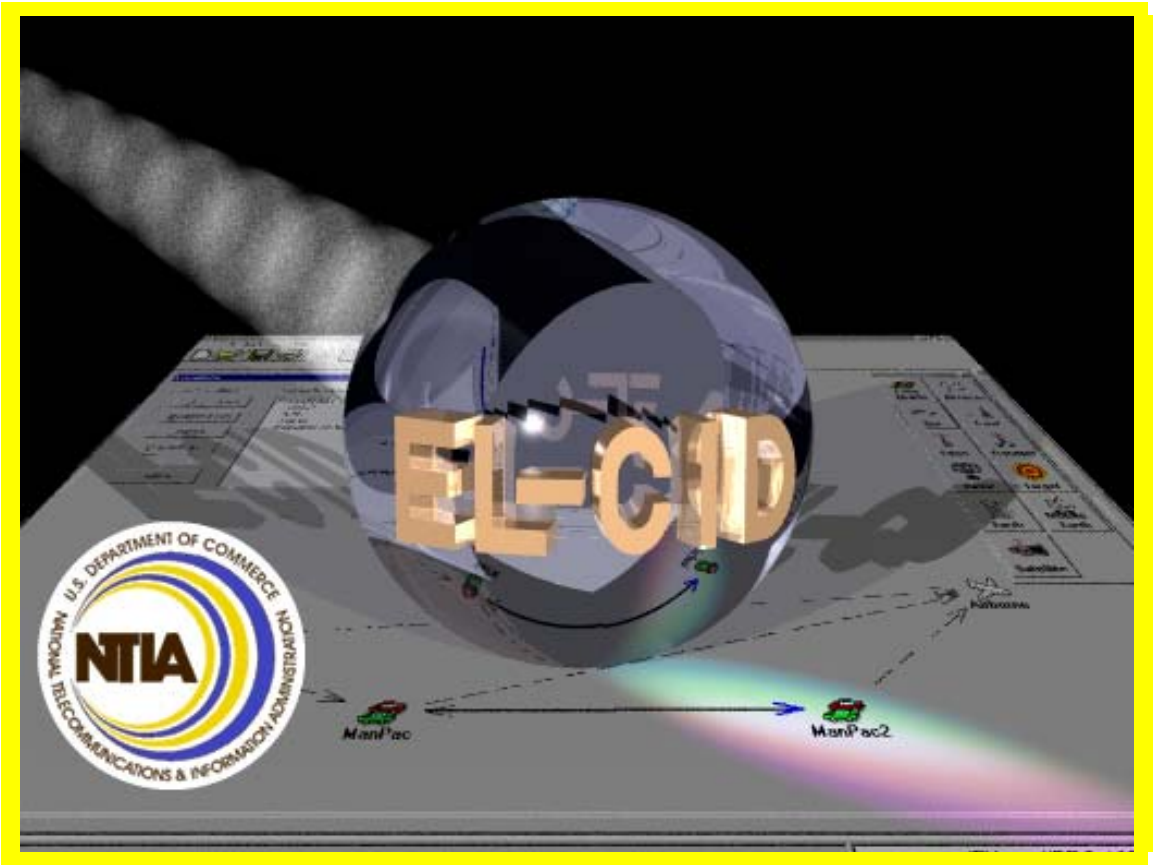


# Equipment Location – Certification Information Database (EL-CID)

## *Version 6.0*

## User Training Manual

**Manual 6.0 Revision 1.3**

**Prepared by:**

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# EL-CID Point of Contact Information

***EL-CID Support Center Web Site***

http://www.ntia.doc.gov/osmhome/elcid/

***NTIA Office of Spectrum Management Web Site***

http://www.ntia.doc.gov/osmhome/osmhome.html

***EL-CID Help Desk***

Email: ELCIDHelp@itt.com

Phone 301.867.2955

***Program Manager NTIA***

Binyam (Ben) Tadesse, BTadesse@ntia.doc.gov

Phone 202.482.1693

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# Table of Contents

# INTRODUCTION

The intent of this manual is to introduce you to some of the capabilities of the EL-CID program. An introduction to all of the capabilities would occupy more time than we are allotted. The user should become familiar with the help file that gives a greater in-depth explanation of the options of the model. Additional help can be obtained from the resources printed on the inside cover of this document.

We understand that these examples are simple in nature and may not completely mimic your operation, but are employed to demonstrate the capabilities of the system.

If you have any comments please send them to the El-CID help desk or if you have a suggestion for the program operation, write a program change request (form can be found under the References Folder on the EL-CID CD) and send it to the EL-CID help desk.

Thank you,

***EL-CID Development Team***
***EL-CID Training Team***

**Please click on the desktop icon "Student Information Sheet" and fill in your information at this time.**

# SOFTWARE INSTALLATION

If not already done, install the EL-CID software. If you are taking this course with an Instructor, follow his instructions (**Appendix B**). If you are taking this course on your own, and have the software Installation CD, follow the instructions you will find on the Training CD in folder **Installation Instructions**. You can also install EL-CID by downloading from the Internet. Go to the EL-CID Support Center Web Site at the web address given on the inside cover of this manual for instructions.

# DOCUMENT CONVENTIONS

**On-screen elements**

Text you see on the screen is **bolded**.

**User Actions and input data**

User actions and input data are **highlighted**. You should perform these actions (or type in the indicated text) as you work through the training.

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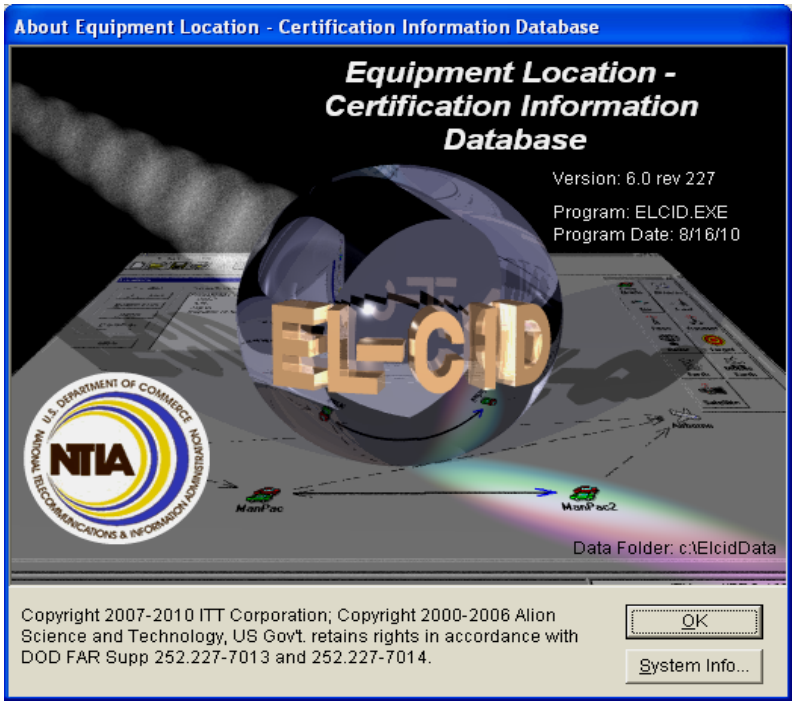
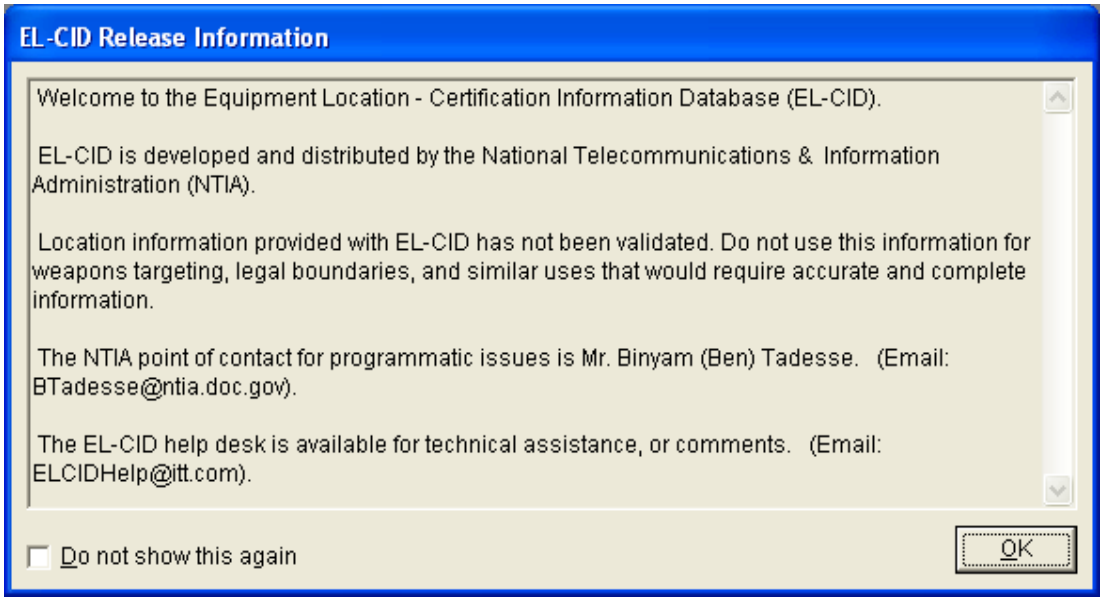
# 1.0 STARTING THE EL-CID PROGRAM

**Step 1.** To start the **EL-CID** program, **double-click** the **EL-CID** icon 

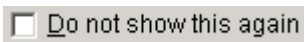
on the Windows desktop. The **About EL-CID** "splash" window will be displayed.




The **EL-CID Release Information** window will then be displayed.

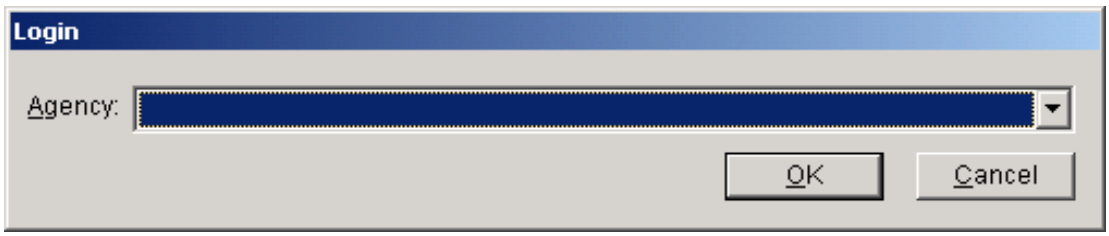



**Step 2.** Check the **Do not show this again** check box if you don't want to see the **Release Information** window in the future and then click **OK**.

***HINT:*** If you check 

you can still retrieve this window by resetting the option in the **Preferred Settings** window.

The **Login** window is displayed.




**Step 3.** Choose your **Agency** by clicking the down arrow **button** and clicking on your agency (e.g., AR - Department of the Army) in the list that drops down. When you are logged in as a DoD agency, additional data items appear on many of the windows and the printed reports differ from when you are not logged in as a DoD agency. The DoD agencies are:

AF – Department of the Air Force
AR – Department of the Army
N – Department of the Navy
CG – Coast Guard

For purposes of this training, choose **AR – Department of the Army**.

***HINT:*** You can type in the first character of your agency name ***abbreviation*** to go down in the list. Pressing the letter again will go to the next agency whose abbreviation begins with the letter.

**Step 4.** Click **OK**. The **Startup EL-CID Wizard** window is displayed.


**Step 5.** This screen allows you to select one of the four EL-CID wizards that will guide you through each capability. Click **Cancel** to go directly into the EL-CID program without the aid of the Startup Wizard.

***HINT:*** Check the **Do not show this again** check box if you don't want to use the Startup Wizard in the future.

# 2.0 SETTING SYSTEM PREFERENCES

The **Preferred Settings** window provides options for setting the data item default units displayed throughout EL-CID and for the customization of wizard and window displays. Three tabs are available for setting preferences: **Default Units, General,** and **Fonts and Colors**.

**Step 1.** To change or review your system preference settings, click the **Preferences button** on the tool bar. The **Preferred Settings** window is displayed. The options currently checked in the tab are the installed defaults.


The **General** tab permits you to set the following options:

- **Large icons in toolbar -** Uncheck the **Large icons** check box if you want the tool bar to display using small pictures.

- **Compact database on startup -** To save some time at startup of the EL-CID program, uncheck the **Compact database on startup** check box (Compacting the database saves disk space and improves the performance of the software.) Remember to manually compact the database from time-to-time by choosing Compact Database on the Maintenance menu.

- **Open data item selector when creating new query -** When you create a new database query, the program normally assumes that you want to immediately pick a data item to query on and automatically displays the Data Item Selector screen. Uncheck the **Open data item selector** check box if you don't want to automatically display the Data Item Selector screen when starting a new query.

- **Display wizard on startup -** When the EL-CID program first starts, an optional Startup Wizard is displayed to assist beginning users. **Uncheck Display wizard on startup** to turn this feature off.

- **Display release information on startup -** When the EL-CID program first starts, a screen displaying release information, including how to obtain help, is displayed. **Uncheck Display release information on startup** to turn this feature off.

- **Show rulers in curve editor** – In the Curve Editor screen, you may display ruler lines to help visualize data points. **Check Show rulers in curve editor** to turn this feature on. You may also set this option when using the curve editor.

- **Use mouse to enter point values in curve editor -** In the Curve Editor screen, you may enter curve points or drag them using the mouse. Check **Use mouse to enter point values in curve editor** to turn this feature on.

- **Allow drag and drop in Tree View** - In the Tree View screen, you can copy and paste nodes of the tree using the Windows clipboard. If you check **Allow drag and drop in Tree View**, you can also copy nodes by dragging them with the mouse.

- **Include XML-Schema (export.xsd) in export files -** EL-CID export files are in XML format. If you want the export file to include the XML-Schema as well, check **Include XML-Schema (export.xsd) in export files**. (advanced users only)

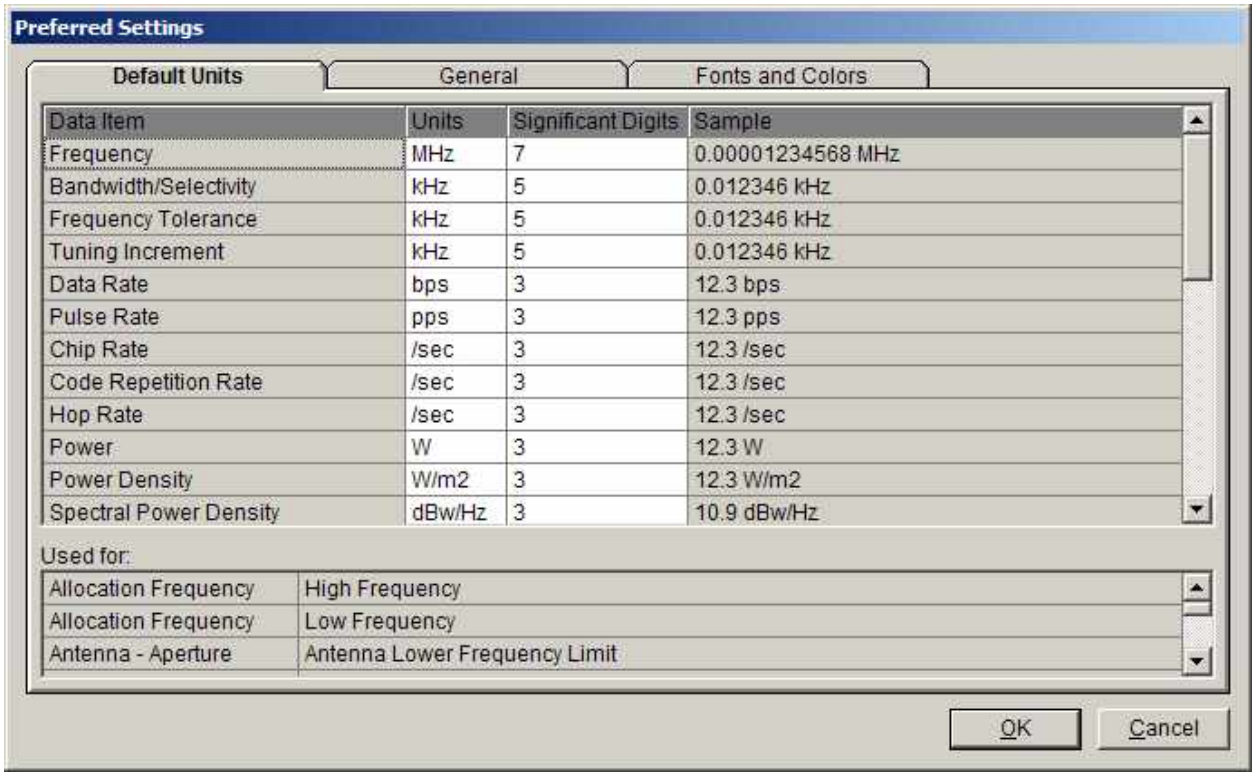
- **Warn about possible viruses when viewing attachments** When you view an attachment from EL-CID, the program will normally warn you about the possibility of viruses, trojans, and other malware that may be in the attachment. Unchecking the **Warn about possible viruses when viewing attachments** box will turn off this warning.

- **Path to Satellite Registration (ITU) -** The **Path to Satellite Registration (ITU)** box is used to tell EL-CID where to find the ITU program (Spacecap), which is used to enter ITU satellite data. If you have the ITU software installed, click the Browse button, and navigate to the ITU program executable file. If you installed the ITU software in the default location, it will be C:\BR_SOFT\Spacecap\Spacecap.exe.

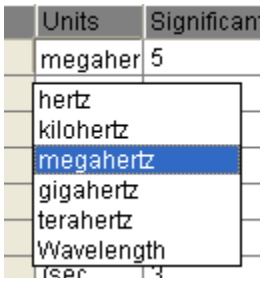
- **Restore map defaults** button - The EL-CID Locations Map normally preserves your layer settings from one viewing to the next. These settings include color, opacity, and labeling, and also your latest zoom settings. To restore the Map to the defaults used when EL-CID was first installed, click the **Restore map defaults button**. (Select **OK** on the EL-CID information window)

- Certain screens containing grids of data permit you to change the order of the columns displayed. The order is remembered from one viewing of the screen to another. To restore these grids to their default settings, **click** the **Restore Grid Defaults** button.

**Step 2.** The **Default Units** tab permits you to control the units used to display and print numeric quantities throughout the program. Click in the **DATA ITEM field** to select it and click the **Units** to get the dropdown list.




You cannot change anything in the shaded columns. Click on the units abbreviation in the **Units** column next to the **Data Item** whose units you want to change. A pick list of available units displays.

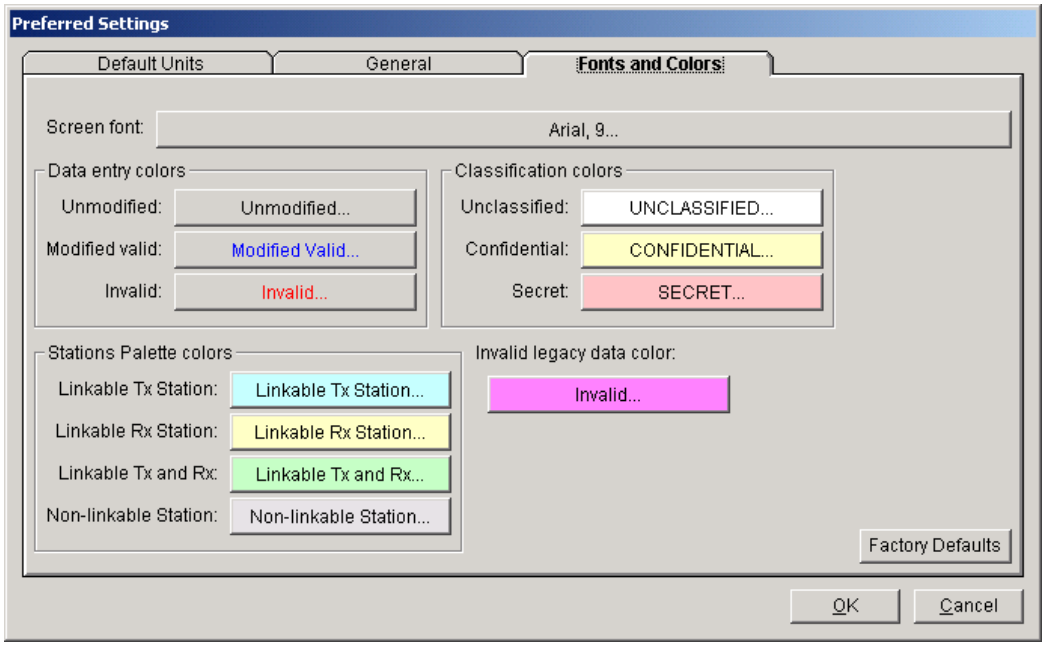



The **Sample** column displays an example of what a quantity might look like in the chosen units. Change the **Significant Digits** to control the rounding of the number displayed.

When you click on a data item, the **Used For** box displays the entities and data items in the database that are affected by changing the units of the highlighted item. The Tree View node name is given first, followed by the field name.

***HINT:*** Internally, the program always stores numeric quantities using fixed units. Changing the units on this screen only affects how the quantities are displayed. Another user can display the same quantities using different units and significant digits. The program always stores numeric quantities with the number of significant digits entered, but always rounds the display to the Significant Digits preference.

**Step 3.** The **Fonts and Colors** tab permits you change the fonts used in most EL-CID screens and to change the colors used in various places throughout the program. If you wish to use a different font, click the button next to **Screen** font and increase the font size.




The **Factory Defaults** button will restore the default fonts and colors as originally set by the EL-CID install program.

***HINT:*** Do not set the font larger than 12 point Arial; otherwise screens will become too crowded to be usable.

**Step 4.** Click **OK** to save any changes or **Cancel** to exit the screen.

# 3.0 REVIEWING HELP TOPICS

The Help file can be accessed from the EL-CID main menu and is available throughout the program. All items covered in training and many functions available within EL-CID, but not covered in training, are explained in extensive detail. These help topics have also been saved to a file on the installation CD (**ELCIDHelp.pdf**) in the **Documents** folder under the EL-CID program.

The **Help** Menu provides:

- **Contents and Index** - Help files for using EL-CID.
- **About**– Displays the **About EL-CID "**splash**"** window. The installed version number and revision number is available on this window, along with copyright information and the path to the folder containing the EL-CID data.

**Step 1.** Select **Help | About.**


The **About Equipment Location – Certification Information Database** window will be displayed. Note the version and revision number. This will be requested by the help desk when calling for assistance.

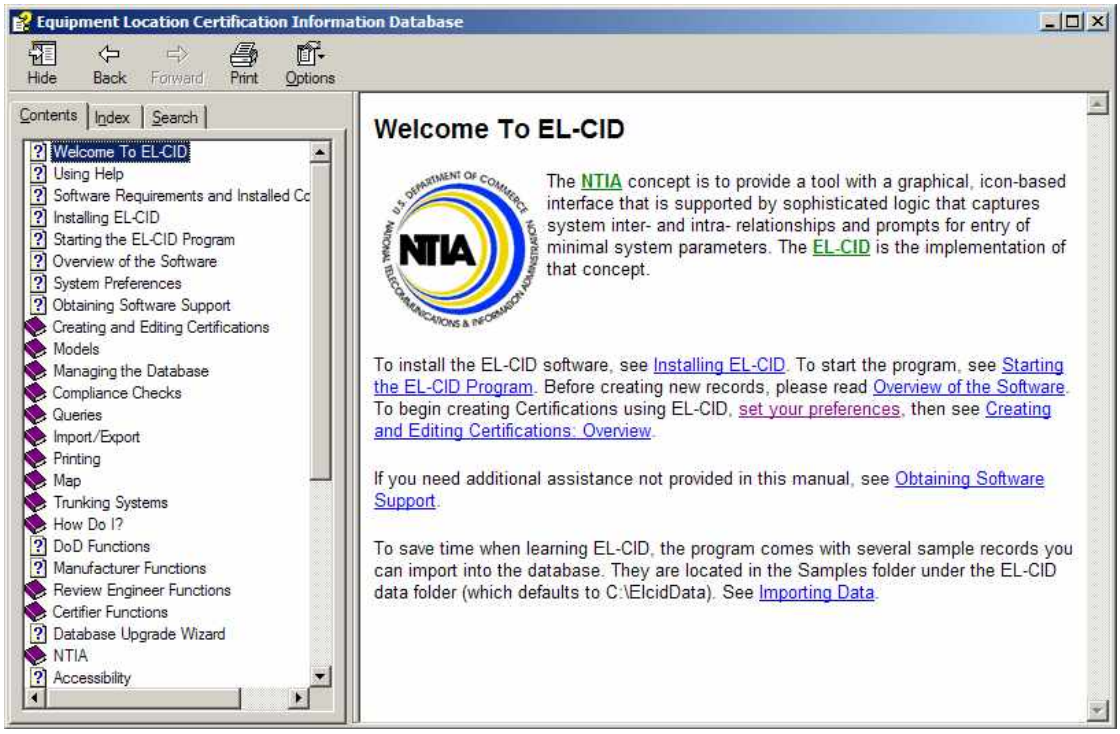

**Step 2.** Select **OK** to close the window.

## 3.1 Navigating The Help Files

**Step 1.** Select **Help | Contents and Index**, or select the **button**.

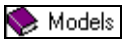

The EL-CID help file will be displayed.

At the top of the help file screen, five navigation icons are visible (**Hide**, **Back**, **Forward**, **Print**, and **Options**). Directly below these icons are the **Contents**, **Index**, and **Search** tabs.



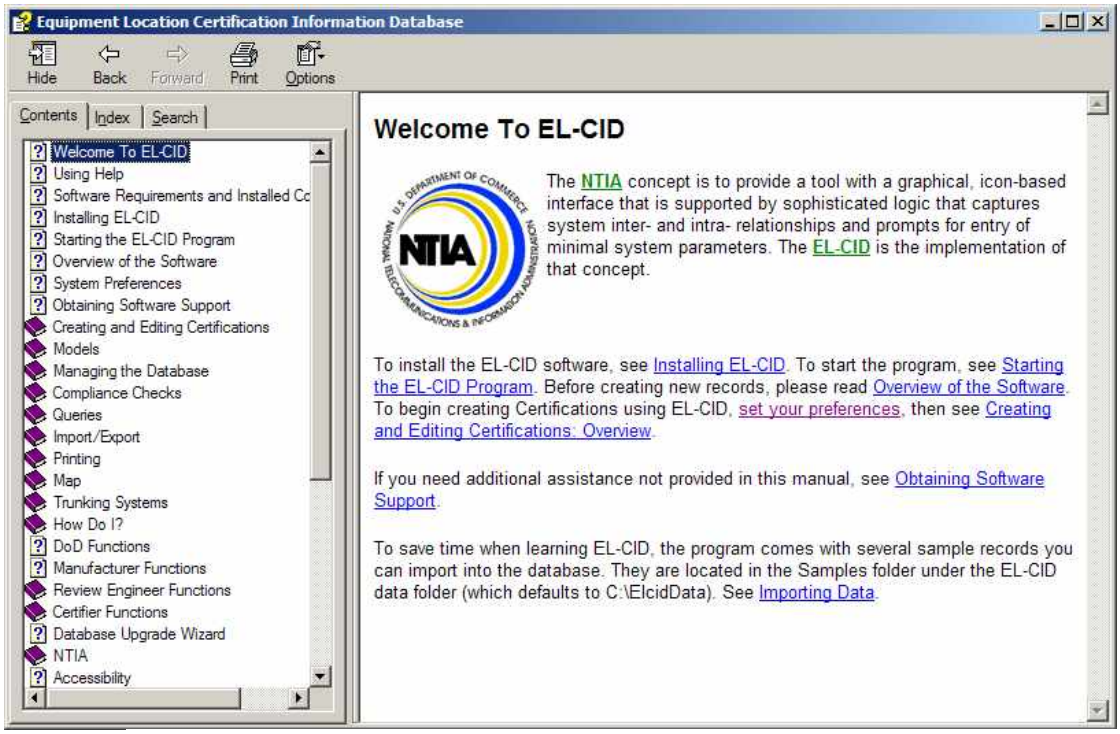

## 3.1.1 Help Tabs

### 3.1.1.1 Contents

**Step 1.** Select the **Contents** tab to view the **Table of Contents**,
Scroll to search for the desired section, indicated by a book icon and content 

.
Double clicking will expand the content, displaying individual topics 

.
**Highlighting** a topic will immediately display the topic information on the right of the screen.



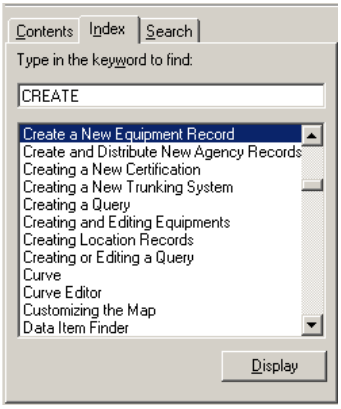

Notice the **GREEN BOLD underlined** letters and the **blue bold underlined** text. The green bold underlined letters are acronyms and, when clicked, display expanding text that defines the acronym. The blue bold underlined text is a hyperlink to other help topics.

**Step 2.** Click **EL-CID.** The acronym expands to display **(Equipment Location Certification Information Database)**.

**Step 3.** Click **Creating and Editing Certifications: Overview.** That topic will be displayed.

### 3.1.1.2 Index

**Step 1.** Select the **Index** tab and type in the keyword to be found, **CREATE**. The keyword list will be displayed automatically, with an alphabetic list of keywords and the first topic entry highlighted that begins with the keyword entered.

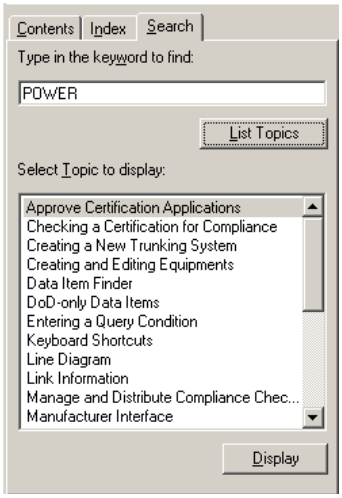



**Step 2.** Click **Display**, if this is the desired topic. Otherwise, highlight another topic.

### 3.1.1.3 Search

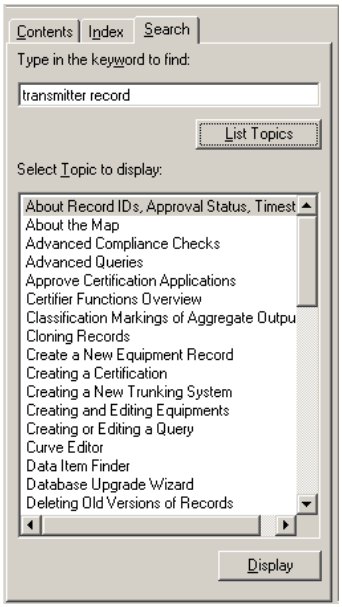
**Step 1.** Select the **Search** tab and type in the keyword to be found, **POWER**.

**Step 2.** Click **List Topics**. A list of topics containing the selected keyword will be displayed. **Highlight** the desired topic and click **Display**. The topic will be displayed on the right of the screen with every occurrence of the keyword highlighted.




**Step 2.** Double-click the topic **Satellite Power Flux Density**. Note the word **power** is highlighted throughout the Help topic.

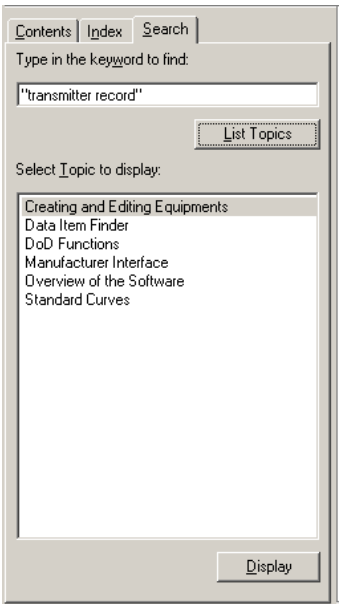
**Step 3.** If you want to find a specific phrase of two or more words, you must enclose them within double quotes. Type in **transmitter record,** and then click **List Topics**.




Notice how many topics were found.

**Step 4.** Select **Advanced Queries** and **Display**. These topics contain the word **transmitter** or the word **record** somewhere in them.

**Step 5.** Enclose the search term within quotes; **"transmitter record"** and click **List Topics**.




Notice that the number of topics has been reduced.

**Step 6.** Select **Overview of the Software** and **Display**. These topics contain the phrase **transmitter record**.

***NOTE***: The entire help is also available in PDF format as a file named **ELCIDHelp.pdf** on the training CD or in the **Documents** sub-folder within the EL-CID program folder.

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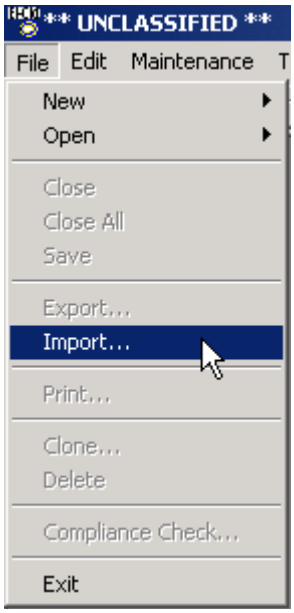
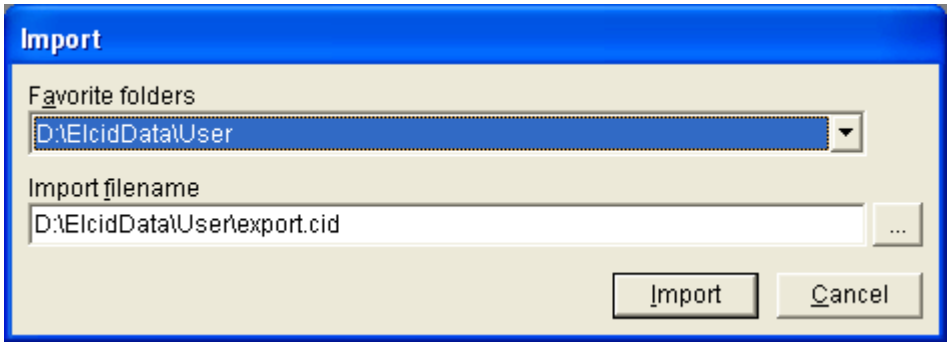
# 4.0 UPDATING NTIA DATA

From time to time, NTIA will issue data updates. For example, NTIA may distribute approved Certification records, or updated Compliance Checks. These updates will typically be posted on the EL-CID Support Center Web Site for you to download. Updates will be announced by e-mail to all users on the mailing list. (The Internet address for the web site is given on the inside cover of this manual.) In this chapter, we will apply some data updates to the EL-CID database by importing records from files on the Training CD.

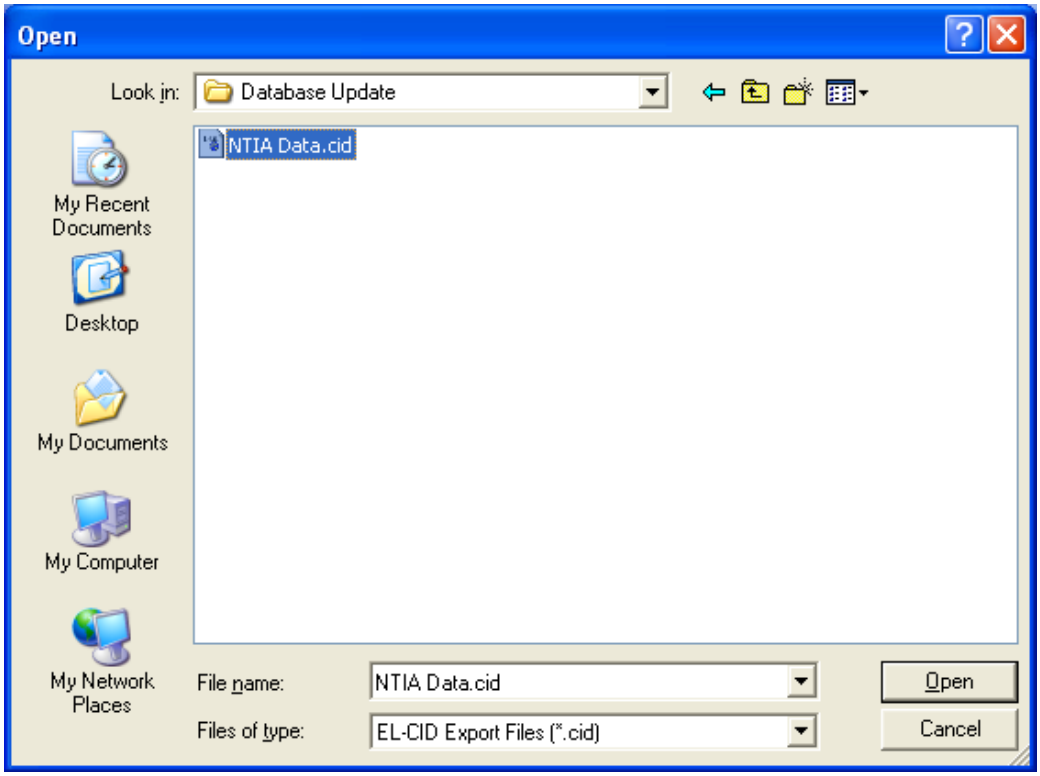
**Step 1.** **Insert** the Training CD in the CD drive. Click the **Import button**  on the tool bar, or from the menu **File | Import.**



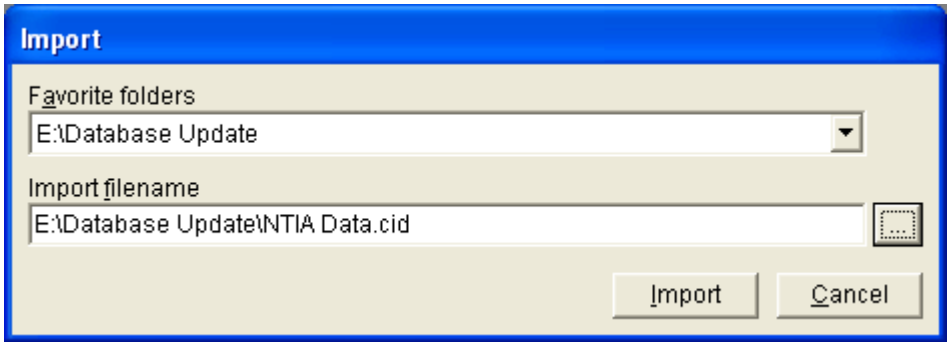

The **Import** window is displayed.



**Step 2.** Click the **browse button** ... to select the file to import. The folder we are using is on the **Training CD** and called **Database Update** (For training, this will be the **E:\Database Update**). Highlight the filename **NTIA Data.cid** and then click **Open**.

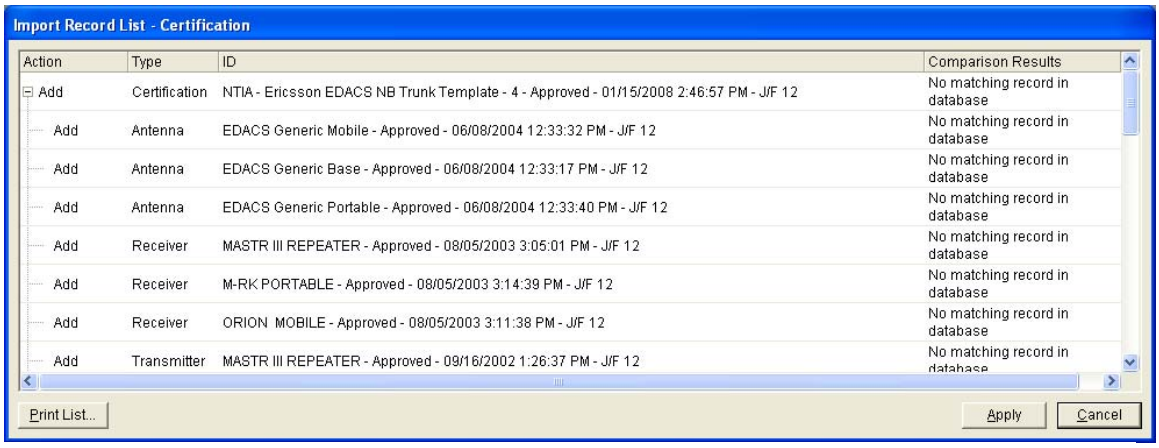



The **Import** window displays the selection.

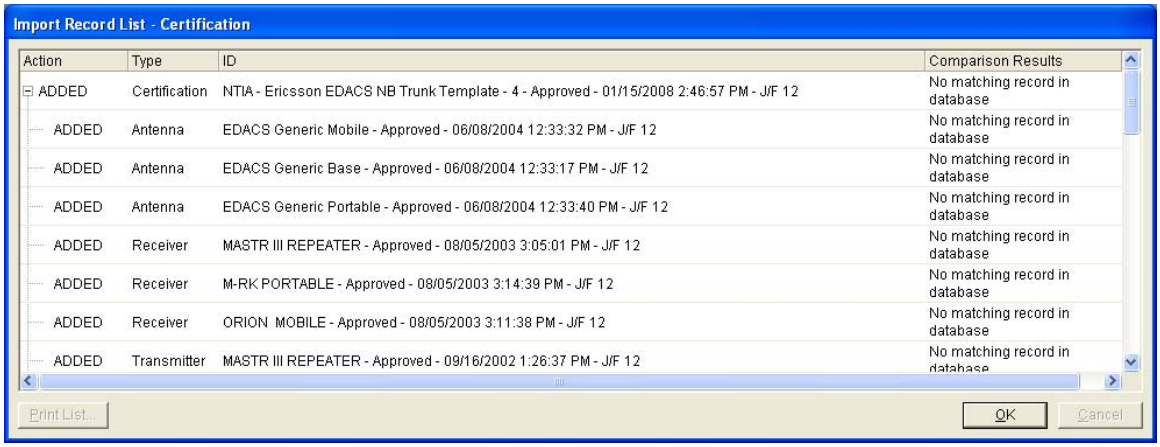



**Step 3.** Click **Import**. A progress window is displayed followed by the **File Description**.

**Step 4.** Click **OK**. The **Import Record List - Certification** window is displayed.




**Step 5.** Click **Apply**. The **Progress** window is briefly displayed and then the **Import Record List - Certification** window is again displayed.




Notice that **Add** changes to **ADDED** in the **Action** column. At this point, the records have been added to the local EL-CID database.

**Step 6.** Click **OK** to close the window.

The procedure for importing updated Compliance Checks is similar to above, but slightly different. If your instructor tells you to, turn to **Appendix C** and follow the instructions there to import updated Compliance Checks.

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# 5.0 CREATING A NEW CERTIFICATION

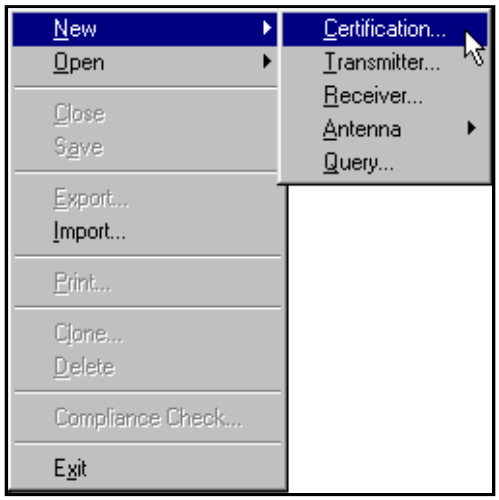
The main purpose of EL-CID is the creation and maintenance of Certification Applications along with their supporting equipment and location data. When you create a Certification Application, the first thing you normally do is to create a line diagram which is a logical picture of the system.

Next, you add Transmitter, Receiver, and Antenna equipment records to the stations. You may use existing equipments in the database, or create new ones.

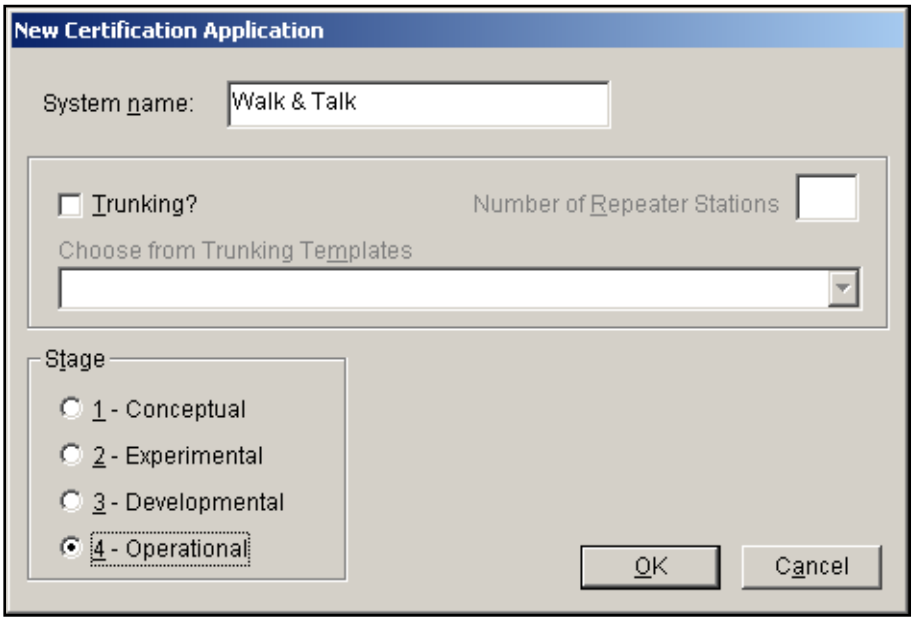
Next, you specify Locations where you want the equipment to be certified for use.

Finally, for each Link in the diagram, you select Station Class(es), the transmitting and receiving equipment(s), and select the modes (frequencies, powers, and emissions) to be certified

**Step 1.** Click the **Create New Certification** button on the tool bar or from the menu select **File|New | Certification**.




The **New Certification Application** window is displayed.

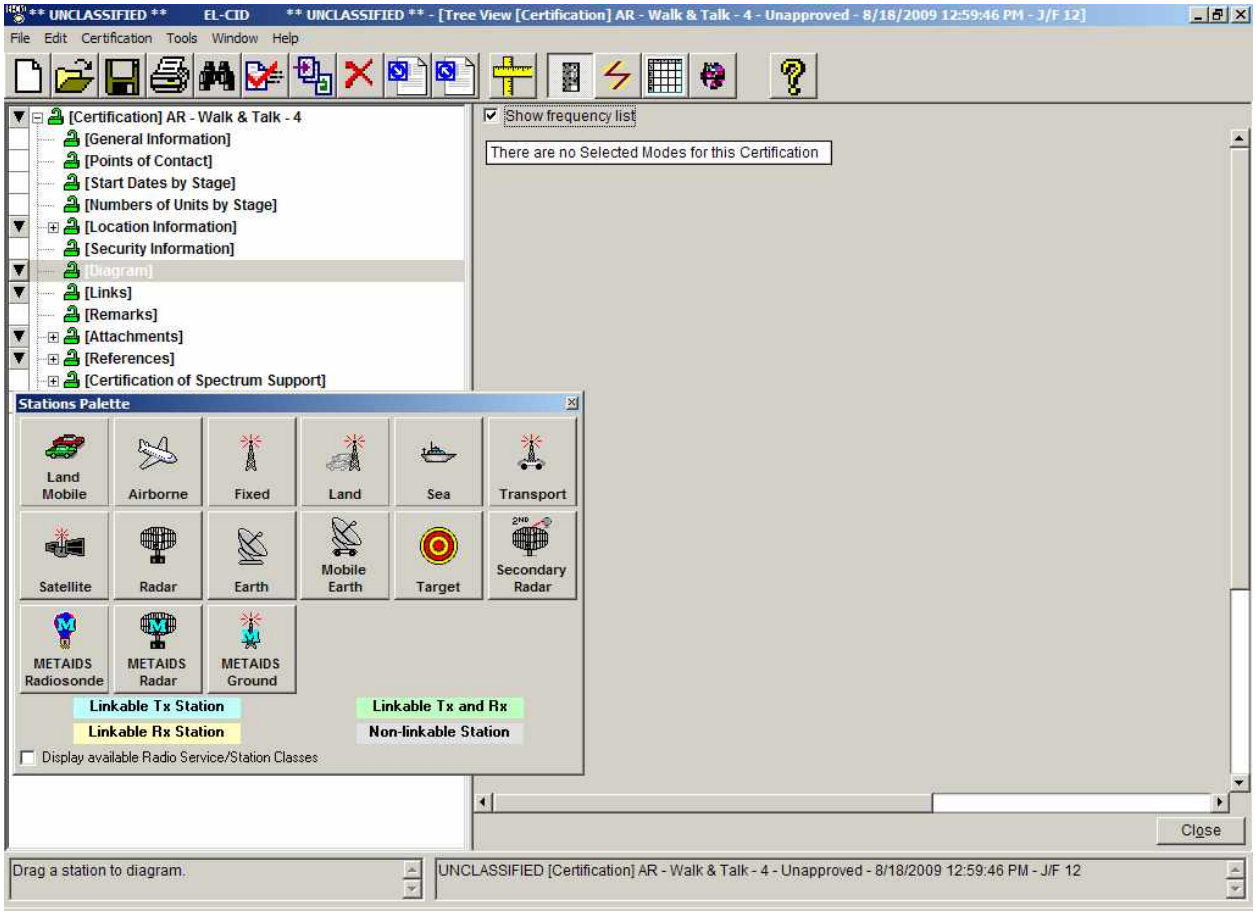


**Step 2.** **Enter** the following data and then click **OK**.

| Field | Value |
|---|---|
| **System name** | **Walk & Talk** |
| **Stage** | **4-Operational** |

***HINT:*** You may not use the word "**and**" in a **System Name**. You may use the **ampersand** or "**AND**" (uppercase).

The **Tree View** is displayed with a blank Line Diagram automatically selected and the **Stations Palette** displayed. (When creating a new Certification Application, the **Stations Palette** is automatically displayed.)

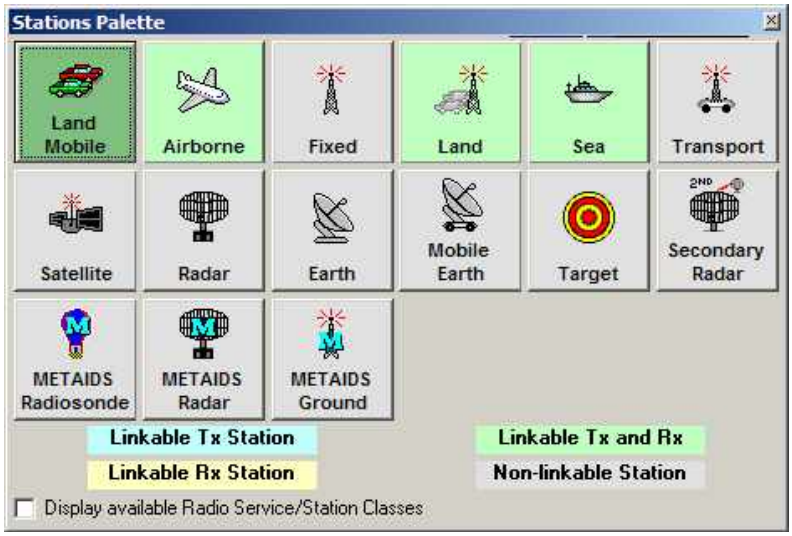


## 5.1 Selecting Stations

The Line Diagram is used to create a logical picture of a Certification system. The diagram consists of one or more named Stations depicted by icons, which you create by dragging onto the diagram. Links between stations are drawn as arrows from the transmitting Station to the receiving Station. In some cases, a reverse link also exists and is drawn as a single line with arrows on both ends.

You are about to create a diagram by dragging icons from the **Stations Palette** to the **Diagram** drawing area. There are rules about which icons can be linked to each other. These rules are displayed using various colors on the **Stations Palette**.

**Step 1**. On the **Stations Palette** window, click (but do not drag) the **Land Mobile** icon.



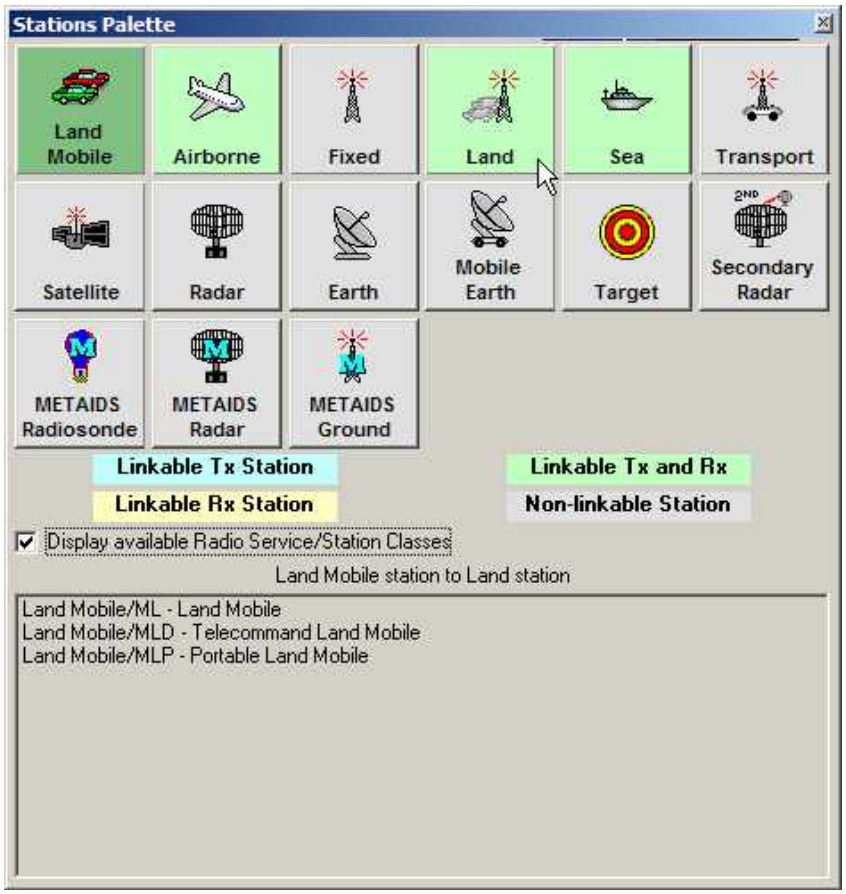

The icon colors indicate that one may draw a link from a **Land Mobile** icon to an **Airborne**, **Land**, or **Sea** icon. One may also draw a link from any of these three icons back to a **Land Mobile** icon. Because the **Land Mobile** icon is a darker green color, one may also draw a link between two **Land Mobile** icons.

**Step 2**. Click (but do not drag) the **Radar** icon.

One may draw a link from a **Radar** icon to a **Target** icon, but not from a **Target** to a **Radar**. One may draw a link from a **Radar** to a **Secondary Radar**, or the reverse. One may not draw a link between two **Radar** icons.

The icons that you choose for your diagram determine the Radio Services and Station Classes available for the links between them.

**Step 3.** On the **Stations Palette** window check the **Display available Radio Service/Station Classes** check box. Click the **Land Mobile** icon, then move the mouse pointer so that it is positioned over the **Land** icon, but do not click.



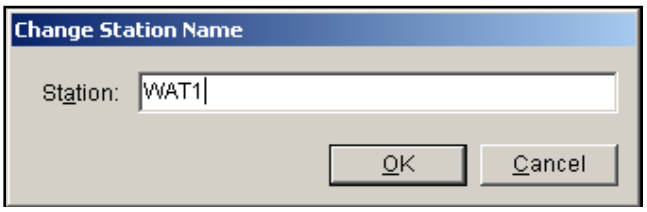

The panel at the bottom of the **Stations Palette** informs us that when a link is drawn from a **Land Mobile** icon to a **Land** icon, one may only choose from Radio Service **Land Mobile**, and Station Classes **ML – Land Mobile**, **MLD – Telecommand Land Mobile**, and **MLP – Portable Land Mobile**.

***HINT:*** Remember that the panel shows available choices from the selected icon to the icon under the mouse pointer.

**Step 4.** Click on the **Land Mobile** icon and **drag** it to the drawing area on the right.

The **Change Station Name** window is displayed with **Land Mobile** as the station name.

**Step 5.** Type **WAT1** and then click **OK**.

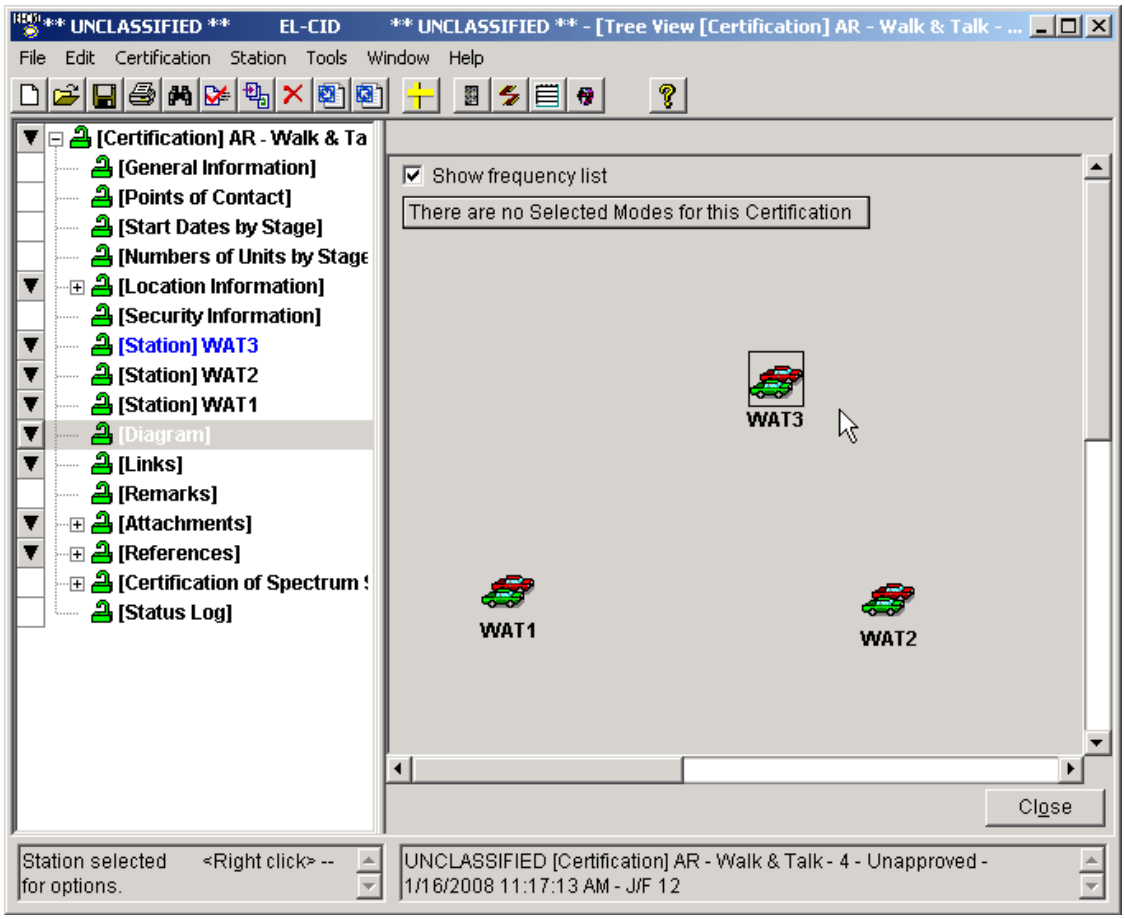



**Step 6.** **Drag two more Land Mobile icons to the drawing area and name them WAT2 and WAT3.**

**Step 7.** Close the palette using the **X** in the upper right or by clicking the **Stations Palette button** on the tool bar.

***HINT:*** The **Stations Palette** may be redisplayed by clicking the **Stations Palette** button again.

The diagram will resemble the following.




***HINT:*** You may move the Stations by clicking and dragging them.

***HINT:*** When you hover the mouse pointer over an icon, the station type pops up in a small yellow box.

**Step 8.** Click on the **WAT3** icon. Notice that a box is drawn around the **WAT3** icon, indicating that it is selected. **[Station] WAT3** is highlighted in blue in the Tree View outline on the left. The status panel in the lower left corner indicates that a station has been selected.

***HINT:*** If you right-click on an icon, a context menu pops up. One of the choices is **Rename**, which will permit you to change the name of a Station. To avoid confusion, make sure your Stations are named **WAT1**, **WAT2**, and **WAT3** as you see in the picture above.

## 5.2 Drawing Links between Stations

Links between stations are drawn as arrows from the transmitting Station to the receiving Station. There can be only one link from any given transmitting Station to a receiving Station. In some cases, a reverse link also exists and is drawn as a single line with arrows on both ends. You draw a reverse link so that the receiving Station also becomes a transmitting Station and the transmitting Station also becomes a receiving Station. The link lines remain as dotted until certain parameters are set for each link.

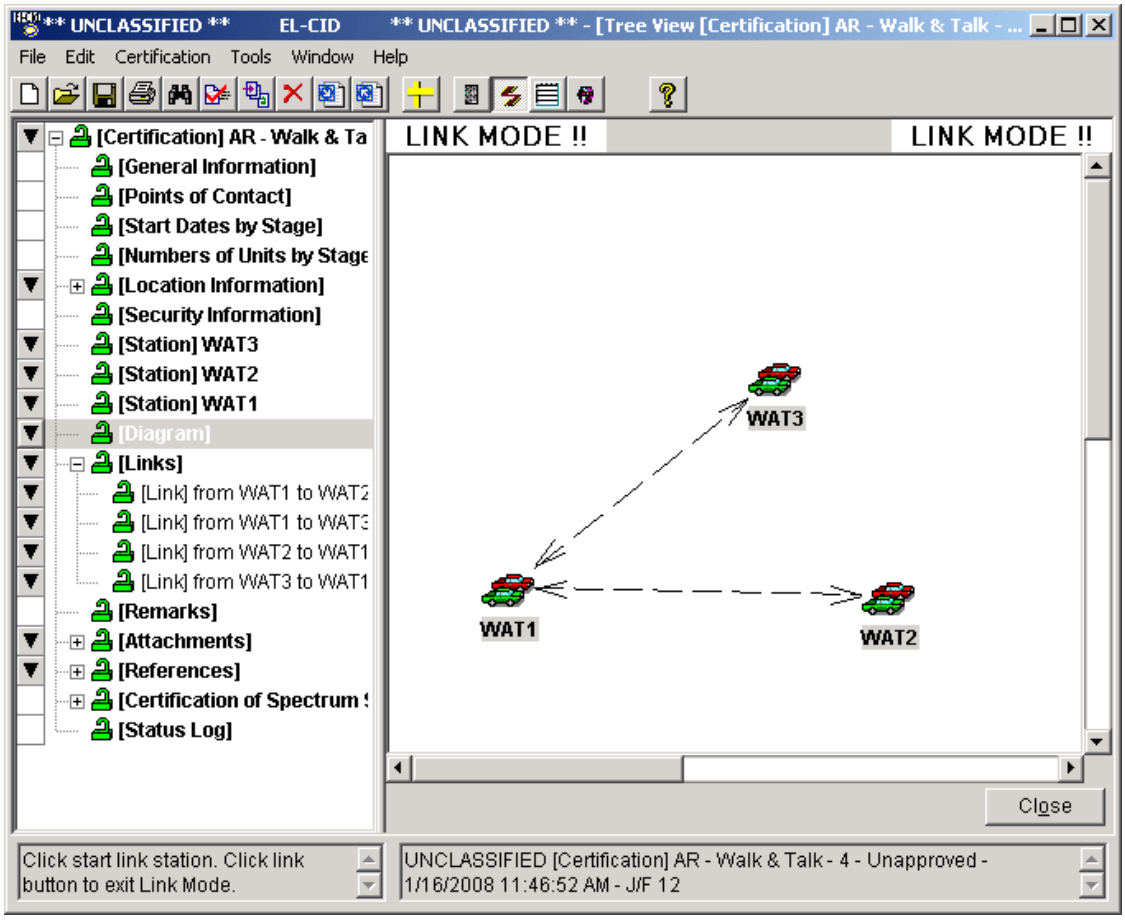
**Step 1.** Click the **Create New Links button** on the tool bar. The words **LINK MODE!!** appear at the top of the diagram and the screen changes color, whenever the program is in **LINK MODE!!**.

**Step 2.** Click once on the transmitting station **WAT1** icon, and then click **once** on the receiving station, **WAT2** icon. A dotted line will be drawn between the stations, with an arrowhead at the receiving end of the link. Notice that the link was added to the Tree View.

***HINT:*** Watch the status panel in the lower left corner. It will indicate which step you are on while drawing links.

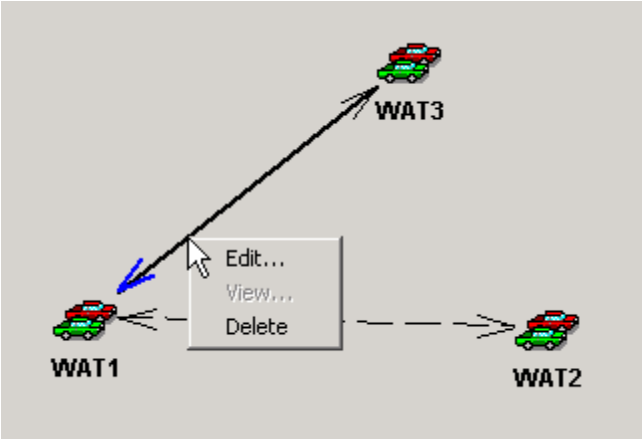
***HINT:*** If it is not permitted to draw a link between two Stations, the mouse pointer will change to ⃠. For example, it is not permitted to draw a link from a Station to itself. In fact, this is a handy way to cancel drawing a link -- if you start a link by clicking on the wrong Station, click the same Station again.

**Step 3.** Draw additional links **from WAT2 to WAT1** and **from WAT1 to WAT3** and **from WAT3 to WAT1**.



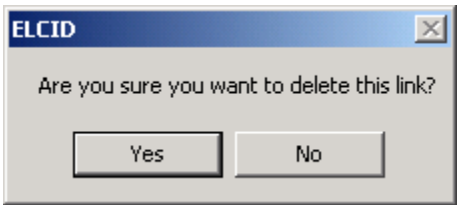
**Step 4.** Click the **Create New Links button**  on the tool bar. The words **LINK MODE!!** will disappear from the top of the diagram and the screen will change color.

**Step 5.** In Step 3 above, we purposefully made an error. We should not have drawn a link from WAT3 to WAT1. Now we want to delete that link. **Right-click** on the link line near to the **WAT1** icon and select **Delete** in the menu that pops up.

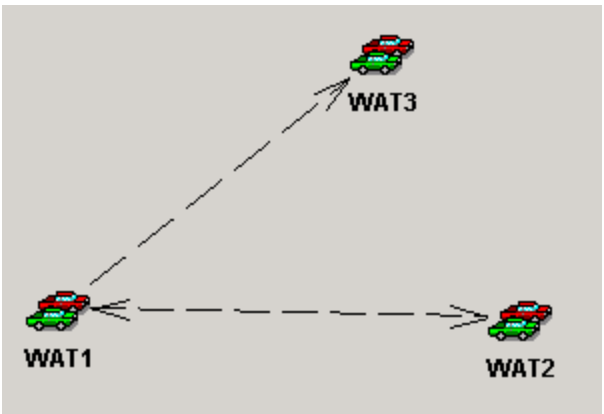



***HINT:*** Note where the mouse pointer is in the picture above at the moment the user right-clicked. It is near the **WAT1** end of the line, but not too close to the end, otherwise the user would select the WAT1 Station and not the link. Also notice how the arrowhead has turned blue, indicating which link is selected.

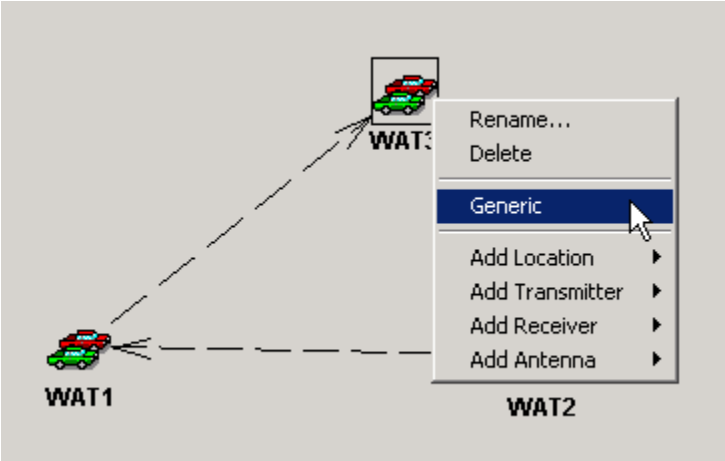
When you select **Delete**, the following window appears.




Click **Yes**. Your diagram should now look something like this.



**Step 6.** **Right-click** on the **WAT3** Station icon, and then click **Generic** in the popup menu that is displayed,




A shaded background is displayed around the Station icon to indicate that it is generic.

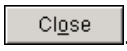

***HINT:*** A generic icon does not allow receiving equipment data to be entered. The generic icon may be used as a termination for a link but cannot be used as a transmitting station. The transmitting station (**WAT1**) is now able to enter the link data between the transmitter and the generic station.

**Example:** You are certifying a telemetry transmitter. The receiver is an already-approved equipment.

**Example:** You are certifying a broadcast transmitter, therefore there is no particular receiver.

## 5.3 Useful Terms and Hints

**Save** There are at least three ways to save data:

- **Click** on the **save button**  . This will save your data and allow you to continue processing.
- **Click** on the **any node** on the left side of the screen in the Tree View section. This will save your data and allow you to continue processing.
- **Click** on the **close button** 

. This will save your data and *close* the Certification.

**Tree View**

Refers to the left side of the screen which presents an image similar to windows explorer.

**Expand Tree View**

To expand the Tree View, highlight a node in the Tree View and press 

. All nodes under the highlighted node will be expanded. You can also expand the node by **clicking** on the ⊞ button.

**Collapse Tree View**

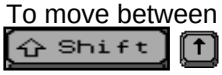
To collapse the Tree View, highlight a node in the Tree View and press 

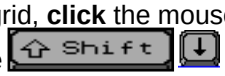
. All nodes under the highlighted node will be collapsed. You can also collapse the node by **clicking** on the ⊟ button.

**Data Grid**

Refers to the right side of the screen and is a place to input data. Data items in bold are required data items.

**Move between lines in the data grid.**

To move between lines in the data grid, **click** the mouse  in the data field, or use the 

to move up or the 

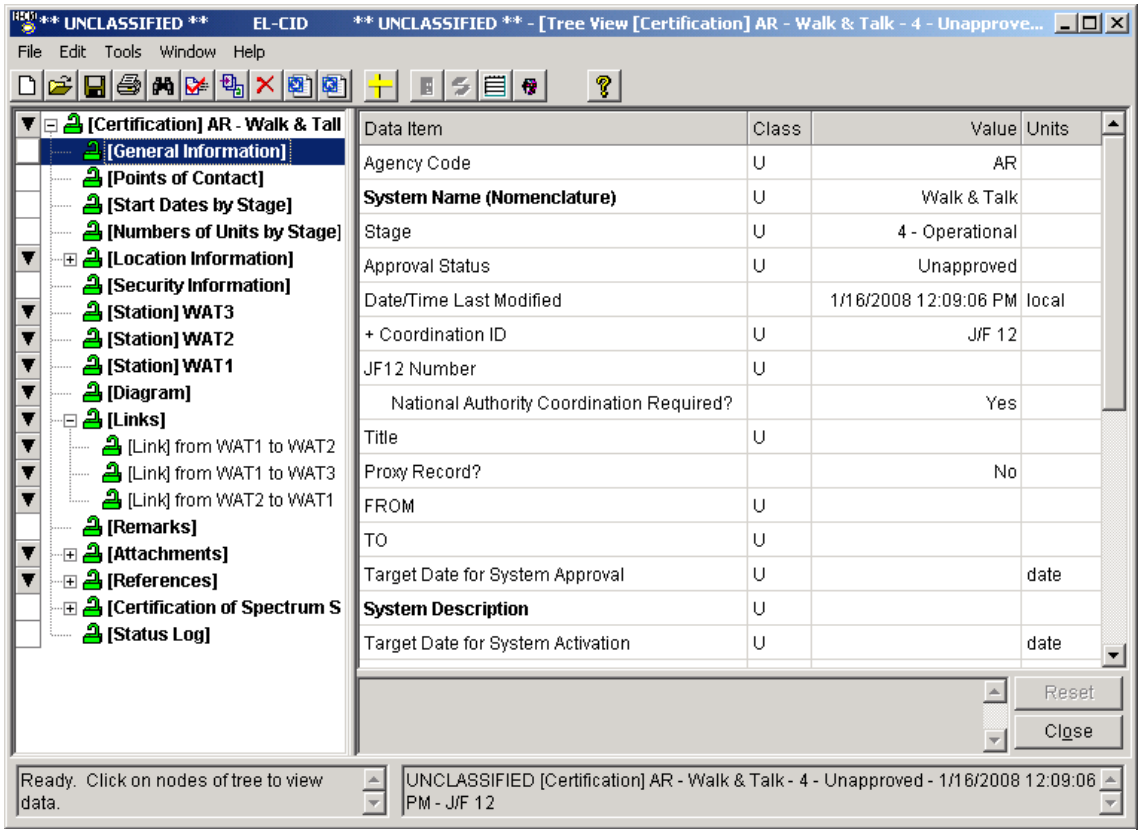
to move down the grid. The 

key also moves the cursor between fields in the data grid.

## 5.4 Entering General Information

The Tree View is the main screen for entering Certification and equipment data. The Tree View has two main panels -- the tree on the left and the data entry panel on the right. The tree panel on the left displays the parts of the record in a tree-like outline (hence the name Tree View). Each node has a type in square brackets and (for some nodes) a name. When you single-click on a node of the tree, the right-hand panel displays all the data item fields for that node.

**Step 1.** Click on the **General Information** node in the Tree View.




**Step 2.** **Enter** the following information by clicking in the appropriate field and entering the information.

| Field | Value |
|---|---|
| **Target Date for System Approval** | **09/30/2012** |
| **System Description** | **This unit is a small, lightweight radio capable of providing two-way ground communications** |
| **Target Date for System Activation** | **03/30/2013** |
| **Target Date for System Termination** | **10/30/2023** |

***HINT:*** If entering data with units, select the units first, then enter the data. Check each data field to determine if there is a dropdown list (indicated by ▼), an expanded text/memo field or user select list (indicated by ...). Entries in **BLUE** indicate that the data is in the correct format. Entries in **RED** indicate that there is a problem with the data format. Data items in **bold** are required data items.

***HINT:*** There are several fields in the **General Information** node that are only visible when logged in as a DoD agency. If not logged in as DoD, they are hidden. These items include:

**National Authority Coordination Required?**
**Title**
**FROM**
**TO**
**Extent of Use**
**Number of Units in Same Environment**
**System Cost Comments**

When you click on these items, **DoD Only** appears in the description block near the bottom.

**Step 3.** Save the data you've entered by clicking on **any node** in the Tree View (including the node you are working on), or by clicking the **Save button**  . When saved, the data will turn **BLACK**.

***HINT:*** At any time before saving the data, you can click the **Reset** button to restore the node to its previous state, discarding your changes.

***WARNING***: Do not click the **Close** button in the lower right corner. This will save the data, but it will also close the Tree View screen and return to the main window! If you inadvertently do this, use the Open button  on the tool bar to reopen the Walk & Talk system.

## 5.5 Entering Location Data

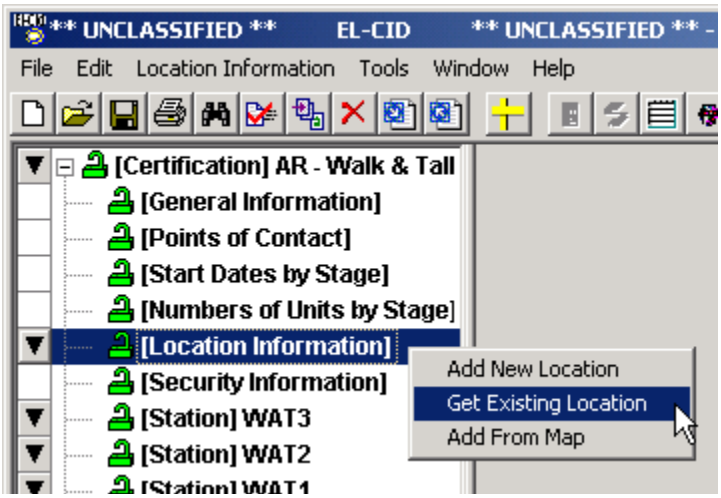
Before approving a Certification Application, NTIA needs to know where the intended area of operation will be. This is accomplished by adding Location records to the Certification record in the Tree View. Where Locations are placed within a Certification depends upon the kind of system being certified.

Locations may be specified in two places. [Location] nodes may appear Underneath the **[Location Information]** node. These Locations are associated with a Stage and they apply to the entire Certification as a whole, and/or

Underneath each **[Station]** node in the tree. These Locations apply to the Station they are under. In effect, these are the Locations of the Antennas used at the Station. Refer to the Help for additional requirements

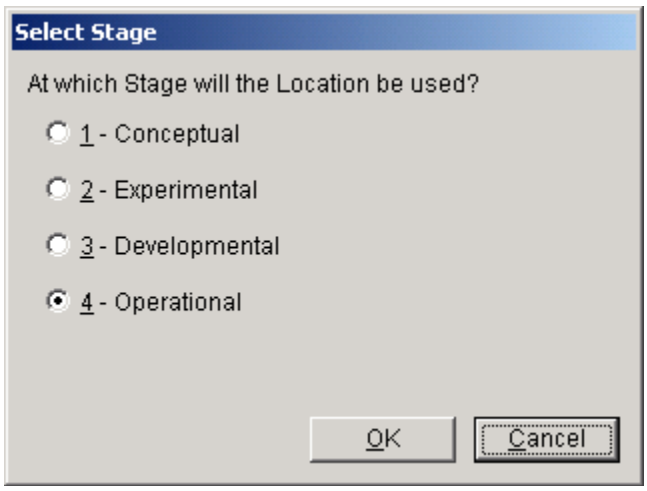
Locations are separate records in EL-CID, which means they may be separately displayed, created, edited, queried, imported, and exported using EL-CID capabilities. They may be used in more than one Certification record.

**Step 1**. **Right-click** on the **Location Information** node in the Tree View, then click **Get Existing Location**.

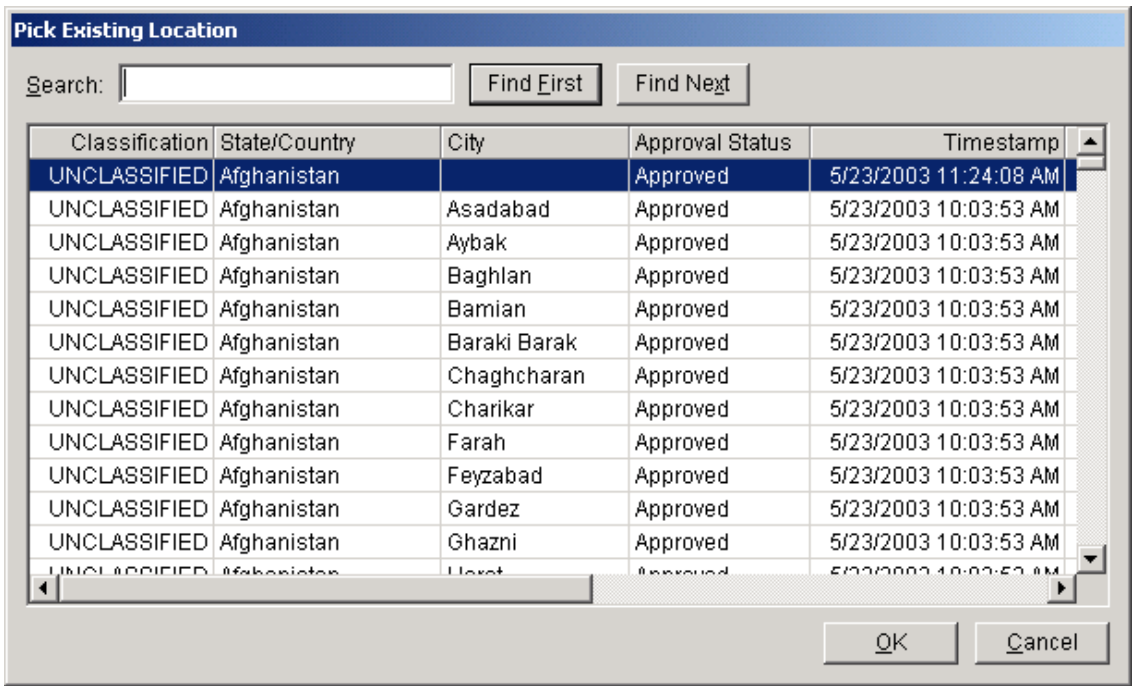



***HINT:*** Another way to pop up menus on the Tree View outline is to click the down arrow button ▼ to the left of the node. A third method is to click the node to select it, and then choose the desired option from the main menu – in this case **Location Information**.

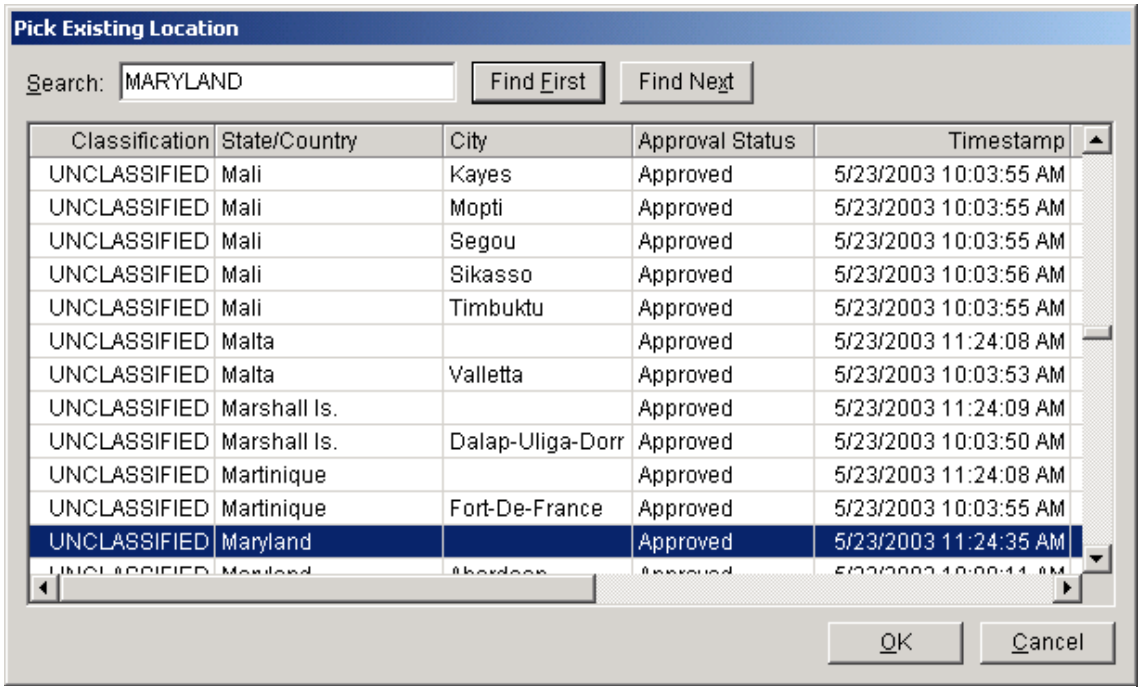
The **Select Stage** window appears.




**Step 2**. With **4 – Operational** chosen (the default), click **OK**. The **Pick Existing Location** window is displayed.

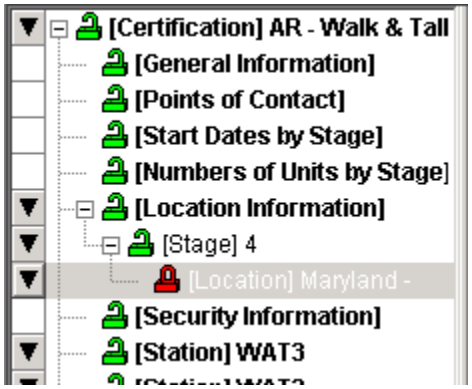



**Step 3.** Type **maryland**, and click the **Find First** button. The list scrolls down and **Maryland** (without a city) is highlighted.




***HINT:*** The Maryland location without a **City** name represents the entire state of Maryland.

**Step 4.** Click **OK**. The location data will be added and another entry in the Tree View will be created.



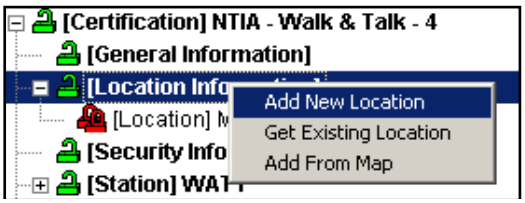

The red, closed padlock next to **[Location] Maryland** indicates that this is an Approved location and you are not permitted to alter the Maryland data.

***HINT:*** The **Points of Contact**, **Start Dates by Stage**, and **Numbers of Units by Stage** nodes in the picture above only appear because you are logged in as a DoD agency. If you had not logged in as a DoD agency, they would not appear. Similarly, the **Remarks** node only appears when logged in as DoD.

**Step 5.** Next, we need to add a location called **Training Area 1** in the state of **Virginia**. **Repeat Steps 1 and 2** to display the **Pick Existing Location** window.

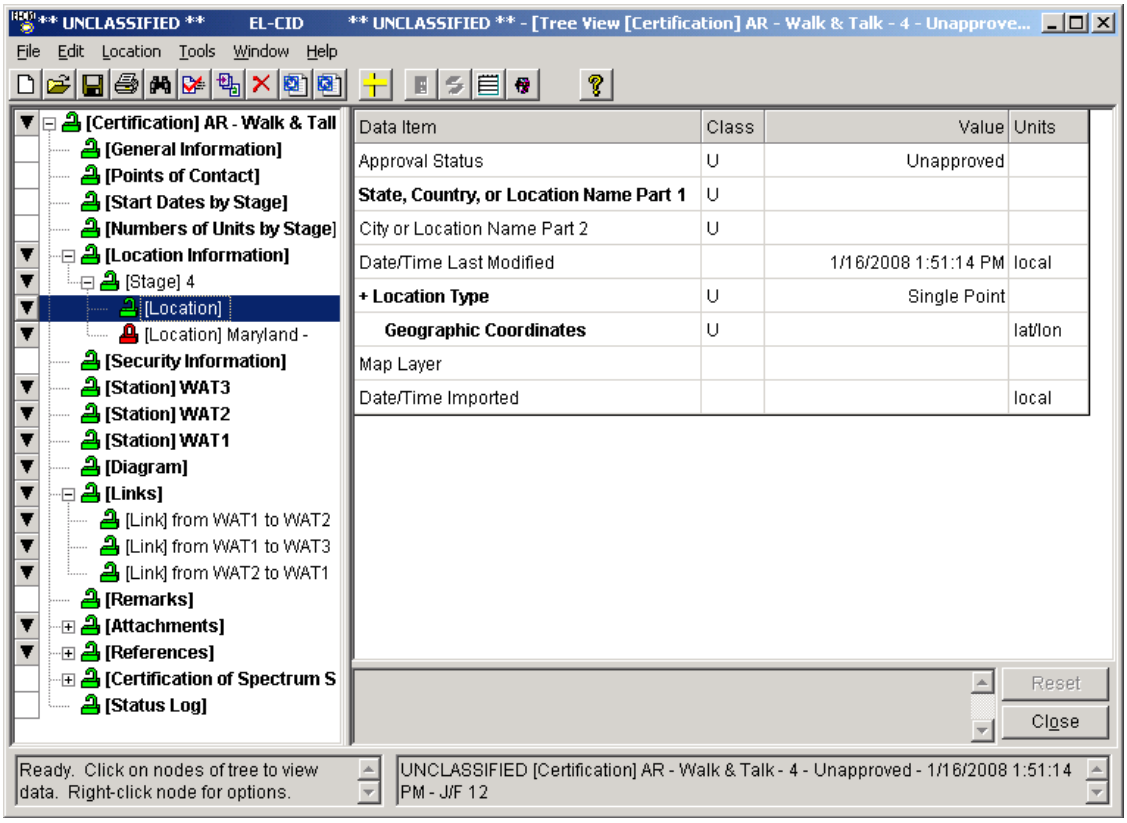
**Step 6.** Type **training area** in the **Search** box and verify that a location with City **Training Area 1** and State/Country **Virginia** does not already exist. Click **Cancel** on the **Pick Existing Location** window to close it.

**Step 7.** To create a new location, **right-click** on the **Location Information** node in the Tree View and then click **Add New Location**.




When the **Select Stage** window appears, click **OK**.

The new **Location** data grid is displayed.

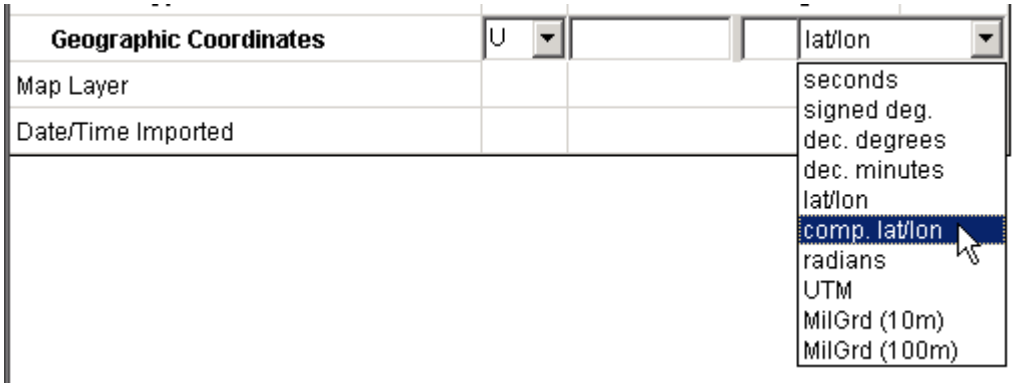



**Step 8.** **Enter** the following information.

| Field | Value |
|---|---|
| **State, Country, or Location Name Part 1** | **Virginia** |
| **City or Location Name Part 2** | **Training Area 1** |
| **Location Type** | **Center point and Radius** |
| **Geographic Coordinates** | **370000N 0800000W** |
| **Radius** | **100 km** |

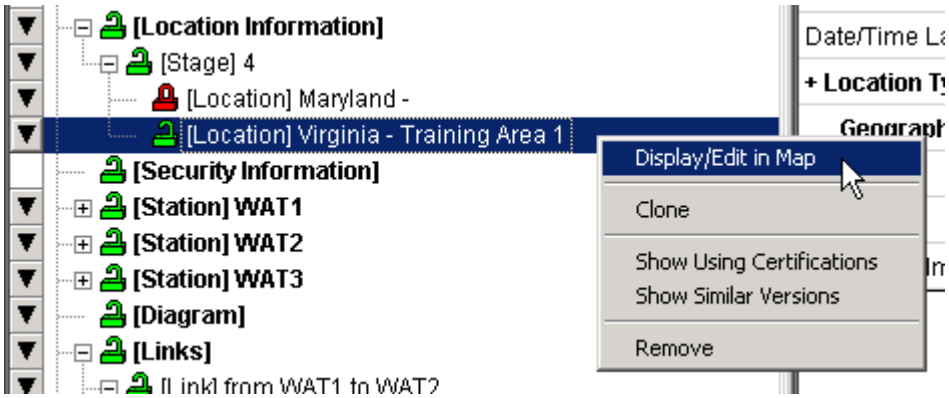
***HINT:*** The Geographic Coordinates are divided into two segments in the data item (latitude on the left and longitude on the right). Since the minutes and seconds are zero, you need only type **37N** for the latitude, press **TAB** key, type **80W** for the longitude, and press **TAB** key.

***HINT:*** If you are familiar with entering coordinates in SPECTRUM XXI, you can click on the units selector at the right side labeled **lat/lon**. Select **comp. lat/lon** in the dropdown list that appears, then type in **370000N0800000W**. When focus leaves the coordinates data item, it returns to the default units format (determined by your Preferences).

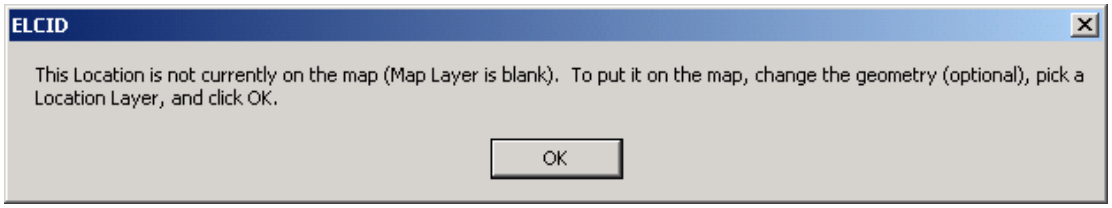



**Step 9.** **Save** the data.

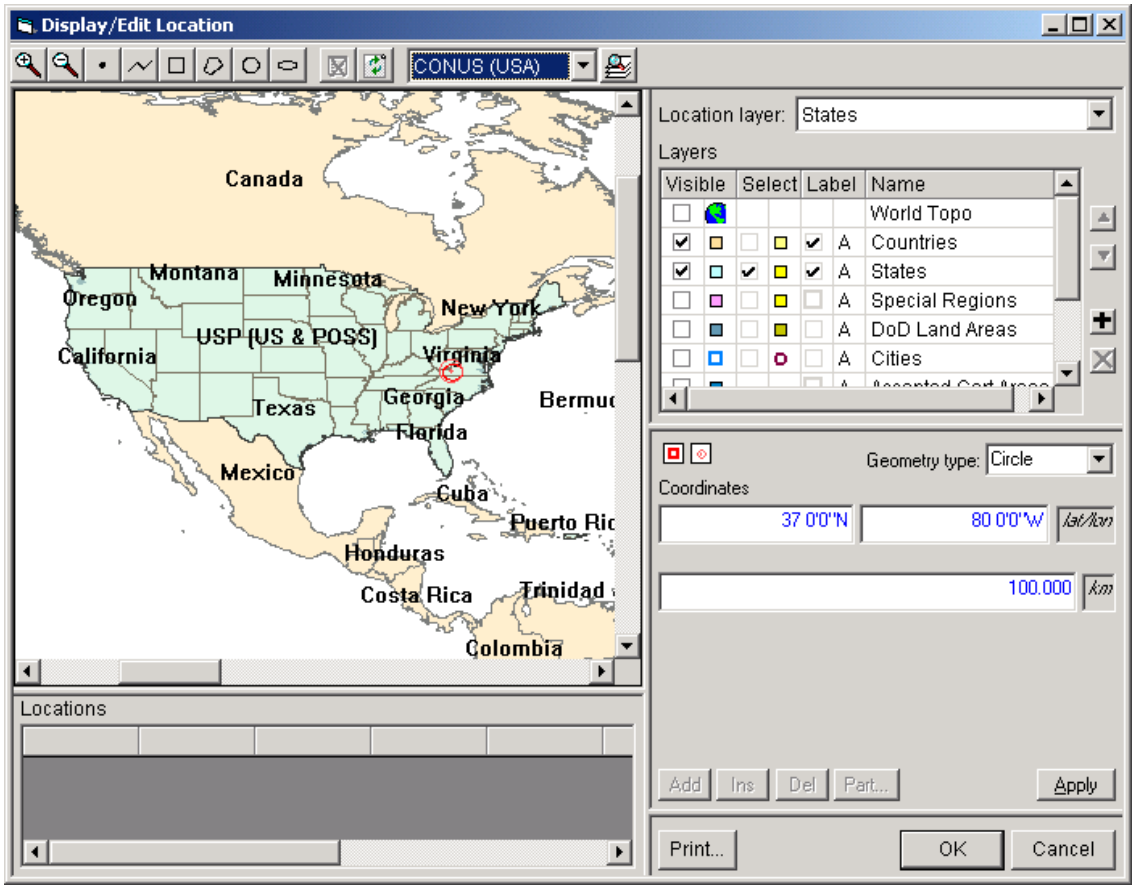
**Step 10.** Notice that the **Map Layer** item may not be edited. To enter the Map Layer, we must put the location "on the map". To do this, **right-click** on the **[Location] Virginia – Training Area 1** node in the Tree View and then click **Display/Edit in Map**.




The following informational dialog appears.




**Step 11.** Click **OK**. The **Display/Edit Location** window appears.




***WARNING:*** *Do not click anywhere on the map*. Doing so will change the coordinates of the **Virginia – Training Area 1** location. If you inadvertently do that, click **Cancel** and go back to Step 10.

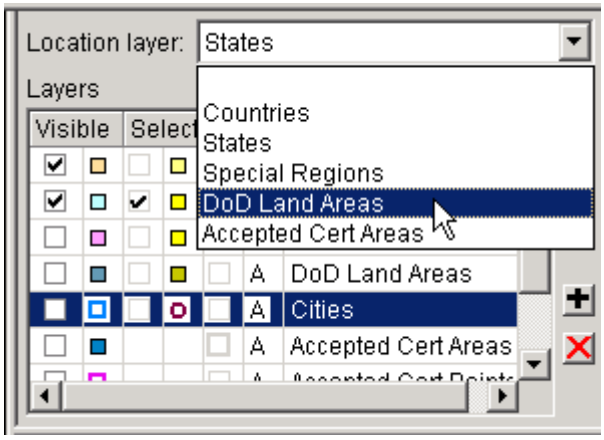
The **Layers** grid in the upper right corner lists the various layers of location data. The map software supports layers of three types, depending upon the type of location geometry that may be stored in the layer:

| | |
|---|---|
| Polygon | The layer may contain locations whose coordinates form a polygon, rectangle, or circle. The **Countries**, **States**, **Special Regions**, and **DoD Land Areas** are examples. |
| Point | The layer may contain locations that have single point coordinates. **Cities** is such a layer. |
| Line | The layer may contain locations whose coordinates form a line or multiple line segments. **Interstates** is such a layer. |

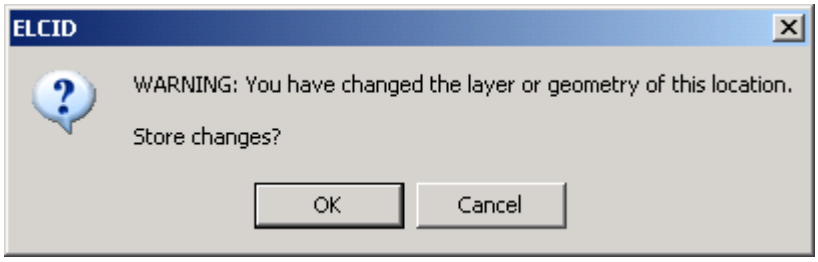
One may not mix geometry types within a layer. For example, you cannot mix polygons and points within a single layer.

To put the **Virginia – Training Area 1** location on the map, you must select a layer whose geometry type is compatible. Since we created the location as a **Center Point and Radius** (circle), we must pick a layer that contains polygons.

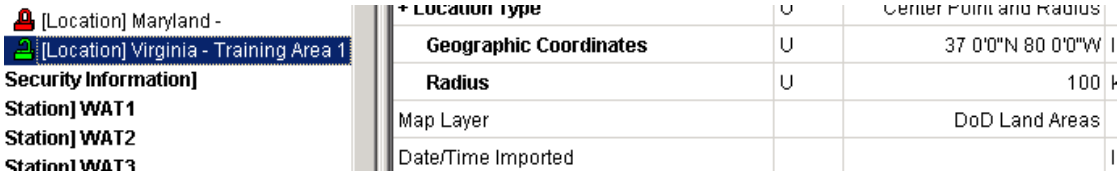
**Step 12.** Click the down arrow next to the **Location layer** box in the upper righthand corner of the window. Notice that the program lists all the layers whose geometry type is polygon. Select **DoD Land Areas**.




**Step 13.** Click the **OK** button. The following window appears.




**Step 14.** Click **OK**. After a moment, the **Tree View** window reappears. **DoD Land Areas** now appears in the **Map Layer** data item.



## 5.6 Entering Application Classification Markings

EL-CID handles data up to the Secret level of classification. For most individual data items you can enter a classification. In the Tree View, the classification of individual data items is displayed and edited in the Class column.

Throughout the program, classified data items are colored to help you locate them as follows:

- White - Unclassified
- Yellow - Confidential
- Pink - Secret

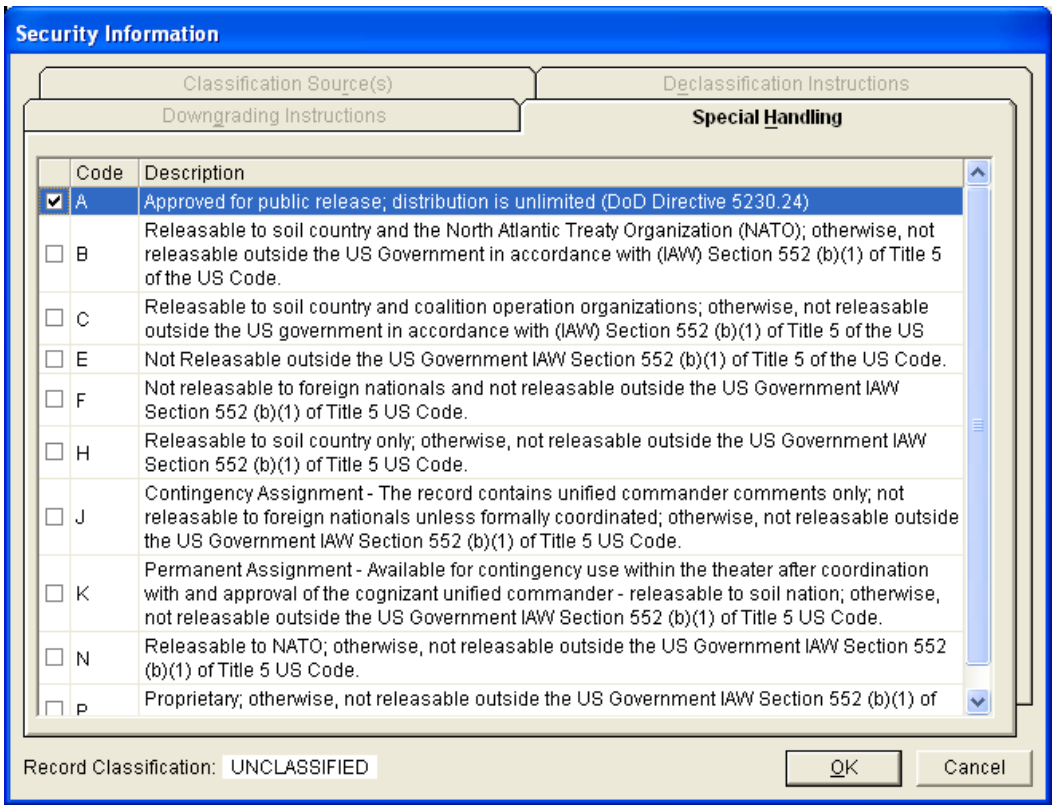
*NOTE:* If an output would be considered classified when several items are output together, then all of the individual data items should be marked at that minimum classification. For example, if Nomenclature and Frequency are considered to be Confidential when appearing together, then both Nomenclature and Frequency should be marked Confidential or higher.

When you change the classification of any data item; the overall classification of the record is re-calculated and upgraded or downgraded as necessary.

The overall classification of the record is displayed in the lower right-hand corner of the Tree View screen.

In addition, the highest classification of all the data in the database is displayed in the title bar.

**Step 1.** Click the **Security Information** node in the Tree View. The **Security Information** window will be displayed.




The overall Record Classification is displayed at the bottom left of this screen. You may not change this, except by changing the classification of individual data items in the record.

The Security Information screen has four tabs used for entering the following information:

- **Special Handling**. All Certification records are required to specify a Special Handling Code.
- **Classification Source(s).** Enabled only if the record is Confidential or Secret.
- **Declassification Instructions**. Enabled only if the record is Confidential or Secret.
- **Downgrading Instructions**. Enabled only if the record is Secret.

All Certification records are required to have a Special Handling Code. When you create a brand new Certification, the record is unclassified and the Special Handling Code defaults to "A", which means unlimited distribution. If a record becomes classified, the "A" code is erased and you must specify a new Special Handling Code. In addition, all classified records are required to have a Classification Source and Declassification Instructions. Secret records may also have Downgrading Instructions.

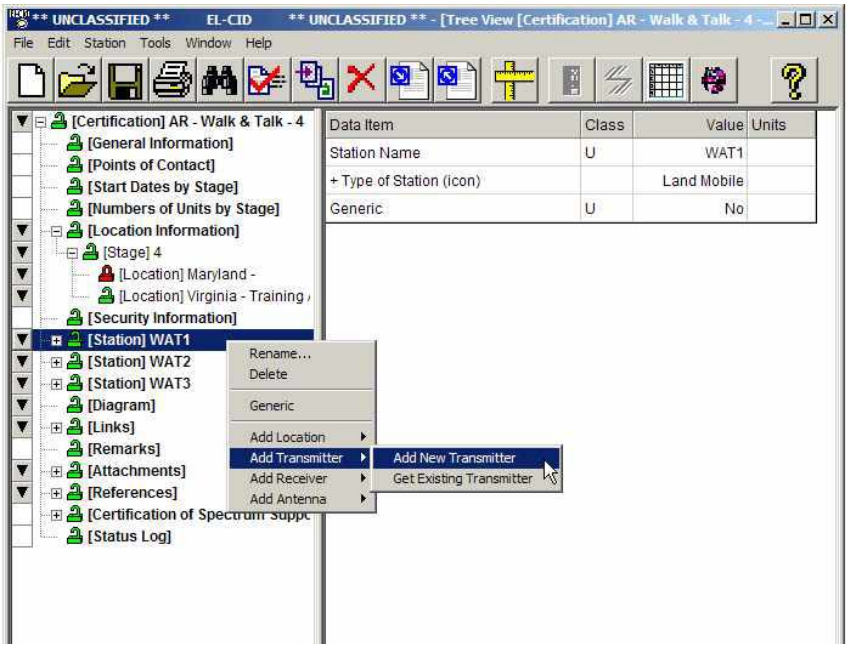
**Step 2.** Click **OK** to save the data.

## 5.7 Entering Station Data

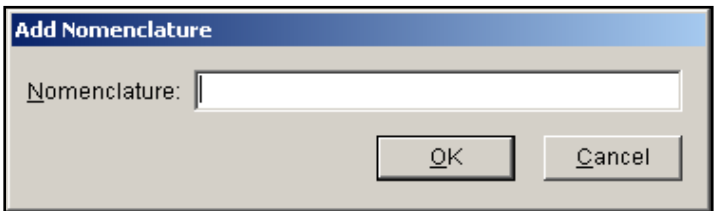
Station data consists of transmitter data, receiver data, and antenna data. If required, you could also enter specific location data.

### 5.7.1 Entering Transmitter Data

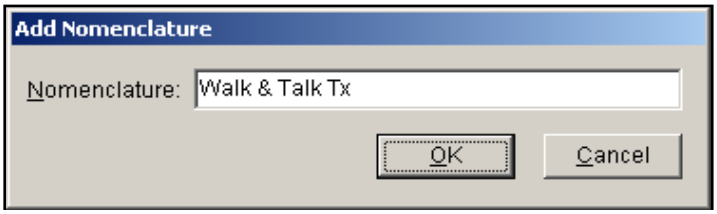
**Step 1.** **Right-click** on the **[Station] WAT1** node in the Tree View and then **select Add Transmitter | Add New Transmitter**.




The **Add Nomenclature** window will be displayed.




**Step 2.** Type **Walk & Talk Tx** and then click **OK**.




The **Transmitter** data grid is displayed:

| Data Item | Class | Value | Units |
|---|---|---|---|
| **Nomenclature** | U | Walk & Talk Tx | |
| Manufacturer | U | | |
| Model Name and Number | U | | |
| Approval Status | U | Unapproved | |
| Date/Time Last Modified | | 1/16/2008 2:40:29 PM | local |
| Coordination ID | U | J/F 12 | |
| Type | U | | |
| Filter Type | U | | |
| Proxy Record? | | No | |
| FCC Acceptance Number | U | | |
| **Frequency Stability (+/-)** | U | | |
| **Frequency Stability Units** | | | |
| **Output Device** | U | | |
| **Tuning Method** | U | | |
| **Suppression of Harmonic** | U | No | |
| Radar or Communications? | U | Communications | |
| Date/Time Imported | | | local |

**Step 3.** **Enter** the following data

| Field | Value |
|---|---|
| **Manufacturer** | **RELM Communications, Inc** |
| **Model Name and Number** | **Model 127A** |
| **FCC Acceptance Number** | **K95LT20002** |
| **Frequency Stability (+/-)** | **5** |
| **Frequency Stability Units** | **ppm** |
| **Output Device** | **Transistor** |
| **Tuning Method** | **Synthesizer** |

***HINT:*** Manufacturer is a select list (indicated by  ). You can type **relm** in the **Search** box and click **Find First** to find the correct entry.

The **bolded items** are required. You are expected to enter **Frequency Stability** and **Frequency Stability Units**. If you click on **Output Device**, you will see **DoD required item** appear in the description block at the bottom. This indicates that this item is required when logged in as a DoD agency. It is optional when not logged in as a DoD agency. Similarly, **Tuning Method** and **Suppression of Harmonic** are DoD required items.

**Step 4.** **Right-click** on **[Transmitter] Walk & Talk Tx** and then select **Add Power**.

The **Power** data grid is displayed.

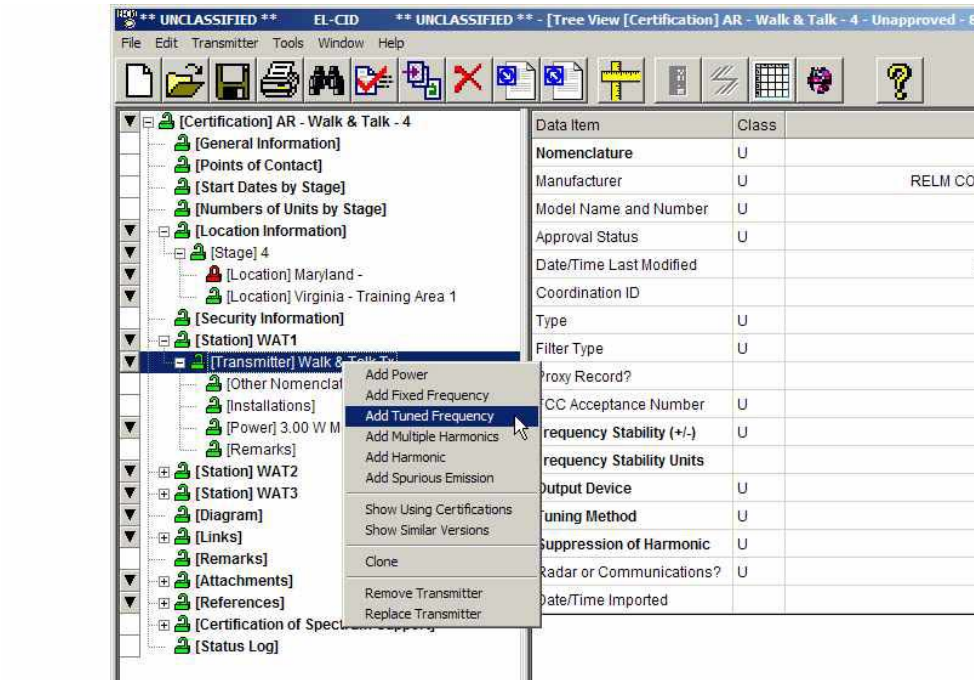
| Data Item | Class | Value | Units |
|---|---|---|---|
| **Power Type** | | | |
| Power Lower Limit | U | | W |
| **Power Upper Limit** | U | | W |

**Step 5.** **Enter** the following data.

| Field | Value |
|---|---|
| **Power Type** | **Mean** |
| **Power Upper Limit** | **3 W** |

***HINT:*** **Power Lower Limit** only appears when logged in as a DoD agency. NTIA requires only the maximum power of the transmitter.

**Step 6.** **Right-click** on **[Transmitter] Walk & Talk Tx** and then select **Add Tuned Frequency**.




The **Tuned Frequency** data grid is displayed.

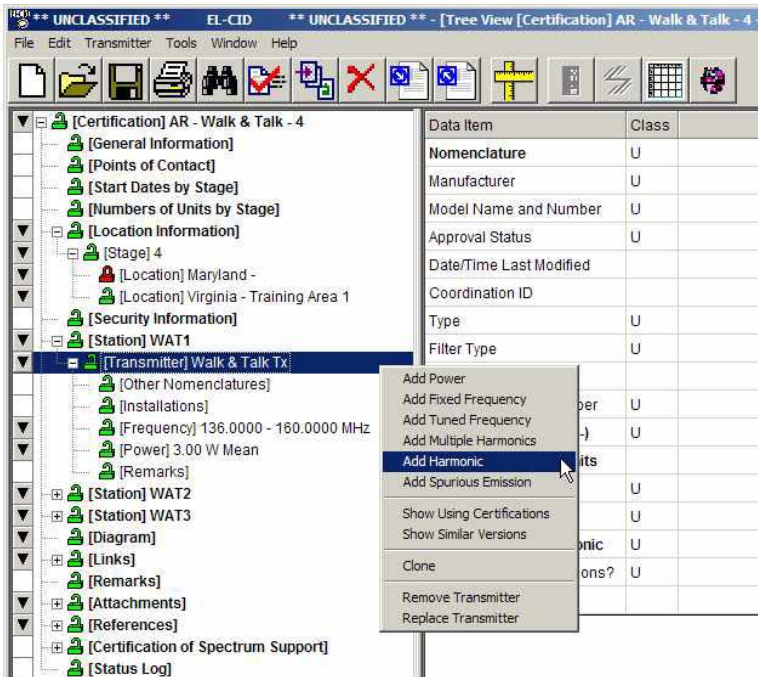
| Data Item | Class | Value | Units |
|---|---|---|---|
| + Fixed Frequency? | | No | |
| **Lowest Tuned Frequency** | U | | MHz |
| **Highest Tuned Frequency** | U | | MHz |
| **Tuning Increment** | U | | kHz |
| **# of Frequencies Required for Operation** | U | | |
| **Minimum Required Frequency Separation** | U | | MHz |
| Frequency Blocking Indicator | U | No | |
| Lowest Usable Channel | U | | MHz |

**Step 7.** **Enter** the following data.

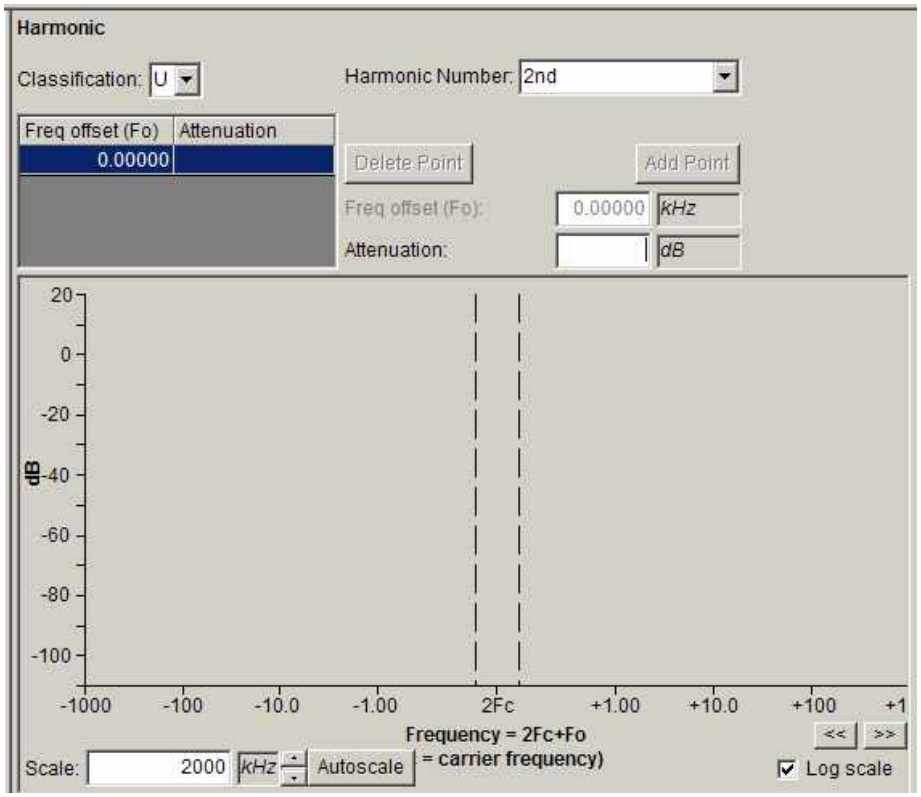
| Field | Value |
|---|---|
| **Lowest Tuned Frequency** | **136 MHz** |
| **Hightest Tuned Frequency** | **160 MHz** |
| **Tuning Increment** | **12.5 kHz** |

***HINT:*** Frequencies may be entered as M136, 136M, K136000, 136000K, or 136m etc.

**Step 8.** **Right-click** on **[Transmitter] Walk & Talk Tx** and then select **Add Harmonic**.



The **Harmonic** window is displayed.

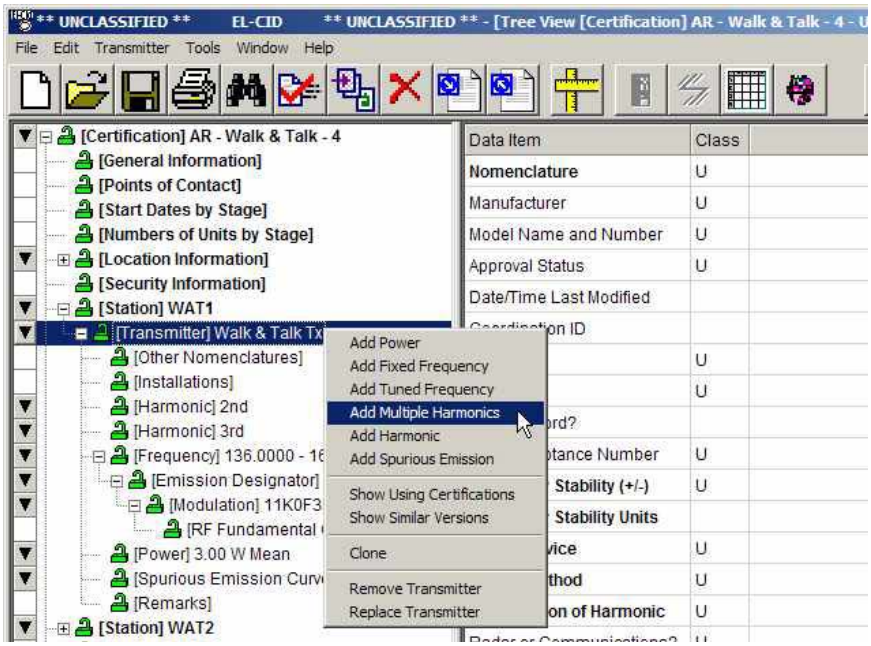



**Step 9.** **Enter** the following data and **Save**.

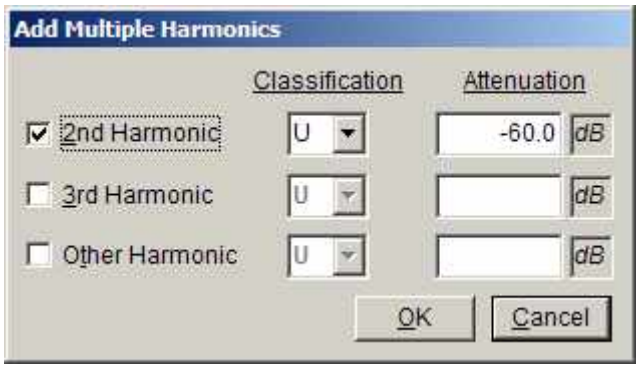
| Field | Value |
|---|---|
| **Harmonic Number** | **2nd** |
| **Attenuation** | **-60 dB** |

***HINT:*** Do not use the **Add Point** button on the Harmonic window to add another Harmonic. Instead, **right click** on the **Transmitter** node and select **Add Harmonic** again, following **Step 8**, or use the **Add Multiple Harmonics** option shown below.

**Step 10.** **Right-click** on **[Transmitter] Walk & Talk Tx** and then select **Add Multiple Harmonics**.



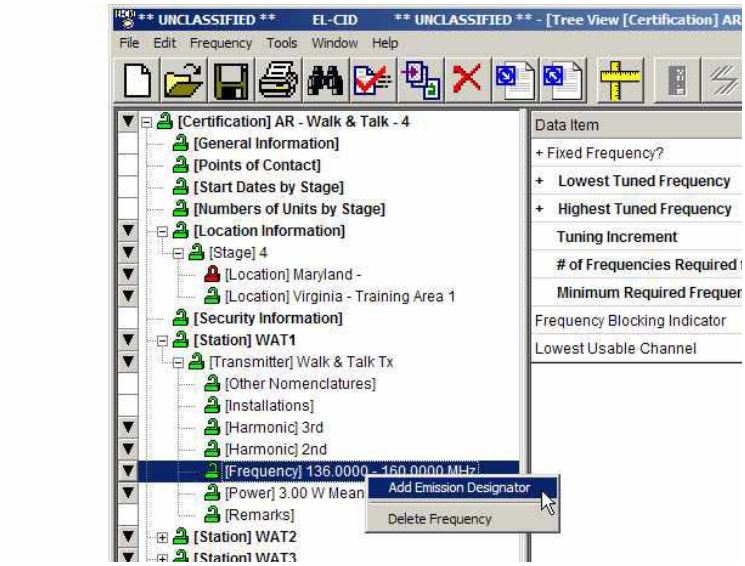

The **Add Multiple Harmonics** window is displayed.




**Step 11.** **Check** the **3rd** and Other **Harmonic** checkboxes and **Enter** the following data and **Save**.

| Field | Value |
|---|---|
| **Harmonic Number** | **3rd** |
| **Attenuation** | **-60 dB** |
| **Harmonic Number** | **Other** |
| **Attenuation** | **-60 dB** |

**Step 12.** **Right-click** on **[Transmitter] Walk & Talk Tx | [Frequency] 136.00 – 160 MHz** and then select **Add Emission Designator**.




The **Emission Designator** data grid is displayed.

| Data Item | Class | Value | Units |
|---|---|---|---|
| Necessary Bandwidth | | | kHz |
| **+ Emission Designator** | U | | |
| Emission Digitized Spectrum Code | U | | |

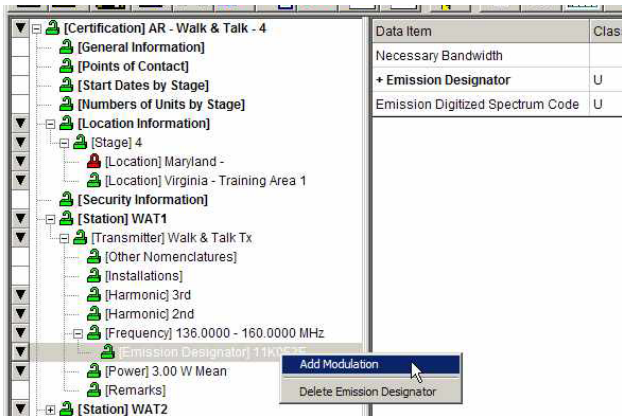
**Step 13.** **Enter** the following data and then **Save**.

| Field | Value |
|---|---|
| **Necessary Bandwidth** | **11 kHz** |
| **Emission Designator** | **11K0F3E** |

***HINT:*** If you need help in determining the Necessary Bandwidth you can click on the  button to access one of the models. The button only appears when focus is on the **Necessary Bandwidth** field.

***HINT:*** If you need help in determining the Emission Designator you can click on the  button to access the Emission Designator Wizard. The button only appears when focus is on the **Emission Designator** field.

**Step 14.** **Right-click** on **[Emission Designator] 11K0F3E** and then select **Add Modulation**.




The **Modulation** data grid is displayed.

| Data Item | Class | Value | Units |
|---|---|---|---|
| + Emission Designator | | 11K0F3E | |
| + Radar or Communications? | | Communications | |
| **Occupied Bandwidth** | U | | kHz |
| **Measured or Calculated?** | U | | |
| **+ Spread Spectrum?** | | No | |
| **+ Modulation Type** | U | | |
| Lowest Modulation Frequency | U | | MHz |
| Pseudorandom Code Period | U | | ms |
| Peak Frequency Deviation Index | U | | |
| RMS Frequency Deviation | U | | |
| RMS Frequency Deviation Code | U | | |
| RMS Modulation Index | U | | |
| Pulse Repetition Rate Lower Limit | U | | pps |
| Pulse Repetition Rate Upper Limit | U | | pps |
| Pulse Duration Lower Limit | U | | ms |
| Pulse Duration Upper Limit | U | | ms |

***HINT:*** There are quite a few DoD only data fields in this grid.

**Step 15.** **Enter** the following data and **Save**.

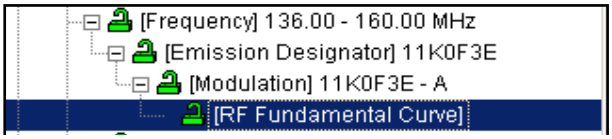
| Field | Value |
|---|---|
| **Occupied Bandwidth** | **11 kHz** |
| **Measured or Calculated** | **Measured** |
| **Spread Spectrum** | **No** |
| **Modulation Type** | **Analog Modulation (AM, FM, or Phase)** |
| **Peak Deviation** | Leave blank |
| **Deviation Ratio** | **0.833** |
| **Maximum Modulation Frequency** | **3 kHz** |

Notice that the **Peak Deviation**, **Deviation Ratio**, and **Maximum Modulation Frequency** items do not appear until Analog is chosen for **Modulation Type**. The program will hide irrelevant items. The plus sign (**+**) next to **Modulation Type** indicates that other items will appear or disappear depending upon what you choose for the **Modulation Type**.

**Step 16**. When you click on any of the three items – **Peak Deviation**, **Deviation Ratio**, or **Maximum Modulation Frequency** – a calculator button  appears. Since you left **Peak Deviation** blank in **Step 14**, **click on it now** and **click the calculator button**. The calculated value of 2.4990 kHz appears.

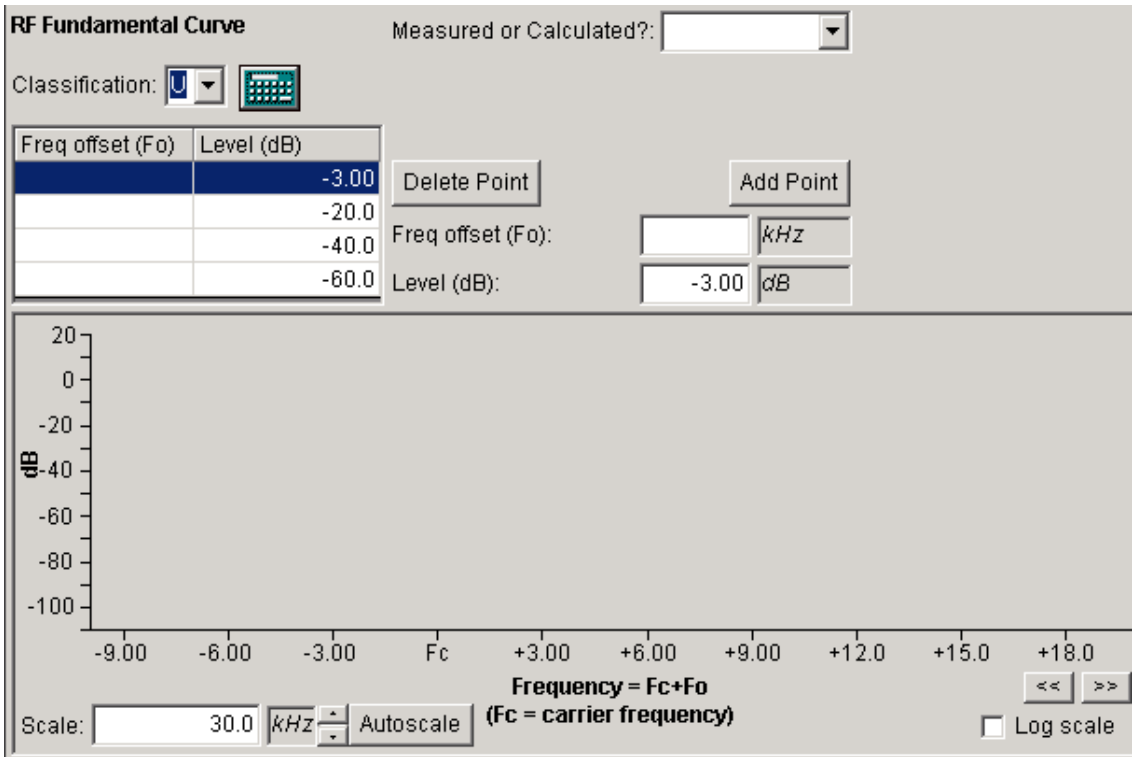
***HINT:*** If any of the inputs to the calculation are classified, a message will appear advising you to check the classification of the calculated item.

**Step 17.** Click on **[RF Fundamental Curve]**.




***HINT:*** The **[RF Fundamental Curve]** node was automatically created when you added the **[Modulation]** node. The fundamental curve cannot be deleted.

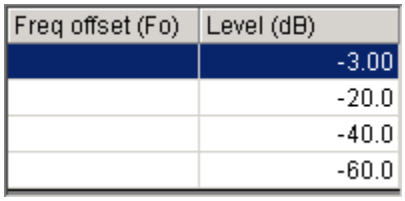
The **RF Fundamental Curve** window is displayed.




**Step 18.** **Enter** the following data.

| Field | Value |
|---|---|
| **Measured or Calculated** | **Measured** |

**Step 19**. **Highlight** the point to be entered in the point grid.




**Step 20**. Enter **4** in the **Frequency offset**.


***HINT:*** Freq offset equals ½ bandwidth

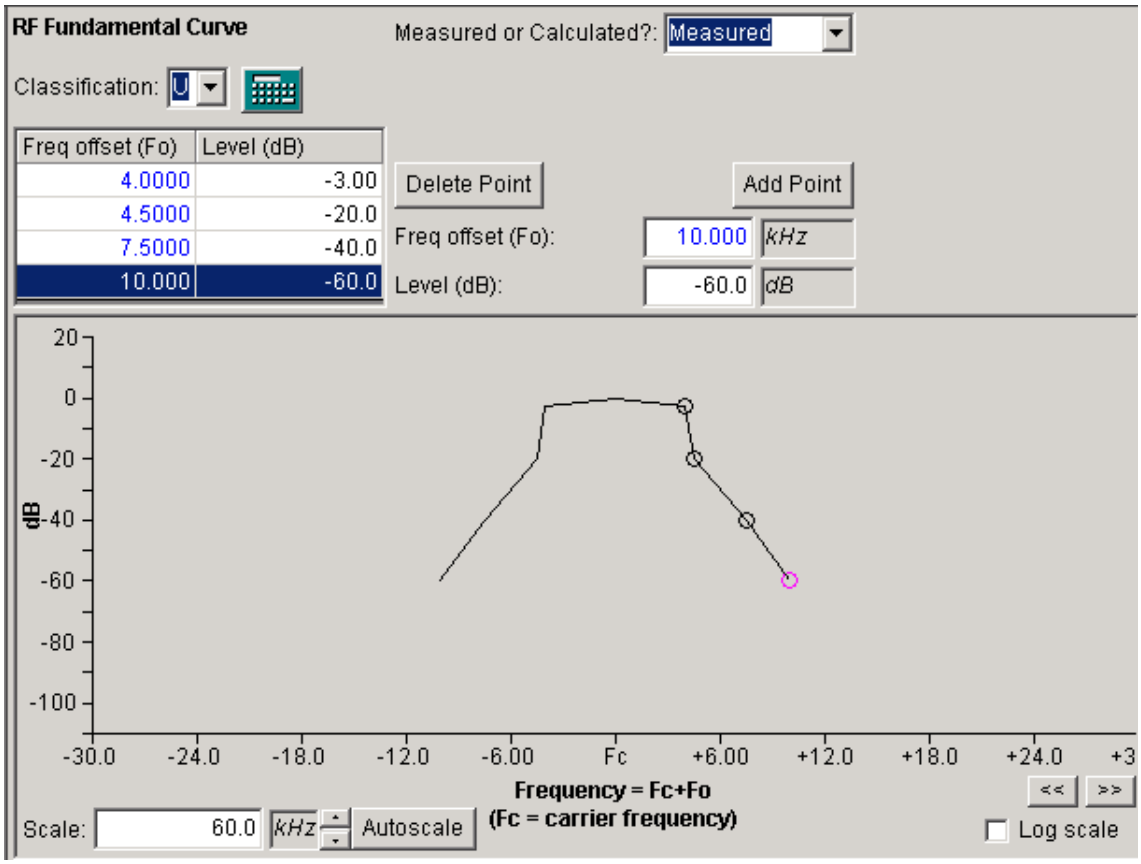
**Step 21**. Click on the **-3 dB row** in the point grid to complete entering the point.

**Step 22.** **Enter** the following data, by following **Step 19** and **Step 20.**

| Field | Value |
|---|---|
| **Freq Offset (1/2 Bandwidth) at –20 dB** | **4.5 kHz** |
| **Freq Offset (1/2 Bandwidth) at –40 dB** | **7.5 kHz** |
| **Freq Offset (1/2 Bandwidth) at –60 dB** | **10 kHz** |

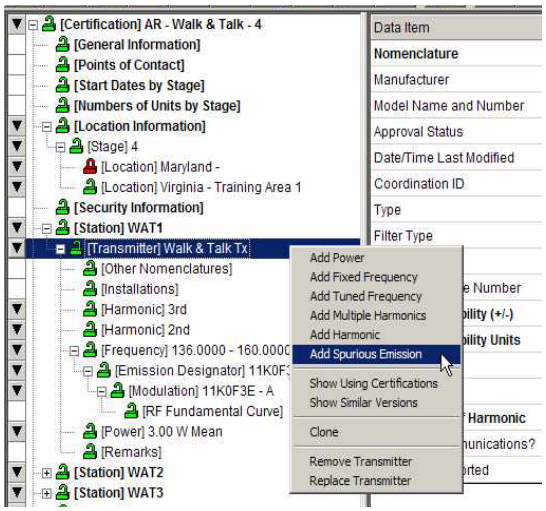
***HINT:*** You may add additional rows to the point grid by clicking the **Add Point** button.

***HINT:*** If your screen does not match the one below, Click the **Autoscale** button and make sure the Log Scale checkbox is unchecked. The resulting **RF Fundamental Curve** should look like the following:

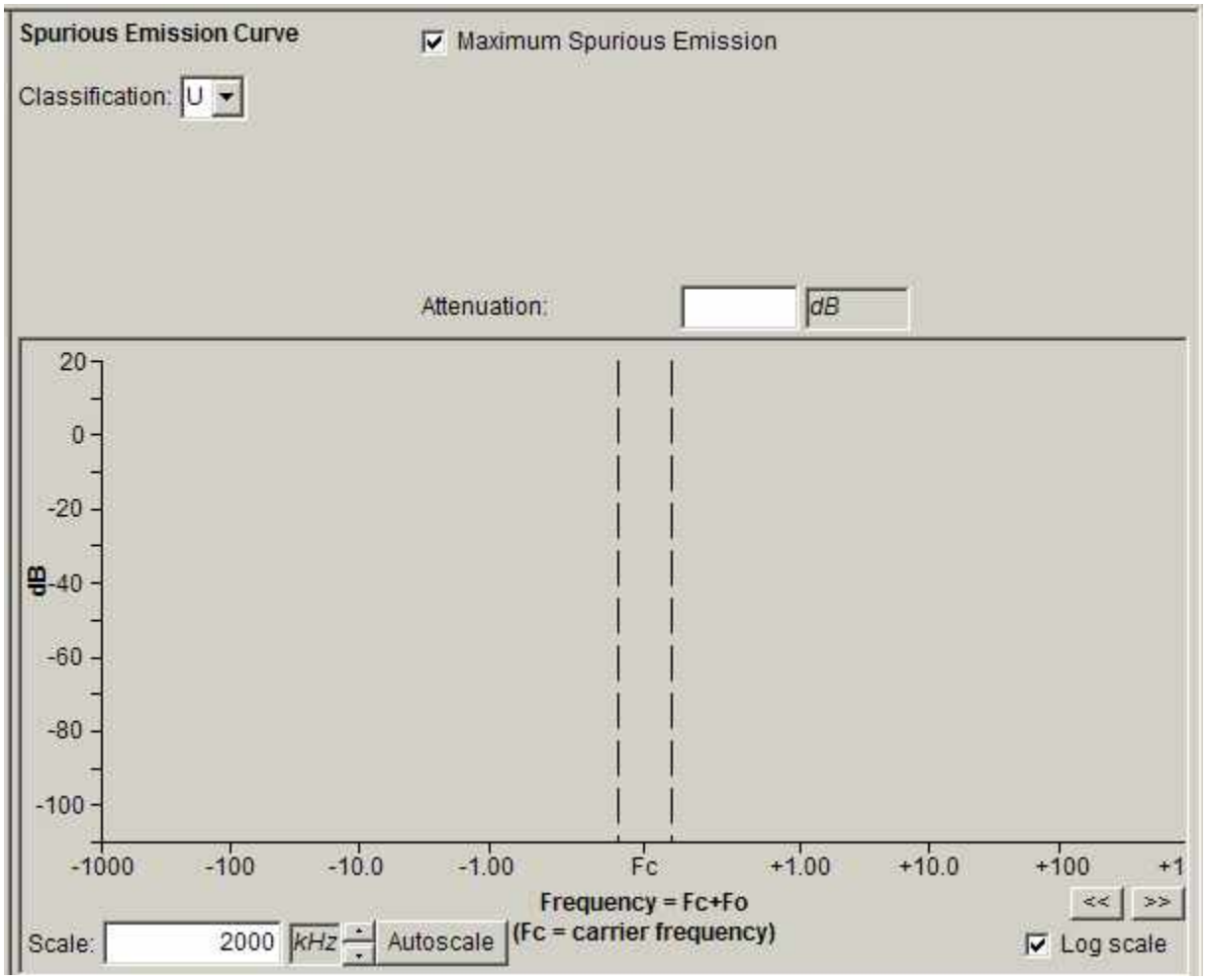



**Step 23**. **Save** the data.

**Step 24.** **Right click** on **[Transmitter]Walk & Talk** and then select **Add Spurious Emission**.




The **Spurious Emission Curve** window is displayed;

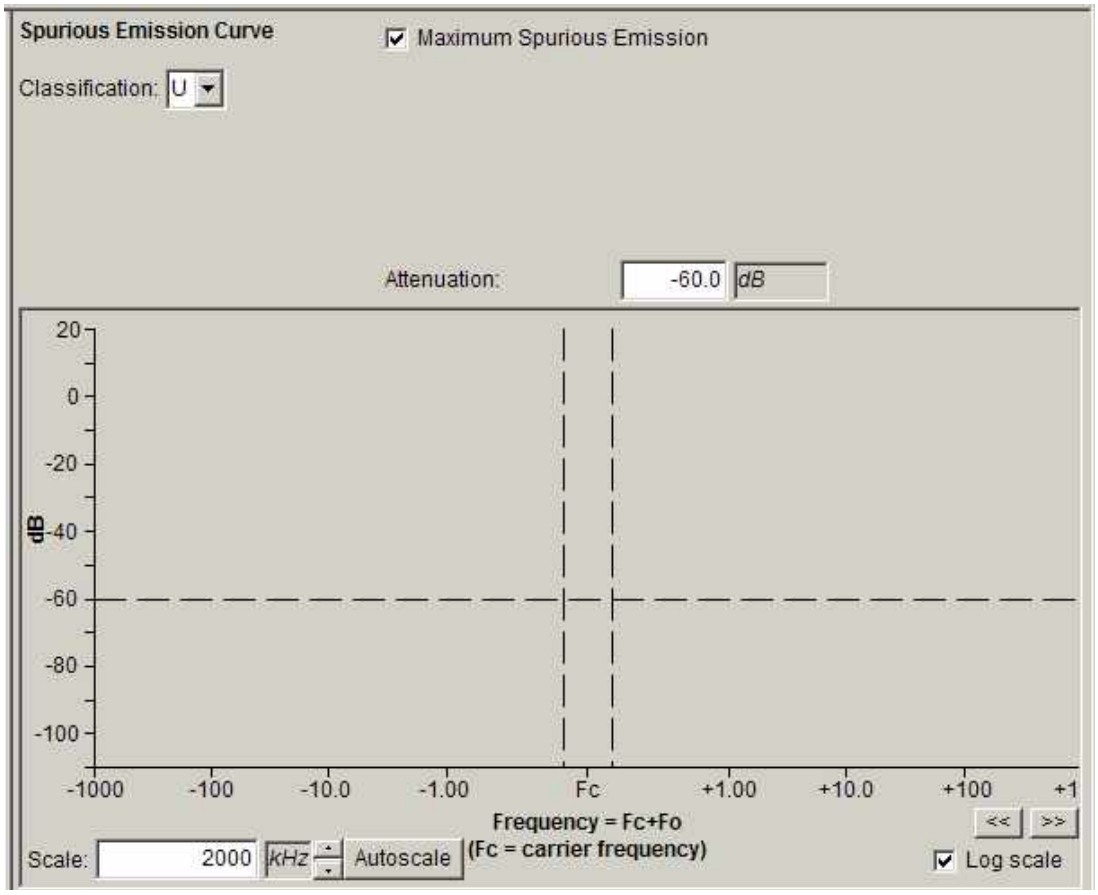



**Step 25.** **Check** the box 
.

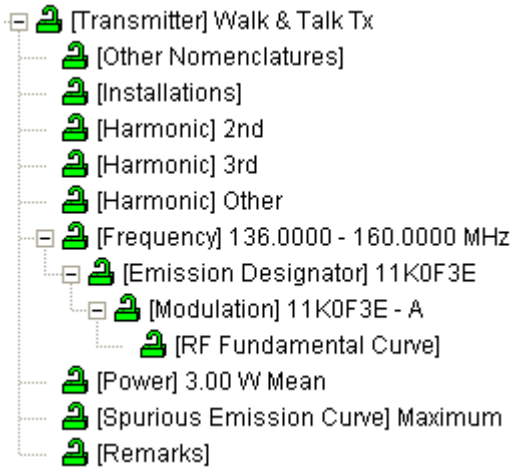
**Step 26.** **Enter** the following and **Save**.

| Field | Value |
|---|---|
| **Attenuation (dB)** | **-60 dB** |

The **Spurious Emission Curve** appears as a single line because it represents the maximum of all spurious emissions across all frequencies.



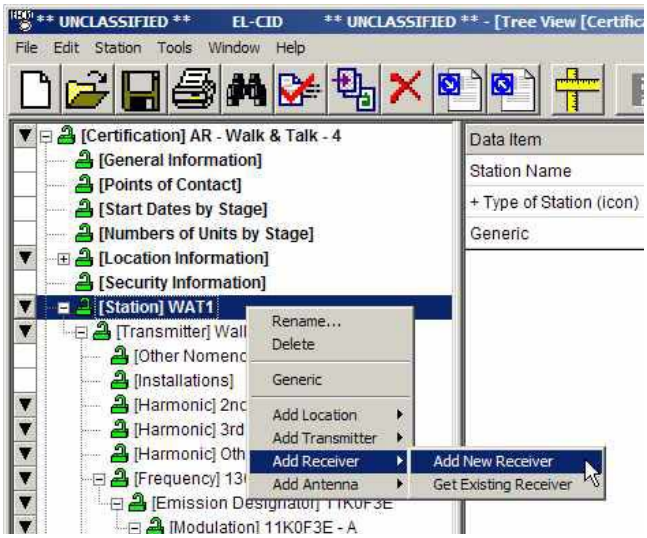

This completes the data entry for the Transmitter **Walk & Talk Tx**. The transmitter portion of Tree View looks like the following:



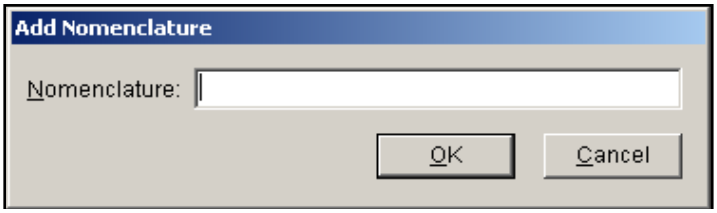

***HINT:*** **[Other Nomenclatures]**, **[Installations]**, and **[Remarks]** only appear when logged in as a DoD agency.

## 5.7.2 Entering Receiver Data

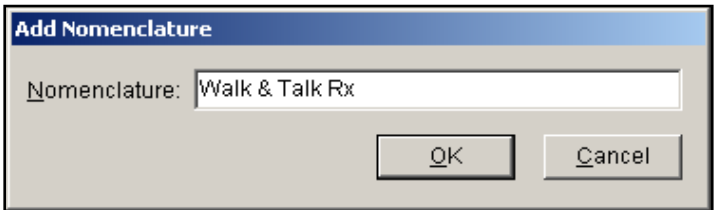
**Step 1.** **Right-click** on the **[Station] WAT1** node and select **Add Receiver | Add New Receiver**.




The **Add Nomenclature** window is displayed.




**Step 2.** Type **Walk & Talk Rx** and click **OK**.



The **Receiver** data grid is displayed.

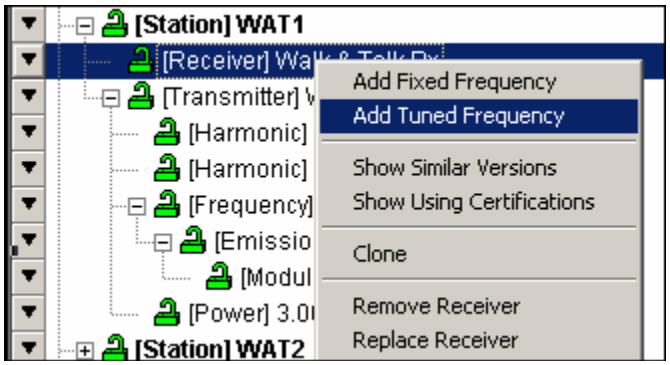
| Data Item | Class | Value | Units |
|---|---|---|---|
| **Nomenclature** | U | Walk & Talk Rx | |
| **Manufacturer** | U | | |
| Model Name and Number | U | | |
| Approval Status | U | Unapproved | |
| Date/Time Last Modified | | 1/16/2008 4:31:45 PM | local |
| Coordination ID | U | J/F 12 | |
| Type | U | | |
| Proxy Record? | | No | |
| FCC Acceptance Number | U | | |
| **Frequency Stability (+/-)** | U | | |
| **Frequency Stability Units** | U | | |
| **Image Rejection Level** | U | | dB |
| **Conducted Undesired Emissions** | U | | dBm |
| Local Oscillator Tuned Indicator | U | | |
| **Tuning Method** | U | | |
| Maximum Bit Rate | U | | bps |
| Minimum Post Detection Frequency | U | | MHz |
| Maximum Post Detection Frequency | U | | MHz |
| Preselection Type | U | | |
| Date/Time Imported | | | local |

**Step 3.** **Enter** the following receiver data.

| Field | Value |
|---|---|
| **Manufacturer** | **RELM Communications, Inc** |
| **Model Name and Number** | **Model 127A** |
| **FCC Acceptance Number** | **K95LT20002** |
| **Frequency Stability (+/-)** | **5** |
| **Frequency Stability Units** | **Ppm** |
| **Local Oscillator Tuned Indicator** | **Below** |

***HINT:*** You can type the Manufacturer name in the block, but it has to be the exact spelling and punctuation as appears in the user select list.

**Step 4.** **Right-click** on **[Receiver] Walk & Talk Rx** and select **Add Tuned Frequency**.



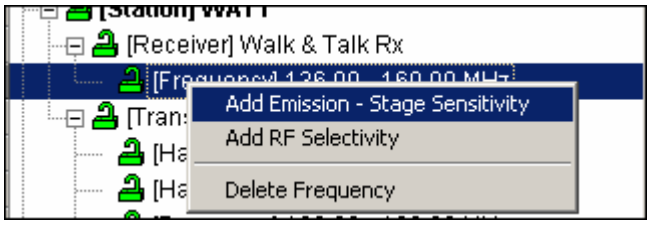

The **Tuned Frequency** data grid is displayed

| Data Item | Class | Value | Units |
|---|---|---|---|
| + Fixed Frequency? | | No | |
| **Lowest Tuned Frequency** | U | | MHz |
| **Highest Tuned Frequency** | U | | MHz |
| **Tuning Increment** | U | | kHz |

**Step 5.** **Enter** the following tuned frequency data and **Save**.

| Field | Value |
|---|---|
| **Lowest Tuned Frequency** | **136 MHz** |
| **Hightest Tuned Frequency** | **160 MHz** |
| **Tuning Increment** | **12.5 kHz** |

**Step 6.** **Right-click** on the **Receiver [Frequency] 136 – 160 MHz** node and select **Add Emission – Stage Sensitivity**.



The **Emission – Stage Sensitivity** data grid is displayed.

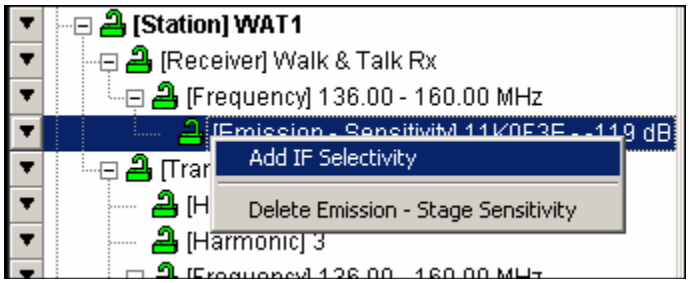
| Data Item | Class | Value | Units |
|---|---|---|---|
| **+ Emission Designator** | U | | |
| Necessary Bandwidth | | | kHz |
| **Performance Criteria** | U | | |
| **Performance Value** | U | | |
| **Sensitivity** | U | | dBm |
| Noise Figure | U | | dB |
| Noise Temperature | U | | K |
| **Spurious Rejection Level** | U | | dB |
| Adjacent Channel Selectivity | U | | dB |
| Intermodulation Rejection Level | U | | dB |

**Step 7.** **Enter** the following emission data and **Save**.

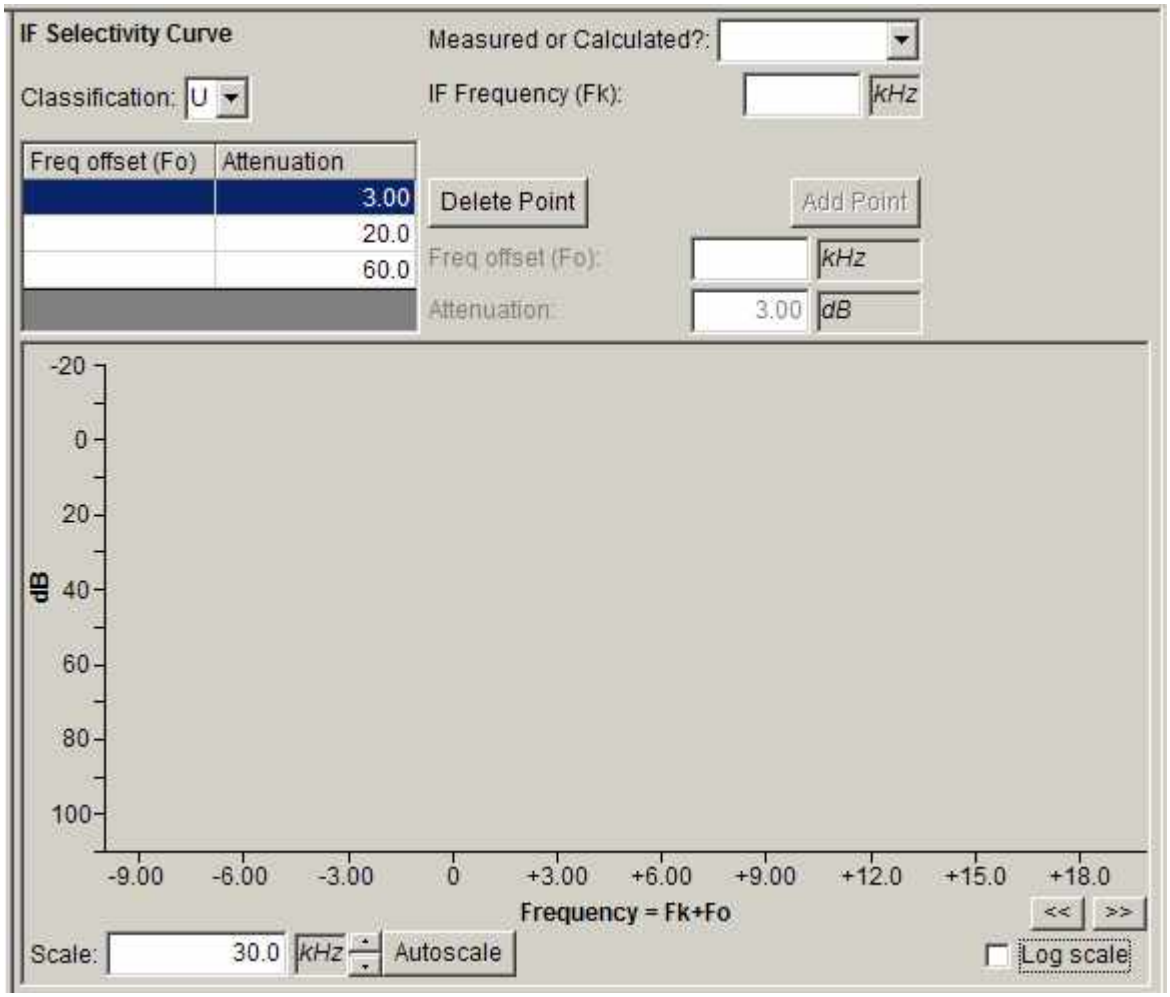
| Field | Value |
|---|---|
| **Emission Designator** | **11K0F3E** |
| **Performance Criteria** | **SINAD–Signal-to-Noise and Distortion Ratio (dB)** |
| **Performance Value** | **10** |
| **Sensitivity** | **-119 dBm** |
| **Spurious Rejection Level** | **75 dB** |
| **Adjacent Channel Selectivity** | **75 dB** |
| **Intermodulation Rejection Level** | **75 dB** |

***HINT:*** The **Necessary Bandwidth** field is automatically filled when the **Emission Designator** is entered.

**Step 8.** **Right-click** on the **[Emission – Sensitivity] 11K0F3E – 119 dBm** node and select **Add IF Selectivity**.



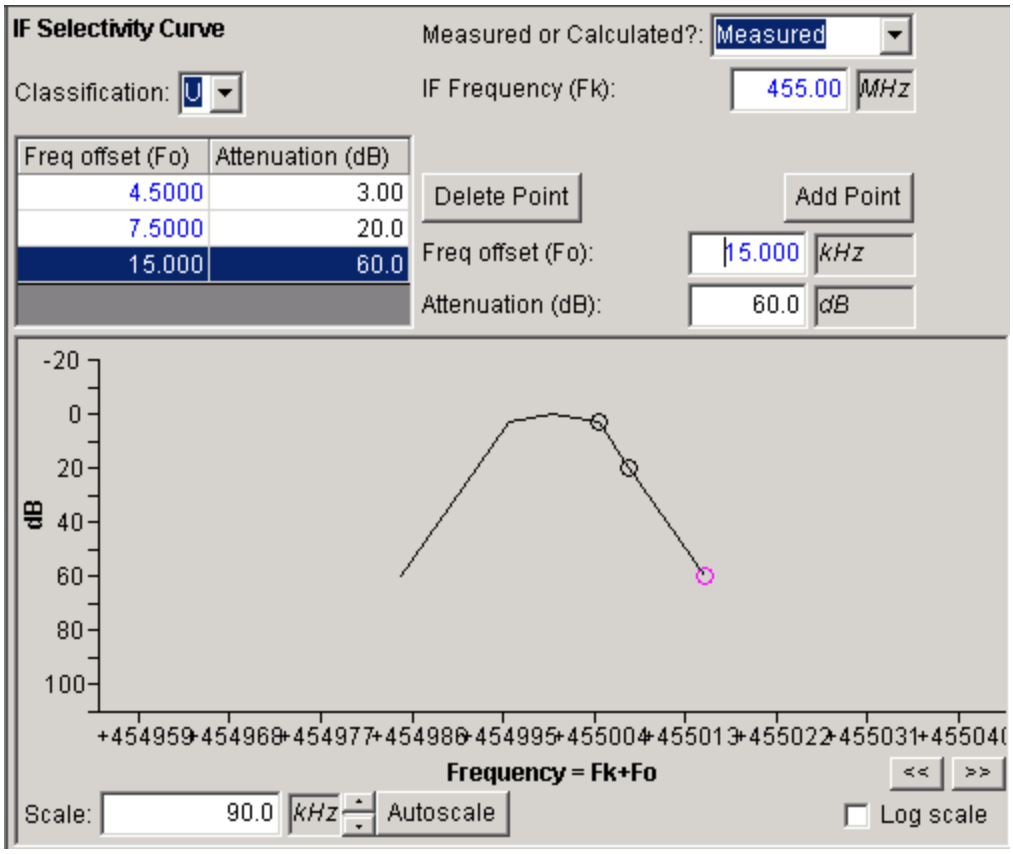
The **IF Selectivity Curve** window is displayed.



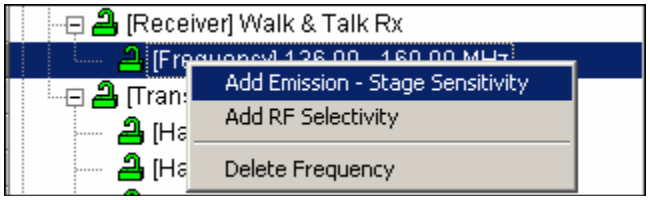

**Step 9.** **Enter** the following intermediate frequency data.

| Field | Value |
|---|---|
| **Measured or Calculated** | **Measured** |
| **IF Frequency** | **M455** |
| **Freq Offset (1/2 Bandwidth) at 3 dB** | **4.5 kHz** |
| **Freq Offset (1/2 Bandwidth) at 20 dB** | **7.5 kHz** |
| **Freq Offset (1/2 Bandwidth) at 60 dB** | **15 kHz** |

**Step 10.** Click the **Autoscale** button to redraw curve. The resulting **IF Selectivity Curve** should look like the following:




**Step 11.** **Right-click** on the **[Frequency] 136 – 160 MHz** node and select **Add Emission – Stage Sensitivity** to enter a second set of data.




The **Emission – Stage Sensitivity** data grid is displayed.

**Step 12.** **Enter** the following data for the second set of emission data and **Save**.

| Field | Value |
|---|---|
| **Emission Designator** | **12K0F3E** |
| **Performance Criteria** | **SINAD–Signal-to-Noise and Distortion Ratio (dB)** |
| **Performance Value** | **10** |
| **Sensitivity** | **-119 dBm** |
| **Spurious Rejection Level** | **75 dB** |
| **Adjacent Channel Selectivity** | **75 dB** |
| **Intermodulation Rejection Level** | **75 dB** |

**Step 13.** **Right-click** on the **[Emission – Sensitivity] 12K0F3E – 119 dBm** node and select **Add IF Selectivity** to add the IF Selectivity values for the 2nd emission designator.

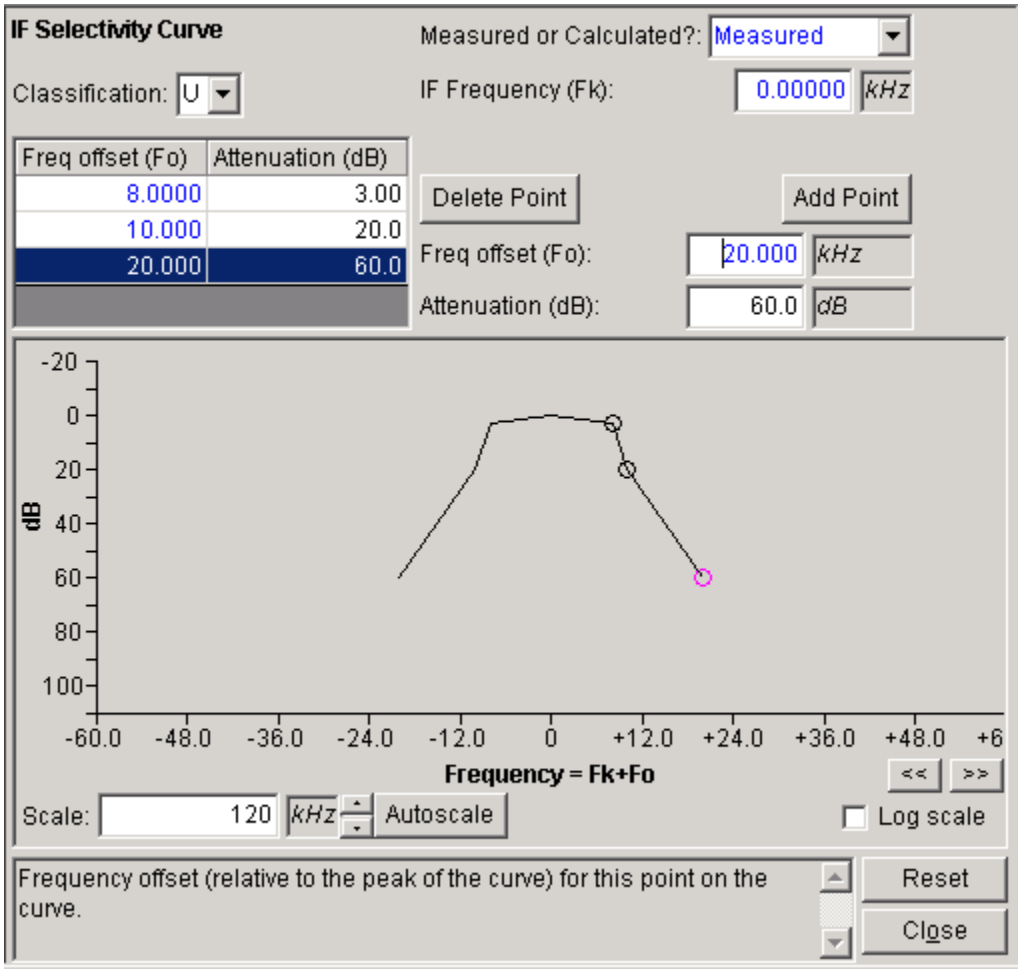

The **IF Selectivity Curve** window is displayed.

**Step 14.** **Enter** the following IF Selectivity data for the 12K0F3E emission.

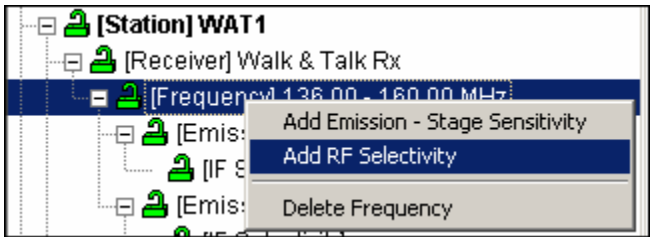
| Field | Value |
|---|---|
| **Measured or Calculated** | **Measured** |
| **IF Frequency** | **0** |
| **Freq Offset (1/2 Bandwidth) at 3 dB** | **8 kHz** |
| **Freq Offset (1/2 Bandwidth) at 20 dB** | **10 kHz** |
| **Freq Offset (1/2 Bandwidth) at 60 dB** | **20 kHz** |

***HINT:*** If you do not know the **IF Frequency**, enter 0.

**Step 15.** Click the **Autoscale** button. The resulting **IF Selectivity Curve** should look like the following:



**Step 16.** **Right-click** on the **[Frequency] 136 – 160 MHz** node and select **Add RF Selectivity** to add the RF selectivity.



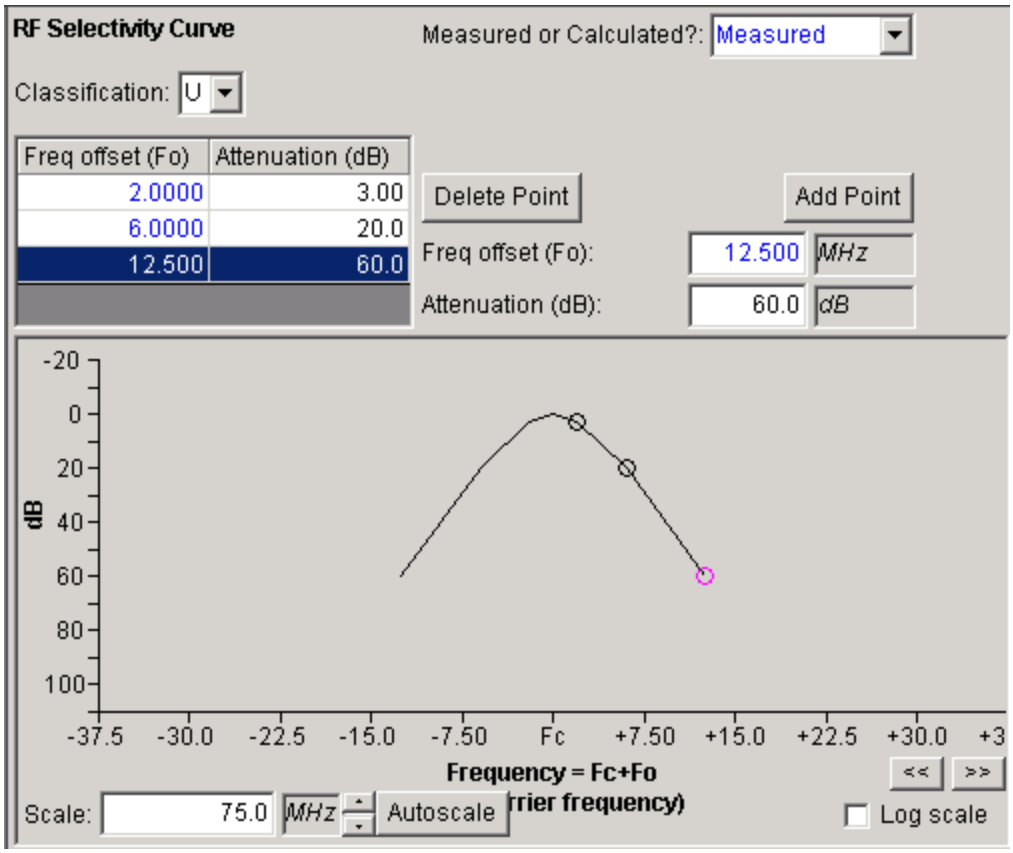

The **RF Selectivity Curve** window is displayed.

**Step 17.** **Enter** the following RF selectivity data.

| Field | Value |
|---|---|
| **Measured or Calculated** | **Measured** |
| **Freq Offset (1/2 Bandwidth) at 3 dB** | **2MHz** |
| **Freq Offset (1/2 Bandwidth) at 20 dB** | **6MHz** |
| **Freq Offset (1/2 Bandwidth) at 60 dB** | **12.5MHz** |

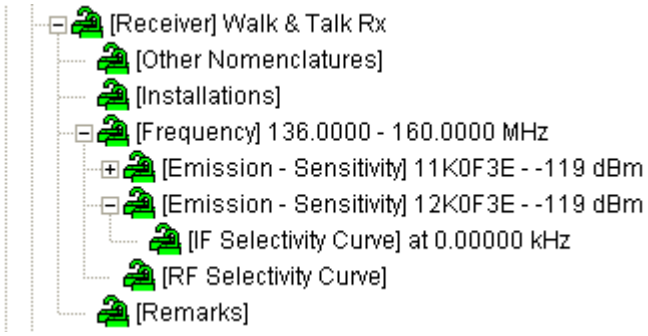
Notice that when you enter M to choose megahertz frequency offset units, the scale of the x-axis on the graph automatically changes to MHz.

**Step 18.** Click the **Autoscale** button. The resulting **RF Selectivity Curve** should look like the following:




**Step 19**. **Save** the data.

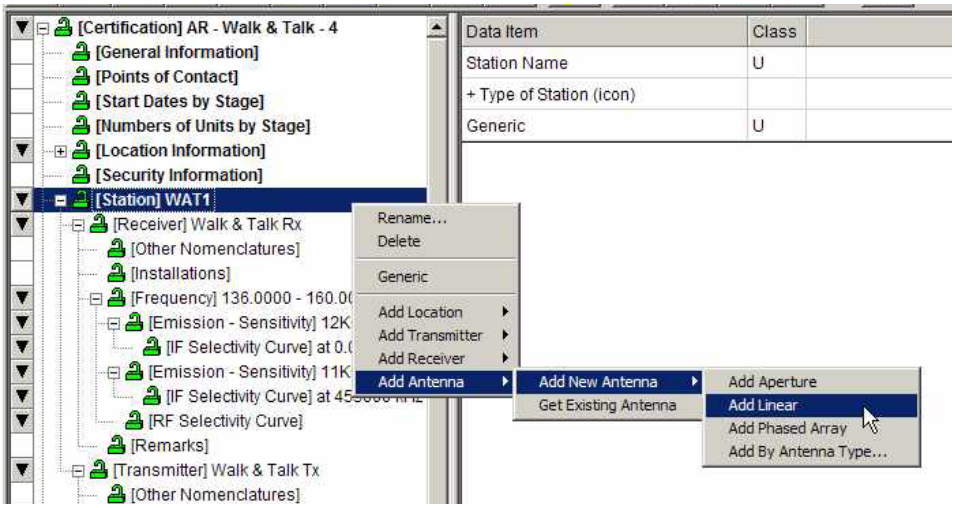
This completes the data entry for the Receiver **Walk & Talk Rx**. The receiver portion of the Tree View looks like the following



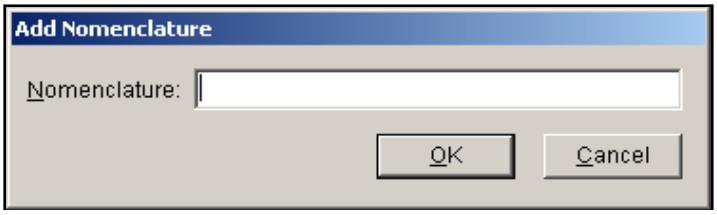

***HINT:*** The **[Other Nomenclatures]**, **[Installations]**, and **[Remarks]** nodes only appear when logged in as a DoD agency.

## 5.7.3 Entering Antenna Data

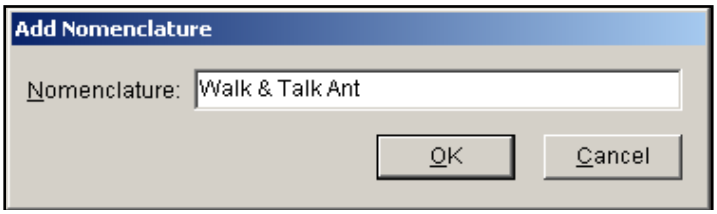
**Step 1.** **Right-click** on the **[Station] WAT1** node and select **Add Antenna | Add New Antenna | Add Linear**.




The **Add Nomenclature** window is displayed.




**Step 2.** Type **Walk & Talk Ant** and click **OK**.



The **Antenna** data grid is displayed.

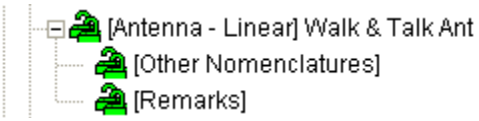
| Data Item | Class | Value | Units |
|---|---|---|---|
| **Antenna Category** | | Linear | |
| **Nomenclature** | U | Walk & Talk Ant | |
| Manufacturer | U | | |
| Model Name and Number | U | | |
| Approval Status | U | Unapproved | |
| Date/Time Last Modified | | 8/19/2009 1:16:05 PM | local |
| Coordination ID | | J/F 12 | |
| Proxy Record? | | No | |
| **Antenna Type** | U | | |
| **Antenna Horizontal Beamwidth** | U | | degrees |
| **Antenna Vertical Beamwidth** | U | | degrees |
| **Antenna Lower Frequency Limit** | U | | MHz |
| **Antenna Upper Frequency Limit** | U | | MHz |
| **Polarization** | U | | |
| **+ Antenna Main Beam Gain** | U | | dBi |
| Date/Time Imported | | | local |

**Step 3.** **Enter** the following antenna data.

| Field | Value |
|---|---|
| **Manufacturer** | **RELM COMMUNICATIONS, INC** |
| **Model Name and Number** | **Model 127A** |
| **Antenna Type** | **Dipole** |
| **Antenna Horizontal Beamwidth** | **360 degrees** |
| **Antenna Vertical Beamwidth** | **45 degrees** |
| **Antenna Lower Frequency Limit** | **136 MHz** |
| **Antenna Upper Frequency Limit** | **160 MHz** |
| **Polarization:** | **Linear** |
| **Antenna Main Beam Gain** | **0 dBi** |

**Step 4.** **Save** the data.

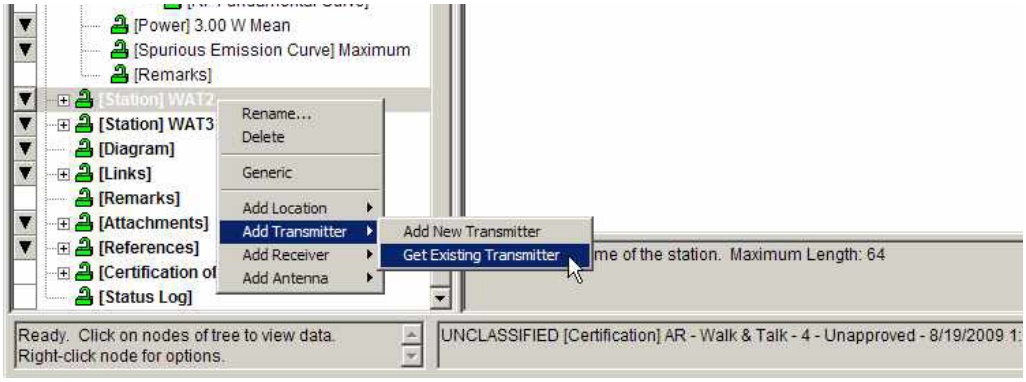
This completes the data entry for the antenna **Walk & Talk Ant**. The antenna portion of the Tree View looks like the following:



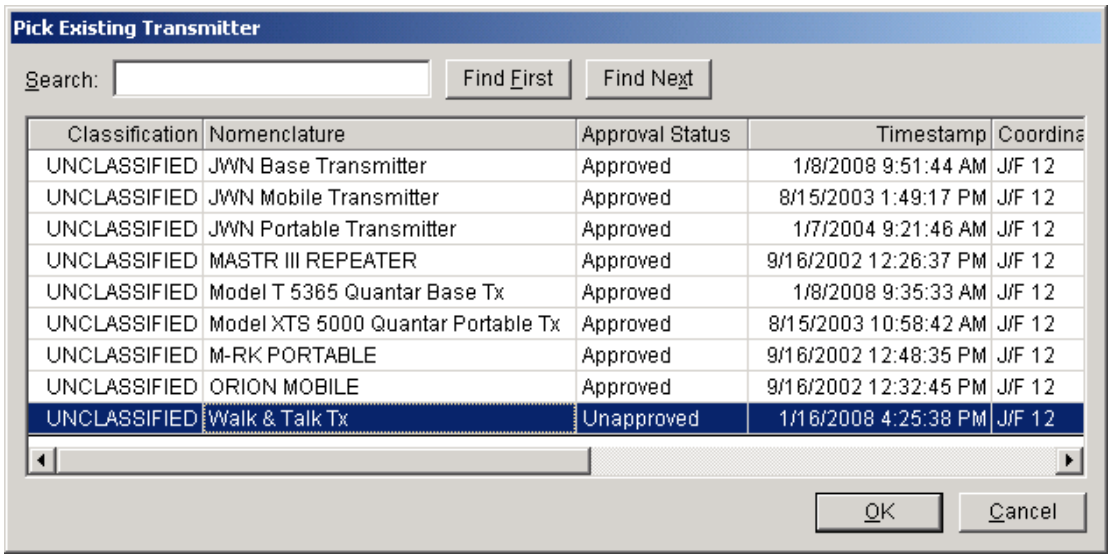

***HINT:*** The **[Other Nomenclatures]** and **[Remarks]** nodes only appear when logged in as a DoD agency.

## 5.7.4 Getting Existing Transmitter Data

**Step 1.** We are going to add a transmitter to station WAT2 by selecting an existing transmitter from the list of transmitters that are already in the database. **Right-click** on **[Station] WAT2** and select **Add Transmitter | Get Existing Transmitter**.

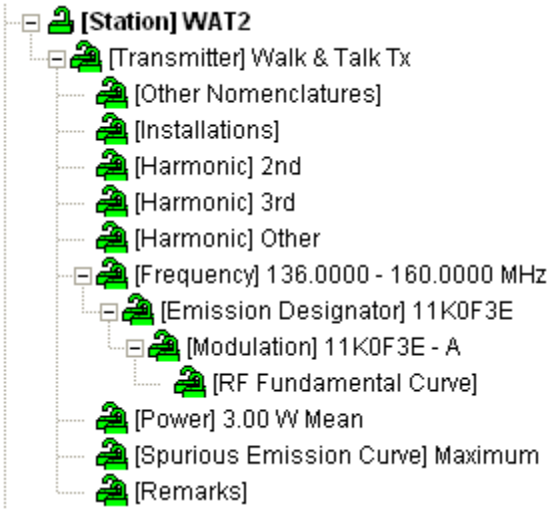



The **Pick Existing Transmitter** window is displayed.




**Step 2.** Highlight **Walk & Talk Tx** and click **OK** to add the **Walk & Talk Tx** to **Station WAT2**.

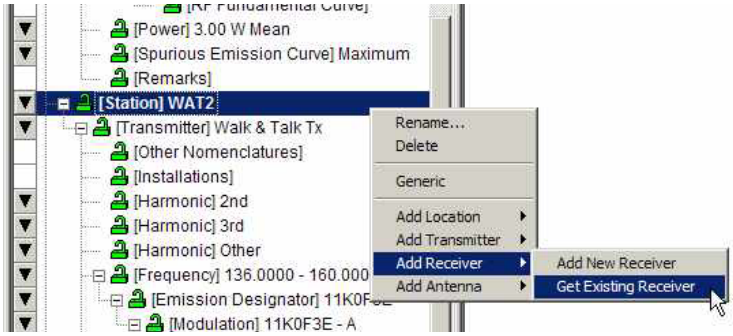
**Step 3.** Open all the nodes for the **WAT2** station by clicking **the +** beside each node. You will see that all of the transmitter data was inserted for the station. The data is identical to the data for the **Walk & Talk Tx** under Station **WAT1** because it is a single Transmitter record that is shared at both Stations. A change to the data at one Station will also change the same data at the other Station.



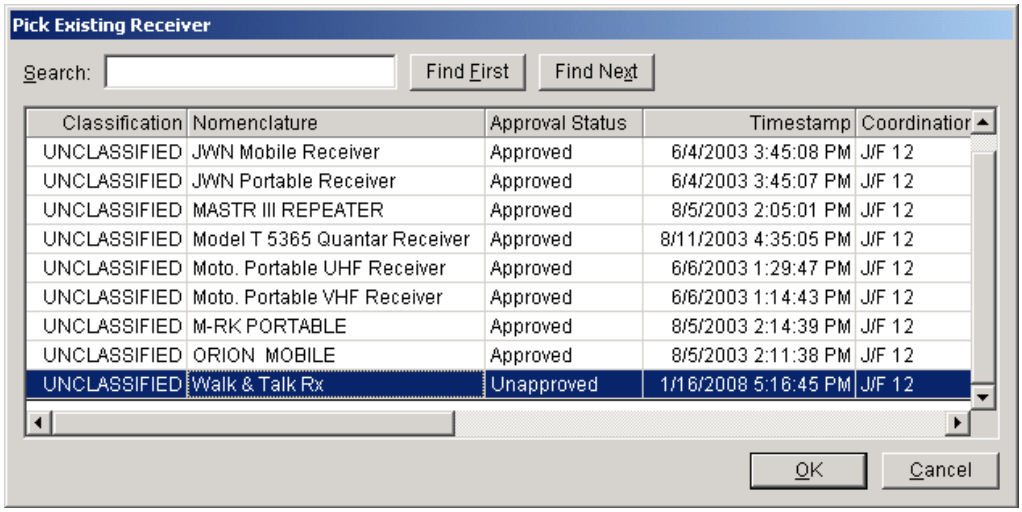

***HINT:*** You may also expand a node and all its child nodes by holding down the Shift key and clicking on the node or by holding down the Shift key and pressing the right arrow key. Holding down the Shift key and pressing the left arrow key will collapse the node. Using the Ctrl key in combination with the left or right arrow keys will expand or collapse a node, but not the child nodes.

## 5.7.5 Getting Existing Receiver Data

**Step 1.** We are going to add a receiver to station WAT2 by selecting an existing receiver from the list of receivers that are already in the database. **Right-click** on **[Station] WAT2 | Add Receiver | Get Existing Receiver**.

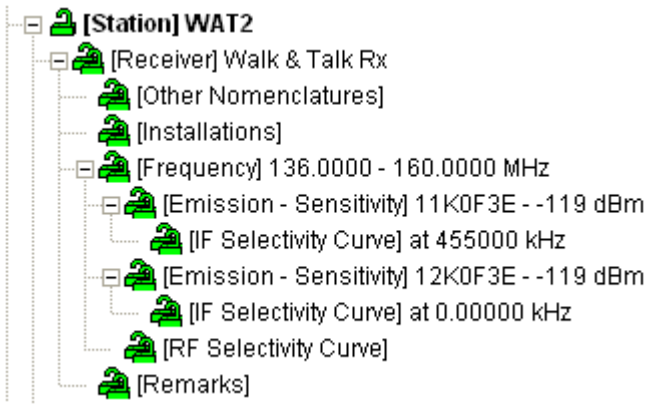



The **Pick Existing Receiver** window is displayed.



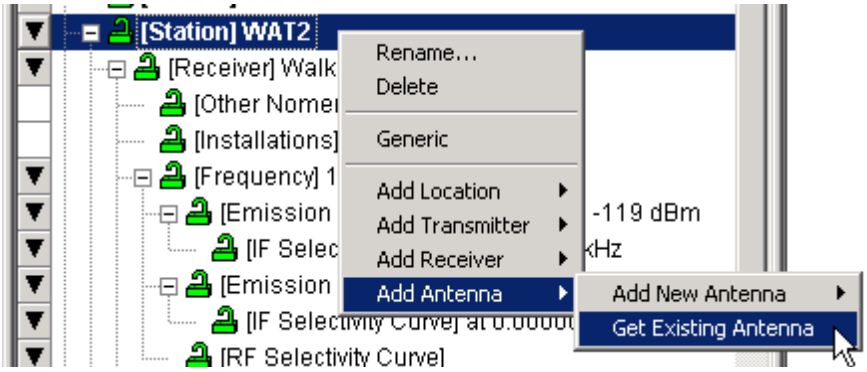

**Step 2.** Highlight **Walk & Talk Rx** and then click **OK** to add the **Walk & Talk Rx** to **Station WAT2**.

**Step 3.** Open all the nodes for the receiver of the **WAT2** station by clicking the **+** beside each node. You will see that all of the receiver data was inserted for the station. Just as the Transmitter, it is shared with Station **WAT1**.

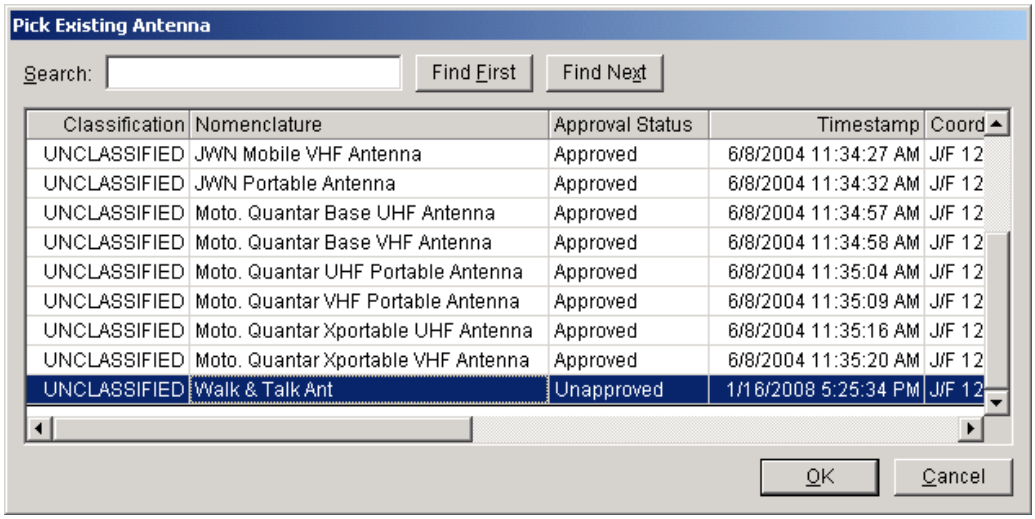


## 5.7.6 Getting Existing Antenna Data

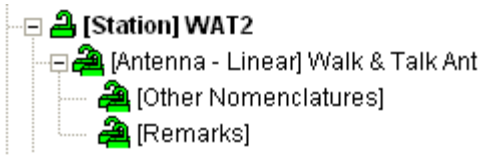
**Step 1.** We are going to add an antenna to station WAT2 by selecting an existing antenna from the list of antennas that are already in the database. **Right-click** on **[Station] WAT2** and select **Add Antenna | Get Existing Antenna**.




The **Pick Existing Antenna** window will be displayed.




**Step 2.** Highlight **Walk & Talk Ant** and then click **OK**, to add the **Walk & Talk Ant** to **Station WAT2**. The added antenna will appear on the Tree View under Station **WAT2** and just like the Transmitter and Receiver, it is shared with Station **WAT1**.



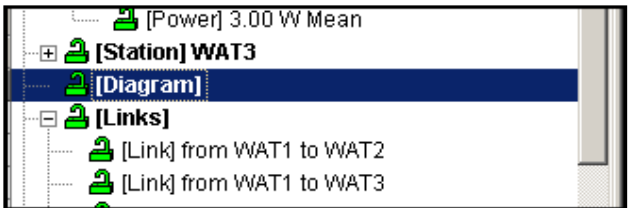

***HINT:*** Recall that **WAT3** is a Generic station. A generic station does not have specific equipment associated with it.

## 5.8 Entering Data For Links

The transmitting link between stations must be defined. The **Link Information** window is used to select the combinations of transmitters, transmitting antennas, receivers, and receiving antennas to be used in a link between stations. It is also used to select the frequencies, powers, and emissions that will be used in each equipment combination. For each frequency range that does not match the pre-defined Frequency Allocation Tables, a justification for out-of-band is also required.

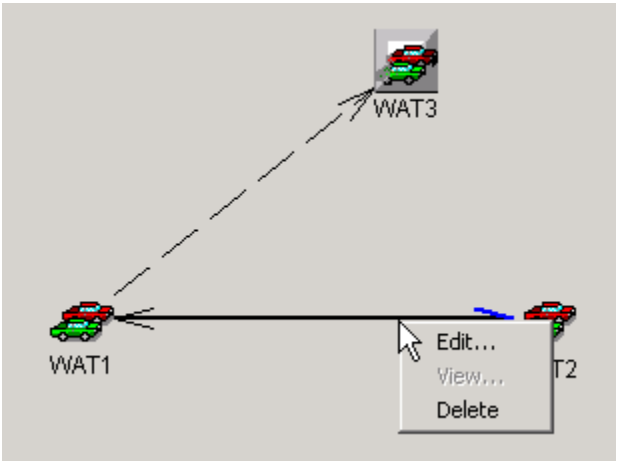
Data can be entered by accessing the diagram and using the graphical links to select which link to edit or by selecting the appropriate **[Links]** in the Tree View..

**Step 1.** **Click** on the **[Diagram]** node in the Tree View. The Diagram is displayed showing the links that had been defined earlier.



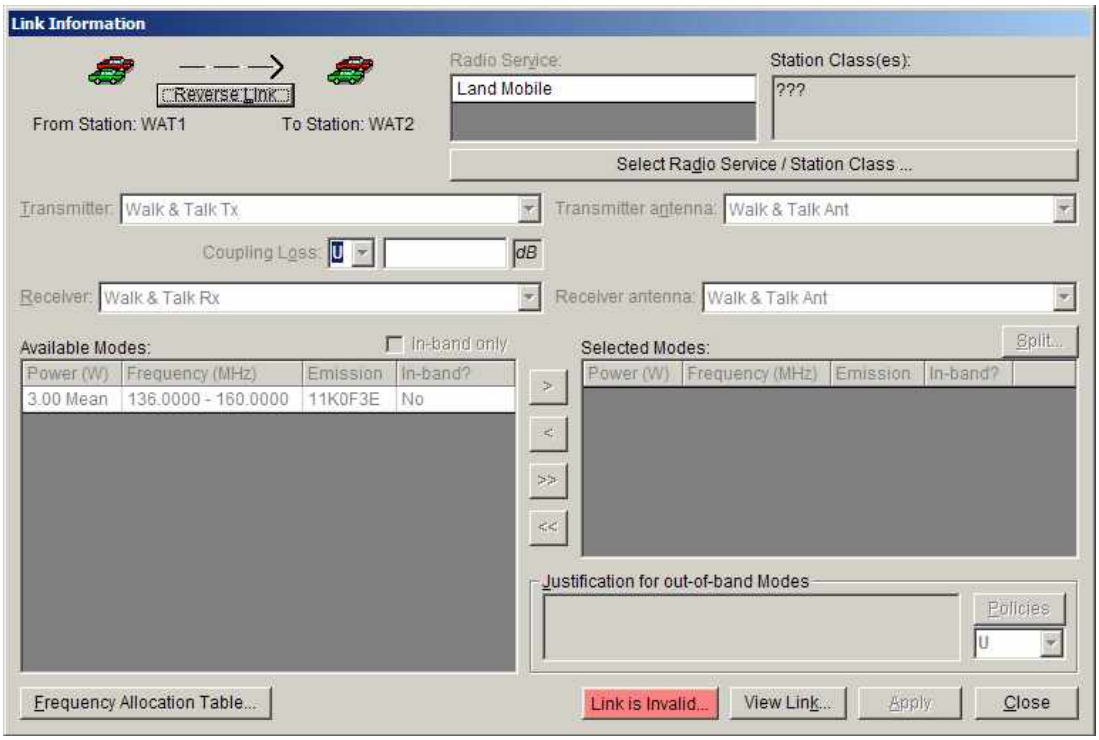

There are two ways to display the **Link Information** window.

**Step 2.** The first way is to right-click on the link line near the receiving end and then click Edit in the popup menu that is displayed. **Right-click on the link line near the WAT2 station and select Edit** (as shown below).




You must right-click on the line near the receiving end, but not too close to the Station, otherwise the program will think you are clicking on the Station. Notice how the arrow head turns blue indicating which link has been selected.

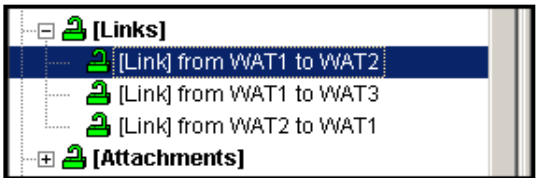
The **Link Information** window will be displayed.




***HINT:*** The **Link is Invalid** button is red because no link information has been entered.

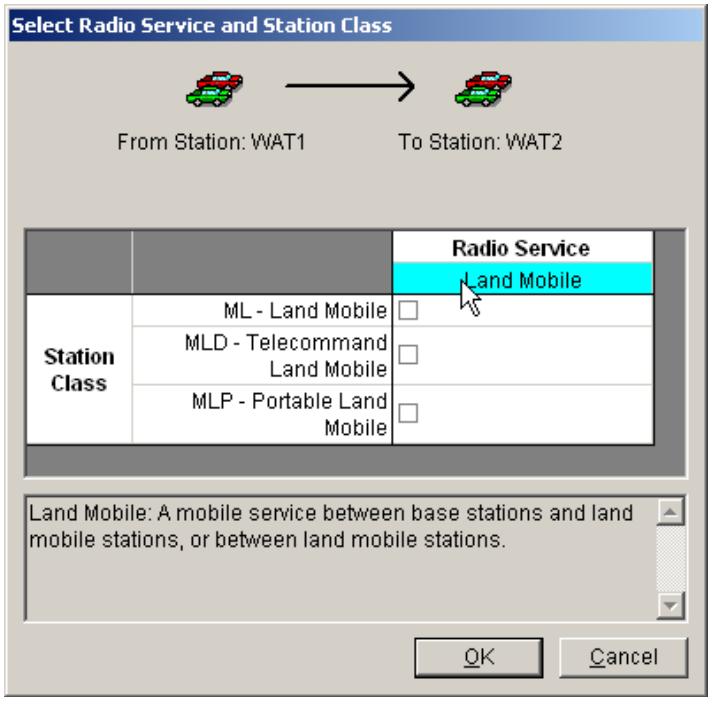
**Step 3.** Click **Close** to close the **Link Information** window.

**Step 4.** The second way to display the **Link Information** window is to click on the individual link shown in the Tree View. Click on **[Link] from WAT1 to WAT2**. Again, the **Link Information** window will be displayed.



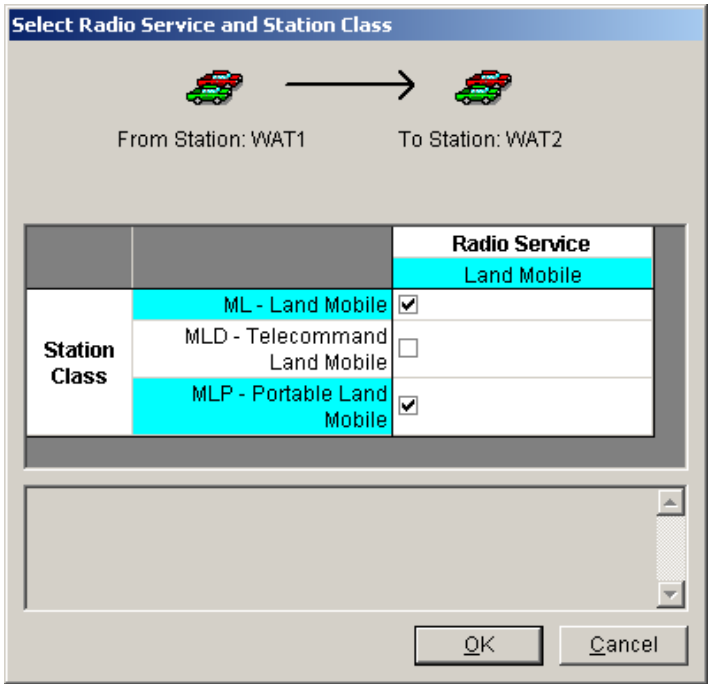
**Step 5.** Click the **Select Radio Service/Station Class** button.


The **Select Radio Service/Station Class** window is displayed.

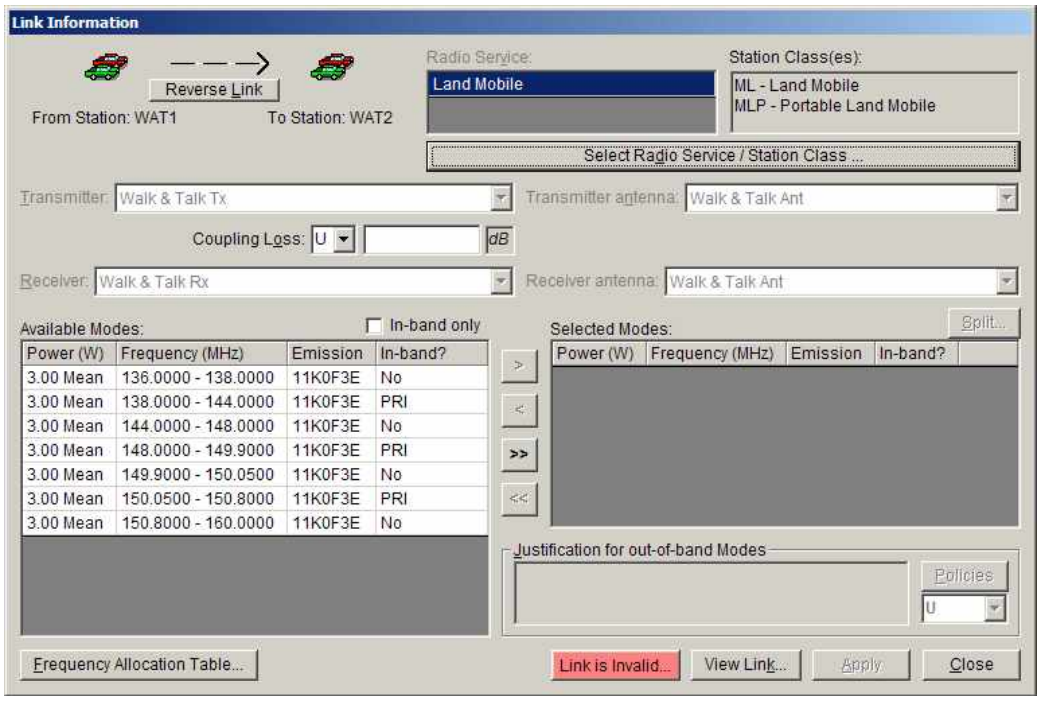



***HINT:*** As you hover the mouse cursor over the Station Class or Radio Service, a description of each appears in the box below.

**Step 6.** Select Station Classes **ML** and **MLP** (i.e., click the respective check boxes) as shown below and then click **OK**.

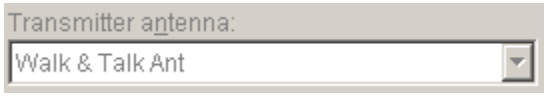


The **Link Information** window reappears with the Radio Service and Station Classes shown.




If there is more than one transmitter, choose a specific Transmitter using the button. Currently, we have identified only one transmitter for Station **WAT1**, therefore the pick list is grayed out.


If there is more than one transmitter antenna, choose a specific Transmitting Antenna using the button. Currently, we have identified only one Transmitting Antenna for Station **WAT1**.



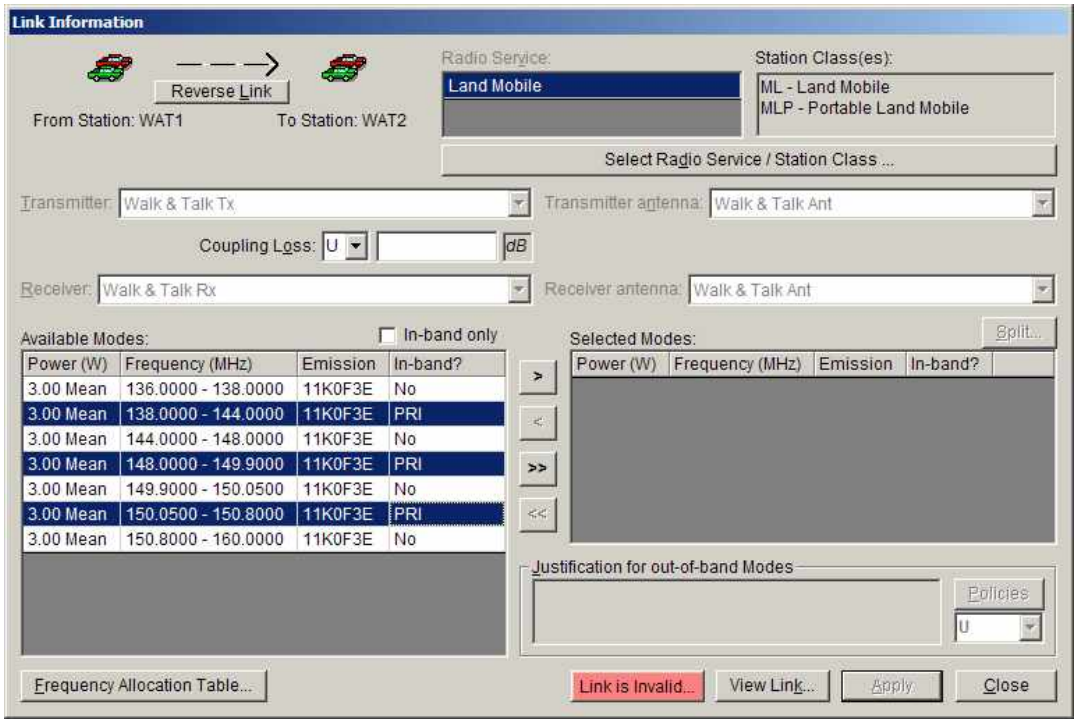

Enter the transmitter to transmitter antenna coupling loss (e.g., cable insertion loss). The security classification is entered using the button. Since we haven't entered this data before we could enter it now if we had the information.


***NOTE***: Coupling Loss (as well as SPD) is required for certain Satellite links.

If there is more than one receiver, choose a specific Receiver using the button. Currently, we have identified only one receiver for Station **WAT2**.


If there is more than one receiver antenna, choose a specific Receiving Antenna at Station **WAT2** using the button.


**Step 7.** From the list of **Available Modes** on the left side, select the modes that you want to certify. Select the 3 modes which have a **PRI** in the **In-band?** column. You can hold down the **Ctrl key** and click each one as shown below.

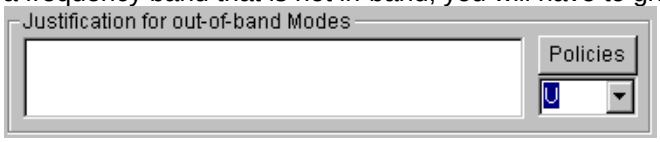



***HINT:*** You can also put a check in the 

box and only the in-band frequencies will appear. Then they can be moved as a group using the 

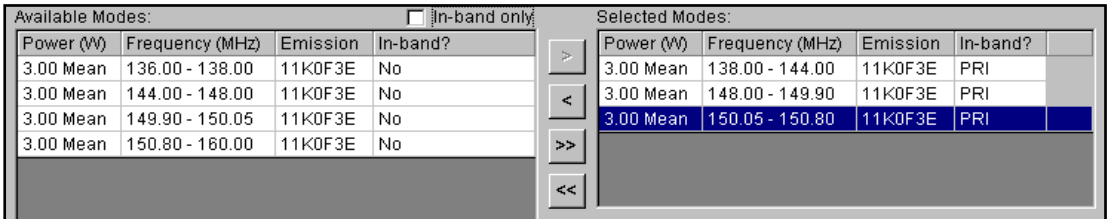
button or individually by using the 

button. If you choose a frequency band that is not in-band, you will have to give a justification for using the band.

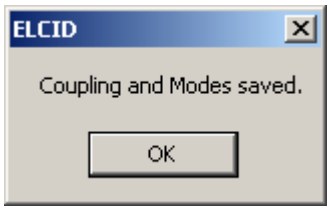



**Step 8.** Click the 

button to transfer the **Available Modes** to the list of **Selected Modes**.



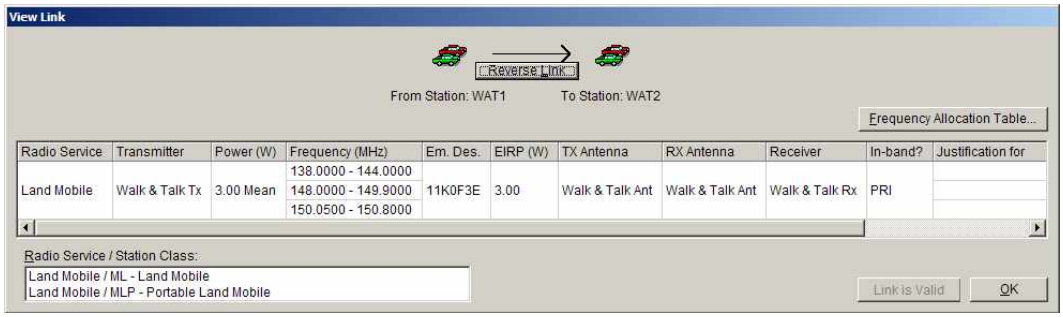
**Step 9.** Click **Apply** to save your choices. A notification window is displayed.




**Step 10.** Click **OK**.

***HINT:*** Notice that the red **Link is Invalid** button has changed to a grey **Link is Valid** button.

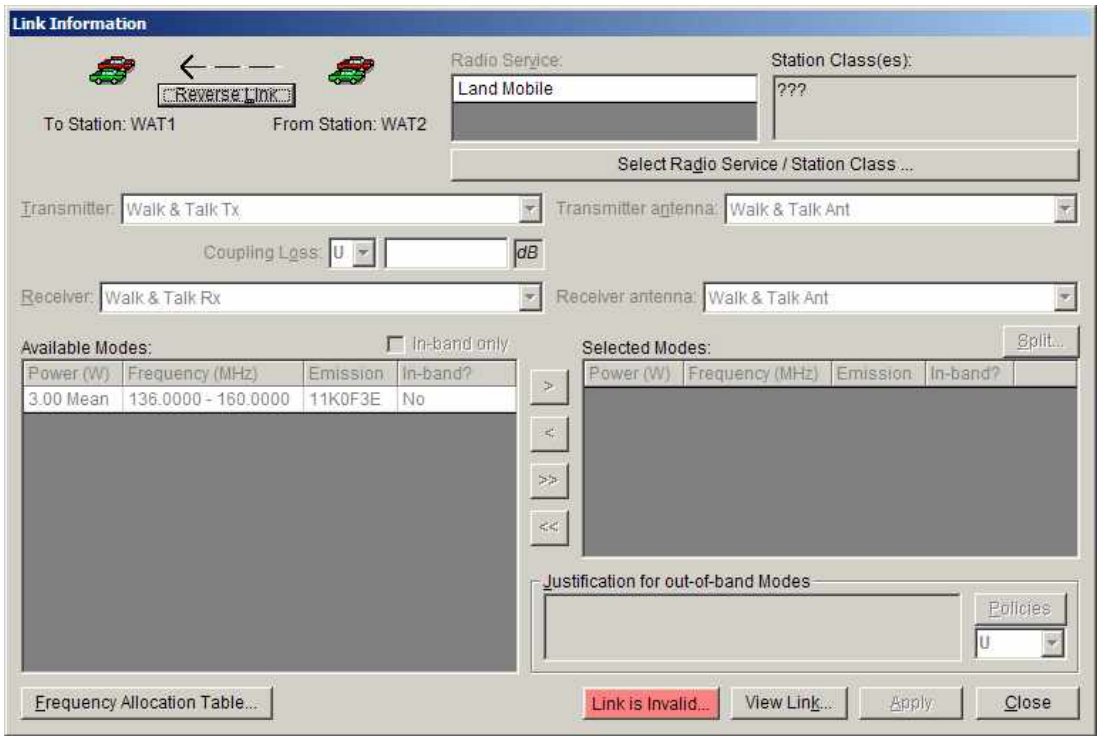
**Step 11.** Click the **View Link** button to see the link information that you have saved.




***HINT:*** The **View Link** screen will display all the modes for the link shown at the top of the window.

**Step 12.** Click **OK** after viewing the data.

**Step 13.** Click the **Reverse Link** button  to display the reverse link (i.e., Station **WAT2** to Station **WAT1**). The reverse link information will be displayed.



**Step 14.** Enter information for this link as we did the previous link. Click the **Select Radio Service/Station Class** button. The **Select Radio Service/Station Class** window is displayed.

**Step 15.** On the **Select Radio Service/Station Class** window, select station class **ML** and **MLP** by clicking the associated check boxes and clicking **OK**. The **Link Information** window is redisplayed with the selected Station Classes. Click the **In-band only** check box **on** and **off** to see all bands / in-band only modes.

**Step 16.** Since we only have one transmitter, receiver, transmitter antenna, and receiver antenna we cannot choose another but we can enter the **Coupling Loss** and its classification, and select the modes to be certified. For now we will **select each mode that has a PRI in the In-band?** column, as shown below.

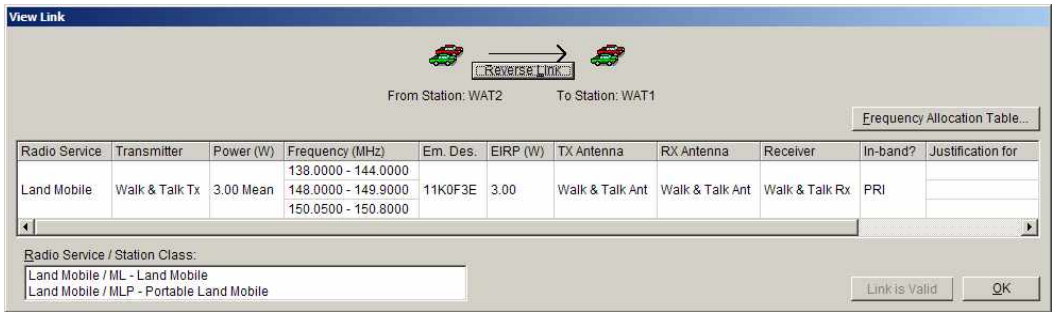
Available Modes: ☐ In-band only

| Power (W) | Frequency (MHz) | Emission | In-band? |
|---|---|---|---|
| 3.00 Mean | 136.00 - 138.00 | 11K0F3E | No |
| 3.00 Mean | 138.00 - 144.00 | 11K0F3E | PRI |
| 3.00 Mean | 144.00 - 148.00 | 11K0F3E | No |
| 3.00 Mean | 148.00 - 149.90 | 11K0F3E | PRI |
| 3.00 Mean | 149.90 - 150.05 | 11K0F3E | No |
| 3.00 Mean | 150.05 - 150.80 | 11K0F3E | PRI |
| 3.00 Mean | 150.80 - 160.00 | 11K0F3E | No |

**Step 17.** Click the [>] button to transfer the **Available Modes** to the list of **Selected Modes**.

**Step 18.** Click **Apply** to save your choices, and then click **OK** on the **Notification** window that pops up.

**Step 19.** Click the **View Link** button to see the link information that you have saved.

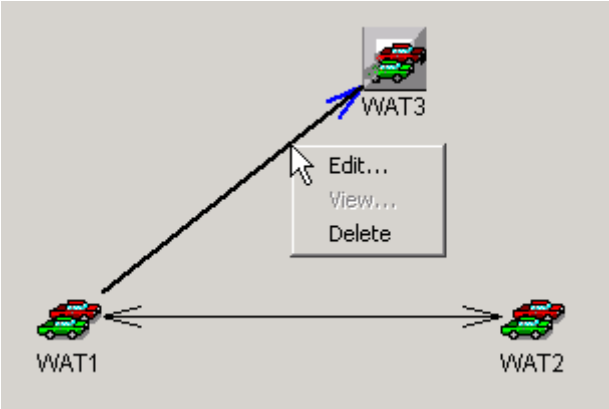



**Step 20.** Click **OK** to close the **View Link** window, and then click **Close** on the **Link Information** window to return to the Tree View.

**Step 21.** Now we are going to use the graphical view to add data for the link from **WAT1** to **WAT3**. In the Tree View, click **Diagram**.

***NOTE***: If the frequency list obscures the diagram, uncheck the **Show frequency list** box.

**Step 22.** **Right-click** on the link line between **WAT1** and **WAT3** **near the receiving end** and then click **Edit**.

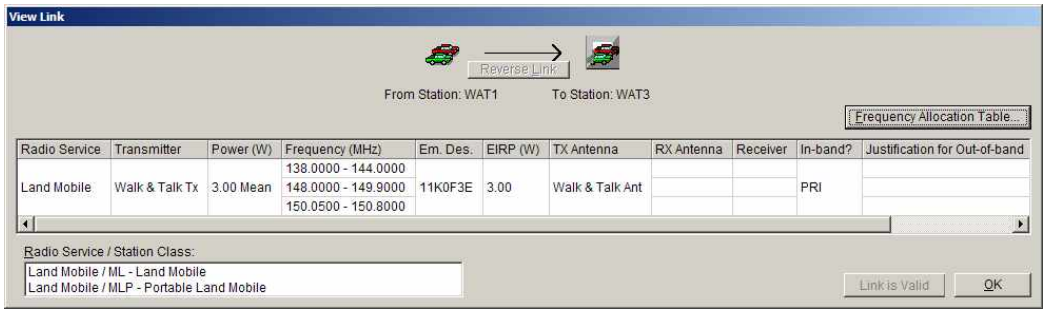



The familiar **Link Information** window will be displayed. Note that the **Receiver** and **Receiver Antenna** data blocks are blank, as **WAT3** is a generic station.

**Step 23**. **Enter** the following data for this link and click **Apply**.

- **Radio Service / Station Class -- ML and MLP**.
- **Coupling Loss -- Leave Blank**.
- **Modes -- 3.00 Mean 138.00 - 144.00 11K0F3E PRI**
  **3.00 Mean 148.00 - 149.90 11K0F3E PRI**
  **3.00 Mean 150.05 - 150.80 11K0F3E PRI**

The information should look like the following when you **view the link**.




**Step 24.** Click **OK** to close the **View Link** window, and then click **Close** on the **Link Information** window to return to the Tree View.

We have now finished entering data for the three links.

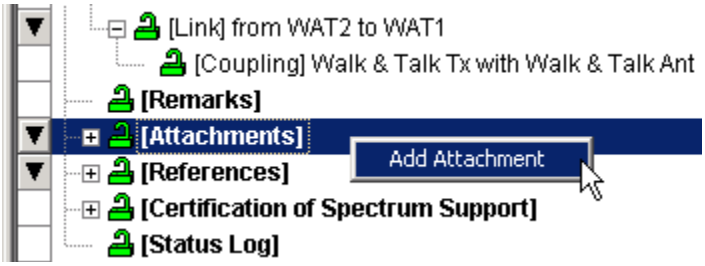
***HINT:*** Notice that the dashed lines between the links have become solid lines. This indicates that data has been entered for the links.

## 5.9 Adding Attachments

Often, supporting data is necessary to accompany a certification request. This could be to explain equipment parameters out of tolerance, detail compliance check failures, clarify a complicated system, request a waiver etc. Any kind of file can be attached to a certification application. The file could be a graphics file, a text file, or a spreadsheet file. (only common file types should be attached to allow NTIA to view the file)

> ***HINT:*** Once a file is attached, it can no longer be edited. If changes are necessary, the attachment should be deleted, the original should be updated and the attachment should be re-attached.

**Step 1.** **Right-click** on the **[Attachments]** node and then click **Add Attachment**.




The **Add Attachment** data grid is displayed.

| Data Item | Class | Value | Units |
|---|---|---|---|
| **Attachment** | U | | |
| SPS Number | | | |
| Date of the Attachment | | | date |

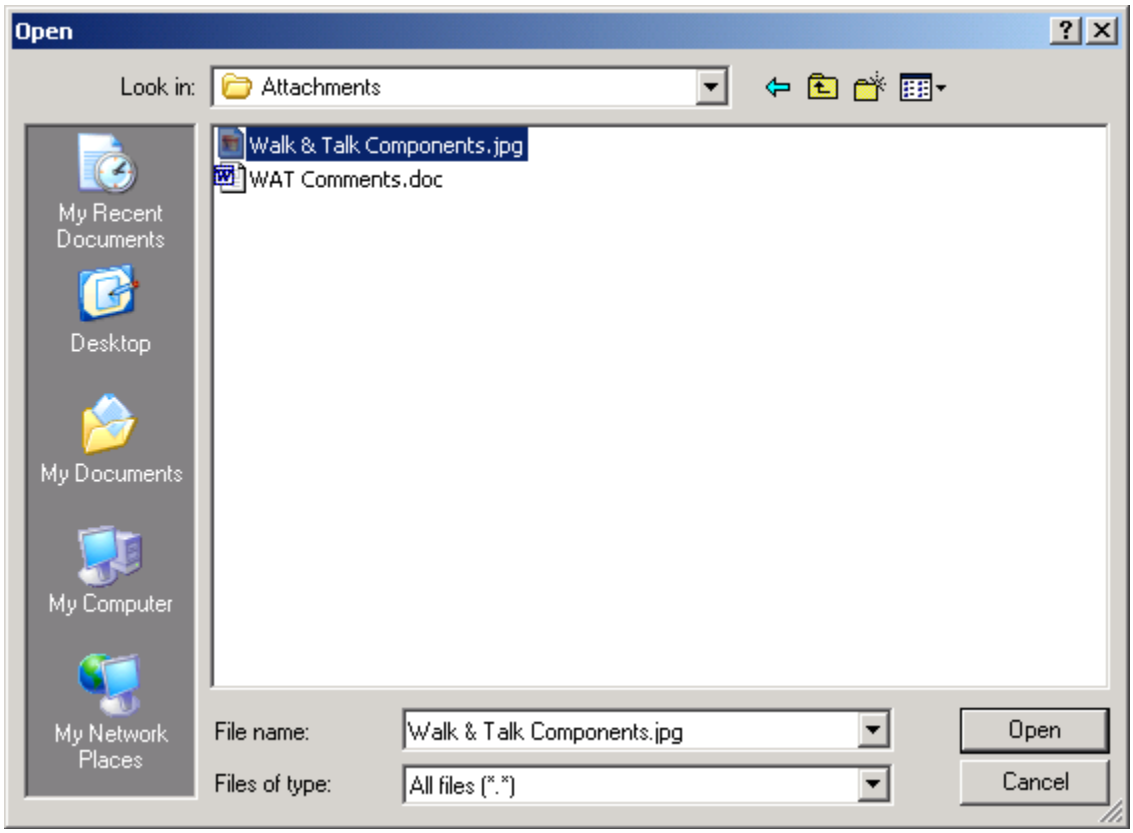
**Step 2.** Click in the **Attachment** Field and click the **Browse** button [...].

| Data Item | Class | Value | Units |
|---|---|---|---|
| **Attachment** | U | | |
| SPS Number | | | |
| Date of the Attachment | | | date |

The **Open** window will be displayed for you to select the file that you want to attach. You will find the attachment file on your Training CD.

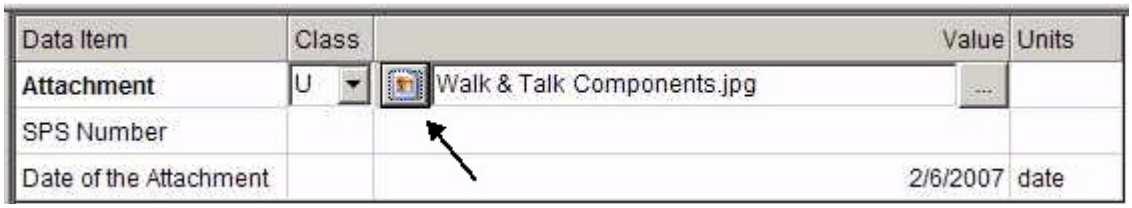
Note: This illustration shows the **Training CD** located on the **E:** drive. If your CD-ROM drive is not assigned to drive letter **E**, you must navigate to the correct drive.

**Step 3.** Go to **E:/Training Material/Attachments** folder.




***HINT:*** Make sure **All files (*.*)** is selected in the **Files of type** box.

**Step 4.** Click on **Walk & Talk Components.jpg** and then click **Open**. The file will now be listed as an attachment to your certification application.



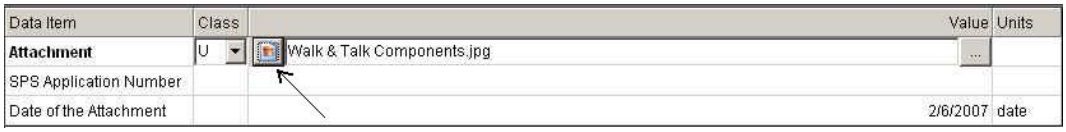

**Step 5.** **Enter** the following data and click the **Save** button.

| Field | Value |
|---|---|
| **Date of the Attachment** | **02/06/2010** |

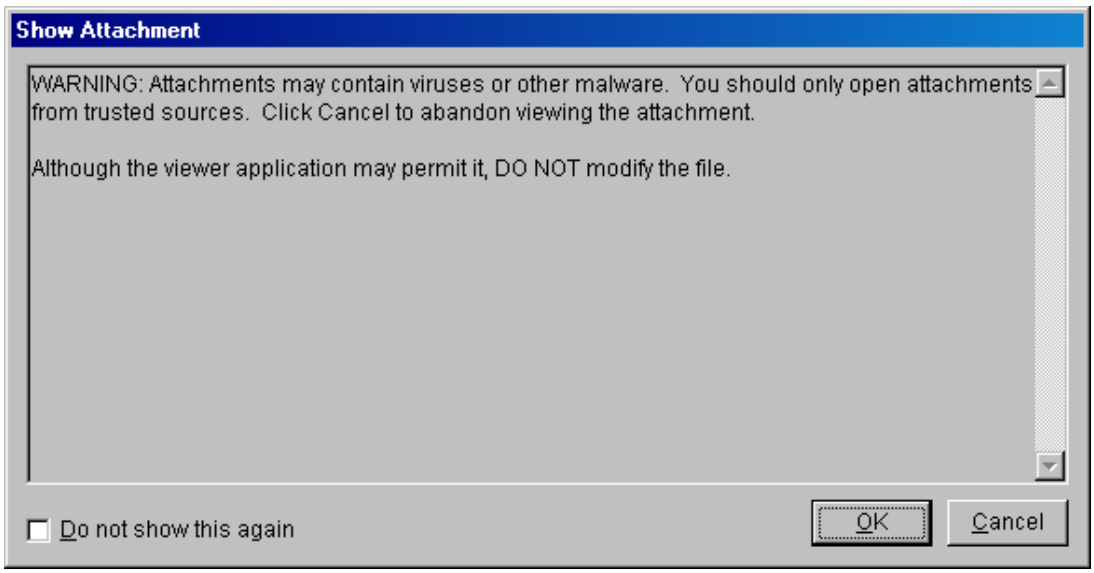
***HINT:*** The **Date of Attachment** is not today's date, but instead the date the attachment document was authored.

***HINT:*** If the attached document is classified, be sure to set the classification for the **Attachment** data field.

**Step 6.** To view the file, click on the **filename** that you just added in the **Value** box to give it focus, and then click on the icon to the left of the file name  . The icon should be active (shown with a dotted line around it).




The **Show Attachment** window will be displayed.




***HINT:*** This window may be disabled by checking the  box, or by setting the correct preferences.



**Step 7.** Click **OK** to open the file.

**Step 8.** **Close** the viewing window.

**Step 9.** We want to add the other file that was on our training CD as an attachment. Using what you have learned in Steps 1-7 above, **add the file WAT Comments.doc** as an attachment.

## 5.10 Viewing The Status Log

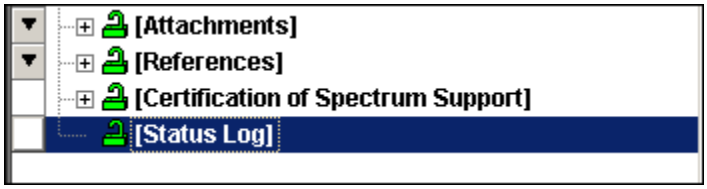
A status log is created and updated while a certification application is being processed. Most of the statuses are automated along with the time/date stamp of the action. Additonally, the Agency logged in at the time is also annotated with the updated status.

Types of automated statuses are:

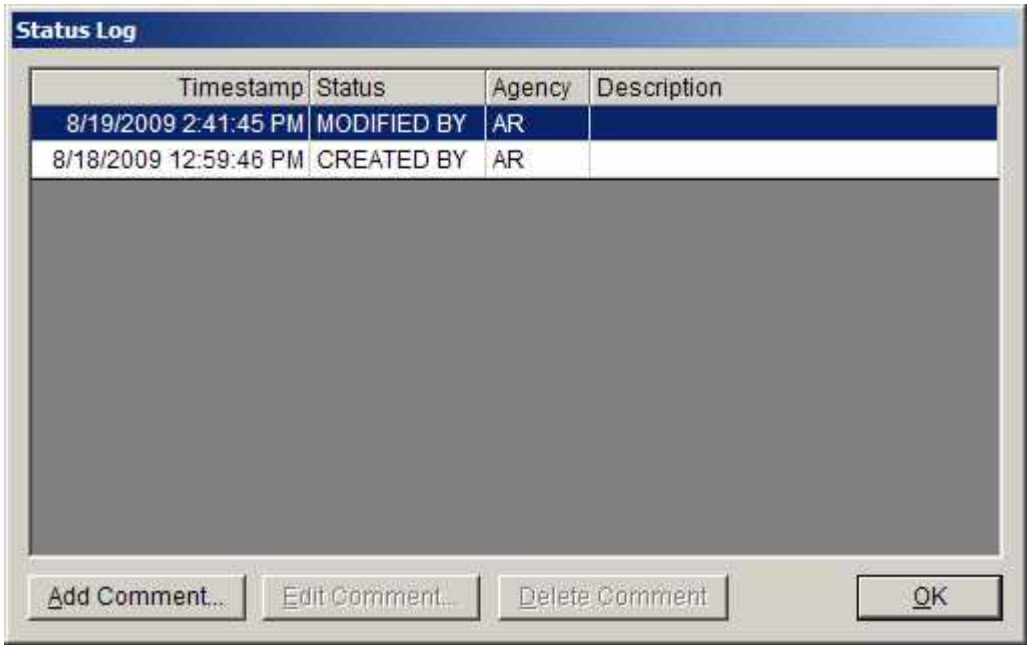
- CREATED BY
- IMPORTED BY
- MODIFIED BY
- EXPORTED BY
- COMPLIANCE CHECK

A manual status may be initated by adding a comment. This will apply the **COMMENT BY**, status, along with additonal **Description** text. The next few steps will show how to view the log and to add status to the log.

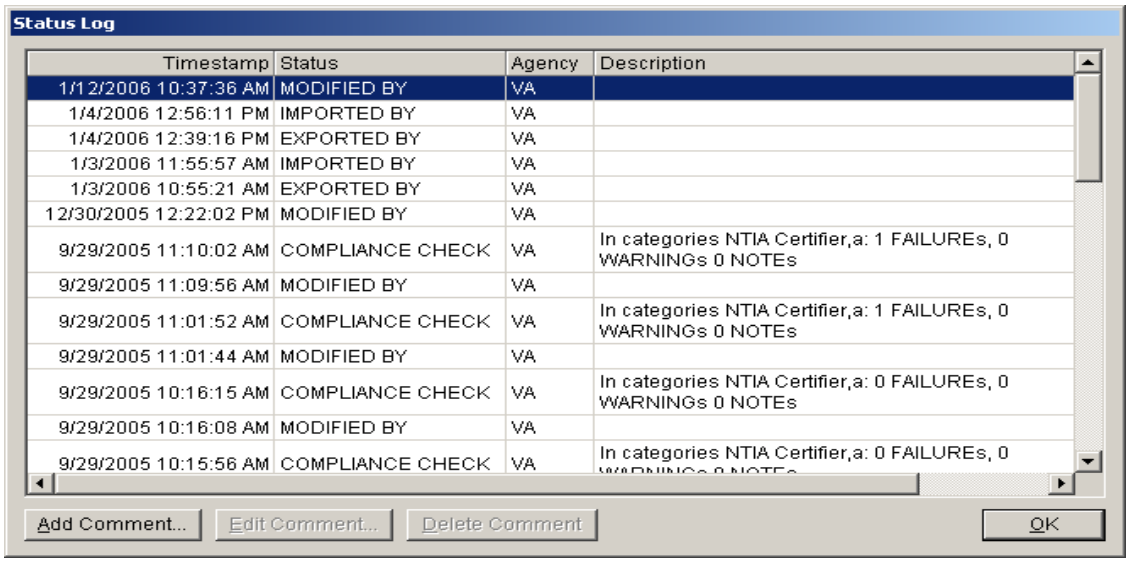
**Step 1.** From the Tree View, click on the **[Status Log]** node.




The **Status Log** window is displayed.

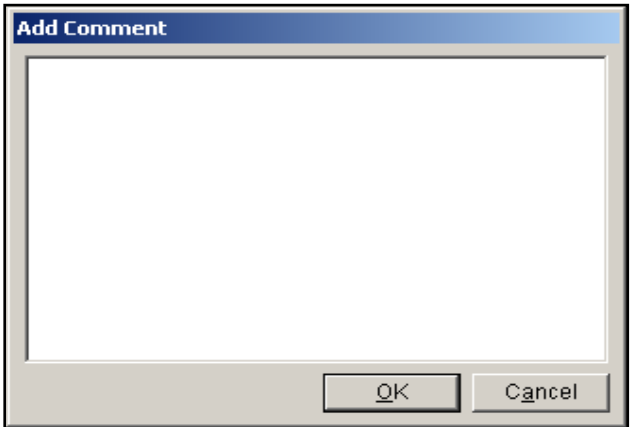


The following is an example log with more entries.

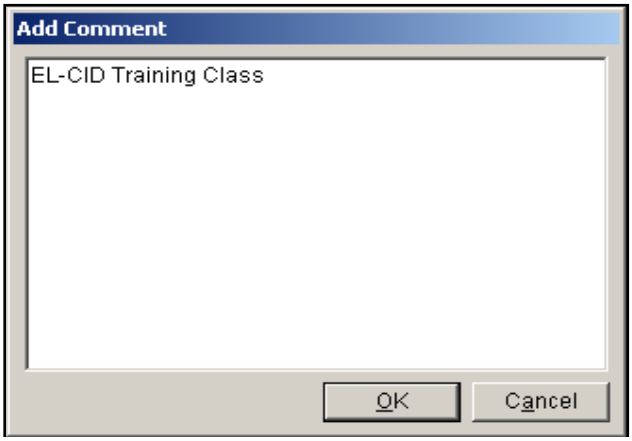



**Step 2.** Click the **Add Comment** button to add your own status entry.

The **Add Comment** window is displayed.

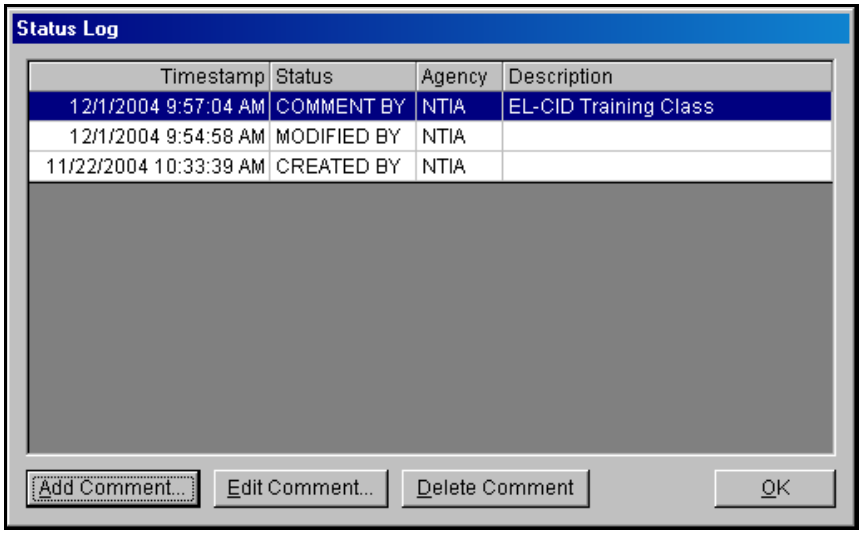



**Step 3.** In the window type **EL-CID Training Class** and then click **OK**.



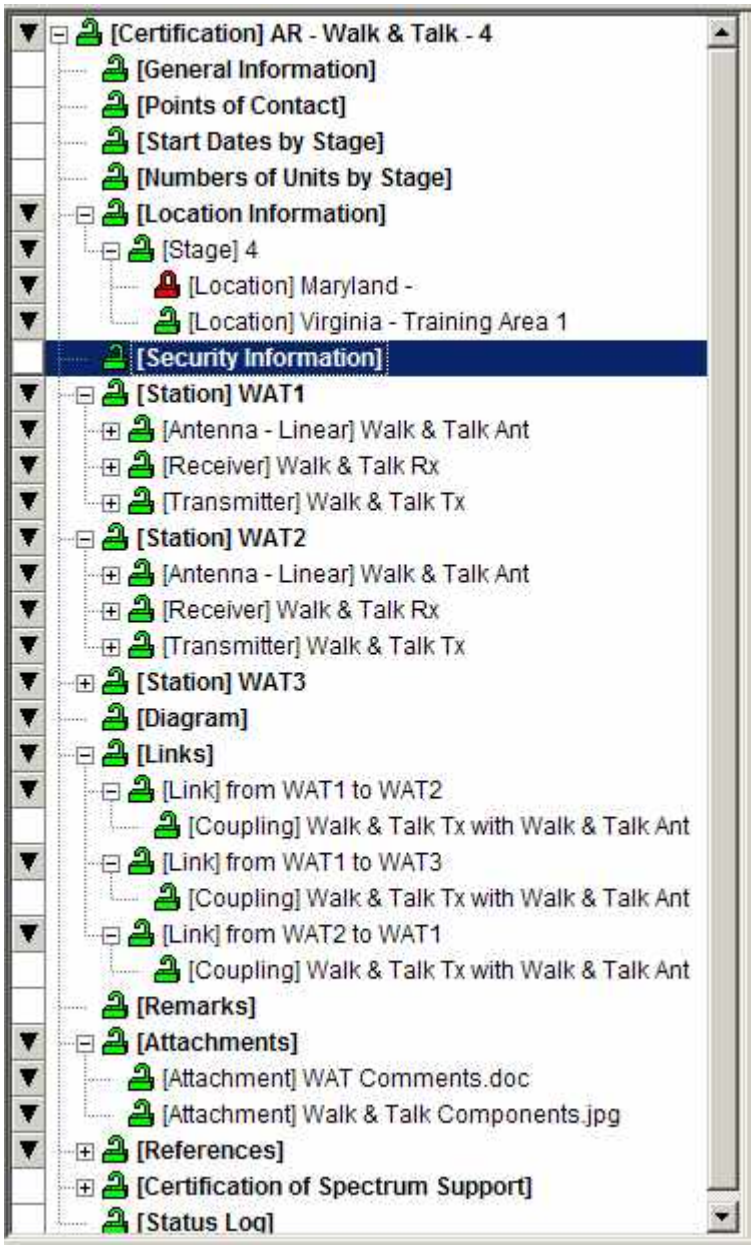
You will notice that your comment was added with the Status Code of **COMMENT BY**. Also notice that the latest status is displayed at the top of the log in chronological order.

***HINT:*** This comment may be edited (using the **Edit** and **Delete** buttons until the record is exported).




**Step 4.** Click **OK** to close the **Status Log** window.

This is what the Tree View should look like so far.



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# 6.0 RUNNING COMPLIANCE CHECKS

To be approved, a Certification application must meet standards set by the NTIA (and DoD and other national and international agencies). Most of these standards are published in the NTIA Manual of Regulations & Procedures for Federal Radio Frequency Management -- commonly referred to as the "Red Book". You can obtain a copy of the NTIA Manual on the Internet at

http://www.ntia.doc.gov/osmhome/redbook/redbook.html

EL-CID contains a powerful and flexible Compliance Check engine, which checks your records for compliance with many of these standards. The Compliance Checks are implemented as a series of SQL queries against the record. If a query returns any results, then the record is non-Compliant. There are 3 levels of non-Compliance:

**FAILURE** The record is not compliant and must be fixed, or a waiver must be obtained.

**WARNING** The record may not be compliant or there may be some other inconsistency or error in the data.

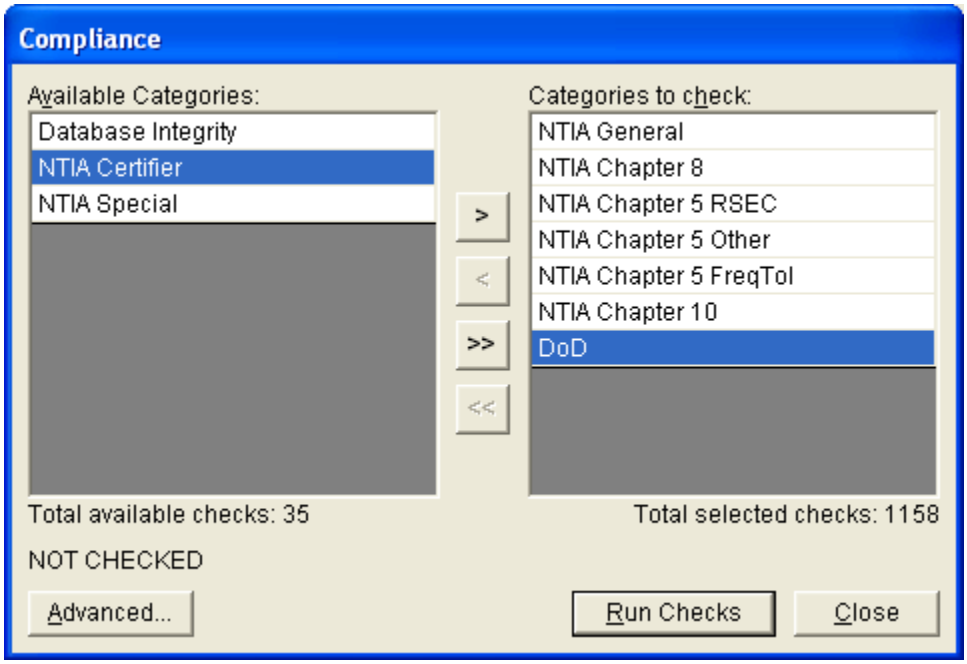
**NOTE** These are messages to help you build more complete or more accurate data, but do not indicate a compliance failure.

From time to time, NTIA will update the Compliance Checks in EL-CID and distribute them to EL-CID users as export files, which you should import following the steps in **Appendix C**.

To run Compliance Checks against the Walk & Talk record we have built, proceed as follows.

**Step 1.** Click on the **Compliance Checks** button  located on the tool bar.

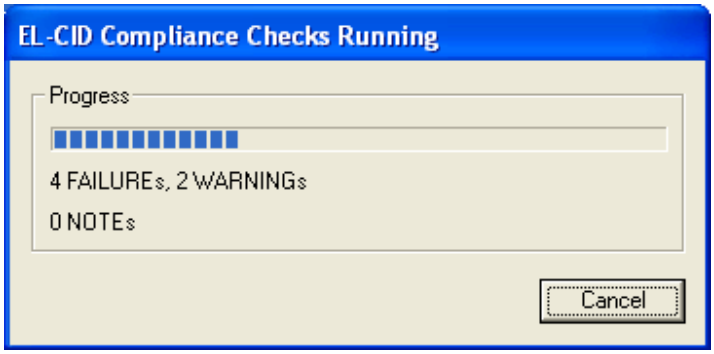
The **Compliance** window is displayed.



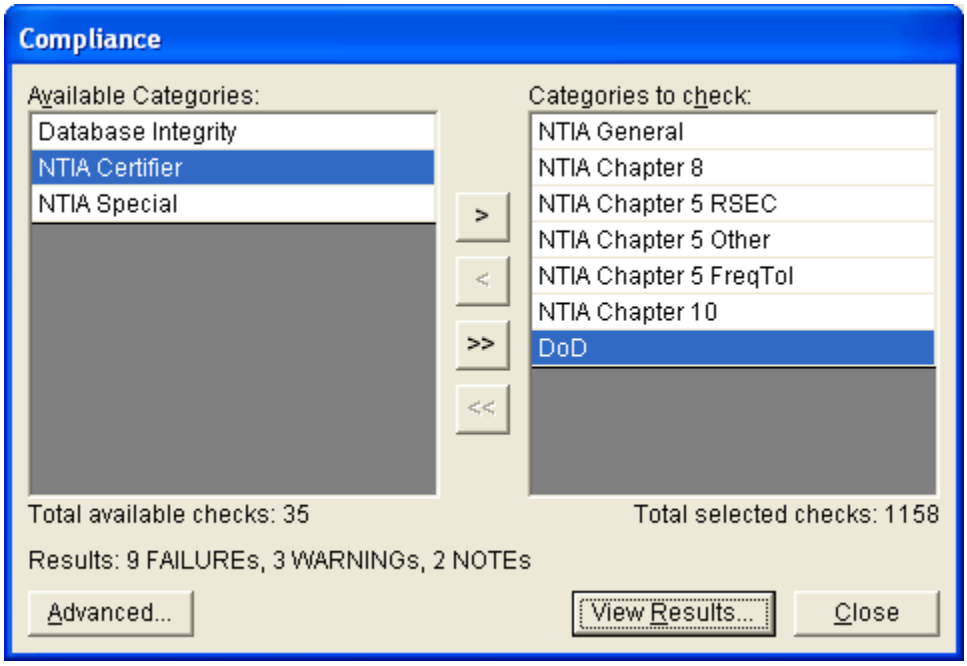

Items from the **Available Categories** list can be added to the **Categories to check** list by using the arrow buttons in the middle of the screen. We will select the categories shown above.

You can view all the checks by clicking the **Advanced** button.

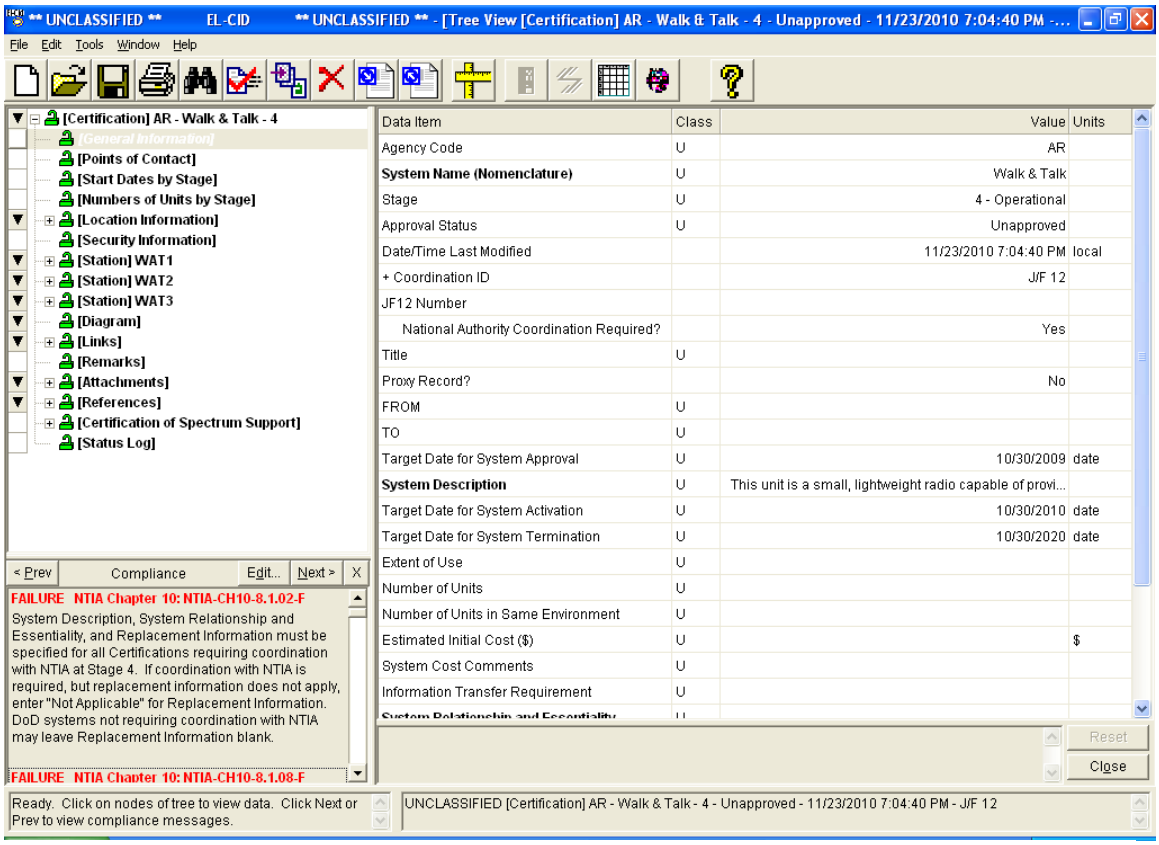
**Step 2.** Click the **Run Checks** button. The following **EL-CID Compliance Checks Running** window is displayed.




When the compliance checks have run, the **Compliance** window is shown with the summary of the number of failures, warning, and notes.



**Step 3.** To see the results, click the **View Results** button. The screen containing the first error will be displayed and the relevant compliance message will be shown at the bottom left of the screen.




***HINT:*** The **Compliance Result** panel may be enlarged by dragging the divider upwards.

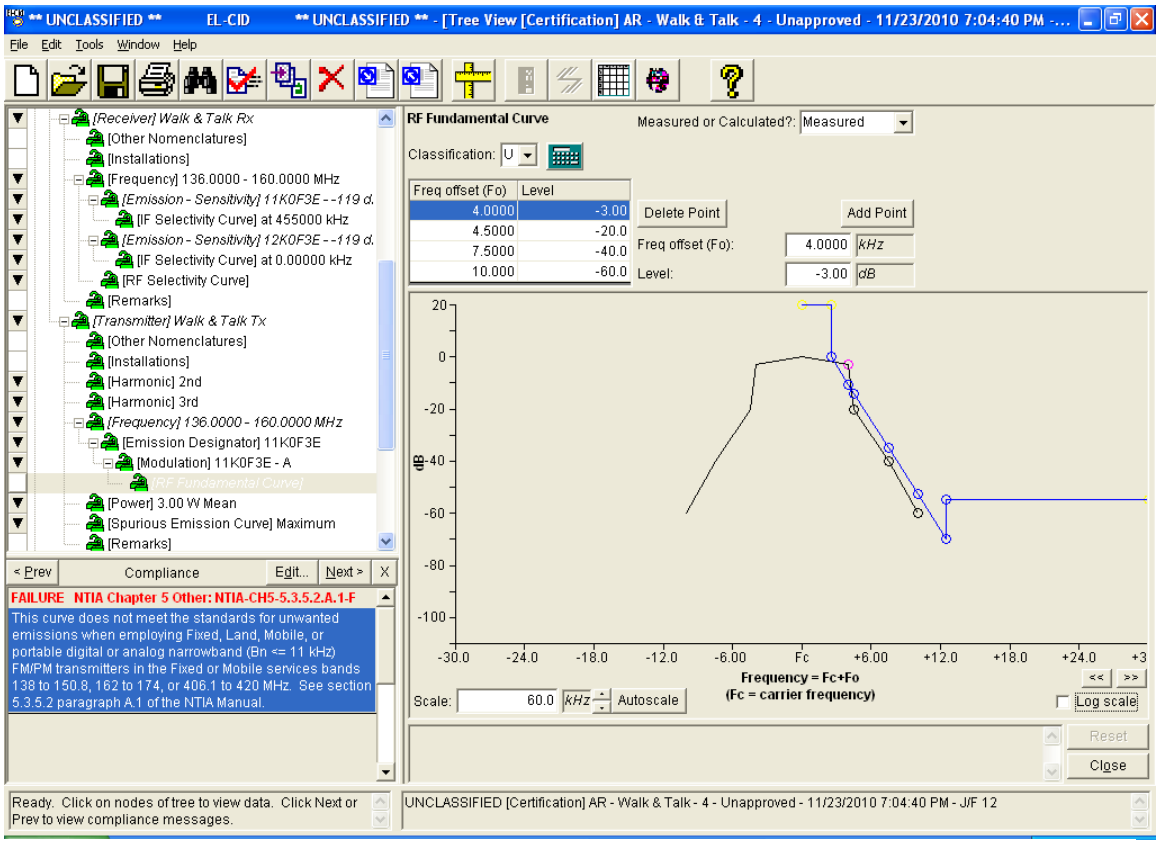
Notice that we did not fill out the fields for **System Relationship and Essentiality** or **Replacement Information**. These are required fields in this case.

Normally you would correct these errors and re-run the compliance checks to verify that all errors have been corrected. However, we are not going to correct these results at this time.

***NOTE:*** The messages do not disappear immediately upon correcting the error.

**Step 4.** To see the remaining compliance messages click the **Next** button. As you can see, the messages indicate the type of message (e.g., Failure, Warning, or Note), the reason for the message, and the reference document(s).

Notice how the **RF Fundamental Curve** fails the NTIA standard curve (shown in blue) in the picture below. To pass, the curve must be everywhere underneath the standard curve.




***HINT:*** A common mistake is to have entered full bandwidths, rather than frequency offsets, when entering the curve. If this is the case, correct the curve by dividing the bandwidths in half.

**Step 5.** Click on the 

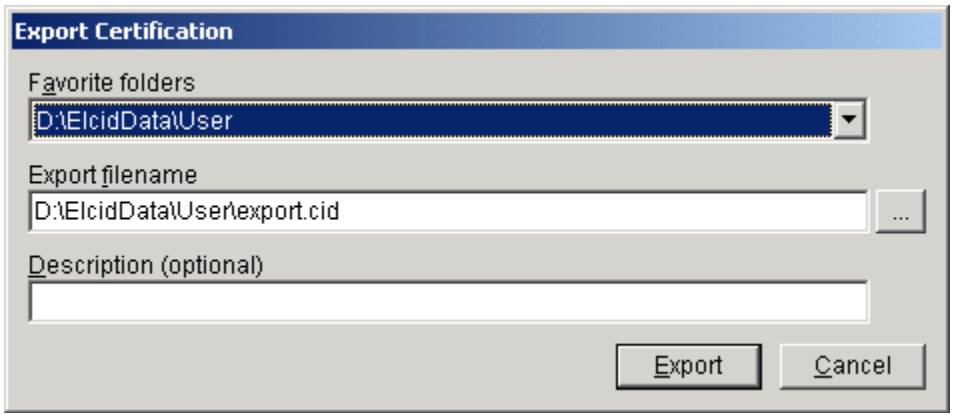
button in the lower left hand window (the **Compliance Results** window) to close it.

# 7.0 EXPORTING CERTIFICATION RECORDS

Once a certification is corrected, you will want to export the certification so it can be forwarded to the next higher organization that will review it. The next few steps will illustrate the exporting process.

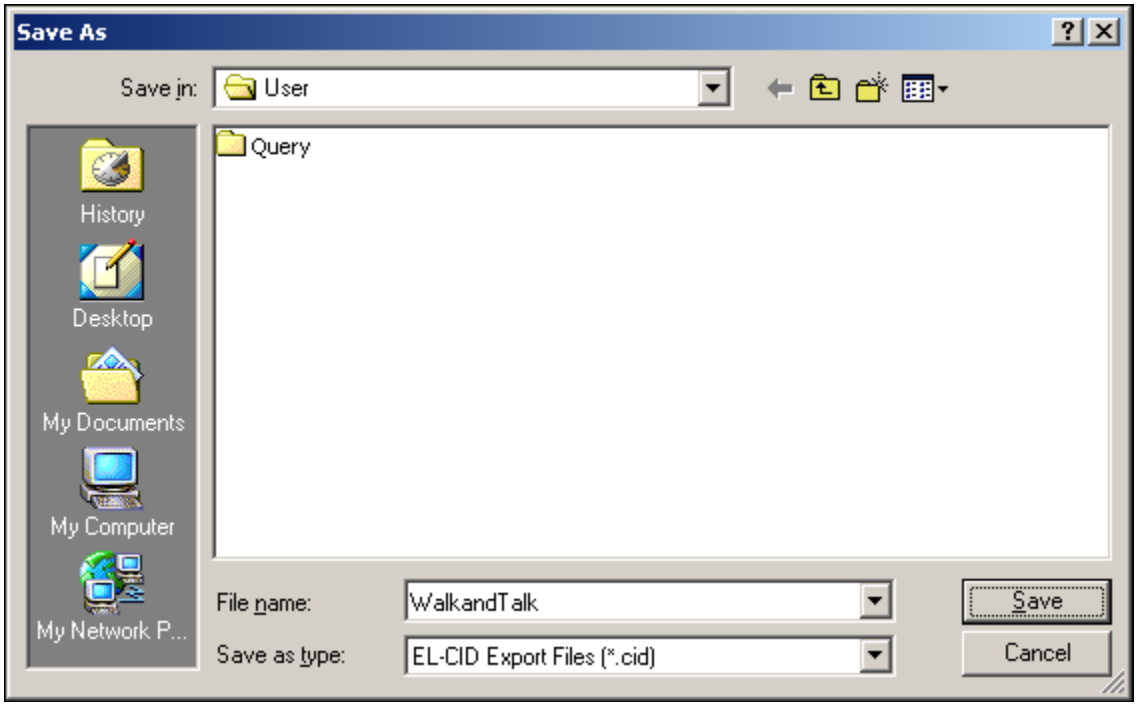
**Step 1.** Click the **Export** button  on the tool bar.

The **Export Certification** window is displayed. Navigate to your **D:** drive and select the folder **D:\ElcidData\User**.

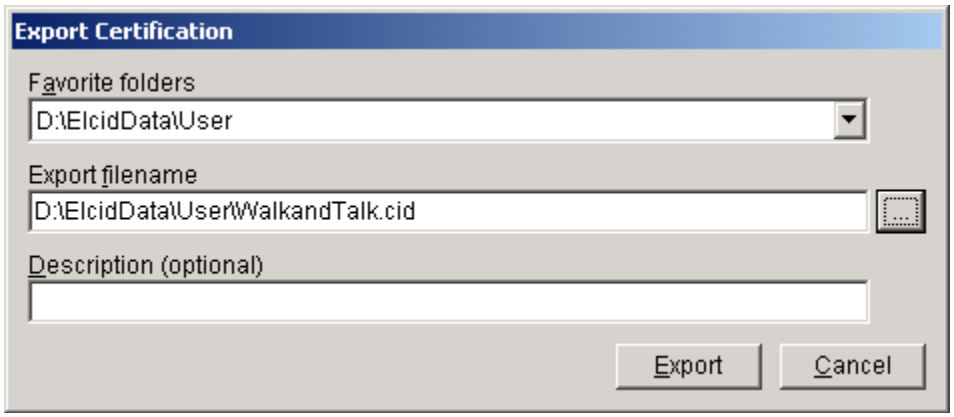



Notice that a default file name of export.cid is entered for you, but you should specify a different filename.

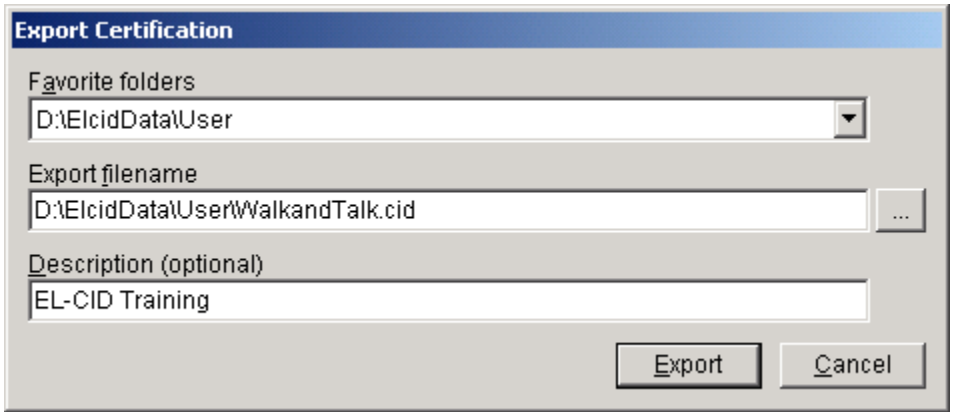
**Step 2.** Click the **Browse** button  and enter **WalkandTalk** as the filename, as shown below.



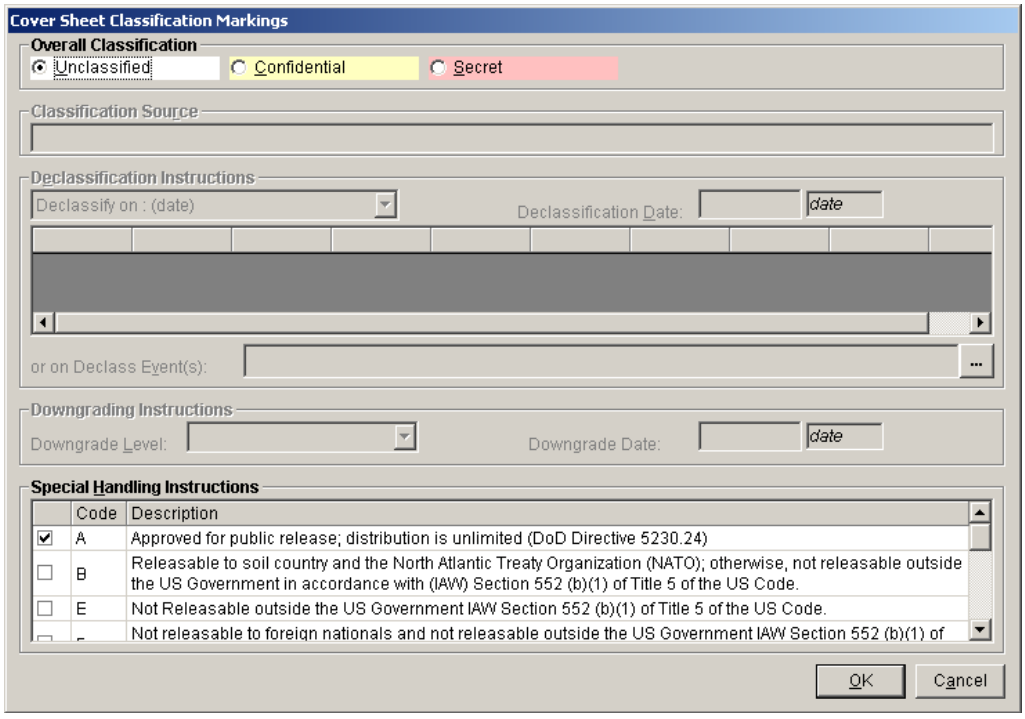
**Step 3.** Click **Save**. The **Export Certification** window is displayed again showing the path and filename that you selected.



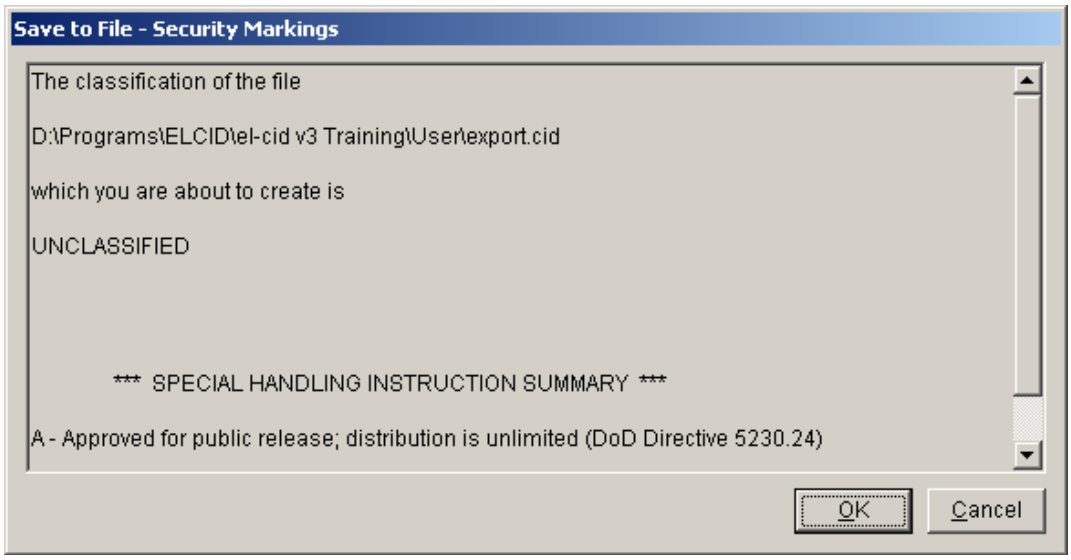

**Step 4.** Type **EL-CID Training** into the **Description** box.



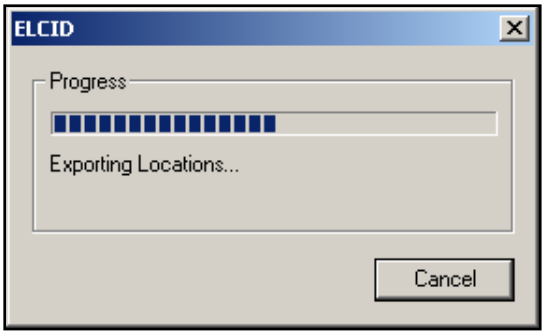

**Step 5.** Click **Export**. The **Cover Sheet Classification Markings** window is displayed.



**Step 6.** Click **OK**. The **Save to File – Security Markings** window is displayed.




**Step 7.** Click **OK**. A **Progress** window is displayed. When it closes, the file has been saved and the Tree View will reappear.



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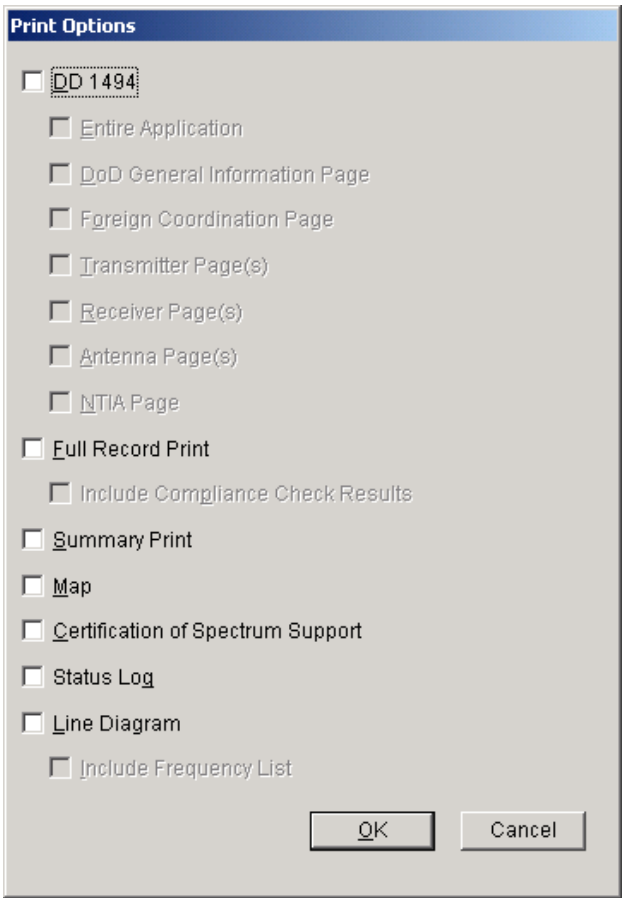
# 8.0 PRINTING A CERTIFICATION RECORD

The Print function can be used to preview and/or print a record in a variety of formats. Additionally, parts (or pages) of a record can also be displayed. The formatted and previewed record can also be saved to a file.

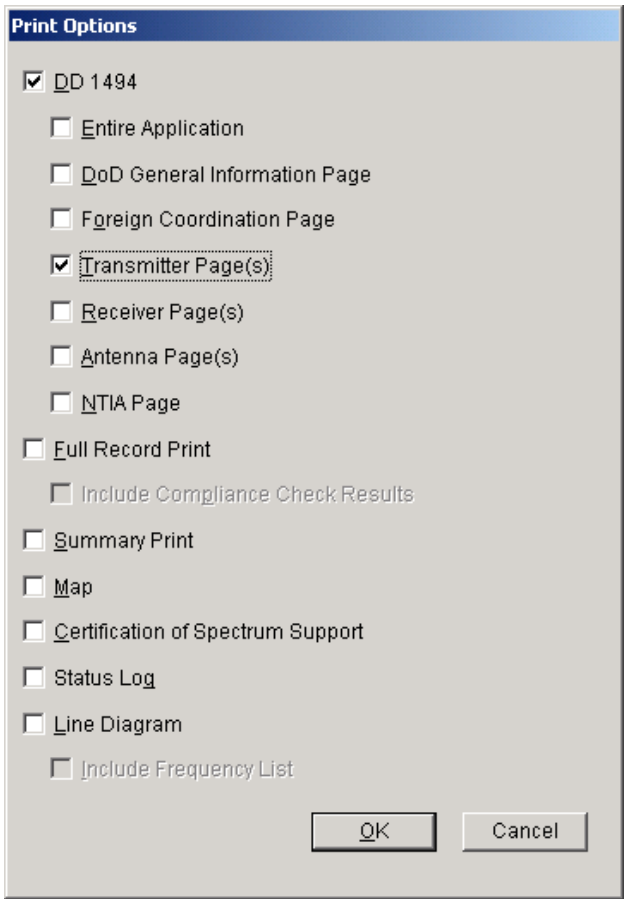
**Step 1.** Click the **Print** button  on the tool bar.

The **Print Options** window is displayed.

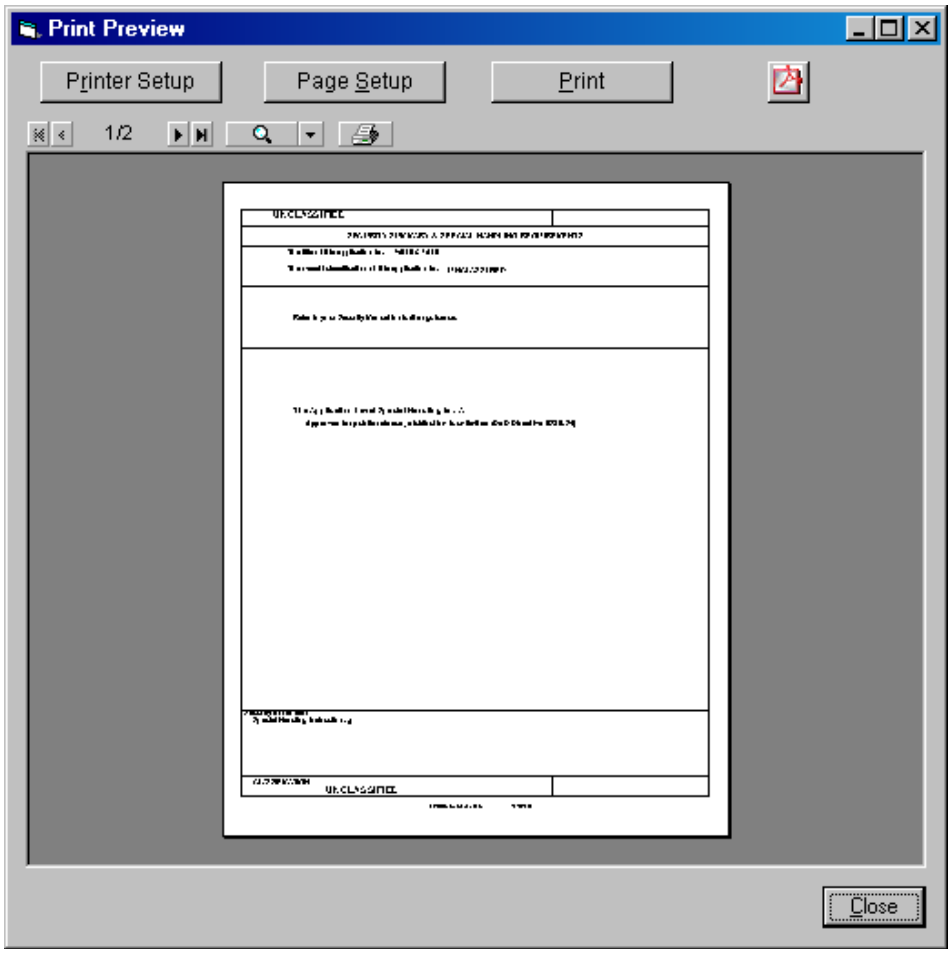



**Step 2.** Check the **DD 1494** check box and then you will see that additional options become active for the DD 1494 output.

**Step 3.** Check the **Transmitter Page(s)** check box and then click **OK**.

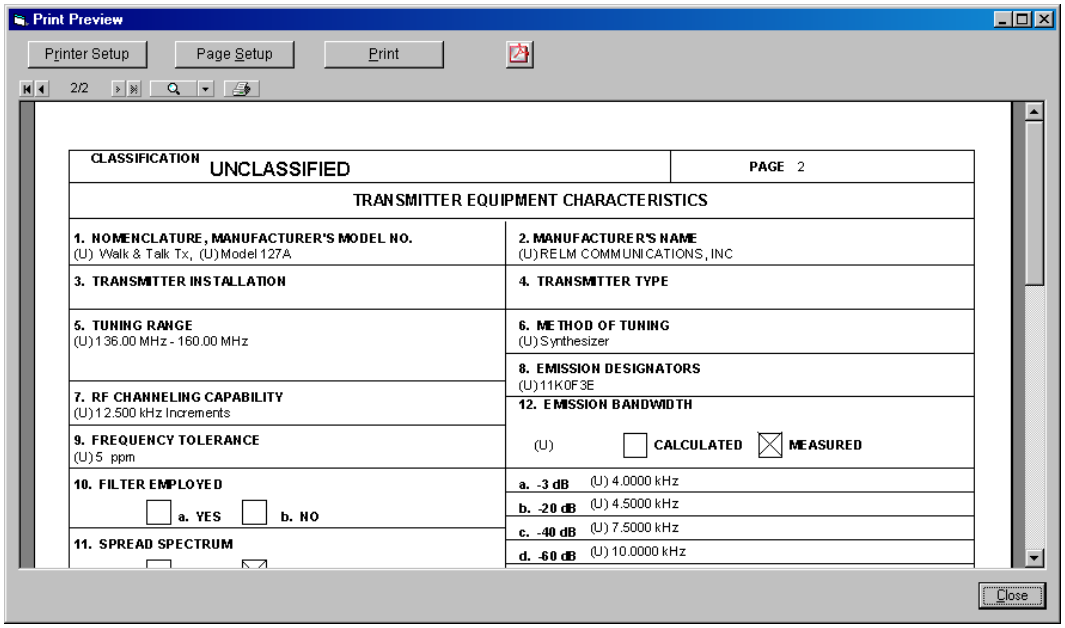


The **Print Preview** window is displayed showing the cover page.




***HINT:*** It will be helpful to maximize the window.

**Step 4.** Click ▶ to go to the next page. Use the magnifying glass icon 🔍 to zoom in on the **Transmitter Equipment Characteristics** page.



***HINT:*** Hold down the **Ctrl** key and click with the left mouse button to zoom in. Hold down the **Ctrl** key and right-click to zoom out. Hold down the **Alt** key and right-click to page forward. Hold down the **Alt** key and click the left mouse button to page backwards.

**Step 5.** Click the **Close** button.

**Step 6.** Click the **Print** button again, and then select the **Full Record Print** check box and the **OK** button.

**Step 7.** **Review the various pages** of the output. If you want to actually print the document you would click the **Print** button (but don't actually print the document.)

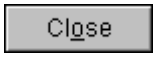
***HINT:*** You can use the PDF button  to send the printout to a Portable Document Format file.

**Step 8.** Click **Close.**

**Step 9.** Click the **Print** button again, and then select the **Summary Print** check box and the **OK** button.

**Step 10.** **Review the various pages** of the output.

**Step 11.** Click **Close**.

**Step 12.** Click **File | Close** on the main menu or use the 

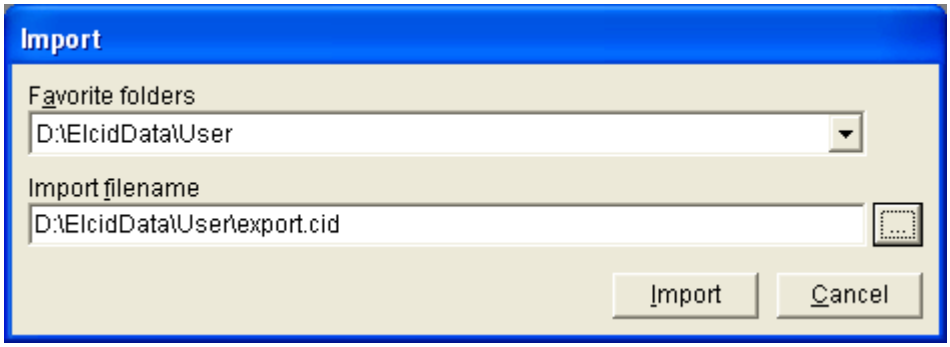
button to close the current certification application.

# 9.0 IMPORTING A CERTIFICATION APPLICATION

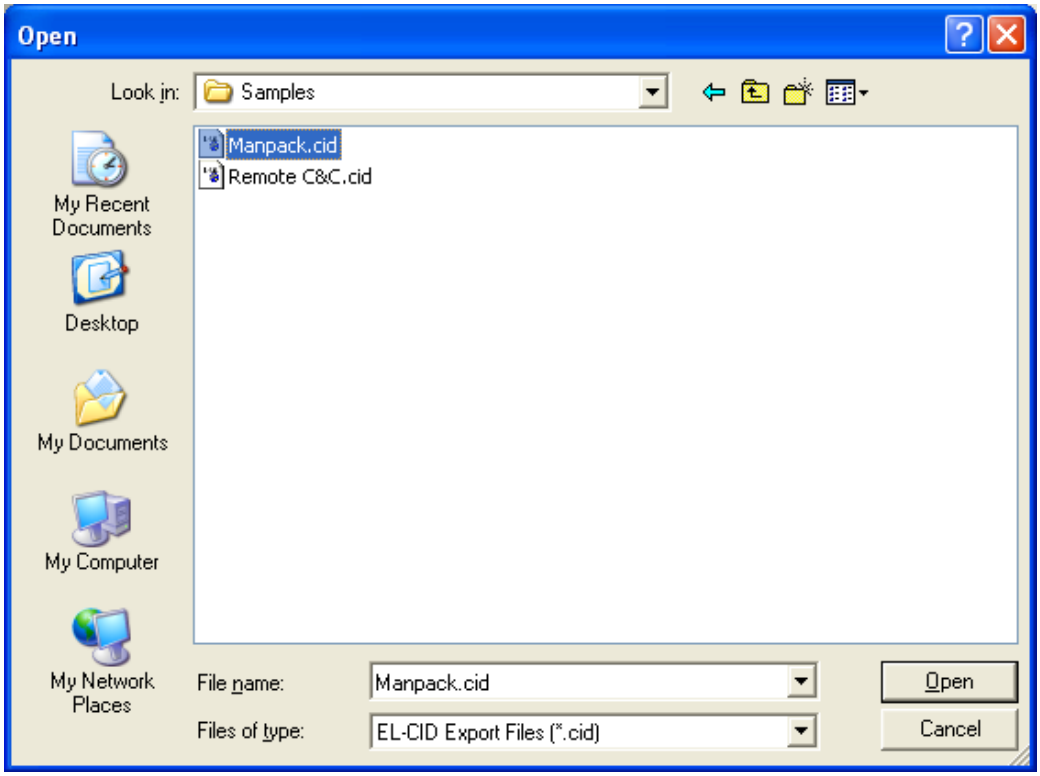
You may need to import a certification application that was prepared by someone else. The following steps will illustrate how to perform this import.

**Step 1.** Click the **Import** button  on the tool bar.

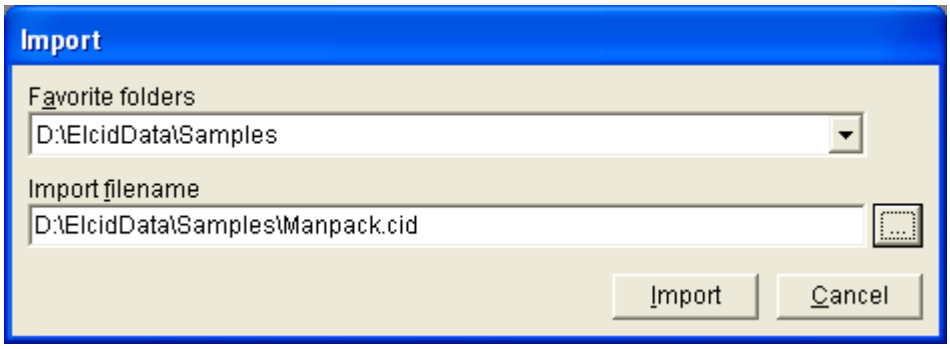
The **Import** window is displayed.




**Step 2.** Click the **browse** button to select the file to import. Navigate to the **Samples** folder in the EL-CID data folder (For training, this will be the **D:\ElcidData\Samples**). Highlight the filename **Manpack.cid** and then click **Open**.

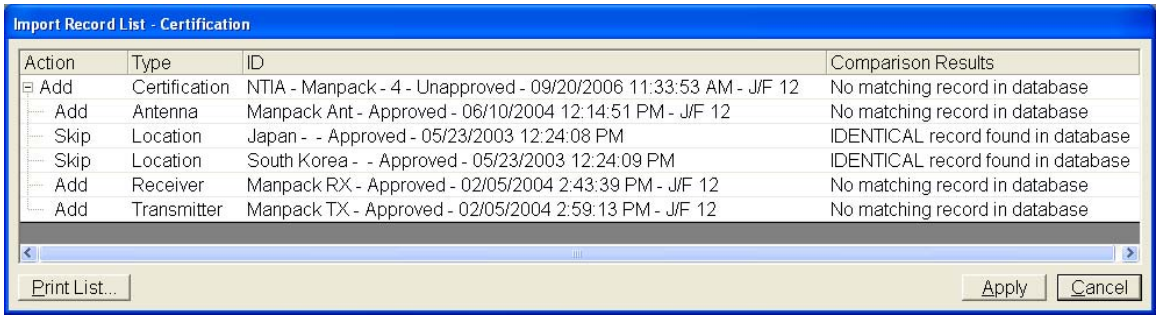


The **Import** window displays the selection.




**Step 3.** Click **Import**. The **File Description** window is displayed.

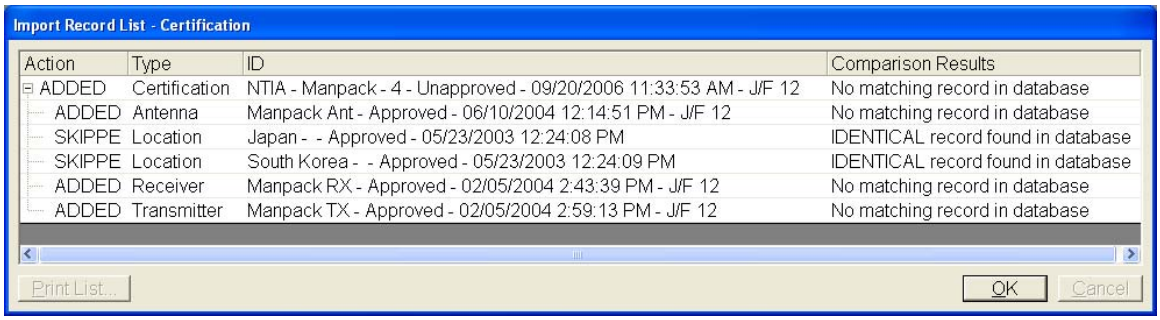

**Step 4.** Click **OK**. The **Import Record List - Certification** window is displayed.




Notice the locations that are marked **Skip**. This is because identical **Location** records already exist in the database. There is no point in importing such records and creating duplicates. Instead, when the **Manpack** certification is imported, it will be associated with the existing **Location** records already in the database.

Depending upon the **Comparison Results**, it is possible to override some of these actions. For example, to override adding a Certification record, click on **Add** in the **Action** column in the Certification row. In the list that drops down, select **Skip**. If a record is marked **Skip** because there is a **NEWER** record in the database, you can override it to **Add**. Notice that you cannot override **Skip** if the there is an **IDENTICAL** record in the database. Also, you cannot override an equipment or Location from **Add** to **Skip** if the Certification containing the equipment is **Add**, because doing so would modify the Certification record.

**Step 5.** Click **Apply**. The **Progress** window is briefly displayed and then the **Import Record List - Certification** window reappears. The rows marked **Add** have changed to **ADDED** and the rows marked **Skip** have changed to **SKIPPED**. At this point, the records have been imported into the database.

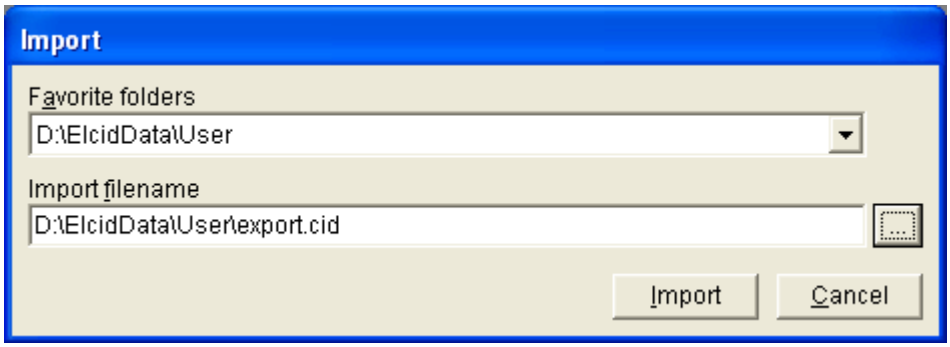



**Step 6.** Click **OK** to close the window.

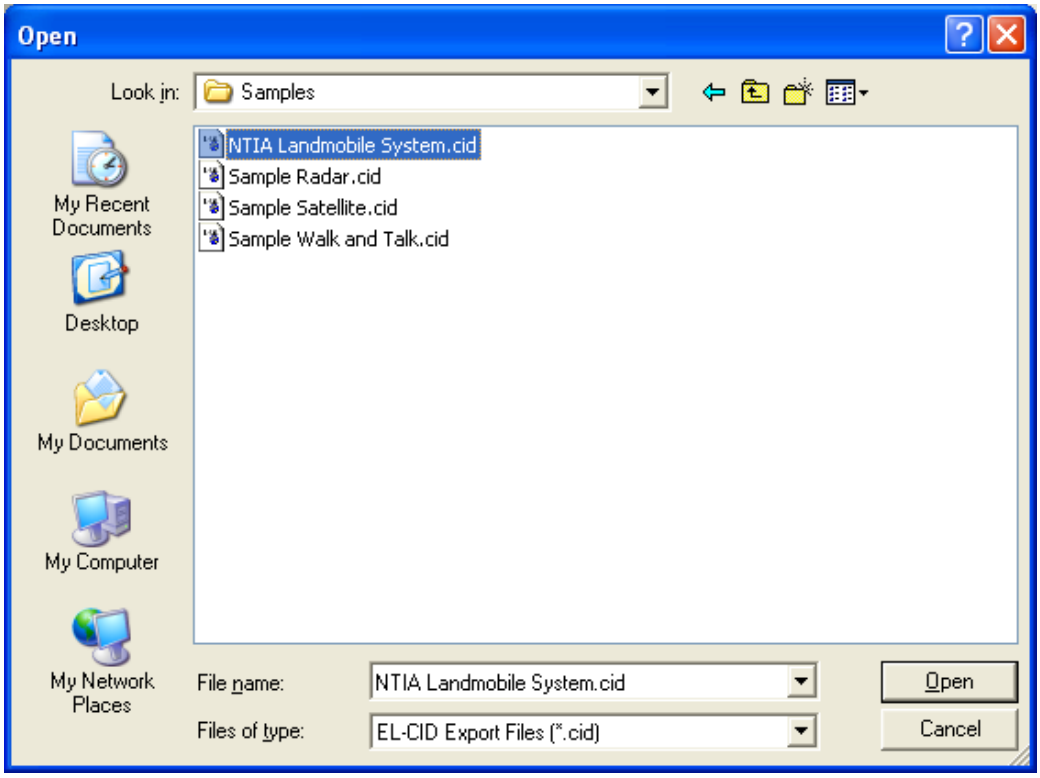
**Step 7**. Repeat the steps above to import the file named **NTIA Landmobile System.cid**, which you will find in the **Training Material\Samples** folder on your **Training CD**. We'll need this record in the next chapter.

**Step 8.** Click the **Import** button  on the tool bar.

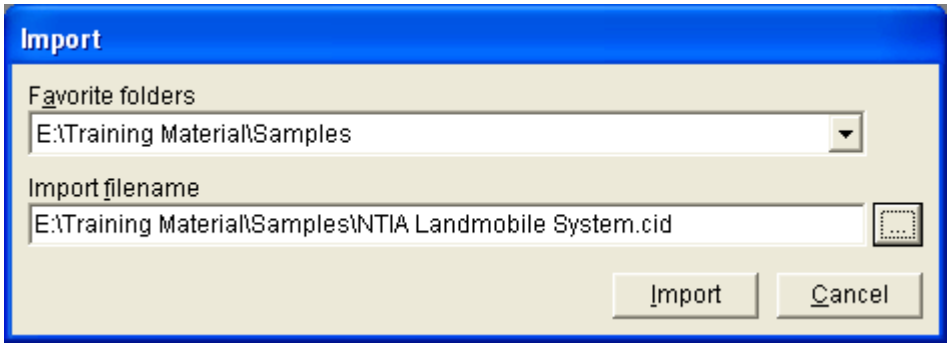
The **Import** window is displayed.




**Step 9.** Click the **browse** button to select the file to import. Navigate to the **Training Material\Samples** folder on your **Training CD** (For training, this will be the **E:\Training Materials\Samples**). Highlight the filename **NTIA Landmobile System.cid** and then click **Open**.

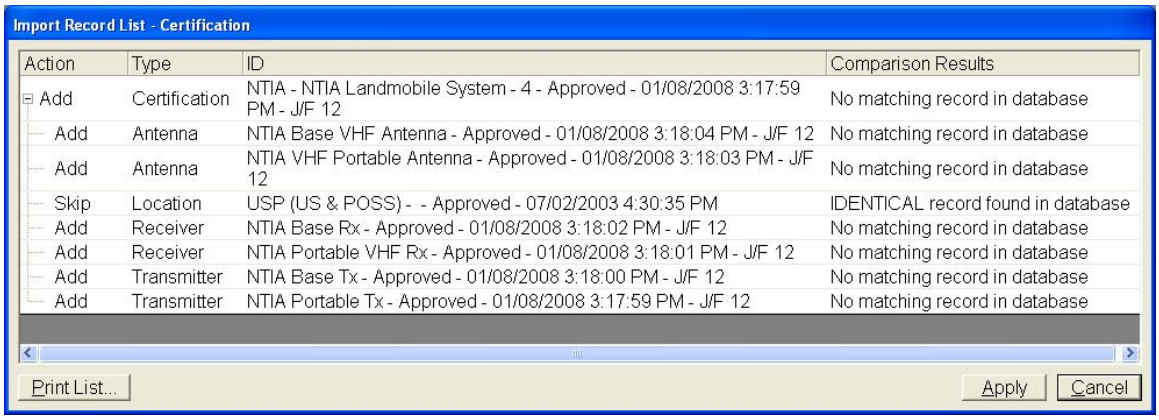



The **Import** window displays the selection.

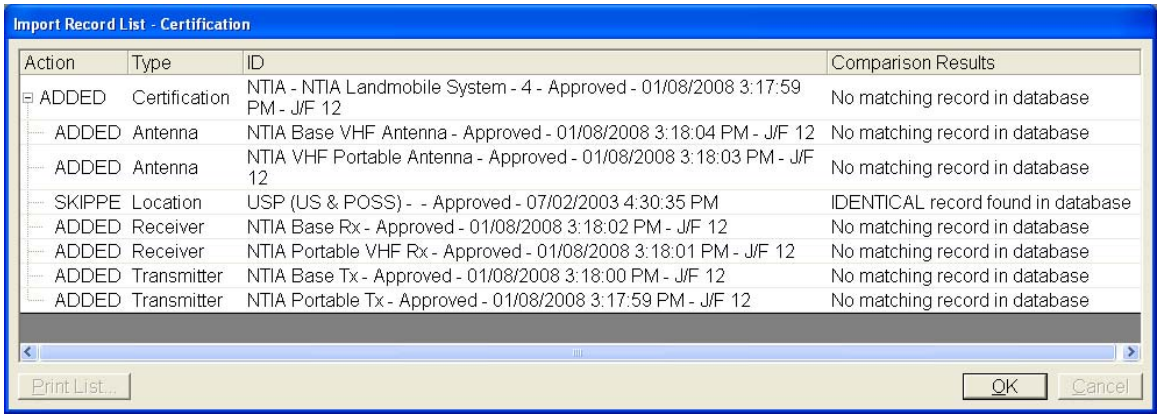



**Step 10.** Click **Import**. The **File Description** window is displayed.

**Step 11.** Click **OK**. The **Import Record List - Certification** window is displayed.




**Step 12.** Click **Apply**. The **Progress** window is briefly displayed and then the **Import Record List - Certification** window reappears. The rows marked **Add** have changed to **ADDED** and the rows marked **Skip** have changed to **SKIPPED**. At this point, the records have been imported into the database.




**Step 13.** Click **OK** to close the window.

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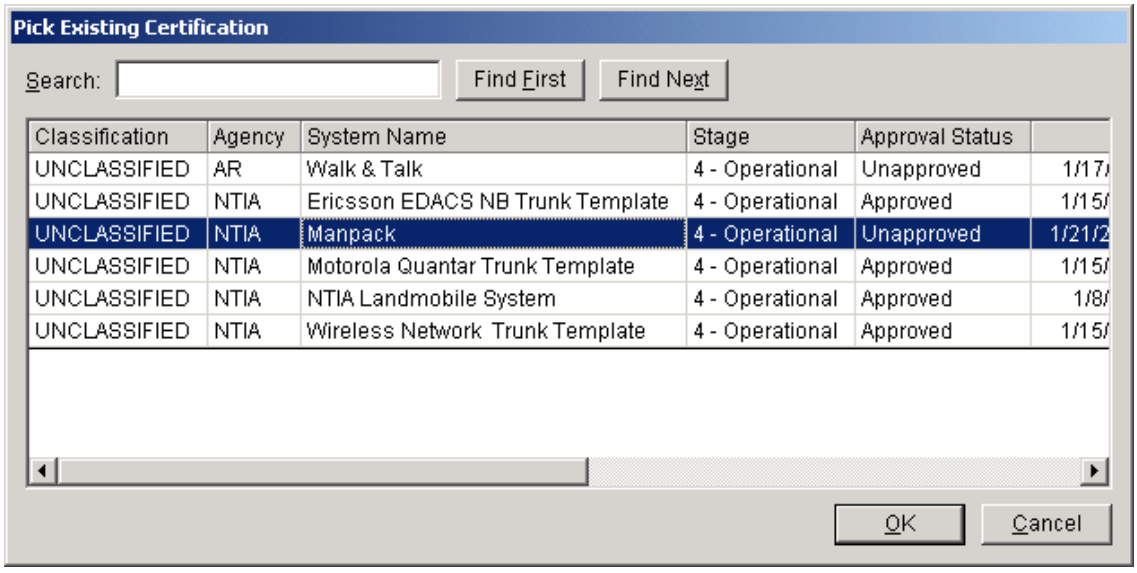
# 10.0 OPENING AND EDITING AN UNAPPROVED CERTIFICATION RECORD

Once you have saved or imported a certification application that has not been approved you can open it and then edit it. The following steps show how you can do this.

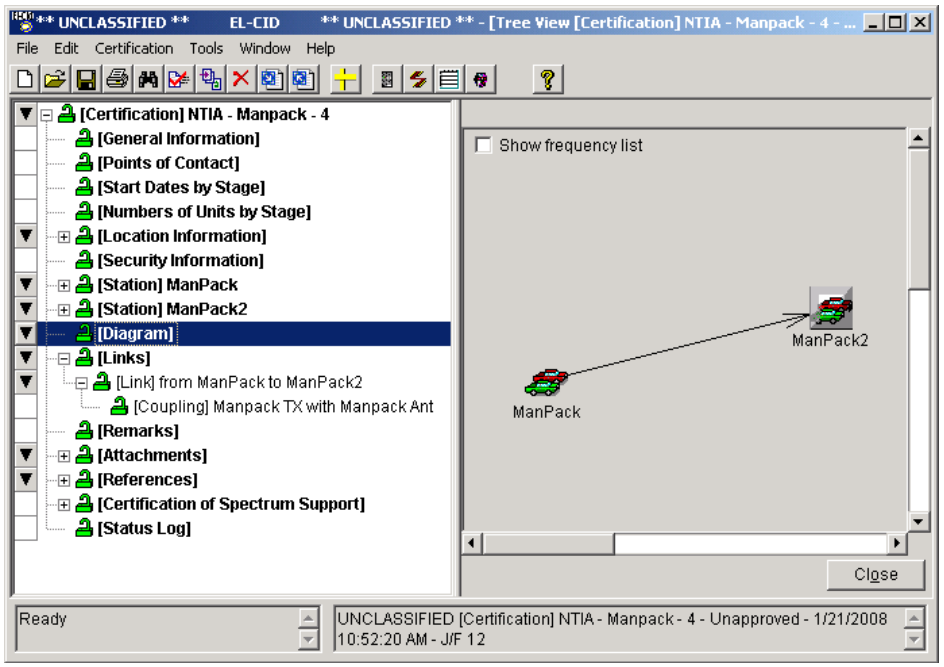
**Step 1.** Click the **Open** button  to open a certification.

The **Pick Existing Certification** window is displayed.

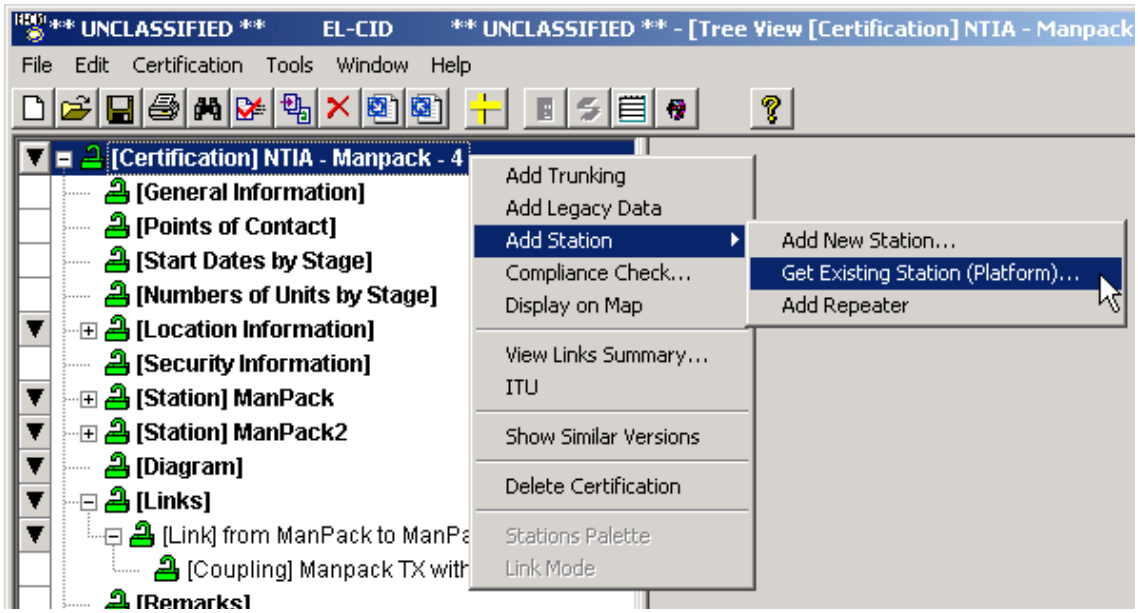



**Step 2.** Highlight the **Manpack** system and then click **OK**. The Certification's Tree View is displayed.

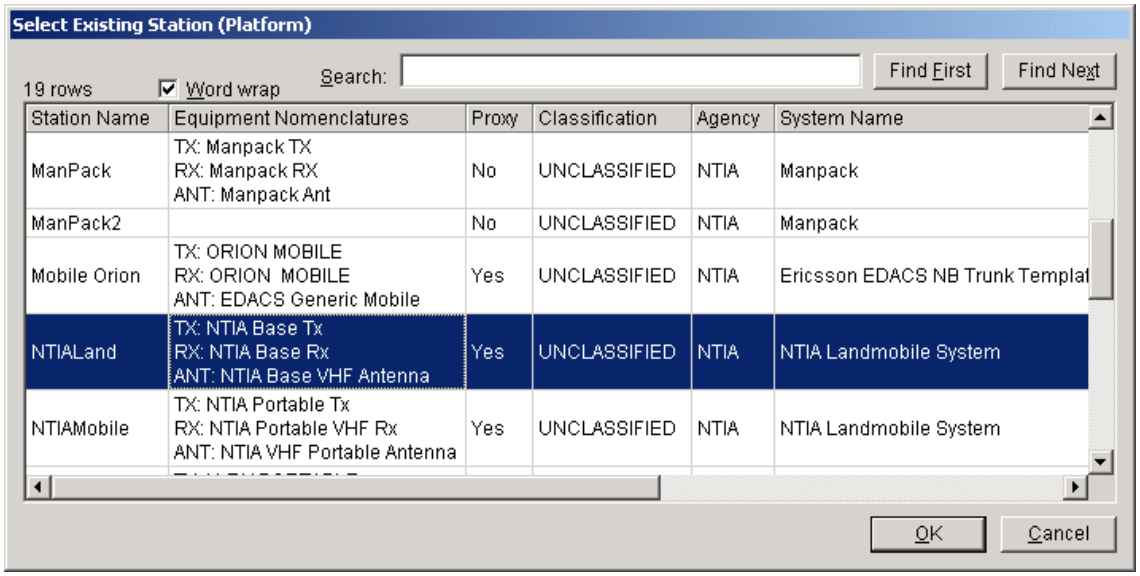
**Step 3.** Click **[Diagram].** The **Diagram** node is displayed.



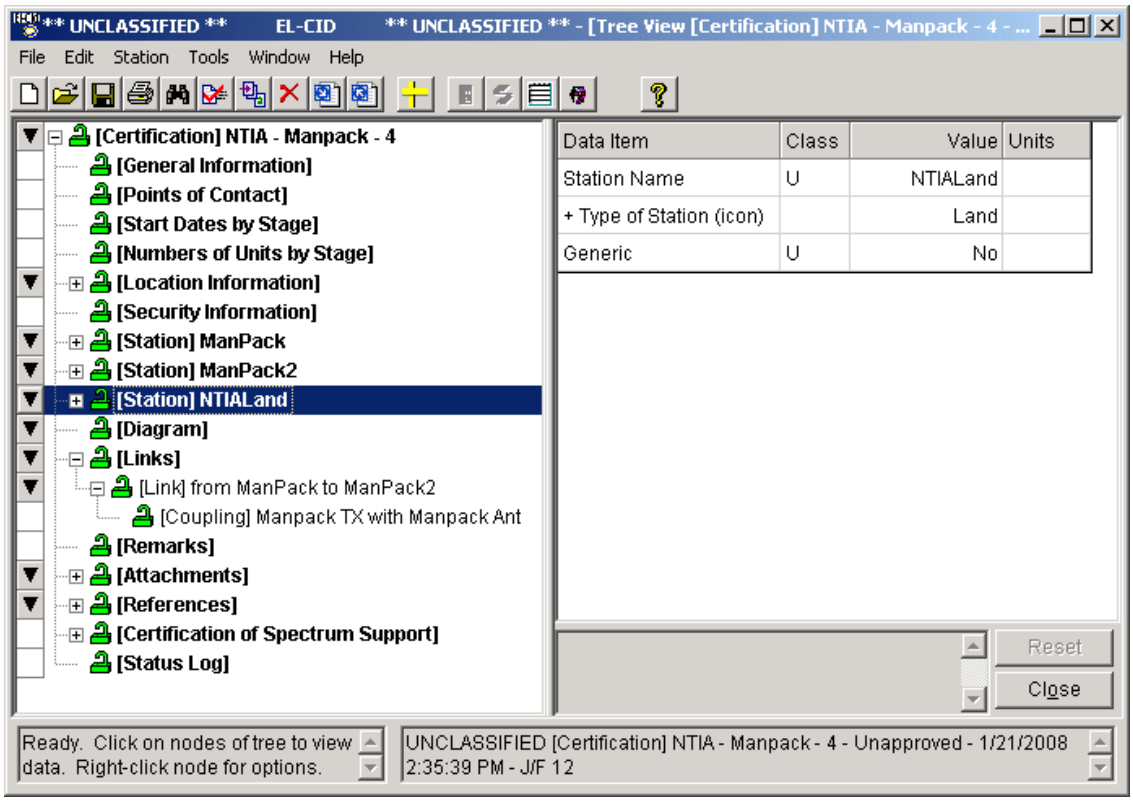
**Step 4.** To add an existing Station to a Certification, including its equipments and locations, **right-click** on the **[Certification] NTIA – Manpack – 4** node and select **Add Station | Get Existing Station (Platform)** in the menu that pops up.




The **Select Existing Station (Platform)** window appears.

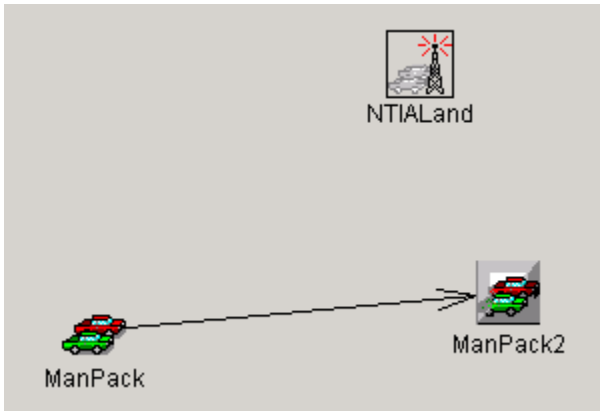


**Step 5**. Select the row with **NTIALand** in the **Station Name** column and click **OK**. The Tree View window reappears with the NTIALand station added to the Certification record.



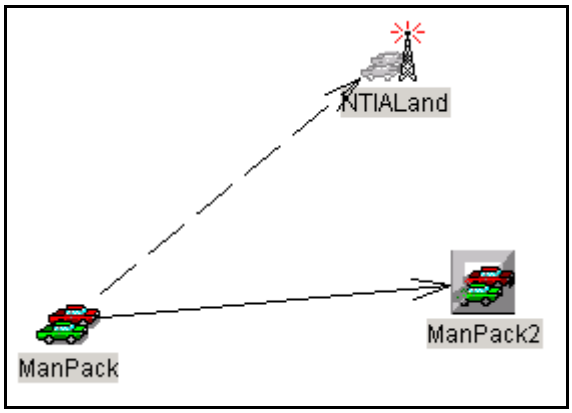

**Step 6.** **Expand** the **NTIALand** node to see that all the equipments from the NTIALand station were copied as well.

**Step 7.** Click on the **Diagram** node and **drag** the **NTIALand** node so that your diagram looks something like this.




**Step 8.** Click the **Create New Links** button  to switch to **LINK MODE!!**.

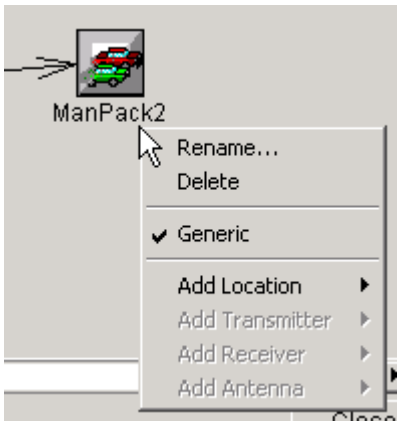
**Step 9.** Click on the **ManPack** icon, and then click on the **NTIALand** icon. A link from the **ManPack** Station to the **NTIALand** Station will be drawn, as shown below.



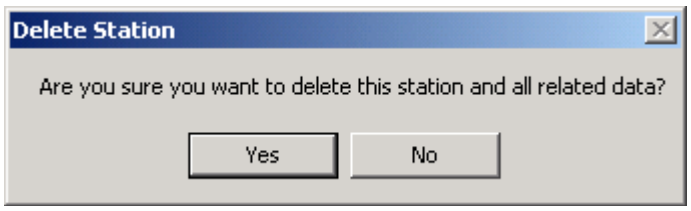

**Step 10.** Click on the **NTIALand** icon, and then click on the **ManPack** icon. A link from the **NTIALand** Station to the **ManPack** Station will be drawn (i.e., the link will be drawn with arrows at both ends of the link).

**Step 11.** Click the **Create New Links** button again to turn the **LINK MODE!!** off.

**Step 12**. To delete the ManPack2 Station and its associated link information, **right-click** on the **ManPack2** Station and select **Delete**.

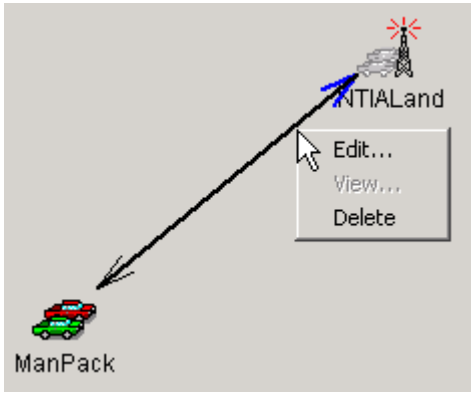



The **Delete Station** window appears.

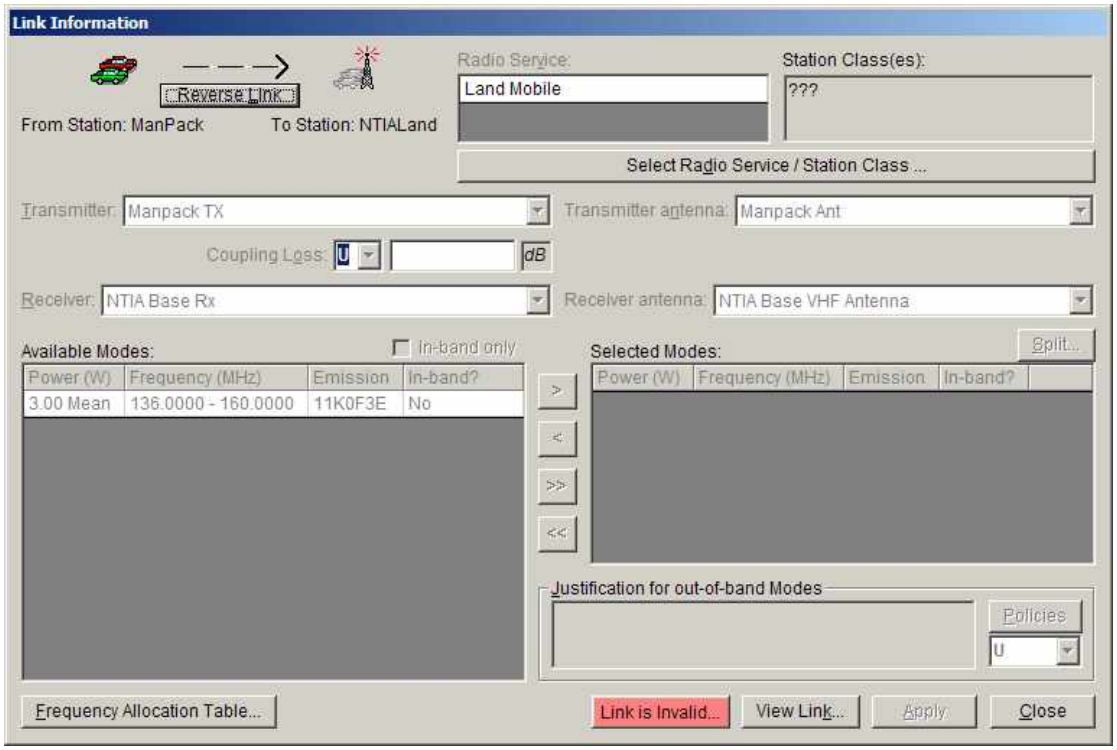



**Step 13.** Click **Yes**.

**Step 14.** **Right-click** on the link line near the **NTIALand** end of the line and select **Edit**.

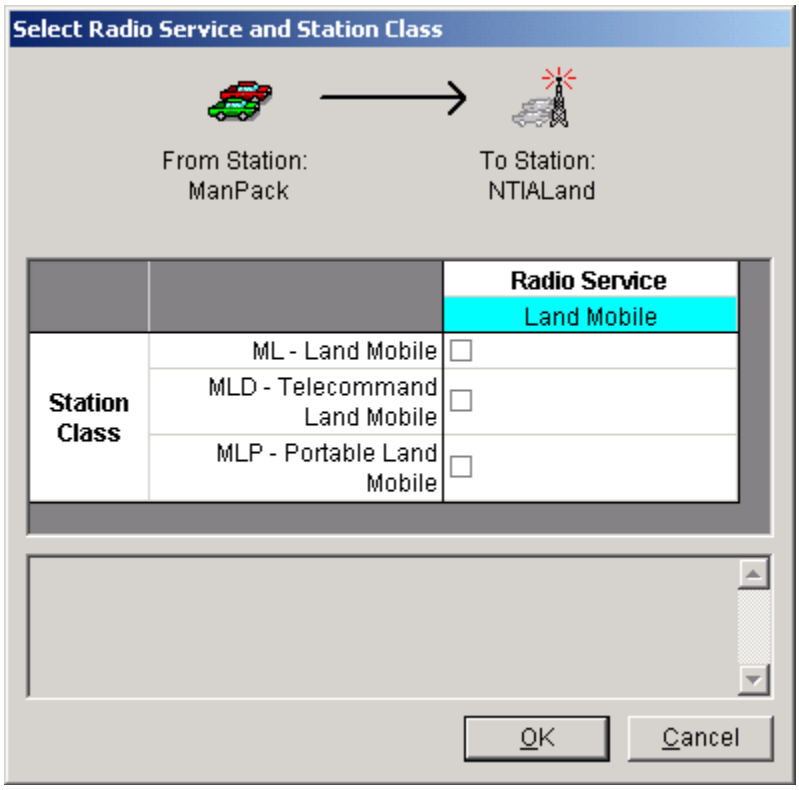



The Link Information window is displayed.

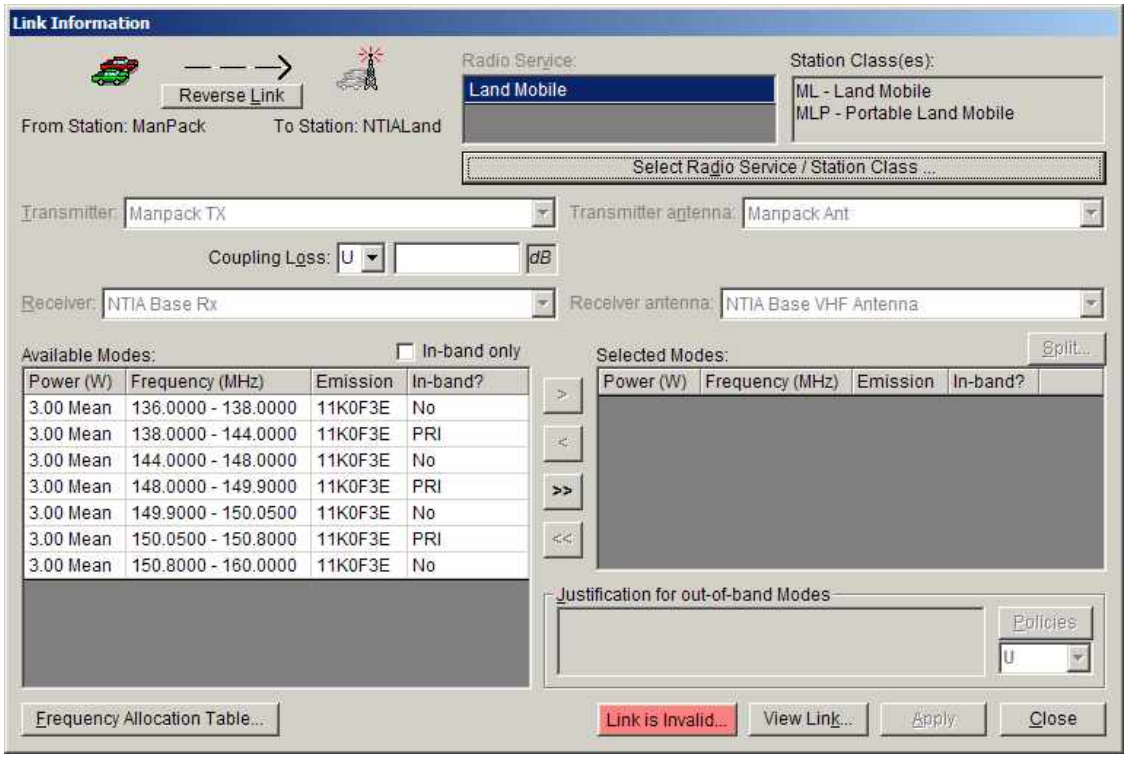



**Step 15.** Click the **Select Radio Service / Station Class** button.

The **Select Radio Service and Station Class** window is displayed.



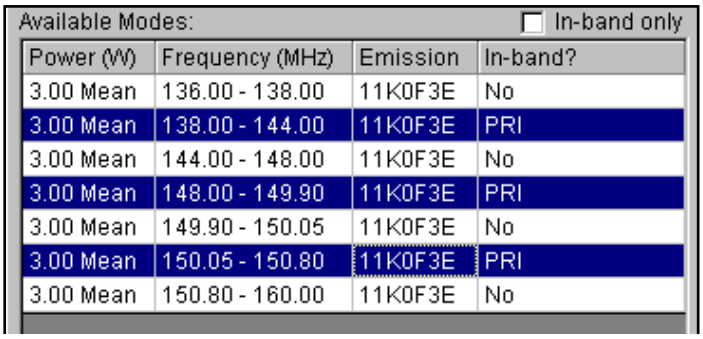

**Step 16.** Select station class **ML** and **MLP** by checking the respective check boxes, and then click **OK**. The **Link Information** window will be redisplayed.



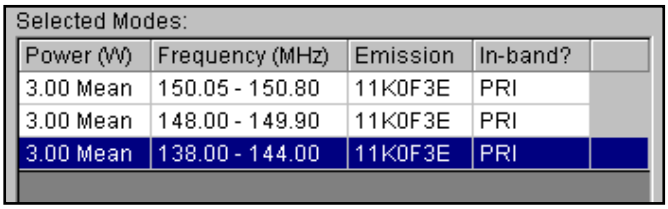

Since we only have one transmitter, receiver, and only one antenna at each station, all the pick lists are disabled. If you had more than one to choose from you could select from the lists by using the down arrow button beside each field.

Notice that you could change the classification and coupling loss fields.

**Step 17.** Select from the available modes the modes that you want to certify. Hold down the **Ctrl key** and then click the 3 rows of available modes that have a **PRI in the In-band? column**.

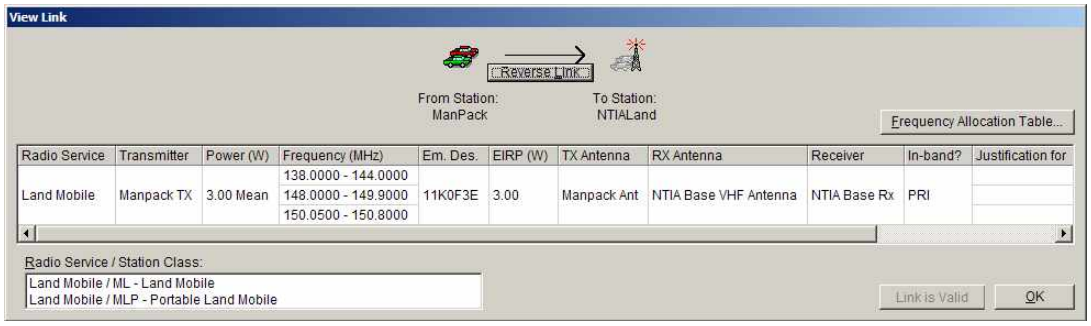



**Step 18.** Click the **right arrow** button to transfer the highlighted mode to the **Selected Modes** list.




**Step 19.** Click **Apply** to save your choices, and then click **OK** to acknowledge that the changes have been saved.

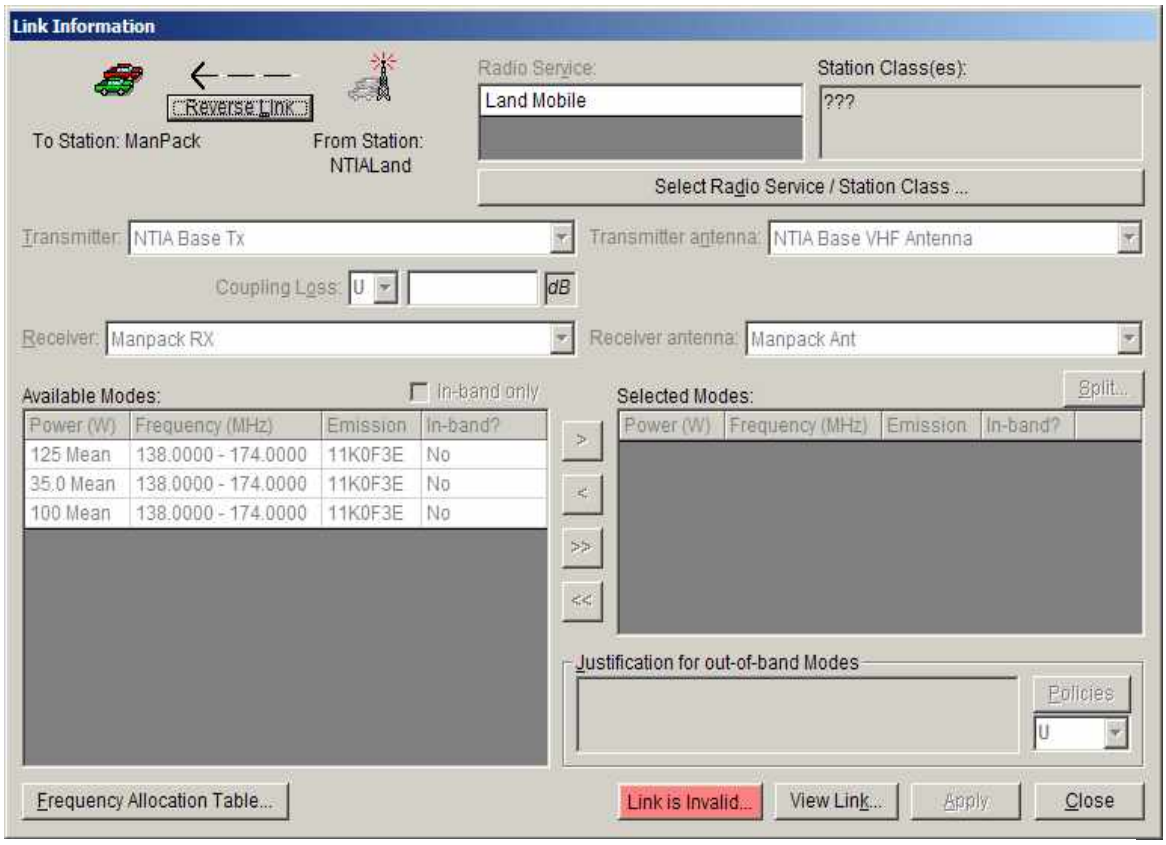
**Step 20.** Click the **View Link** button to see the link information that you have saved.




**Step 21.** Click **OK** to close the window.

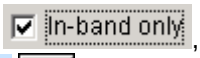
**Step 22.** Click the **Reverse Link** button  to edit the reverse link data.

The reverse link information will appear.



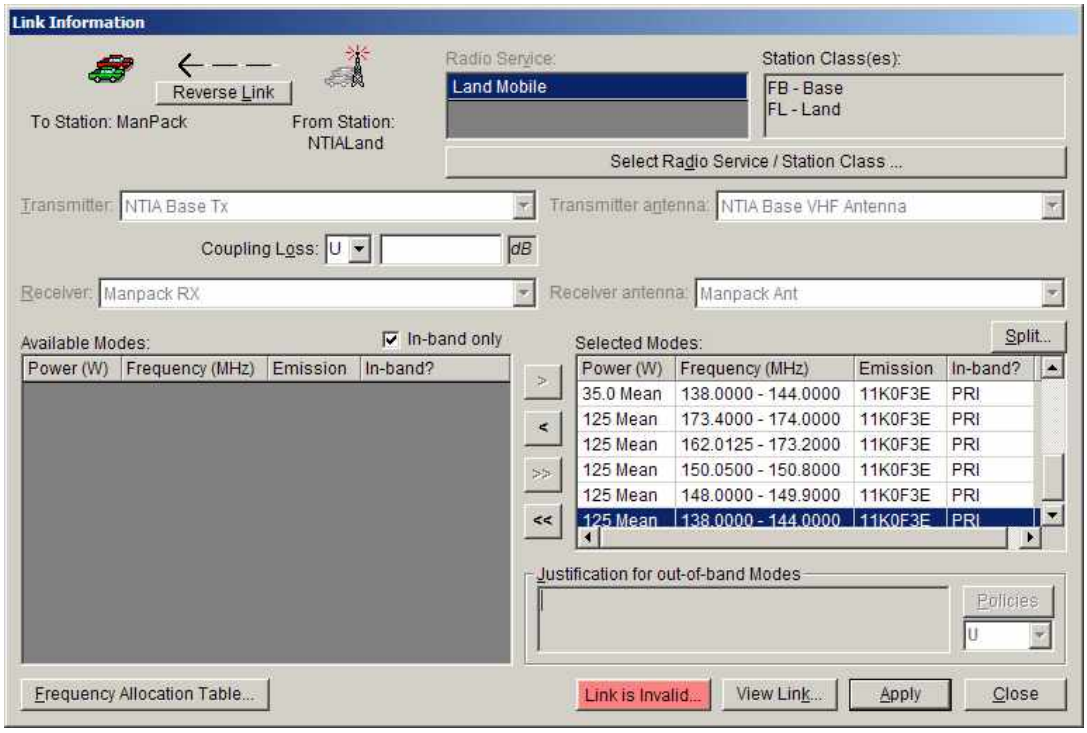

**Step 23.** Click the **Select Radio Service / Station Class** button.

**Step 24.** On the **Select Radio Service and Station Class** window select station classes **FB** and **FL** and then click **OK**.

**Step 25.** On the **Link Information** window, check the **In-band only** check box 

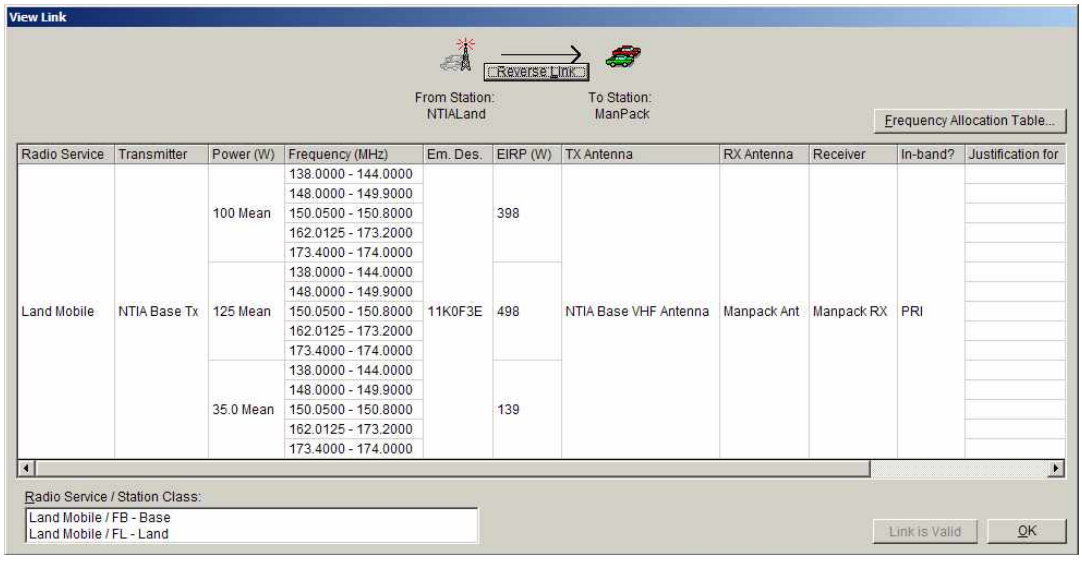
, then select all the available **In-band** modes by clicking the **select all button** 

.




**Step 26.** Click **Apply** to save your choices, and then click **OK** to acknowledge that the data has been saved.

**Step 27.** Click the **View Link** button to see the link information that you have saved.




**Step 28.** Click **OK** to close the **View Link** window.

**Step 29.** Click **Close** to close the **Link Information** window.

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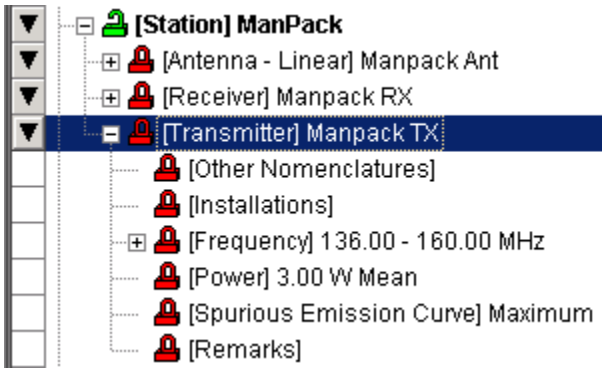
# 11.0 CLONING RECORDS

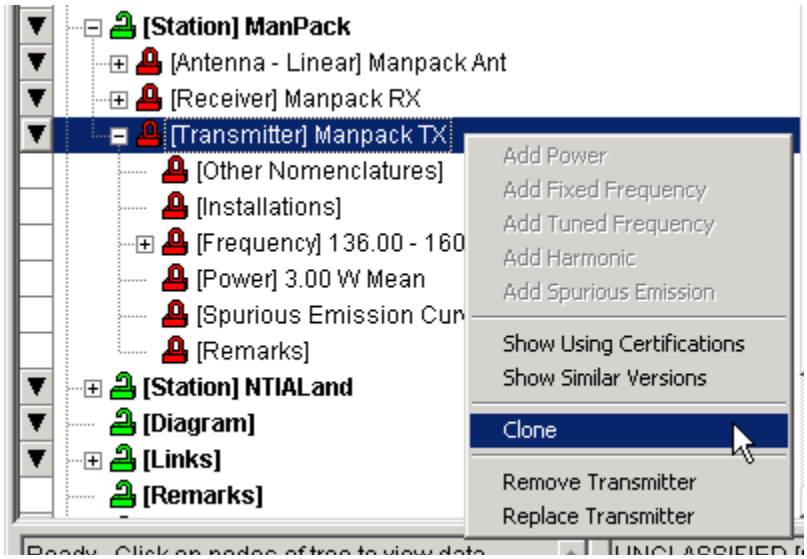
You can clone a Certification, Transmitter, Receiver, Antenna, or Location from the **Tree View**.

> ***HINT*** **:** You can also clone a Certification, Transmitter, Receiver, Antenna, Location, or Compliance Check record from the **Query Results** window. See Section 13.

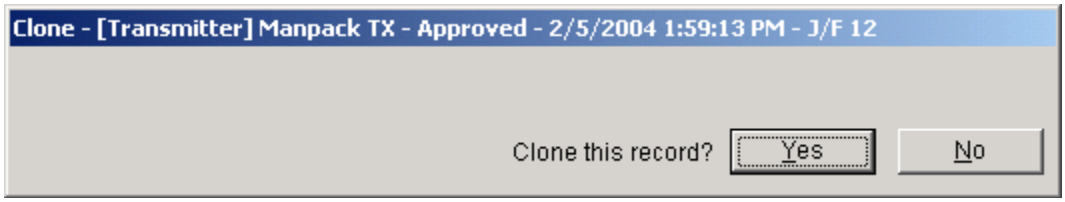
**Step 1.** **Expand** the **[Station] ManPack** node. **Click** on the **[Transmitter] Manpack TX** node to expand it as well. Note that the transmitter node is red padlocked (Approved). We want to create a new model of this transmitter with a dual power selector. Because it is locked, we will clone this transmitter and make the changes to the cloned record.



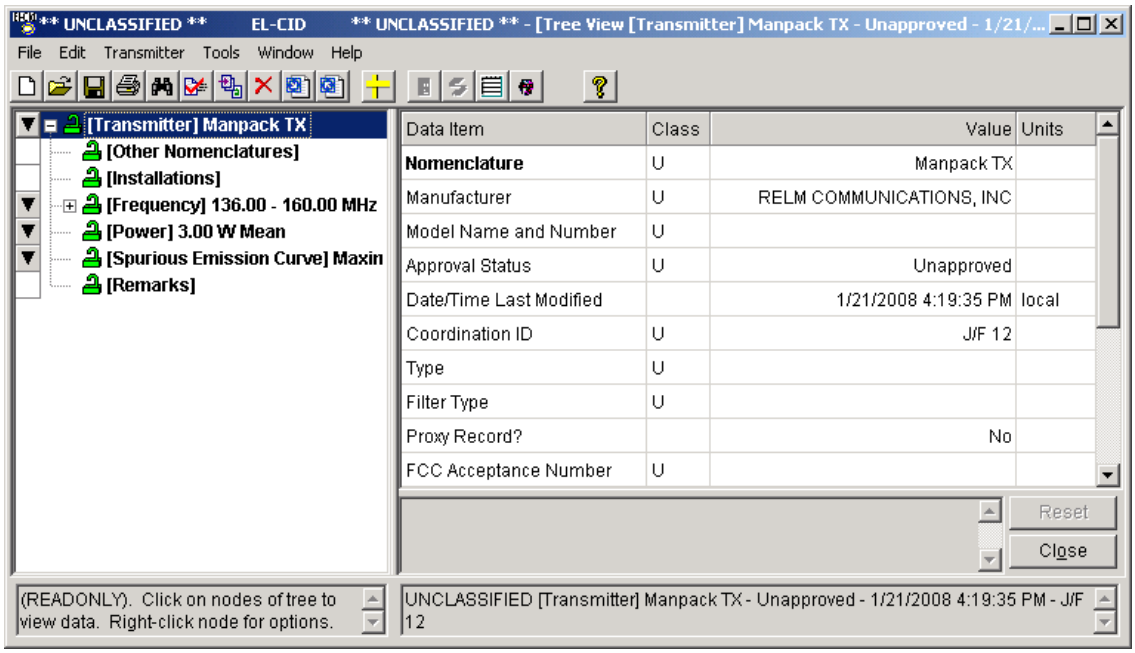

**Step 2.** **Right-click** on the **[Transmitter] Manpack TX** node and **select** **Clone**.




The **Clone** window is displayed.



**Step 3.** Click **Yes** to clone the record. The cloned transmitter is displayed.

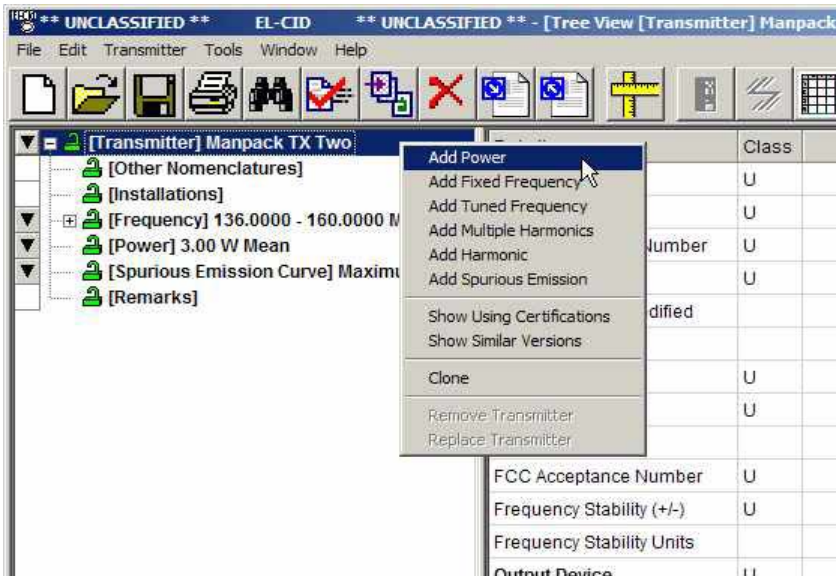



***HINT:*** When you clone a record you are adding it to the database and not to the active certification. Notice that the **Red** locks have turned to **Green** locks. When you close this window you will return to the active application.

**Step 4.** Click on the **Nomenclature** field, and change the name to **Manpack TX Two**.


***HINT:*** Click on the **[Transmitter] Manpack TX** node to save the change and note that the node name will change to **Manpack TX Two**.

**Step 5.** Now we are going to edit the new transmitter. **Save** the transmitter. **Right-click** on **[Transmitter] Manpack TX Two** and select **Add Power**.




The **Power** data grid is displayed.

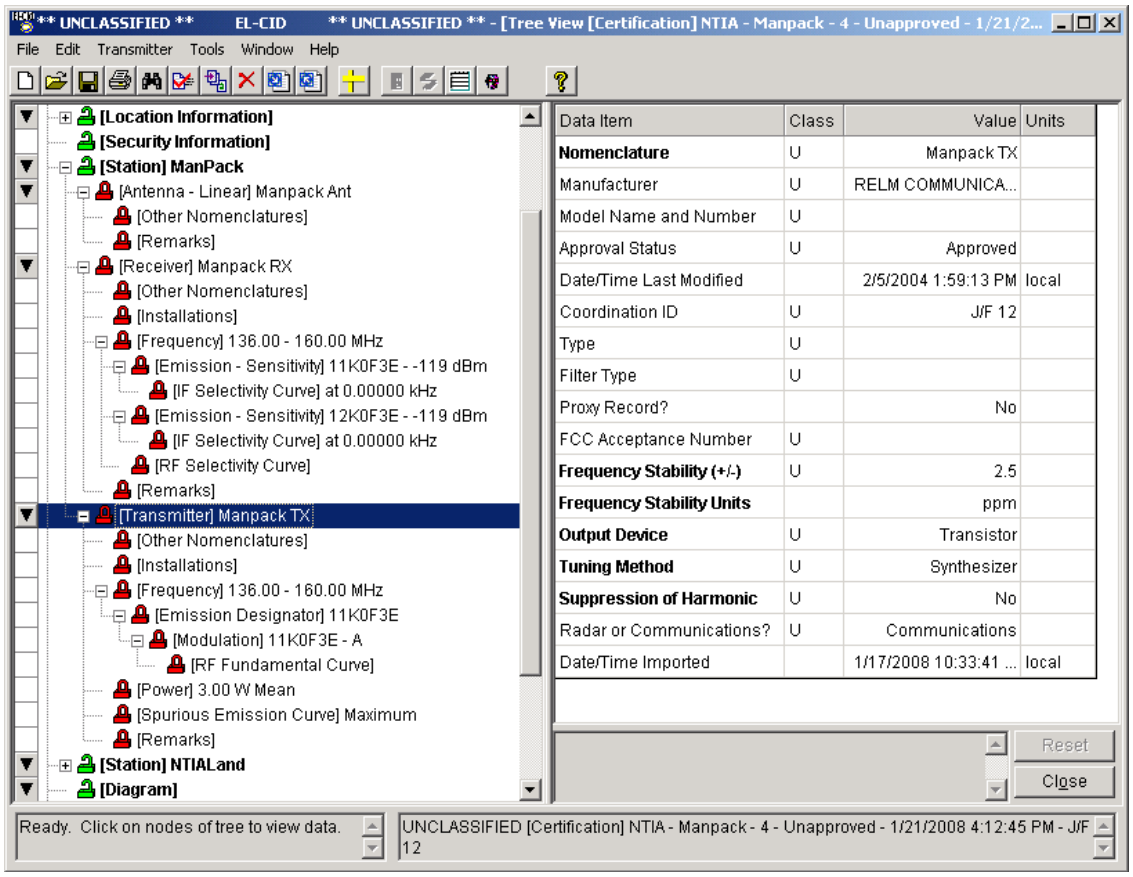
| Data Item | Class | Value | Units |
|---|---|---|---|
| **Power Type** | | | |
| Power Lower Limit | U | | W |
| **Power Upper Limit** | U | | W |

**Step 6.** **Enter** the following data.

| Field | Value |
|---|---|
| **Power Type** | **Mean** |
| **Power Upper Limit** | **50W** |

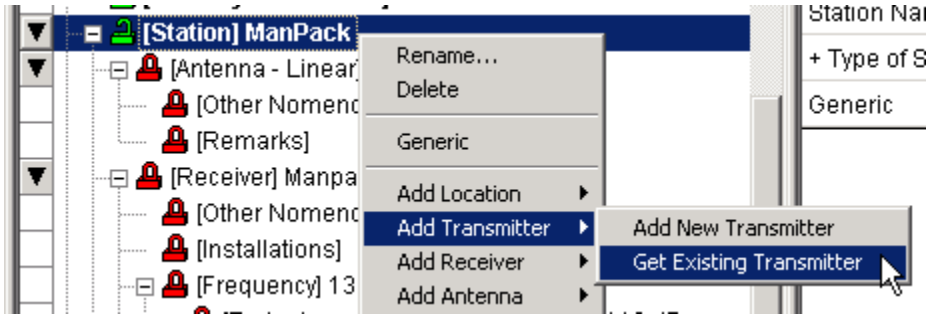
**Step 7.** **Save** the data.

**Step 8.** Click the **Close** button. The **Original Certification** window is displayed.

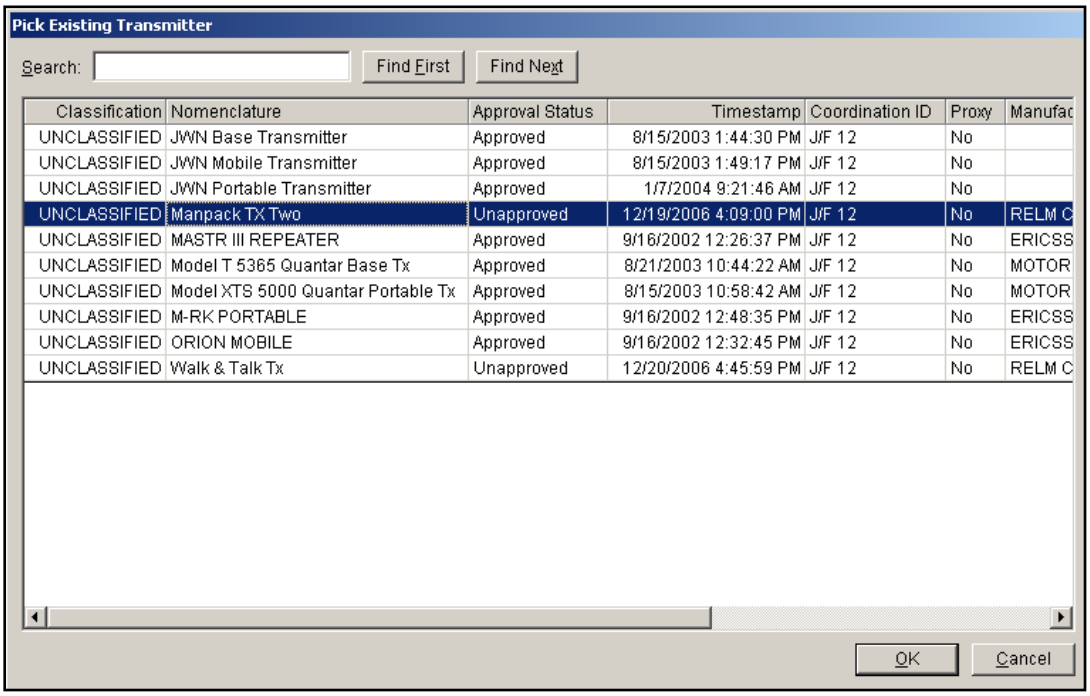



Now that we have a new transmitter record which was cloned (or copied) from an existing transmitter, we are going to add this new transmitter to the ManPack Station.

**Step 9.** **Right-click** on the **[Station] ManPack** node and select **Add Transmitter | Get Existing Transmitter**.

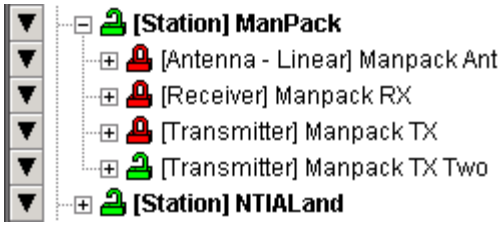


The **Pick Existing Transmitter** window is displayed. Notice how the original **ManPack TX** Transmitter does not appear in the list because it is already associated with the **ManPack** Station.




**Step 10.** Highlight **Manpack TX Two** and then click **OK**.

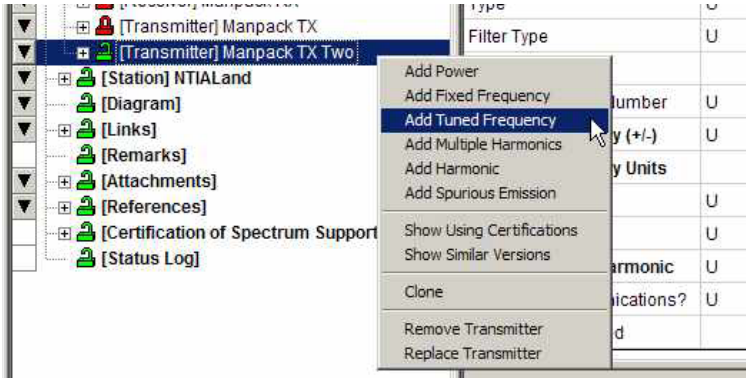
The **Manpack TX Two** transmitter is added to your certification for the Station **ManPack**.




**Step 11.** **Save** the data.

Next we will use the Copy and Paste capability of EL-CID.

**Step 12**. **Right-click** on the **[Transmitter] ManPack TX Two** node and select **Add Tuned Frequency**




The Frequency data grid will be displayed.

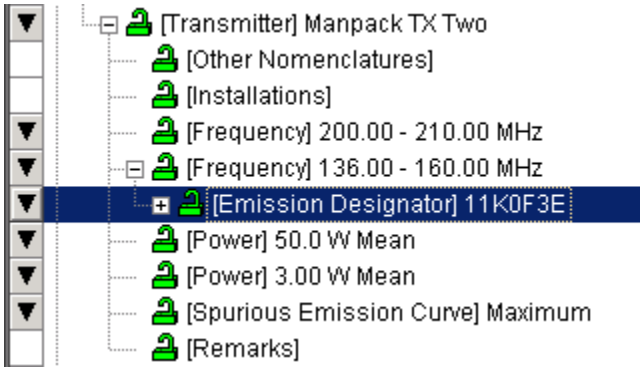
| Data Item | Class | Value | Units |
|---|---|---|---|
| + Fixed Frequency? | | No | |
| **Lowest Tuned Frequency** | U | | MHz |
| **Highest Tuned Frequency** | U | | MHz |
| **Tuning Increment** | U | | kHz |
| **# of Frequencies Required for Operation** | U | | |
| **Minimum Required Frequency Separation** | U | | MHz |
| Frequency Blocking Indicator | U | No | |
| Lowest Usable Channel | U | | MHz |

**Step 13.** **Enter** the following data.

| Field | Value |
|---|---|
| **Lowest Tuned Frequency** | **200 MHz** |
| **Highest Tuned Frequency** | **210 MHz** |
| **Tuning Increment** | **5 kHz** |
| **# of Frequencies Required for Operation** | **3** |
| **Minimum Required Frequency Separation** | **1 kHz** |

**Step 14.** **Save** the data.

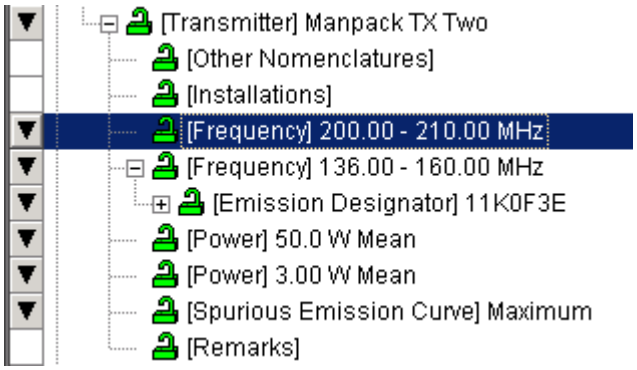
**Step 15.** If not already done, expand the **[Frequency] 136.00 – 160.00 MHz** node underneath node **[Transmitter] Manpack TX Two**. Click the **[Emission Designator] 11K0F3E** node to highlight it.




**Step 16.** Hold down the **CTRL** key and hit the **C** key

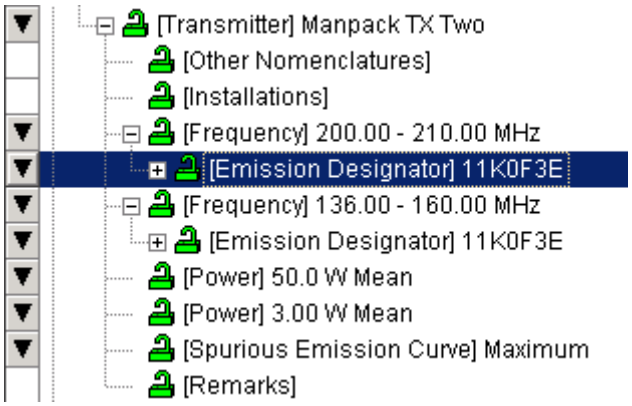
***HINT:*** There will be no feedback on the screen.

**Step 17.** **Click** on the **[Frequency] 200.00 – 210.00 MHz** node we created a moment ago.




**Step 18**. Hold down the **CTRL** key and hit the **V** key.

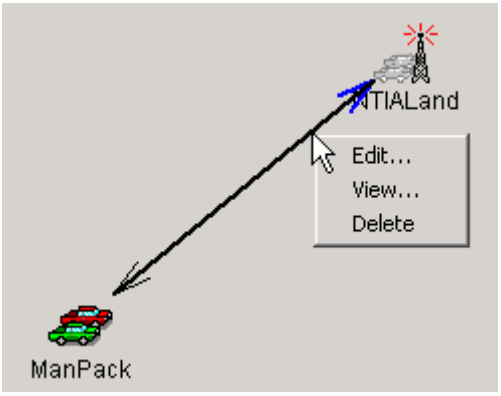
The emission designator 11K0F3E will be copied to the 200 MHz frequency node.



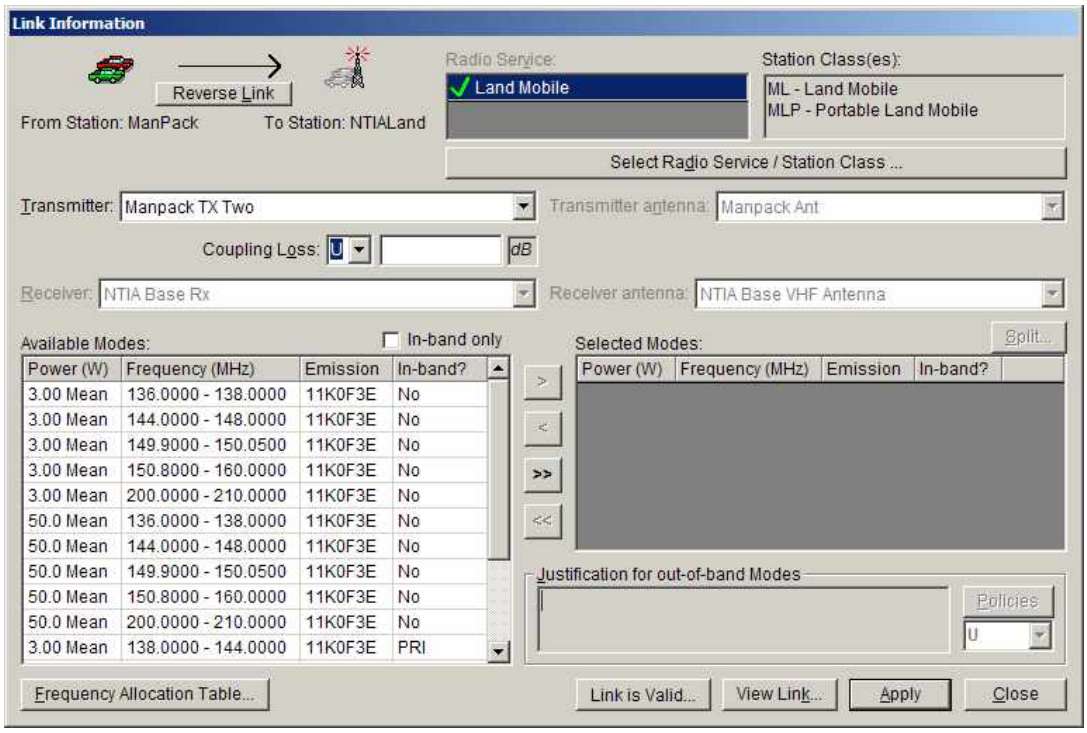

***HINT:*** Expand the emission node to see that the modulation was also copied.

This concludes the Copy and Paste ***introduction***.

**Step 19.** Click on the Diagram node. **Highlight** the link from **Manpack** to **NTIALand**. **Right-click** and select **Edit**




**Step 20.** Click the ▼ button on the transmitter and notice that two transmitters are now shown for this link.

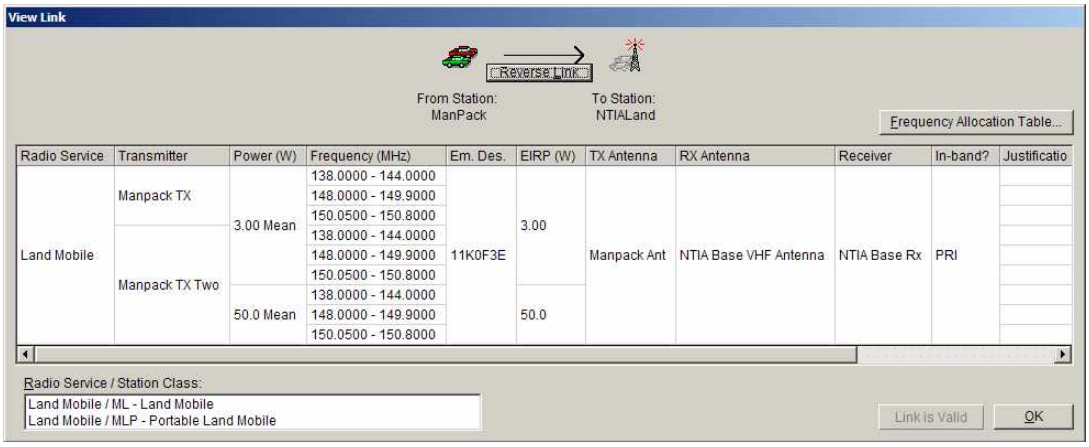



Choose the **ManPack TX Two** transmitter. Complete this link, select the 6 available modes with the word **PRI in the In-band? column**. Move them to the **Selected Modes list.**

***HINT:*** The link for each Transmitter, Receiver, and Antenna combination must be defined.

**Step 21.** Click **Apply** to save your choices, and then click **OK** to acknowledge that the data has been saved.

**Step 22.** Click the **View Link** button to see the link information *(two transmitters)* that you have saved.




| Radio Service | Transmitter | Power (W) | Frequency (MHz) | Em. Des. | EIRP (W) | TX Antenna | RX Antenna | Receiver | In-band? | Justificatio |
|---|---|---|---|---|---|---|---|---|---|---|
| Land Mobile | Manpack TX | 3.00 Mean | 138.0000 - 144.0000 | 11K0F3E | 3.00 | Manpack Ant | NTIA Base VHF Antenna | NTIA Base Rx | PRI | |
| | | | 148.0000 - 149.9000 | | | | | | | |
| | | | 150.0500 - 150.8000 | | | | | | | |
| | Manpack TX Two | | 138.0000 - 144.0000 | | | | | | | |
| | | | 148.0000 - 149.9000 | | | | | | | |
| | | | 150.0500 - 150.8000 | | | | | | | |
| | | 50.0 Mean | 138.0000 - 144.0000 | | 50.0 | | | | | |
| | | | 148.0000 - 149.9000 | | | | | | | |
| | | | 150.0500 - 150.8000 | | | | | | | |

**Step 23.** Click **OK** to close the **View Link** window.

**Step 24.** Click **Close** to close the **Link Information** window.

**Step 25.** Click **Close** to close the current certification application.

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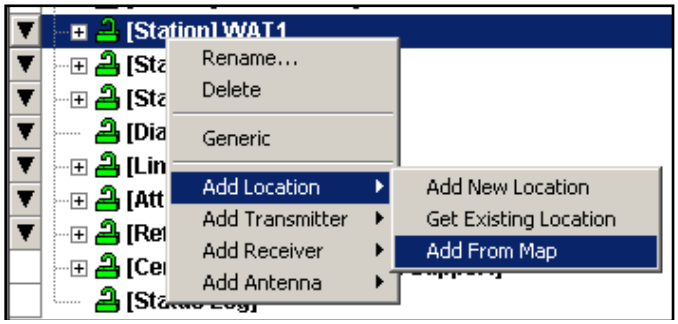
# 12.0 ADDING LOCATIONS FROM THE MAP

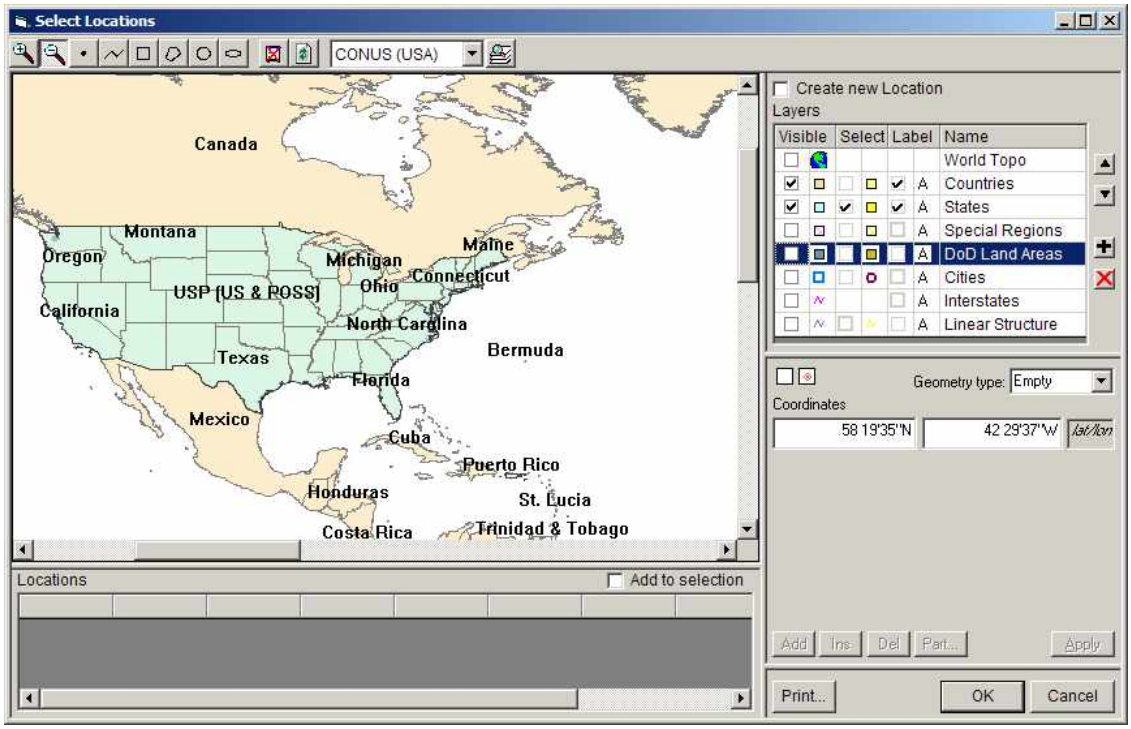
If you want to add a location to your certification record but do not know the detailed information, you may be able to find the location by using the Map to find the desired location. If it is a city already in the database, follow the steps below to select the city and add its location data to your certification.

**Step 1.** Open the **Walk & Talk** certification. We are going to add Annapolis, Maryland to the certification.

**Step 2.** **Right-click [Station] WAT1** and select **Add Location | Add From Map**.

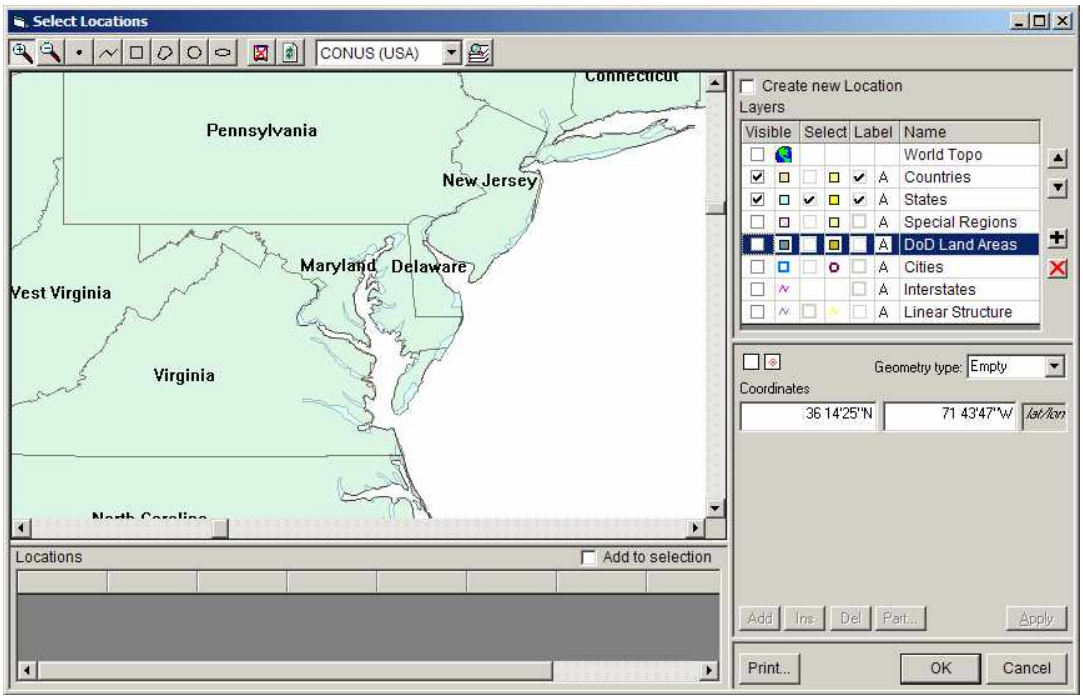



The **Select Locations** window is displayed.

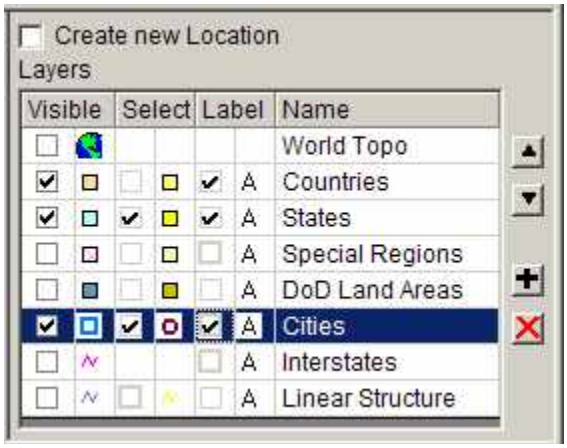



In the **Layers** grid on the right check or uncheck boxes (if needed) to make your settings match those you see in the screen above.

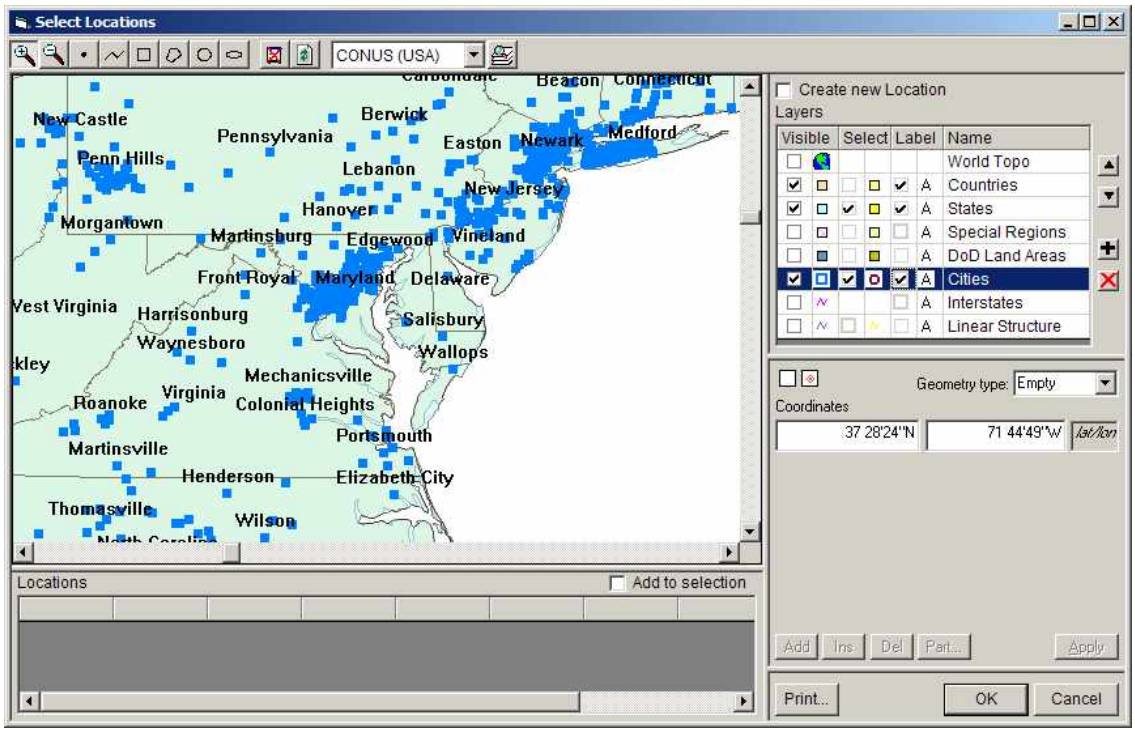
**Step 3.** Click on the **Magnify** button  and then place the mouse over the letter “y” in Maryland and click several times. You will zoom in on the Maryland area.




**Step 4.** Highlight the **Cities** Name in the **Layers** window. Click the check boxes for **Visible**, **Select**, and **Label**.

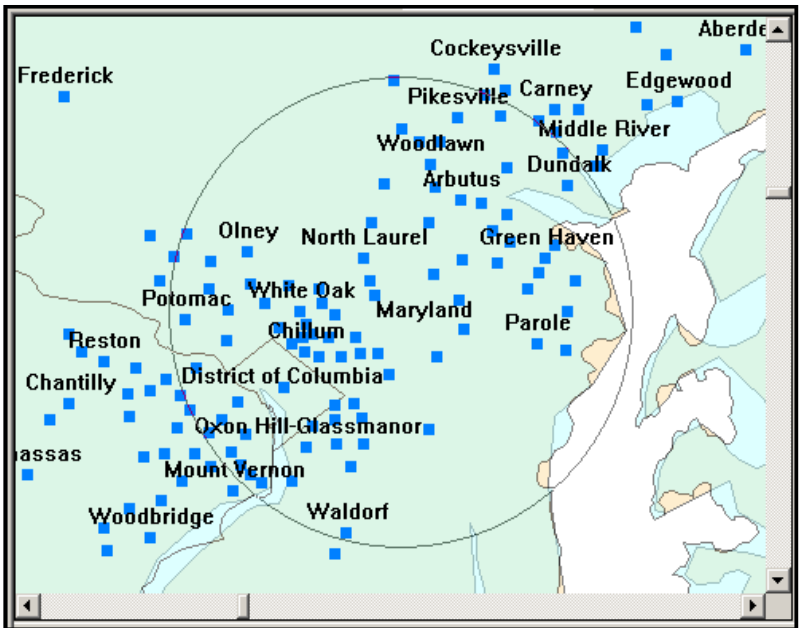


The **Select Locations** window will be displayed as shown below.

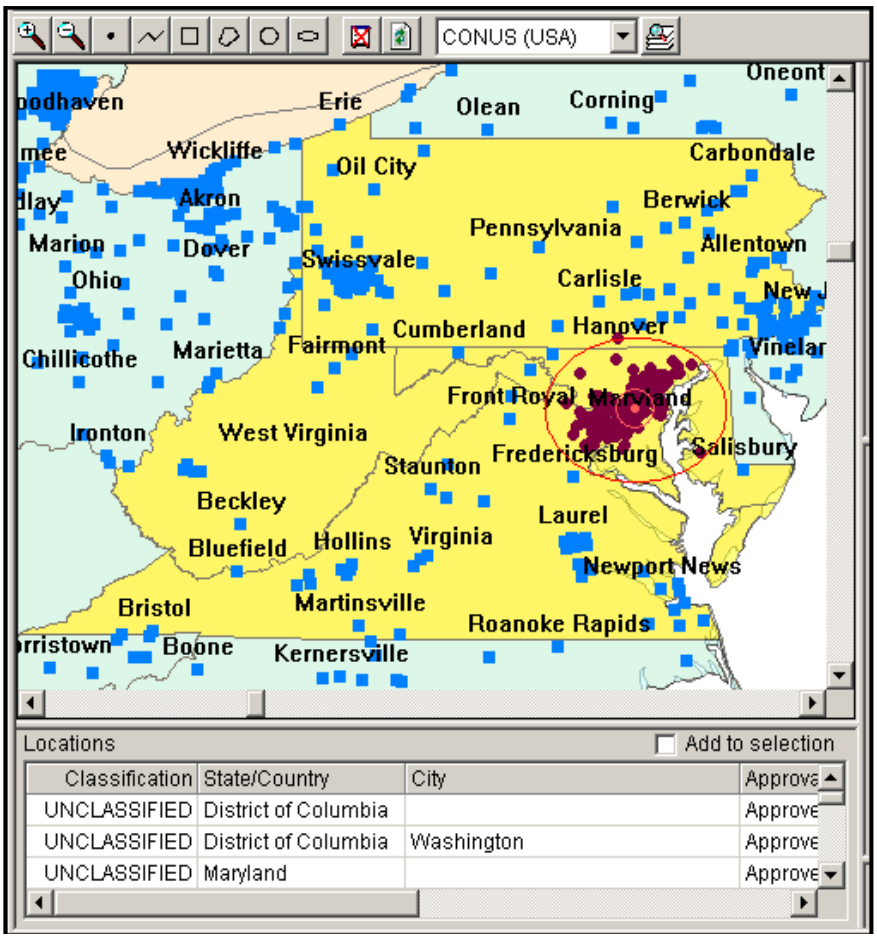



**Step 5.** **Zoom in** on the word **Maryland** several times.

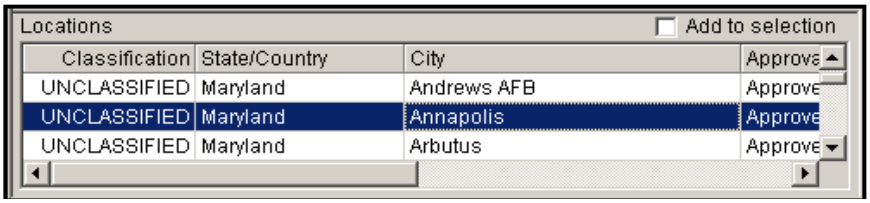
**Step 6.** Click the **Circle** button. Place the cursor over the **"a" in Maryland** and drag the mouse while holding down the left mouse button to create a **small circle.** Release the **mouse button**. Make sure the circle is big enough to encircle the Annapolis, MD area.



The **Select Locations** window displays the selections




**Step 7.** Highlight **Maryland | Annapolis** in the location box and then click **OK**.




The Annapolis, MD location information is added to the WAT1 record.

| Data Item | Class | Value | Units |
|---|---|---|---|
| **Approval Status** | U | Approved | |
| **State, Country, or Location Name Part 1** | U | Maryland | |
| City or Location Name Part 2 | U | Annapolis | |
| **Date/Time Last Modified** | | 5/23/2003 10:08:12 AM | local |
| **+ Location Type** | U | Single Point | |
| Geographic Coordinates | U | 385818N0763010W | lat/lon |
| Map Layer | | Cities | |
| Date/Time Imported | | 5/23/2003 11:27:47 AM | local |

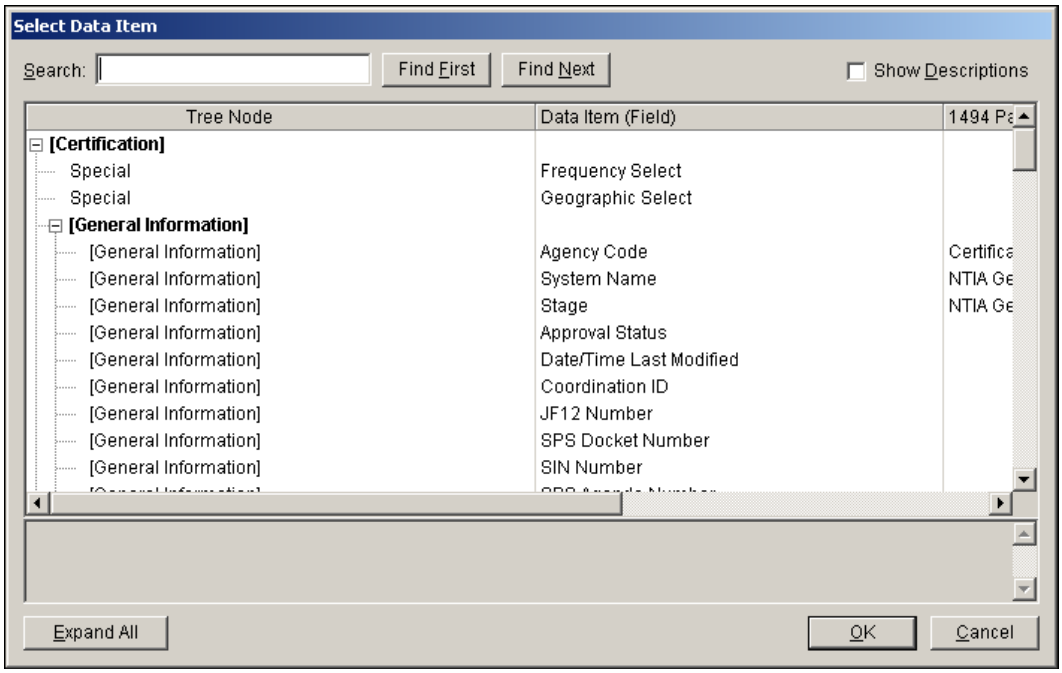
Step 8. Click the **Close** button.

# 13.0 PERFORMING QUERIES

You can select records (Certifications, equipments, Locations, Policies, Transmitters, Compliance Checks, and etc.) from the database using any of the database fields.

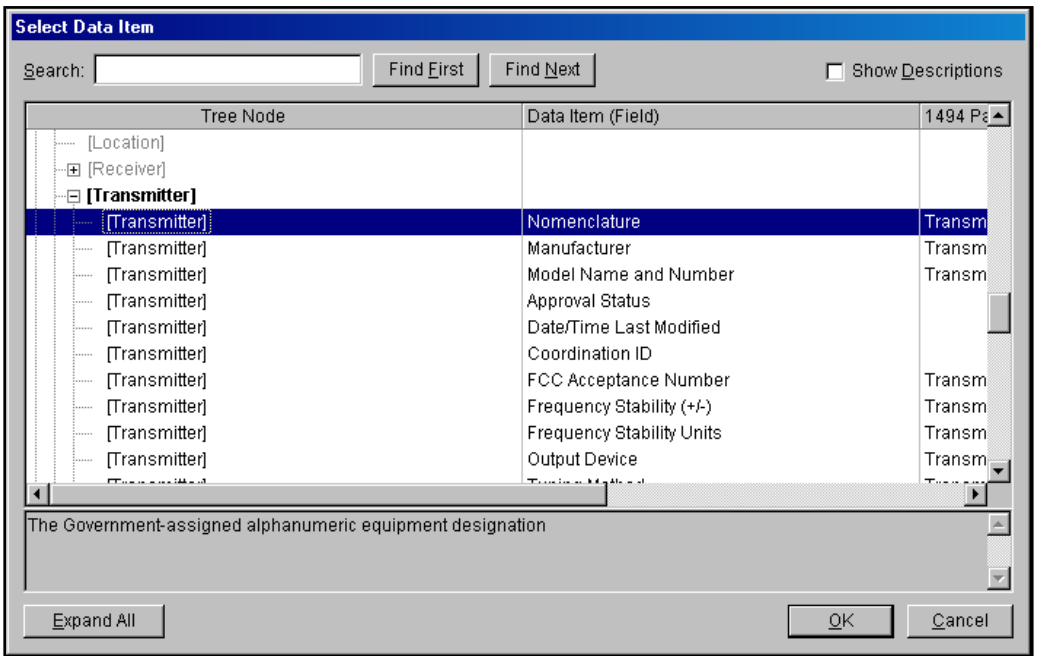
**Step 1.** Click the **New Query** button  on the tool bar.

The **Build Query** window appears and (assuming that you have not disabled it in the Preferences) the **Select Data Item** window automatically appears.




***HINT:*** If the **Select Data Item** window does not automatically appear, click the Browse button  at the end of the **Field** box.

**Step 2.** Highlight **Transmitter Nomenclature** and click **OK**.




**Step 3.** Select **$$Contains** using the **dropdown** list button for the **Operator** box.

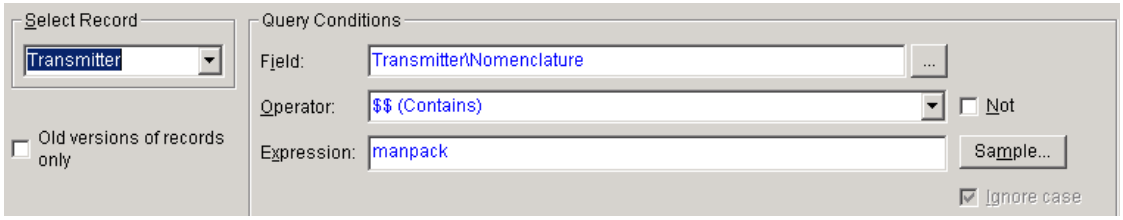
**Step 4.** Type **manpack** in the **Expression** box.

***HINT:*** You can use the Sample... button to get a listing of the entries in this field from the database.

***HINT:*** Upper- or lowercase does not matter for this particular field. You can tell this because the **Ignore case** check box is grayed out.

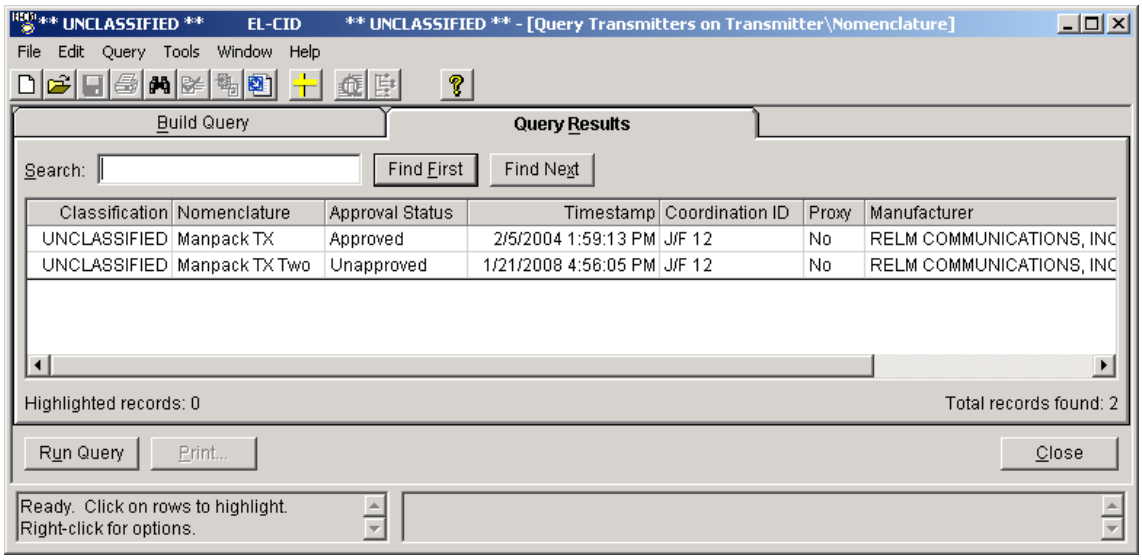
**Step 5.** Select **Transmitter** using the **dropdown** list button for the **Select Record** box.


The **Build Query** window should resemble the following:

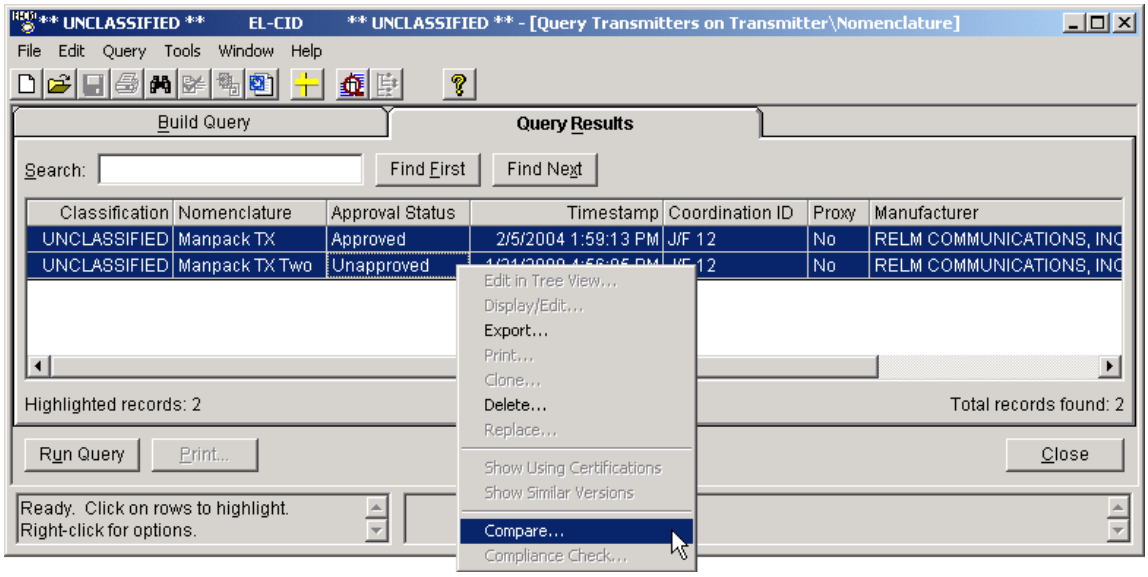


**Step 6.** Click the **Run Query** button, or click the **Query Results** tab to execute the query.

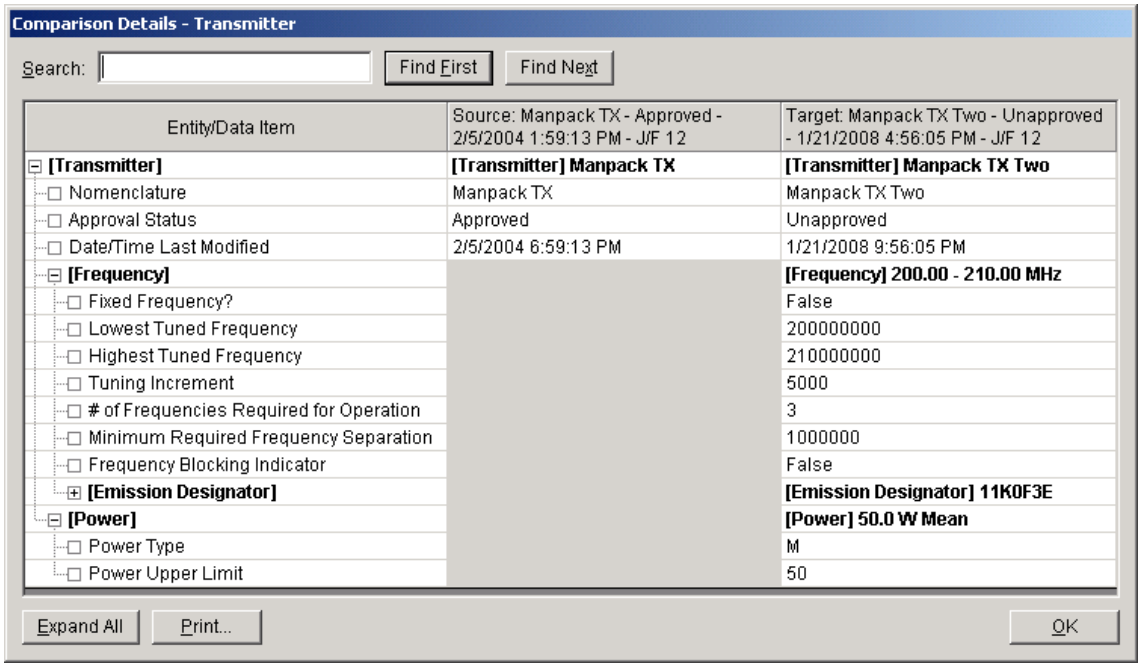
Two records are found.




**Step 7.** Highlight the two rows, **right-click** and select **Compare**.



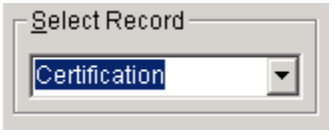

The **Comparison Details** window will be displayed showing the differences in the two records.



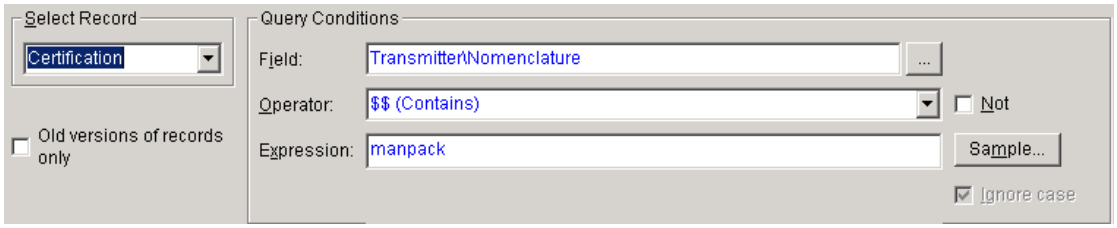

**Step 8.** Click **OK** to close the **Comparison Details** window.

**Step 9.** Click on the **Query Builder** tab to return to the query conditions window.

**Step 10.** In the previous query, we selected **Transmitter** records whose nomenclature contains **manpack**. This time, we'll select **Certification** records having any transmitter whose nomenclature contains **manpack**. Select **Certification** using the dropdown list button for the **Select Record** box.

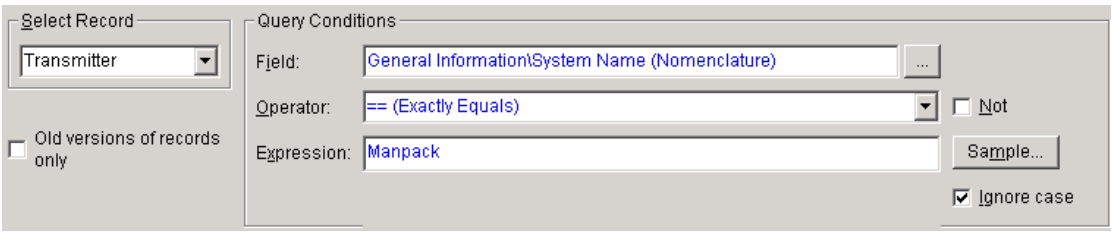



Your query should now resemble this.




**Step 11**. **Run** the query. You'll get one **Certification** record in the **Query Results**.

**Step 12.** This time, let's query for **Transmitters** belonging to a **Certification** record whose **System Name** is **Manpack**. **Return** to the **Query Builder** screen and **make your query look like this**.




**Step 13**. When you **run the query**, you should get results like this.

| Classification | Nomenclature | Approval Status | Timestamp | Coordination ID | Proxy | Manufacturer |
|---|---|---|---|---|---|---|
| UNCLASSIFIED | Manpack TX | Approved | 2/5/2004 1:59:13 PM | J/F 12 | No | RELM COMMUNICATIONS, INC |
| UNCLASSIFIED | Manpack TX Two | Unapproved | 1/21/2008 4:56:05 PM | J/F 12 | No | RELM COMMUNICATIONS, INC |

**Step 14.** **Close** the Query window.

***NOTE:*** The Query feature may be used to back up one or more certifications or the entire EL-CID Database. This process is illustrated in **Appendix D**.

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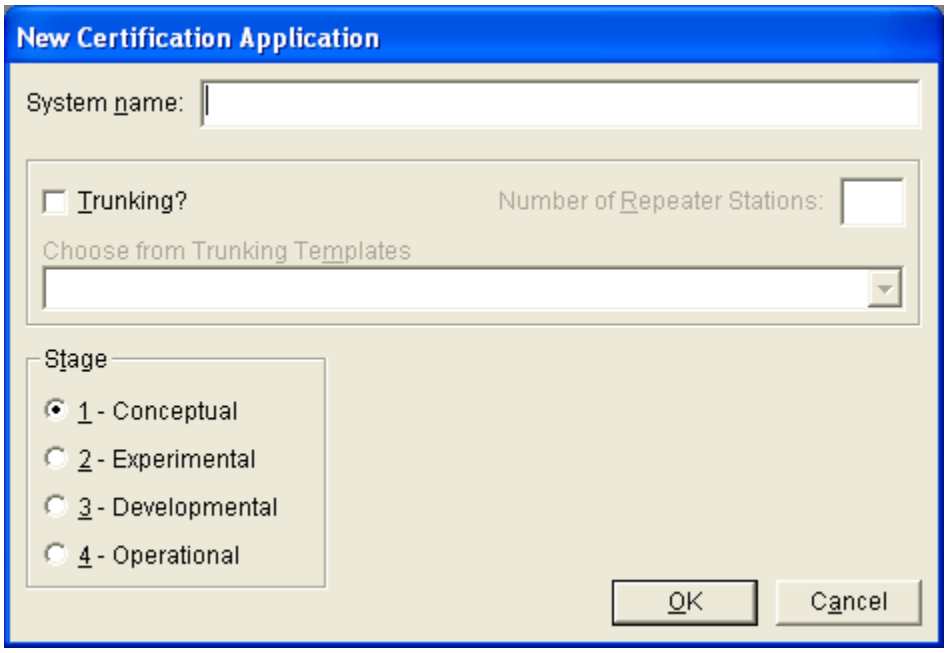
# 14.0 CREATING A TRUNKING SYSTEM CERTIFICATION USING A TEMPLATE

**Step 1.** Click the **Create New Certification** button  on the tool bar. The **New Certification Application** window is displayed.



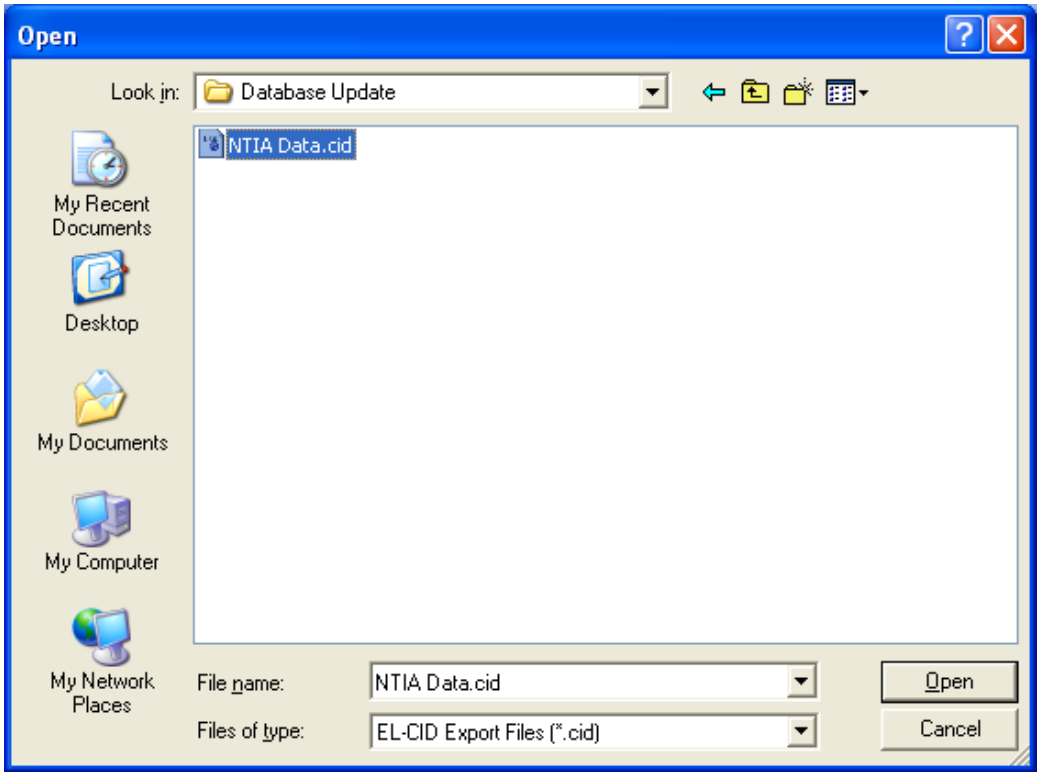

**Step 2.** Click the **Trunking?** Checkbox. If there are no Trunking Templates in your database, the following message is displayed.


Click **OK**. There will be no Trunking Templates from which to choose. These must be imported from your Training CD. Click **Cancel** to close this window.

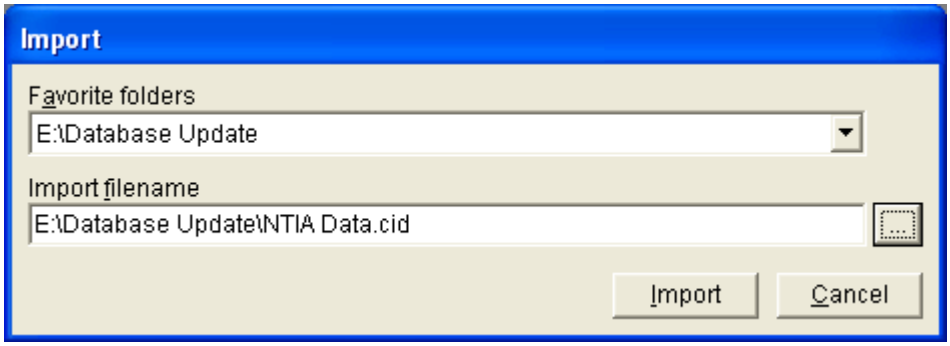
***Hint***: If the **NTIA Data.cid** has already been imported in Section 4, the Trunking Templates should be in your database and you can Skip to **Step 8.**

**Step 3.** Insert the Training CD in the CD drive. Click the **Import button**  on the tool bar, or from the menu **File | Import.**

**Step 4.** Click the **browse button** ... to select the file to import. The folder we are using is on the **Training CD** and called **Database Update** (For training, this will be the **E:\Database Update**). Highlight the filename **NTIA Data.cid** and then click **Open**.

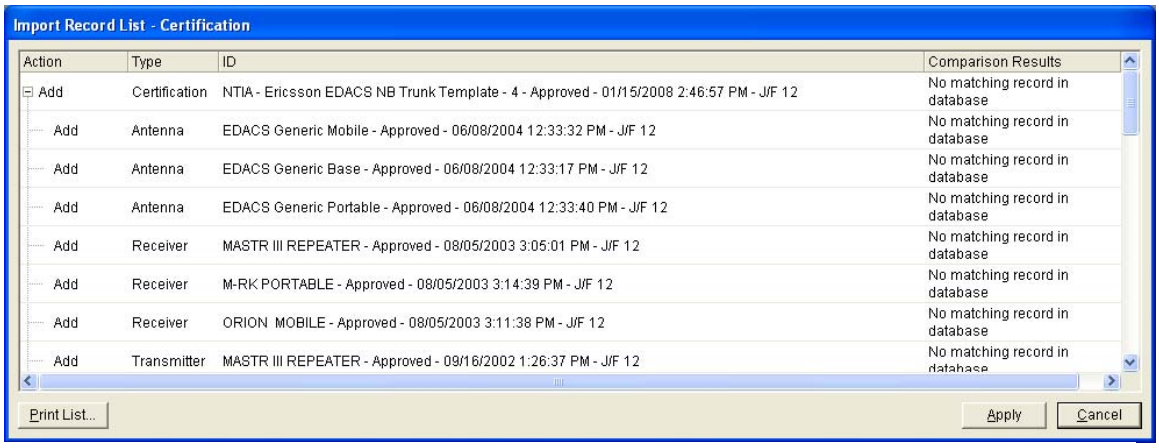



The **Import** window displays the selection.

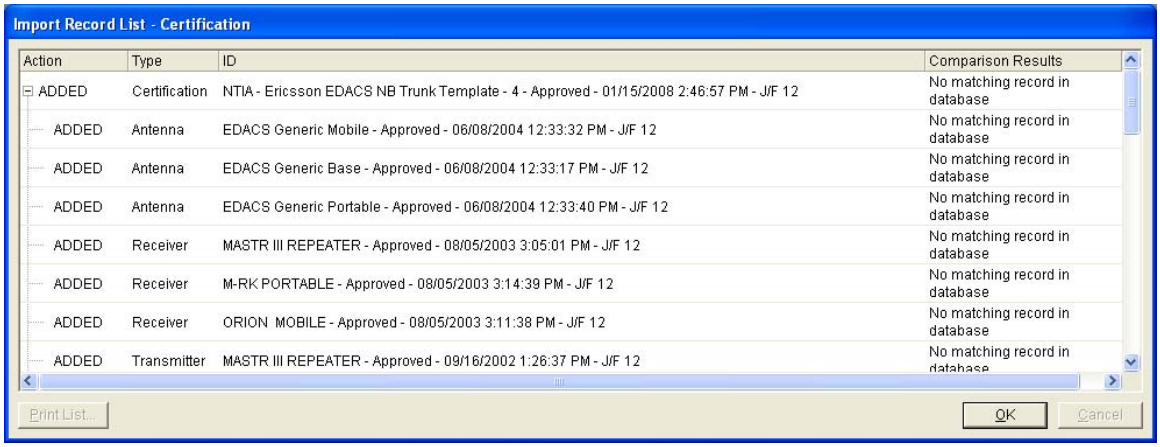



**Step 5.** Click **Import**. A progress window is displayed followed by the **File Description**.

**Step 6.** Click **OK**. The **Import Record List - Certification** window is displayed.

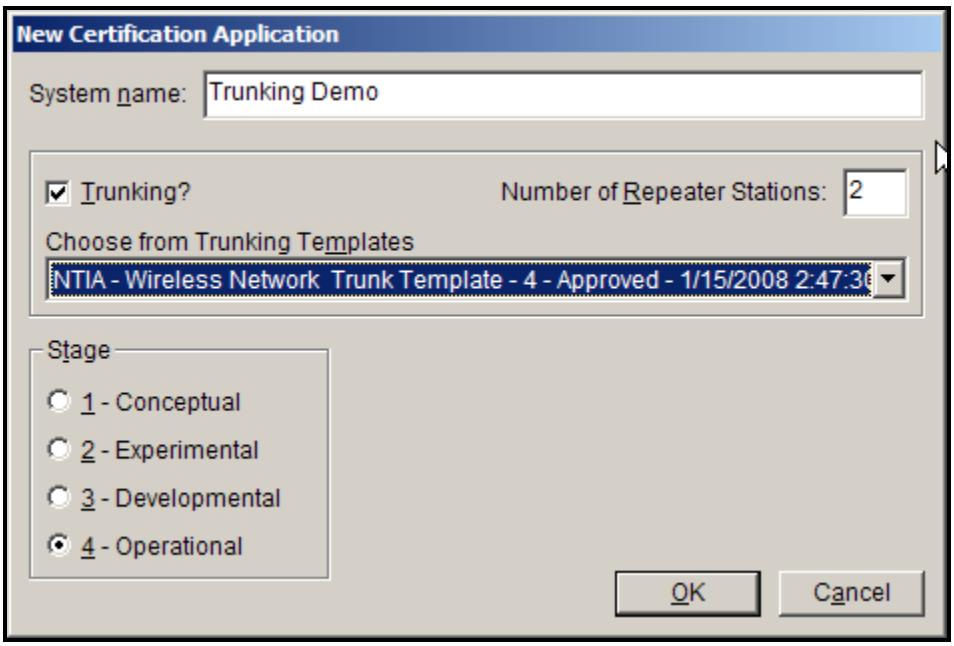



**Step 7.** Click **Apply**. The **Progress** window is briefly displayed and then the **Import Record List - Certification** window is again displayed.




Notice that **Add** changes to **ADDED** in the **Action** column. At this point, the records have been added to the local EL-CID database.

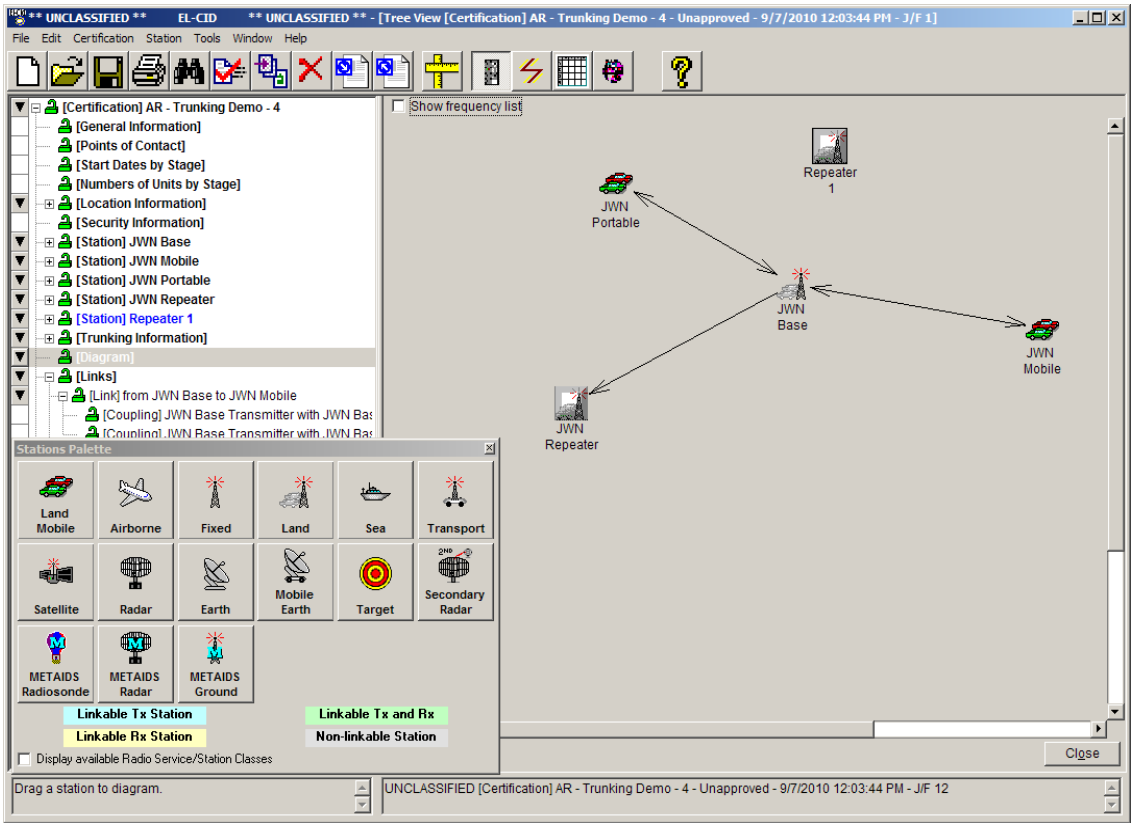
**Step 8.** Repeat **Step 1**. Click the **Trunking?** Checkbox. Three trunking templates will be available for you to select.




**Step 9.** Enter the information shown in the screen above and listed in the table below and then click **OK**.

| Field | Value |
|---|---|
| **System Name** | **Trunking Demo** |
| **Trunking?** | **Checked** |
| **Number of Repeater Stations** | **2** |
| **Choose from Trunking Templates** | **NTIA-Wireless Network Trunk Template - 4** |
| **Stage** | **4- Operational** |

The **Tree View** is displayed with the template filled.




**Step 10.** Close the palette using the **X** in the upper right or by clicking the **Stations Palette button** on the tool bar.

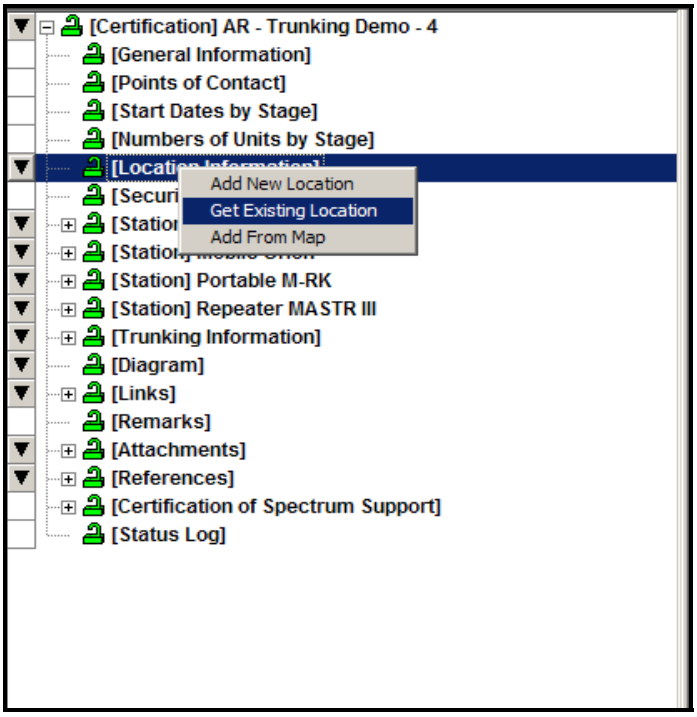
**Step 11.** To see all the different tranmsitters, receivers, and antenna data, Expand the nodes using the button.

***Hint:*** To expand the Tree View, highlight a node in the Tree View and press Shift + →. All nodes under the highlighted node will be expanded.

To collapse the Tree View, highlight a node in the Tree View and press Shift + ←.

All nodes under the highlighted node will be collapsed.

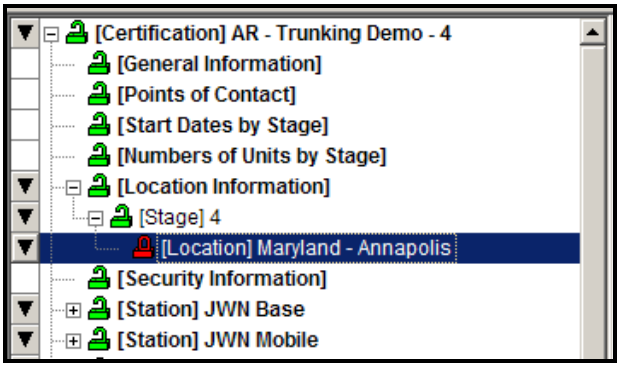
**Step 12.** **Right-click** on the **Location Information** node in the Tree View, then click **Get Existing Location.** Select **Stage 4** on the **Select Stage** screen and click **OK**.




The **Pick Existing Location** screen will appear.

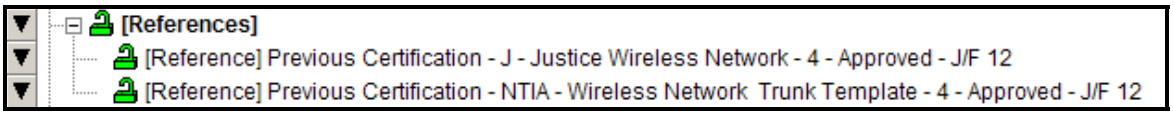
**Step 13.** Type **Annapolis** and click **Find First.**


**Step 14.** When the **Annapolis** location appears, click **OK** and the location will be added to the **Location Information** node.



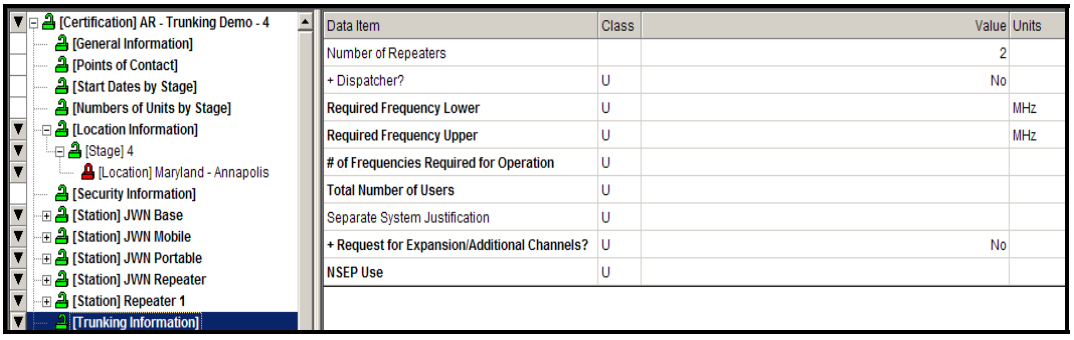

Note that the location is added for the whole certification, not under a particular station.

**Step 15.** Expand the **References** node using the ⊞ button.




***HINT***: When you create a Trunking System from a Trunking Template, EL-CID automatically adds a **Reference** to the Trunking Template for you. Since the Trunking Template typically also has a reference to the original Certification for the system, it automatically appears as a **Reference** as well. (See Referencing Documents and Other Certifications in the Help File for further information.) Delete any references not appropriate to your certification.

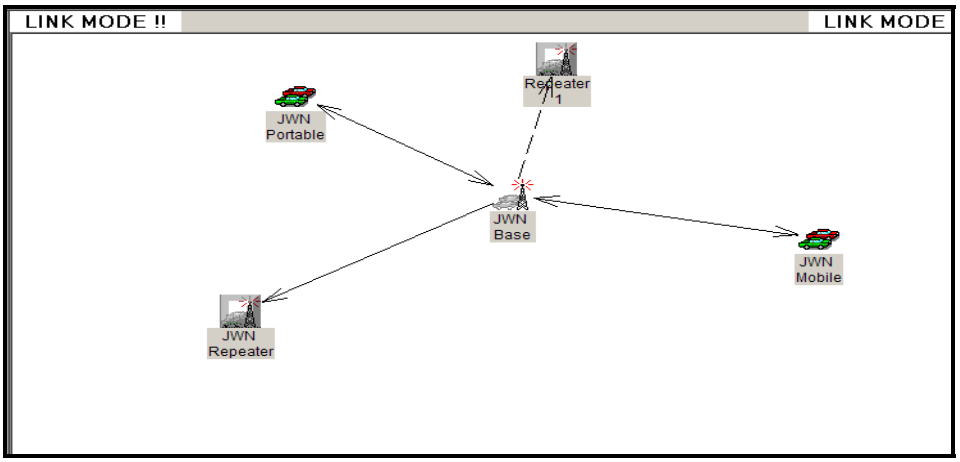
**Step 16.** Click on the **Trunking Information** node in the Tree View.




**Step 17.** Enter the information shown in the table below and then **Save**.

| Field | Value |
|---|---|
| **Dispatcher?** | **Yes** |
| **Dispatcher Explanation** | **To coordinate with mobile users** |
| **Required Frequency Lower** | **150 MHz** |
| **Required Frequency Upper** | **160 MHz** |
| **# of Frequencies Required for Operation** | **20** |
| **Total Number of Users** | **50** |
| **Request for Expansion/Additional Channels?** | **No** |
| **NSEP Use** | **Coordinate with local authorities** |

**Step 18.** **Click** on the **[Diagram]** node in the Tree View. Click the **Create New Links button** on the tool bar to enter **LINK MODE!!** and draw a link from JWN Base to Repeater 1.




**NOTE:** You cannot draw a return link from the repeater station to the base station as the repeater is a generic station.

**Step 19.** Click the **Create New Links** button again to turn the **LINK MODE!!** off.

**Step 20.** Click on each station in the Tree View and enter a **Site Elevation** and **Antenna Height** for each of the four stations and then **Save**.

**JWN Base**

| Field | Value |
|---|---|
| **Site Elevation** | **100 m** |
| **Antenna Height** | **50 m** |

**JWN Mobile**

| Field | Value |
|---|---|
| **Site Elevation** | **40 m** |
| **Antenna Height** | **30 m** |

**JWN Portable**

| Field | Value |
|---|---|
| **Site Elevation** | **50 m** |
| **Antenna Height** | **25 m** |

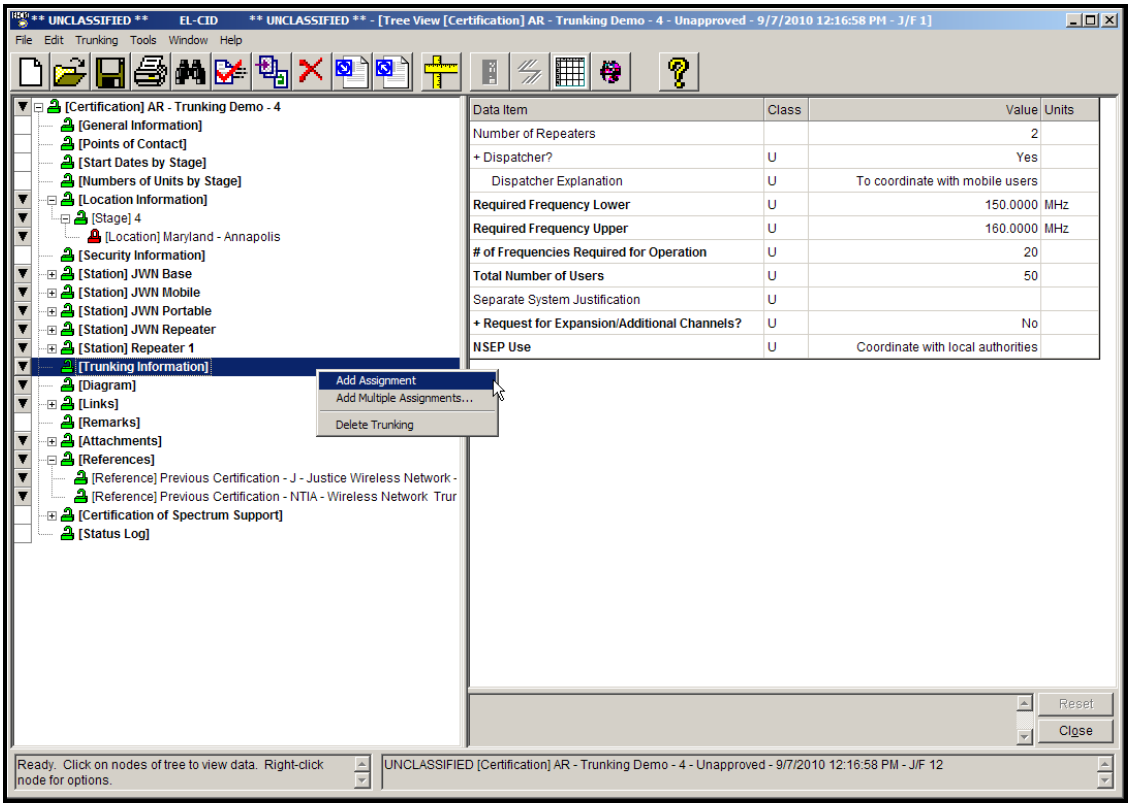
**JWN Repeater**

| Field | Value |
|---|---|
| **Site Elevation** | **100 m** |
| **Antenna Height** | **50 m** |

**Repeater 1**

| Field | Value |
|---|---|
| **Site Elevation** | **100 m** |
| **Antenna Height** | **50 m** |

**Step 21.** Right-click on the **Trunking Information** node in the Tree View and select **Add Assignment.**

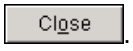



**Step 23.** Enter the information shown in the screen above and the table below and then **Save**.

| Field | Value |
|---|---|
| **Relinquished or Used** | **Used** |
| **Assignment Frequency (lower or discrete)** | **150 MHz** |
| **Assignment Frequency Upper** | **155 MHz** |
| **Agency Serial Number** | **APD 1234** |

**Step 24.** Select the **General Information** node in the Tree View and enter **$200,000** for the **Estimated Initial Cost** field and then **Save**.

***HINT:*** In the Help File,  (under Trunking Systems | Creating a New Trunking System) A table is shown (NTIA Manual Section 10.9.1 to EL-CID Cross-reference), that will give a cross-reference between the NTIA requirements in Section 10.9.1 and where they can be found in EL-CID.

**Step 25.** Click on the **Close** button 

. This will save your data and close the Certification.

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# STUDENT INFORMATION SHEET

**Date:** _____ **Training Location:** _____

**Name:** _____ **Job Title/Rank:** _____
(**Last**) (**First**) (**MI**)

**Government Agency:** _____

**Company (Contractor):** _____

**Address:** _____

**City/State/Zip:** _____

**E-mail NIPRNET**: _____

**E-mail SIPRNET**: _____

**Telephone**:

**Voice**: **CML:** _____ **DSN**: _____

**Fax**: **CML:** _____ **DSN**: _____

**Secure: CML:** _____ **DSN**: _____

**Access to: SIPRNET** ☐ **STU-III/STE** ☐

**Area Hotel:** _____

**Room Number:** _____

# STUDENT CRITIQUE SHEET

**Dates of Training**: **From**: _____ **To**: _____

**Training Location:** _____

**Name & Grade:** _____

**Job Title/Rank**: _____

**Government Agency**: _____

**Company (Contractor)**: _____

**Course Material**

**Information Received**: ☐ Great Help ☐ Some Help ☐ No Help

**Technical Value**: ☐ About Right ☐ Too Hard ☐ Too Easy

**Course Is**: ☐ Too Long ☐ Too Short ☐ Long Enough

**Course Material**: ☐ Outstanding ☐ Adequate ☐ Not Adequate

**Course Presentation**

**Lessons**: ☐ Well Presented ☐ Adequate ☐ Poor

**Instructor's Presentation**: ☐ Easy to Follow ☐ Difficult to Follow

**Instructor's Presentation**: ☐ Easy to Understand ☐ Difficult to Understand

**Instructors**: ☐ Time to Ask Questions ☐ No Time to Ask Questions

**Practice**: ☐ Too Much ☐ About Right ☐ Not Enough

**Value of Training Aids**

**Training Aids**: ☐ Very Good ☐ Good ☐ Fair ☐ Poor

**Opinion**

**Opinion Overall**: ☐ Very Good ☐ Good ☐ Fair ☐ Poor

**Remarks/Recommendations:**

_____

_____

_____

_____

_____

_____

_____

**Additional Critique Comments**:

# APPENDIX A - QUICK REFERENCE GUIDE

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# APPENDIX B – INSTALLING EL-CID

***Please Note**:* **Users must have read and write privileges to the ElcidData directory and ALL its subdirectories.**

***NOTE:*** **The following instructions are tailored for installing EL-CID on the course training machines. More complete instructions for installing EL-CID are available on the Training CD.**

***NOTE:*** **Do not work ahead of the Instructor when performing the procedures below. In particular, do not go beyond Step 4 until instructed to!**

**Step 1.** **Login** using the **Admin** username and password on the PC.

**Step 2.** **Insert** the CD labeled "Equipment Location – Certification Information Database" into your CD drive. The **Welcome** window will appear. (If the **Welcome** window does not appear, use Windows Explorer to find your CD drive. Then double click the file **Setup.exe**.)

**Step 3.** Click the **Next >** button. The **Information** window will appear.

**Step 4.** Click the **Next >** button. The **Select Components** window will appear. Leave the top two boxes checked to install the EL-CID User Training Manual as well as icons and shortcuts.

**Step 5.** Click the **Next >** button. The **Choose Program Folder** window will appear. The **Destination Folder** should default to **C:\Program Files\EL-CID**. If it does not, use the Browse button  to select this directory.

***HINT:*** Notice the difference between the window title in the step above – **Choose Program Folder** – and the window in the next step – **Choose Data Folder**.

**Step 6.** Click the **Next >** button. The **Choose Data Folder** window will appear. The **Destination Folder** should default to **C:\ElcidData. STOP!** Click the Browse button to display the **Choose Folder** window**. Erase the drive letter C: and replace it with D:** as we will be installing to **D:\ElcidData.(Do NOT select the D: drive from the drive letter combo box!)**

**Step 7.** Click the **OK** button. A window will appear stating that directory does not exist and asking if the program should create it. **Click** the **Yes** button. You will return to the **Choose Data Folder** window and the correct directory should be selected.

**Step 8.** Click the **Next>** button. The **Choose Program Shortcut Folder** window will appear with the folder **ELCID** selected. (***HINT:*** Although the window calls this the "Program Shortcut Folder", it is actually where the menu entries on the Windows Start menu will be created and should not be confused with the Program Folder in Step 4 above.)

**Step 9.** Click the **Next >** button. The **Start Copying Files** window will appear. Confirm that the correct **Destination Folders** are selected.

**Step 10.** Click the **Next >** button. Progress bars will be displayed during the install. When the install is complete you will be prompted to make sure the system date, time and time zone are correct.

**Step 11.** Click **Ok**. The **Setup Complete** window will appear.

**Step 12.** Make sure the **Yes, I want to launch ELCID now** check box is **NOT** checked. Then click the **Finish** button. You have completed installing the ELCID program.

**Step 13.** **Log out** of the Admin account.

**Step 14**. After installing the EL-CID software, you would normally install data updates. You will do this in Section 4.

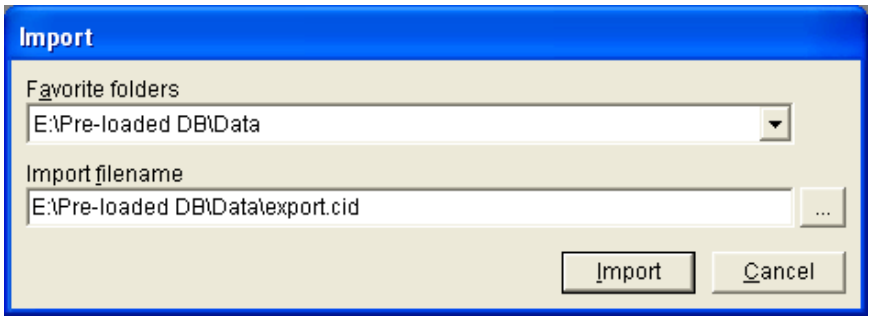
# APPENDIX C - IMPORTING UPDATED COMPLIANCE CHECKS

The following steps will illustrate how to perform the import of the updated Compliance Checks in *the purge and replace* mode. The updates are in two parts -- Compliance Checks and Snippets.

**Step 1.** If needed, **start the EL-CID program.**

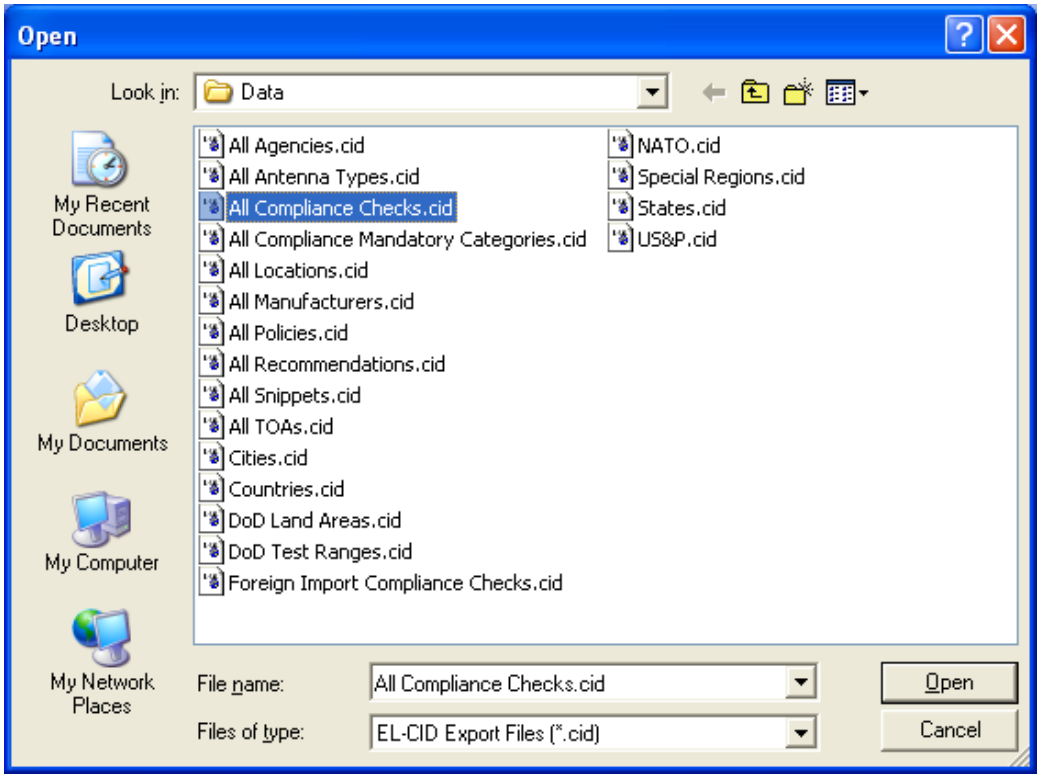
**Step 2.** Click the **Import** button  .

The **Import** window is displayed.

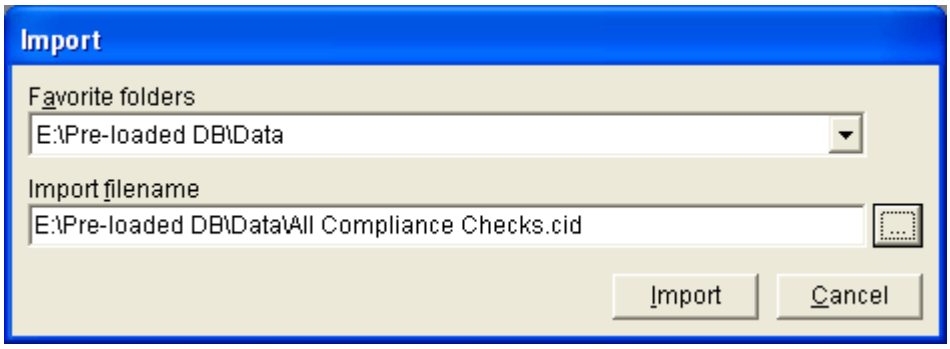



Note: This illustration shows the **Installation CD** located on the **E:** drive. If your CD-ROM drive is not assigned to drive letter **E**, you must navigate to the correct drive.

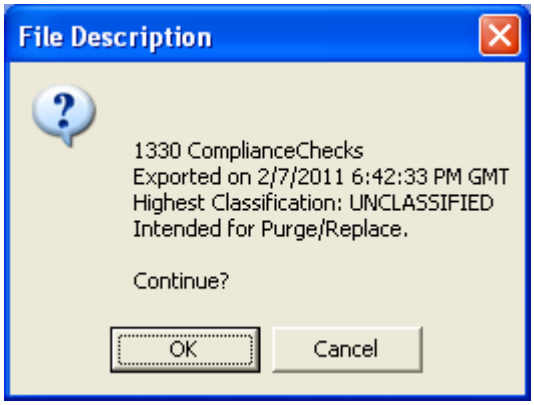
**Step 3.** Click the **Browse** button  to select the file to import. The folder we are using is on the E: drive. Go to **E:\Pre-loaded DB\Data.** Highlight the filename **All Compliance Checks.cid** and then click **Open**.



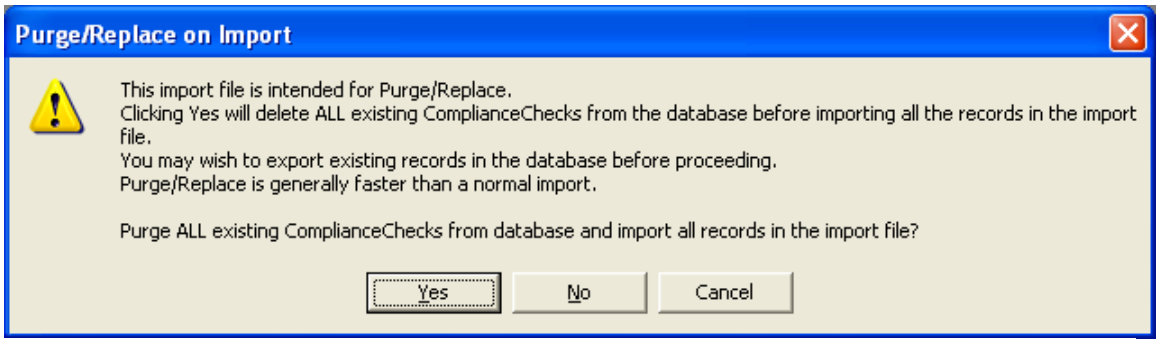
The **Import** window displays the selection.




**Step 4.** Click **Import**. The **File Description** window is displayed.




**Step 5.** Click **OK**. The **Purge/Replace on Import** window is displayed.

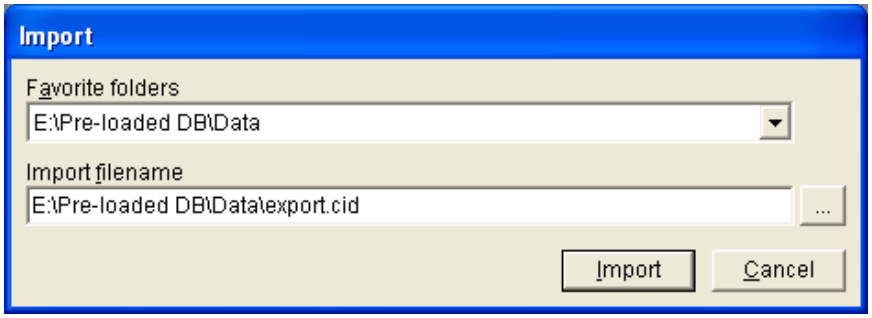



**Step 6.** Click **Yes**. The **Progress** window is briefly displayed and then disappears.

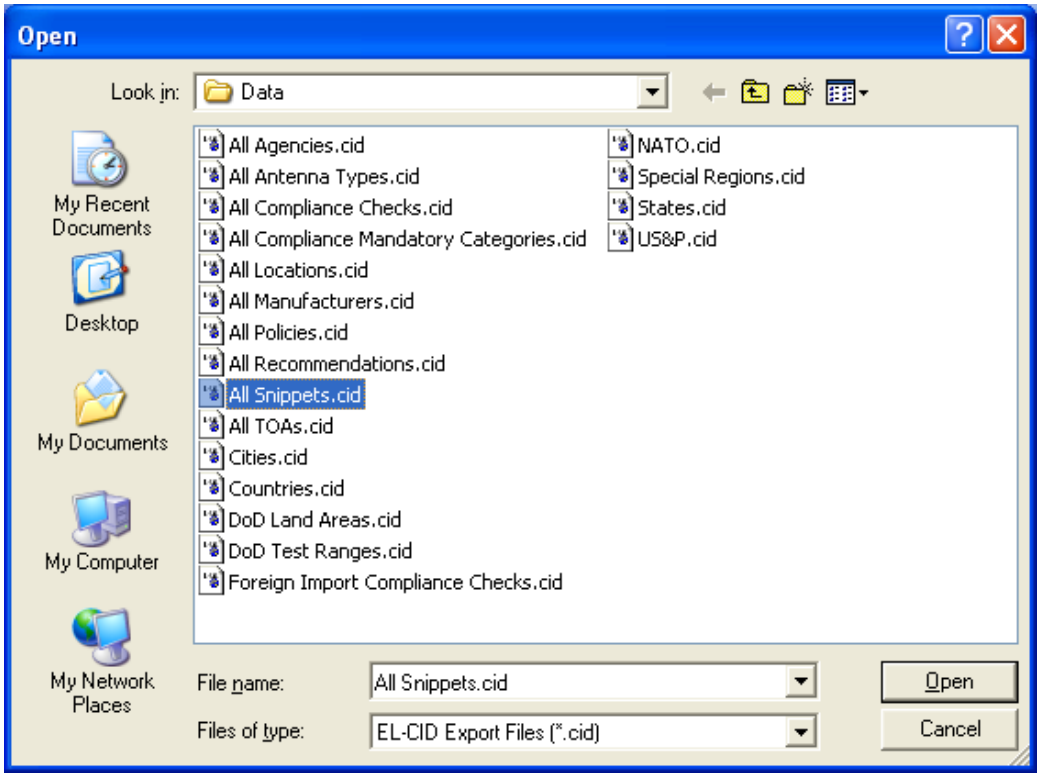
**Step 7.** Repeat the process, but this time choose **All Snippets.cid** from the import location.

**Step 8.** Click the **Import** button  .

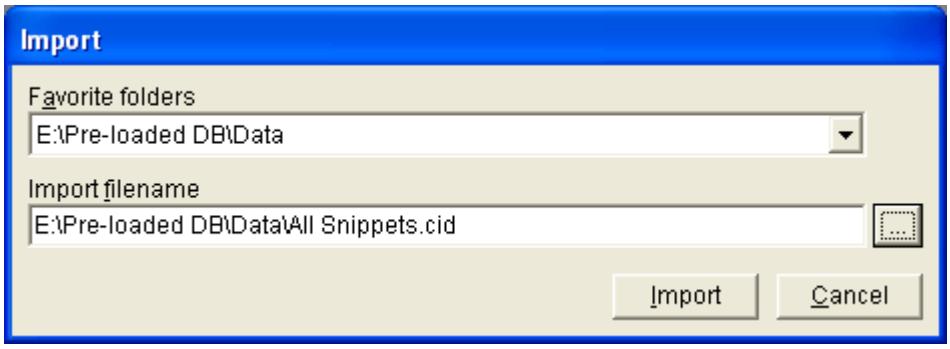
The **Import** window is displayed.



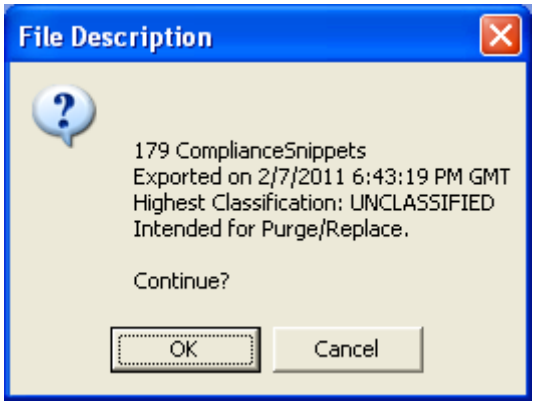

**Step 9.** Click the **Browse** button  to select the file to import. The folder we are using is on the E: drive. Go to **E:\Pre-loaded DB\Data.** Highlight the filename **All Snippets.cid** and then click **Open**.



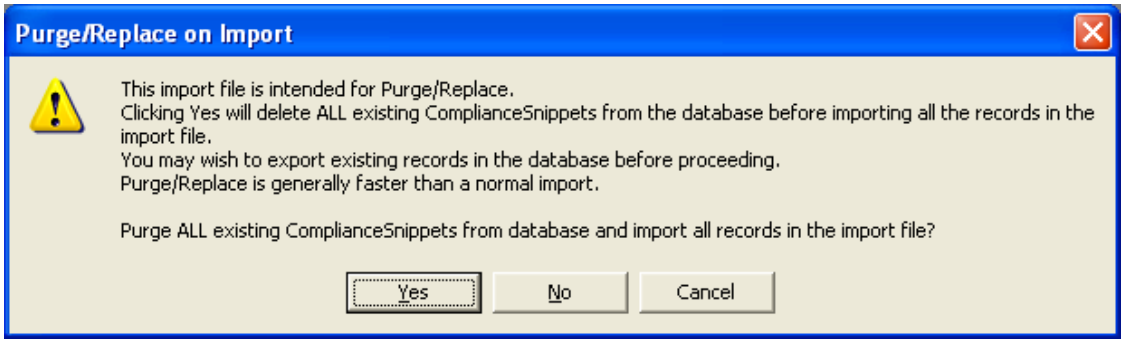
The **Import** window displays the selection.




**Step 10.** Click **Import**. The **File Description** window is displayed.




**Step 11.** Click **OK**. The **Purge/Replace on Import** window is displayed.




**Step 12.** Click **Yes**. The **Progress** window is briefly displayed and then disappears.

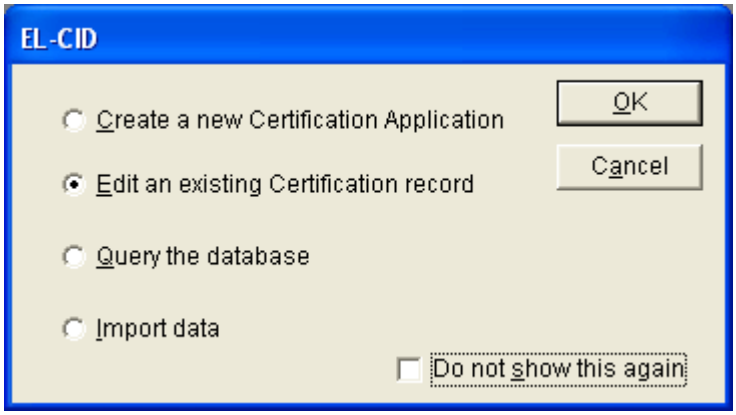
The Compliance Checks and Snippets have now been updated.

.

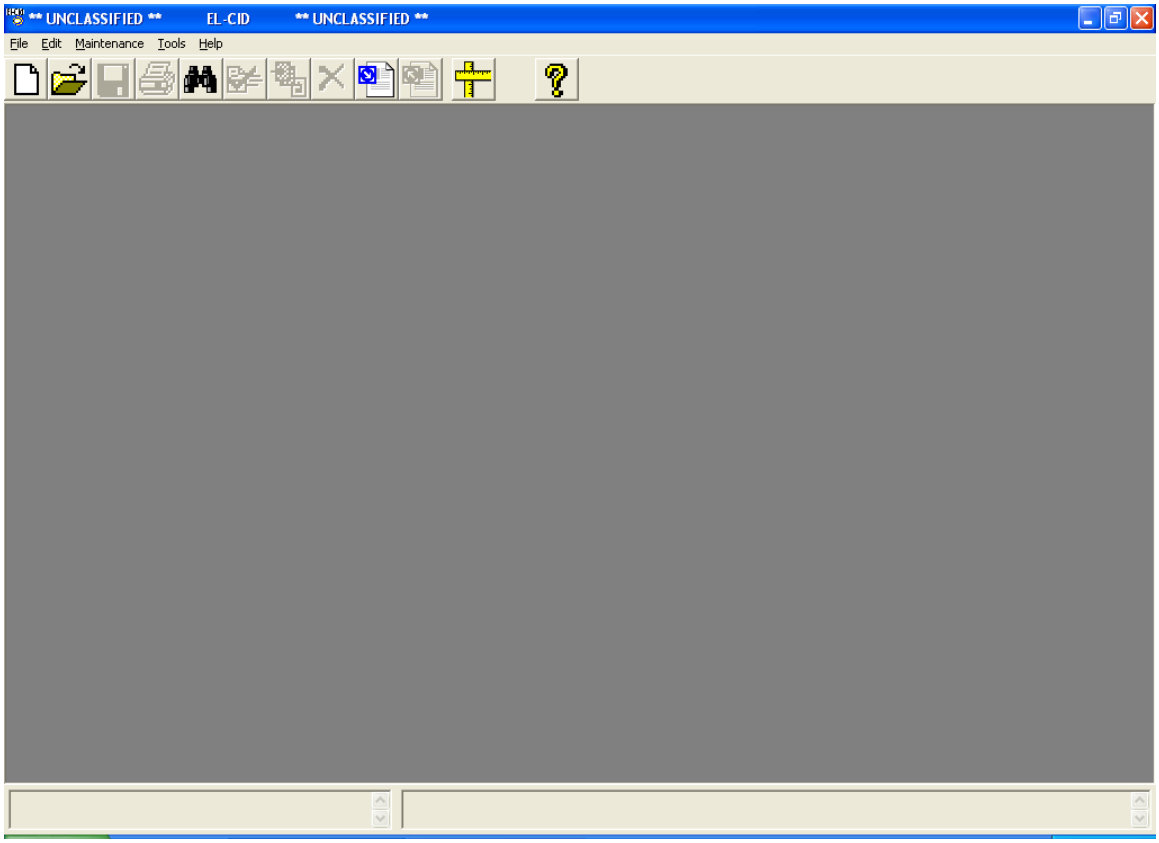
# APPENDIX D - BACKING UP THE EL-CID DATABASE

The following steps will illustrate how to backup certifications in the EL-CID database. This process may be used to export one or more certifications, or the complete database.

**Step 1.** Start the EL-CID program. If the Startup EL-CID Wizard window is displayed, click **Cancel** to dismiss this screen.

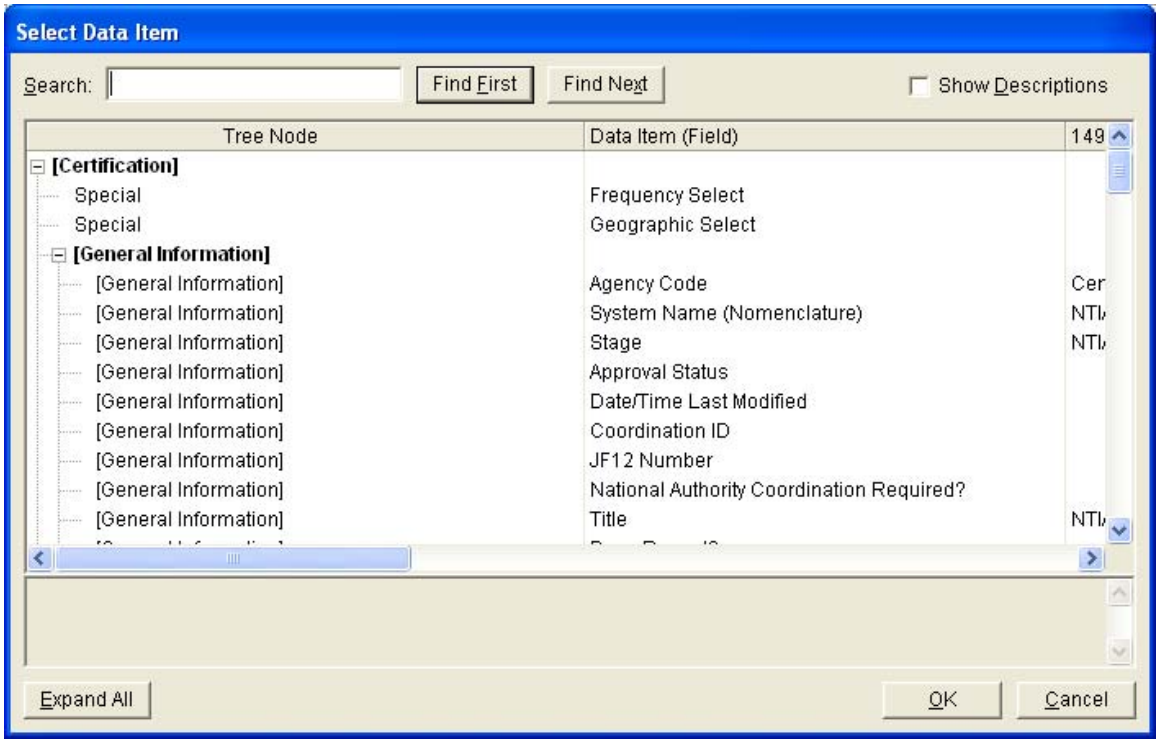



**Step 2**. The main screen appears.

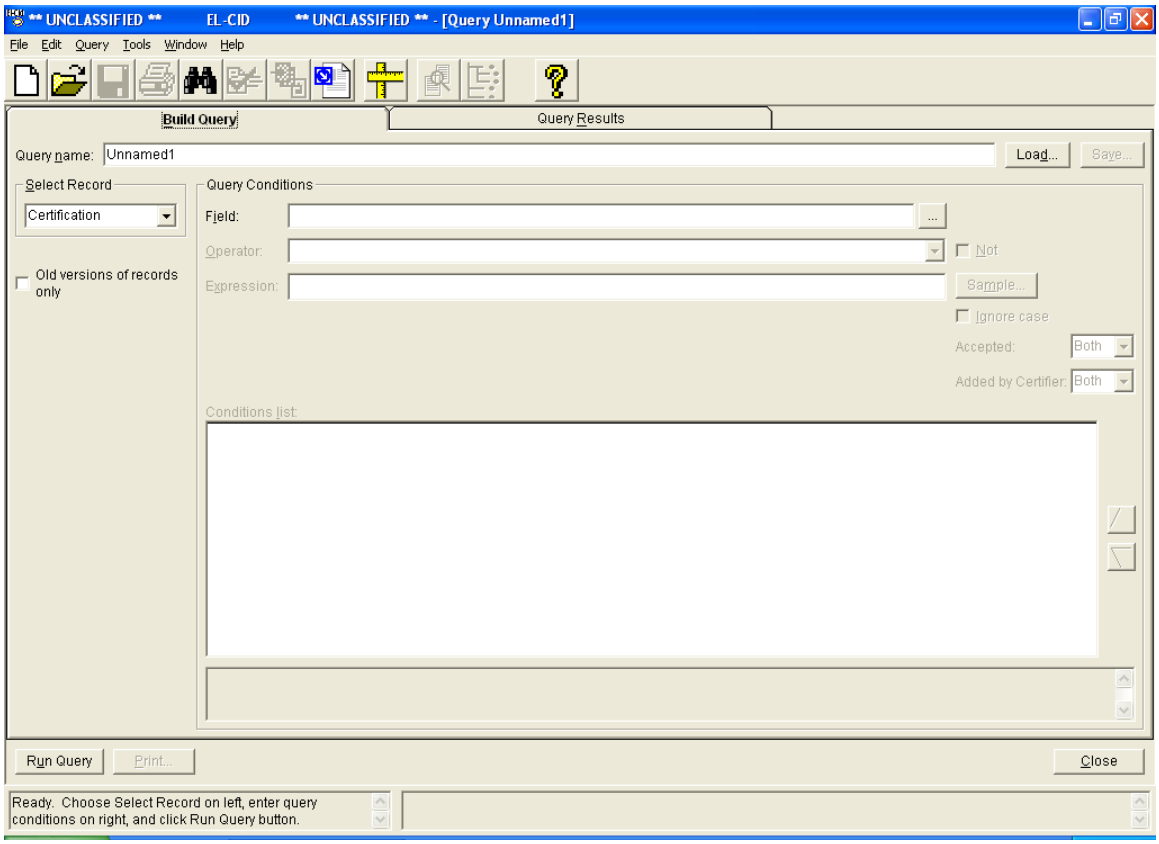


**Step 3.** Click the **New Query** button  on the tool bar.

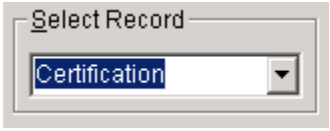
The **Build Query** window appears and (assuming that you have not disabled it in the Preferences) the **Select Data Item** window automatically appears. If the **Select Data Item** window is displayed, click **Cancel** .



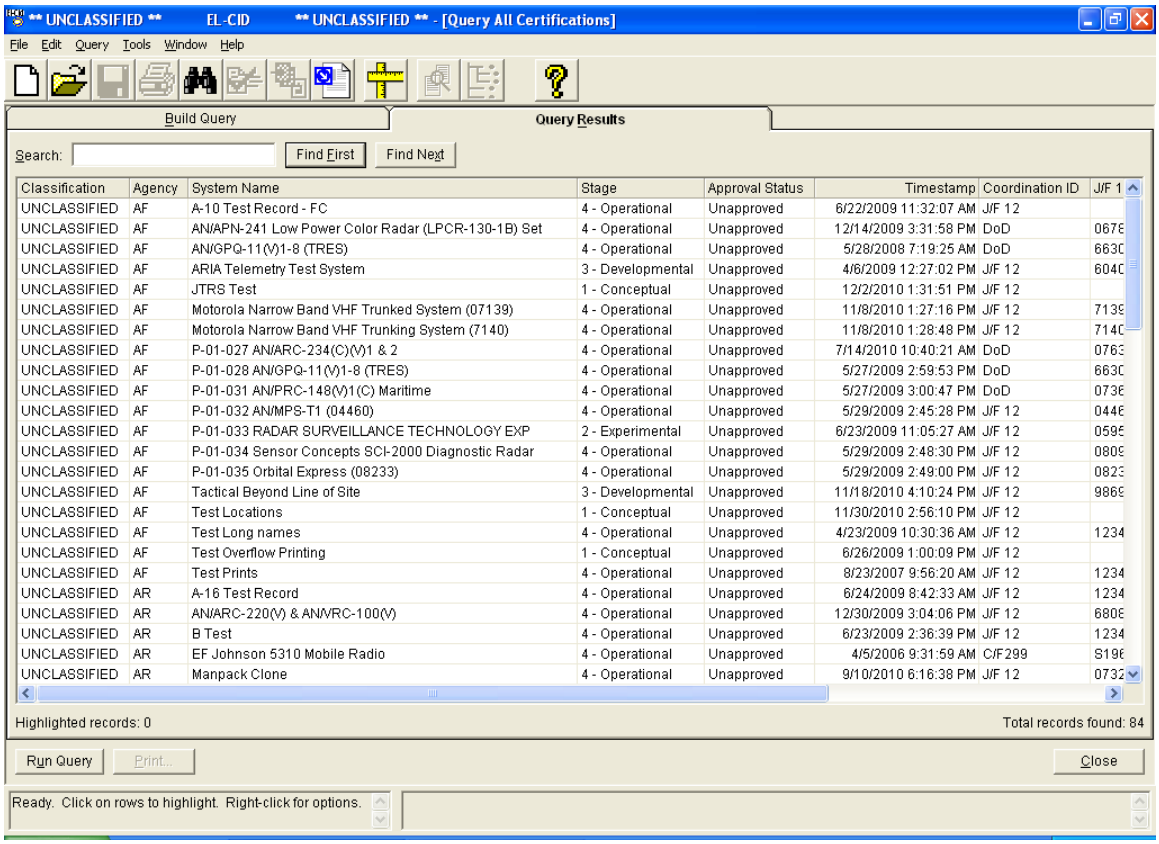
**Step 4**. The **Build Query** window appears.



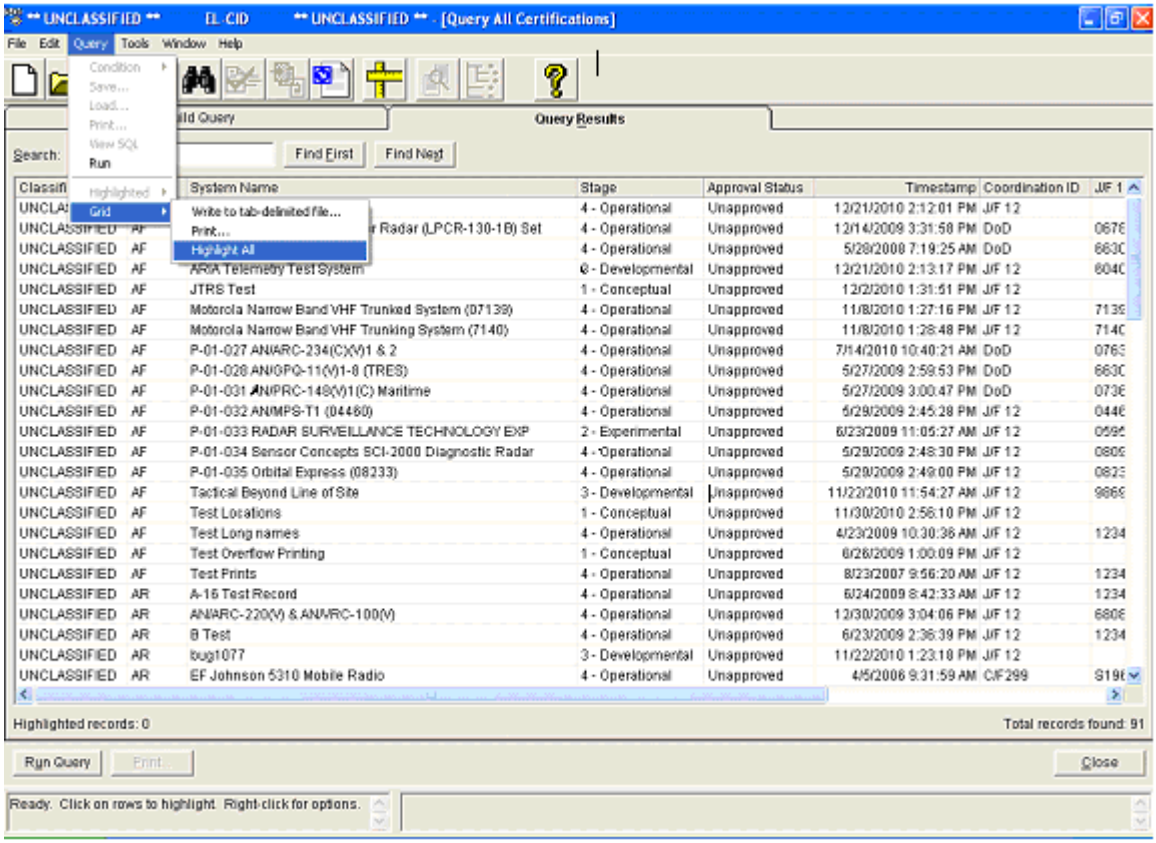

**Step 5**. Select **Certification** using the dropdown list button for the **Select Record** box.



**Step 6.** Click the **Run Query** button, or click the **Query Results** tab to execute the query. All Certifications in your Database will appear.

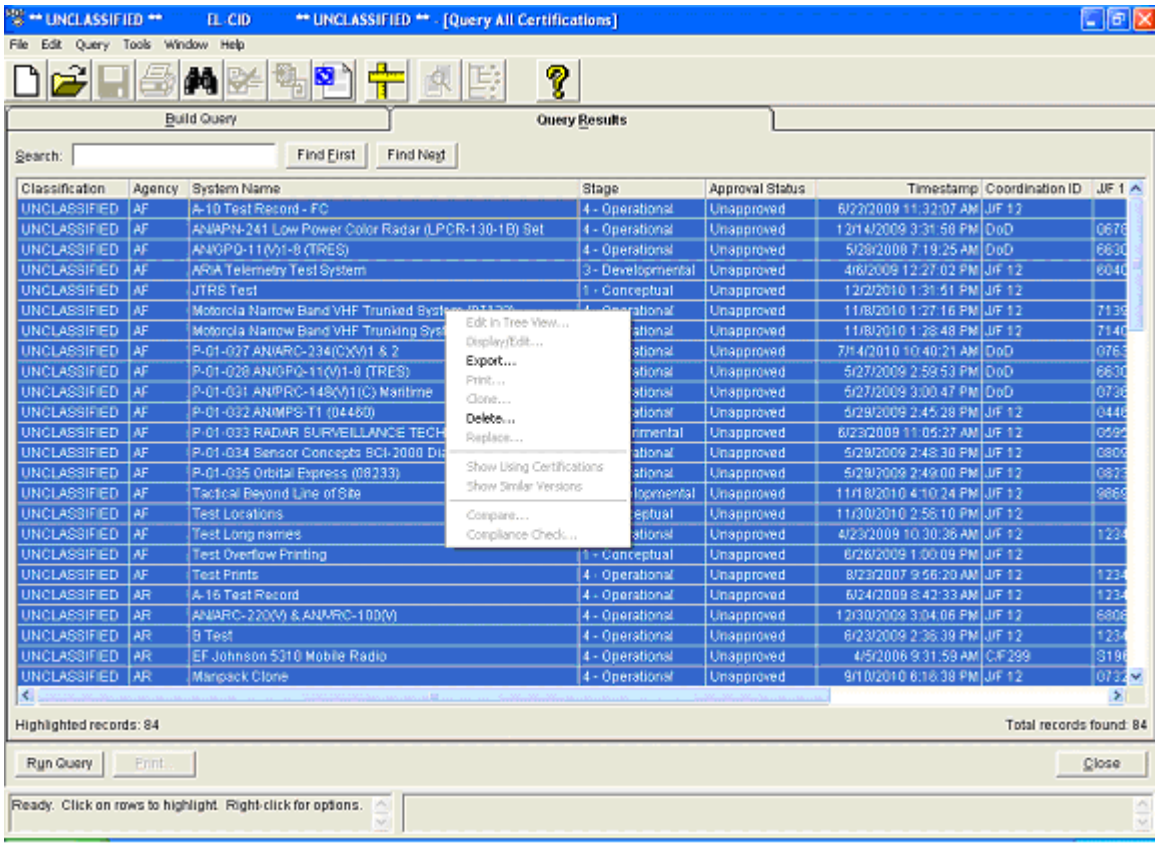


**Step 7.** Highlight all rows by selecting **Query** on the tool bar, then select **Grid** and **Highlight All** from the drop down list.

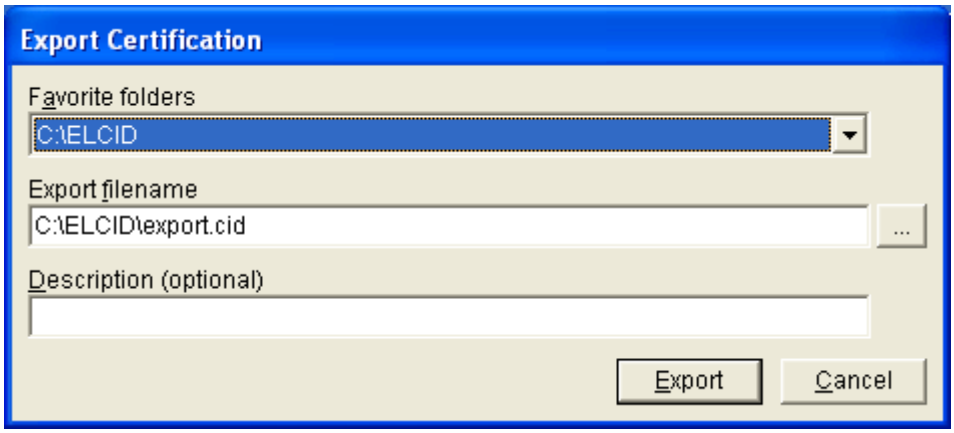



***NOTE:*** If only one or more Certifications are to be exported, highlight only those rows that you wish to export. You can hold down the **Ctrl key** and click each row individually.

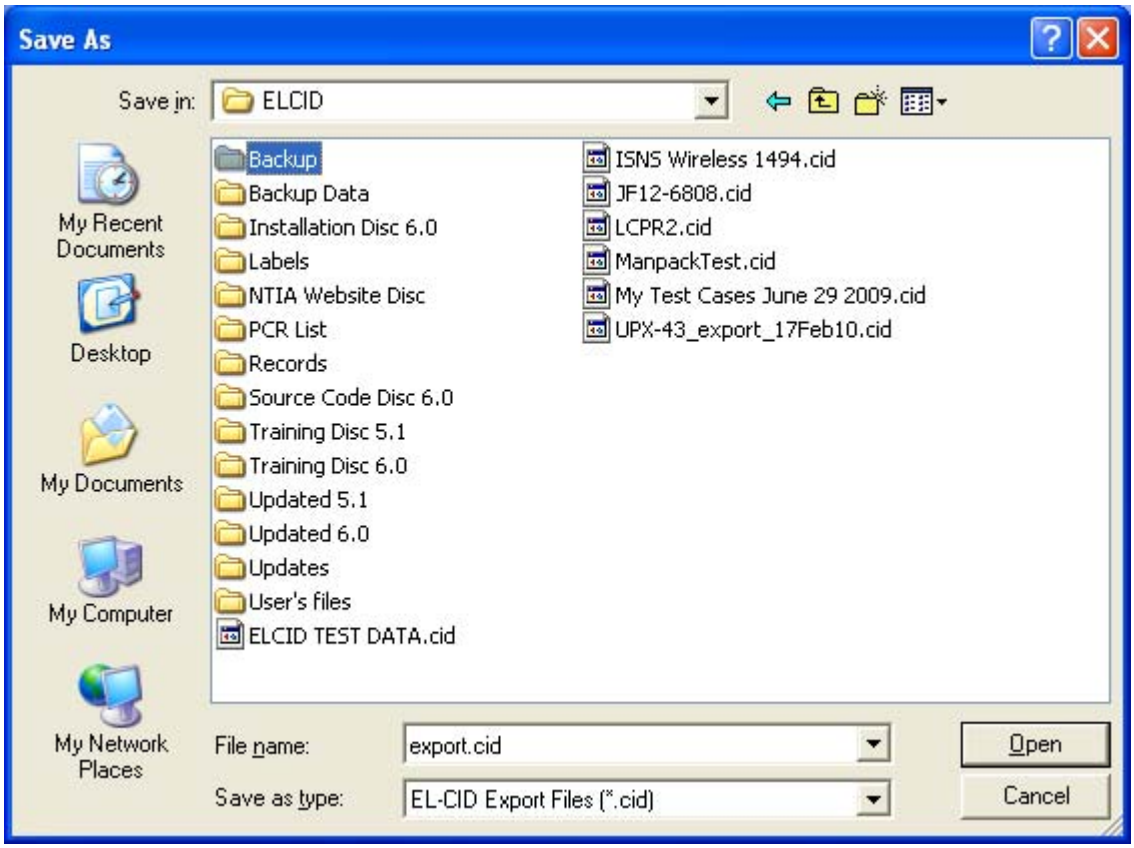
**Step 8.** **Right-click** and select **Export** from the drop down list.




**Step 9**. The **Export Certification** window appears.

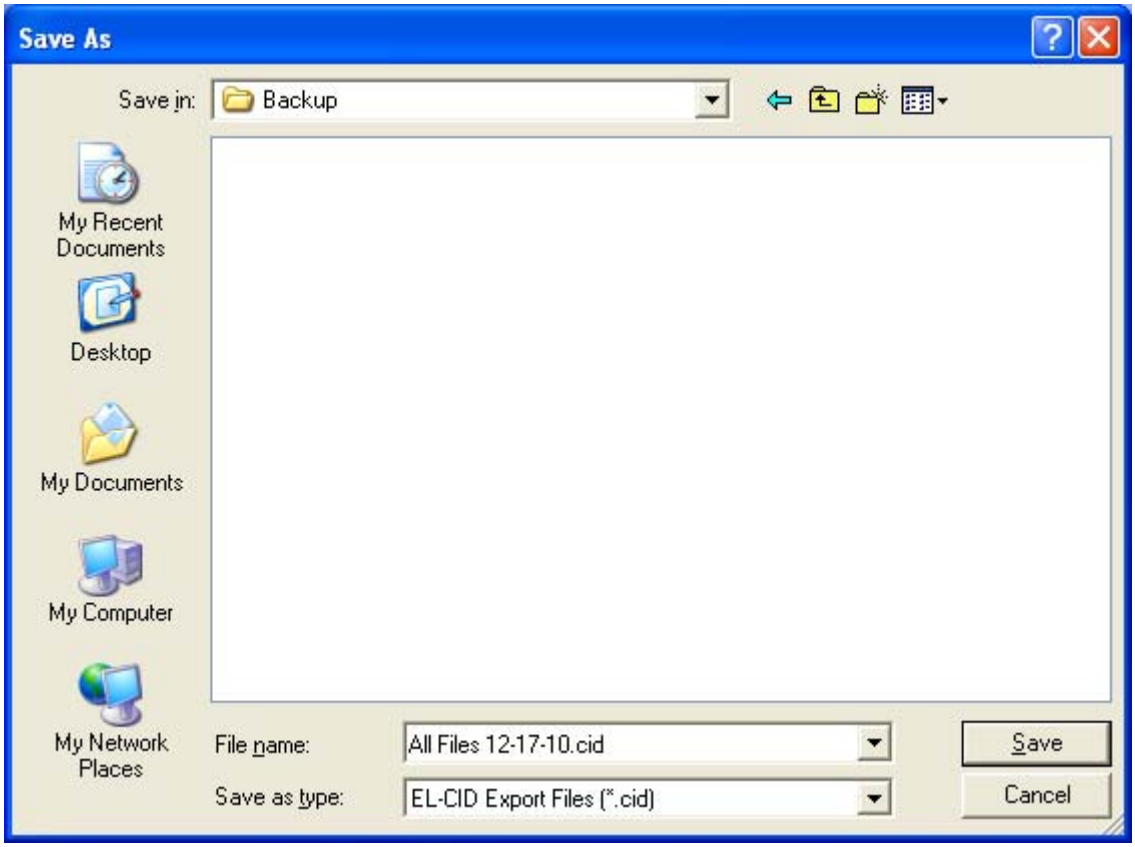


**Step 10.** Click the **Browse** button ... to select the directory in which the files will be saved.

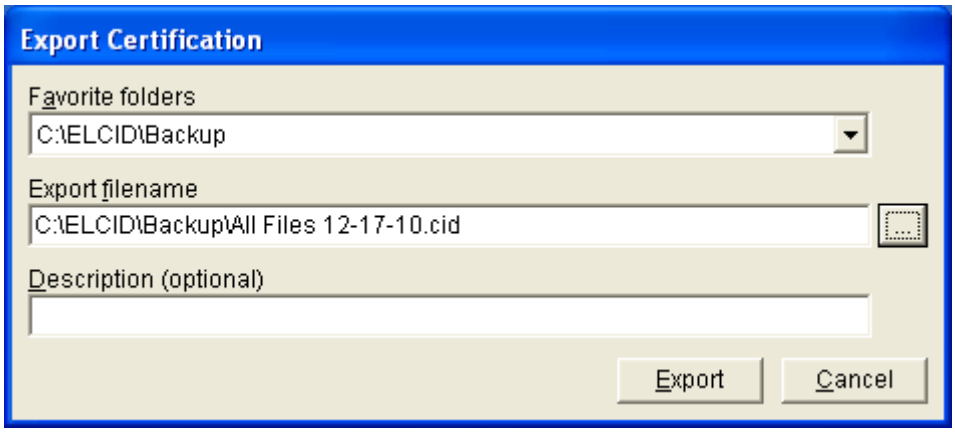


**Step 11.** Select a file folder and provide a distinct name in the **File name**.

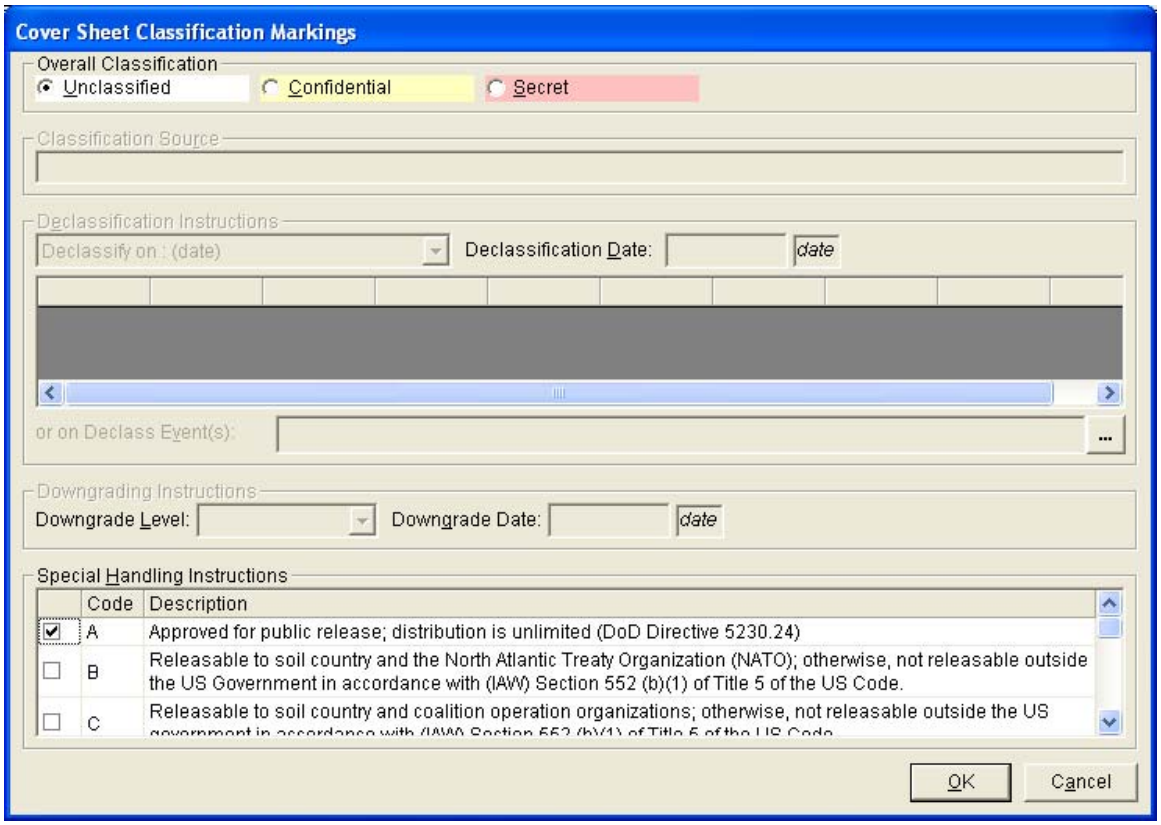
***NOTE:*** In this example, the **Backup** folder is selected, and a file name of **All Files 12-17-10.cid** is entered for the File name.



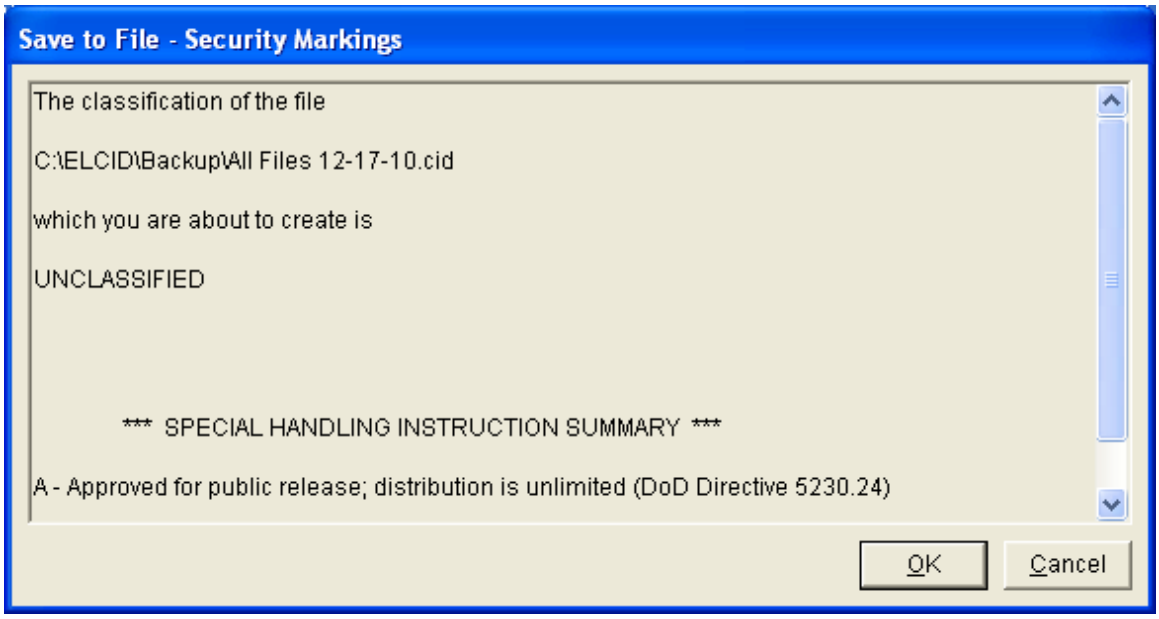
**Step 12.** Click **Save**. The **Export Certification** window is displayed again showing the path and filename that you selected. Additional information may be entered in the **Description** box.



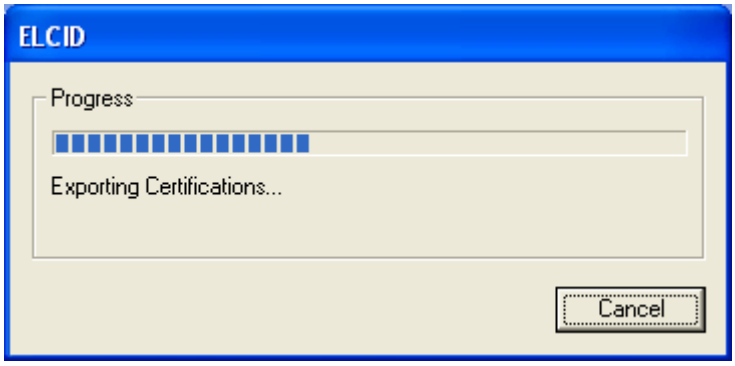

**Step 13.** Click **Export**. The **Cover Sheet Classification Markings** window is displayed. Select the appropriate Special Handling Instructions.



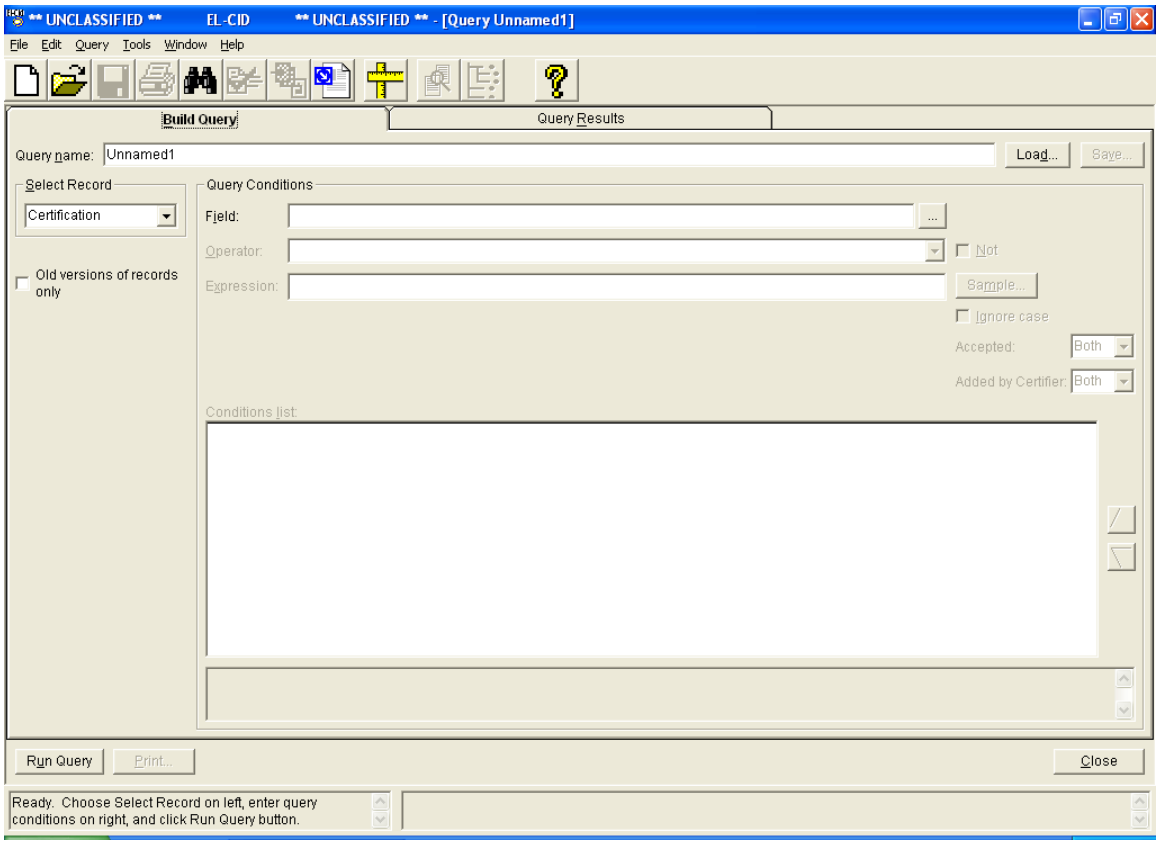
**Step 14.** Click **OK**. The **Save to File – Security Markings** window is displayed.




**Step 15.** Click **OK**. A **Progress** window is displayed while EL-CID is exporting Certifications, Antennas, Locations, Receivers, and Transmitters. The time it takes depends upon the size of your Database.



**Step 16**. The **Build Query** window appears again.




**Step 17.** Click **Close** to return to the main screen and then **Exit the EL-CID program.**

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# APPENDIX E - FREQUENTLY ASKED QUESTIONS

## E.1 What do the non-compliance messages mean when running compliance checks?

There are three levels of non-Compliance:

**Failure** – The record is not compliant and must be fixed, or a waiver must be obtained.
**Warning** – The record may not be compliant or there may be some other inconsistency or error in the data.
**Note** – These are messages to help you build more complete or more accurate data, but do not indicate a compliance failure.

## E.2 I have failed compliance checks; what do I do?

Determine the cause of the failure. If the failure cannot be rectified, attach a document to the application to explain to NTIA why you should be granted a waiver from the standard.

## E.3 I think that a compliance check is incorrect.

Send an email to the EL-CID Help Desk. Give the compliance check number and include a description of the problem. If possible, send the unclassified certification to the Help Desk. The Help Desk will notify NTIA that a potential problem exists. The Help Desk will further coordinate with NTIA to determine if the compliance check is accurate. If the compliance check is found to be inaccurate, a new one will be issued. If the user must submit the application before resolution of the issue, indicate to NTIA that a compliance check is in question and under review (you can do this by using an attachment document). The user will be notified of the action taken.

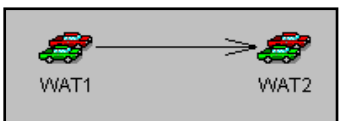
## E.4 I just have one radio, how do I draw a link?

The link information that is gathered on the link node is most beneficial to NTIA. The link information gives the relationship between the transmitter, the transmitting antenna, transmitter power, and emission code. The applicable frequency bands are also listed.

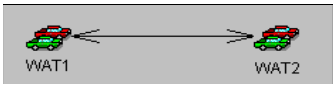
The link can be drawn in three different ways.

1. Terminate the link with a generic icon. This allows the link to be drawn and the transmitter information to be entered with no receiver information. This represents that you are probably communicating with similar equipment in the same frequency range.


2. Drag an identical icon to the screen and put the radio receiver characteristics on the second icon. This will allow you to give the receiver and receiver antenna data in the link.

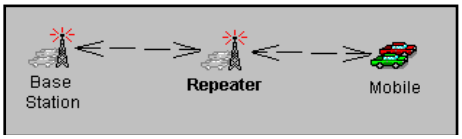



3. Drag an identical icon to the screen and put the full radio characteristics on the second icon. This will allow you to draw a link in the opposite direction. This represents that the radio will communicate with identical models of this radio.

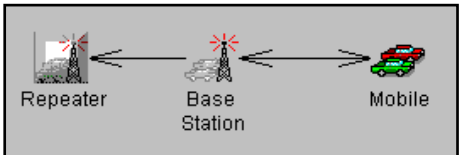



## E.5 I don't understand how repeaters are represented on the trunking diagram.

The typical trunking system consists of a base station communicating through a repeater to the mobile.




Since the repeater is usually the same radio equipment as the base station we have decided to ease the burden of repeating the transmitter information by calling it a generic station. Including the repeater icon is important, since the requirement exists to give the geographical location for each repeater; therefore we make a place holder of the repeater stations in order that they may be assigned geographic locations.




## E.6 I have a change that I would like to be made to the EL-CID model.

In the documents directory under the EL-CID directory, you will find an EL-CID PCR (Program Change Request) Form. Fill this form out and email it to the EL-CID Help Desk. The Help Desk will coordinate the change with NTIA to determine if it is appropriate for use in EL-CID. If it is appropriate, the change will be included on the development schedule.

## E.7 The frequency allocation table does not list the operating frequencies of my transmitter as being valid.

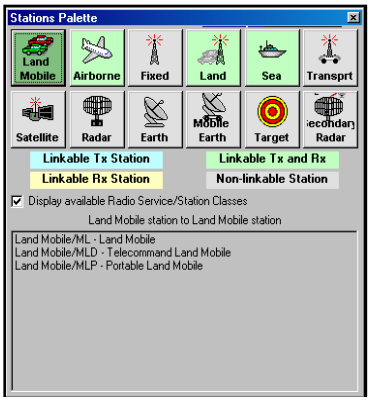
This situation can be caused by several reasons:

1. The frequency allocation table frequencies are linked to the service station and radio class. Check to see if you have the correct icon on the diagram. The radio class is set on the link information page.

2. Changes may have been made to the frequency allocation table and not updated in the EL-CID Model. If you see the frequency band for which you are interested and it is marked as being not in-band, you may still choose the band and give a reason for wanting to use the frequency band.

## E.8 Why can't I draw links between some of the station icons?

The station icons represent Radio Service/Station Classes and according to NTIA rules only certain Radio Service/Station Classes may communicate with each other. The station icons are color coded to show which icons can be linked together. The radio service and station classes are listed in the expanded station palette.




## E.9 What frequency range do I use for the transmitter, the operating range or the range I want to use?

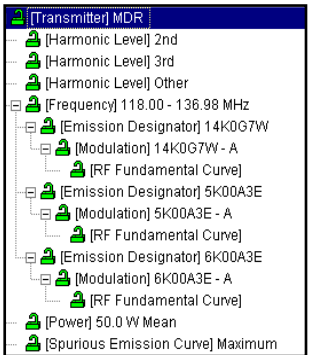
You should enter the operating range of the transmitting equipment. EL-CID will scan the frequency allocation table using the station class and radio service and display on the link information window the applicable frequency ranges that are available to use.

## E.10 I have a range of power values; what do I do?

Enter the minimum and maximum power values.

## E.11 May I have multiple emission codes for a single transmitter?

Yes, you may. You may also have multiple power values, and harmonic levels.




## E.12 When is NTIA going to require the use of EL-CID?

Certifications using EL-CID can be submitted to NTIA immediately. NTIA has already received several submissions from agencies. NTIA has required the use of EL-CID for submission of certifications to NTIA as of 1 November 2009.

## E.13 How can I get any data that NTIA has in EL-CID format?

EL-CID files are FOR U.S. GOVERNMENT USE ONLY. The National Telecommunications and Information Administration (NTIA), U.S. Department of Commerce, authorizes only Government frequency assignment personnel (including Spectrum Planning Subcommittee representatives) and approved supporting contractors to have access to and utilize the EL-CID files pursuant to the following limitations.

The EL-CID files are authorized for U.S. Government Use Only. Reproduction of the EL-CID files is prohibited without the prior written approval of NTIA. The EL-CID files shall not be sold or otherwise made available for commercial purposes. If an authorized user needs additional copies of the EL-CID files, requests should be directed to:

Department of Commerce
NTIA
ATTN: B. Tadesse, Room 4600
1401 Constitution Avenue, N.W.
Washington, DC 20230

Or

email: btadesse@ntia.doc.gov

Government frequency assignment personnel (including Spectrum Planning Subcommittee representatives) are authorized to distribute the EL-CID files to supporting contractors only with the prior approval of the controlling U.S. Government Contracting Officer and only for the stated purposes of the contract. All copies of the EL-CID files must be returned to the Contracting Officer or NTIA at the conclusion of the work or the contract. Any other use of the EL-CID files by the supporting contractor is prohibited. The EL-CID files are intended for domestic U.S. Government use only. The EL-CID files shall not be made available to foreign governments or used in any contract with a foreign government without prior written approval by NTIA. An authorized user shall immediately notify NTIA or the controlling U.S. Government Contracting Officer of any violation of these limitations on the use of the EL-CID files.

## E.14 How can I represent an antenna that has multiple gains or multiple frequencies?

EL-CID only allows one gain and one frequency range in an antenna record. You can create several antenna records with a different name showing the explicit data (i.e., myantenna 136-160, myantenna 180-200, myantenna 3db, myantenna 5db).

## E.15 Why is it possible to put location data on a station node?

For satellite and trunking systems, NTIA requires that you provide location data for each station.

## E.16 Do I have to draw the line diagram first?

No. You may create equipment records first (file|new|transmitter, receiver, antenna). You can export these equipment records and send them to someone else. When you create the new certification, you can draw the line diagram, right click on the Tree View station node and (add ….| get existing …) from the data base.

## E.17 What receiver IF data do I put in the model?

NTIA is interested in the most restrictive (narrowest) IF curve data. Only one set of IF data is needed for each emission-sensitivity node.

## E.18 How do I assign multiple radio services to a station icon?

EL-CID only allows one radio service to be assigned to a station icon, except for Space which allows multiple radio services to be assigned to the Space Station Icon. If you need to represent more than one radio service for your station, drag the appropriate station icon to the diagram and indicate that it is the same transmitter (through the station name (i.e., my transmitter/1, my transmitter/2). You can then add the appropriate equipment data to the new station and update the link information. Additional information can be represented in the attachment node using additional text or diagrams.

## E.19 How do I represent a shipboard mobile earth station?

When you drag out the mobile earth station icon you have the choice of ship, air, or land based.

## E.20 How do I represent an airborne radar station?

When you drag out the radar station icon you have the choice of ship, air, or land based.

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# APPENDIX F – SAMPLE SATELLITE SYSTEM

***NOTE:*** Perform these exercises while logged in as **AR – Department of the Army**. Otherwise, you'll get different compliance results at the end.

**Step 1.** Draw a diagram and enter the following data to create a sample satellite system.

This example is a description of a system that has two way communications between an earth station (named "Earth" and a satellite (named "Satellite"). Each station transmits and receives through a different antenna. This is a developmental system (stage 3) called "Sample Satellite".

| **General Information** | |
|---|---|
| **Field** | **Value** |
| Target Date for System Approval | 10/30/2012 |
| System Description | The sample satellite will provide a platform for scientific data collected by onboard experiments. |
| Target Date for System Activation | 06/30/2013 |
| Target Date for System Termination | 06/30/2023 |
| Number of Units | 1 |
| Estimated Initial Cost ($) | 260000 |
| Information Transfer Requirement | Telemetry data GMSK/9.6 kbps ; Experiment data BPSK/38.4 kbps |
| System Relationship and Essentiality | System is designed to detect and characterize plasma bubbles in the atmosphere. |
| Replacement Information | Not Applicable |

# Earth Station 


| **Earth Station** | |
|---|---|
| **Field** | **Value** |
| Minimum Point Angle | 0.0 Degrees |

| **Antenna – Aperture** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Earth Antenna Receiving |
| Manufacturer | Direction Corp |
| Model Name and Number | DC-Aperture-1 |
| Antenna Horizontal Beamwidth | 4 Degrees |
| Antenna Vertical Beamwidth | 4 Degrees |
| Antenna Lower Frequency Limit | 2200 MHz |
| Antenna Upper Frequency Limit | 2290 MHz |
| Polarization | Lefthand Circular |
| Antenna Main Beam Gain | 26 dBi |
| 1st Sidelobe Level Plane Attenuation Rel/Act | Actual dBi |
| 1st Sidelobe Level Plane Attenuation Horiz | 8 dB |
| 1st Sidelobe Level Plane Attenuation Vert | 8 dB |
| 1st Sidelobe Plane Position Horizontal | 32 Degrees |
| 1st Sidelobe Plane Position Vertical | 32 Degrees |
| Vertical Scan Characteristics Type | Electronic Scan Sector |
| Vertical Scan Speed (degrees per …) | 2.0 per second |
| Vertical Scan Rate (scans per …) | 1.33 per minute |
| Antenna Vertical Scan Maximum Elevation | 90 Degrees |
| Antenna Vertical Scan Minimum Elevation | 0 Degrees |

| **Antenna – Linear** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Earth Antenna Transmitting |
| Manufacturer | Mirage System |
| Model Name and Number | MS-Linear-1 |
| Antenna Horizontal Beamwidth | 34 Degrees |
| Antenna Vertical Beamwidth | 78 Degrees |
| Antenna Lower Frequency Limit | 2025 MHz |
| Antenna Upper Frequency Limit | 2035 MHz |
| Polarization | Linear |
| Antenna Main Beam Gain | 3 dBi |
| 1st Sidelobe Level Plane Attenuation Rel/Act | Actual dBi |
| 1st Sidelobe Level Plane Attenuation Horizontal | 6 dB |
| 1st Sidelobe Level Plane Attenuation Vertical | 6 dB |

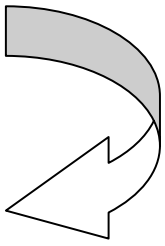
| **Location** | |
|---|---|
| **Field** | **Value** |
| State, Country, or Location Name Part 1 | Colorado |
| City or Location Name Part 2 | Colorado Springs-USAF Academy |
| Location Type | Single Point |
| Geographic Coordinates | 390021N 1043534W |
| Map Layer | Cities |

| **Earth Receiver** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Earth Receiver |
| Manufacturer | Kenwood |
| Model Name and Number | K-Ground-Rx |
| Frequency Stability | 15 |
| Frequency Stability Units | ppm |
| Image Rejection Level | 60 dB |
| Local Oscillator Tuned Indicator | Below |
| Tuning Method | Synthesizer |

| **Earth Receiver Frequency** | |
|---|---|
| **Field** | **Value** |
| Lowest Tuned Frequency | 2200 MHz |
| Highest Tuned Frequency | 2290 MHz |
| Tuning Increment | 5.0 kHz |

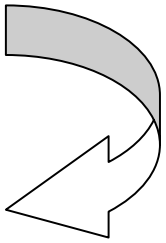
| **Earth Receiver Frequency Emission Sensitivity** | |
|---|---|
| **Field** | **Value** |
| Emission Designator | 80K0G2D |
| Performance Criteria | BER – Bit Error Rate |
| Performance Value | 0.0001 |
| Sensitivity | -124 dBm |
| Noise Figure | 4.0 dB |
| Noise Temperature | 438 K (use the calculator button) |
| Spurious Rejection Level | 50 dB |

| **Earth Receiver Frequency Emission Sensitivity IF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| IF Frequency | 70 MHz |
| 3 dB Bandwidth / (Frequency Offset) | 130 kHz / (65 kHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 210 kHz / (105 kHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 1380 kHz / (690 kHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Earth Receiver Frequency RF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| 3 dB Bandwidth / (Frequency Offset) | 5 MHz / (2.5 MHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 20 MHz / (10 MHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 30 MHZ / (15 MHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Earth Transmitter** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Earth Transmitter |
| Manufacturer | Kenwood |
| Model Name and Number | K-Ground-Tx |
| Frequency Stability | 3 |
| Frequency Stability Units | ppm |
| Output Device | Transistor |
| Tuning Method | PLL Synthesizer |
| Suppression of Harmonic | Yes |
| Radar or Communications? | Communications |

| **Earth Transmitter Harmonic** | |
|---|---|
| **Field** | **Value** |
| 2nd Harmonic | -70 dB |
| 3rd Harmonic | -70 dB |
| Other Harmonic | -80 dB |

| **Earth Transmitter Frequency** | |
|---|---|
| **Field** | **Value** |
| Lowest Tuned Frequency | 2025 MHz |
| Highest Tuned Frequency | 2035 MHz |
| Tuning Increment | 2.0 kHz |
| # of Frequencies Required for Operation | 2 |
| Minimum Required Frequency Separation | 10 MHz |

| **Earth Transmitter Frequency Emission Designator** | |
|---|---|
| **Field** | **Value** |
| Necessary Bandwidth | 30 kHz |
| Emission Designator | 30K0F2D |

| **Earth Transmitter Frequency Emission Designator Modulation** | |
|---|---|
| **Field** | **Value** |
| Occupied Bandwidth | 30 kHz |
| Measured or Calculated | Measured |
| Modulation Type | Digital Modulation |
| Digital Modulation Type | MSK – Minimum Shift Keying |
| Number of Digital States | 2 |
| Transmission Bit Rate | 9600 bps |

| | |
|---|---|
| Digital Peak Deviation | 4.8 kHz |
| Digital Deviation Ratio | 0.500 |
| Digital Maximum Modulation Frequency | 9.6 kHz |
| Digital Pulse Format | Non-Return to Zero |

| **Earth Transmitter Frequency Emission Designator Modulation RF Fundamental Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| -3 dB Bandwidth / (Frequency Offset) | 7 kHz / (3.5 kHz)* |
| -20 dB Bandwidth / (Frequency Offset) | 32 kHz / (16 kHz)* |
| -40 dB Bandwidth / (Frequency Offset) | 57 kHz / (28.5 kHz)* |
| -60 dB Bandwidth / (Frequency Offset) | 90 kHz / (45 kHz)* |

***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Earth Transmitter Power** | |
|---|---|
| **Field** | **Value** |
| Power Type | Mean |
| Power Upper Limit | 100 Watts |

| **Earth Transmitter Spurious Emission Curve** | |
|---|---|
| **Field** | **Value** |
| Maximum Spurious Emission | Checked |
| Attenuation | -80 dB |

## Satellite Station 


| **Antenna – Linear** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Satellite Antenna Transmitting |
| Manufacturer | OMNI Tronix |
| Model Name and Number | OT-Linear-1 |
| Antenna Horizontal Beamwidth | 8 Degrees |
| Antenna Vertical Beamwidth | 8 Degrees |
| Antenna Lower Frequency Limit | 2200 MHz |
| Antenna Upper Frequency Limit | 2290 MHz |
| Polarization | Lefthand Circular |
| Antenna Main Beam Gain | 28 dBi |
| 1st Sidelobe Level Plane Attenuation Rel/Act | Actual dBi |
| 1st Sidelobe Level Plane Attenuation Horizontal | 6 dB |
| 1st Sidelobe Level Plane Attenuation Vertical | 6 dB |

+

| **Antenna – Linear** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Satellite Antenna Receiving |
| Manufacturer | OMERA(FRANCE) |
| Model Name and Number | O-Linear-1 |
| Antenna Horizontal Beamwidth | 34 Degrees |
| Antenna Vertical Beamwidth | 78 Degrees |
| Antenna Lower Frequency Limit | 2025 MHz |
| Antenna Upper Frequency Limit | 2035 MHz |
| Polarization | Vertical |
| Antenna Main Beam Gain | 4.0 dBi |
| 1st Sidelobe Level Plane Attenuation Rel/Act | Actual dBi |
| 1st Sidelobe Level Plane Attenuation Horizontal | 6 dB |
| 1st Sidelobe Level Plane Attenuation Vertical | 6 dB |

| **Location** | |
|---|---|
| **Field** | **Value** |
| State, Country, or Location Name Part 1 | Space |
| City or Location Name Part 2 | Sample Satellite |
| Location Type | Non-geostationary Satellite |
| Altitude at Apogee | 375 km |
| Altitude at Perigee | 370 km |
| Equatorial Inclination | 51.6 Degrees |
| Period of Orbit | 5520 Seconds |

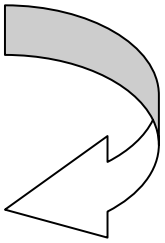
| **Satellite Receiver** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Satellite Receiver |
| Manufacturer | SUR-TEC INC |
| Model Name and Number | S-Satellite-Rx |
| Frequency Stability | 5 |
| Frequency Stability Units | ppm |
| Image Rejection Level | 60 dB |
| Local Oscillator Tuned Indicator | Below |
| Tuning Method | Fixed Crystal |

| **Satellite Receiver Frequency** | |
|---|---|
| **Field** | **Value** |
| Lowest Tuned Frequency | 2025 MHz |
| Highest Tuned Frequency | 2035 MHz |
| Tuning Increment | 1.0 kHz |

| **Satellite Receiver Frequency Emission Sensitivity** | |
|---|---|
| **Field** | **Value** |
| Emission Designator | 30K0F2D |
| Performance Criteria | BER – Bit Error Rate |
| Performance Value | 0.0001 |

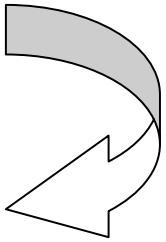
| | |
|---|---|
| Sensitivity | -130 dBm |
| Noise Figure | 2 dB |
| Noise Temperature | 230 K (do not use the calculator button) |
| Spurious Rejection Level | 50 dB |

| **Satellite Receiver Frequency Emission Sensitivity IF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| IF Frequency | 455 kHz |
| 3 dB Bandwidth / (Frequency Offset) | 60 kHz / (30 kHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 80 kHz / (40 kHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 120 kHz / (60 kHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Satellite Receiver Frequency RF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| 3 dB Bandwidth / (Frequency Offset) | 30 MHz / (15 MHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 40 MHz / (20 MHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 60 MHZ / (30 MHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Satellite Transmitter** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Satellite Transmitter |
| Manufacturer | SUR-TEC INC |
| Model Name and Number | ST-Satellite-1 |
| Frequency Stability | 10 |
| Frequency Stability Units | ppm |
| Output Device | Transistor |
| Tuning Method | Fixed Crystal |

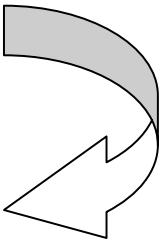
| **Satellite Transmitter Harmonic** | |
|---|---|
| **Field** | **Value** |
| 2nd Harmonic | -60 dB |
| 3rd Harmonic | -60 dB |
| Other Harmonic | -60 dB |

| **Satellite Transmitter Frequency** | |
|---|---|
| **Field** | **Value** |
| Lowest Tuned Frequency | 2200 MHz |
| Highest Tuned Frequency | 2290 MHz |
| Tuning Increment | 0.0 kHz |
| # of Frequencies Required for Operation | 2 |
| Minimum Required Frequency Separation | 0.5 MHz |

| **Satellite Transmitter Frequency Emission Designator** | |
|---|---|
| **Field** | **Value** |
| Necessary Bandwidth | 80 kHz |
| Emission Designator | 80K0G2D |

| **Satellite Transmitter Frequency Emission Designator Modulation** | |
|---|---|
| **Field** | **Value** |
| Emission Designator | 80K0G2D |
| Occupied Bandwidth | 80 kHz |
| Measured or Calculated | Measured |
| Modulation Type | Digital Modulation |
| Digital Modulation Type | PSK – Phase Shift Keying |
| Number of Digital States | 2 |
| Transmission Bit Rate | 38400 bps |
| Digital Peak Deviation | 60.288 kHz |
| Digital Deviation Ratio | 1.57 |
| Digital Maximum Modulation Frequency | 38.400 kHz |
| Digital Pulse Format | Non-Return to Zero |

| **Satellite Transmitter Frequency Emission Designator Modulation RF Fundamental Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| -3 dB Bandwidth / (Frequency Offset) | 60 kHz / (30 kHz)* |
| -20 dB Bandwidth / (Frequency Offset) | 90 kHz / (45 kHz)* |
| -40 dB Bandwidth / (Frequency Offset) | 130 kHz / (65 kHz)* |
| -60 dB Bandwidth / (Frequency Offset) | 188 kHz / (94 kHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Satellite Transmitter Power** | |
|---|---|
| **Field** | **Value** |
| Power Type | Mean |
| Power Upper Limit | 0.5 Watts |

| **Satellite Transmitter Spurious Emission Curve** | |
|---|---|
| **Field** | **Value** |
| Maximum Spurious Emission | Checked |
| Level | -60 dB |

| **Link Information: Earth to Satellite** | |
|---|---|
| **Field** | **Value** |
| Radio Service/Station Class | Space Operation / TT – Earth<br>Space Research / TH – Earth |
| Coupling Loss | 0.0 dB |
| Selected Modes | Select the one PRI mode |

| Link Information: Satellite to Earth | |
|---|---|
| **Field** | **Value** |
| Radio Service/Station Class | Space Operation / ET – Space<br>Space Research / EH – Space |
| Coupling Loss | 0.0 dB |
| Spectral Power Density | -48.8 dBW/Hz |
| Selected Modes | Select the one PRI mode |

**Step 2.** Run the compliance checks. A sample of compliance check results is below:


**FAILURE DoD: DoD-0004**
Horizontal Scan Characteristics Type is required for Aperture antennas in DoD systems at all stages.

**WARNING NTIA Chapter 10: NTIA-CH10-8.9.10-A-W**
Scan Characteristics (horizontal and vertical) should be specified for each Aperture antenna in a Stage 1 through 3 Certification.

---



**WARNING NTIA General: NTIA-Gen-0087-W**
Receiver Conducted Undesired Emission is required at Stage 4 and should be specified at Stages 2 and 3.

---



**NOTE NTIA Chapter 10: NTIA-CH10-8.7.23**
If this transmitter has been type accepted by the FCC, enter the FCC Acceptance Number.

---


**WARNING NTIA General: NTIA-Gen-0083**
Calculated Noise Figure differs from the entered Noise Figure by more than 5%. Noise Figure[dB] = 10Log( ( Noise Temperature[K] / 290 ) + 1 )

---


**NOTE NTIA Chapter 10: NTIA-CH10-8.3.05**

Stage 2 and above space systems are generally required to submit notification to the Radiocommunication Bureau (BR). See Section 3.3 of the NTIA Manual. If not installed on your system, install the ITU software. In EL-CID Preferences, General tab, enter the path to the ITU program. Use the ITU program to prepare the notification and attach it to the EL-CID Certification. If this system is exempt from BR notification, set ITU Waiver to Yes in the General Information node.

**NOTE NTIA Chapter 10: NTIA-CH10-8.5**

For all stages, submit reports of any previous EMC studies, predictions, analyses, and prototype EMC testing that are relevant to the assessment of the system (right-click Attachments in Tree View) You may reference documents previously provided to the IRAC/SPS, including references to previous stages of this system (right-click References in Tree View).

---


**WARNING NTIA Chapter 8: NTIA-CH8-8.2.36.1.a-04-1-W**

This Satellite (to Earth) link exceeds the Power Flux Density Limits of Table 8.2.36 (1525-1530, 1670-1710, 1761-1842, and 2200-2300 MHz). Click the [Coupling] node to display the Link Info screen, click Power Flux Density, and click Calculate to see the calculated PFD and limits. If this is a Satellite to Earth link at 2210 MHz, and you are failing by less than 16 dB, you may request a waiver from NTIA pursuant to SPS-12308/IRAC 31015/1.

**Step 3.** Follow the instructions on the above WARNING to see why the PFD is failing. (You can do "what if" analysis to see how varying the parameters will change the PFD result.)

**Step 4.** Import the **Sample Satellite.cid** file from the training CD (under Training Materials/Samples). Its System Name will be **Sample Satellite for Training** to distinguish it from the record you created.

**Step 5.** Use the Query Builder to query on Certifications with System Name containing "Sample Satellite", and then compare the two records in the Query Results to compare your record with the one on the Training CD.

# APPENDIX G – SAMPLE RADAR SYSTEM

**Step 1.** Draw a diagram and enter the following data to create a sample radar system.

This example is a description of a land based radar system that has a station named "Radar" (select the Land option button) transmitting to a target named "Target". This is a developmental system (stage 3) called "Sample Radar".

| **General Information** | |
|---|---|
| **Field** | **Value** |
| System Description | Radar to detect targets and weather. |
| Target Date for System Activation | 06/30/2013 |
| Target Date for System Termination | 06/30/2023 |
| Number of Units | 1 |
| Estimated Initial Cost ($) | 1250000 |
| Information Transfer Requirement | Unmodulated and Linear FM pulses. |
| System Relationship and Essentiality | Improved dangerous weather detection. |
| Replacement Information | Replace existing system. |

| **Location** | |
|---|---|
| **Field** | **Value** |
| State, Country, or Location Name Part 1 | USP (US & POSS) |
| City or Location Name Part 2 | |
| Location Type | Polygon |
| Map Layer | Countries |

## Radar Station 


| **Antenna – Aperture** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Radar Antenna |
| Manufacturer | ANDREW ANTENNA CORPORATION LTD |
| Model Name and Number | A-Aperture-1 |
| Antenna Type | Biconical |
| Antenna Horizontal Beamwidth | 1.45 Degrees |
| Antenna Vertical Beamwidth | 4.8 Degrees |
| Antenna Lower Frequency Limit | 1215 MHz |
| Antenna Upper Frequency Limit | 1260 MHz |
| Polarization | Right and Left Hand Circular |
| Antenna Main Beam Gain | 34 dBi |
| 1st Sidelobe Level Plane Attenuation Rel/Act | Relative dBi |
| 1st Sidelobe Level Plane Attenuation Horizontal | 21 dB |
| 1st Sidelobe Level Plane Attenuation Vertical | 21 dB |
| 1st Sidelobe Plane Position Horizontal | 3.5 Degrees |
| 1st Sidelobe Plane Position Vertical | 3.5 Degrees |
| Horizontal Scan Characteristics Type | 360 Degrees Rotating |
| Horizontal Scan Speed (degrees per …) | 70 per second |
| Horizontal Scan Rate (scans per …) | 12.5 per minute |
| Capable of Blanking | No |

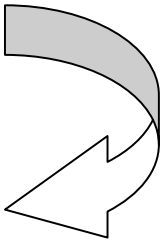
| **Antenna – Aperture** | |
|---|---|
| **Field** | **Value** |
| Vertical Scan Characteristics Type | Electronic Scan Sector |
| Vertical Scan Speed (degrees per …) | 1.0 per second |
| Vertical Scan Rate (scans per …) | 8.0 per minute |
| Antenna Vert. Scan Maximum Elevation | 5 Degrees |
| Antenna Vert. Scan Minimum Elevation | -3 Degrees |
| Antenna Horizontal Dimension | 5 meters |
| Antenna Vertical Dimension | 2.75 meters |

| **Radar Receiver** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Radar Receiver |
| Manufacturer | RAYTHEON CO. OR RAYTHEON MANUFACTURING CO. |
| Model Name and Number | R-Radar-Rx |
| Frequency Stability | 10 |
| Frequency Stability Units | ppm |
| Image Rejection Level | 60 dB |
| Local Oscillator Tuned Indicator | Above |
| Tuning Method | Crystal Controlled |

| **Radar Receiver Frequency** | |
|---|---|
| **Field** | **Value** |
| Lowest Tuned Frequency | 1215 MHz |
| Highest Tuned Frequency | 1260 MHz |
| Tuning Increment | 5.0 kHz |

| **Radar Receiver Frequency Emission Sensitivity** | |
|---|---|
| **Field** | **Value** |
| Emission Designator | 4M20Q3N |
| Necessary Bandwidth | 4.2 MHz |
| Performance Criteria | S/N – Signal to Noise Ratio (dB) |
| Performance Value | 10 |
| Sensitivity | -110 dBm |
| Noise Figure | 2.90 dB |
| Noise Temperature | 275 K (use the calculator button) |
| Spurious Rejection Level | 65 dB |

| **Radar Receiver Frequency Emission Sensitivity IF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| IF Frequency | 27.180 MHz |
| 3 dB Bandwidth / (Frequency Offset) | 6.4 kHz / (3.2 kHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 9 kHz / (4.5 kHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 18.2 kHz / (9.1 kHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Radar Receiver Frequency Emission Sensitivity** | |
|---|---|
| **Field** | **Value** |
| Emission Designator | 7M30P0N |
| Necessary Bandwidth | 7300 kHz |
| Performance Criteria | MDS – Minimum Discernable Signal (dB) |
| Performance Value | 10 |
| Sensitivity | -109 dBm |
| Noise Figure | 3 dB |
| Noise Temperature | 289 K (use the calculator button) |
| Spurious Rejection Level | 65 dB |

| **Radar Receiver Frequency Emission Sensitivity IF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| IF Frequency | 75 MHz |
| 3 dB Bandwidth / (Frequency Offset) | 5.8 MHz / (2.9 MHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 8 MHz / (4 MHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 21.8 MHz / (10.9 MHz)* |

***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Radar Receiver Frequency RF Selectivity Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| 3 dB Bandwidth / (Frequency Offset) | 568 MHz / (284 MHz)* |
| 20 dB Bandwidth / (Frequency Offset) | 904 MHz / (452 MHz)* |
| 60 dB Bandwidth / (Frequency Offset) | 2700 MHZ / (1350 MHz)* |

***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Radar Transmitter** | |
|---|---|
| **Field** | **Value** |
| Nomenclature | Radar Transmitter |
| Manufacturer | RAYTHEON CO. OR RAYTHEON MANUFACTURING CO. |
| Model Name and Number | R-Radar-Tx |
| Frequency Stability | 30 |
| Frequency Stability Units | ppm |
| Output Device | Transistor |
| Tuning Method | Crystal Controlled |
| Suppression of Harmonic | Yes |
| Radar or Communications? | Radar |

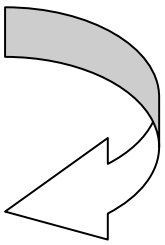
| **Radar Transmitter Harmonic** | |
|---|---|
| **Field** | **Value** |
| 2nd Harmonic | -74 dB |
| 3rd Harmonic | -80 dB |
| Other Harmonic | -80 dB |

| **Radar Transmitter Frequency** | |
|---|---|
| **Field** | **Value** |
| Lowest Tuned Frequency | 1215 MHz |
| Highest Tuned Frequency | 1260 MHz |
| Tuning Increment | 0.0 kHz |
| Number of Frequencies Required for Operation | 2 |
| Minimum Required Frequency Separation | 30 MHz |

| **Radar Transmitter Frequency Emission Designator** | |
|---|---|
| **Field** | **Value** |
| Necessary Bandwidth | 4200 kHz |
| Emission Designator | 4M20Q3N |

| **Radar Transmitter Frequency Emission Designator Modulation** | |
|---|---|
| **Field** | **Value** |
| Emission Designator | 4M20Q3N |
| Occupied Bandwidth | 4200 kHz |
| Measured or Calculated | Measured |
| Radar Type | FM Pulse Radar |
| Pulse Repetition Rate | 1391 pps |
| Pulse Rise Time | 0.000150 ms |
| Pulse Fall Time | 0.000150 ms |
| Pulse Width | 0.0256 ms |
| Pulse Duty Cycle | 3.561 % |
| Pulse Compression Ratio | 74 |
| Radar Processing Gain | 10 dB |
| Radar Pulse Frequency Deviation | 2890 kHz |
| Number of Radar Subpulses | 5 |

| **Radar Transmitter Frequency Emission Designator Modulation RF Fundamental Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| -3 dB Bandwidth / (Frequency Offset) | 2630 kHz / (1315 kHz)* |
| -20 dB Bandwidth / (Frequency Offset) | 4200 kHz / (2100 kHz)* |
| -40 dB Bandwidth / (Frequency Offset) | 9500 kHz / (4750 kHz)* |
| -60 dB Bandwidth / (Frequency Offset) | 30000 kHz / (15000 kHz)* |



***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Radar Transmitter Frequency Emission Designator** | |
|---|---|
| **Field** | **Value** |
| Necessary Bandwidth | 7300 kHz |
| Emission Designator | 7M30P0N |

| **Radar Transmitter Frequency Emission Designator Modulation** | |
|---|---|
| **Field** | **Value** |

| | |
|---|---|
| Emission Designator | 7M30P0N |
| Occupied Bandwidth | 7300 kHz |
| Measured or Calculated | Measured |
| Radar Type | Non-FM Pulse Radar |
| Pulse Repetition Rate | 1391 pps |
| Pulse Rise Time | 0.000150 ms |
| Pulse Fall Time | 0.000150 ms |
| Pulse Width | 0.00200 ms |
| Pulse Duty Cycle | 0.2782 % |

| **Radar Transmitter Frequency Emission Designator Modulation RF Fundamental Curve** | |
|---|---|
| **Field** | **Value** |
| Measured or Calculated | Measured |
| -3 dB Bandwidth / (Frequency Offset) | 3500 kHz / (1750 kHz)* |
| -20 dB Bandwidth / (Frequency Offset) | 7300 kHz / (3650 kHz)* |
| -40 dB Bandwidth / (Frequency Offset) | 11000 kHz / (5500 kHz)* |
| -60 dB Bandwidth / (Frequency Offset) | 150000 kHz / (75000 kHz)* |

***Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)***

| **Radar Transmitter Power** | |
|---|---|
| **Field** | **Value** |
| Power Type | Peak Envelope |
| Power Upper Limit | 45000 Watts |

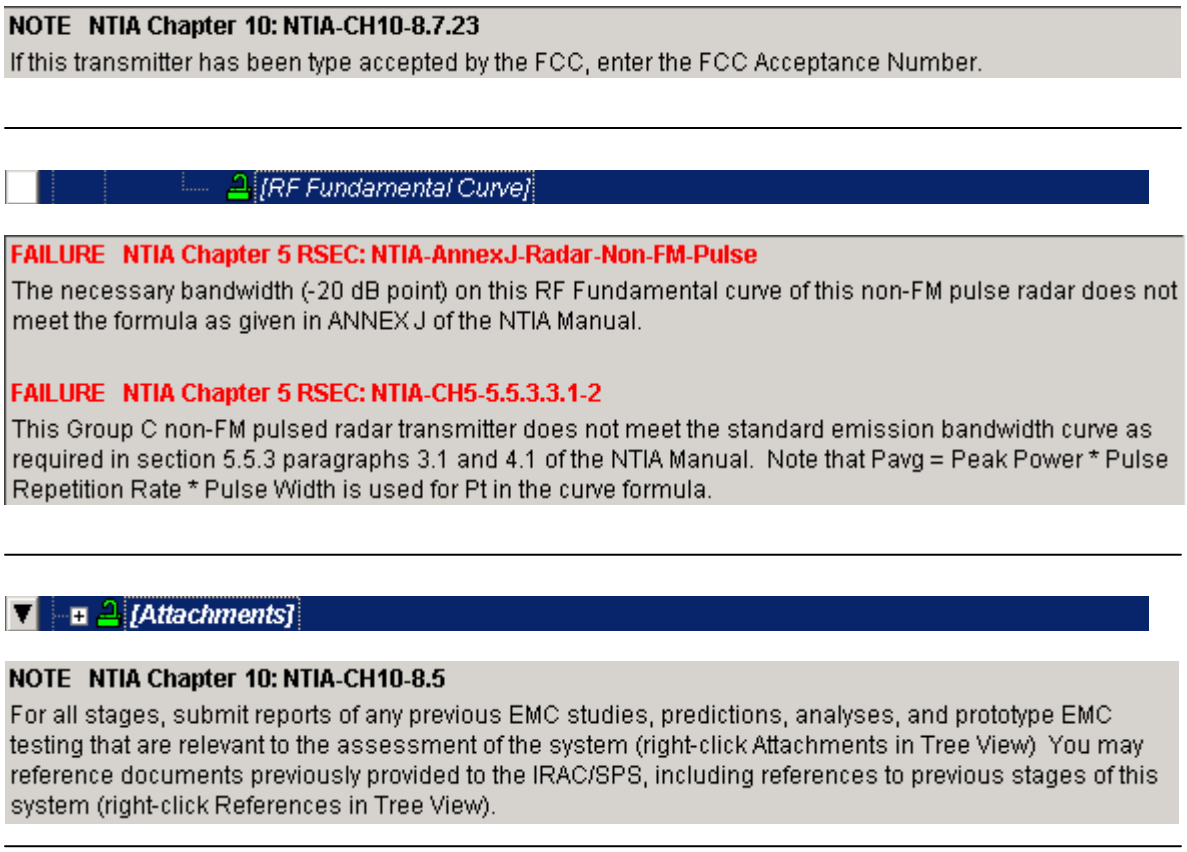
| **Radar Transmitter Spurious Emission Curve** | |
|---|---|
| **Field** | **Value** |
| Maximum Spurious Emission | Checked |
| Level | -80 dB |

| **Link Information: Radar to Target** | |
|---|---|
| **Field** | **Value** |
| Radio Service/Station Class | Radiodetermination / LR - Land |
| Available Modes | Both in-band modes |

**Step 2.** Run the compliance checks. A sample list of compliance check results is below:


**FAILURE NTIA Chapter 5 RSEC: NTIA-CH5-5.5.3.7-1**

Group C radar receivers must have IF Selectivity characteristics commensurate with or narrower than the corresponding transmitter bandwidth. The receiver IF Selectivity curve is wider than the corresponding transmitter's RF Fundamental curve. See secion 5.5.3 paragraph 7 of the NTIA Manual.




**Step 3.** Import the **Sample Radar.cid** file from the training CD (under Training Materials/Samples). Its System Name will be **Sample Radar for Training** to distinguish it from the record you created.

**Step 4.** Use the Query Builder to query on Certifications with System Name containing “Sample Radar”, then compare the two records in the Query Results to compare your record with the one on the Training CD.