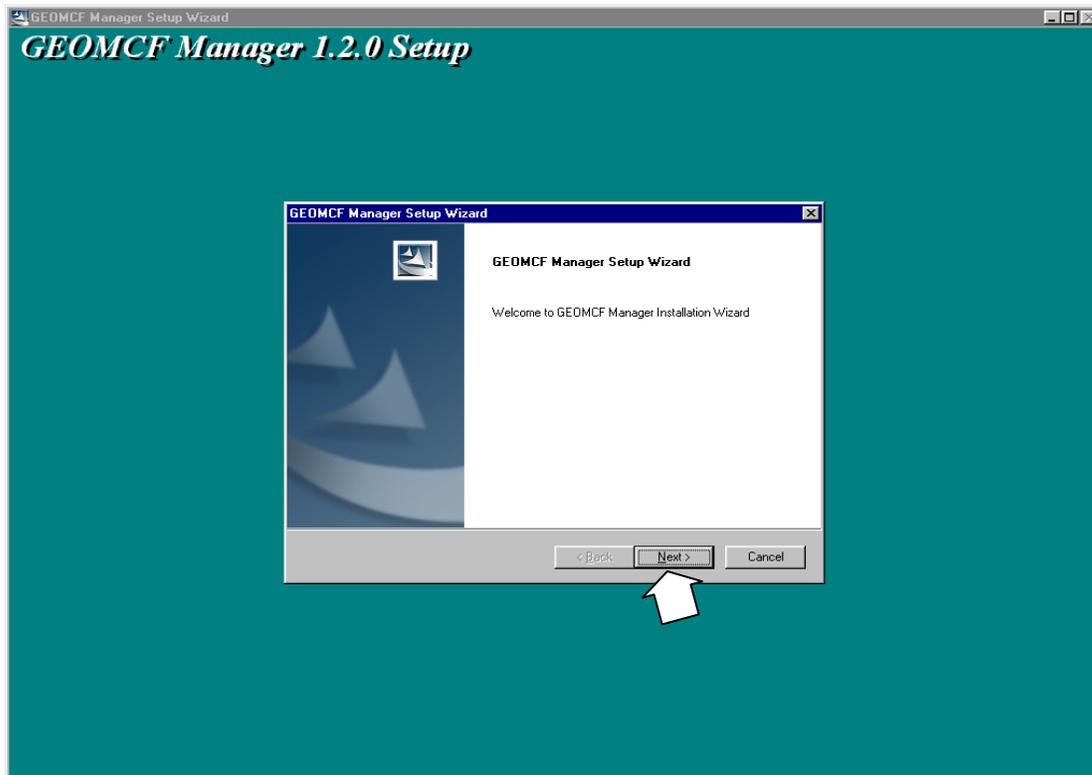
Figure 1-8. GEOMCF Manager Main Screen

NOTE	**NOTE**
	The current version of the GEOMCF Manager being installed is displayed in the upper left corner of the screen (refer back to figure 1-8).

3. Click on the **Next >** button to continue with setup.

NOTE	**NOTE**
	At any time during the installation, the user can click on the **< Back** button (when active) of a displayed window to return to the previously displayed window for the purpose of making changes or repeating a step.

1.9.1   First Time Installation

1. If this is a first time installation of the GDT utility on this computer, the "License Agreement" window is displayed (figure 1-9).
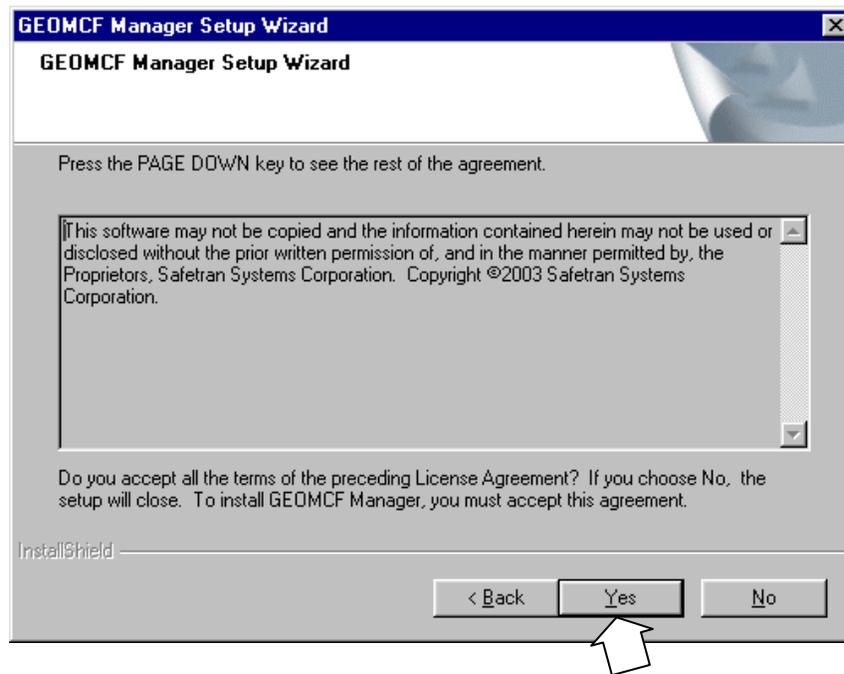
Figure 1-9. License Agreement Window

NOTE	**NOTE**
	If a version of this software has been previously installed, the Installation Wizard detects it and displays the "Modify, Repair, or Remove the Program" window (figure 1-18) instead of the "License Agreement" window. Proceed to paragraph 1.8.2 for modifying, repairing, or removing a previously installed version of this software.

2. Click on **Yes** in the "License Agreement" window to continue with the installation.

3. The **GEOMCF Manager Setup Wizard** displays the "Destination Folder" window (figure 1-10).

1-10
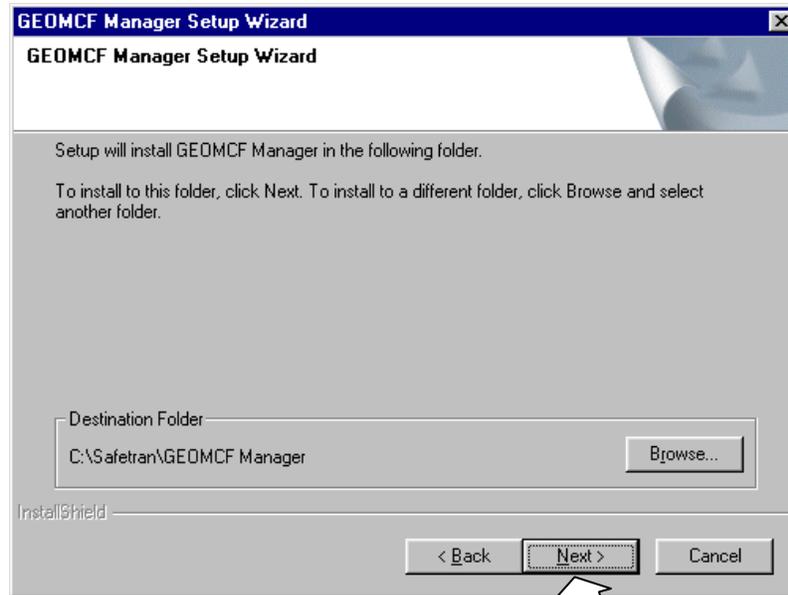
Figure 1-10. Destination Folder Window

4. The destination for installation of the software is displayed in the **Destination Folder** box of the **GEOMCF Manager Setup Wizard** window. If a different destination is desired, click on the **Browse...** button, then select a different destination. When the correct destination for installation is displayed, click on the **Next >** button.

5. The GEOMCF Manager Setup Wizard window allows the user to select the path to the GEO® database (figure 1-11).
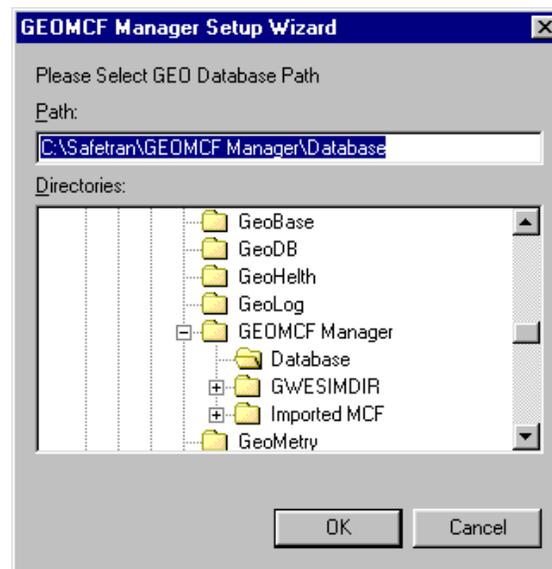
Figure 1-11. Selecting the Path to the GEO® Database

1-11

6. After the proper path to the GEO® Database is displayed in the **Path** box, click on **OK**. The Program Folder Selection window is displayed (figure 1-12).
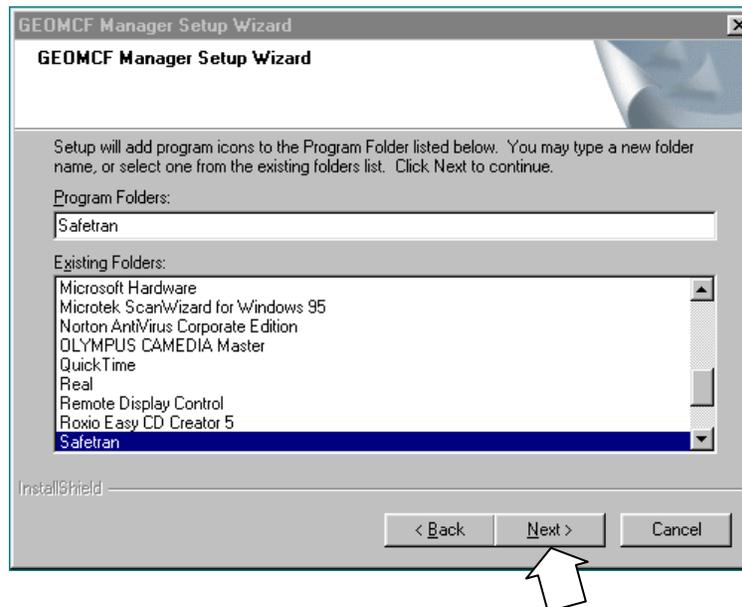
Figure 1-12. Program Folder Selection Window

7. The folder where the program icons will be added is displayed in the **Program Folders:** box (the default is the **Safetran** folder). If a different folder is desired, scroll through the **Existing Folders:** box and select the desired folder, then click on the **Next >** button.

8. The "Installation Summary" window appears (figure 1-13).
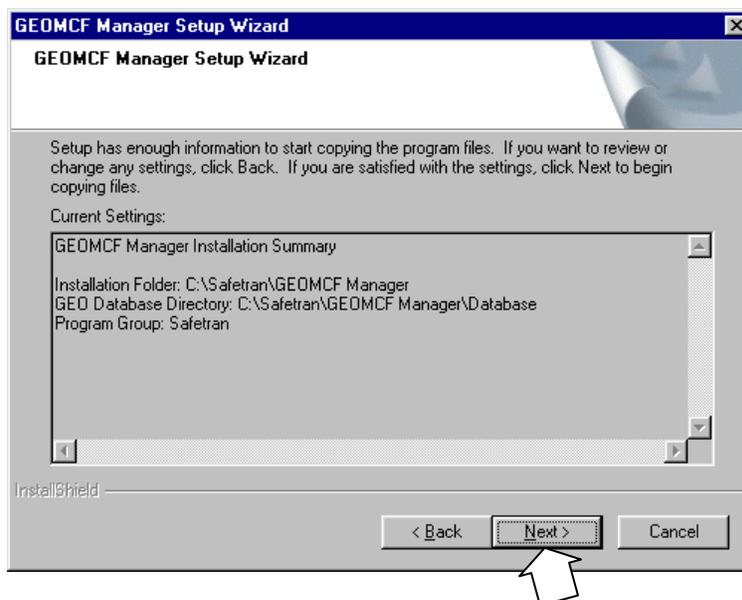
Figure 1-13. Installation Summary Window

1-12

9. Inspect the **Current Settings:** box of the "Installation Summary" window to verify that the software is about to be added to the correct installation folder and program group. If the settings are correct, click on the **Next >** button.

NOTE	**NOTE** If the settings in the "Installation Summary" window are not the desired ones, click on the < **Back** button to change the settings.

10. The Installation Wizard begins loading some of the applications needed to run with the GEOMCF Manager utility (a number of splash screens appear as files are installed).

11. When the Installation Wizard has finished loading a portion of these files, the "Microsoft XML Parser Setup" window is displayed (figure 1-14). Click on **Next >** to continue.
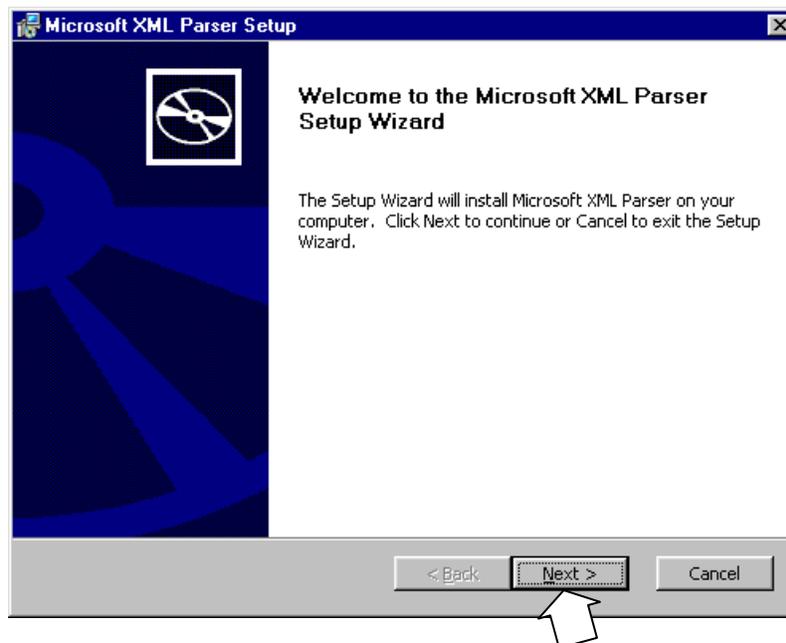
Figure 1-14. Microsoft® XML Parser Setup Window

12. Follow the instructions for the Microsoft® installation windows as they are displayed to install Microsoft® XML Parser.

13. After Microsoft® XML Parser is installed, the **GEOMCF Manager Setup Wizard** displays the "Setup Status" window as the files are loaded (figure 1-15).

1-13
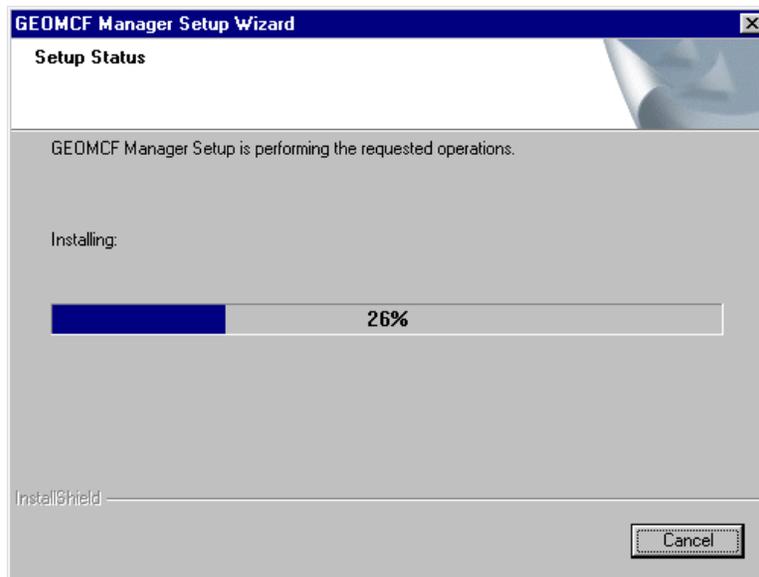
Figure 1-15. GEOMCF Manager Setup Wizard Installation Window

14. The **GEOMCF Manager Setup Wizard** "Release Notes" window (figure 1-16) is displayed after the files are loaded. To review the release notes, verify the box is checked (or uncheck box to not review release notes), and click on **Finish**.
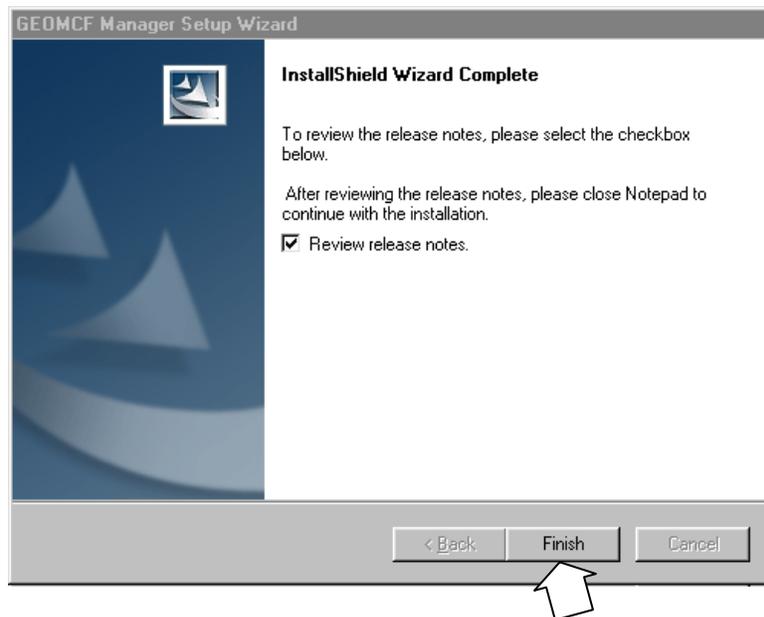
Figure 1-16. Release Notes Window

15. The **GEOMCF Manager Setup Wizard** "Restart" window (figure 1-17) is displayed. Select the radio button desired for rebooting and click on **Finish** (normally, the computer should be restarted now, if installation is finished).

1-14
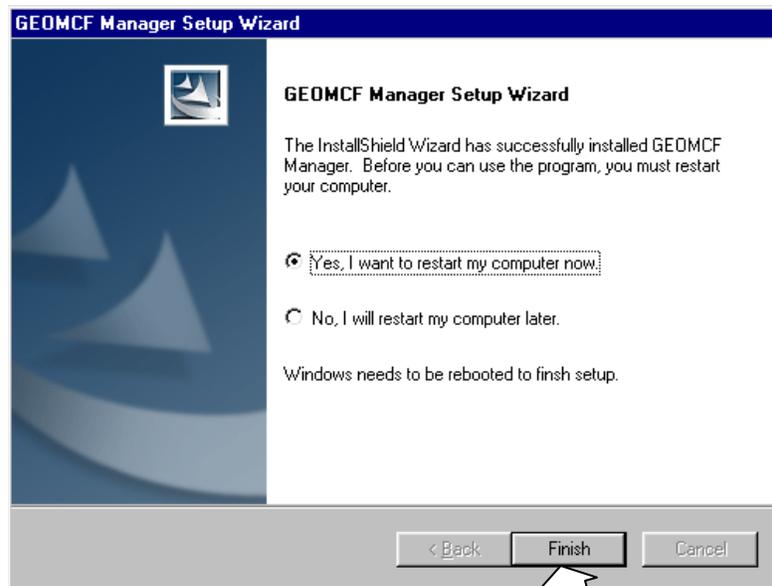
Figure 1-17. GEOMCF Manager Setup Wizard Restart Window

16. When the GEOMCF Manager Installation Wizard has finished installing files, the installation utility is closed and the computer is rebooted (if the radio button was selected for restarting now).

1.9.2   GEOMCF Manager Previously Installed

If a version of GEOMCF Manager has been previously installed on the computer, the InstallShield Wizard displays the "Modify, Repair, or Remove the Program" window (figure 1-18).
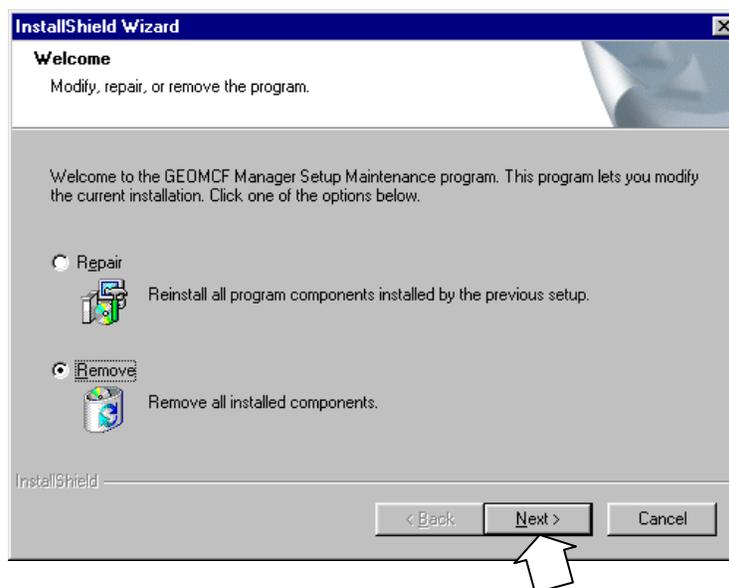
Figure 1-18. "Modify, Repair, or Remove the Program" Window

1-15

The user has two options when a version of GEOMCF Manager has been previously installed: repair the previously installed version of GEOMCF Manager, or remove the previously installed version of GEOMCF Manager. Generally, the previously installed version is first "removed", then the utility is "installed" as a first time installation.

NOTE	**NOTE**
	The default option for repairing or removing the previously version of GEOMCF Manager is "Remove".

1.9.2.1 Remove the Previously Installed GEOMCF Manager

NOTE	**NOTE**
	Before installing GEOMCF Manager, it is preferable to completely remove an old version.

1. To remove all installed components of a currently installed version of GEOMCF Manager, select the **Remove** radio button and click on the **Next >** button. The "Confirm Uninstall" window is displayed (figure 1-19).

2.

Figure 1-19. Confirm Uninstall Window

NOTE	**NOTE**
	If files used by GEOMCF Manager are shared by other Safetran programs, a "Shared File Detected" notice is displayed (see below). Delete all shared files because they are going to be reinstalled when GEOMCF Manager is reinstalled.
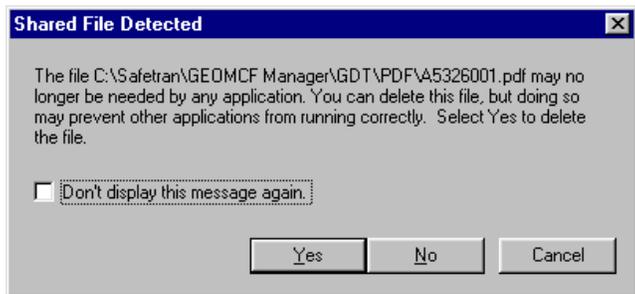
1-16

NOTE	**NOTE**
	GEOMCF Manager must not be installed on the same PC where GDT version 1.1.19 or earlier resides, as there might be a conflict between shared files.

NOTE	**NOTE**
	GEOMCF Manager must not be installed on the same PC where GCS version 1.3.3 or earlier is installed, as there might be a conflict between shared files.

3. Click on **OK** on the **Confirm Uninstall** window to delete GEOMCF Manager software including all of its components. The InstallShield Wizard performs the required operations as it displays the "Setup Status" window (figure 1-20), then the **Maintenance Complete** window is displayed (figure 1-21). Click on **Finish** in the "Maintenance Complete" window to close the Installation Wizard.
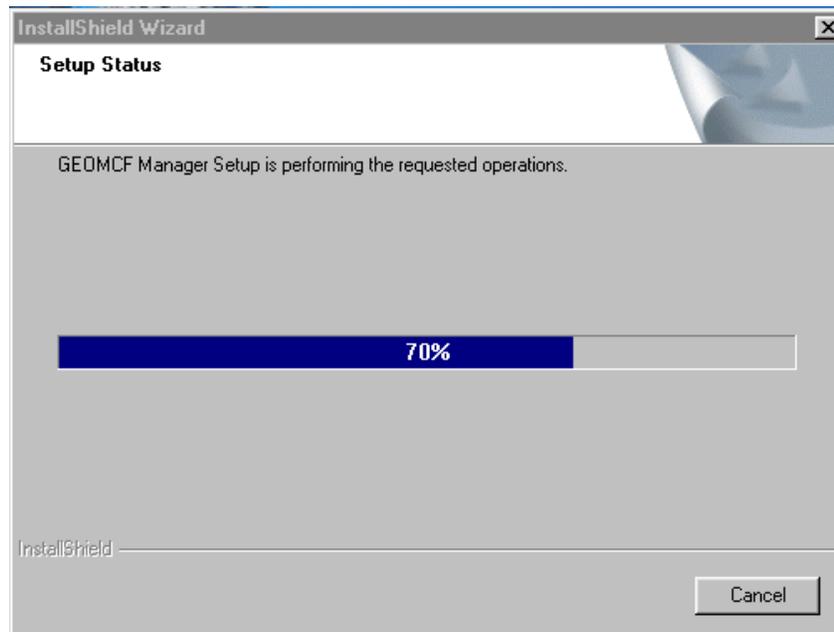
Figure 1-20. Setup Status Window
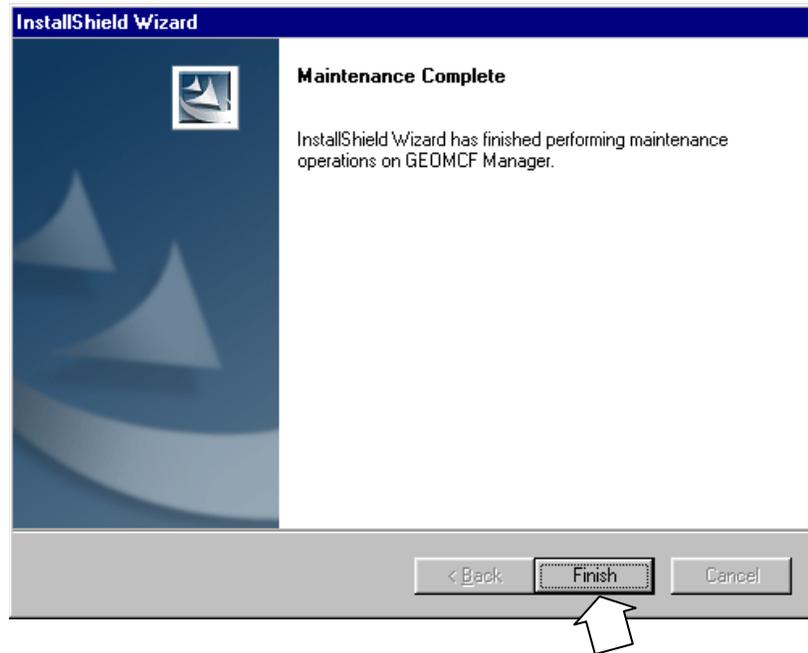
Figure 1-21. Maintenance Complete Window

1.9.2.2   Repair the Previously Installed GEOMCF Manager

To reinstall all components of a currently installed version of GEOMCF Manager, select the **Repair** radio button and click on the **Next >** button. The Installation Wizard performs the required operations, then displays the "Maintenance Complete" window (refer back to figure 1-21). Click on **Finish** in the "Maintenance Complete" window to close the Installation Wizard.

SECTION II
LAUNCHING AND USING GEOMCF MANAGER

2.0   STARTING THE GEOMCF MANAGER PROGRAM

1. Click the Windows® **Start** button.

2. Select **P**rograms.

3. Select **Safetran**.

4. Click on the **GEOMCF Manager** icon.

<table>
<tr>
<td>**NOTE**</td>
<td>**NOTE**

Steps 1 through 3 can be eliminated if a shortcut icon is placed on the PC desktop for GEOMCF Manager.</td>
</tr>
</table>

5. The GEOMCF Manager main screen is displayed (figure 2-1) with any currently installed configurations displayed in the Tabs viewing area on the left side of the screen.
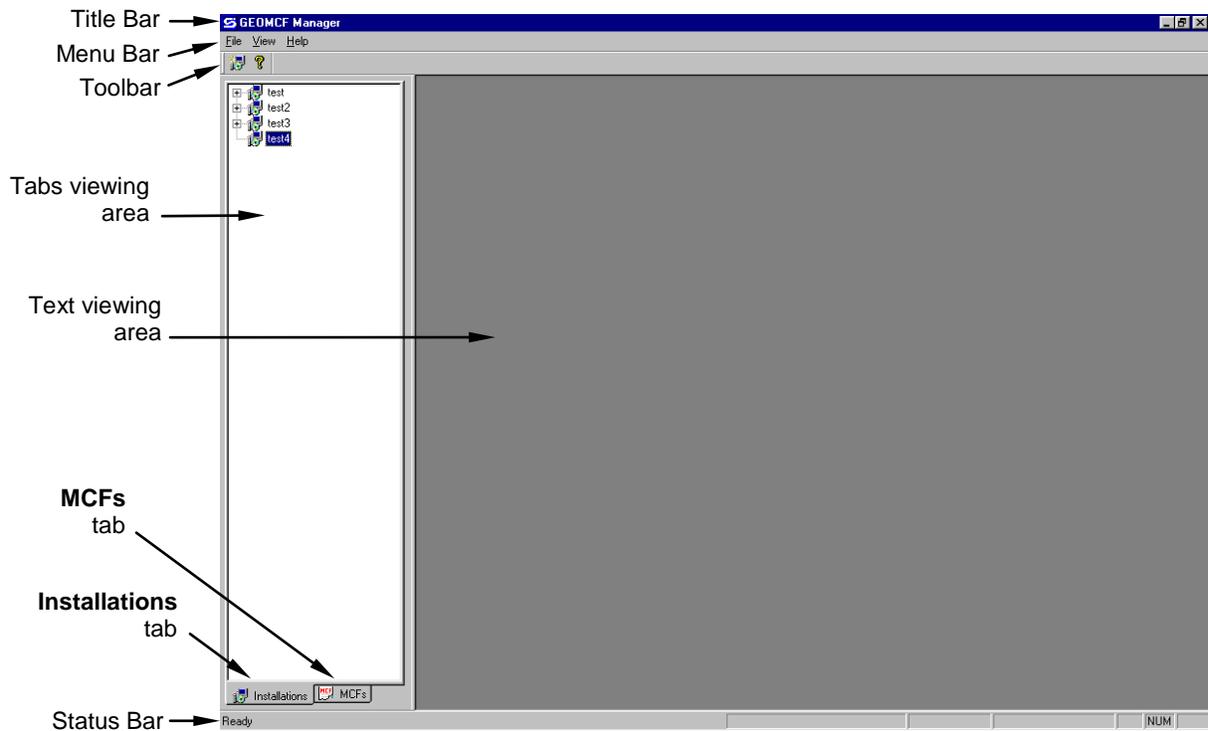
Figure 2-1. GEOMCF Manager Main Screen

2-1

2.1.1 GEOMCF Manager Main Screen Components

The top 3 bars of the GEOMCF Manager main screen (refer back to figure 2-1) are: **Title Bar**, **Menu Bar**, and **Toolbar** (which can be enabled/disabled from the **View** menu). The main area of the screen is divided into the **Tabs** area and the **Text** area. At the bottom of the screen is the **Status Bar**, which can be enabled/disabled from the **View** menu. The main screen components are discussed in the paragraphs that follow.

2.1.1.1 <u>Title Bar</u>

The Title Bar identifies the GEOMCF Manager application.

2.1.1.2 <u>Menu Bar</u>

▪ When the Text Area is empty (no text documents displayed), the Menu Bar contains 3 menu items: **File** menu, **View** menu, and **Help** menu (see below).

▪ When the Text Area is displaying a text document (e.g., GEO Installation Listing), the Menu Bar contains 3 additional items: **DOC** button, **Edit** menu, and **Window** menu (see below).

DOC Button
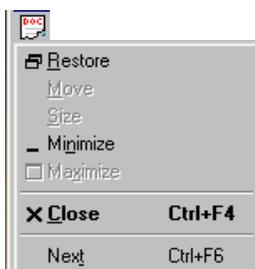
When the Text Area <u>is</u> displaying a text document (e.g., GEO Installation Listing), the **DOC** button is displayed. Clicking on the **DOC** button displays a standard menu of options for working with documents, such restoring or minimizing/maximizing a document. Options not applicable for the currently displayed document are disabled (grayed out). Click on **Close** to close the text document.

File Menu
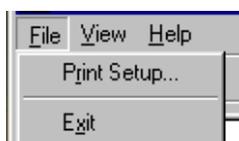
When the Text Area <u>is not</u> displaying a text document, the **File** menu displays options to display the standard Windows® Print Setup box (select printing options and click on **OK** to accept setup and close the box), or to exit the GEOMCF Manager utility.
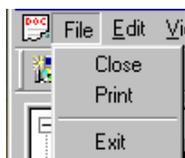
When the Text Area <u>is</u> displaying a text document (e.g., GEO Installation Listing), the **File** menu displays options to close the document, print the document (using the print setup established before displaying a document), or to Exit the GEOMCF Manager utility.

Edit Menu

When the Text Area <u>is</u> displaying a text document (e.g., GEO Installation Listing), the **Edit** menu displays options for editing the document. Currently, this function is not implemented (options are disabled).

View Menu

The **<u>View</u>** menu is displayed whether a document is displayed or not. It allows the user to enable or disable the Toolbar and the Status Bar. When a checkmark is placed next to the option, the option is enabled.

Window Menu
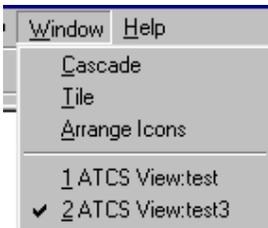
When the Text Area <u>is</u> displaying one or more text documents (e.g., GEO Installation Listing), the **<u>Window</u>** menu displays the standard options for cascading or tiling different documents on the screen, or arranging icons. It also displays a list of open documents (the currently selected document displays a checkmark).

Help Menu
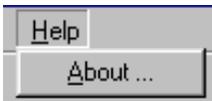
The **<u>About...</u>** option from the **<u>Help</u>** menu brings up the **About GEOMCF Manager** window (figure 2-2), which provides application software version and the software part number. Click on **OK** to close the window.
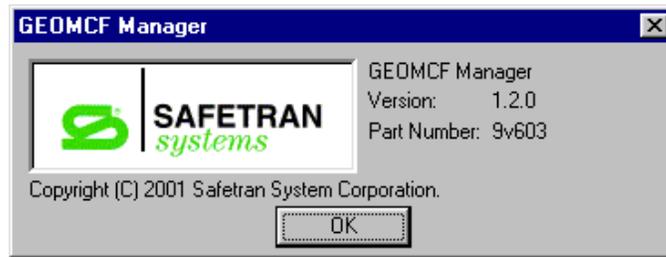
Figure 2-2. About GEOMCF Manager Window

2.1.1.3 <u>Toolbar</u>

The Toolbar contains 2 items: **New Installation** button and **About GEOMCG Manager** button. The **New Installation** button displays the **GEO MCF Installation** window (figure 2-3). The **GEO MCF Installation** window allows the user to name and introduce a new Installation. A "Comment" box is included to add any specific information about the installation.
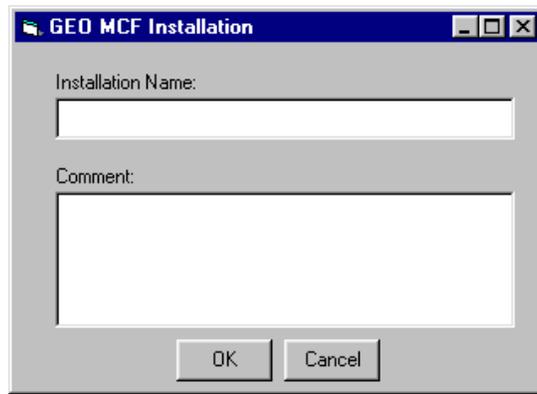
Figure 2-3. GEO MCF Installation Window

The **About GEOMCF Manager** button provides the same information provided in the **Help** menu (refer back to figure 2-2).

2.1.1.4   Tabs Area

There are two tabs: **Installations** and **MCFs** (see detail below).

Installations Tab- The **Installations** tab provides an area for expanding the installation trees (see below), where options are provided by pop-up menus for the installations and installed MCFs.
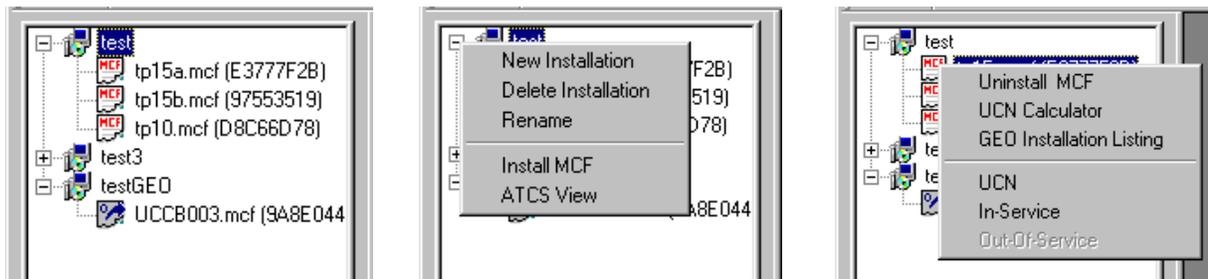
MCFs Tab- The **MCFs** tab lists the MCFs that have been imported. From this view, an MCF icon may be right-clicked on to display a pop-up menu to delete or import an MCF (see example below).

2-4
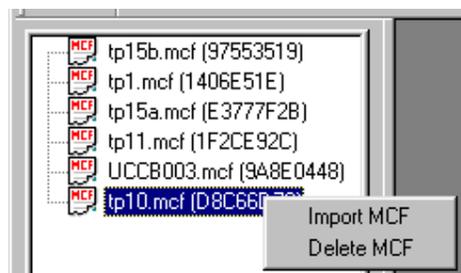
2.1.1.5 Text Area

The text area is used to display text files such as the GEO Installation Listing or the ATCS view (see example below, and in Appendix A).
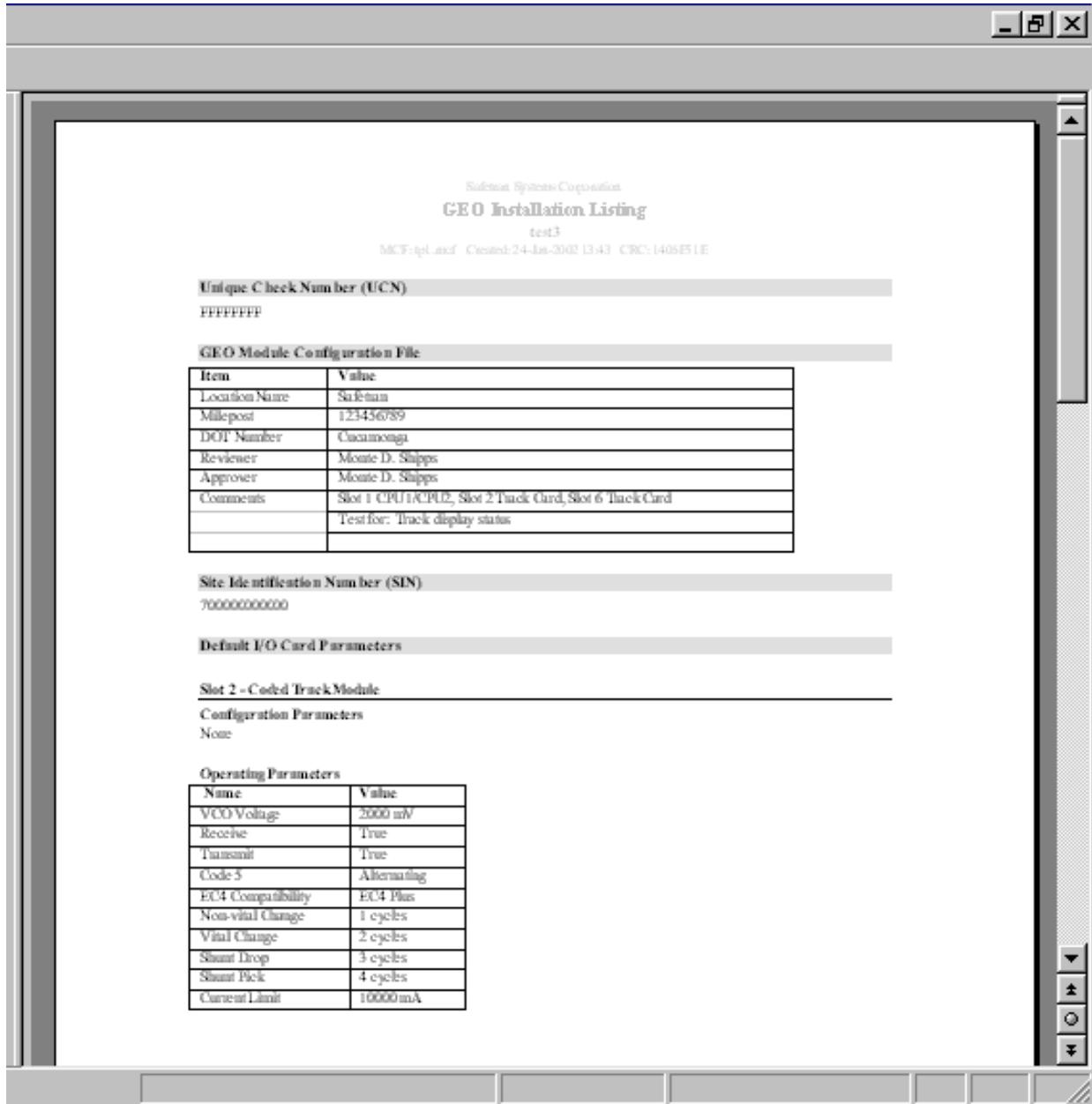
These files may be cascaded or tiled for viewing from the **Window** menu, and may be closed from the **File** menu. The GEO Installation Listing may be printed from the **File** menu.

2.1.1.6 Status Bar

The Status Bar provides boxes for status messages (e.g., Ready), describes menu options, etc. It also provides boxes to indicate Lock status (Caps Lock, Numbers Lock, and Scroll Lock).

2.2   USING GEOMCF MANAGER

2.2.1   Setting Up Installations

To set up an installation, the user can use current installations and MCFs, deleting unneeded installations, renaming and reusing installations, or installing new installations, as follows:

a. To reuse an existing installation, right-click on the Installation icon to display the pop-up menu (see detail at right), then click on **Rename**. A window (see detail below) is displayed to allow the user to rename the installation. Type in the name and click on **OK.**

Select **Rename** to reuse an existing installation
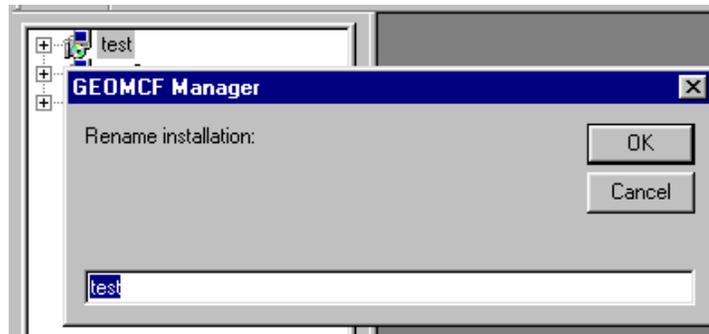
b. To begin a new installation, right-click on the Installation icon to display the pop-up menu (see detail at right), then click on **New Installation**. The **GEO MCF Installation** window (see detail below) is displayed to allow the user to name the new installation and enter any desired information about the installation in the **Comment** box. Click on **OK**.

Select **New Installation** to begin a new installation

2-6

c. To delete an installation, right-click on the Installation icon to display the pop-up menu (see detail at right), then click on **Delete Installation.** A confirmation prompt is displayed (see detail below). Click on <u>**Yes**</u>.

| New Installation |
| Delete Installation |
| Rename |
| |
| Install MCF |
| ATCS View |
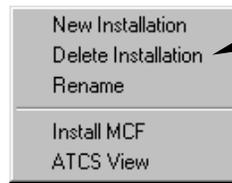
Select **Delete Installation** to delete a selected installation

NOTE

<u>**NOTE**</u>

Before any installations can be deleted, any MCFs installed in them must first be uninstalled, or an error message is displayed (see below).
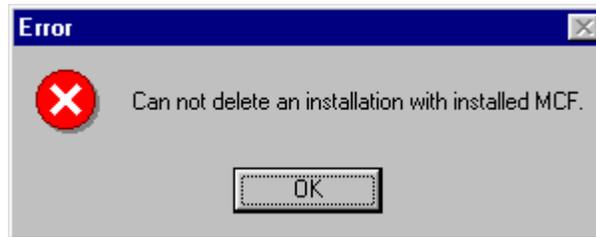
Click on the expand box (+) for the installation to display the MCFs installed, then select the MCFs one at a time and right-click to display the pop-up menu (see first detail below), then click on Uninstall MCF. A confirmation prompt is displayed (see second detail below). Click on Yes to uninstall the MCF.

Select **Uninstall MCF** to uninstall an MCF from a selected installation

2-7

2.2.2   Installing MCFs

1. From the main screen, click on the **MCFs** tab to display the imported **MCFs** viewing area.

2. Right-click in the **MCFs** viewing area of the screen to display the **MCFs** pop-up menu (see below).

Select **Import MCF** to import an MCF to the **MCFs** Tab from the GEOMCF Database

Select **Delete MCF** to delete the currently selected MCF from the **MCFs** Tab

3. One at a time, highlight any MCFs to be deleted, and from the pop-up menu, click on **Delete MCF** to delete them.

4. One at a time to import new MCFs, click on **Import MCF**. The **Select MCF** window is displayed (figure 2-4).
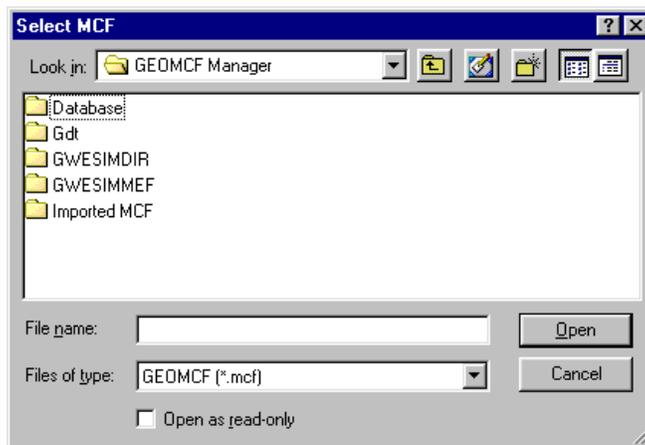
Figure 2-4. Select MCF Window

5. Navigate to the directory where the desired MCF resides, highlight the MCF, and click on **Open**.

6. From the main screen, click on the **Installations** tab to display the **Installations** viewing area.

7. From the **Installations** viewing area, right-click on the installation icon that requires MCFs to be installed, to display the pop-up menu (see detail below), then click on **Install MCF**.

Select **Install MCF** to display the **Install MCF** window

2-8
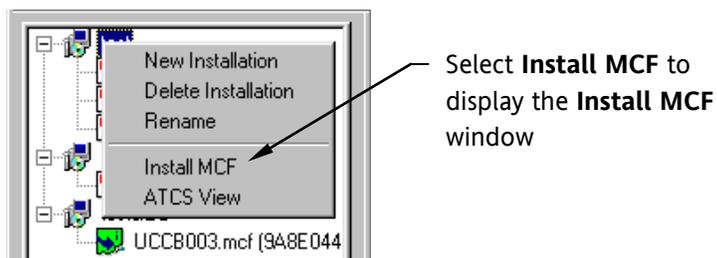
8. The **Install MCF** window is displayed to allow the user to select from a list of MCFs (figure 2-5). Also if required, additional MCFs may be imported from this window.
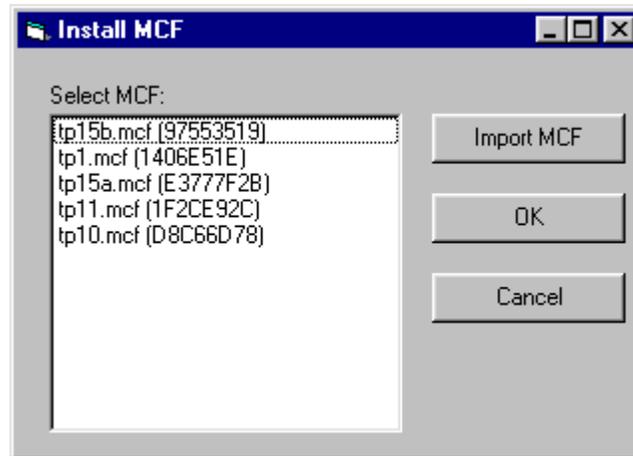
Figure 2-5. Install MCF Window

NOTE	**NOTE** The MCF CRC is displayed in parentheses following the MCF name. Use the CRC to verify the correct MCF.

9. To install MCFs, perform one of the following steps:

   ▪ Select the desired MCF from the list and click on **OK**.

   ▪ Click on the **Import MCF** button on the Install MCF window to display the **Select MCF** window (refer back to figure 2-4), navigate to the directory where the MCF resides (figure 2-6), highlight the correct MCF, then click on **Open**.

NOTE	**NOTE** MCFs in the Imported MCF directory reside in folders identified by their CRCs.

2-9
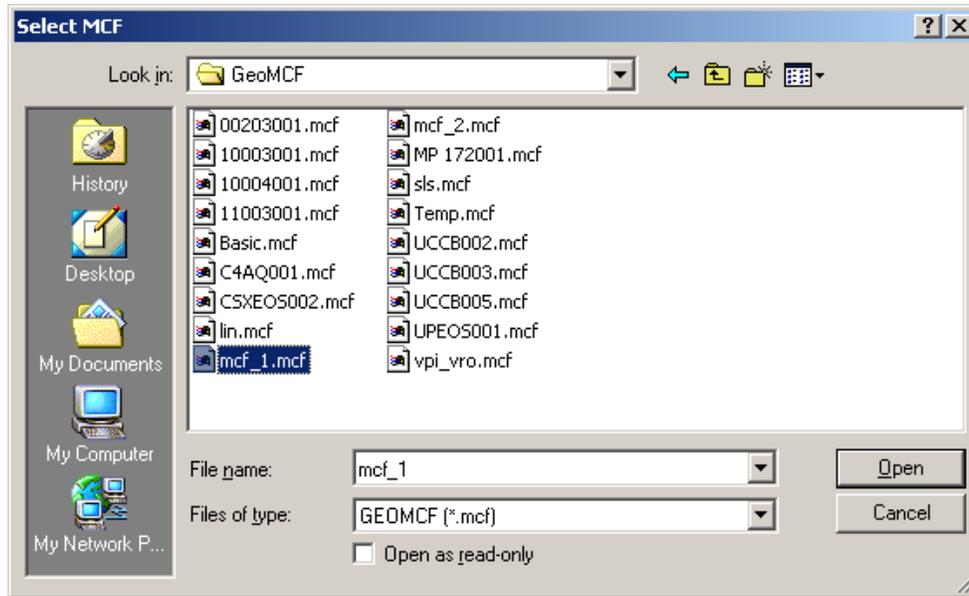
Figure 2-6. Selecting an MCF

NOTE	**NOTE** If the desired MCF is not in the directory, place it there from floppy diskette or other source.

2.2.3   Viewing ATCS Parameters

1. After the proper MCFs are displayed in the tree for the installation, the user can right-click on the installation icon to display the pop-up menu, and select **ATCS View** (see detail below).

Select ATCS View to display communication device and connection information
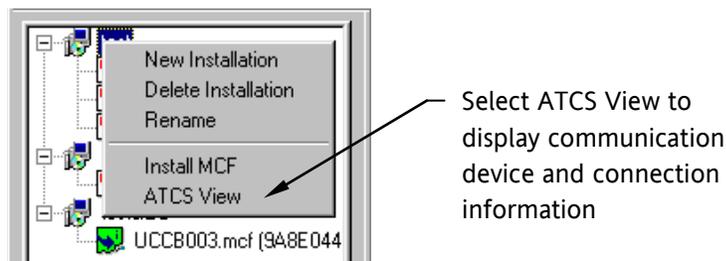
2. The right-hand side of the screen displays a tab (display formatted as a text document) for each MCF installed (see examples in figures 2-6 and 2-7). Also, the current SIN (default of 700000000000 or assigned SIN) is displayed below the screen.
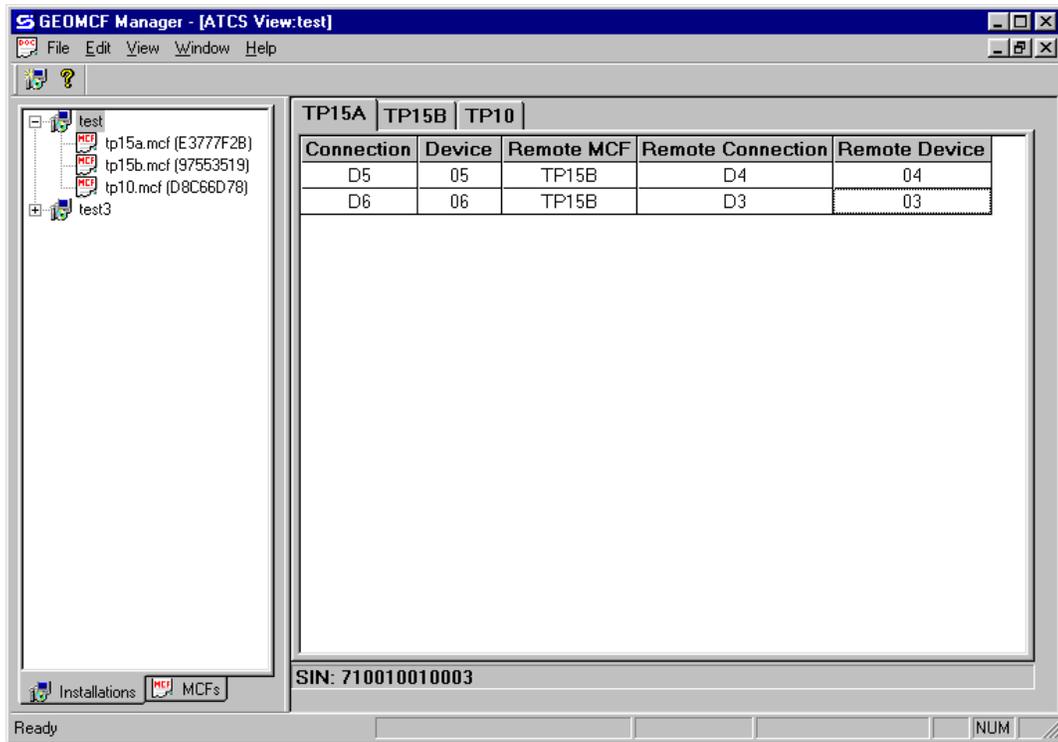
Figure 2-7. Example ATCS View – TP15A Tab
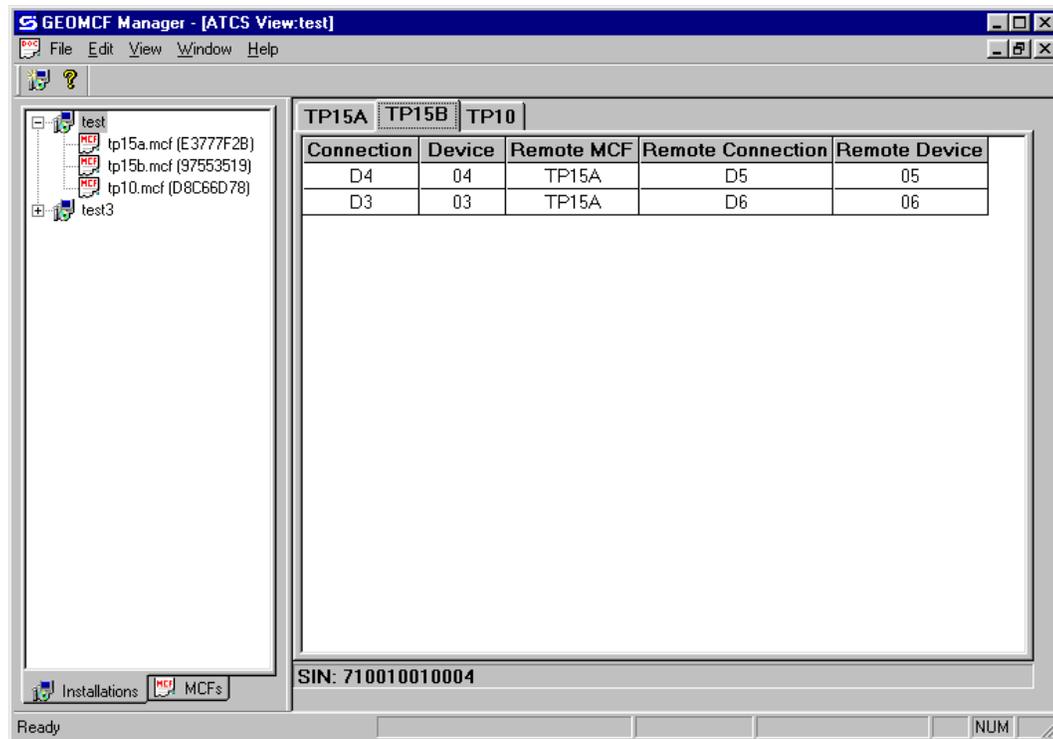
Figure 2-8. Example ATCS View – TP15B Tab

3. Verify the MCFs are set up to communicate as desired. Close the window by clicking on the close button (see detail below), or use the **File** menu, **Close** option.

Close Button

2.2.4   Assigning ATCS Addresses

1. The user must assign ATCS addresses to all MCFs that require communications. From the **Installations** tab, right-click on the first MCF to assign an ATCS address, and click on **UCN Calculator**.

⚠ WARNING	**WARNING** **TO ENSURE THAT NO POTENTIAL SAFETY CONFLICTS CAN OCCUR WITH OTHER EQUIPMENT, VERIFY THAT EACH NEW SIN ASSIGNED IS UNIQUE TO THE FIELD UNIT BEING CONFIGURED.**

2. When the **GEO UCN Calculator** window appears, select **Set Sin** from the **Configure** menu. The **SIN** window appears (figure 2-9).
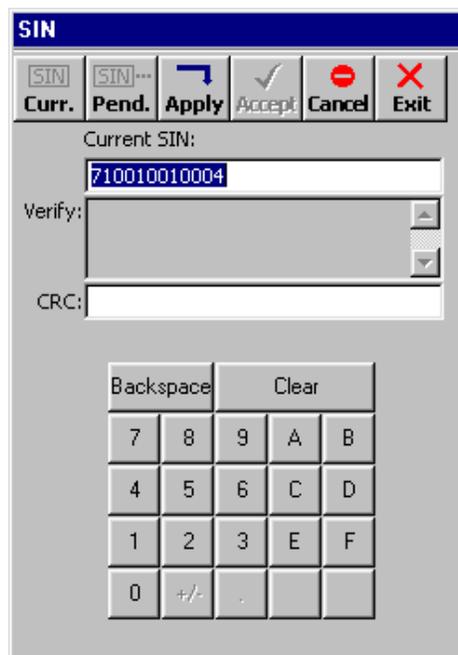
Figure 2-9. SIN Window

NOTE	**NOTE**
	If the SIN does not appear in the "Current SIN" text box on the **SIN** screen, click on **Cancel**, then on **Curr.** (SIN) to display the current SIN.

NOTE	**NOTE**
	The **Pend.** (SIN) button, the **Verify:** text box, and the **CRC:** text box are not used even though active.

3. In the **Current SIN** text box, enter the correct SIN, then click on the **Apply** button.

NOTE	**NOTE**
	A SIN of all zeros is invalid (a number must be assigned). GEOMCF Manager detects an invalid SIN and will not allow it to be applied.

4. Click on the **Curr.** button and verify the SIN was properly applied.

5. Click on the **Exit** button to close the **SIN** window.

6. Repeat steps 1 through 5 for all other MCFs.

⚠ WARNING	**WARNING**
	WHEN CHANGING ATCS ADDRESS (SIN) FOR A GWE IN THE FIELD, THE INSTALLATION NEEDS TO BE REVALIDATED IN ACCORDANCE WITH RAILROAD PROCEDURES FOR QUALIFYING IN-SERVICE INSTALLATIONS.

2.2.5   Using UCN Calculator

The **UCN Calculator** window provides a simulated view of the GWE, with slots for modules, if the GWE supports individual modules. The headers for populated module slots provide pop-up menus when right-clicked on. This function is described in paragraphs 2.2.5.2 and 2.2.5.3.

The **UCN Calculator** window also provides a menu bar for selecting options. These functions are described in paragraph 2.2.5.1.

The UCN Calculator window also provides a **View Next Slot Up** button to shift the view to the right in order to view slots of larger racks that are out of view on the screen. To shift the view back to the left, the **View Next Slot Down** button is enabled when the view is shifted to the right.

2-13

2.2.5.1 UCN Calculator Menu Bar

File Menu- Currently, the **File** menu contains only one option: **Exit** (see detail below). Clicking on this option closes the GEO UCN Calculator window.
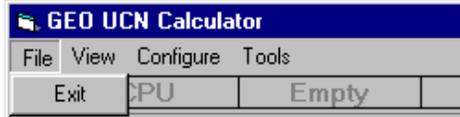
View Menu- Currently, the **View** menu contains only one option: **Refresh** (see detail below). Clicking on this option refreshes the display with any new changes.
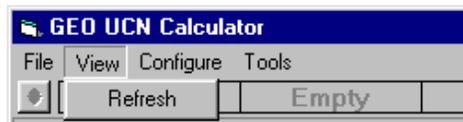
Configure Menu- The **Configure** menu allows user–configurable parameters to be set (see detail below), provided the parameter is programmed in the MCF. The options in the **Configure** menu are: **Vital User Options**, **Nonvital user Options**, **Vital User I/O**, **Nonvital User I/O**, **Vital User Timers**, **Nonvital User Timers**, and **Set SIN**.
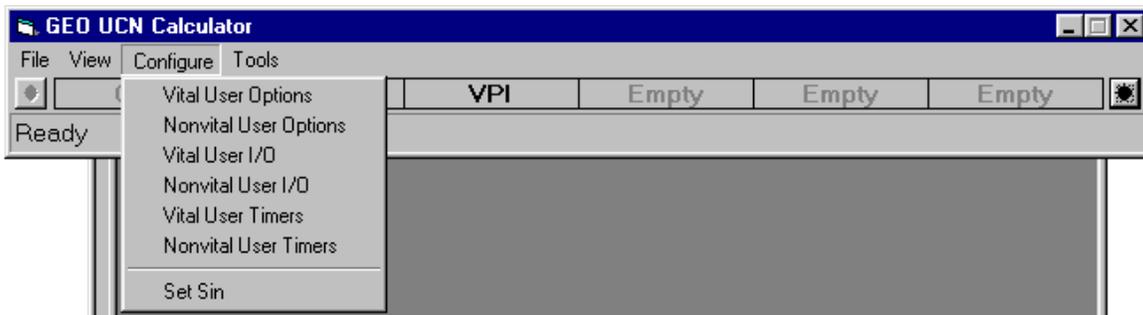
If the selected User Parameters option is not programmed in the MCF, a message appears (see right):

2-14
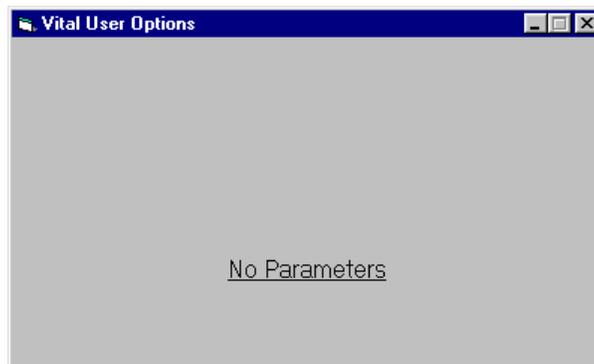
Tools Menu- Currently, the **Tools** menu contains only one option: **Sniffer** (see detail below).

NOTE
NOTE The **Sniffer** option is provided as a diagnostic tool primarily for use by Siemens Rail Automation Engineering personnel.

In GEOMCF Manager, there is a GEO Simulator running to simulate message traffic between the GDT utility and the GWE when functions are performed such as "set SIN", etc. The **Sniffer** option of the GEOMCF Manager **Tools** menu monitors ATCS message activity between the user interface (UCN Calculator) in the GEOMCF Manager utility and the active function. It displays the message bytes for evaluation. Select "Sniffer" from the **Tools** menu to display the **Sniffer** screen (figure 2-10).
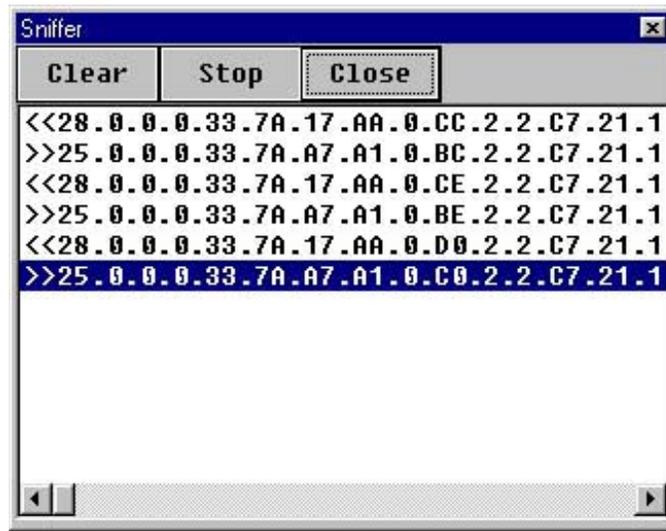
Figure 2-10. Typical Sniffer Display

Sniffer is a dynamic display. As new message traffic occurs, it is added to the bottom of the display and the message list scrolls up screen.

Select the **Stop** button to freeze the display so that currently displayed messages may be examined. The button label changes to **Continue**. Select the button again to continue monitoring messages as they occur.

Select the **Clear** button to remove all currently displayed messages from the screen. New messages will appear on the display as they are sent or received.

Select the **Close** button to exit this display and return to the function partition display.

2.2.5.2   Setting Vital/Nonvital User Options, I/O and Timers

1. Select the first MCF for the application in the **Installations** tab, then click on **UCN Calculator**. The **GEO UCN Calculator** window is displayed (see example in figure 2-11).
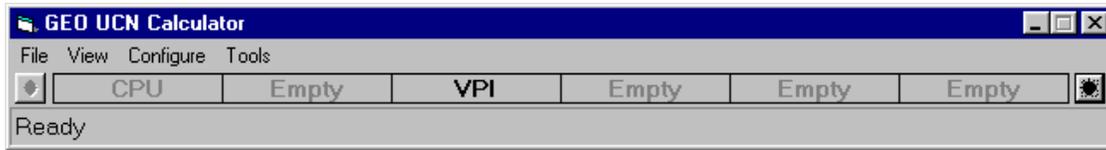
Figure 2-11. Example GEO UCN Calculator Window

2. Click on the **Configure** menu. If any Vital or Non-vital User Options, User I/O, or User Timers are configured, click on them to display the window (see example for Nonvital User Options in figure 2-12).
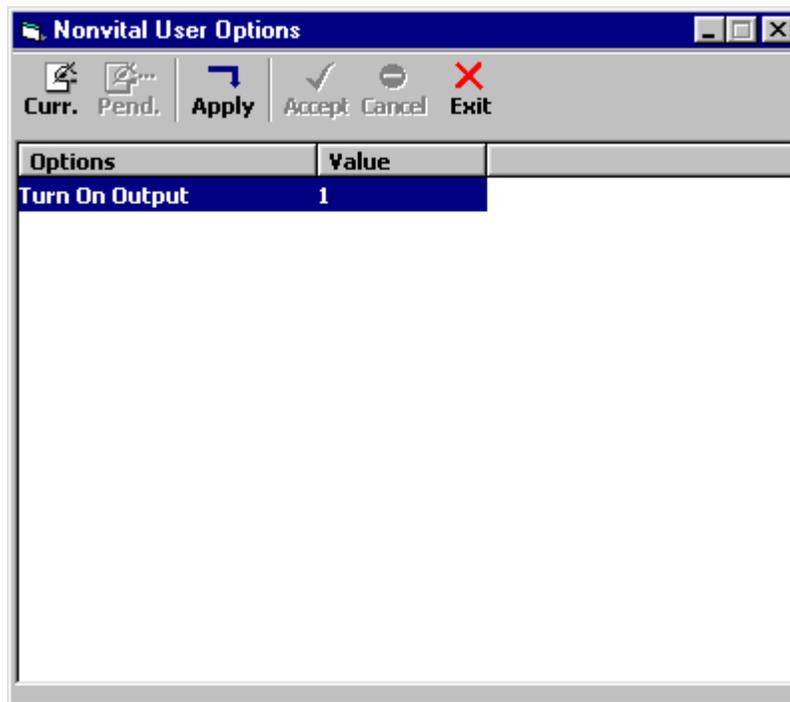
Figure 2-12. Typical Nonvital User Options Window

3. Click on the **Curr.** button at the top left of the screen to refresh the current option selections.

⚠ WARNING	**WARNING** **WHEN CHANGING VITAL USER PARAMETERS, THE INSTALLATION NEEDS TO BE REVALIDATED IN ACCORDANCE WITH RAILROAD PROCEDURES FOR QUALIFYING IN-SERVICE INSTALLATIONS.**

⚠ WARNING	**WARNING** **SETTING VITAL USER PARAMETERS INCORRECTLY COULD RESULT IN A HAZARDOUS EVENT. THE IMPLEMENTATION OF VITAL USER PARAMETER CHANGES AND THEIR EFFECTS ON RAILROAD SAFETY ARE THE RESPONSIBILITY OF THE RAILROAD.**

4. Click on the "Value" field of the desired option to display the Current Options list control box (refer back to figure 2-12) and click on the down arrow button (   ) to display the drop-down options list. The current selection is highlighted (see detail below).
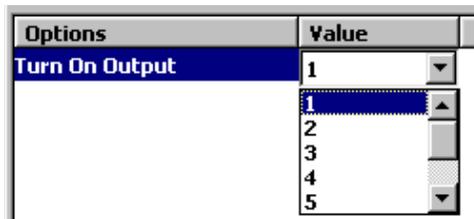
5. Select the desired value/option from the drop-down list (e.g., 2) by highlighting it. The drop-down list closes (see detail below).

NOTE	**NOTE** The available values/options depend on the type of Option selected and established in MCF.

6. Verify that the desired selection is now displayed in the "Value" field, then click out of the control box to close it.

7. Make any other value/option changes as desired.

8. Click on the **Apply** button at the top of the screen. To verify that the value was accepted, click on the **Curr.** button. The desired value should appear in the value column.

9. Click on the **Exit** button to close the options window.

2.2.5.3 <u>Setting Configuration / Operating Parameters</u>

1. In the **GEO UCN Calculator** window, right-click on the header for any module (slot number) that has user-configurable Configuration Parameters or Operating parameters (see figure 2-13 for a typical **Operating Parameters** window (e.g., VPI Slot 3).
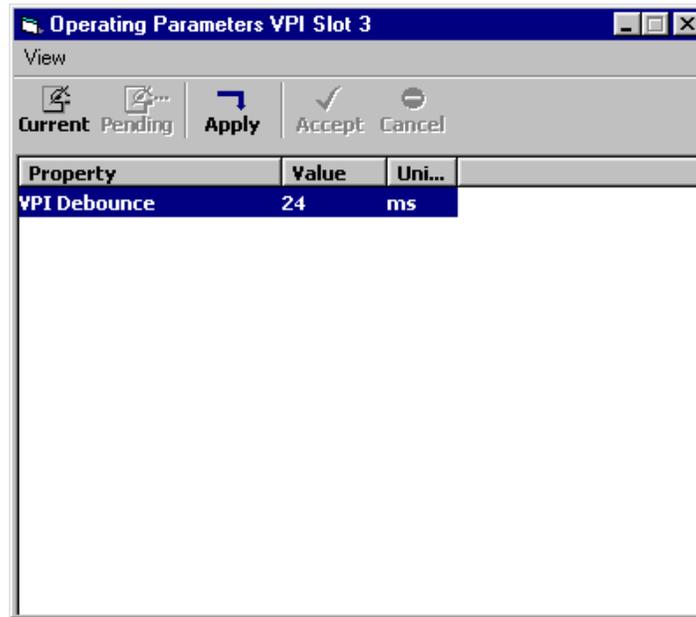
Figure 2-13. Typical Operating Parameters Window

<table>
<tr><td>**NOTE**</td><td><p align="center">**NOTE**</p>Making changes to Module Configuration or Operating Parameters does not affect the UCN.</td></tr>
</table>

⚠ WARNING

WARNING
SETTING CONFIGURATION OR OPERATING PARAMETERS INCORRECTLY COULD RESULT IN A HAZARDOUS EVENT. THE IMPLEMENTATION OF CONFIGURATION AND OPERATING PARAMETER CHANGES AND THEIR EFFECTS ON RAILROAD SAFETY ARE THE RESPONSIBILITY OF THE RAILROAD.

2. Click on the **Curr.** button at the top left of the screen to refresh the current selections. The settings are listed in the "Value" column, and the units of measurement are in the "Units" column.

NOTE

NOTE
It may be necessary to widen the fields in order to view full properties, values, or units.

NOTE

NOTE
The default values may be confirmed by clicking on the **Apply** button, or they may be changed.

3. Click on the "Value" field of the desired property to highlight it and display the spin control box with the **+** (plus) and **–** (minus) spin controls (see detail below).

Property	Value	Uni...
VPI Debounce	24	⊞ ms

4. Click on the **+** or **–** spin button to increase or decrease the value by valid amounts (see detail below).

Property	Value	Uni...
VPI Debounce	26	⊞ ms

NOTE

NOTE
The value range, units and valid increments depend on the type of property selected (established by the MCF).

5. Verify that the desired value is now displayed in the "Value" field.

NOTE	**NOTE** If an invalid value is attempted, an error message similar to the one shown below is displayed.
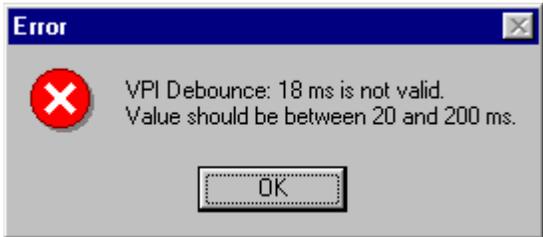
6. Click anywhere on the "Operating Parameters" screen to close the spin box. The changed value will be displayed (see detail below for an example of a changed value).

Property	Value	Uni...	
VPI Debounce	26	ms	

7. Make any other desired changes in a similar manner.

8. Click on the **Apply** button at the top of the "Operating Parameters" screen for the module slot or function partition. To verify that the value was accepted, click on the **Curr.** button. The desired value should appear in the value column.

2.2.5.4   Calculating/Viewing UCN

The UCN is continuously calculated as changes are made to the configuration. It is calculated over the MCF, SIN, vital parameters, and in some cases over the MEF.

To view the calculated UCN at any time, from the Installations tab, right-click on the MCF in question and select **UCN**. The **UCN** window appears (figure 2-14). Click on **OK** to close the window.

Figure 2-14. UCN Window

2-20

2.2.5.5   Printing the GEO Installation Listing

When configuration is complete and the user is ready to print out the GEO Installation Listing, do the following:

1. From the **File** menu (before the document to be printed is displayed), select **Print Setup...**.

2. Select the destination printer, select the paper size, source and orientation, and click on **OK** to close the window.

3. Open the document to be printed by right-clicking on the desired installation icon to display the pop-up menu, click on **GEO Installation Listing**, and when the document is displayed, click on **Print** from the **File** menu. The document will print to the selected printer.

Refer to Appendix A for a sample GEO Installation Listing.

2.2.5.6   Setting In / Out-of-Service

In-Service

When configuration is complete and the user has printed out the GEO Installation Listing, the listing is handed over to the Maintainer so that the GWE can be placed in operation. To do this, the Maintainer, at the site, uses the information on the GEO Installation Listing to set SIN, operating parameters, and the UCN in the GWE, and reboots the unit. The Maintainer then enters his name, signature and date in the "Commissioning" box in the GEO Installation Listing.

After the GWE has rebooted and is operational, the Maintainer must review the event log and record the In-Service Check Number on the GEO Installation Listing **In-Service** box and give it to the office so that the GEOMCF Manager can be updated to In-Service. The user at the office sets the In-Service Check Number into GEOMCF Manager as follows:

1. On the **Installations** tab, expand the tree for the selected installation to display the MCF in question and right-click on it to display the pop-up menu (see detail below).

Select **In-Service** to display the **In-Service** window.
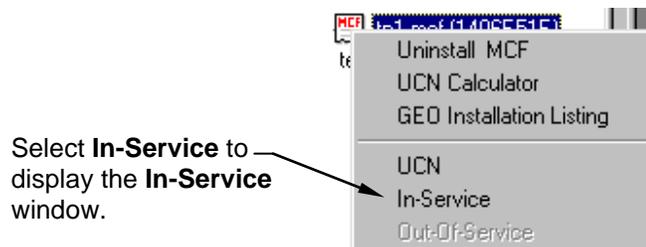
2. From the pop-up menu, click on **In-Service**. The In-Service window is displayed (figure 2-15).

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Figure 2-15. In-Service Window

3. In the **In-Service** window, type in the In-Service Check Number recorded from the GWE, and click on **OK**.

4. The MCF icon in the **Installations** tab should have changed (indicating an "i" and a downward arrow) and should now be displaying green instead of red to indicate the MCF is in service (see detail below).
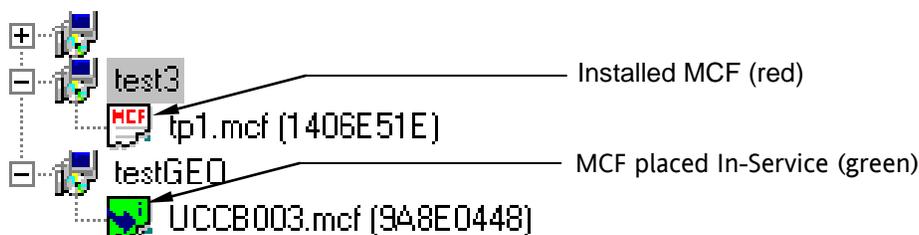
5. Also, now when the user right-clicks on the MCF in the **Installations** tab to display the pop-up menu, the In / Out-of-Service option is "Out-of-Service" (see below).
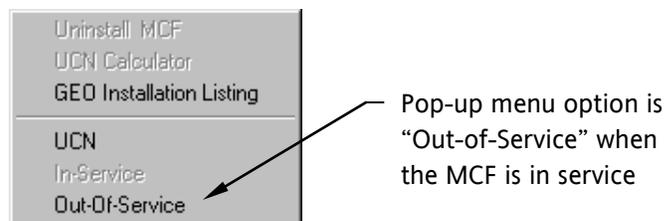
6. On the GEO Installation Listing, the user enters his name, signature, and date in the **In-Service** box.

Out-of-Service

To take an operating GWE out of service, the Maintainer at the site sets the unit out of service or "unconfigured" and reboots the unit.

NOTE	**NOTE**
	One way that a GWE can be set to "unconfigured" is to disable the MCF.

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After the GWE has rebooted and is unconfigured, the Maintainer must review the event log and record the Out-of-Service Check number on the GEO Installation Listing **Out-of-Service** box and give it to the office so that the GEOMCF Manager can be updated to Out-of-Service.

The user at the office places the MCF "Out-of-Service" in GEOMCF Manager as follows:

1. On the **Installations** tab, expand the tree for the selected installation to display the MCF in question (displaying green with an "i" and a downward arrow) and right-click on it to display the pop-up menu (see below).

Select **Out-of-Service** to place an MCF out of service in GEOMCF Manager
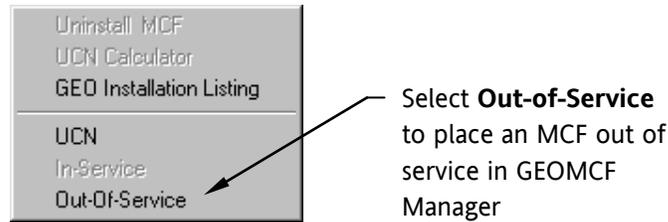
2. From the pop-up menu, click on **Out-of-Service**. A confirmation prompt is displayed (see figure 2-16).

Figure 2-16. Out-of-Service Confirmation Promp

3. Click on **Yes** to take the MCF out of service.

4. The icon for the MCF changes to a gray color and displays an "o" with an upward arrow to indicate the MCF is out of service (see detail below).

Installed MCF (red)

MCF taken Out-of-Service (gray)
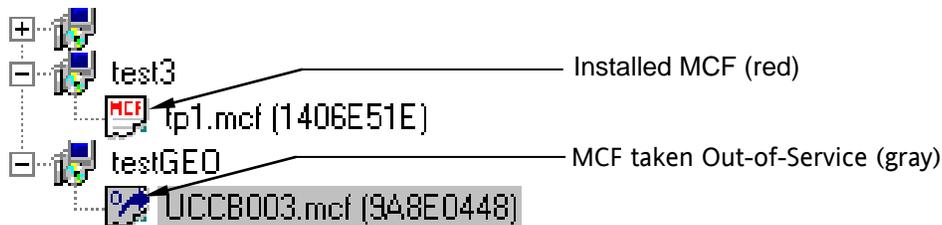
5. On the GEO Installation Listing, the user enters his name, signature, and date in the **Out-of-Service** box.

NOTE	**NOTE** Now, when the user right-clicks on the MCF in the **Installations** tab to display the pop-up menu, the In / Out-of-Service option is "In-Service".

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APPENDIX A
SAMPLE GEO INSTALLATION LISTING

Safetran Systems Corporation
GEO Installation Listing
testGEO

MCF: UCCB003.mcf Created: 14-Sep-2001 14:46 CRC: 9A8E0448

1E035170

Item	• Value
Location Name	Safetran
Milepost	123456789
DOT Number	Cucamonga
Reviewer	Monte D. Shipps
Approver	R. Selznick
Comments	Bidirectional colorlight w/ cab and options for double FY.
	Slot 1 = CPU/CPU2, Slots 2 & 6 = TRK, Slots 3 & 5 = CLS, Slot 4 = RIO
	Test for: Track display status

700000000000

- **Slot 2 – Coded Track Module**

- **Configuration Parameters**
None

- **Operating Parameters**

• Name	• Value
VCO Voltage	2000 mV
Receive	True
Transmit	True
Code 5	Alternating
EC4 Compatibility	EC4 Plus
Non-vital Change	2 cycles
Vital Change	2 cycles
Shunt Drop	2 cycles
Shunt Pick	5 cycles
Current Limit	10000 mA

- **Slot 3 – Colorlight Module**

Configuration Parameters
None

- **Operating Parameters**

• Name	• Value
Lamp Voltage	9000 mV
Filament Threshold	0 mA
Cold Filament Test	Yes
VPI Debounce	20 ms

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Safetran Systems Corporation
GEO Installation Listing
testGEO

MCF: UCCB003.mcf Created: 14-Sep-2001 14:46 CRC: 9A8E0448

- **Slot 4 – RIO Module**

Configuration Parameters
None

- **Operating Parameters**

• Name	• Value
VPI Debounce	20 ms

- **Slot 5 – Colorlight Module**

Configuration Parameters
None

- **Operating Parameters**

• Name	• Value
Lamp Voltage	9000 mV
Filament Threshold	0 mA
Cold Filament Test	Yes
VPI Debounce	20 ms

- **Slot 6 – Coded Track Module**

- **Configuration Parameters**
None

- **Operating Parameters**

• Name	• Value
VCO Voltage	2000 mV
Receive	True
Transmit	True
Code 5	Alternating
EC4 Compatibility	EC4 Plus
Non-vital Change	2 cycles
Vital Change	2 cycles
Shunt Drop	2 cycles
Shunt Pick	5 cycles
Current Limit	10000 mA

Vital User Options

• Option	• Value
EOPT	False
WOPT	False

- **Non-vital User Options**

• Option	• Value
ETKC5	Off
WTKC5	Off

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Safetran Systems Corporation
GEO Installation Listing
testGEO

MCF: UCCB003.mcf Created: 14-Sep-2001 14:46 CRC: 9A8E0448

None

None

Installed by:	
Signature:	
Date:	

In-Service Check Number:	
Authorized by:	
Signature:	
Date:	

Out-of-Service Check Number:	
Authorized by:	
Signature:	
Date:	

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