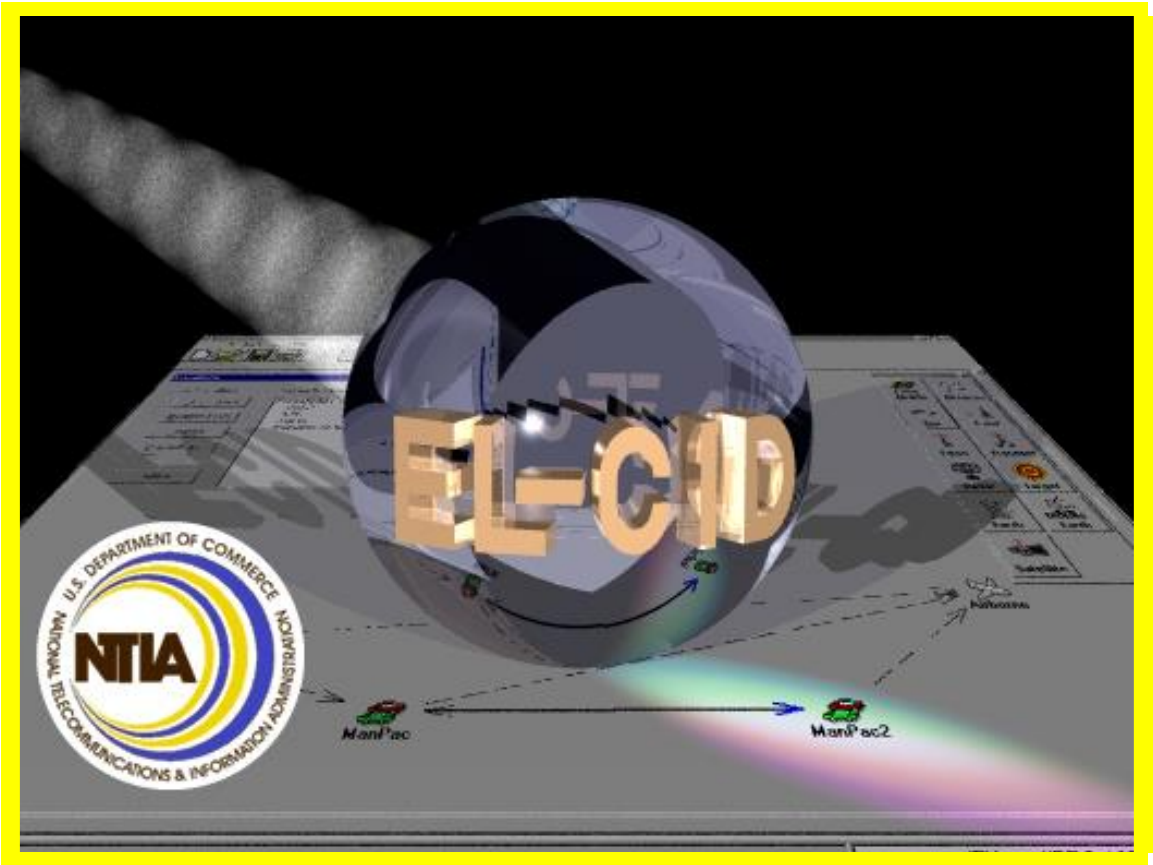

Equipment Location – Certification Information Database (EL-CID)

Version 6.1

User Training Manual

Manual 6.1 Revision 1.2

Prepared by:

Expression Networks LLC.
1342 Florida Ave NW.
Washington, DC 20009

EL-CID POINT OF CONTACT INFORMATION

EL-CID Support Center Web Site

http://www.ntia.doc.gov/el-cid-support-center

NTIA Office of Spectrum Management Web Site

http://www.ntia.doc.gov/office/osm

EL-CID Help Desk

Email: ELCIDsupport@expr.net

Phone: 202-379-4888 ext. 3524 (ELCI)

Program Manager NTIA

Mr. Hien Ly

Email: HLy@ntia.doc.gov

Phone: 202-482-2069

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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 **page i** 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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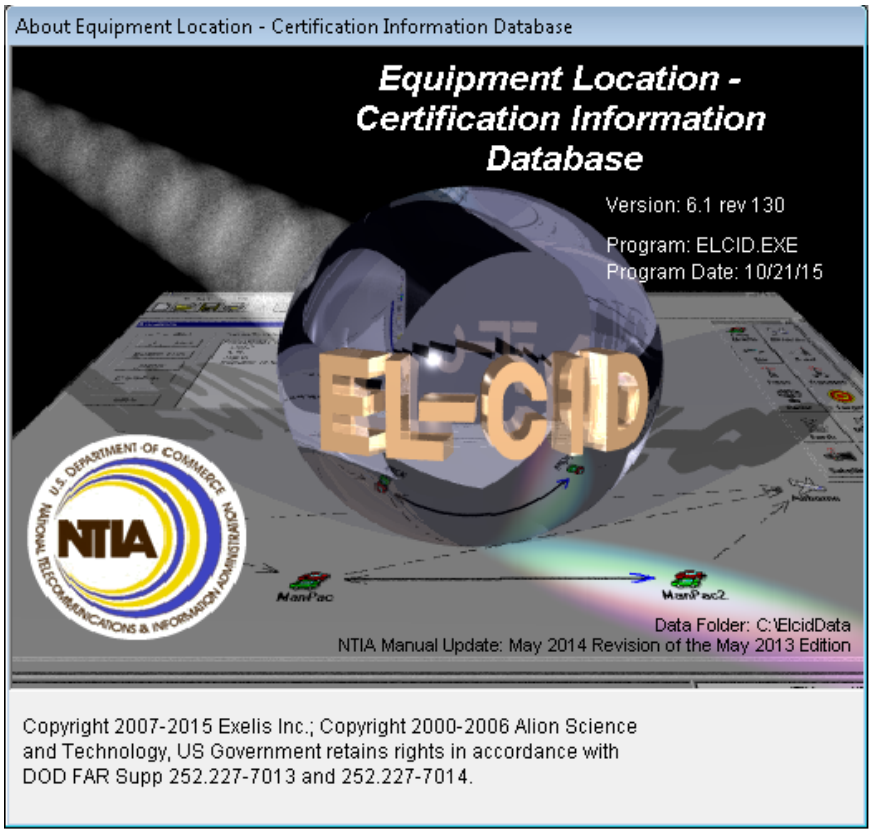
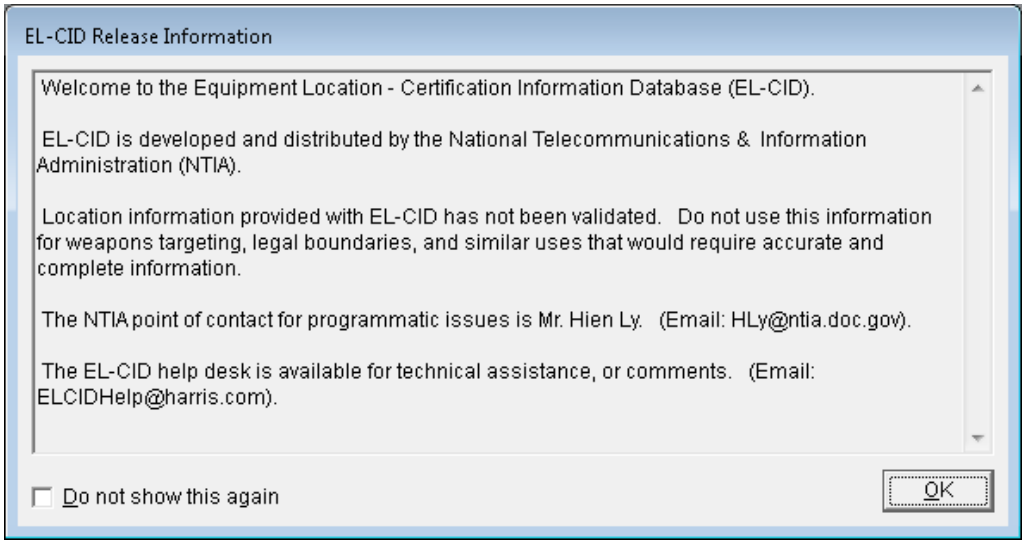
1.0 STARTING THE EL-CID PROGRAM

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

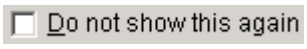
on the Windows desktop. The **About Equipment Location – Certification Information Database** "splash" window will be displayed.



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

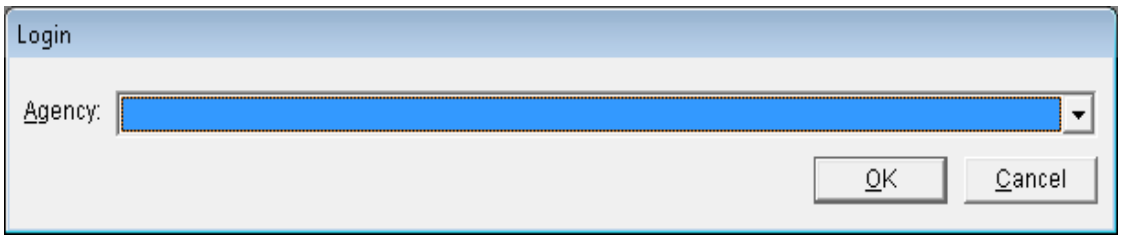


Step 2. Check the **Do not show this again** check box if you don't want to see the **Release Information** window in the future and then click **OK**.

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.

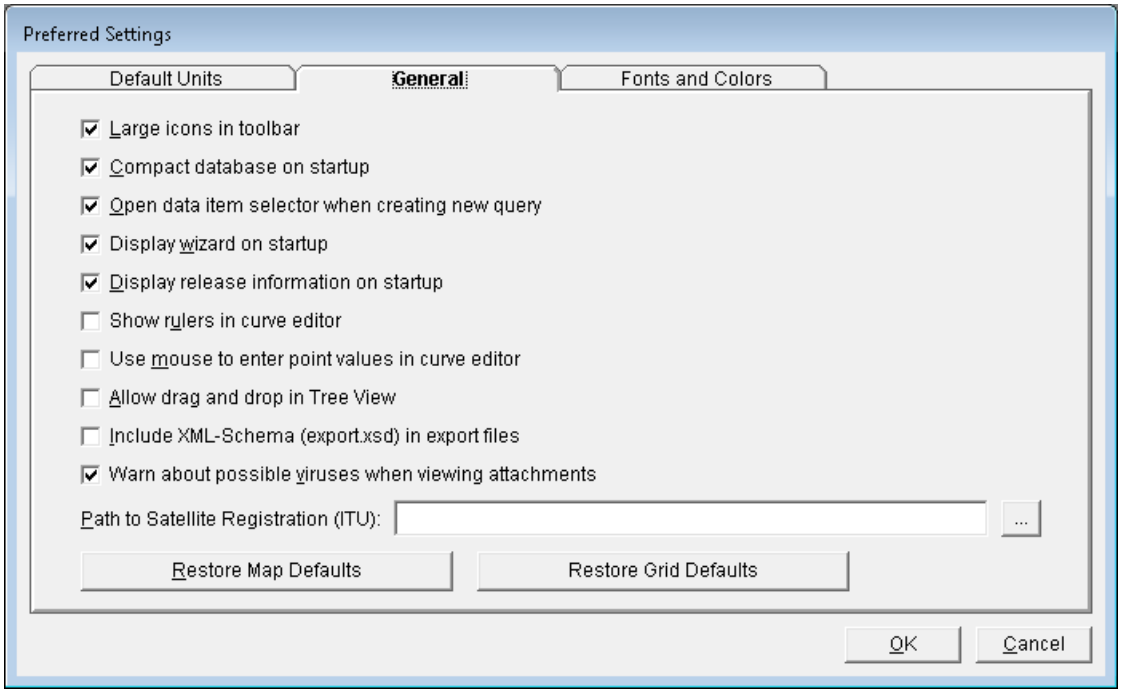
Step 5. This screen allows you to select one of the four EL-CID wizards that will guide you through each capability. Click **Cancel** to go directly into the EL-CID program without the aid of the Startup Wizard.

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)

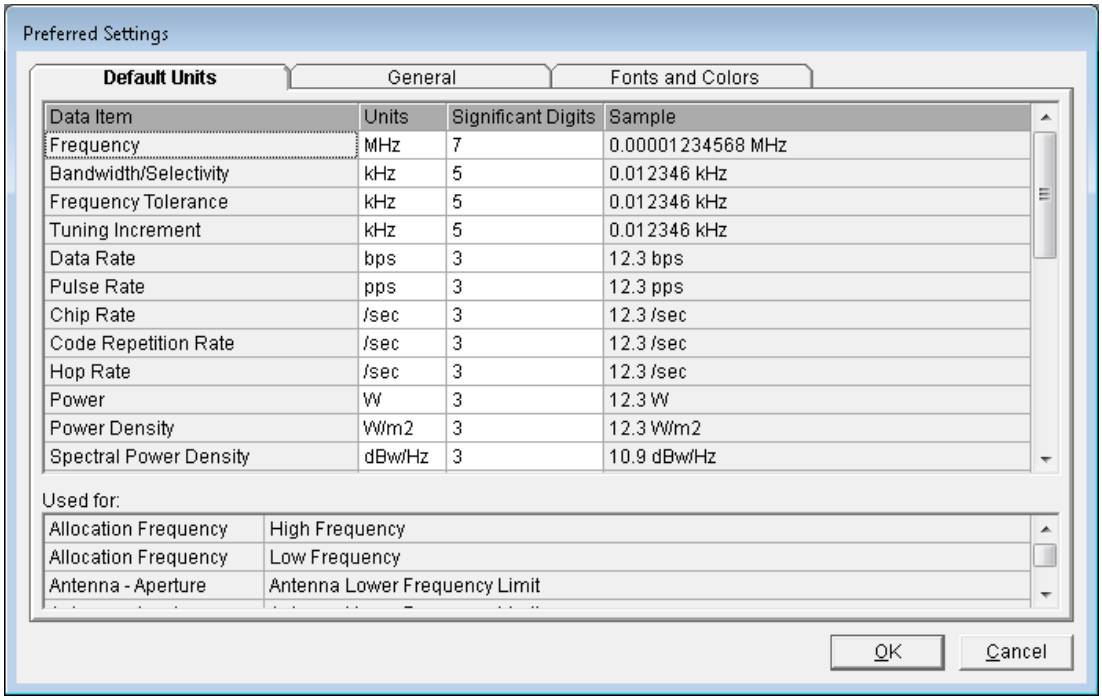
- **Warn about possible viruses when viewing attachments** When you view an attachment from EL-CID, the program will normally warn you about the possibility of viruses, trojans, and other malware that may be in the attachment. Unchecking the **Warn about possible viruses when viewing attachments** box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

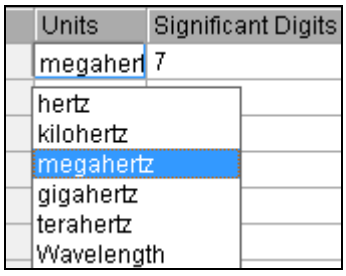
- **Restore map defaults** button - The EL-CID Locations Map normally preserves your layer settings from one viewing to the next. These settings include color, opacity, and labeling, and also your latest zoom settings. To restore the Map to the defaults used when EL-CID was first installed, click the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

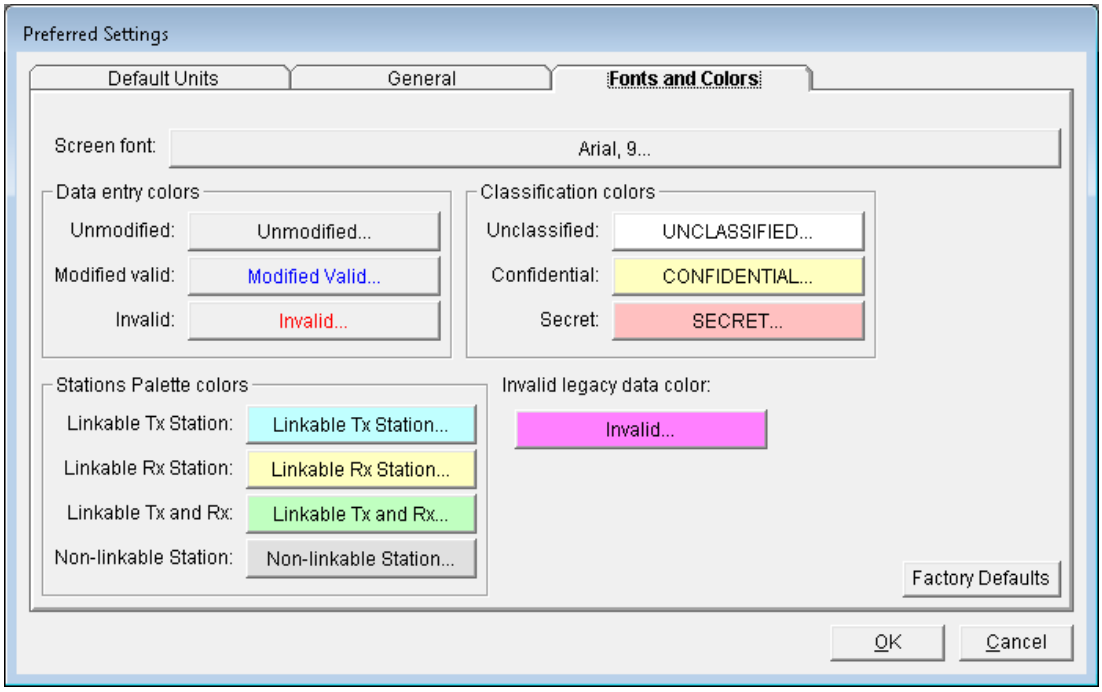


The **Sample** column displays an example of what a quantity might look like in the chosen units. Change the **Significant Digits** to control the rounding of the number displayed.

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.

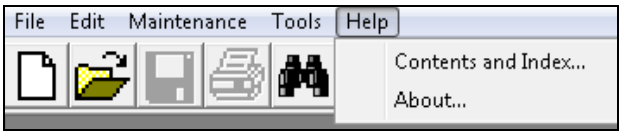
3.0 REVIEWING HELP TOPICS

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.

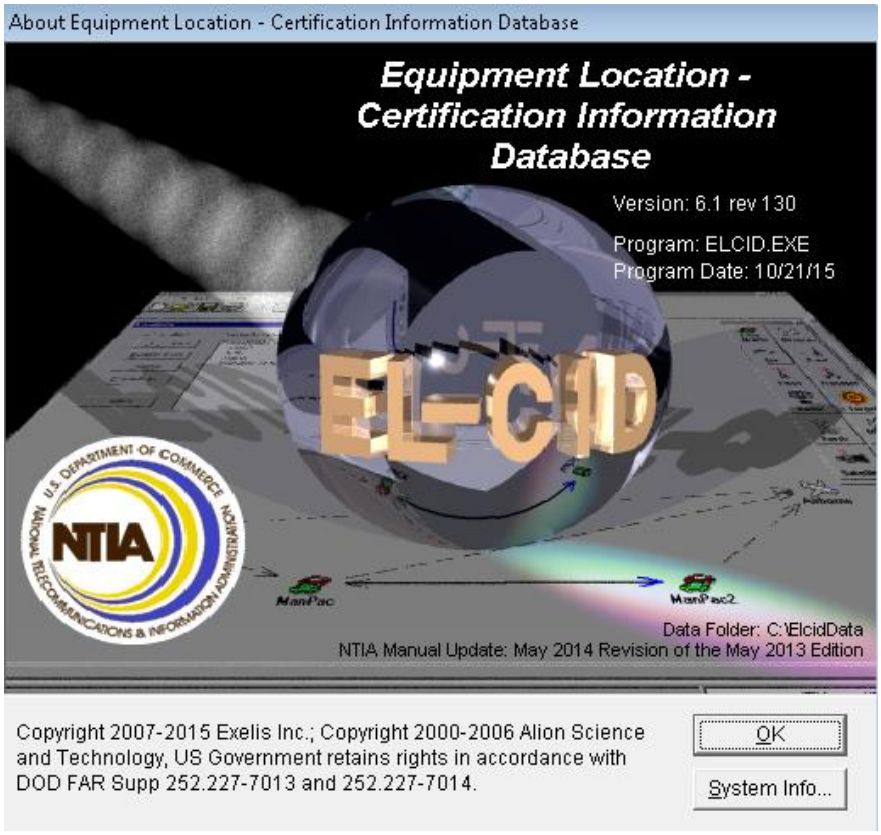
The **Help** Menu provides:

- **Contents and Index** - Help files for using EL-CID.
- **About -** Displays the **About Equipment Location – Certification Information Database** **"**splash**"** window.

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



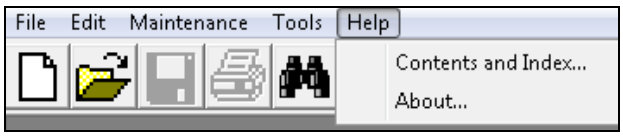
The **About Equipment Location – Certification Information Database** window will be displayed. The installed Version and Revision number is available on this window, along with the Program Date and Copyright information. This may be requested by the Help Desk when calling for assistance. The date of the current Compliance Checks, the path to the folder containing the EL-CID data, and the Revision of the NTIA Manual to which EL-CID is updated are also displayed.



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

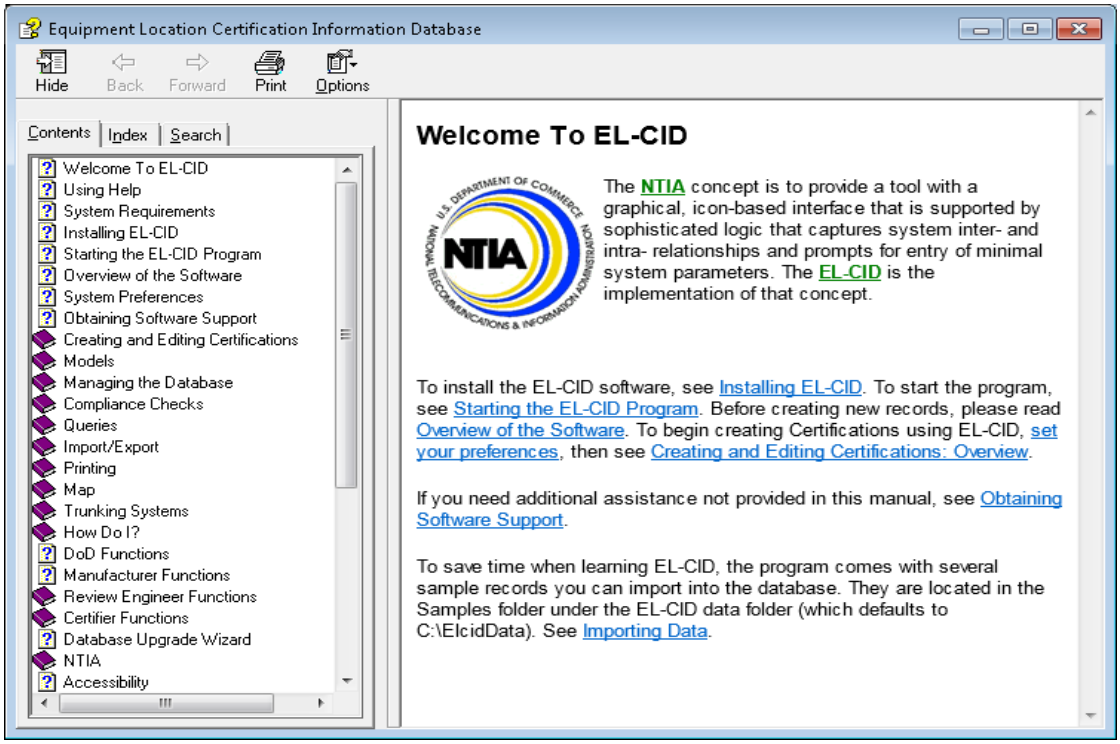
3.1 Navigating The Help Files

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



The EL-CID Help File will be displayed.

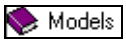
At the top of the Help File screen, five navigation icons are visible (**Hide**, **Back**, **Forward**, **Print**, and **Options**). Directly below these icons are the **Contents**, **Index**, and **Search** tabs.

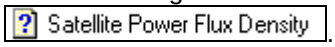


3.1.1 Help Tabs

3.1.1.1 Contents

Step 1. Select the **Contents** tab to view the **Table of Contents**.

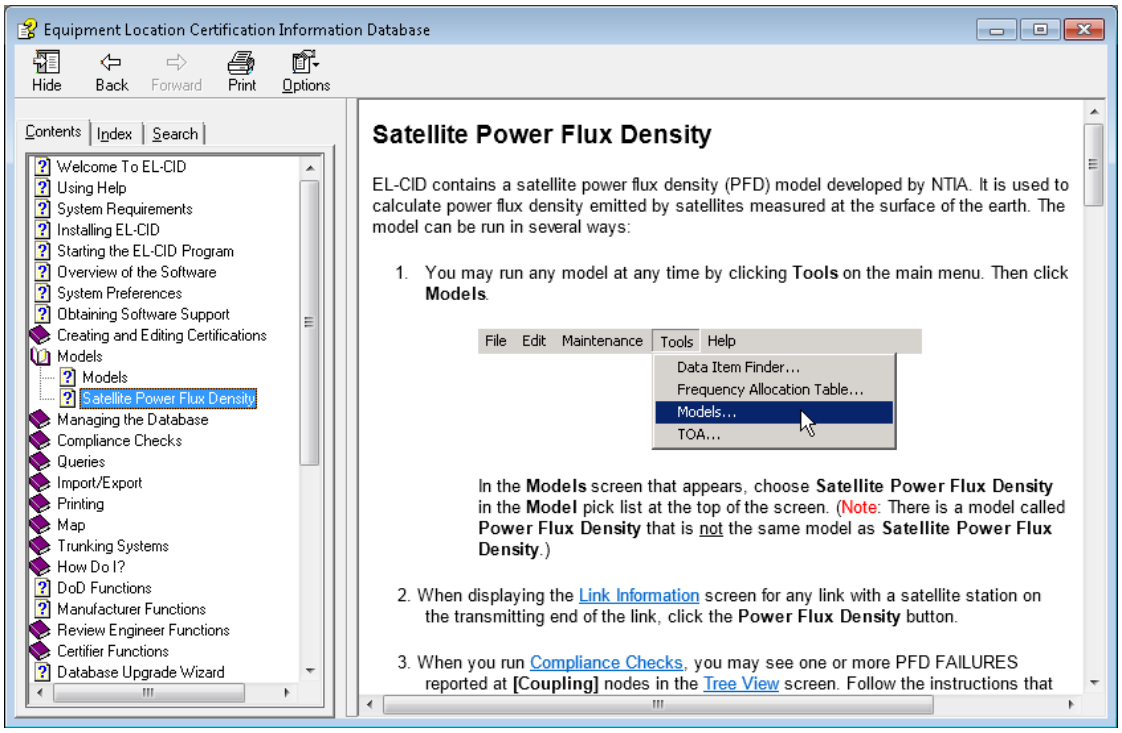
Scroll to search for the desired section, indicated by a book icon and content 

. Double clicking on the book icon will expand the content, displaying individual topics 

.

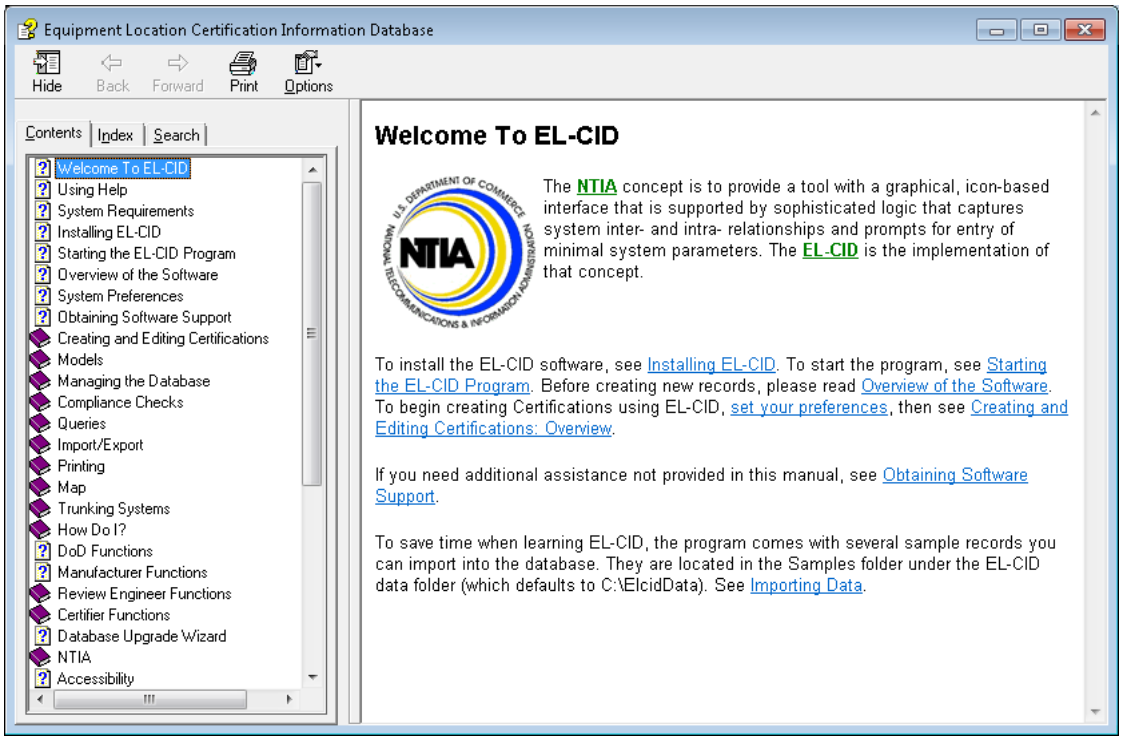
Highlighting a topic will immediately display the topic information on the right of the screen.

Step 2. Click on **Satellite Power Flux Density.** That topic will be displayed.

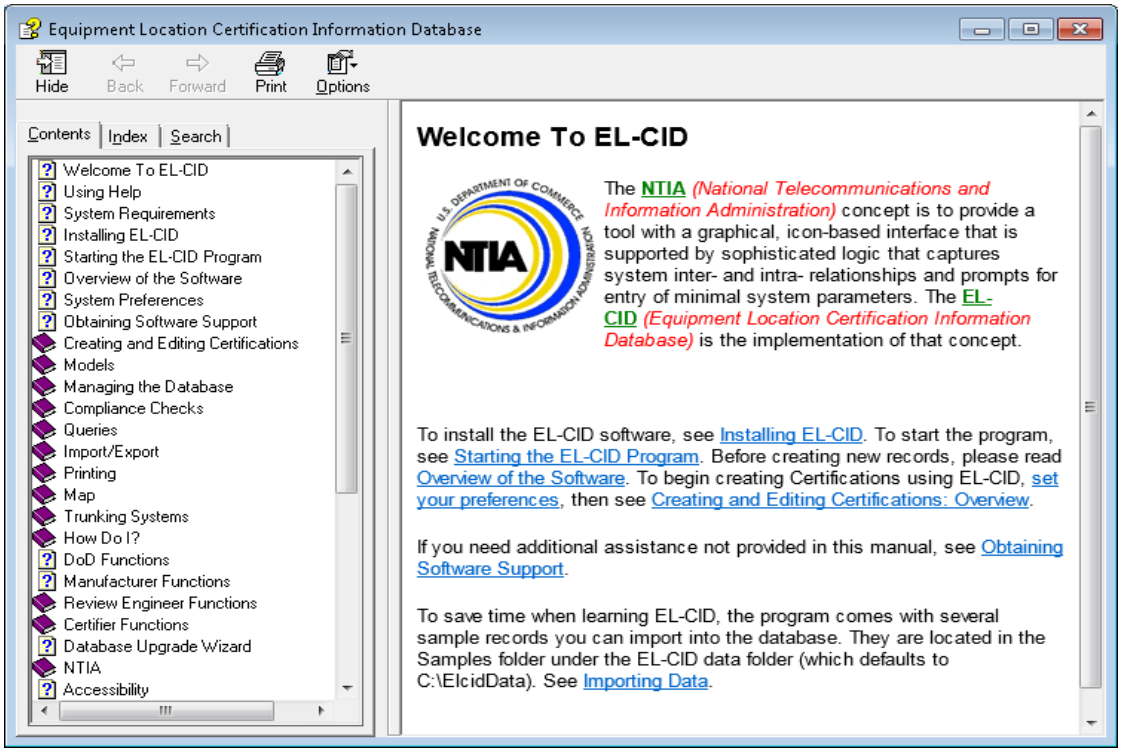


Double click on the Models book icon to contract the content.

Step 3. Click on **Welcome to EL-CID**. 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.

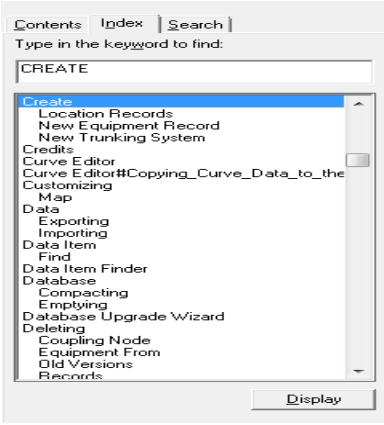


Click on **NTIA**. The acronym expands to display **(National Telecommunications and Information Administration)**. Click on **EL-CID**. The acronym expands to display **(Equipment Location Certification Information Database)**.



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.

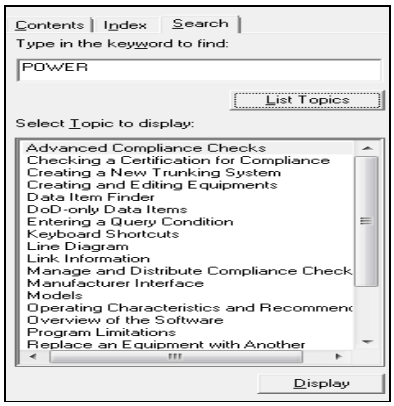


Step 2. Click **Display**, if this is the desired topic. Otherwise, highlight another topic.

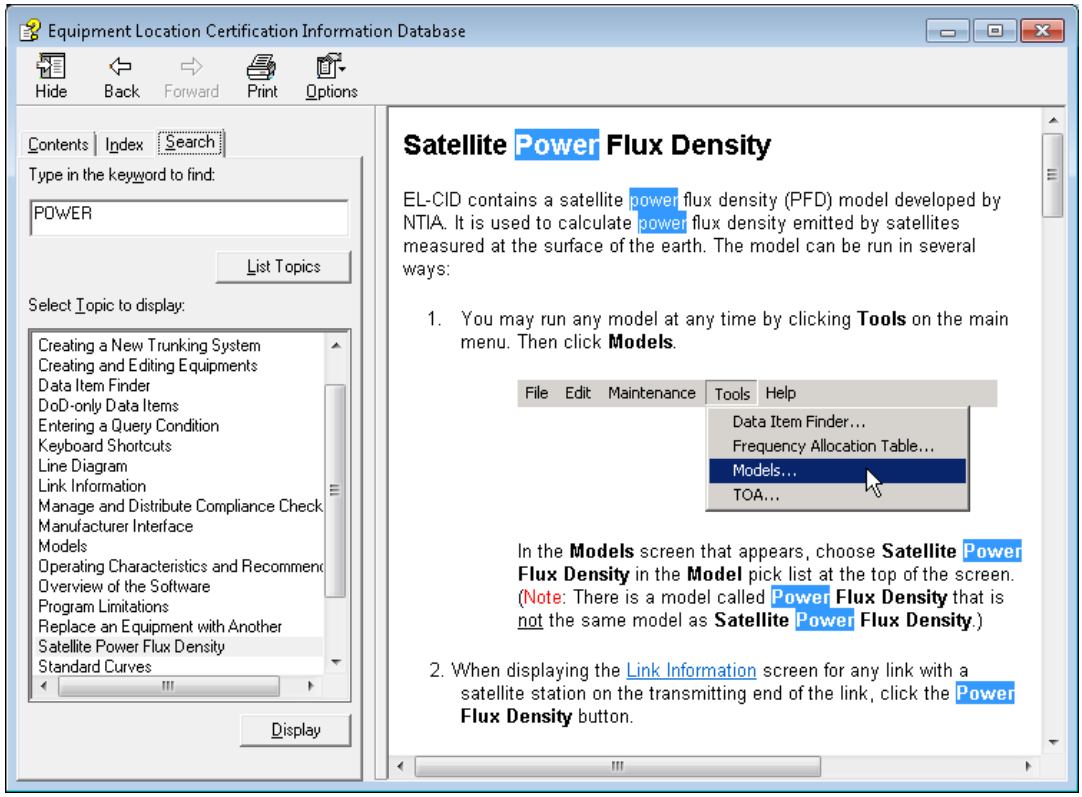
3.1.1.3 Search

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

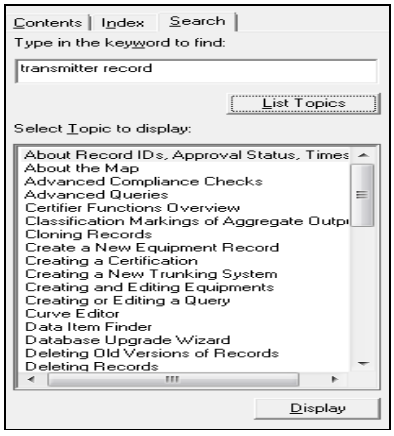
Step 2. Click **List Topics**. A list of topics containing the selected keyword will be displayed. **Highlight** the desired topic and click **Display**. The topic will be displayed on the right of the screen with every occurrence of the keyword highlighted.



Step 3. Scroll down and double-click the topic **Satellite Power Flux Density**. Note that the word **power** is highlighted throughout the Help topic.

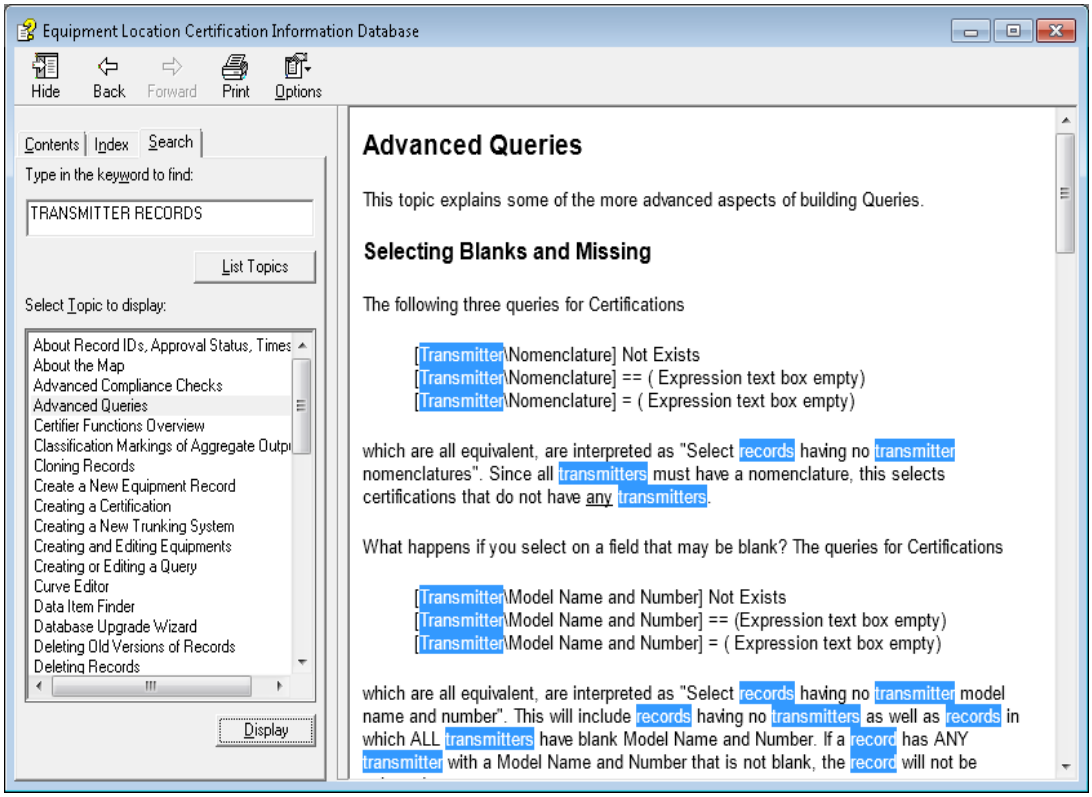


Step 4. If you want to find a specific phrase of two or more words, you must enclose them within double quotes. Type in **transmitter record**, and then click **List Topics**.

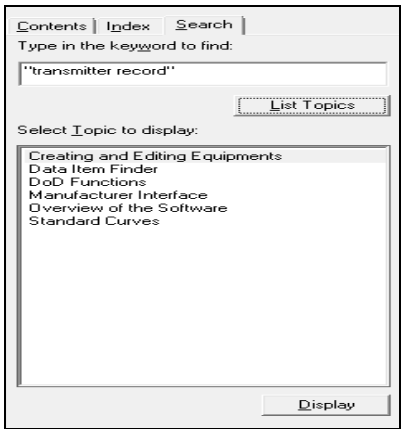


Notice how many topics were found.

Step 5. Select **Advanced Queries** and **Display**. These topics contain the word **transmitter** or the word **record** somewhere in them.

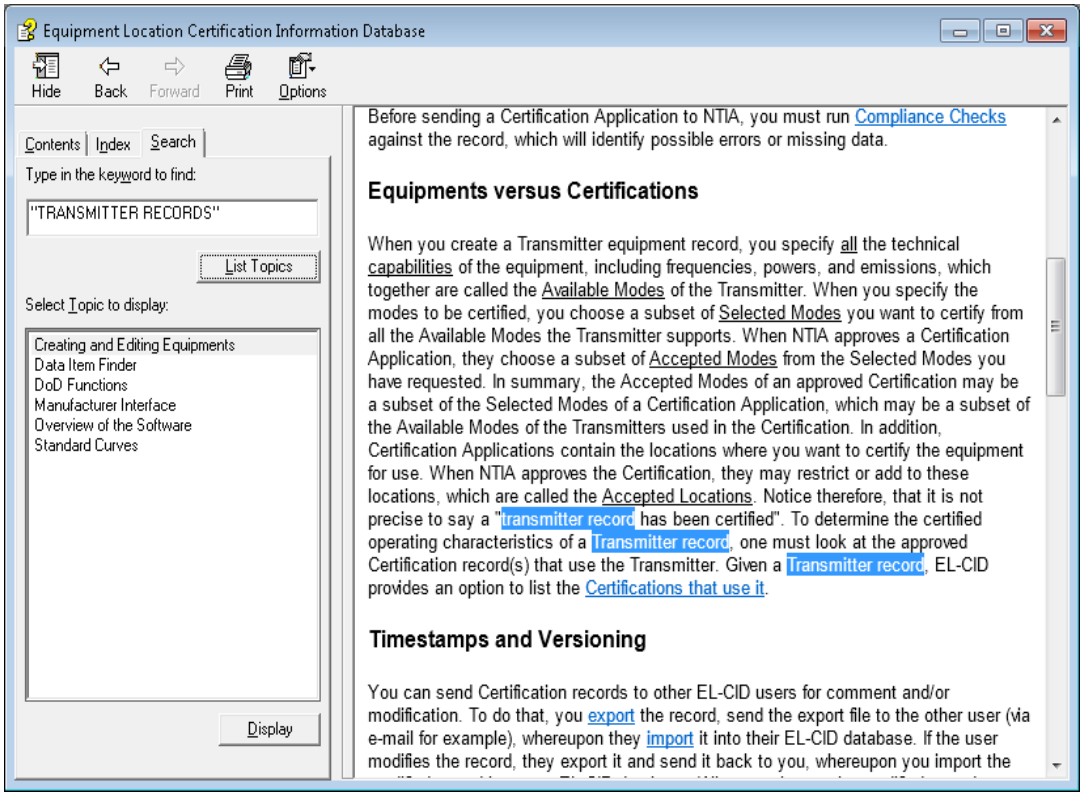


Step 6. Enclose the search term within quotes; **"transmitter record"** and click **List Topics**.



Notice that the number of topics has been reduced.

Step 7. 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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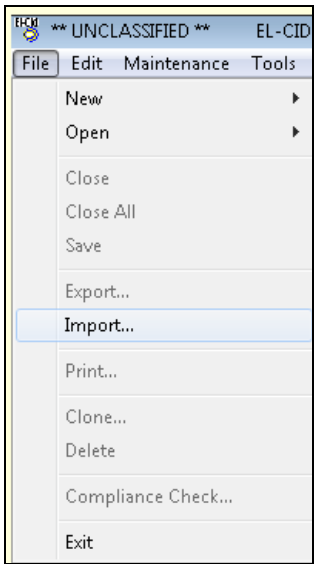
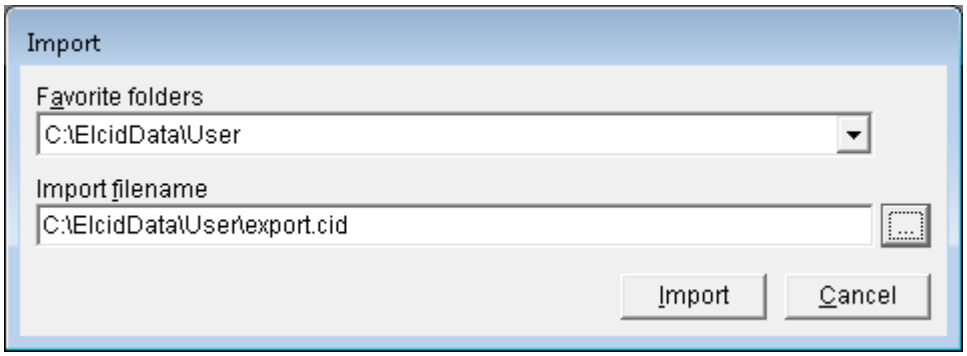
4.0 UPDATING NTIA DATA

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**.

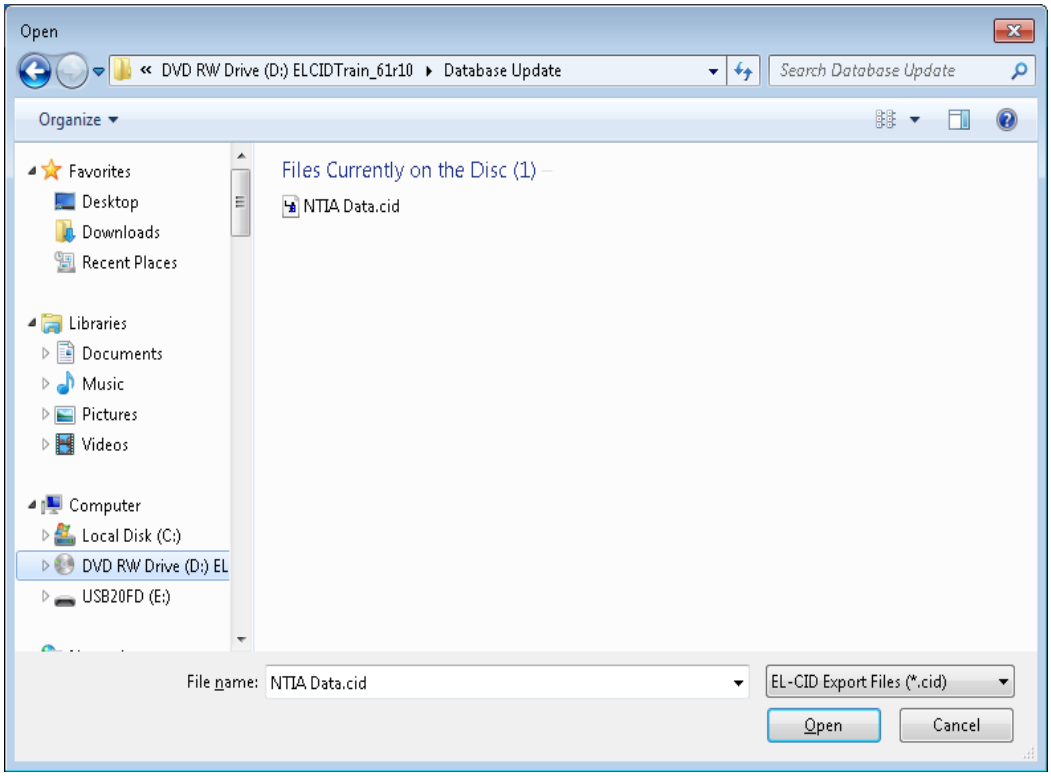
Step 1. **Insert** the **Training CD** in the CD/DVD drive. Click the **Import** button  on the tool bar, or from the menu **File | Import.**



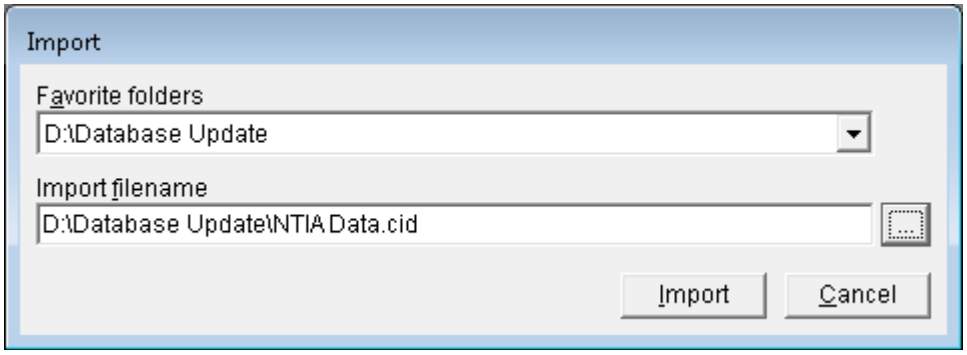
The **Import** window is displayed.



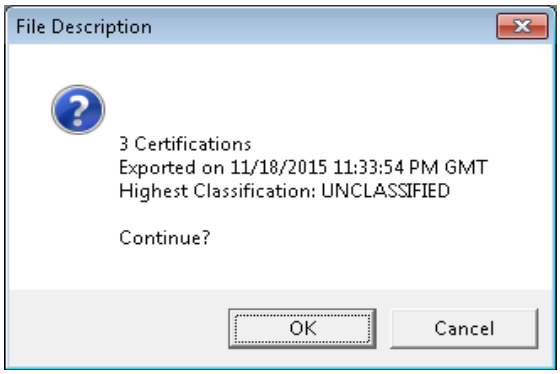
Step 2. Click the **browse button** ... to select the file to import. The folder we are using is on the **Training CD** and called **Database Update** (For training, this will be the **D:\Database Update**). Highlight the filename **NTIA Data.cid** and then click **Open**.



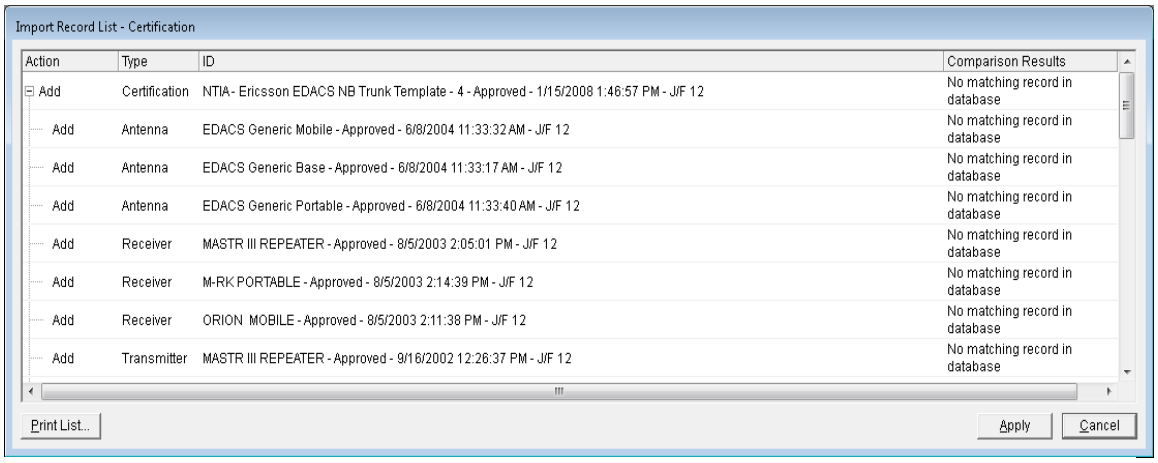
The **Import** window displays the selection.



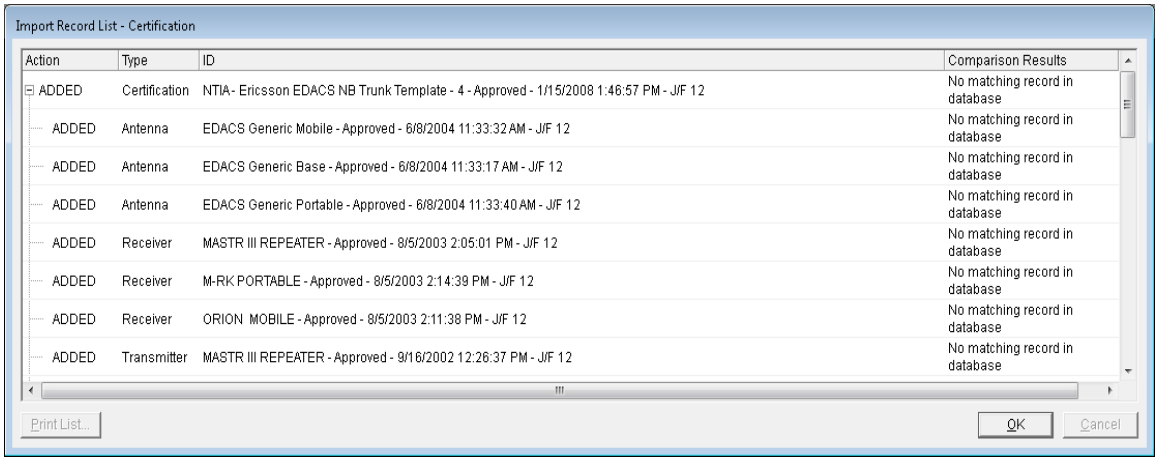
Step 3. Click **Import**. A progress window is displayed followed by the **File Description**.



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

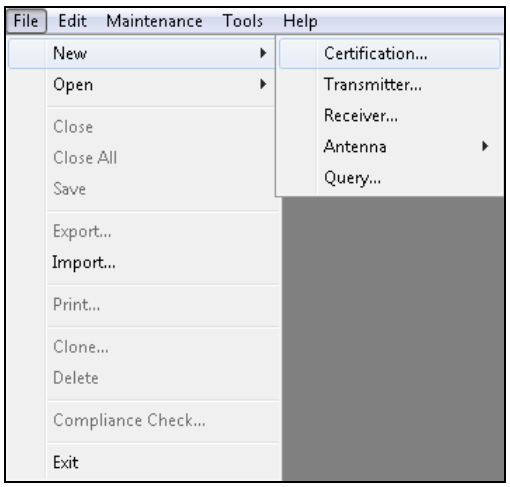
The main purpose of EL-CID is the creation and maintenance of Certification Applications along with their supporting equipment and location data. When you create a Certification Application, the first thing you normally do is to create a line diagram that is a logical picture of the system.

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

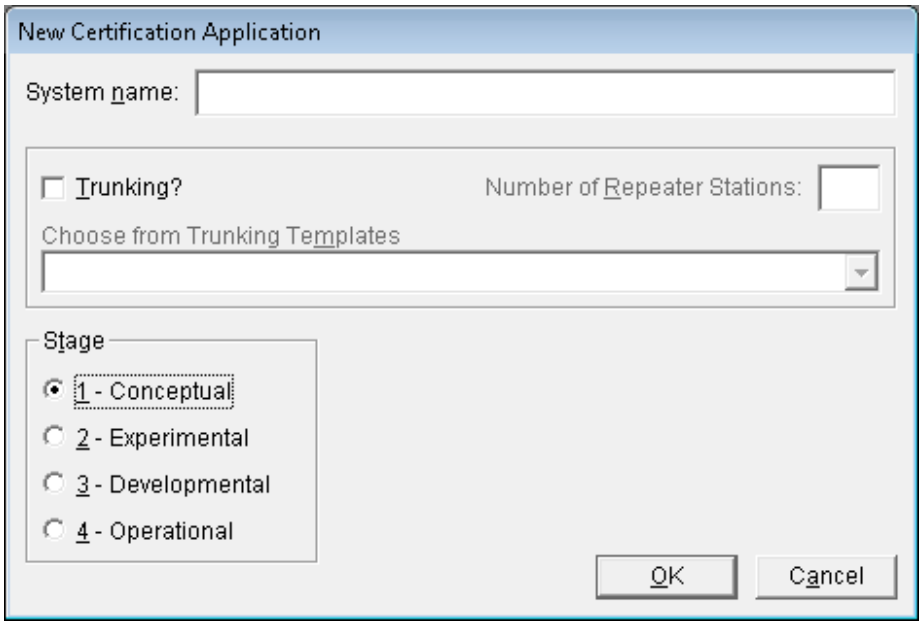
Next, you specify Locations where you want the equipment to be certified for use.

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.



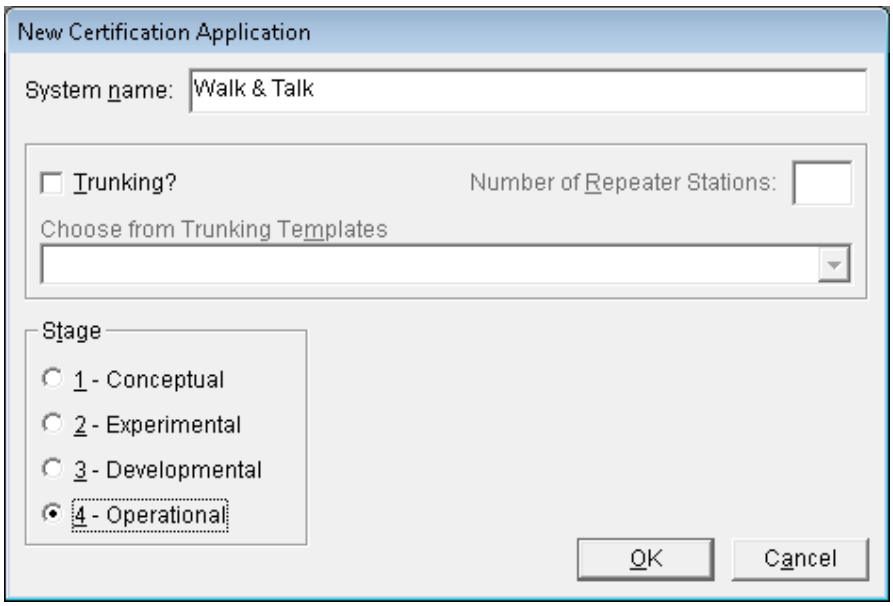
HINT: The **Stages** are defined below:

1 - **Conceptual:** The initial planning effort has been completed, including proposed frequency bands and other available characteristics;
2 - **Experimental:** The preliminary design has been completed, and radiation, using such things as test equipment or preliminary models, may be required;
3 - **Developmental:** The major design has been completed, and radiation may be required during testing;
4 - **Operational:** Development has been essentially completed, and final operating constraints or restrictions required to assure compatibility need to be identified.

Step 2. **Enter** the following data, as shown below. Do not Click the **Trunking?** checkbox at this time.

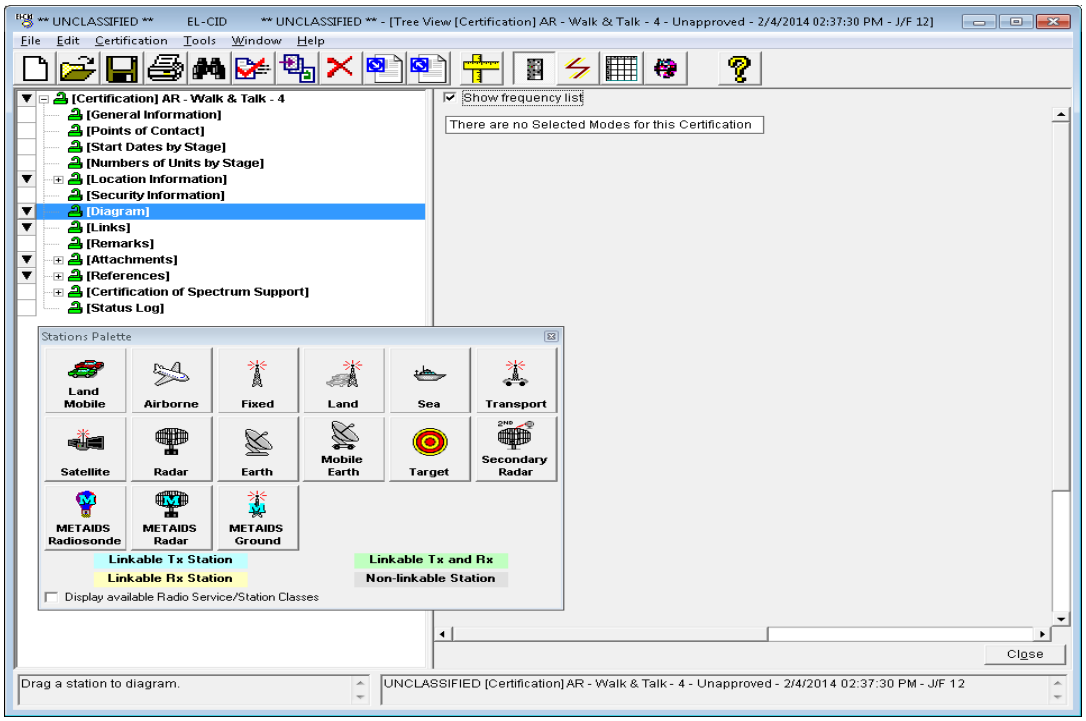
Field	Value
System name	**Walk & Talk**
Stage	**4 - Operational**

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



Step 3. Click **OK**.

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.)

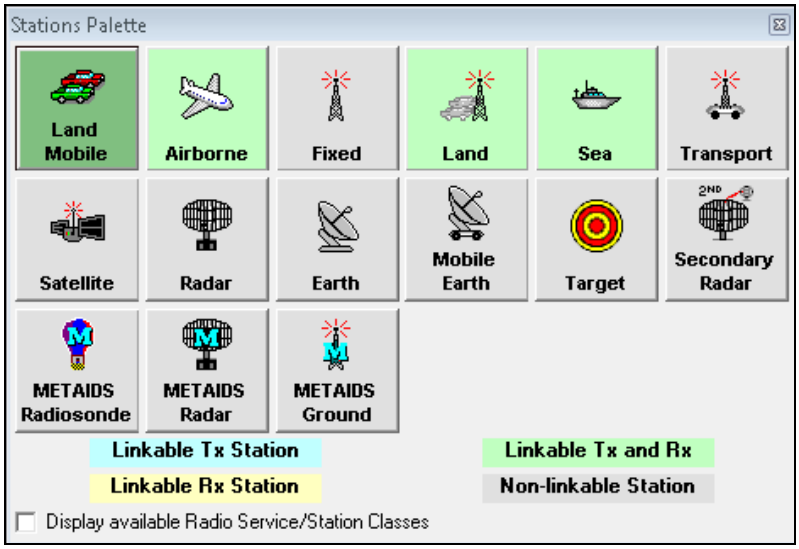


5.1 Selecting Stations

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.

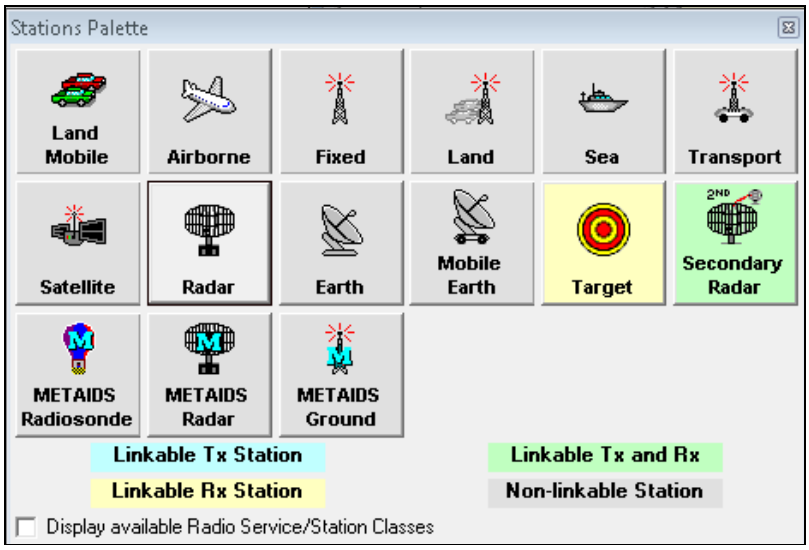
You are about to create a diagram by dragging icons from the **Stations Palette** to the **Diagram** drawing area. There are rules about which icons can be linked to each other. These rules are displayed using various colors on the **Stations Palette**.

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.

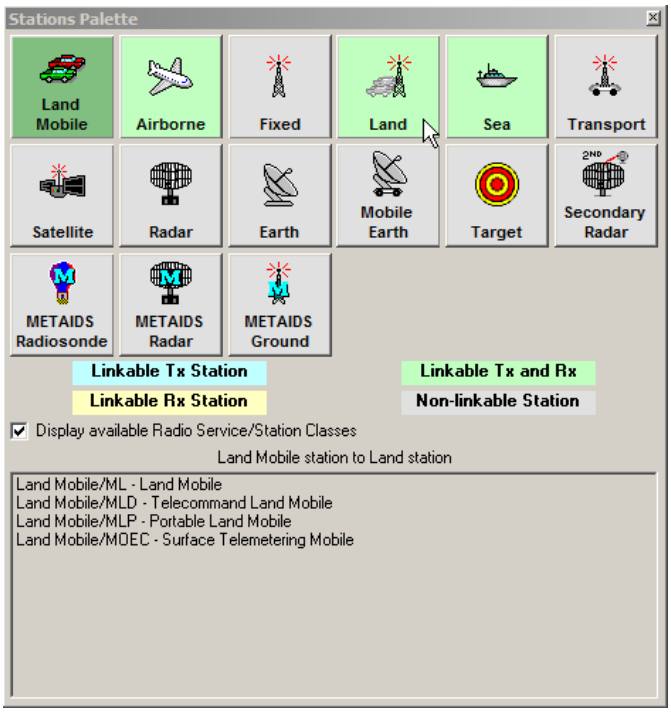
Step 2. Click (but do not drag) the **Radar** icon.



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.



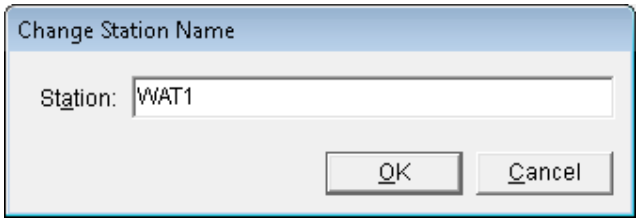
The panel at the bottom of the **Stations Palette** informs us that when a link is drawn from a **Land Mobile** icon to a **Land** icon, one may only choose from Radio Service **Land Mobile**, and Station Classes **ML – Land Mobile**, **MLD – Telecommand Land Mobile**, **MLP – Portable Land Mobile**,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

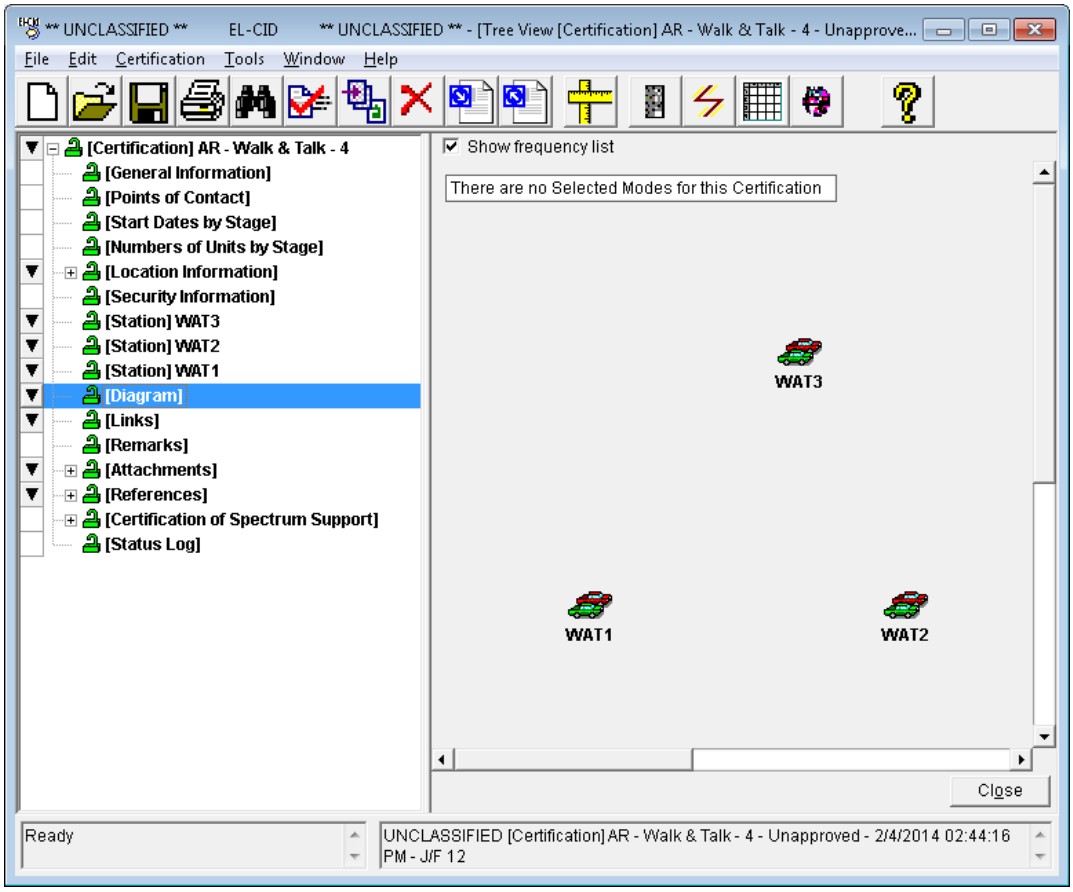
Step 7. Close the palette using the **X** in the upper right or by clicking the **Stations Palette button** 

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: The **Diagram** may be redisplayed by clicking **[Diagram]** node in the Tree View.



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.

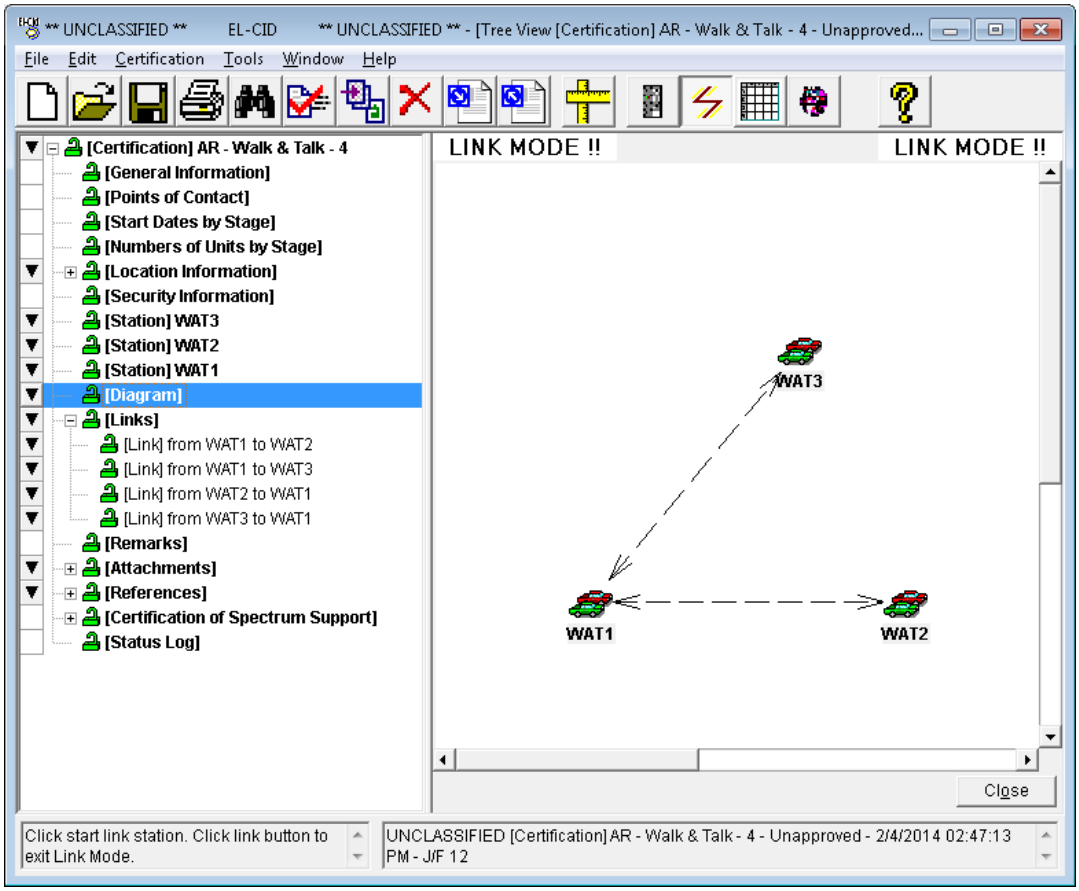
Step 1. Click the **Create New Links** button  on the tool bar. The words **LINK MODE!!** appear at the top of the diagram and the screen changes color, whenever the program is in **LINK MODE!!**.

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.

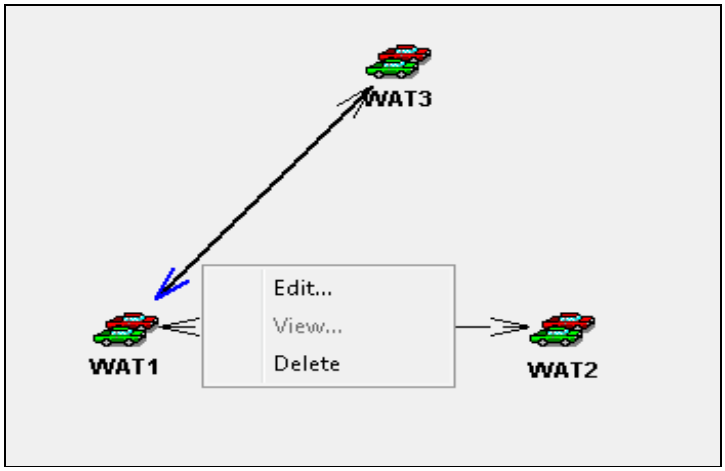
HINT: If it is not permitted to draw a link between two Stations, the mouse pointer will change to  . For example, it is not permitted to draw a link from a Station to itself. In fact, this is a handy way to cancel drawing a link -- if you start a link by clicking on the wrong Station, click the same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

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



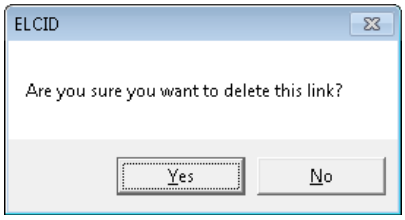
Step 4. Click the **Create New Links** button  on the tool bar. The words **LINK MODE!!** will disappear from the top of the diagram and the screen will change color.

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.

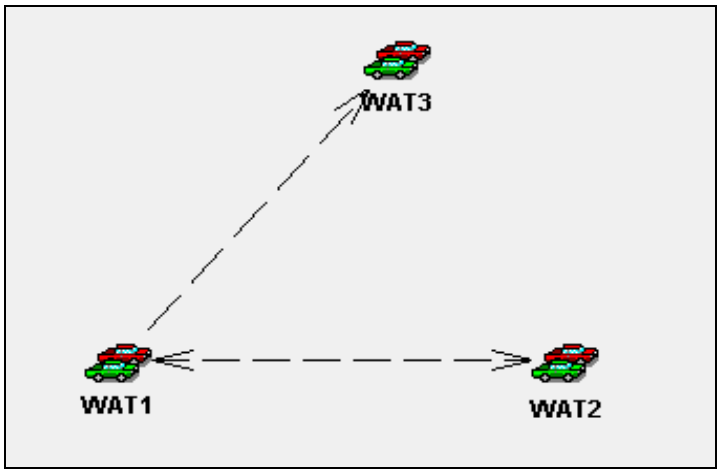


HINT: Note where the mouse pointer is in the picture above at the moment the user right-clicked. It is near the **WAT1** end of the line, but not too close to the end, otherwise the user would select the WAT1 Station and not the link. Also notice how the arrowhead has turned blue, indicating which link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

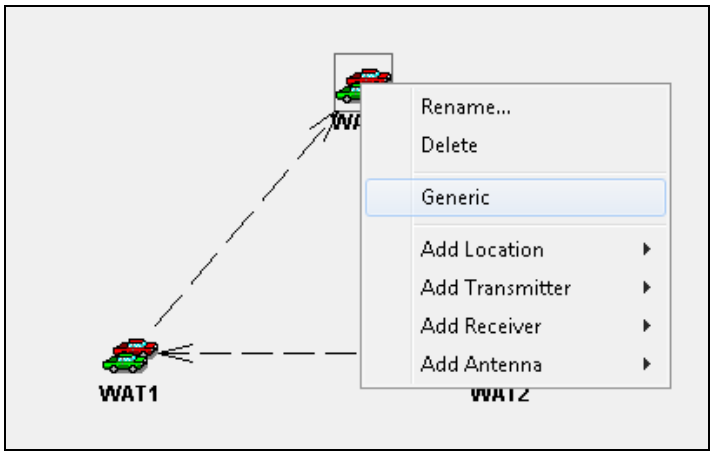
When you select **Delete**, the following window appears.



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 **WAT3** Station icon to indicate that it is generic.

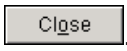
HINT: A generic icon does not allow receiving equipment data to be entered. The generic icon may be used as a termination for a link but cannot be used as a transmitting station. The transmitting station (**WAT1**) is now able to enter the link data between the transmitter and the generic station.

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

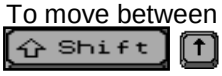
To collapse the Tree View, highlight a node in the Tree View and press 

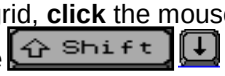
. All nodes under the highlighted node will be collapsed. You can also collapse the node by **clicking** on the ⊟ button.

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 

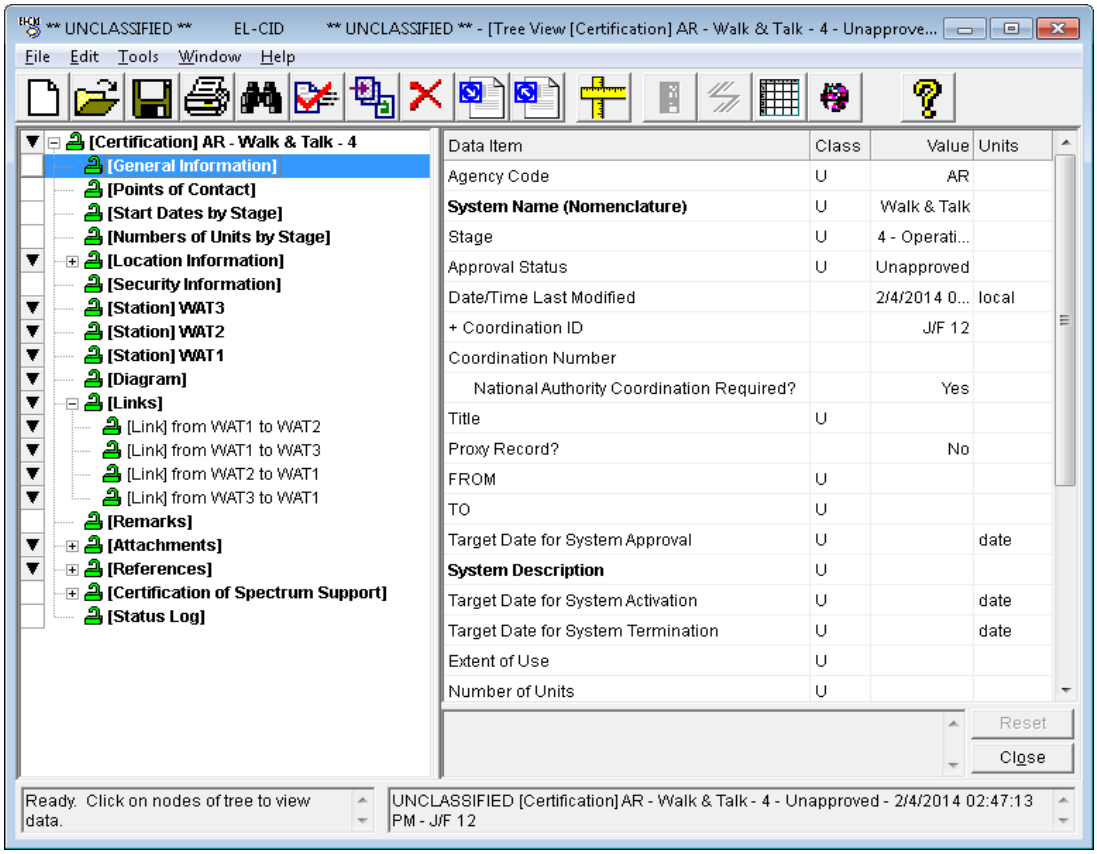
to move down the grid. The 

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	**11/30/2016**
System Description	**This unit is a small, lightweight radio capable of providing two-way ground communications**
Target Date for System Activation	**05/30/2017**
Target Date for System Termination	**05/30/2027**

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

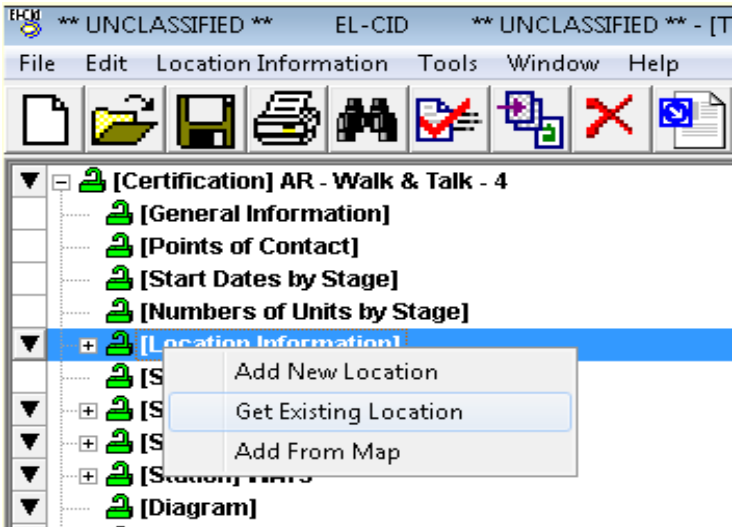
Before approving a Certification Application, NTIA needs to know where the intended area of operation will be. This is accomplished by adding Location records to the Certification record in the Tree View. Where Locations are placed within a Certification depends upon the kind of system being certified.

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

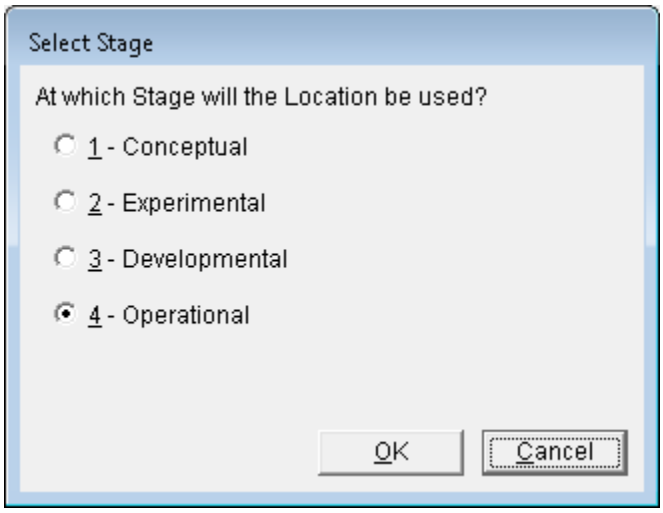
Locations are separate records in EL-CID, which means they may be separately displayed, created, edited, queried, imported, and exported using EL-CID capabilities. They may be used in more than one Certification record.

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

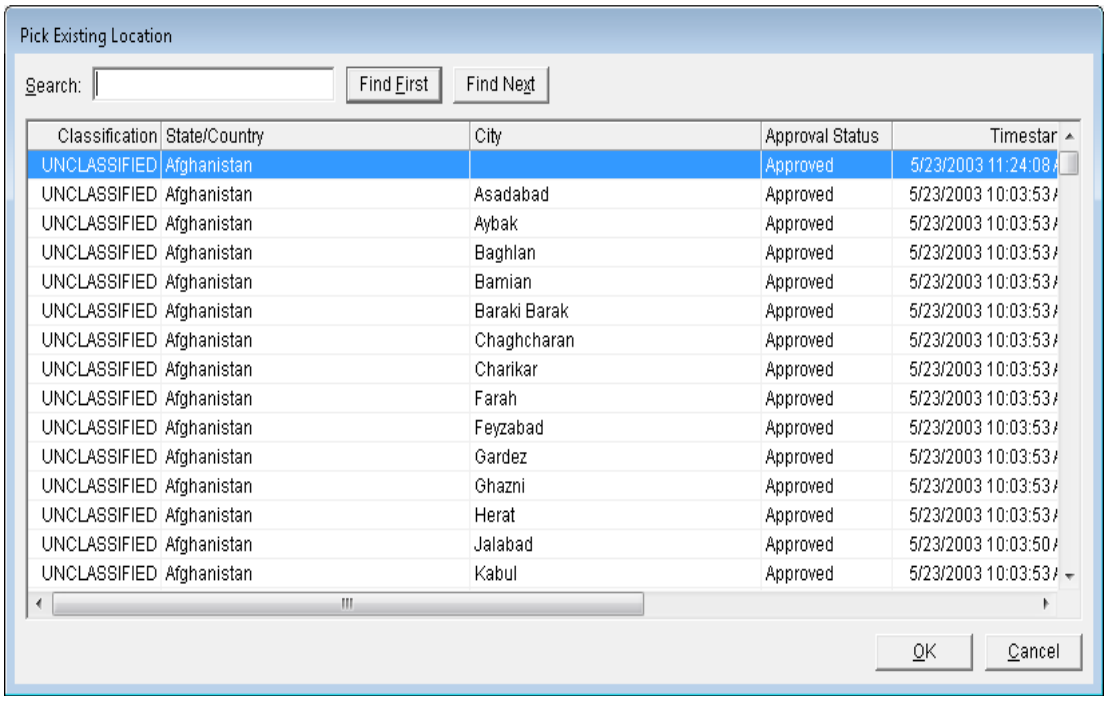


HINT: Another way to pop up menus on the Tree View outline is to click the down arrow button ▼ to the left of the node. A third method is to click the node to select it, and then choose the desired option from the main menu – in this case **Location Information**.

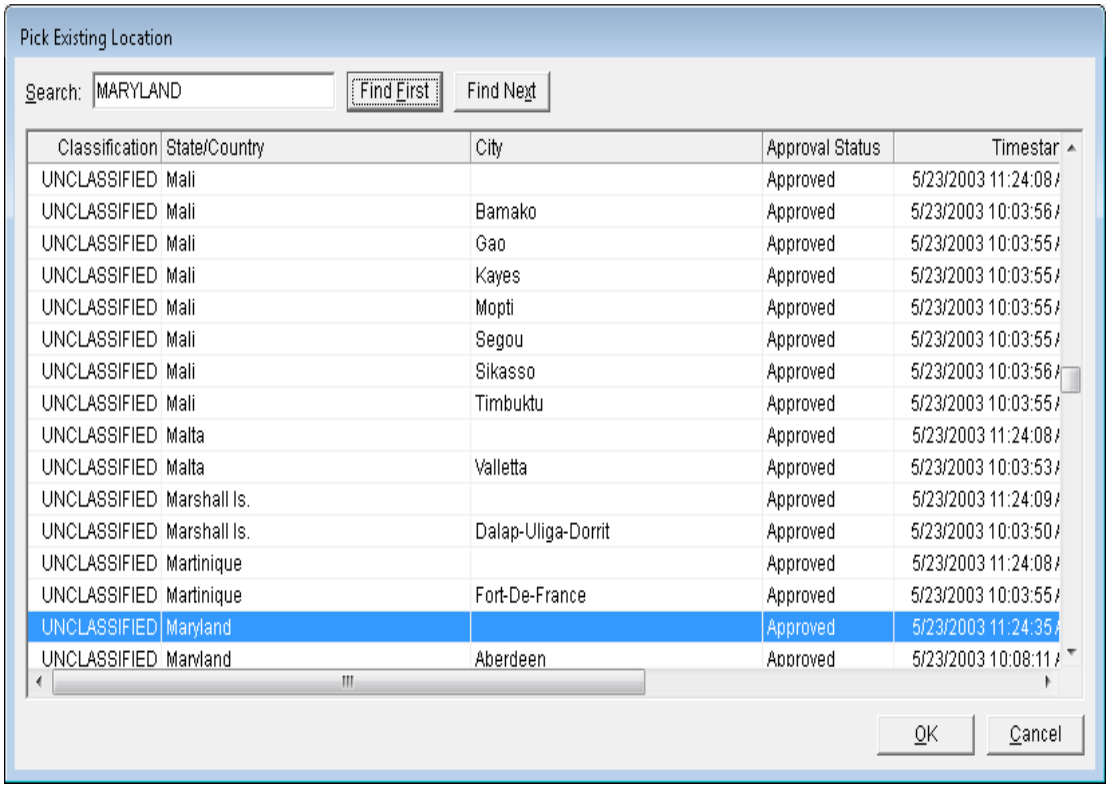
The **Select Stage** window appears.



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

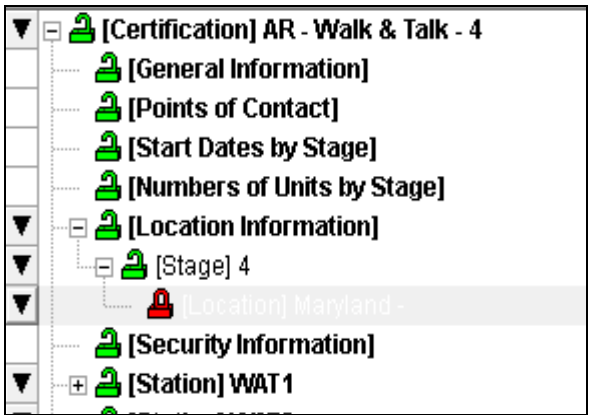


Step 3. Type **MARYLAND**, and click the **Find First** button. The list scrolls down and **Maryland** (without a city) is highlighted.



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.



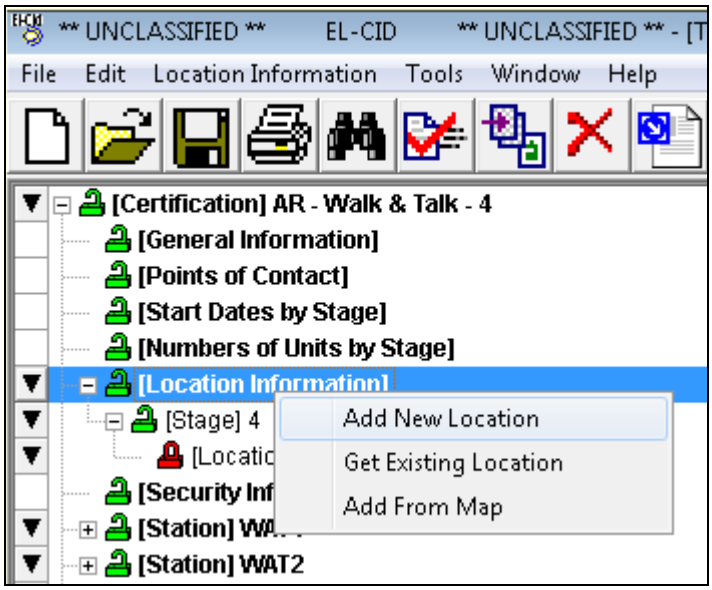
The red, closed padlock next to **[Location] Maryland** indicates that this is an Approved location and you are not permitted to alter the Maryland data.

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.

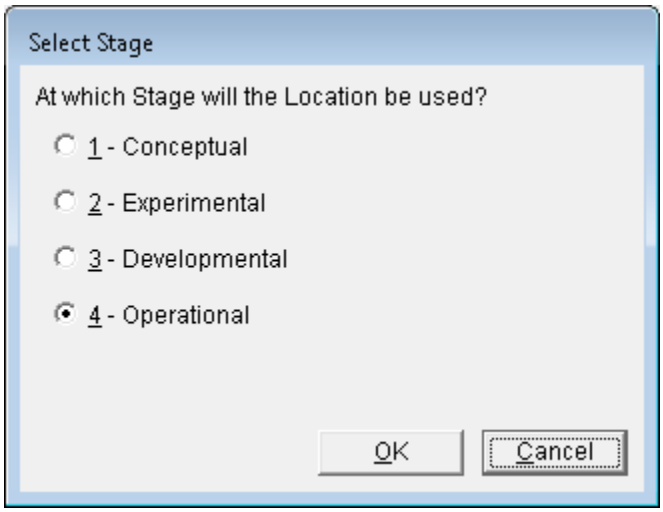
Step 5. Next, we need to add a location called **Training Area 1** in the state of **Virginia**. **Repeat Steps 1 and 2** to display the **Pick Existing Location** window.

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.

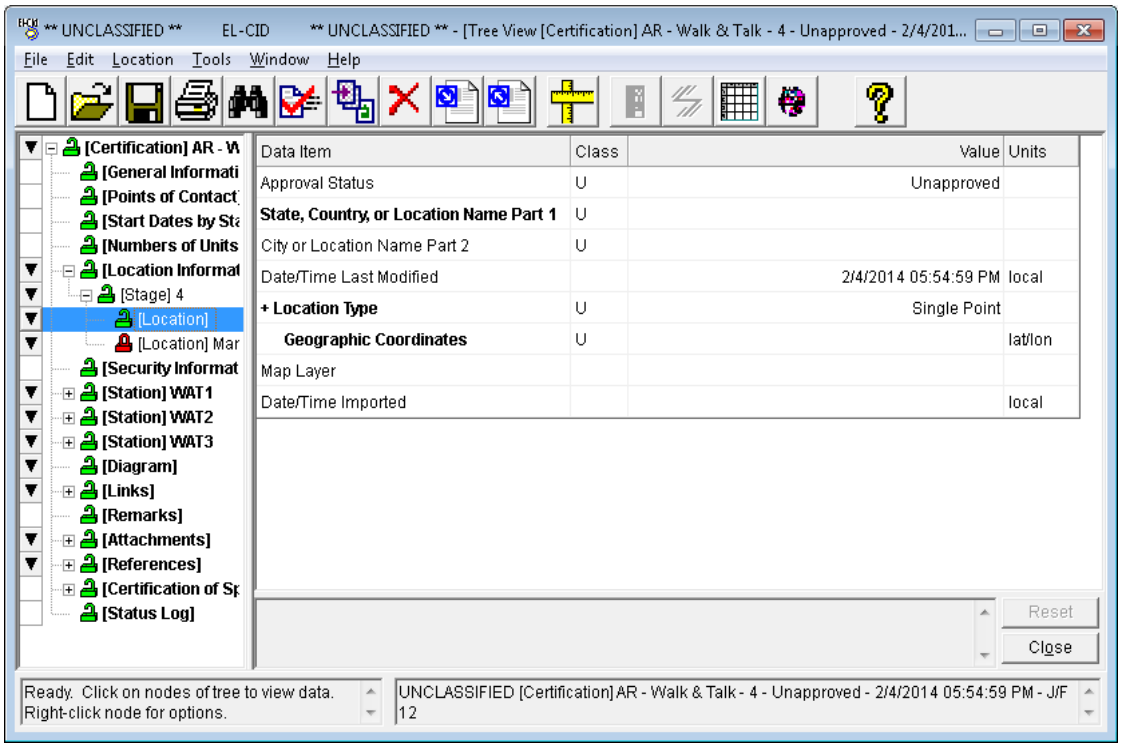
Step 7. To create a new location, **right-click** on the **Location Information** node in the Tree View and then click **Add New Location**.



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



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

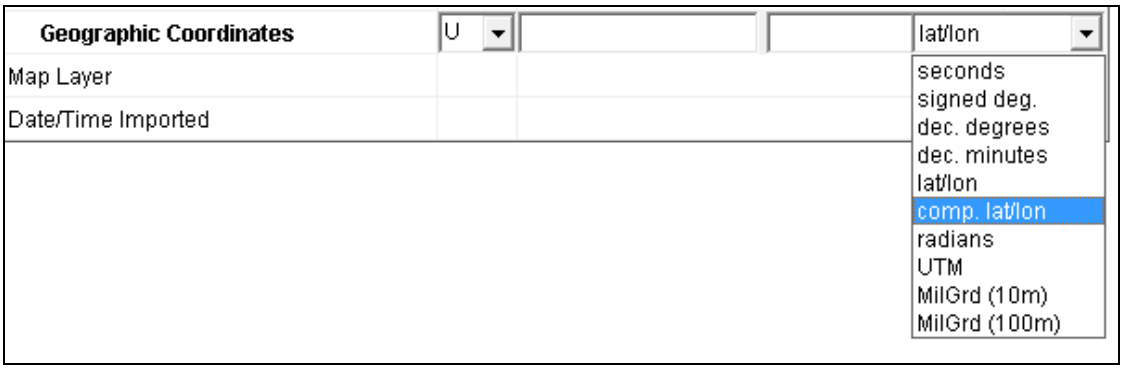


Step 8. **Enter** the following information.

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

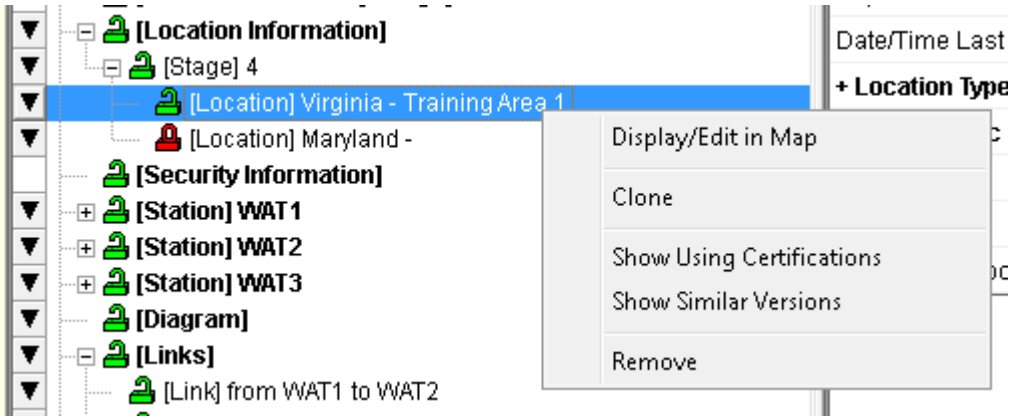
HINT: The Geographic Coordinates are divided into two segments in the data item (latitude on the left and longitude on the right). Since the minutes and seconds are zero, you need only type **37N** for the latitude, press **TAB** key, type **80W** for the longitude, and press **TAB** key.

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).

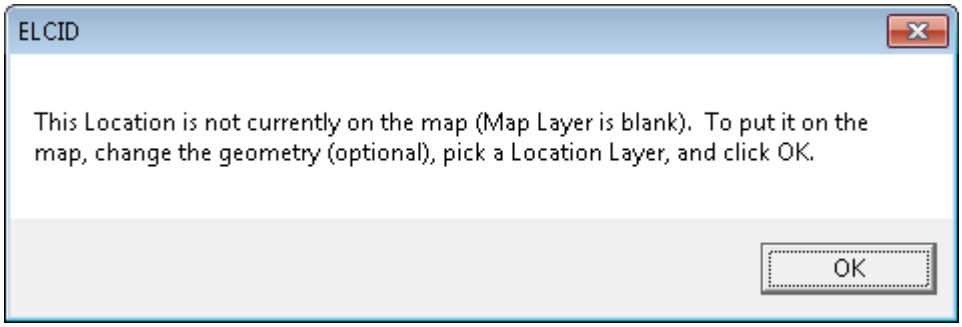


Step 9. **Save** the data.

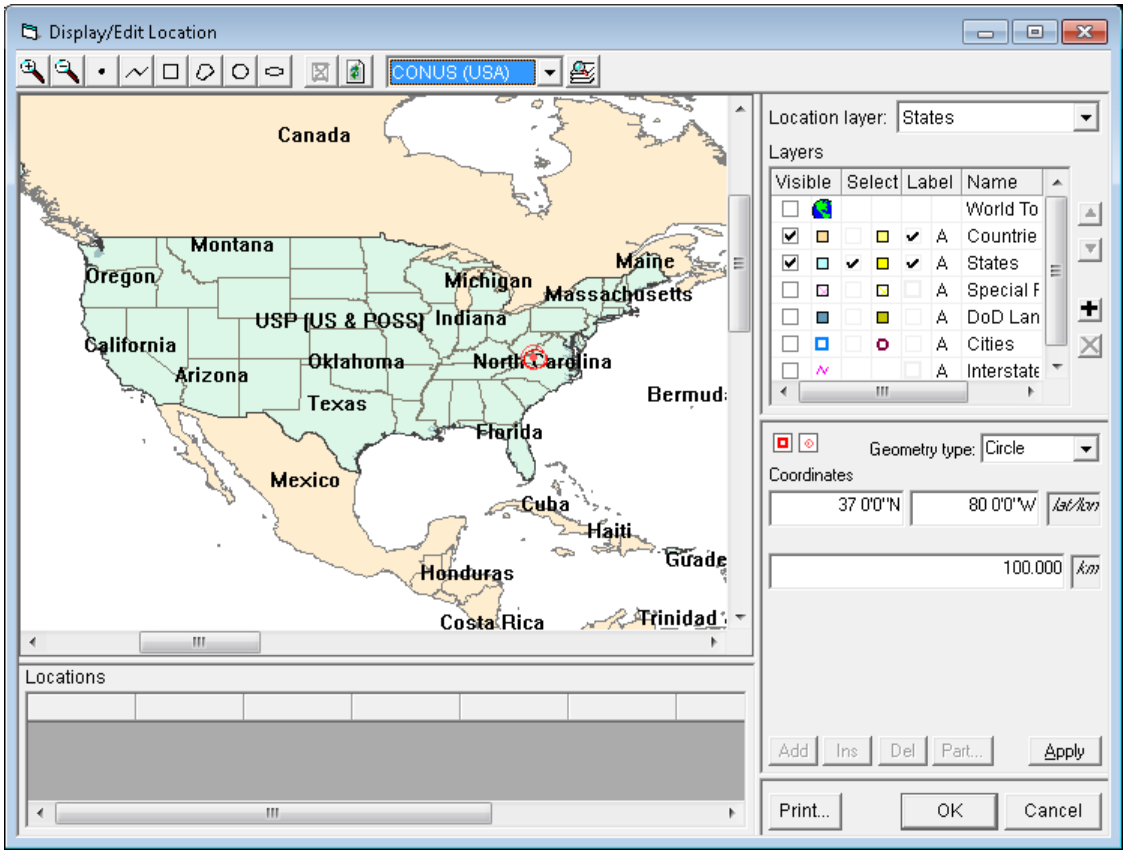
Step 10. Notice that the **Map Layer** item may not be edited. To enter the Map Layer, we must put the location "on the map". To do this, **right-click** on the **[Location] Virginia – Training Area 1** node in the Tree View and then click **Display/Edit in Map**.



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.

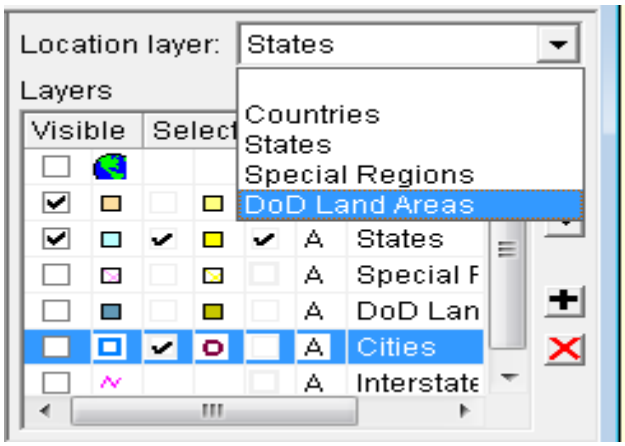
The **Layers** grid in the upper right corner lists the various layers of location data. The map software supports layers of three types, depending upon the type of location geometry that may be stored in the layer:

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.

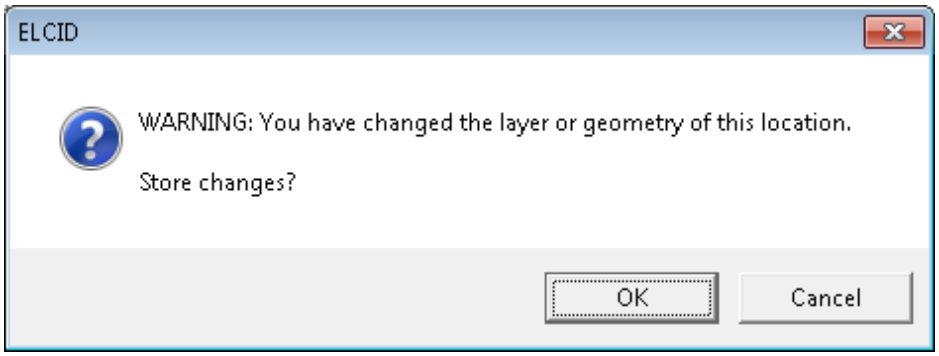
One may not mix geometry types within a layer. For example, you cannot mix polygons and points within a single layer.

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.

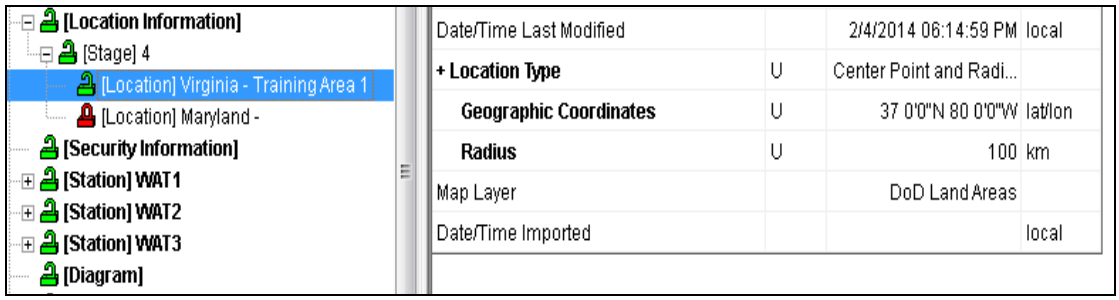
Step 12. Click the down arrow next to the **Location layer** box in the upper right-hand corner of the window. Notice that the program lists all the layers whose geometry type is polygon. Select **DoD Land Areas**.



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

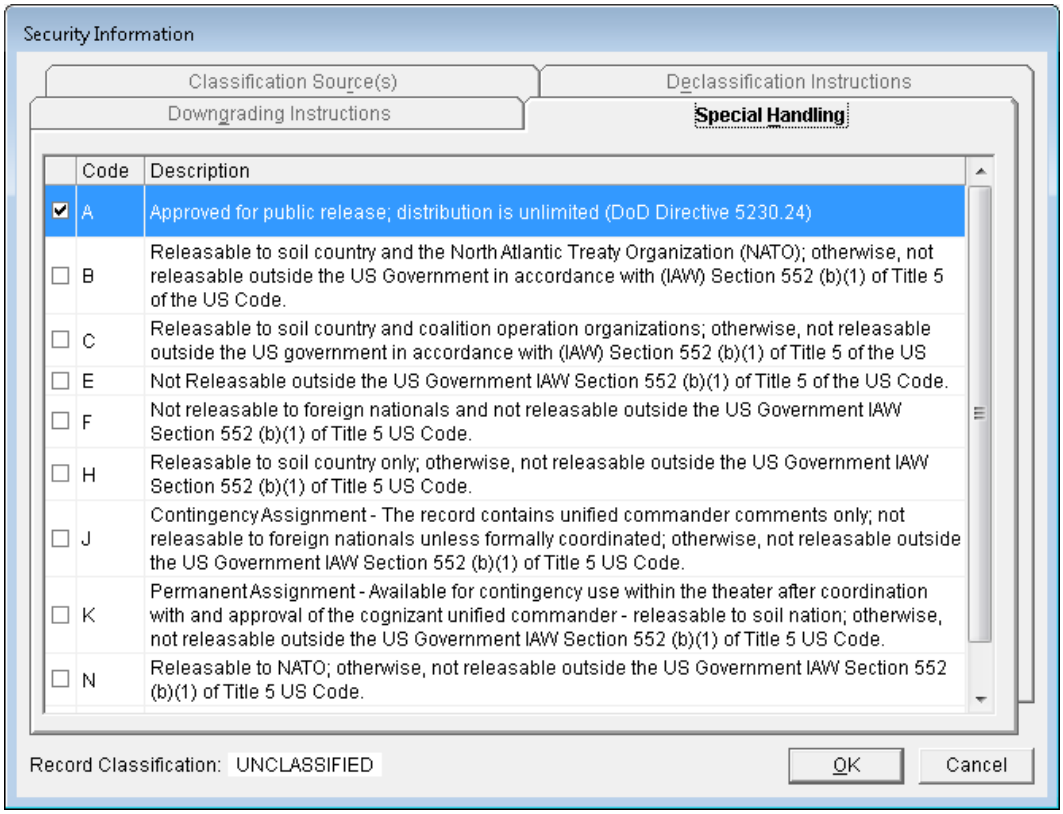
NOTE: If an output would be considered classified when several items are output together, then all of the individual data items should be marked at that minimum classification. For example, if Nomenclature and Frequency are considered to be Confidential when appearing together, then both Nomenclature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

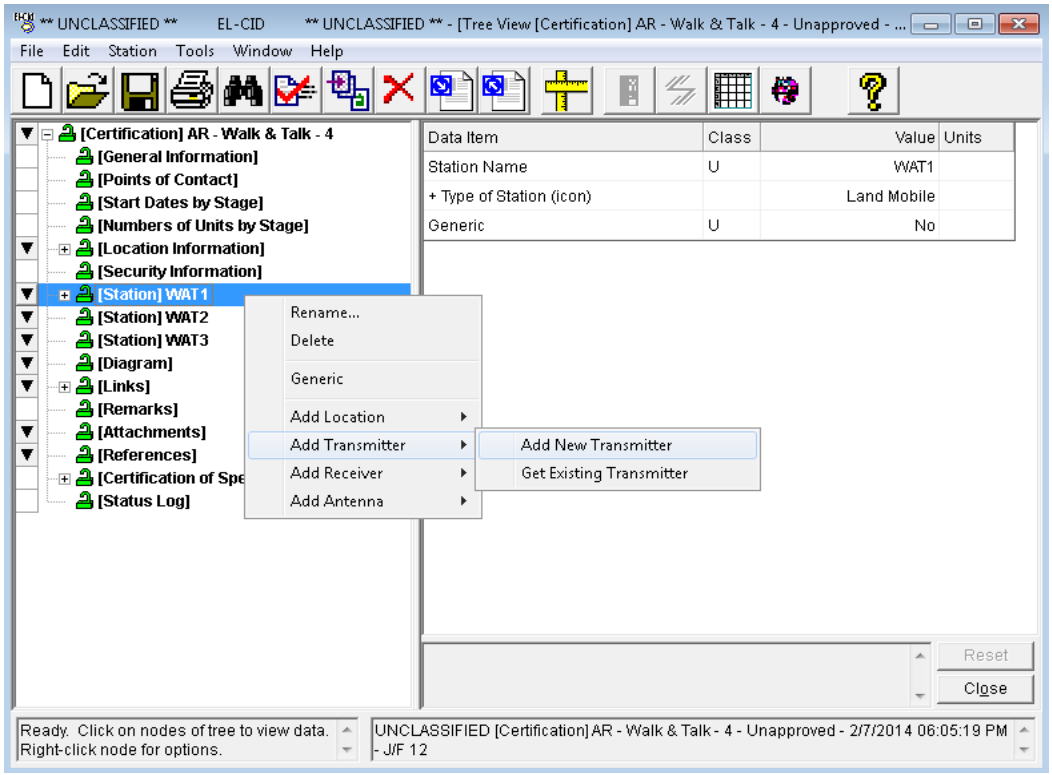
Step 2. Click **OK** to save the data.

5.7 Entering Station Data

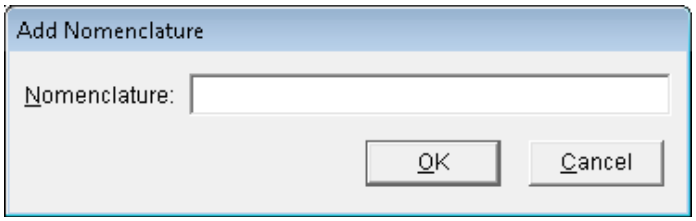
Station data consists of transmitter data, receiver data, and antenna data. If required, you could also enter specific location data.

5.7.1 Entering Transmitter Data

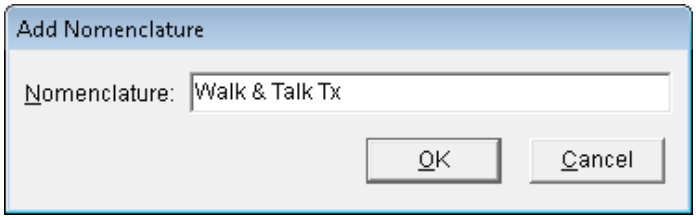
Step 1. **Right-click** on the **[Station] WAT1** node in the Tree View and then **select Add Transmitter | Add New Transmitter**.



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		2/6/2014 06:26:35 PM	local
Coordination ID		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

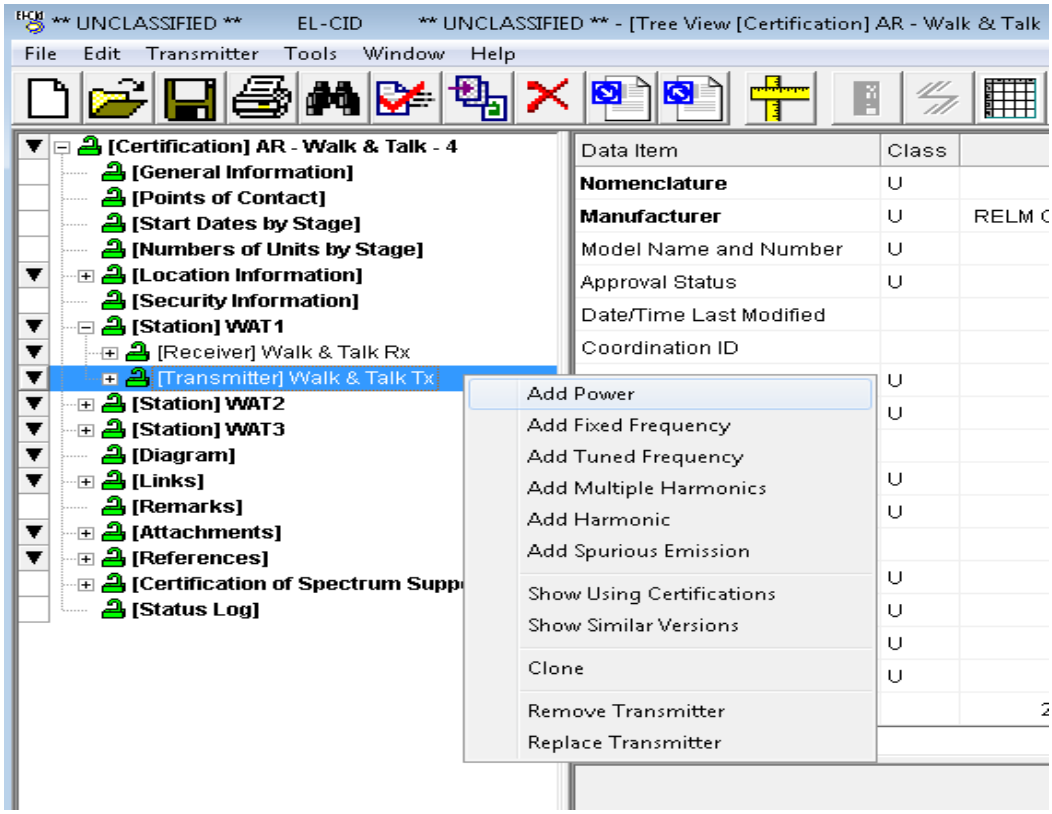
Step 3. **Enter** the following data

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**

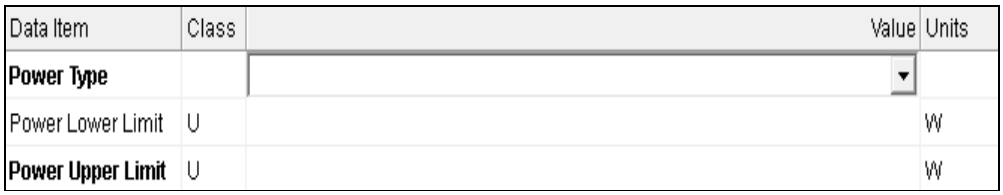
HINT: Manufacturer is a select list (indicated by ). You can type **RELM** in the **Search** box and click **Find First** to find the correct entry.

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** node in the Tree View and then select **Add Power**.



The **Power** data grid is displayed.

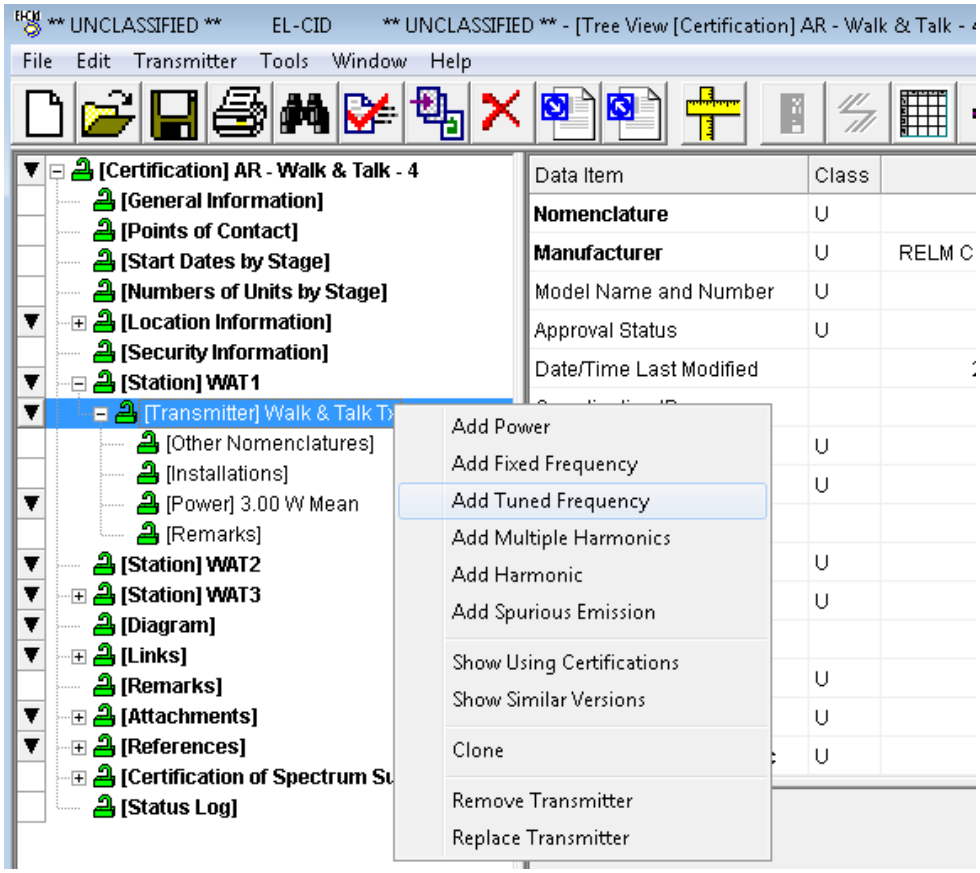


Step 5. **Enter** the following data.

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.

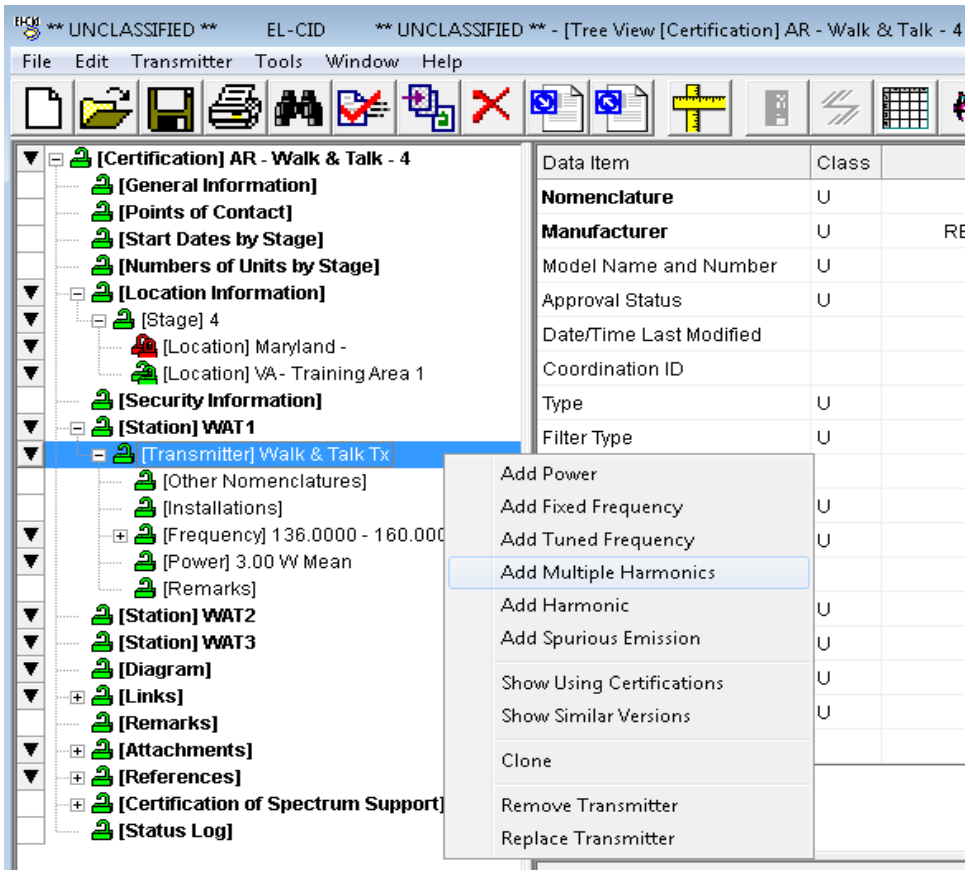
Data Item	Class	Value	Units
+ **Fixed Frequency?**		No	
+ **Lowest Tuned Frequency**	U		MHz
+ **Highest Tuned Frequency**	U		MHz
Tuning Increment	U		kHz
# of Frequencies Required for Operation	U		
Minimum Required Frequency Separation	U		MHz
Frequency Blocking Indicator	U	No	
Lowest Usable Channel	U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

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

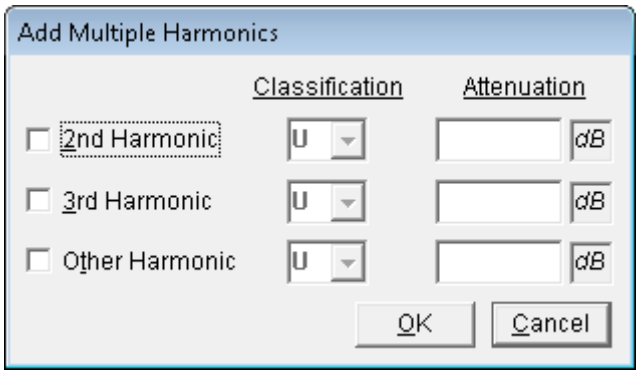
Field	Value
Lowest Tuned Frequency	**136 MHz**
Highest Tuned Frequency	**160 MHz**
Tuning Increment	**12.5 kHz**

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

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



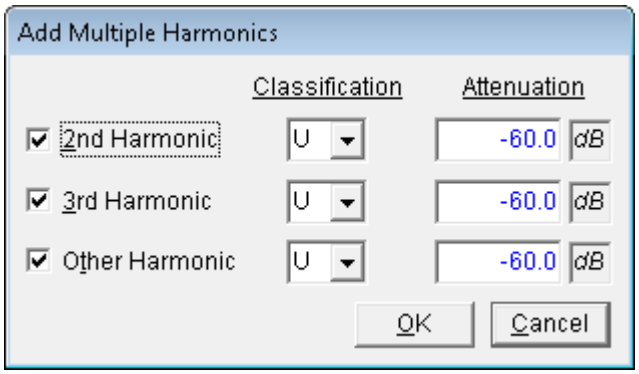
The **Add Multiple Harmonics** window is displayed.



Step 9. **Check** the **2nd**, **3rd**, and **Other Harmonic** checkboxes and **Enter** the following data.

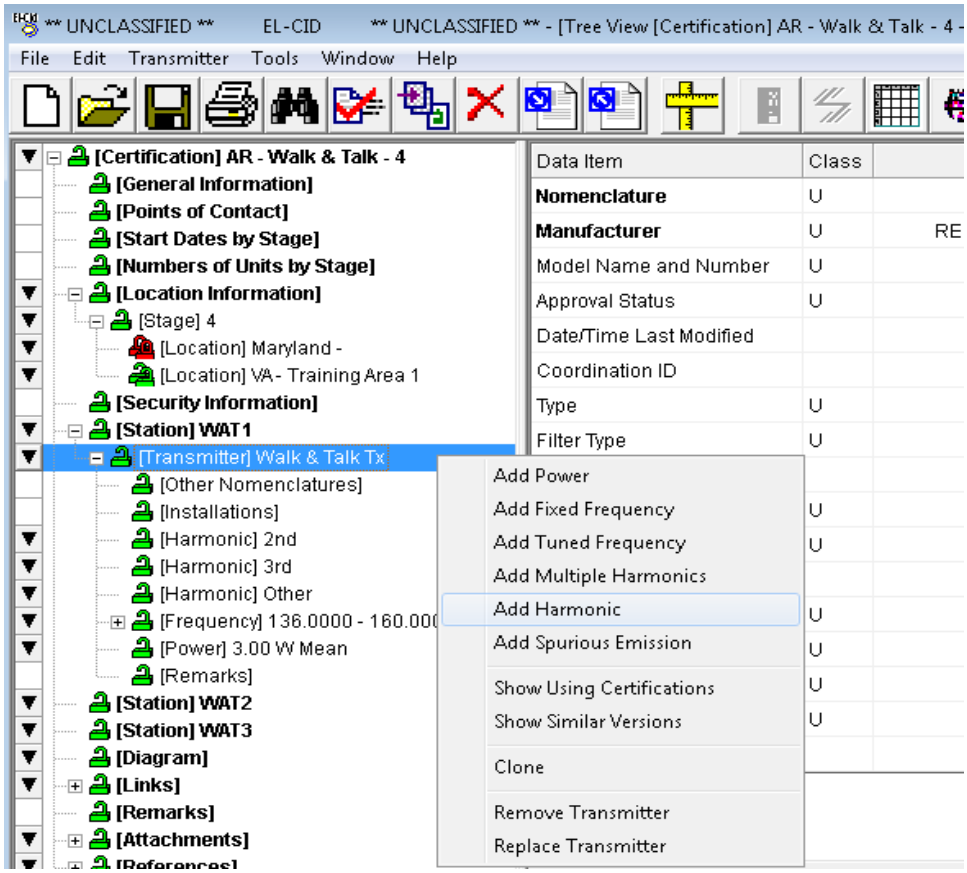
Field	Value
Harmonic Number	**2nd**
Attenuation	**-60 dB**
Harmonic Number	**3rd**
Attenuation	**-60 dB**
Harmonic Number	**Other**
Attenuation	**-60 dB**

The Attenuation is displayed with the Harmonic Number. Click **OK**.

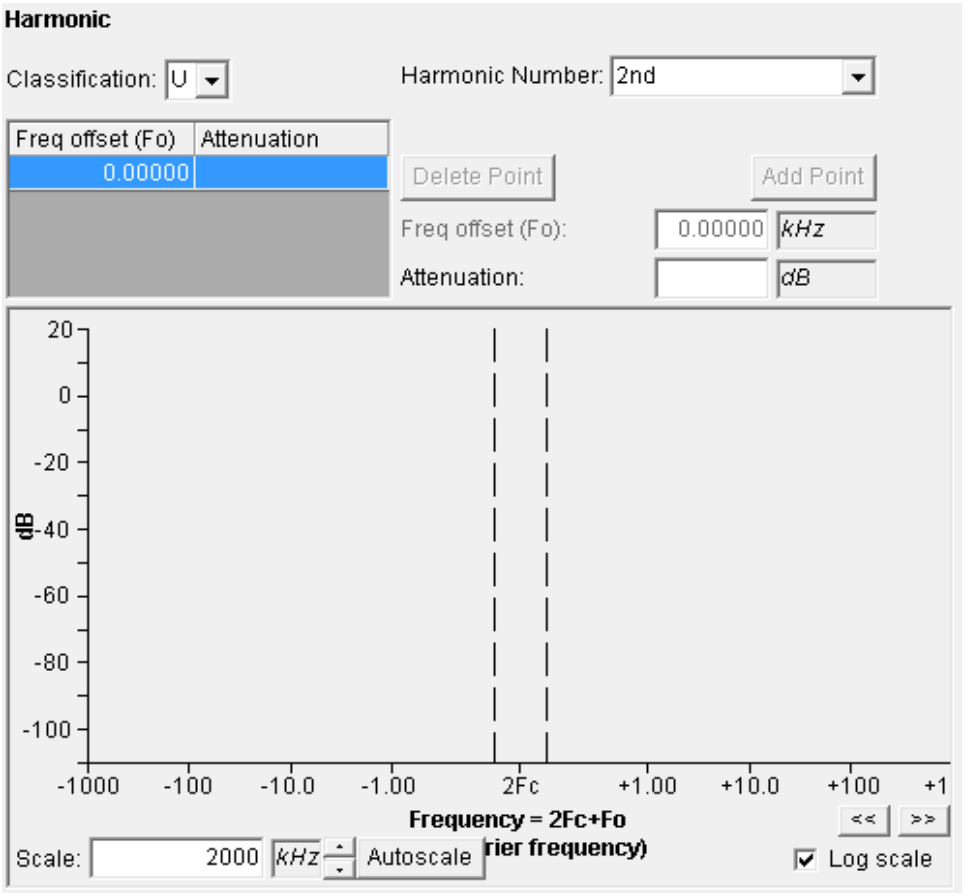


HINT: In order to add Harmonics other than 2nd, 3rd, and Other, you will need to select the **Add Harmonic** option**.**

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



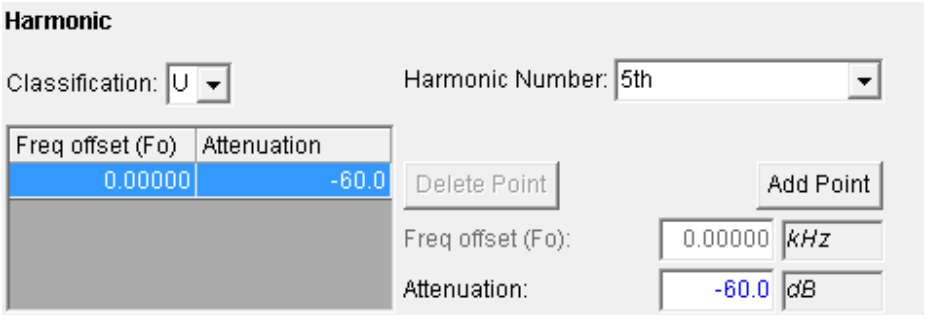
The **Harmonic** window is displayed.



Step 11. **Enter** the following data.

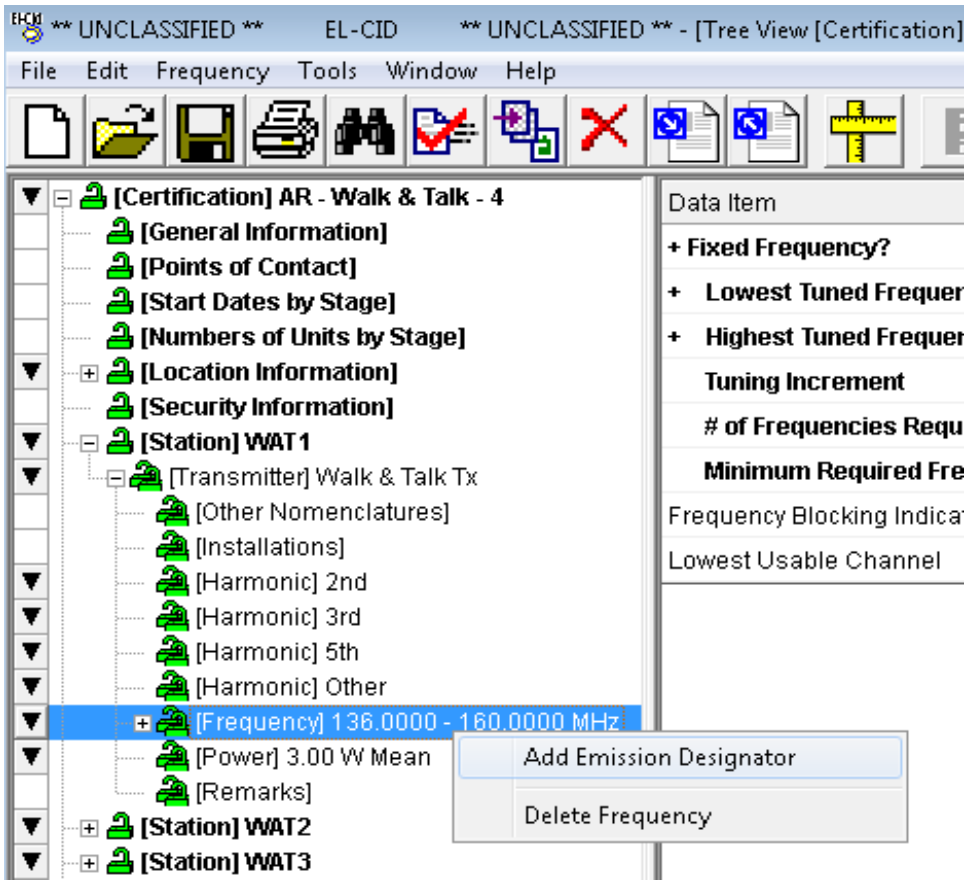
Field	Value
Harmonic Number	**5th**
Attenuation	**-60 dB**

The Attenuation is displayed with the Freq offset (Fo). **Save** the data.



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 10, or use the **Add Multiple Harmonics** option.

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	U		kHz
+ Emission Designator	U		
Emission Digitized Spectrum Code	U		

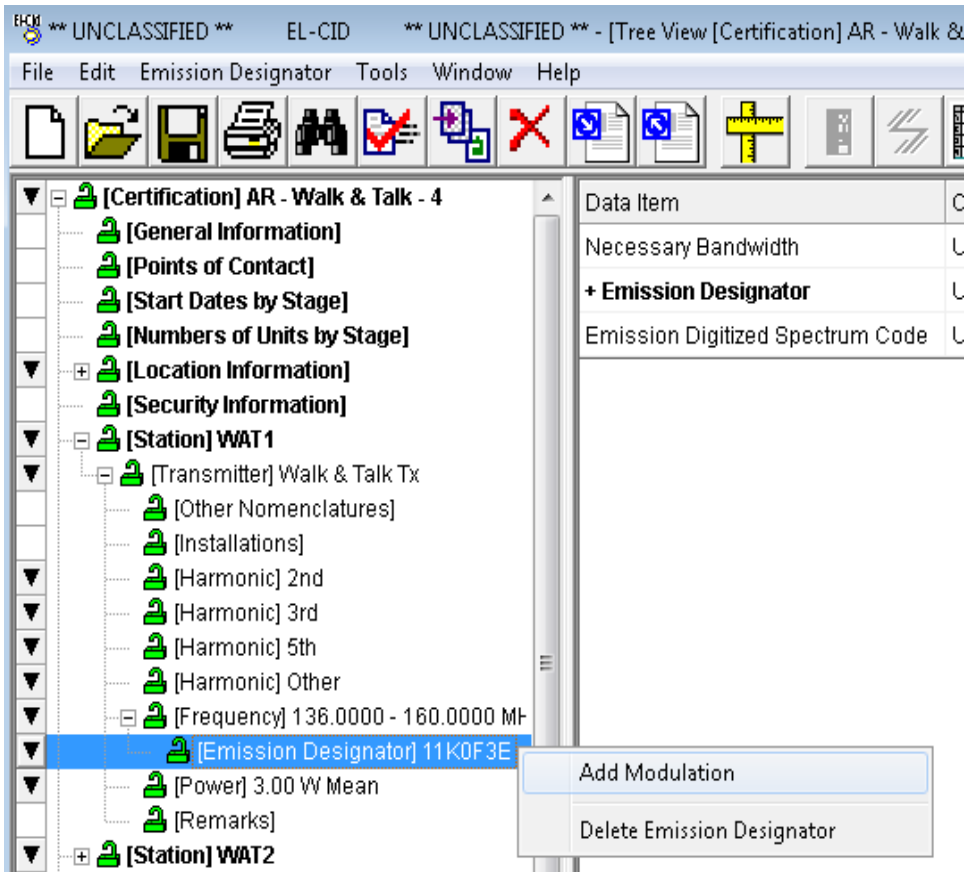
Step 13. **Enter** the following data and then **Save**.

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
Occupied Bandwidth	U		kHz
Measured or Calculated?	U		
+ Spread Spectrum?		No	
+ Modulation Type	U	Analog Modulation (AM, FM, or ...	
Peak Deviation	U		kHz
Deviation Ratio	U		
Maximum Modulation Frequency	U		kHz
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 then **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**

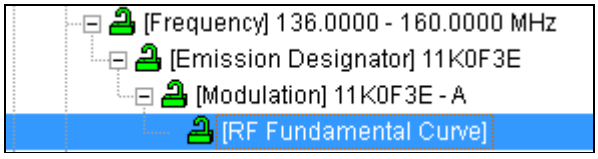
Notice that the **Peak Deviation**, **Deviation Ratio**, and **Maximum Modulation Frequency** items do not appear until Analog is chosen for **Modulation Type**. The program will hide irrelevant items. The plus sign (**+**) next to **Modulation Type** indicates that other items will appear or disappear 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 the **Peak Deviation** was left blank in Step 15, **click** on it now and **click** the **calculator** button. The calculated value of **2.4990** kHz appears.

Data Item	Class	Value	Units
Occupied Bandwidth	U	11.000	kHz
Measured or Calculated?	U	Measured	
+ Spread Spectrum?		No	
+ Modulation Type	U	Analog Modulation (AM, FM, or ...	
Peak Deviation	U	2.4990	*kHz*
Deviation Ratio	U	0.833	
Maximum Modulation Frequency	U	3.0000	kHz
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

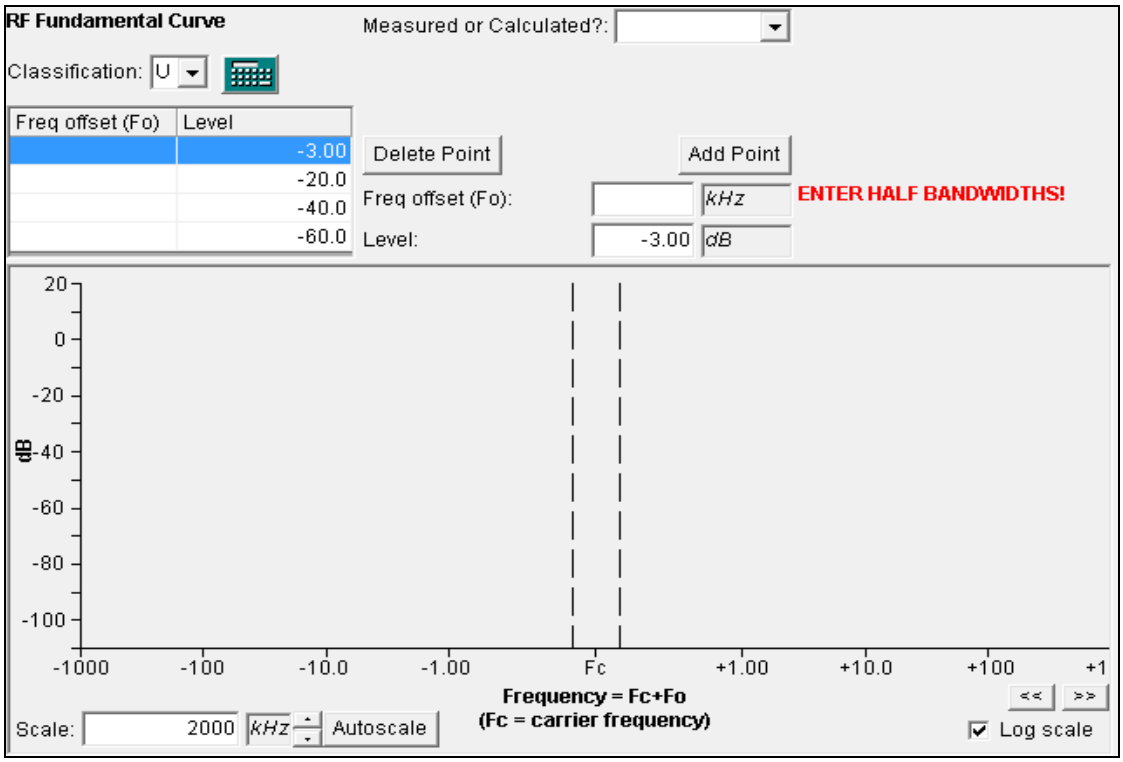
HINT: If any of the inputs to the calculation are classified, a message will appear advising you to check the classification of the calculated item.

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.

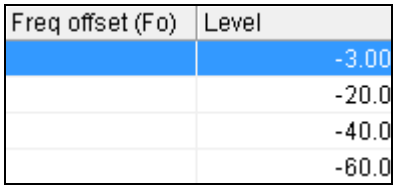
The **RF Fundamental Curve** window is displayed.



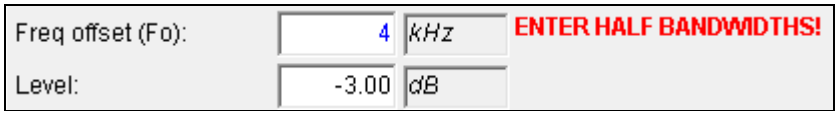
Step 18. **Enter** the following data.

Field	Value
Measured or Calculated	**Measured**

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

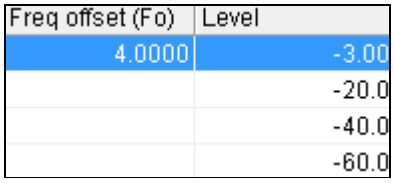


Step 20. Enter **4** in the **Frequency offset**.



NOTE: Freq offset equals ½ bandwidth.

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



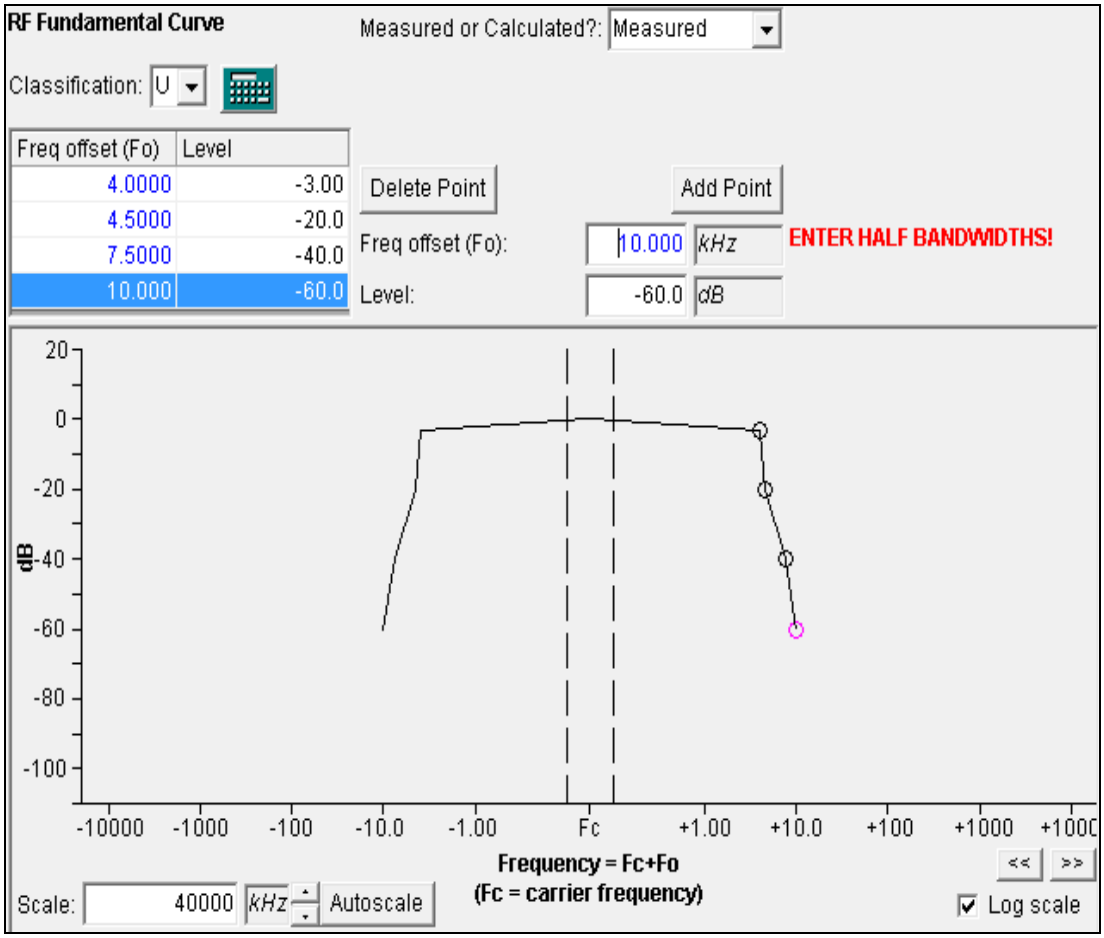
Step 22. **Enter** the following data, by following **Step 19** and **Step 20.**

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**

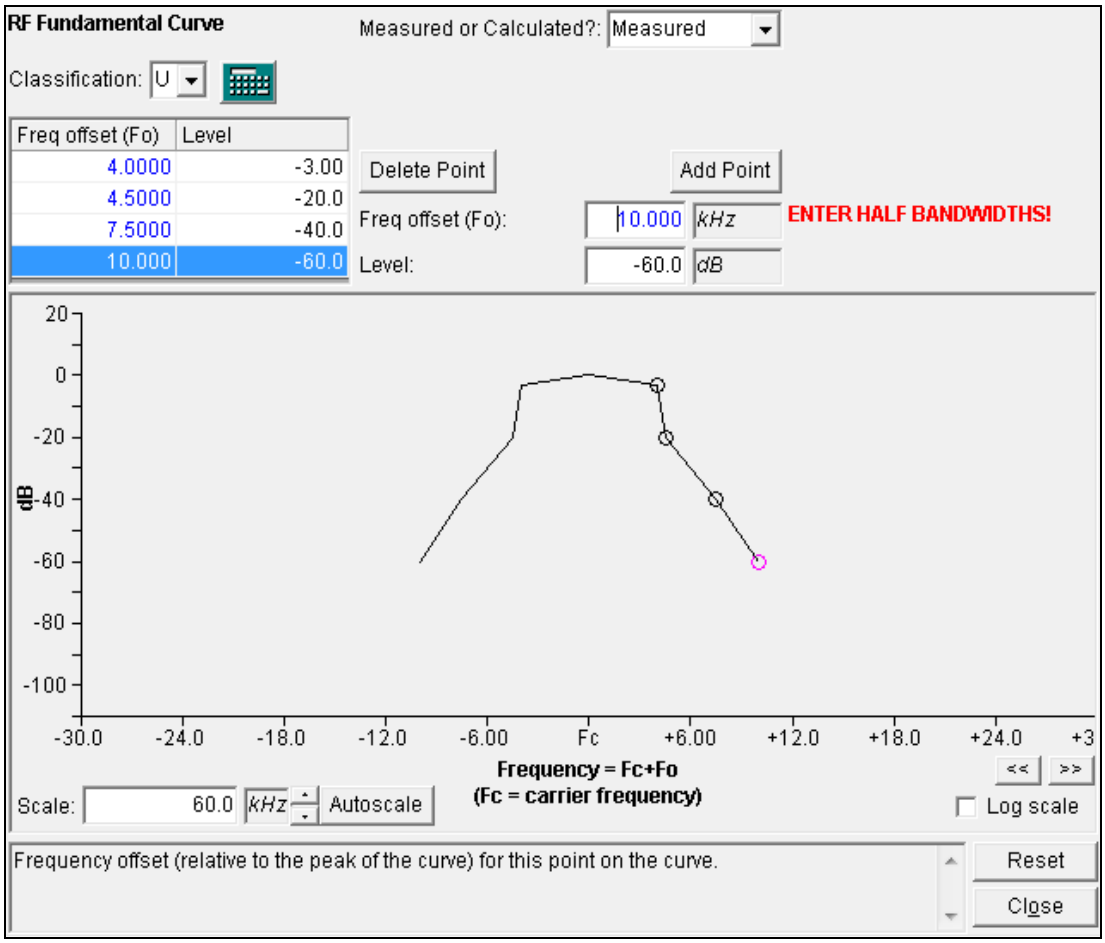
HINT: You may add additional rows to the point grid by clicking the **Add Point** button.

When the last point is entered, click on one of the rows in the point grid to complete the grid.

Step 23. Click the **Autoscale** button. The resulting **RF Fundamental Curve** should look like the following:

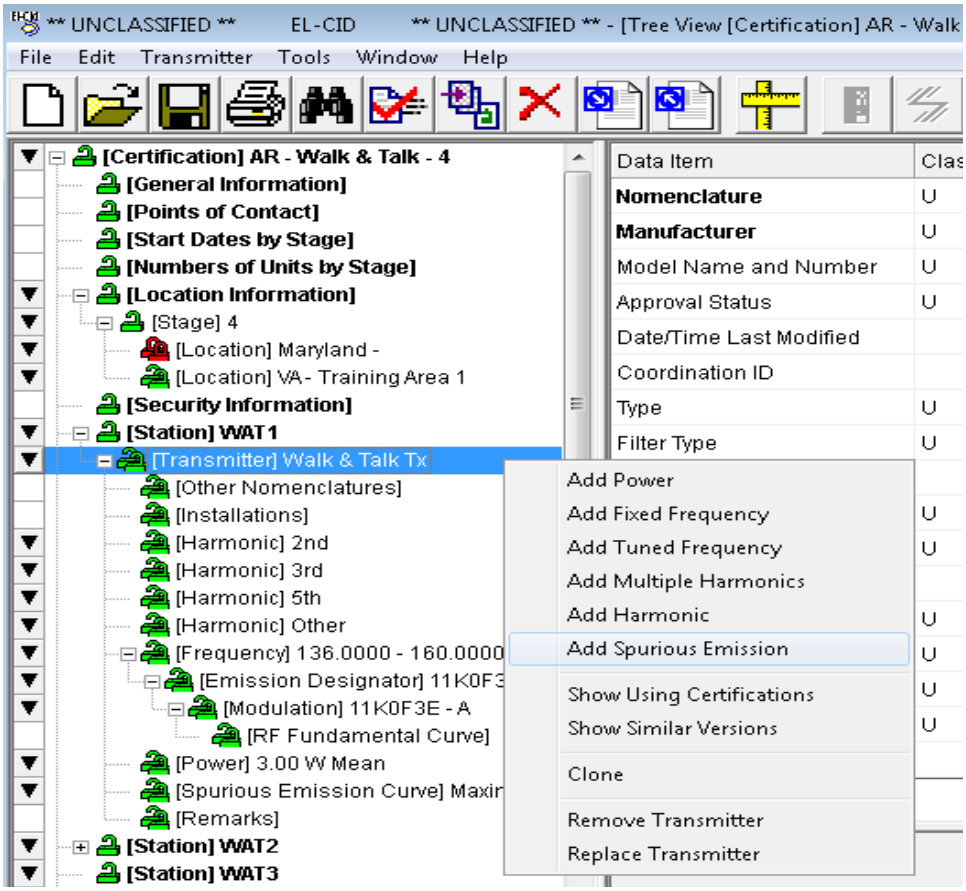


Step 24. Click the **Autoscale** button and make sure the **Log scale** checkbox is unchecked. The resulting **RF Fundamental Curve** should now look like the following:

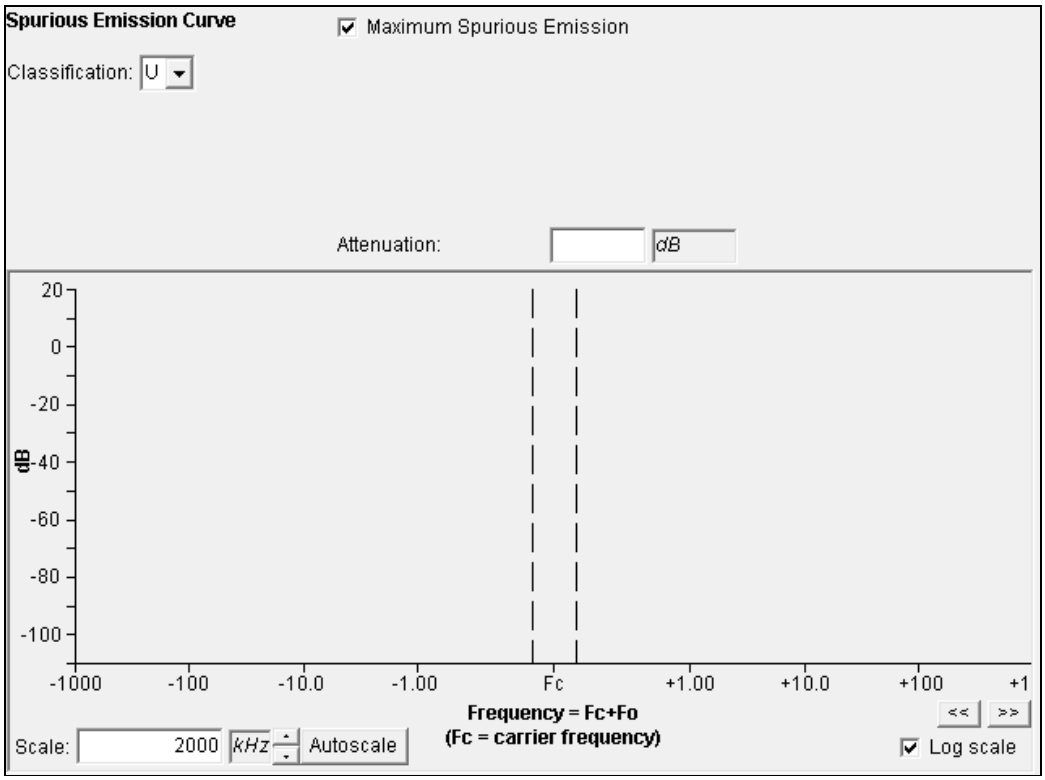


Step 25. **Save** the data.

Step 26. **Right-click** on **[Transmitter]Walk & Talk** and then select **Add Spurious Emission**.



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

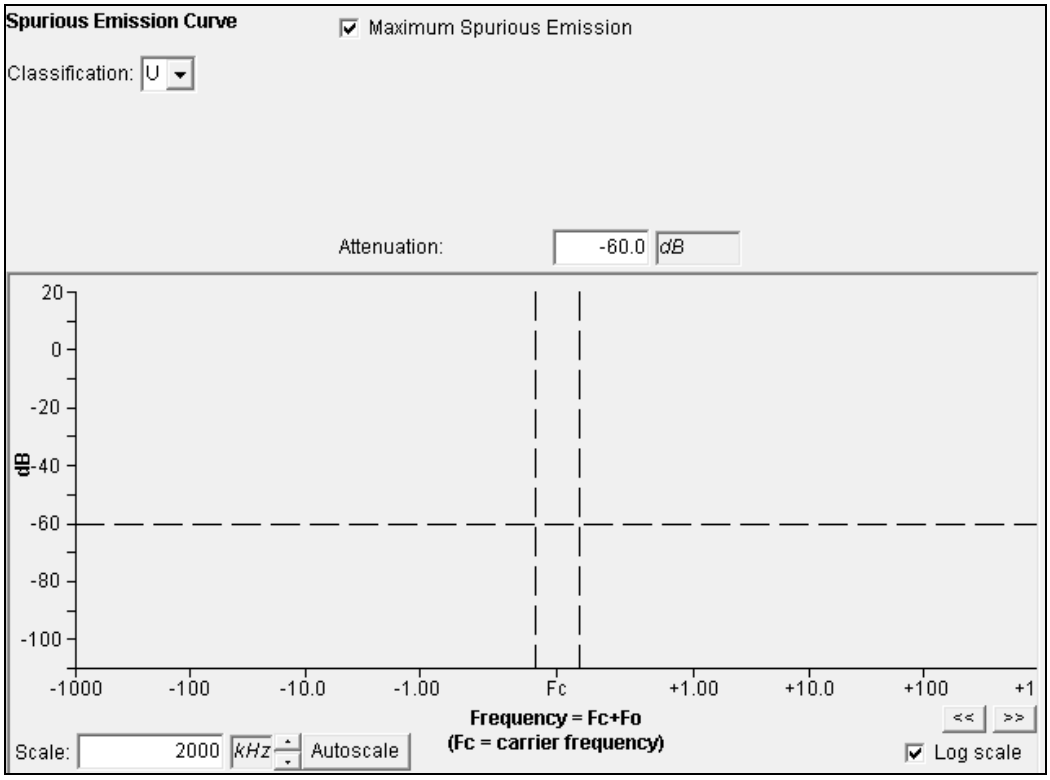


Step 27. **Check** the box ☑ Maximum Spurious Emission if not already checked.

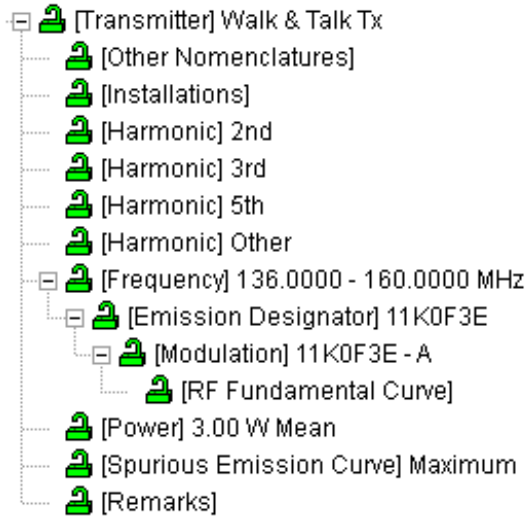
Step 28. **Enter** the following and then **Save**.

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.



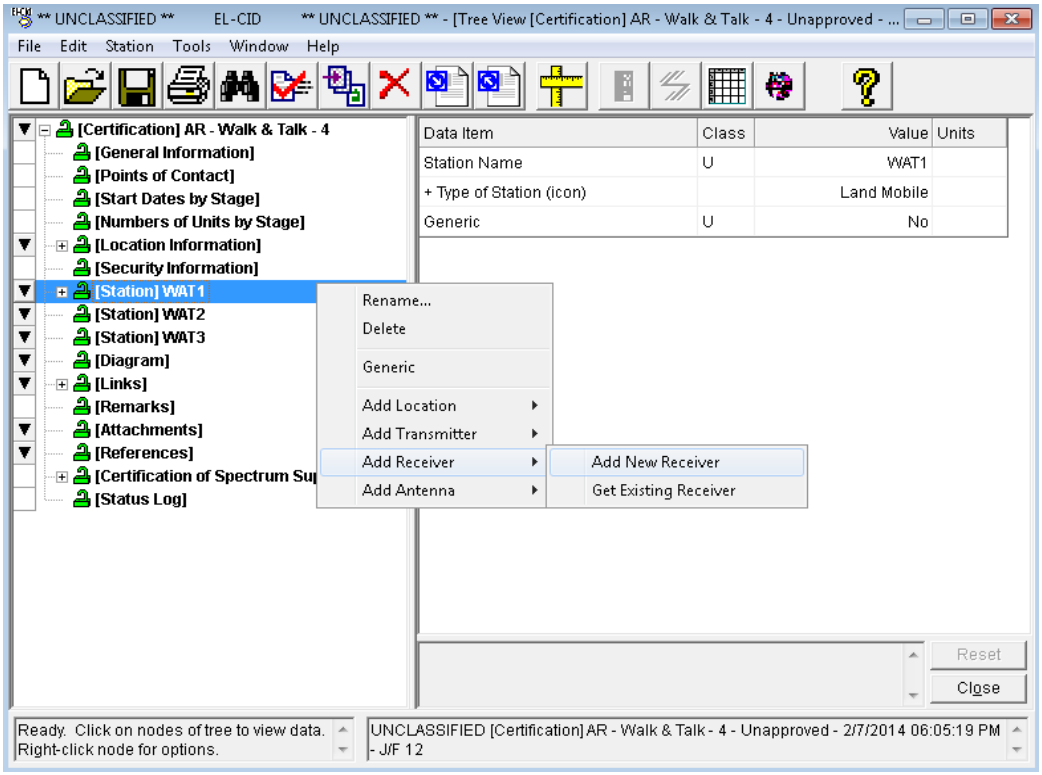
This completes the data entry for the Transmitter **Walk & Talk Tx**. The transmitter portion of Tree View looks like the following:



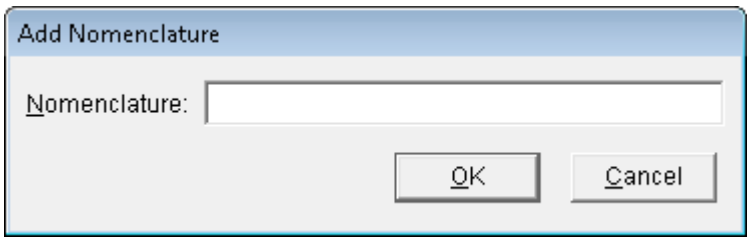
NOTE: **[Other Nomenclatures]**, **[Installations]**, and **[Remarks]** only appear when logged in as a DoD agency.

5.7.2 Entering Receiver Data

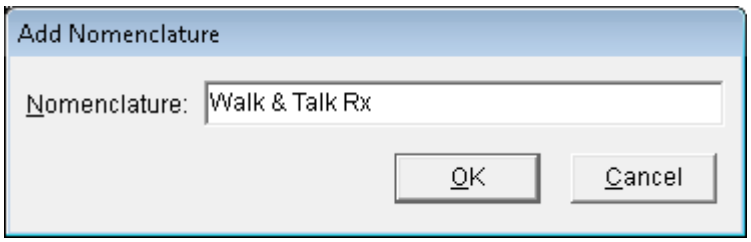
Step 1. **Right-click** on the **[Station] WAT1** node and select **Add Receiver | Add New Receiver**.



The **Add Nomenclature** window is displayed.



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



The **Receiver** data grid is displayed.

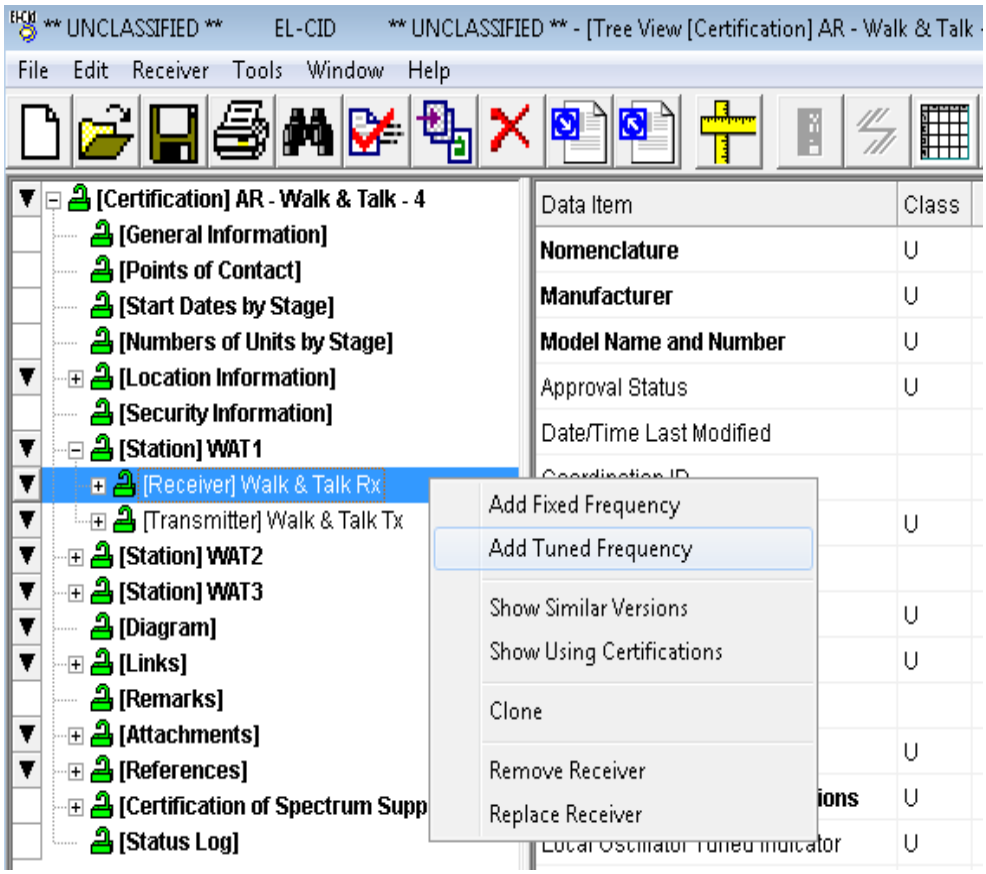
Data Item	Class	Value	Units
Nomenclature	U	Walk & Talk Rx	
Manufacturer	U		
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		2/12/2014 05:26:42 PM	local
Coordination ID		J/F 12	
Type	U		
Proxy Record?		No	
FCC Acceptance Number	U		
Frequency Stability	U		
Frequency Stability Units			
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
Direct Conversion/Homodyne		No	

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**.



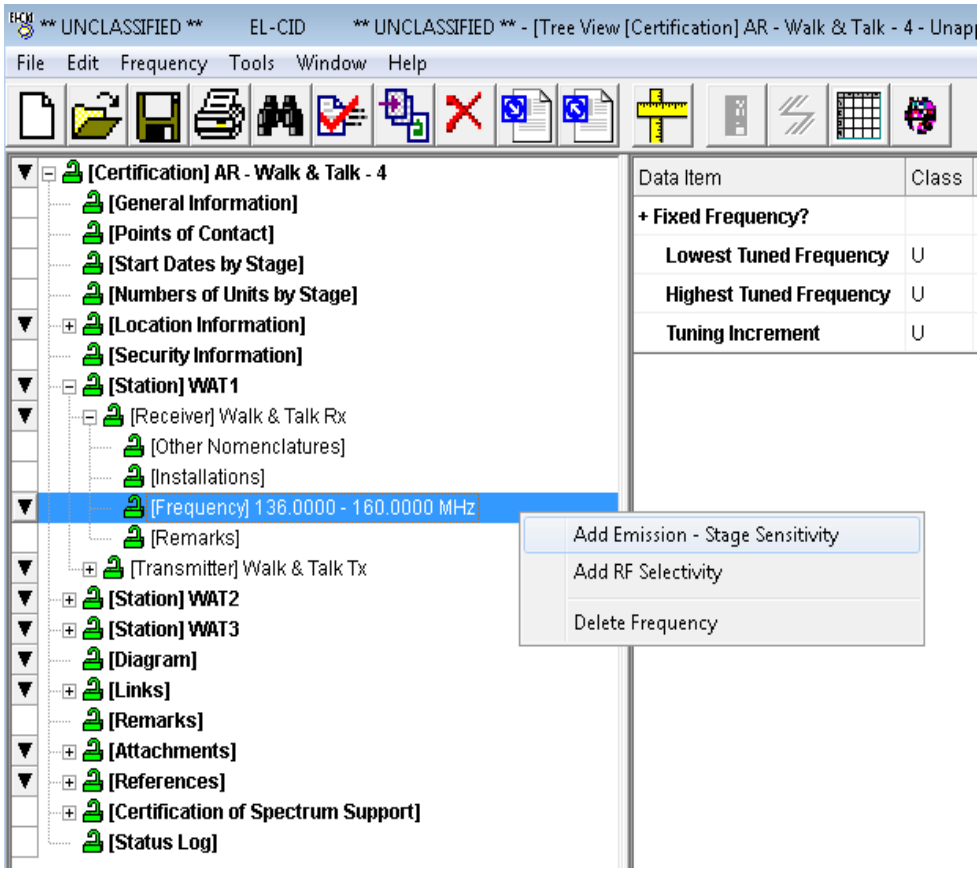
The **Tuned Frequency** data grid is displayed

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 then **Save**.

Field	Value
Lowest Tuned Frequency	**136 MHz**
Highest 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**.



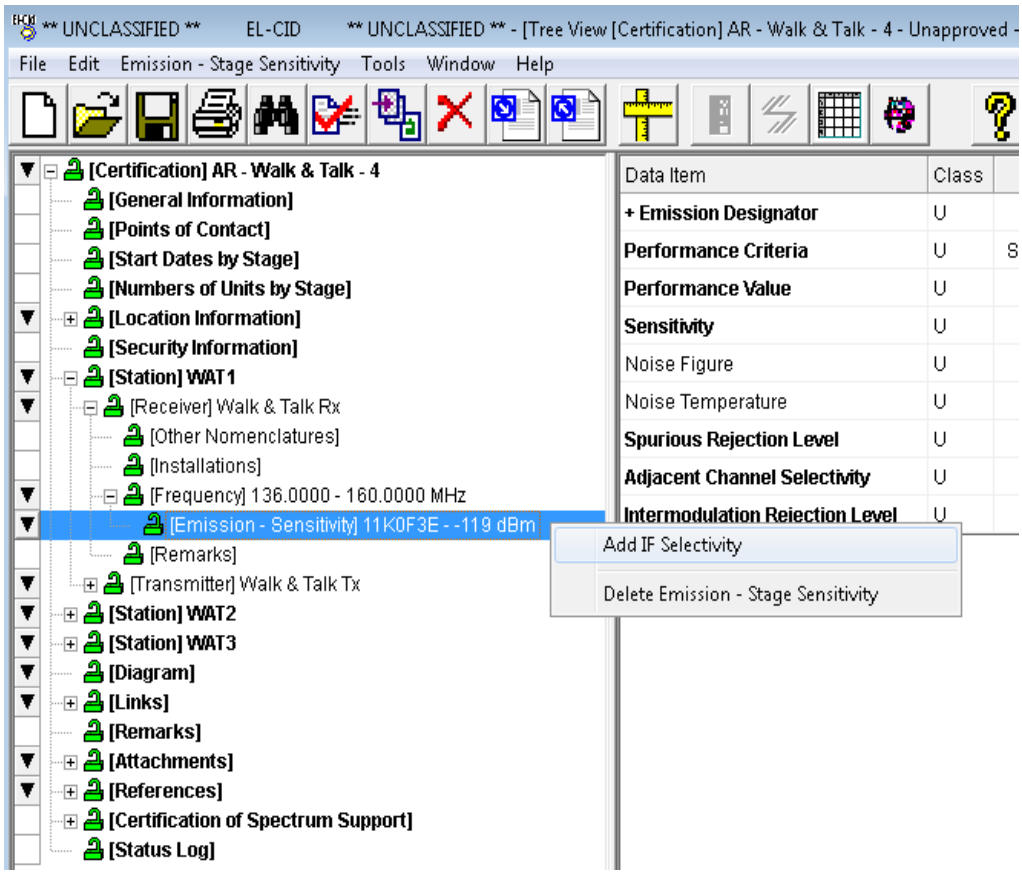
The **Emission – Stage Sensitivity** data grid is displayed.

Data Item	Class	Value	Units
+ Emission Designator	U		
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

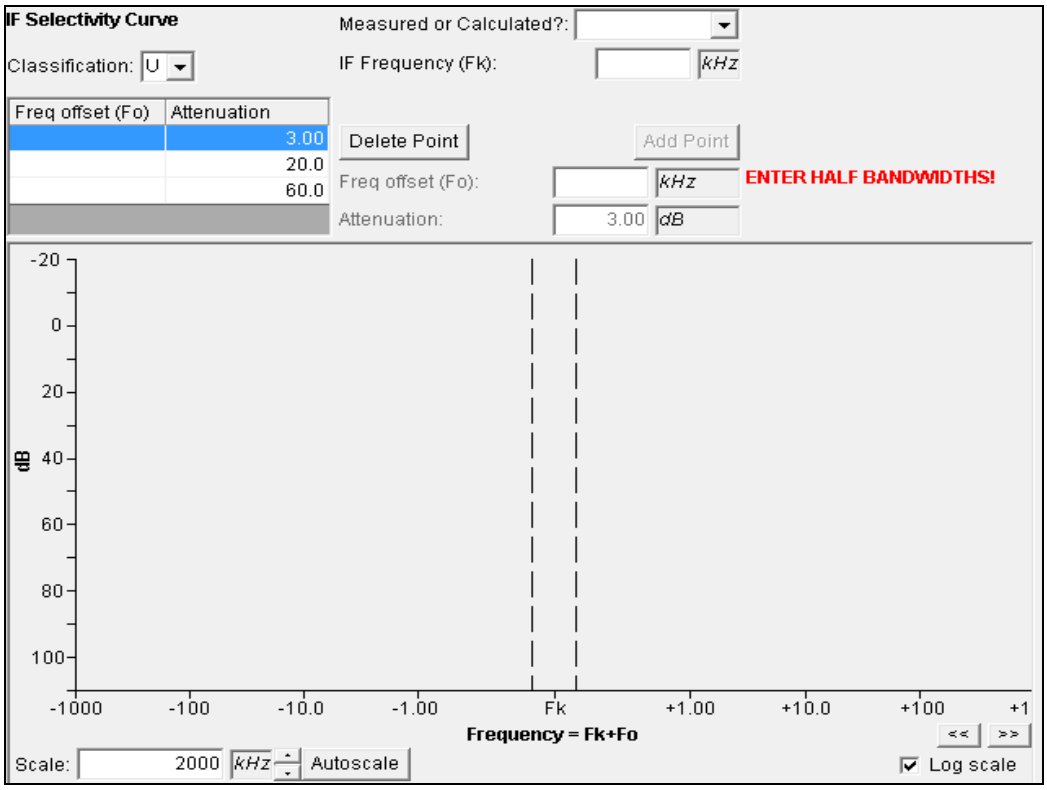
Step 7. **Enter** the following emission data and then **Save**.

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**

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



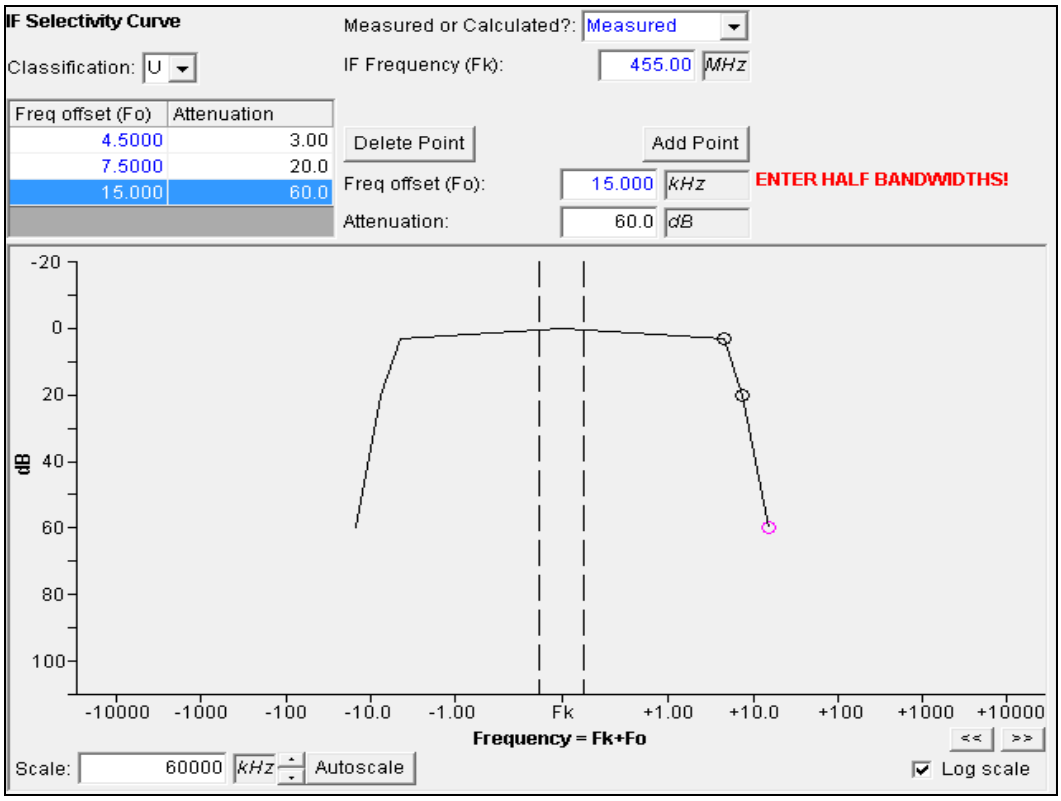
The **IF Selectivity Curve** window is displayed.



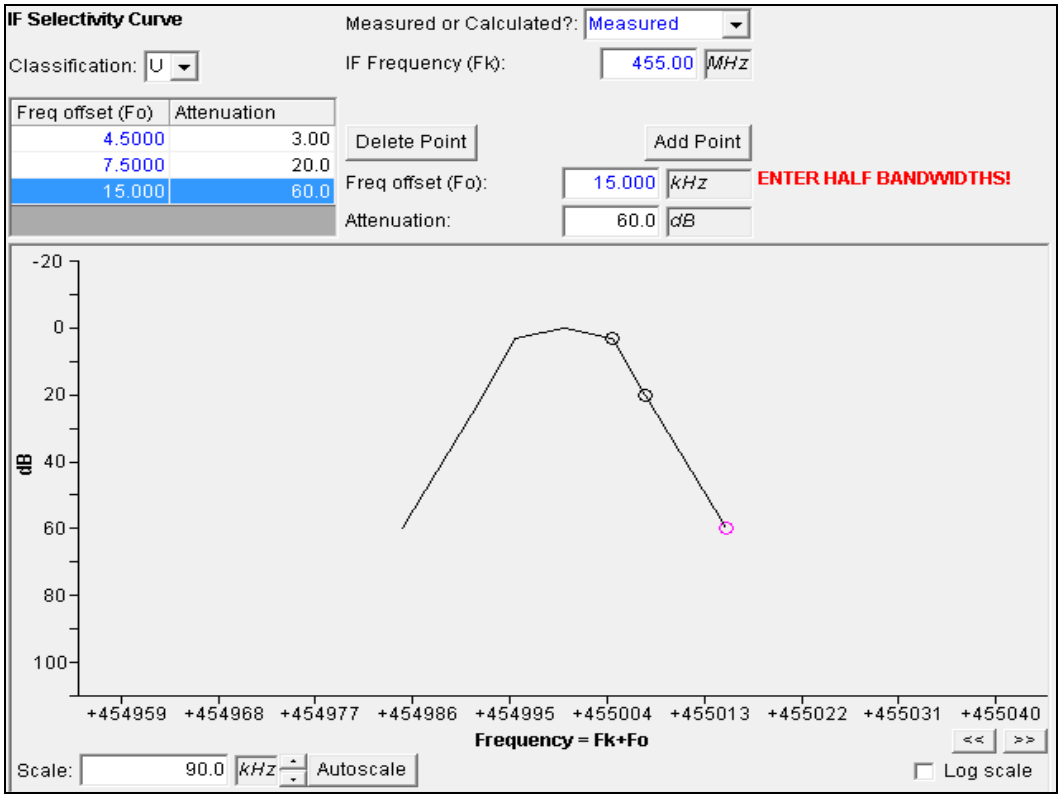
Step 9. **Enter** the following intermediate frequency data.

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**

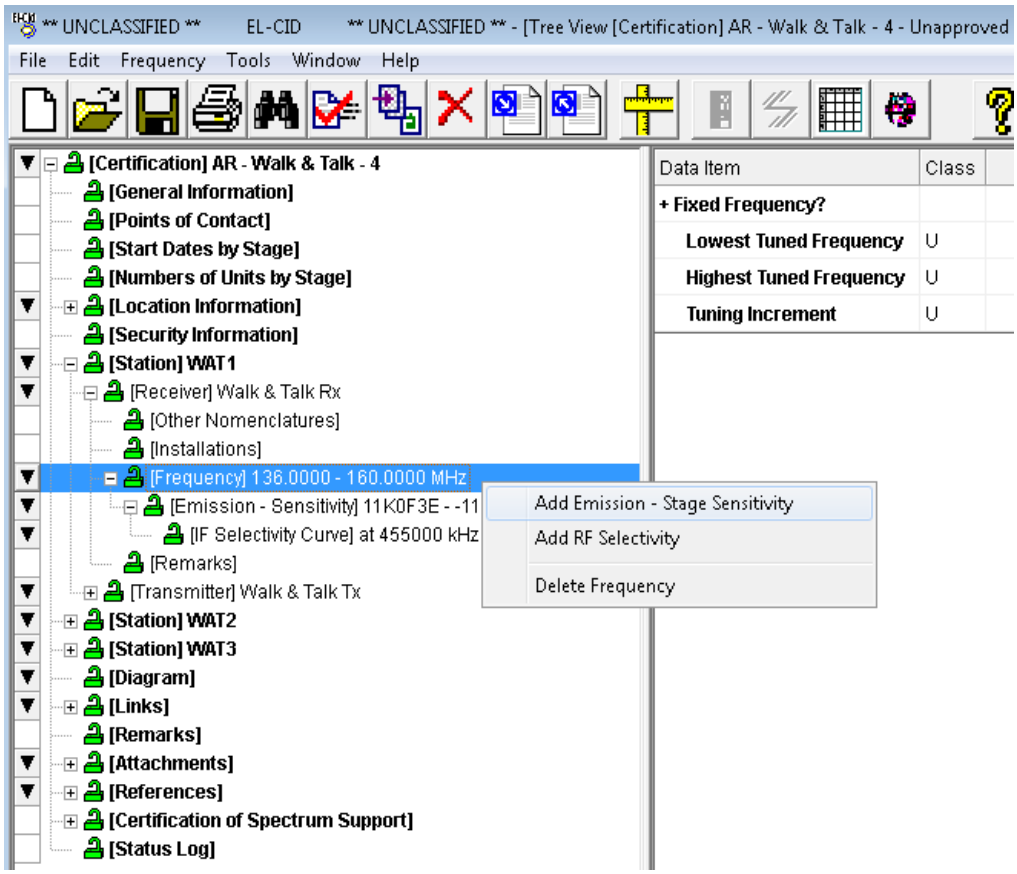
Step 10. Click the **Autoscale** button. The resulting **IF Selectivity Curve** should look like the following:



Step 11. Click the **Autoscale** button and make sure the **Log scale** checkbox is unchecked. The resulting **IF Selectivity Curve** should now look like the following:



Step 12. **Right-click** on the **[Frequency] 136 – 160 MHz** node and select **Add Emission – Stage Sensitivity** to enter a second set of data.

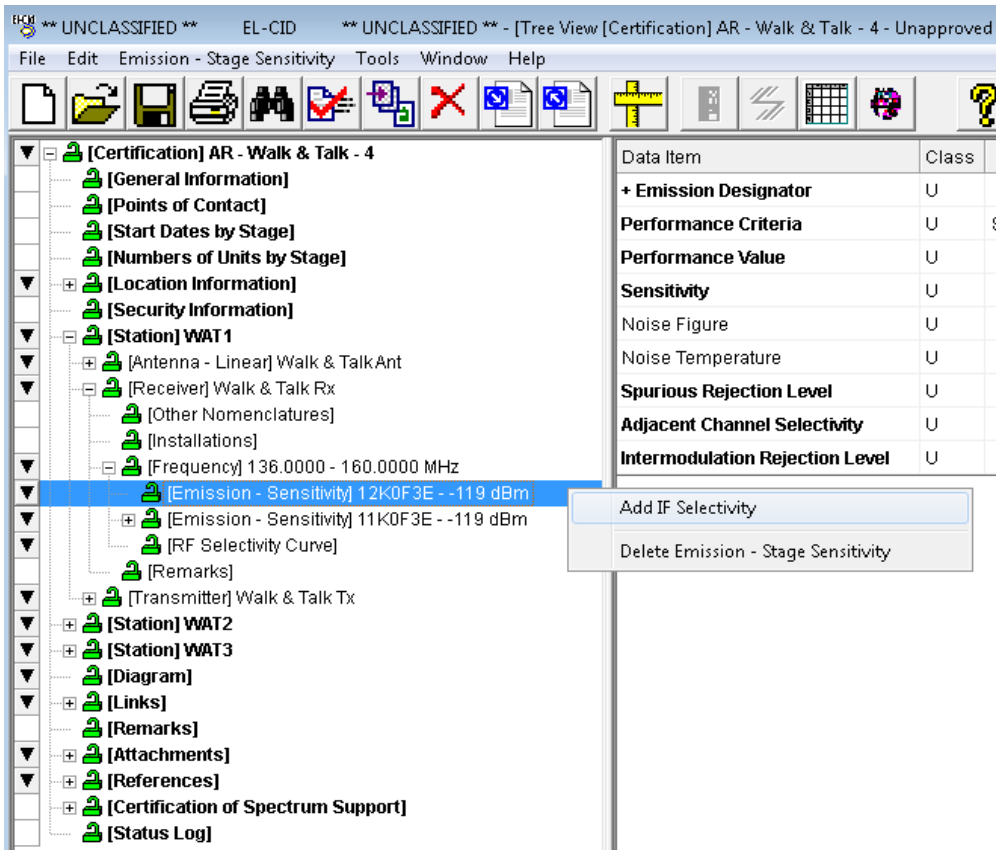


The **Emission – Stage Sensitivity** data grid is displayed.

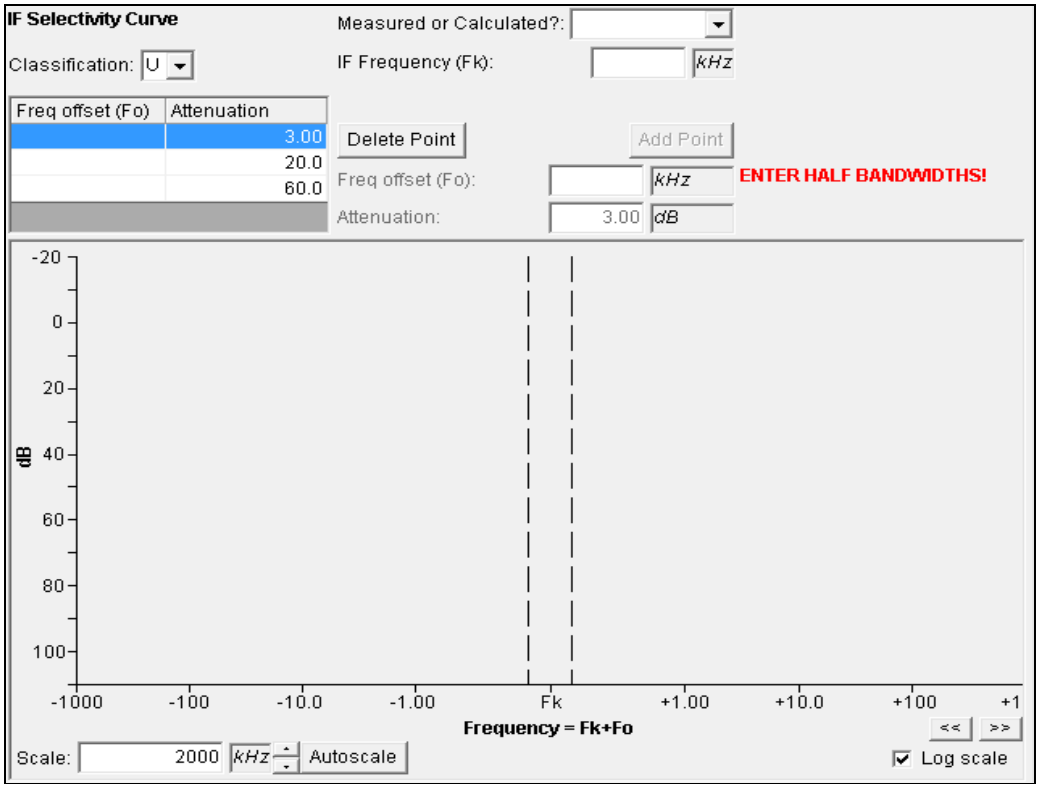
Step 13. **Enter** the following data for the second set of emission data and then **Save**.

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 14. **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.

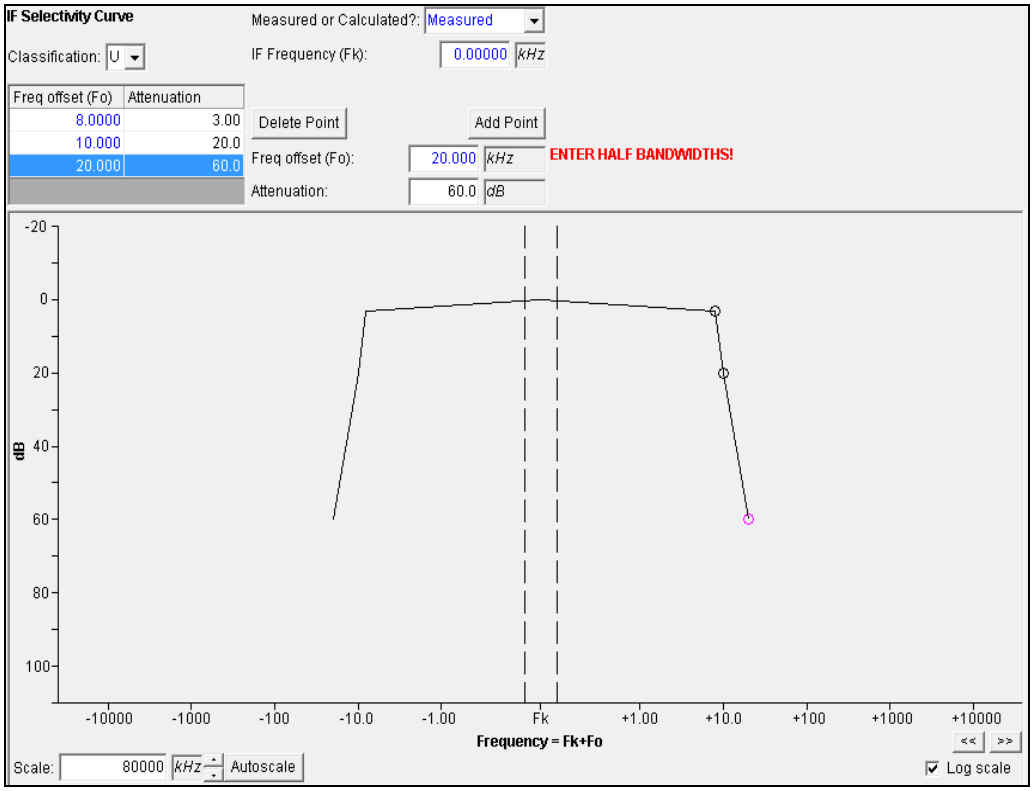


Step 15. **Enter** the following IF Selectivity data for the 12K0F3E emission.

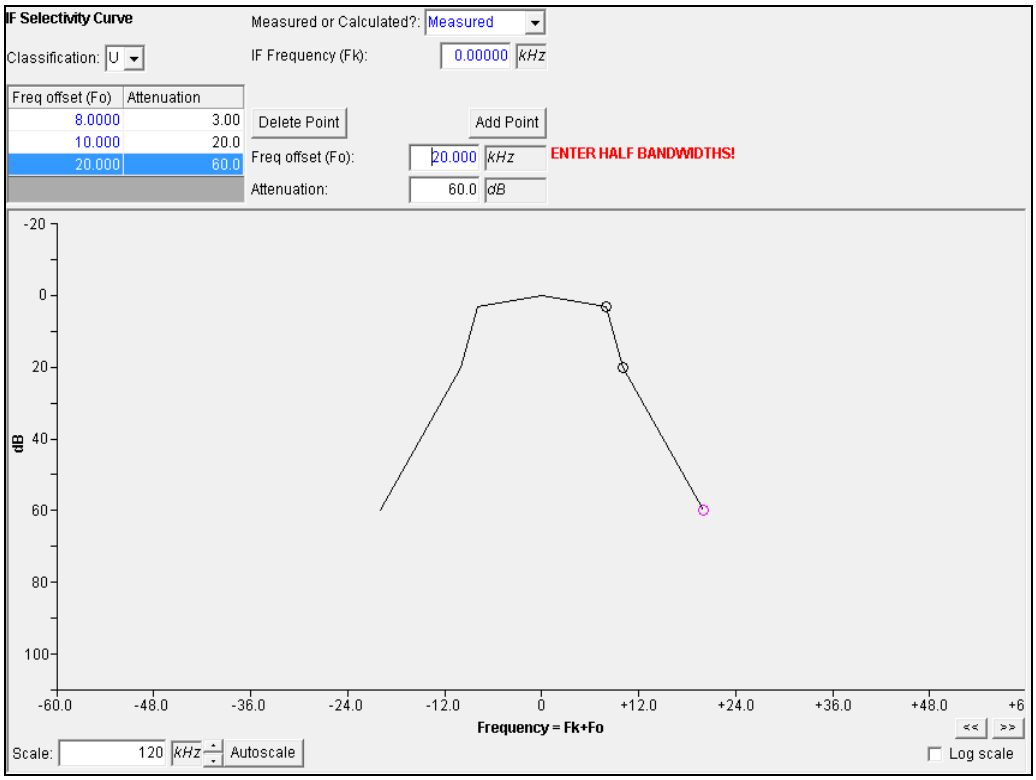
Field	Value
Measured or Calculated	**Measured**
IF Frequency	**0**
Freq Offset (1/2 Bandwidth) at 3 dB	**8 kHz**
Freq Offset (1/2 Bandwidth) at 20 dB	**10 kHz**
Freq Offset (1/2 Bandwidth) at 60 dB	**20 kHz**

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

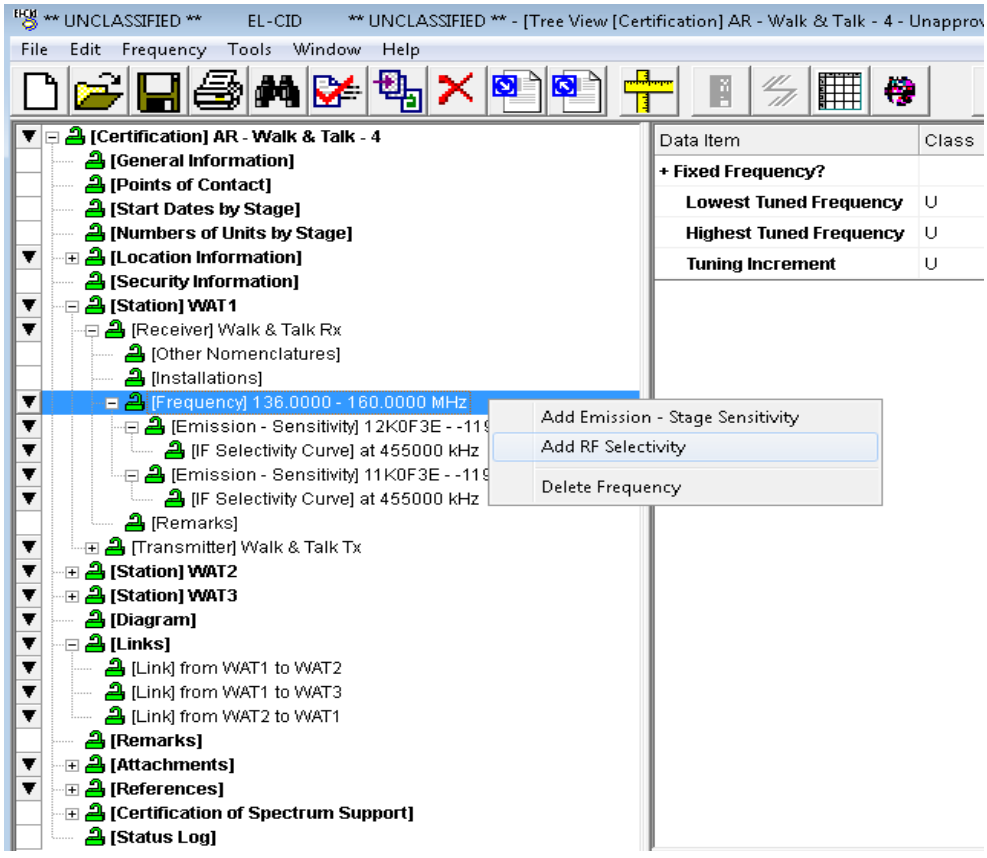
Step 16. Click the **Autoscale** button. The resulting **IF Selectivity Curve** should look like the following:



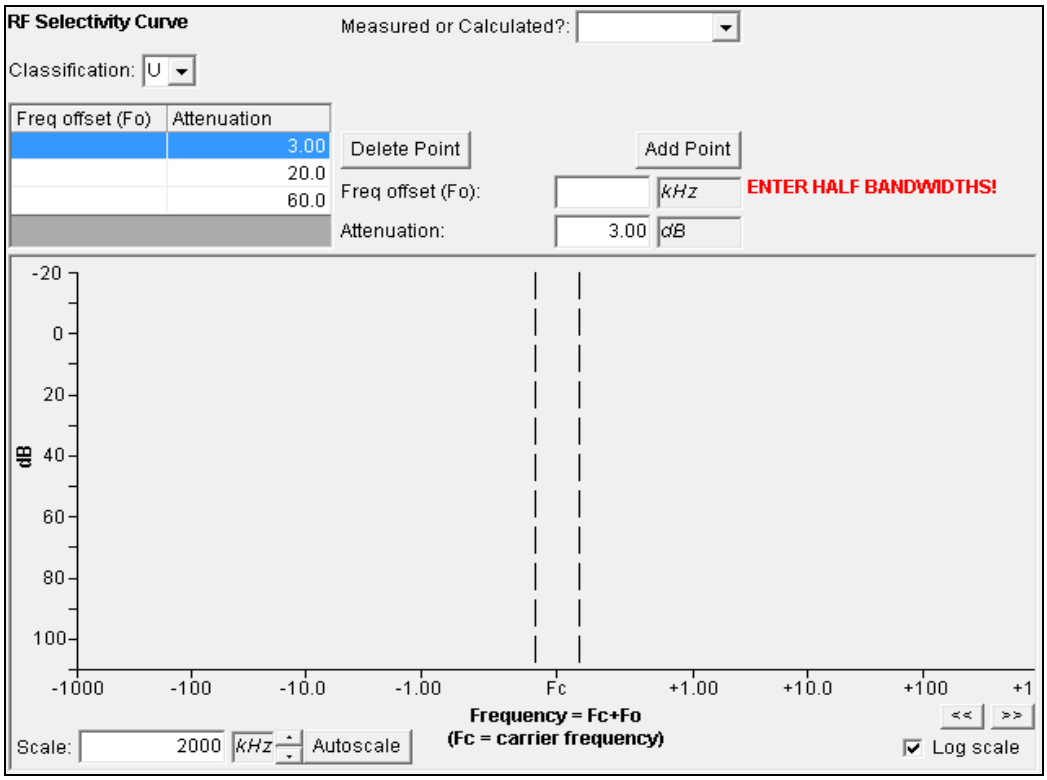
Step 17. Click the **Autoscale** button and make sure the **Log scale** checkbox is unchecked. The resulting **IF Selectivity Curve** should now look like the following:



Step 18. **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.

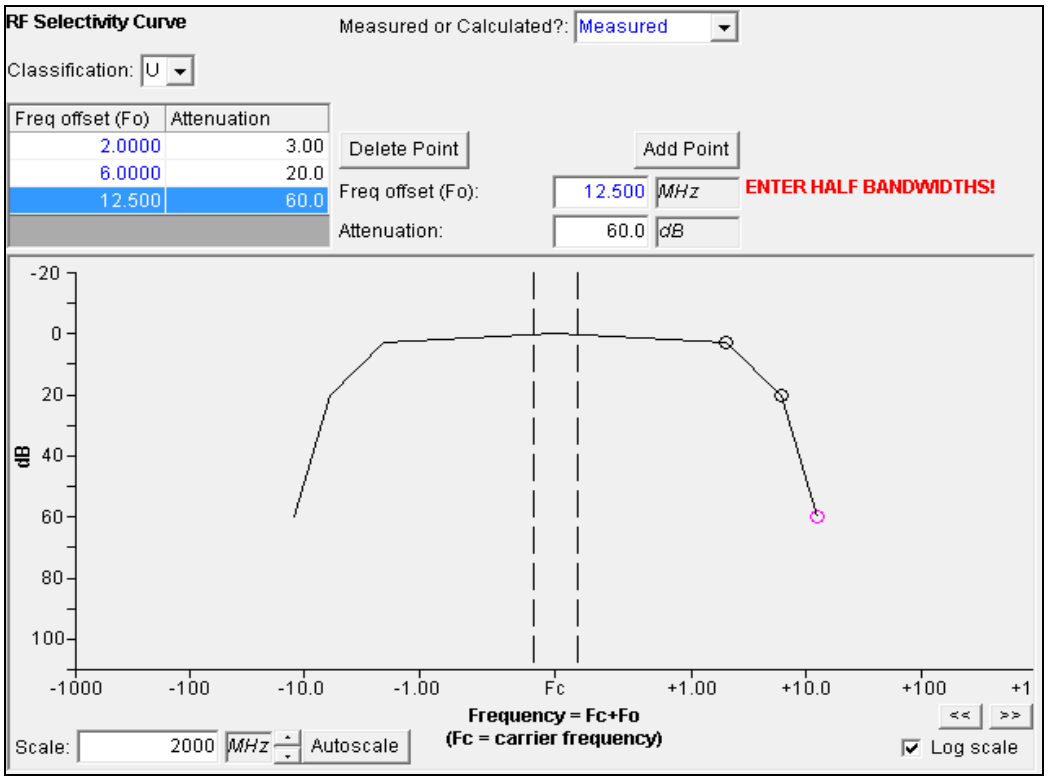


Step 19. **Enter** the following RF selectivity data.

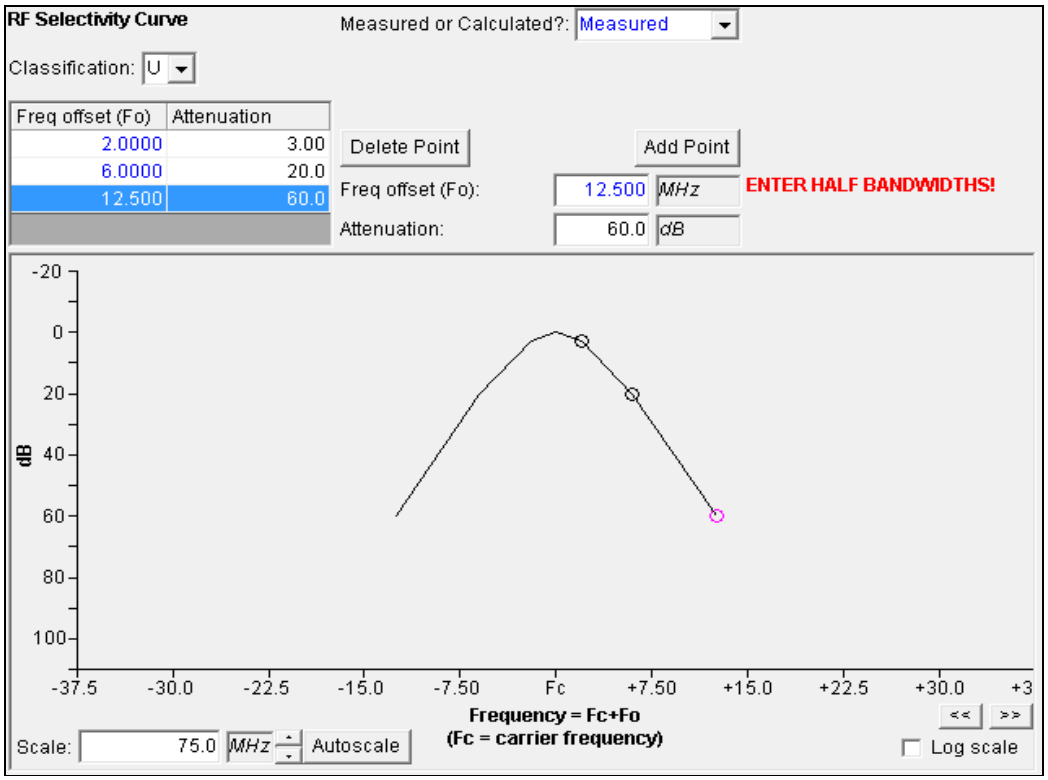
Field	Value
Measured or Calculated	**Measured**
Freq Offset (1/2 Bandwidth) at 3 dB	**2 MHz**
Freq Offset (1/2 Bandwidth) at 20 dB	**6 MHz**
Freq Offset (1/2 Bandwidth) at 60 dB	**12.5 MHz**

Notice that the units are in megahertz. When you choose megahertz (MHz) for the frequency offset units, the scale of the x-axis on the graph automatically changes to MHz.

Step 20. Click the **Autoscale** button. The resulting **RF Selectivity Curve** should look like the following:

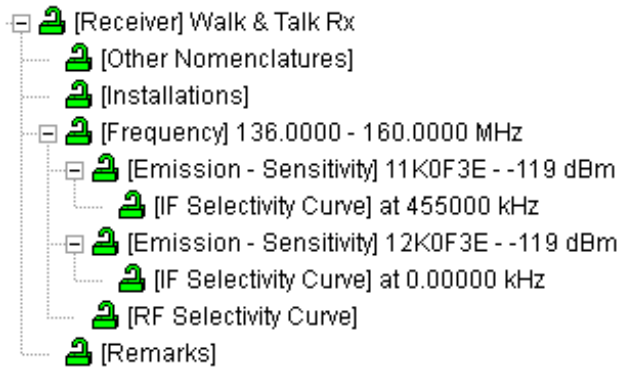


Step 21. Click the **Autoscale** button and make sure the **Log scale** checkbox is unchecked. The resulting **RF Selectivity Curve** should now look like the following:



Step 22. **Save** the data.

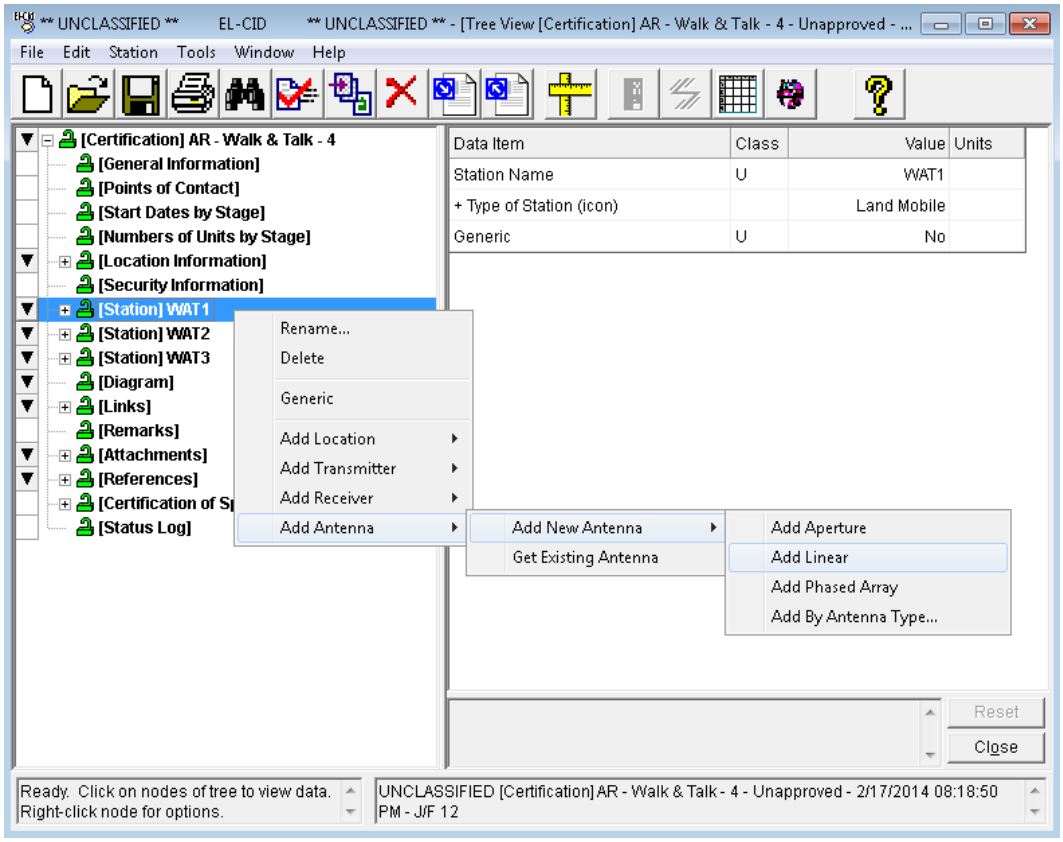
This completes the data entry for the Receiver **Walk & Talk Rx**. The receiver portion of the Tree View looks like the following



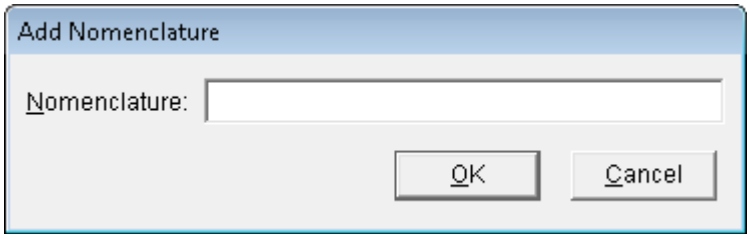
NOTE: The **[Other Nomenclatures]**, **[Installations]**, and **[Remarks]** nodes only appear when logged in as a DoD agency.

5.7.3 Entering Antenna Data

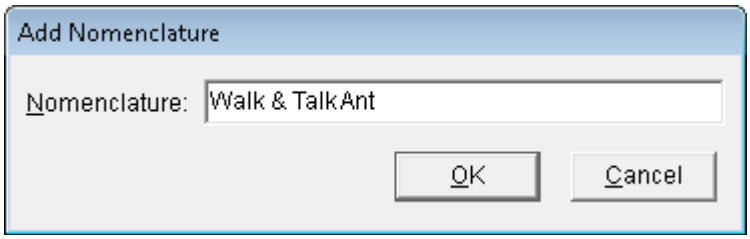
Step 1. **Right-click** on the **[Station] WAT1** node and select **Add Antenna | Add New Antenna | Add Linear**.



The **Add Nomenclature** window is displayed.



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



The **Antenna** data grid is displayed.

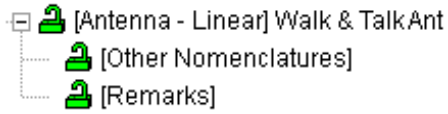
Data Item	Class	Value	Units
Antenna Category		Linear	
Nomenclature	U	Walk & Talk Ant	
Manufacturer	U		
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		2/12/2014 06:48:54 PM	local
Coordination ID		J/F 12	
Proxy Record?		No	
Antenna Type	U		
Antenna Horizontal Beamwidth	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.

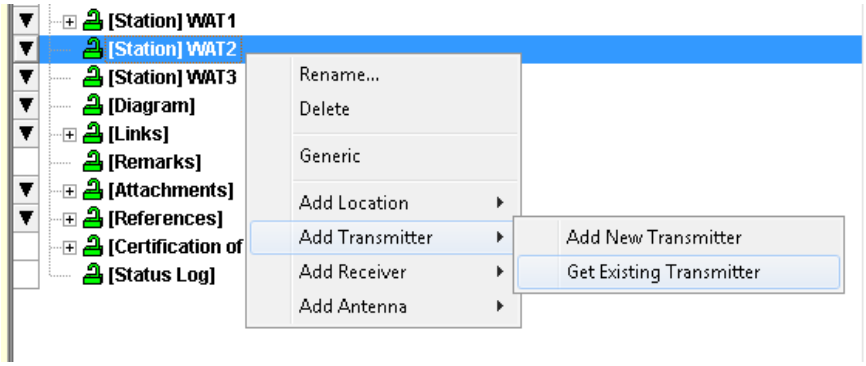
This completes the data entry for the antenna **Walk & Talk Ant**. The antenna portion of the Tree View looks like the following:



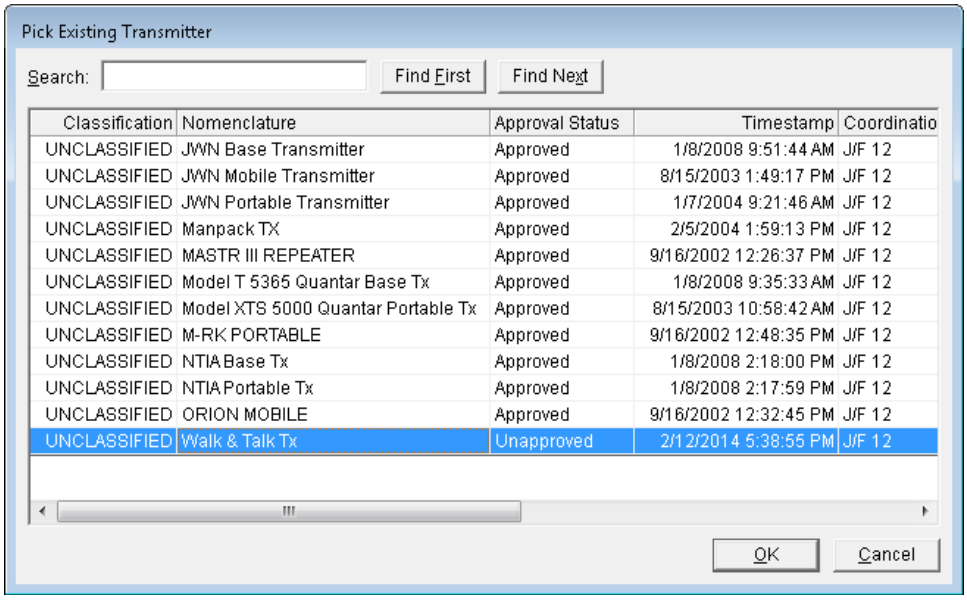
NOTE: The **[Other Nomenclatures]** and **[Remarks]** nodes only appear when logged in as a DoD agency.

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**.

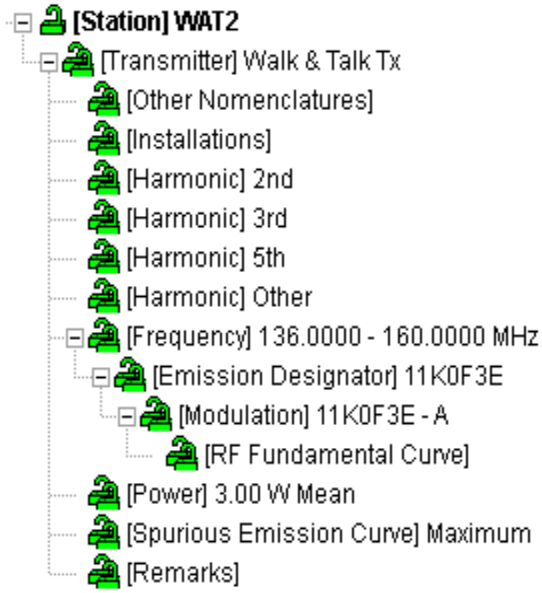


The **Pick Existing Transmitter** window is displayed.



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

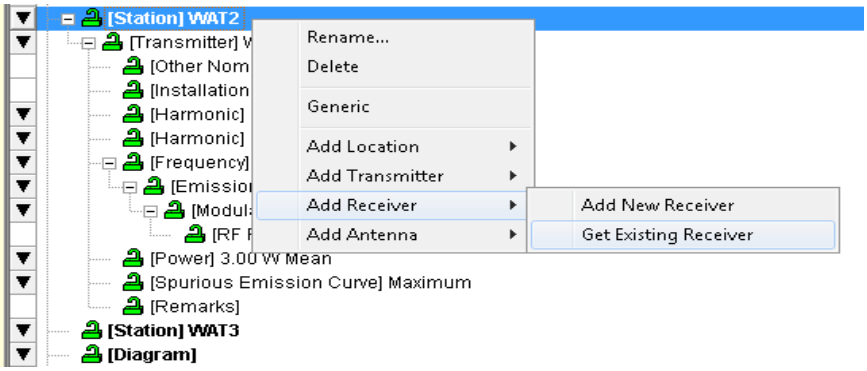
Step 3. Open all the nodes for the **WAT2** station by clicking **the +** beside each node. You will see that all of the transmitter data was inserted for the station. The data is identical to the data for the **Walk & Talk Tx** under Station **WAT1** because it is a single Transmitter record that is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



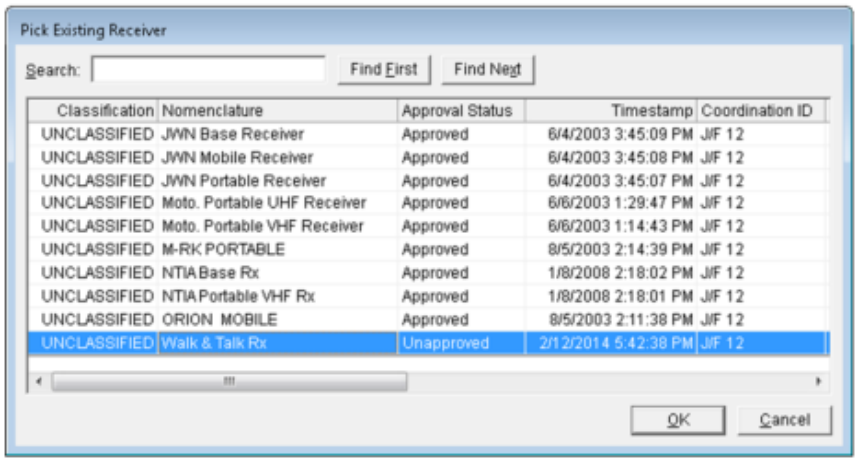
HINT: You may also expand a node and all its child nodes by holding down the Shift key and clicking on the node or by holding down the Shift key and pressing the right arrow key. Holding down the Shift key and pressing the left arrow key will collapse the node. Using the Ctrl key in combination with 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**.

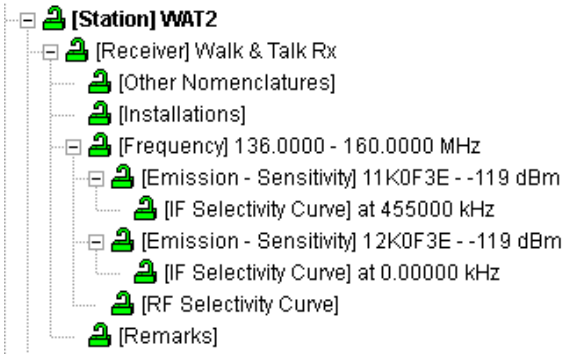


The **Pick Existing Receiver** window is displayed.



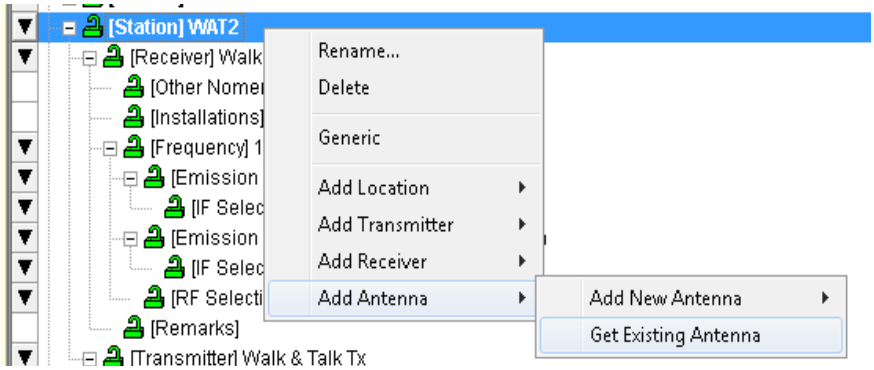
Step 2. Highlight **Walk & Talk Rx** and then click **OK** to add the **Walk & Talk Rx** to **Station WAT2**.

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**.

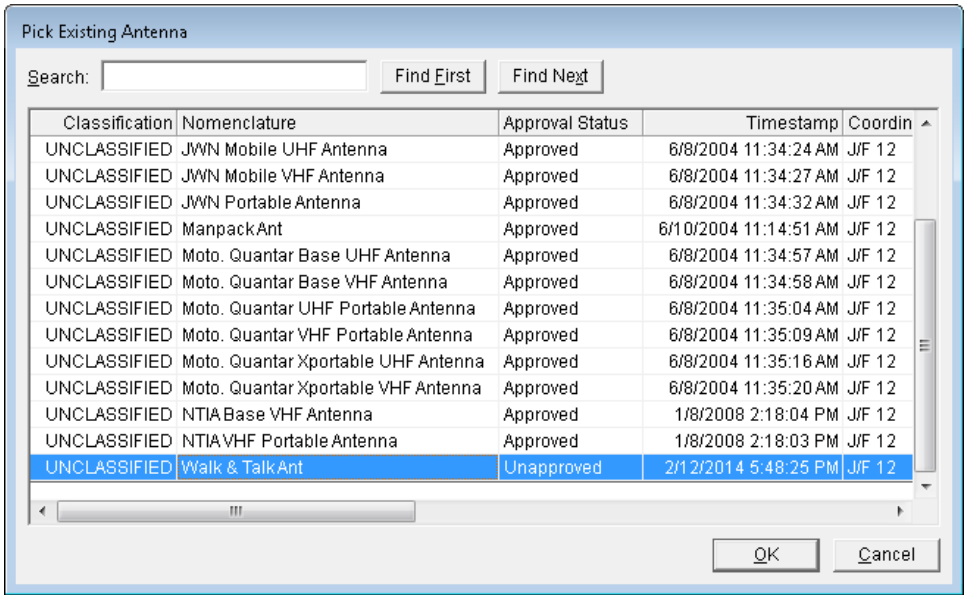


5.7.6 Getting Existing Antenna Data

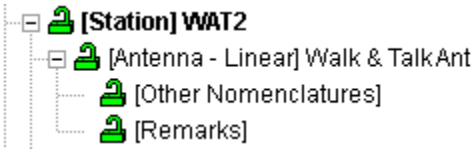
Step 1. We are going to add an antenna to station WAT2 by selecting an existing antenna from the list of antennas that are already in the database. **Right-click** on **[Station] WAT2** and select **Add Antenna | Get Existing Antenna**.



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

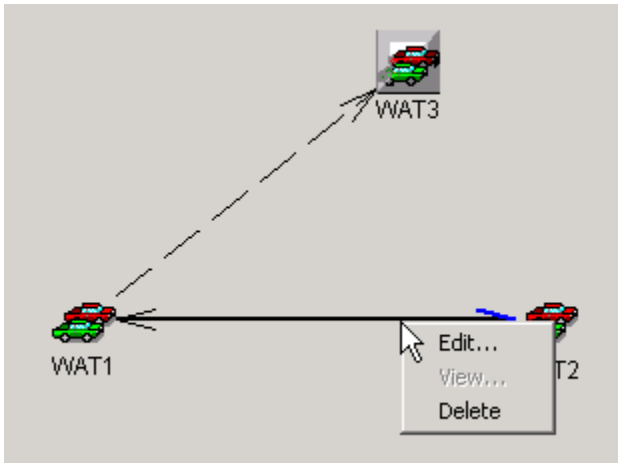
The transmitting link between stations must be defined. The **Link Information** window is used to select the combinations of transmitters, transmitting antennas, receivers, and receiving antennas to be used in a link between stations. It is also used to select the frequencies, powers, and emissions 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.

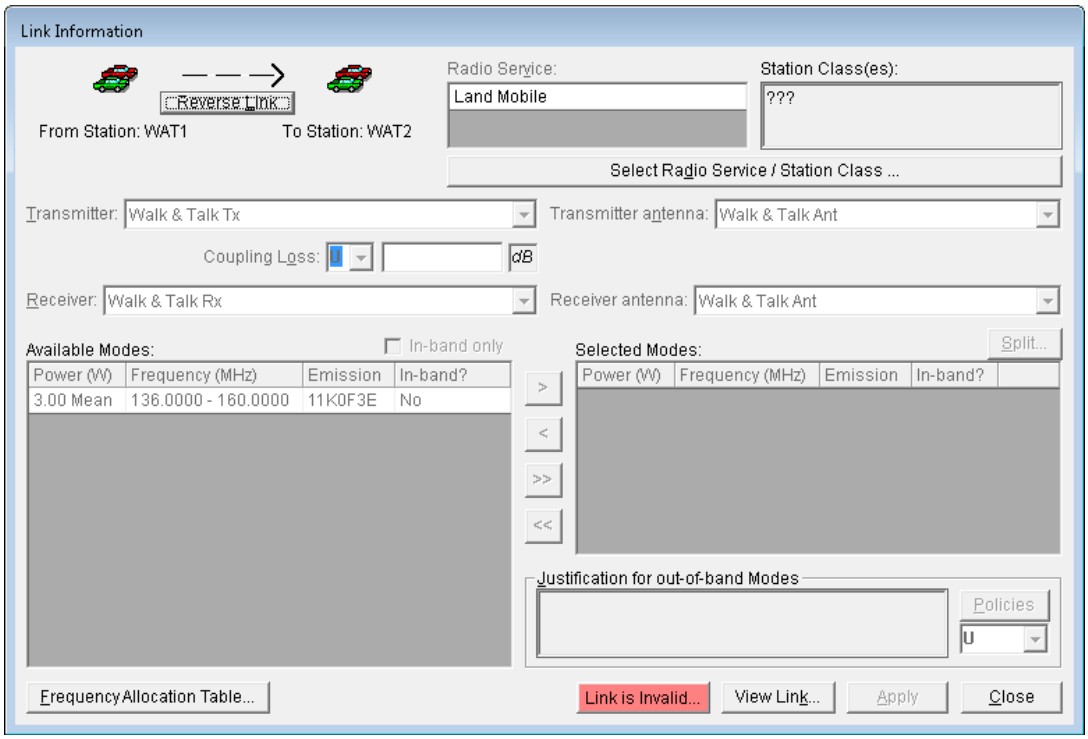
There are two ways to display the **Link Information** window.

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 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.

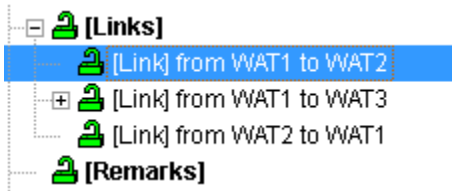
The **Link Information** window will be displayed.



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

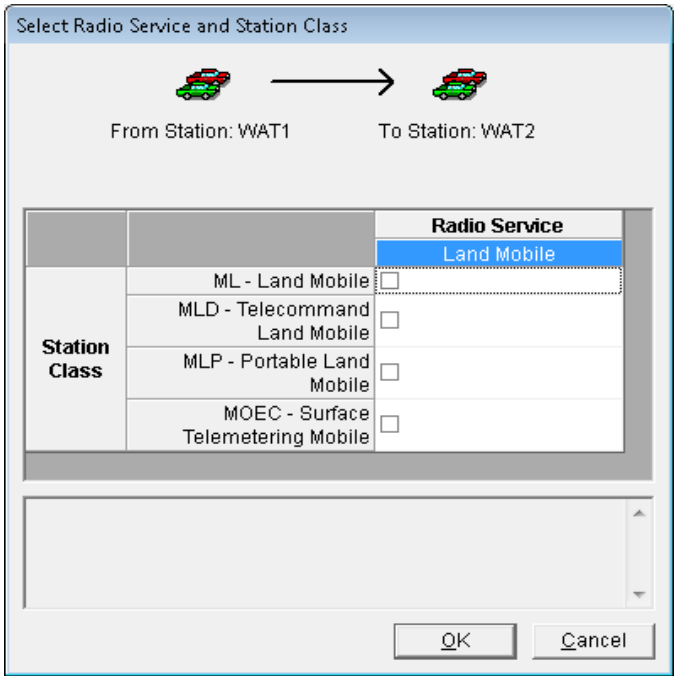
Step 3. Click **Close** to close the **Link Information** window.

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.



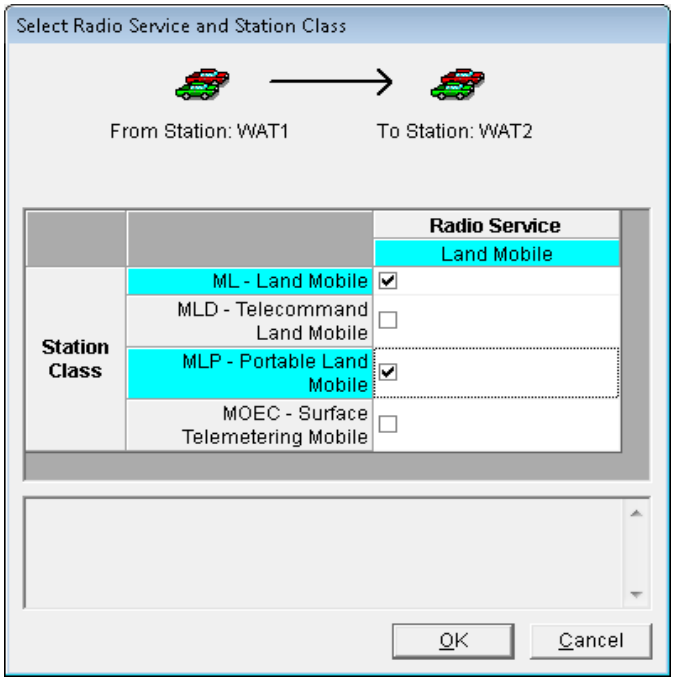
Step 5. Click the **Select Radio Service/Station Class** button.

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

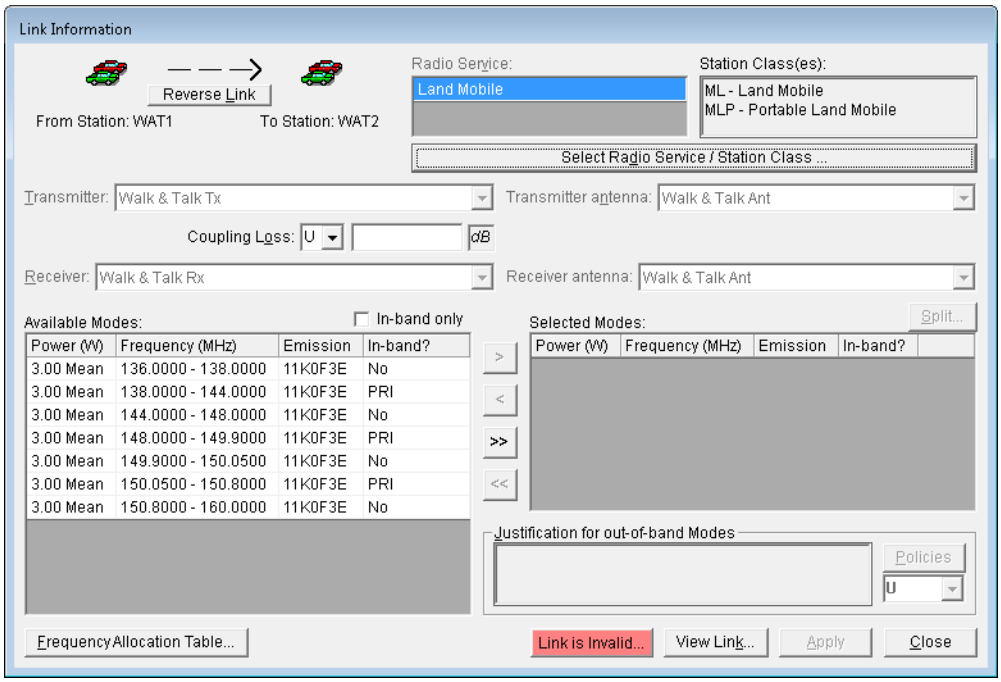


HINT: As you hover the mouse cursor over the Station Class or Radio Service, a description of each appears in the box below.

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

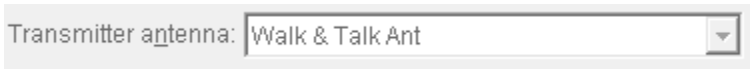


The **Link Information** window reappears with the Radio Service and Station Classes shown.



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.

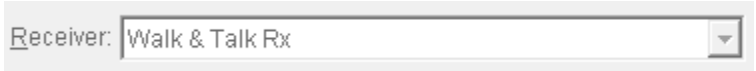
If there is more than one transmitter antenna, choose a specific Transmitting Antenna using the button. Currently, we have identified only one Transmitting Antenna for Station **WAT1**.



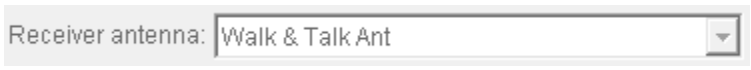
Enter the transmitter to transmitter antenna coupling loss (e.g., cable insertion loss). The security classification is entered using the button. Since we haven't entered this data before we could enter it now if we had the information.

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

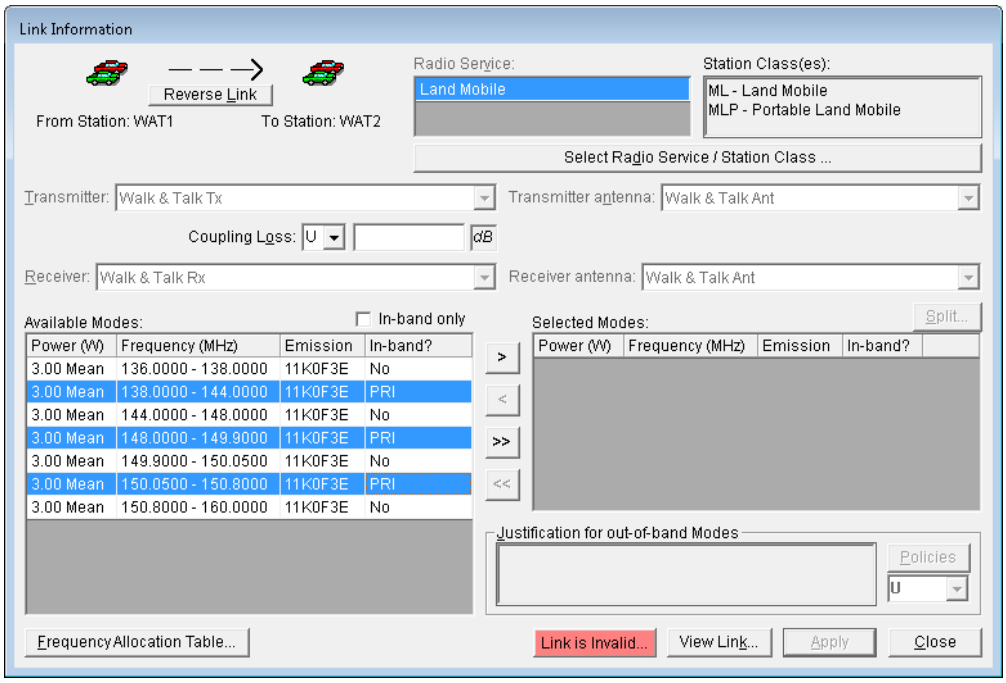
If there is more than one receiver, choose a specific Receiver using the button. Currently, we have identified only one receiver for Station **WAT2**.



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.

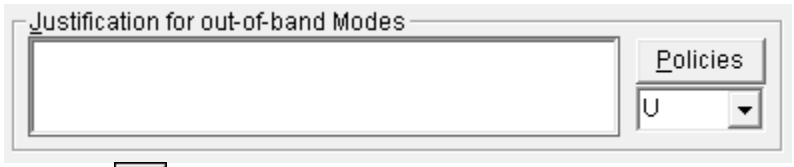


HINT: You can also put a check in the 

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

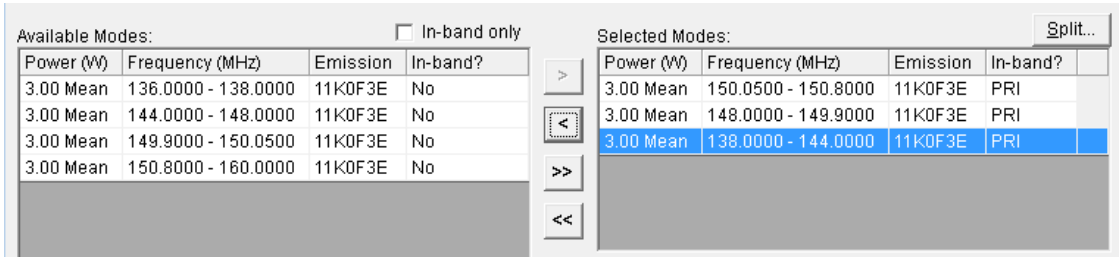
button or individually by using the 

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

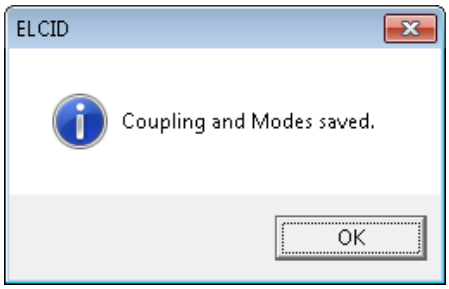


Step 8. Click the 

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



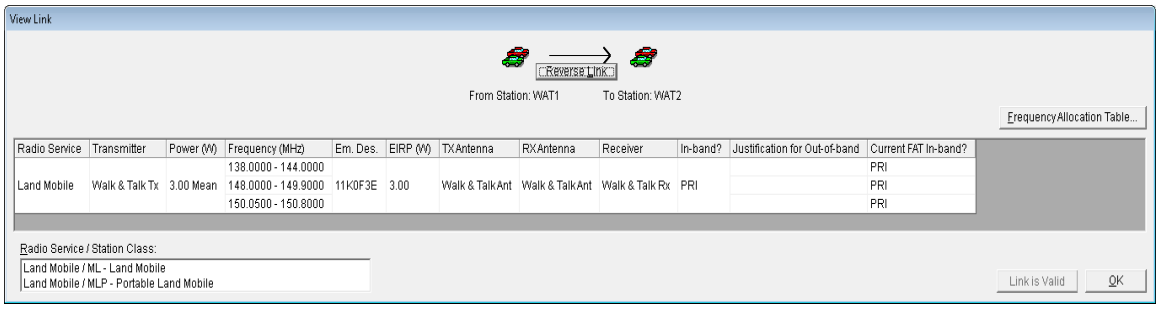
Step 9. Click **Apply** to save your choices. A notification window is displayed.



Step 10. Click **OK**.

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

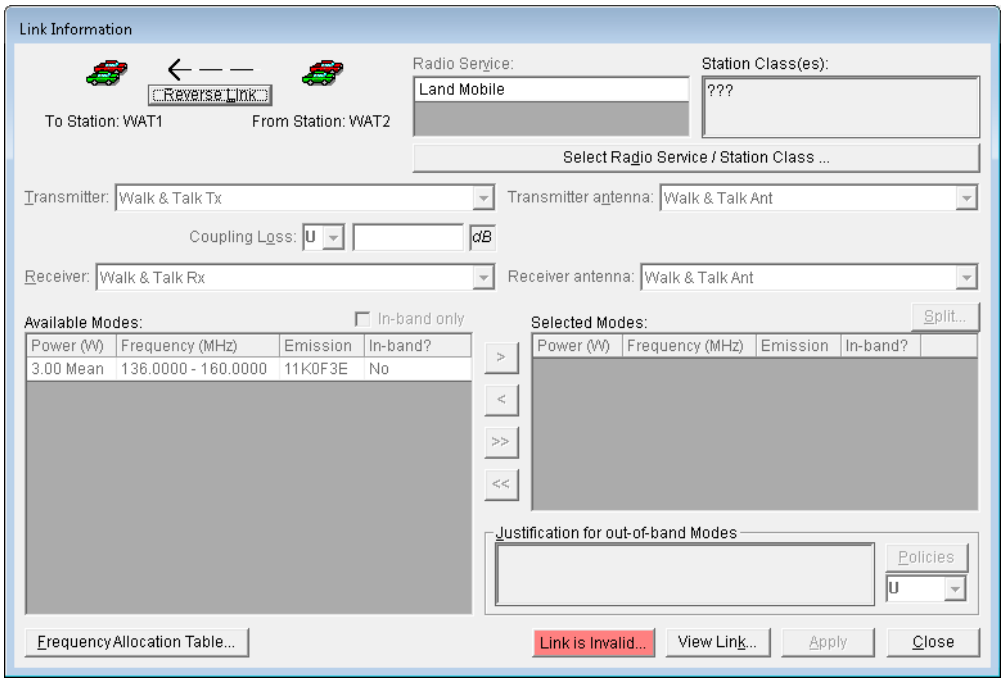
Step 11. Click the **View Link** button to see the link information that you have saved.



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.

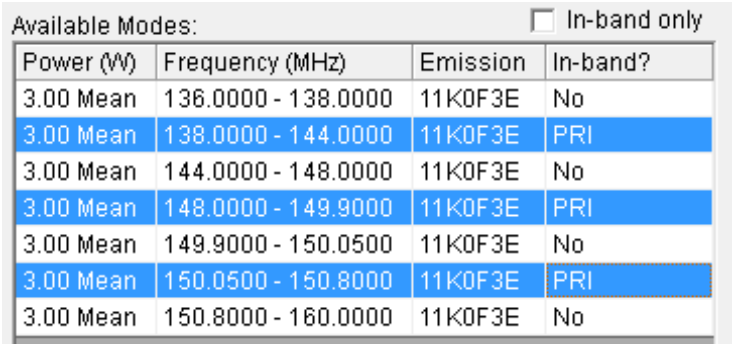
Step 13. Click the **Reverse Link** button  to display the reverse link (i.e., Station **WAT2** to Station **WAT1**). The reverse link information will be displayed.



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.

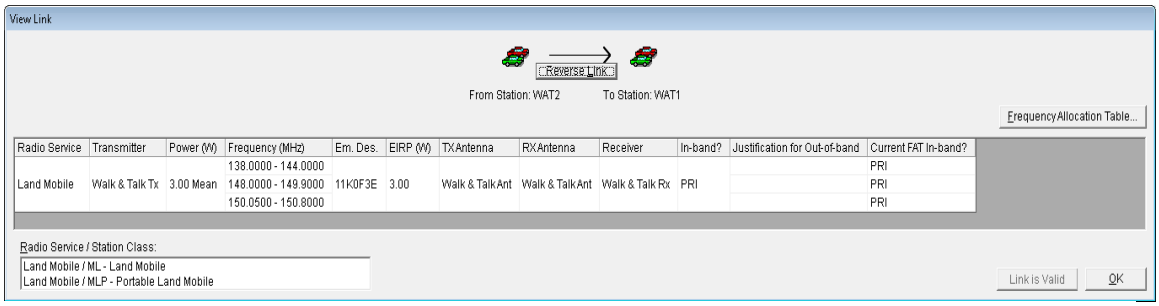


Step 17. Click the 

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.

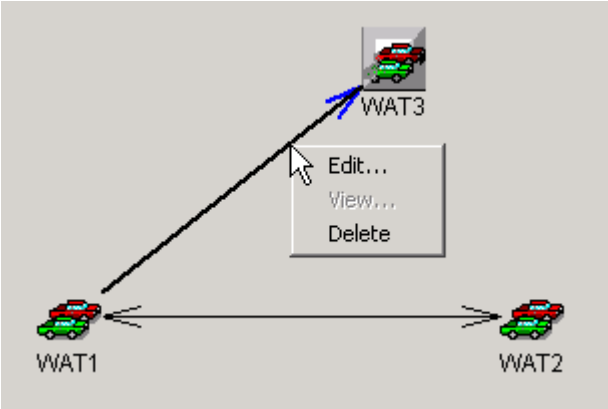


Step 20. Click **OK** to close the **View Link** window, and then click **Close** on the **Link Information** window to return to the Tree View.

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**.

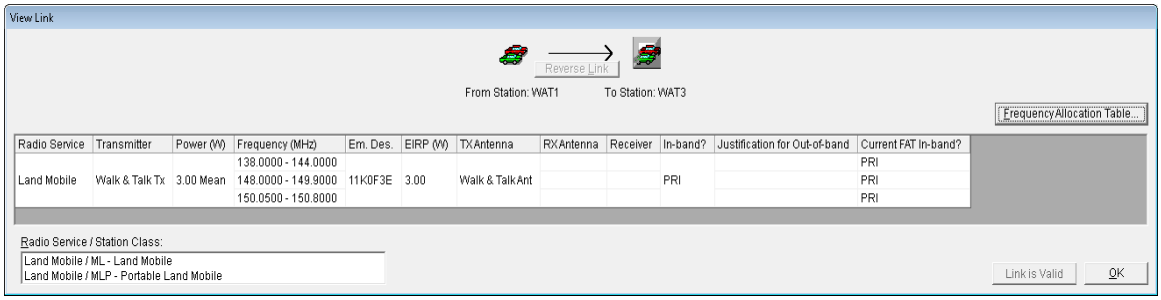


The familiar **Link Information** window will be displayed. Note that the **Receiver** and **Receiver Antenna** data blocks are blank, as **WAT3** is a generic station.

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.

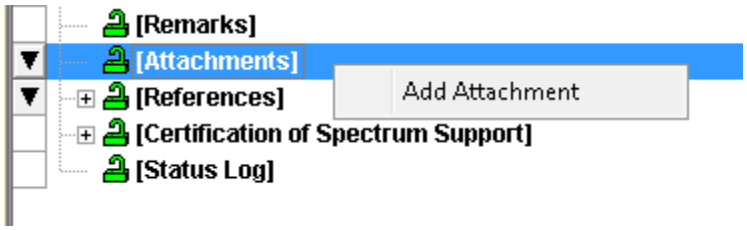
HINT: Notice that the dashed lines between the links have become solid lines. This indicates that data has been entered for the links.

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

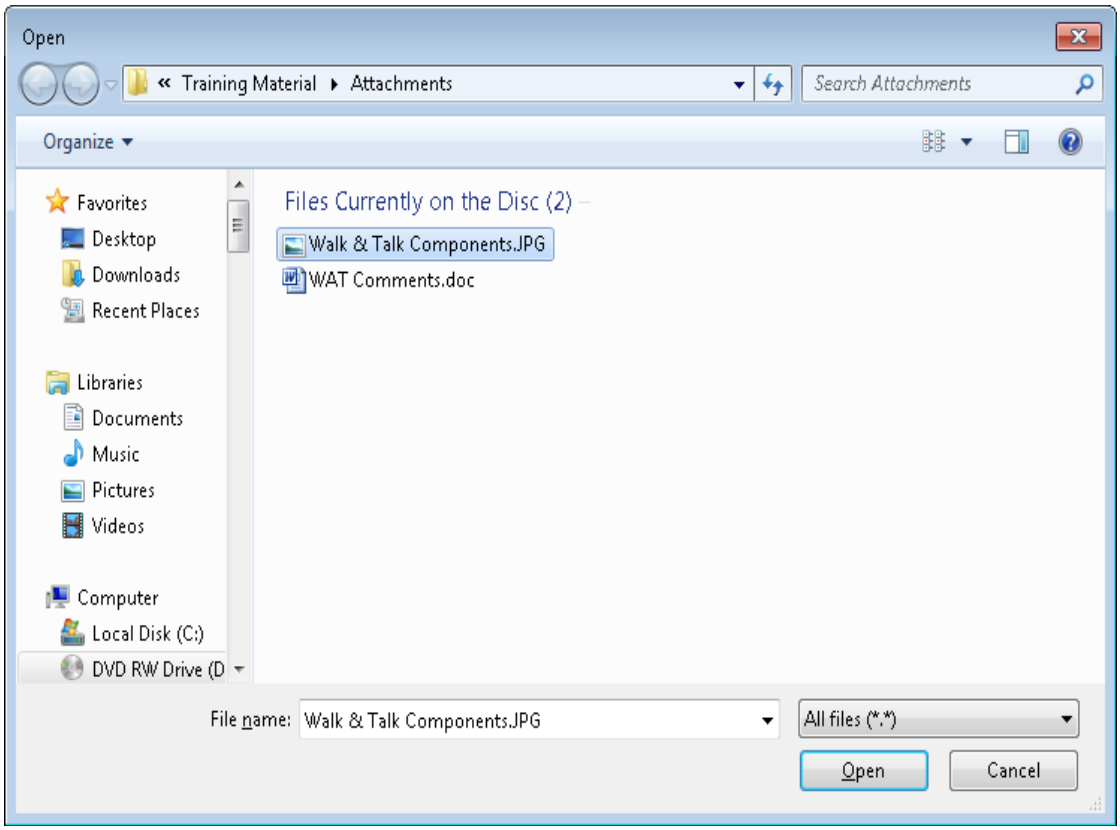
Step 2. Click in the **Attachment** Field and click the **Browse** button ...

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 **D:** drive. If your CD/DVD drive is not assigned to drive letter **D**, 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.

Data Item	Class	Value	Units
Attachment	U	Walk & Talk Components.JPG	
SPS Number			
Date of the Attachment			date

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

Field	Value
Date of the Attachment	**12/18/2013**

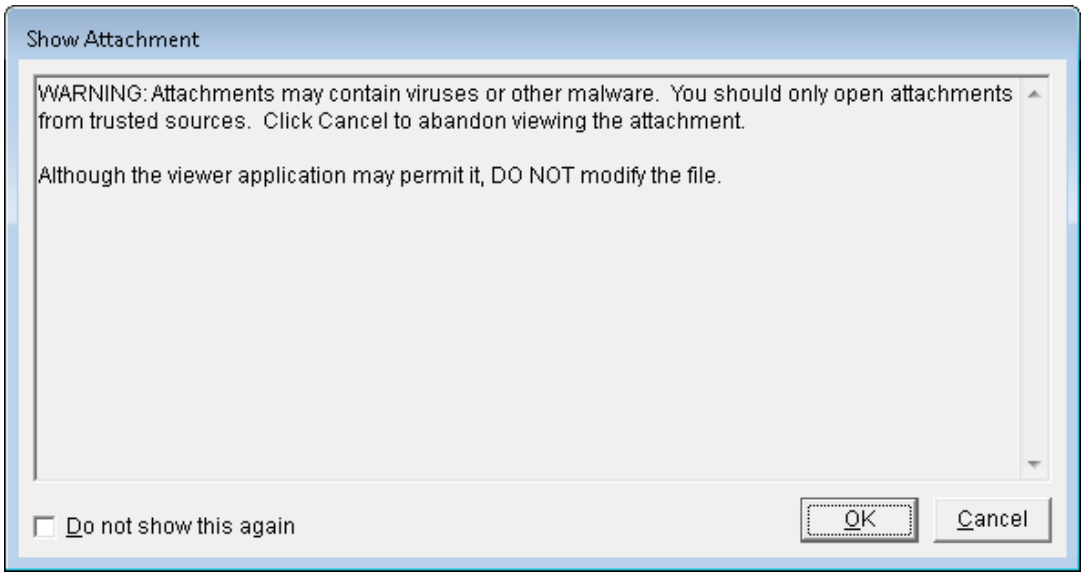
HINT: The **Date of Attachment** is not today's date, but instead the date the attachment document was authored.

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).

Data Item	Class	Value	Units
Attachment	U	Walk & Talk Components.JPG	
SPS Number			
Date of the Attachment		12/18/2013	date

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



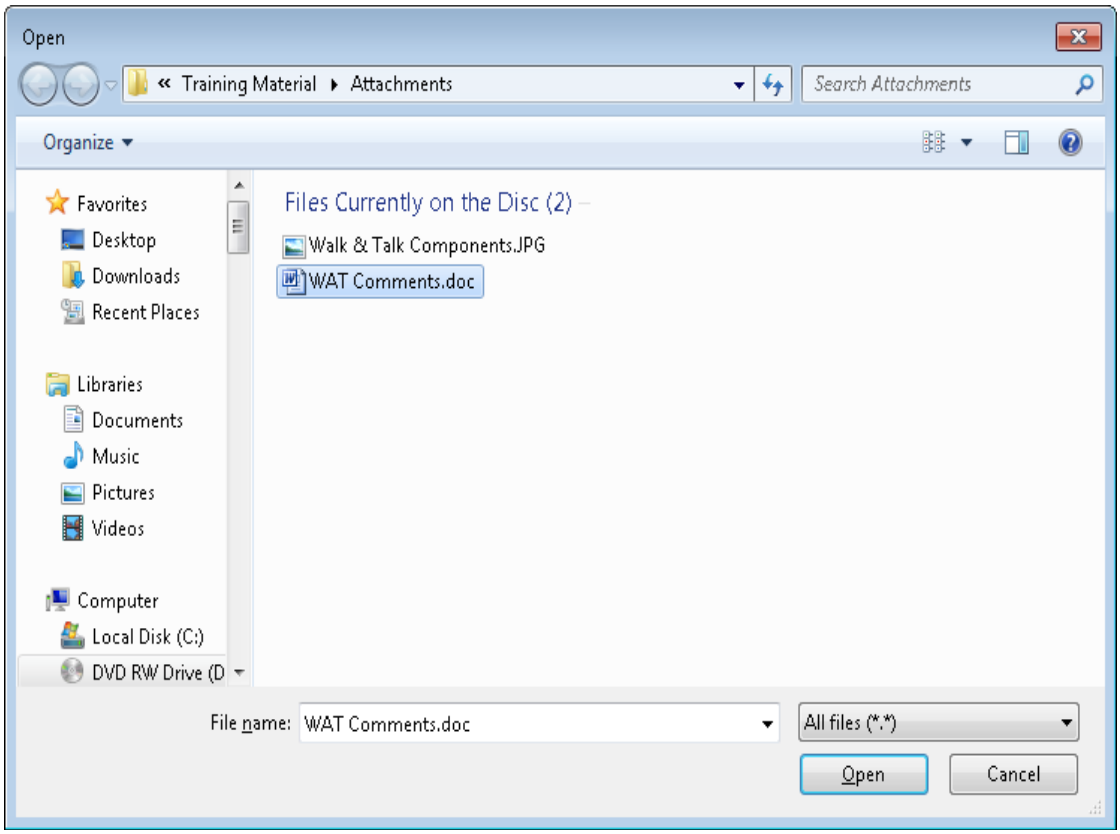
HINT: This window may be disabled by checking the  box, or by setting the correct preferences.

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.

Step 10. Go to **E:/Training Material/Attachments** folder.



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

Step 11. Click on **WAT Comments.doc** and then click **Open**. The file will now be listed as an attachment to your certification application.

Data Item	Class	Value	Units
Attachment	U	WAT Comments.doc	
SPS Number			
Date of the Attachment			date

Step 12. **Enter** the following data and click the **Save button**  .

Field	Value
Date of the Attachment	**12/18/2013**

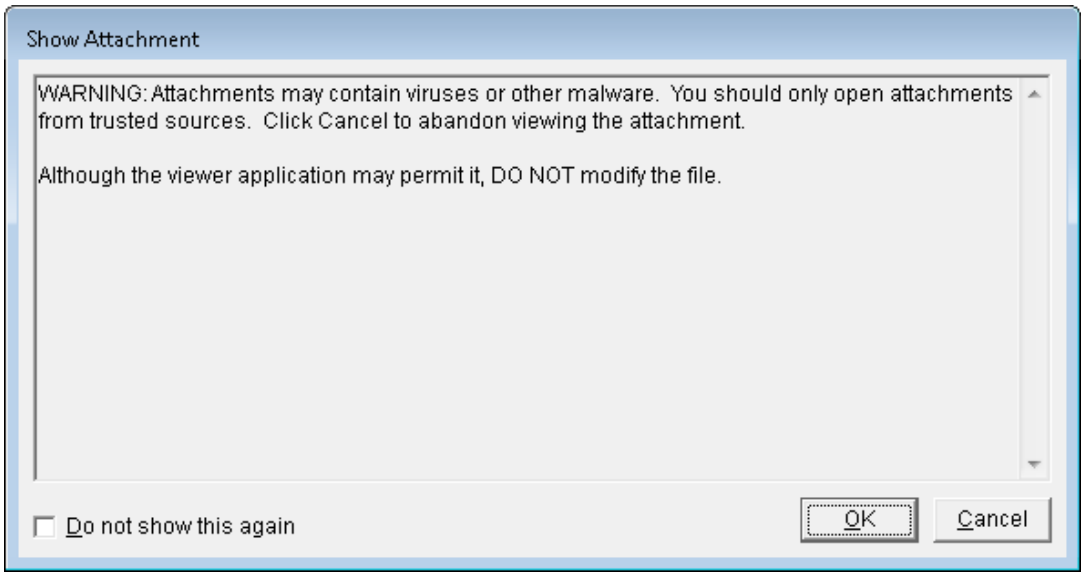
HINT: The **Date of Attachment** is not today's date, but instead the date the attachment document was authored.

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

Step 13. 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).

Data Item	Class	Value	Units
Attachment	U	WAT Comments.doc	
SPS Number			
Date of the Attachment		12/18/2013	date

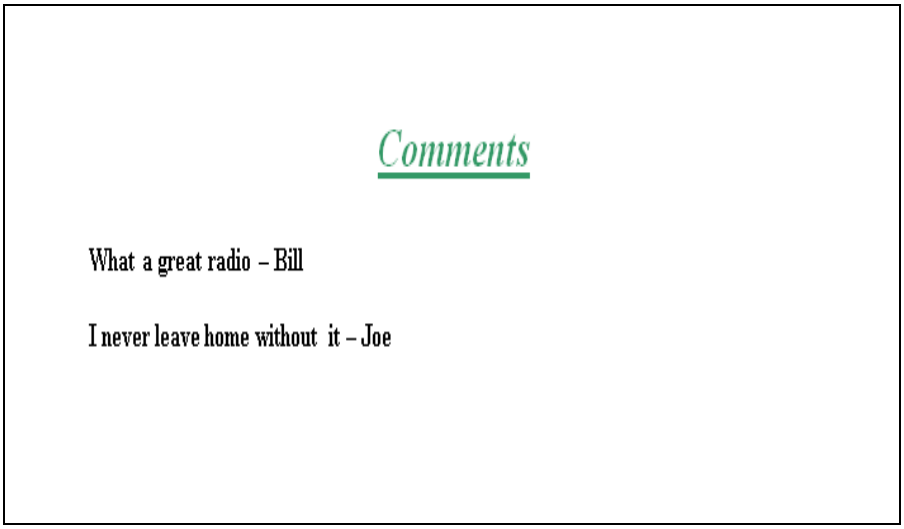
The **Show Attachment** window will be displayed.



HINT: This window may be disabled by checking the 

box, or by setting the correct preferences.

Step 14. Click **OK** to open the file.



Step 15. **Close** the viewing window.

5.10 Viewing The Status Log

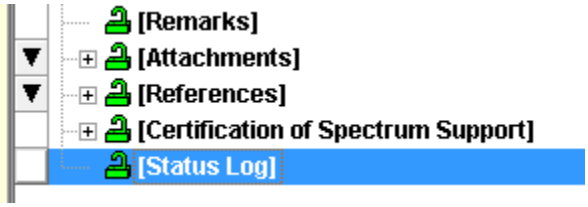
A status log is created and updated while a certification application is being processed. Most of the statuses are automated along with the time/date stamp of the action. Additionally, the Agency logged in at the time is also annotated with the updated status.

Types of automated statuses are:

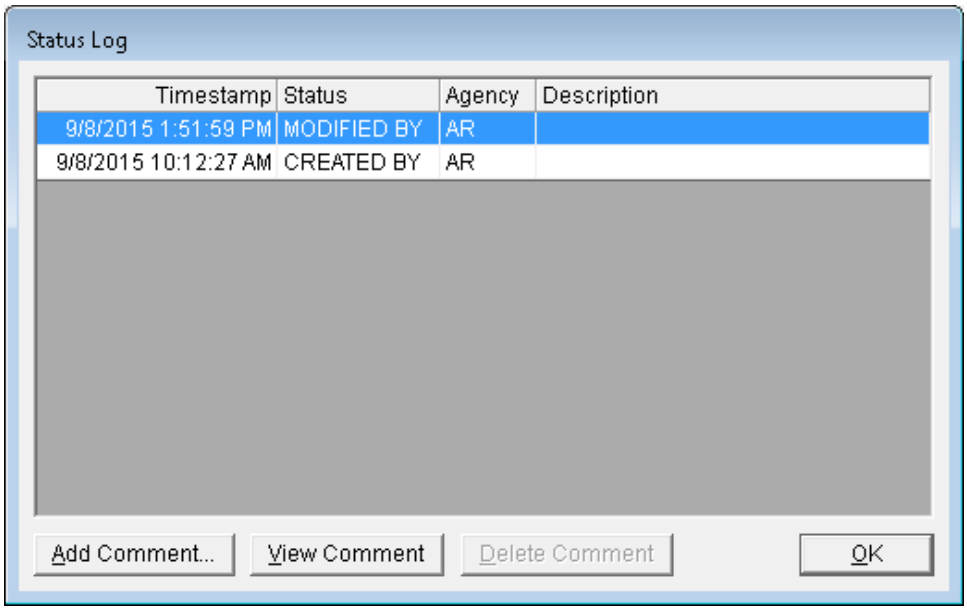
- CREATED BY
- IMPORTED BY
- MODIFIED BY
- EXPORTED BY
- COMPLIANCE CHECK

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

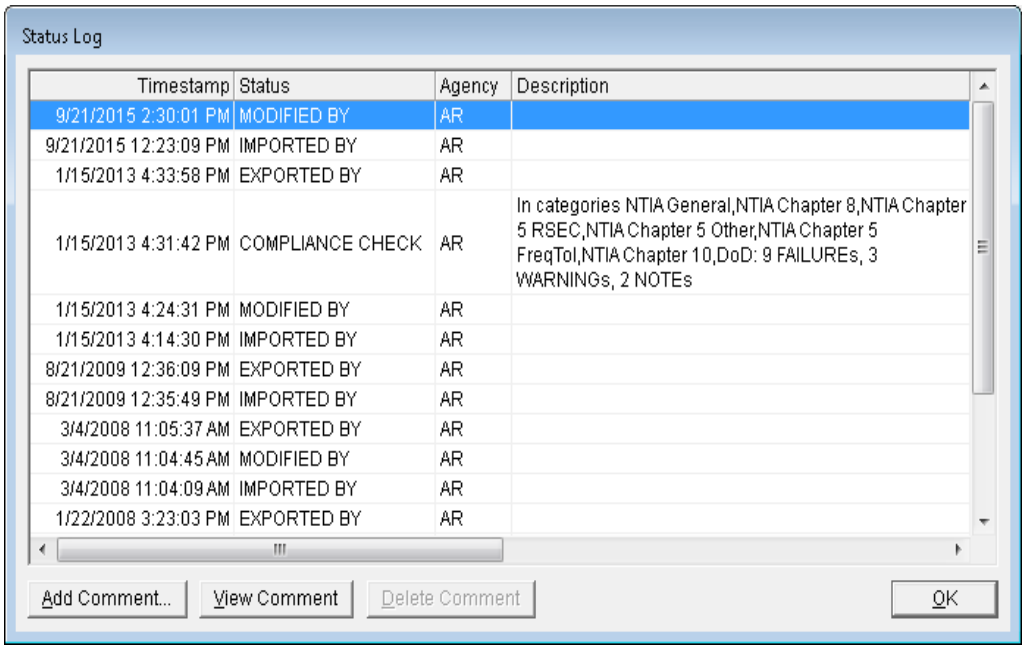
Step 1. From the Tree View, click on the **[Status Log]** node.



The **Status Log** window is displayed.

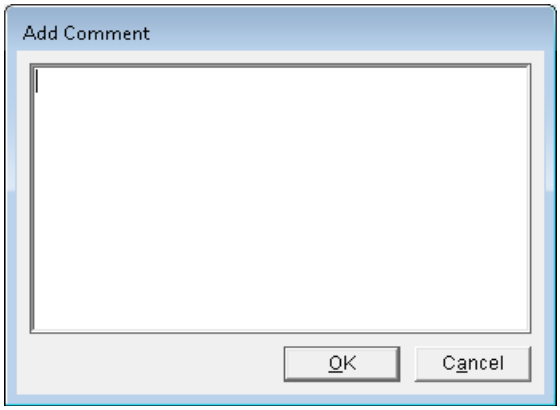


The following is an example log with more entries.

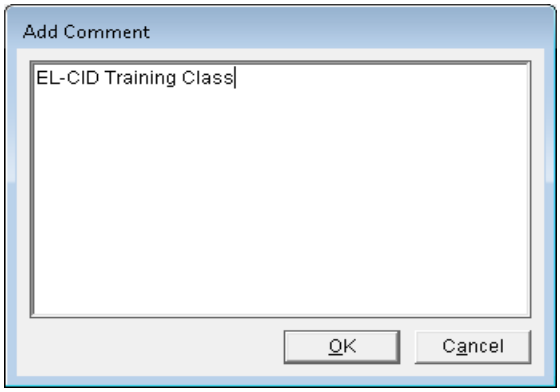


Step 2. Click the **Add Comment** button to add your own status entry.

The **Add Comment** window is displayed.

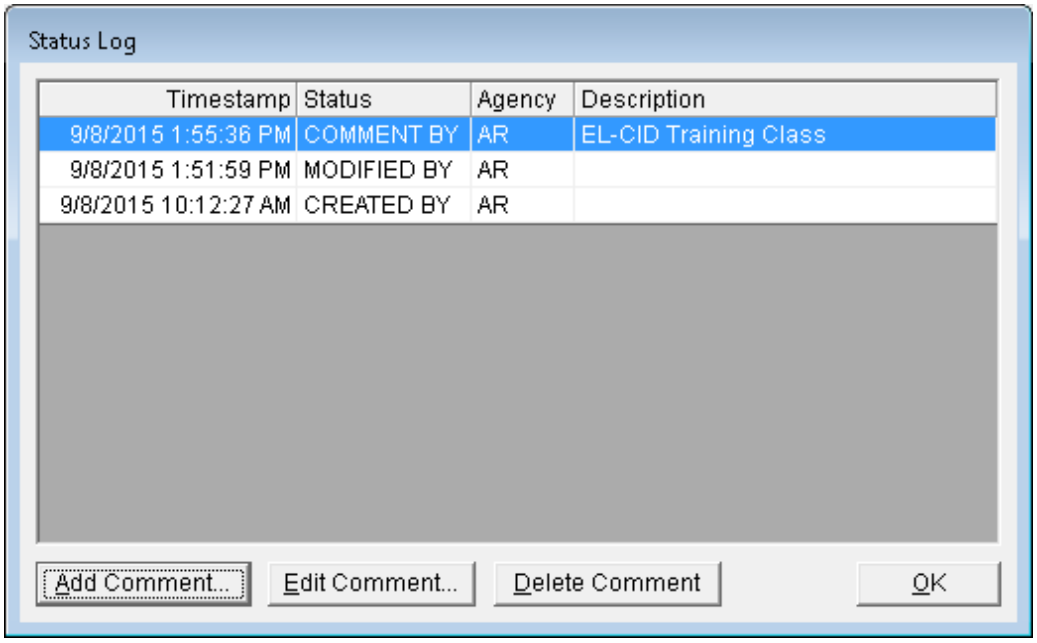


Step 3. In the window type **EL-CID Training Class** and then click **OK**.



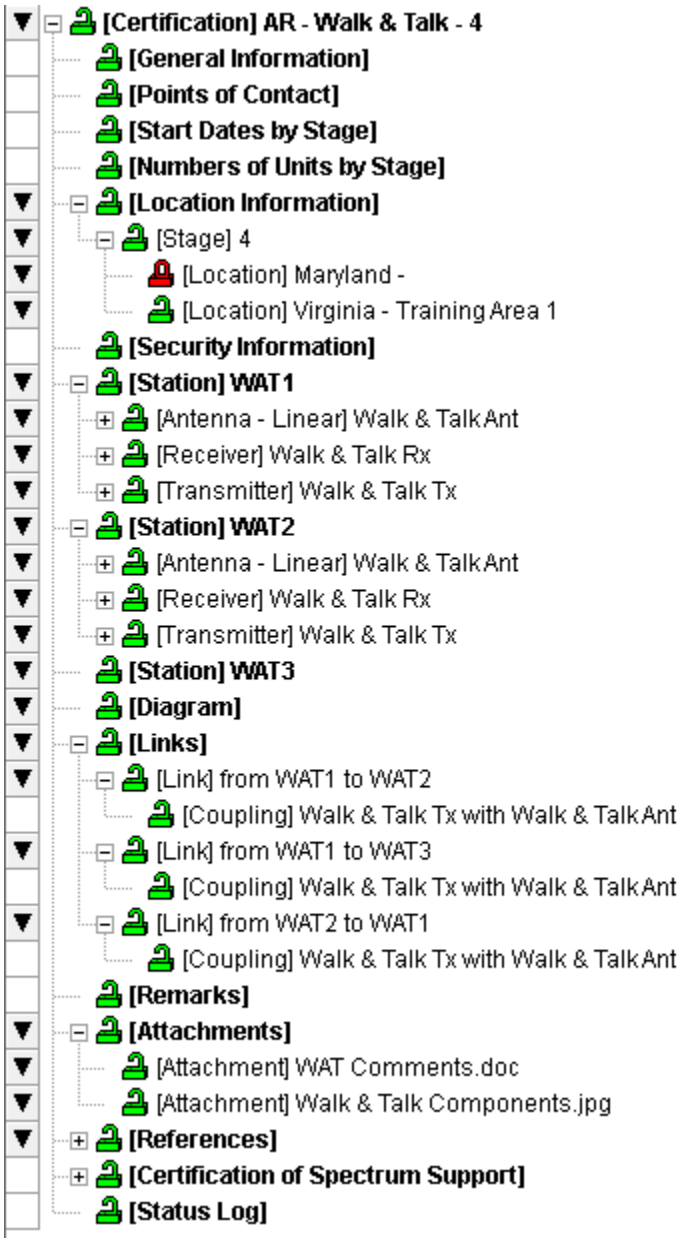
You will notice that your comment was added with the Status Code of **COMMENT BY**. Also notice that the latest status is displayed at the top of the log in chronological order.

HINT: Comments may be edited or deleted using the **Edit Comment** and **Delete Comment** buttons until the record is exported. Once exported, the comments are permanent.



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.

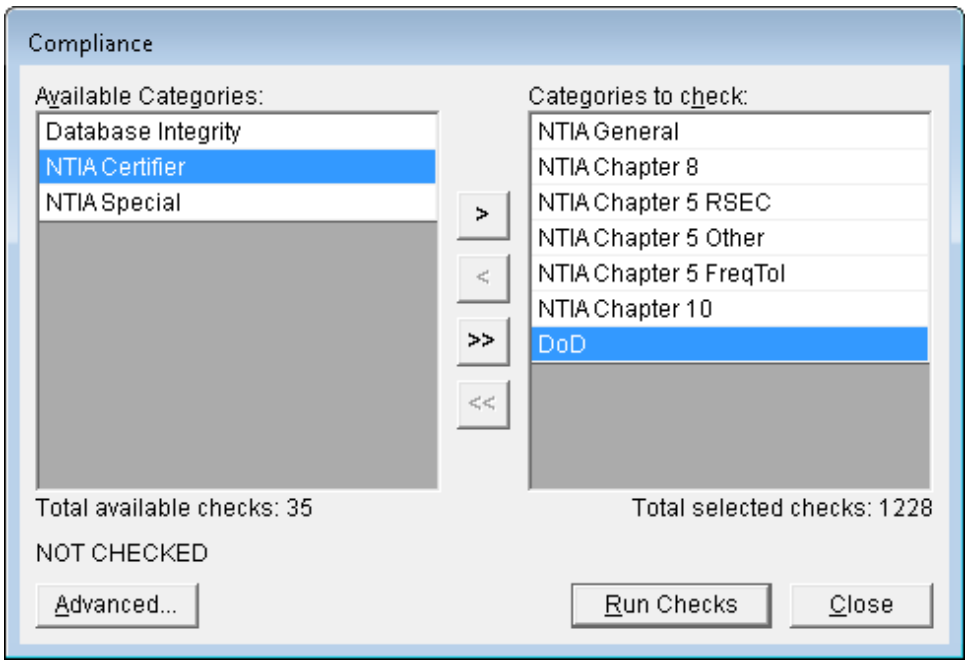
NOTE These are messages to help you build more complete or more accurate data, but do not indicate a compliance failure.

NOTE: From time to time, NTIA will provide updated Compliance Checks on the **EL-CID Support Center Web Site** as export files, which you should import following the steps under the "Importing Updated Compliance Checks" instructions on the web site. If the Compliance Checks were not updated in **Section 4**, turn to **Appendix C** and follow the instructions there to import updated Compliance Checks.

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.

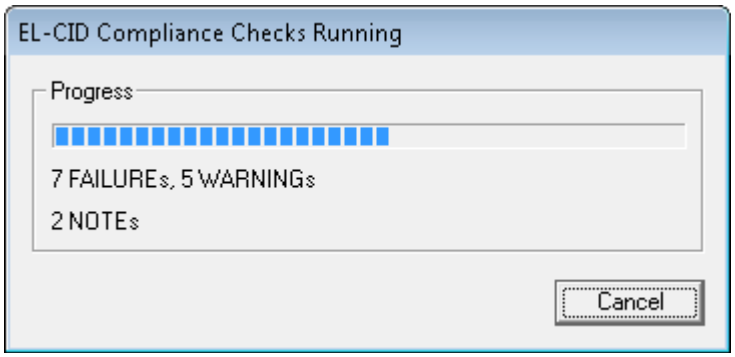
The **Compliance** window is displayed.



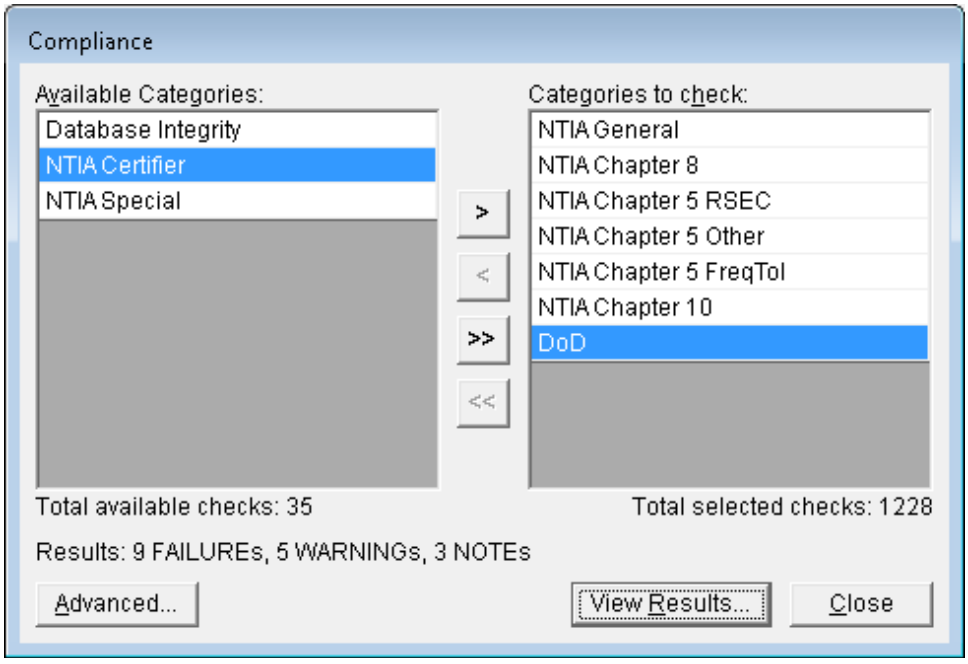
Items from the **Available Categories** list can be added to the **Categories to check** list by using the arrow buttons in the middle of the screen. We will select the categories shown above.

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

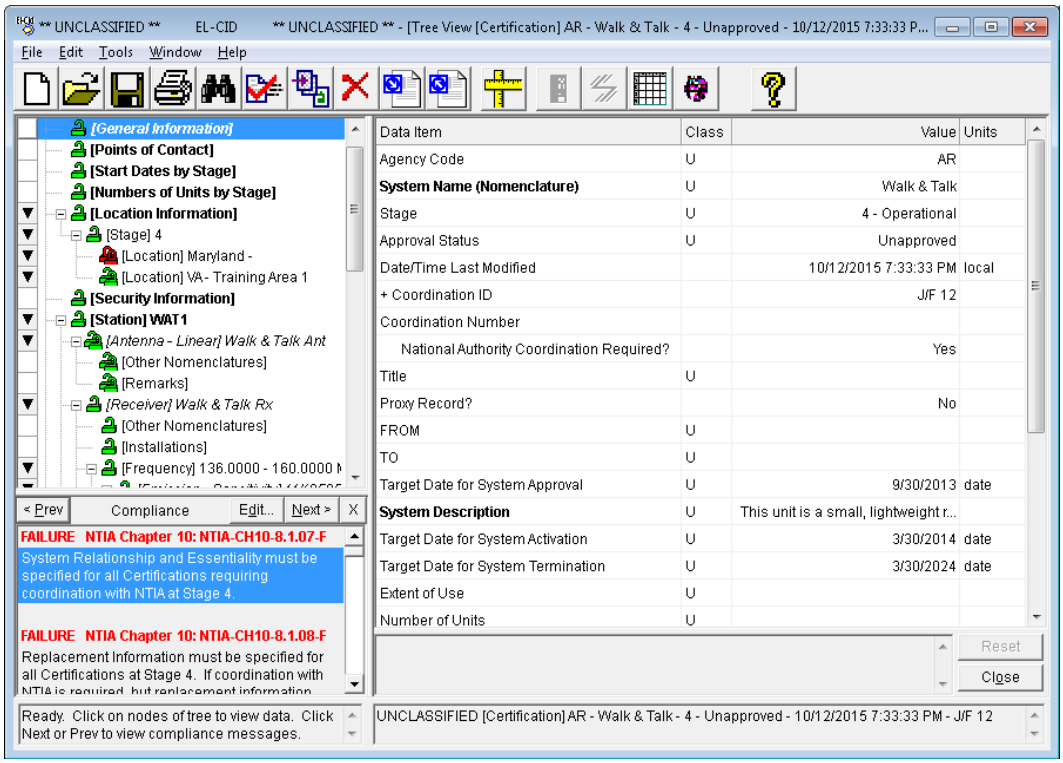
Step 2. Click the **Run Checks** button. The following **EL-CID Compliance Checks Running** window is displayed.



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.

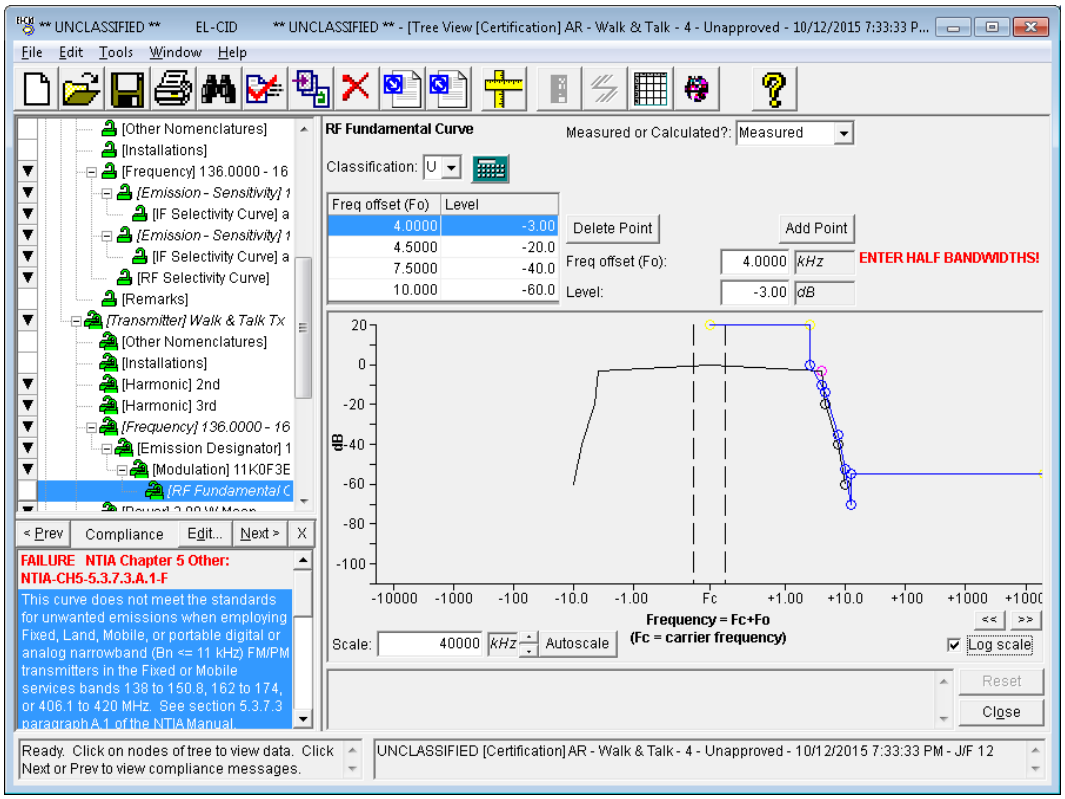
Notice that we did not fill out the fields for **System Relationship and Essentiality** or **Replacement Information**. These are required fields in this case.

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).

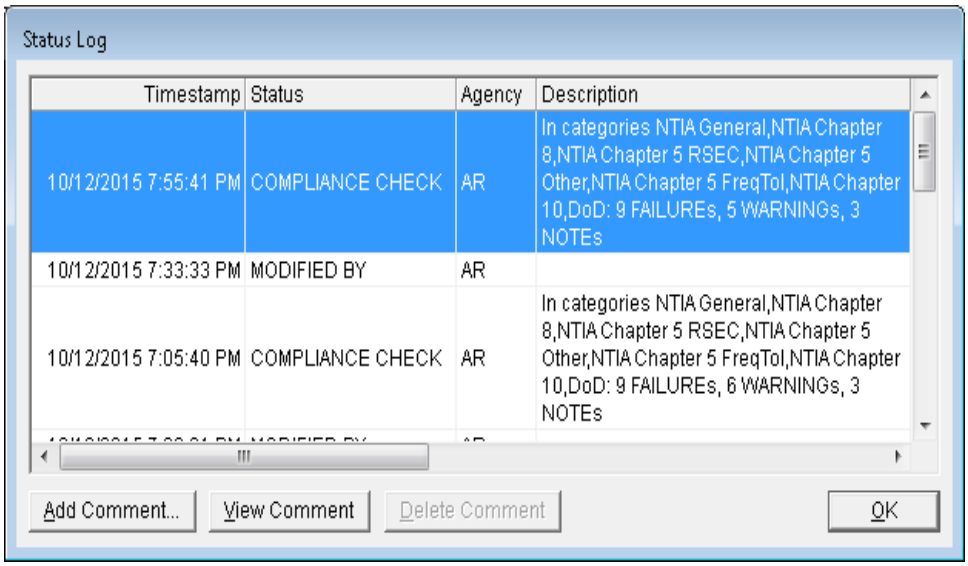
Notice how the **RF Fundamental Curve** fails the NTIA standard curve (shown in blue) in the picture below. To pass, the curve must be everywhere underneath the standard curve.



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.

Step 6. From the Tree View, click on the **[Status Log]** node. Notice that the Compliance Check results are shown.



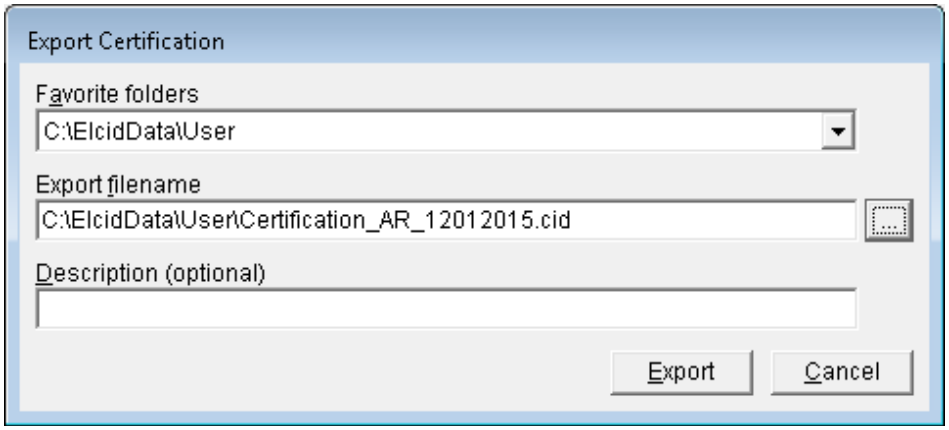
Step 7. Click **OK** to close the **Status Log** window.

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.

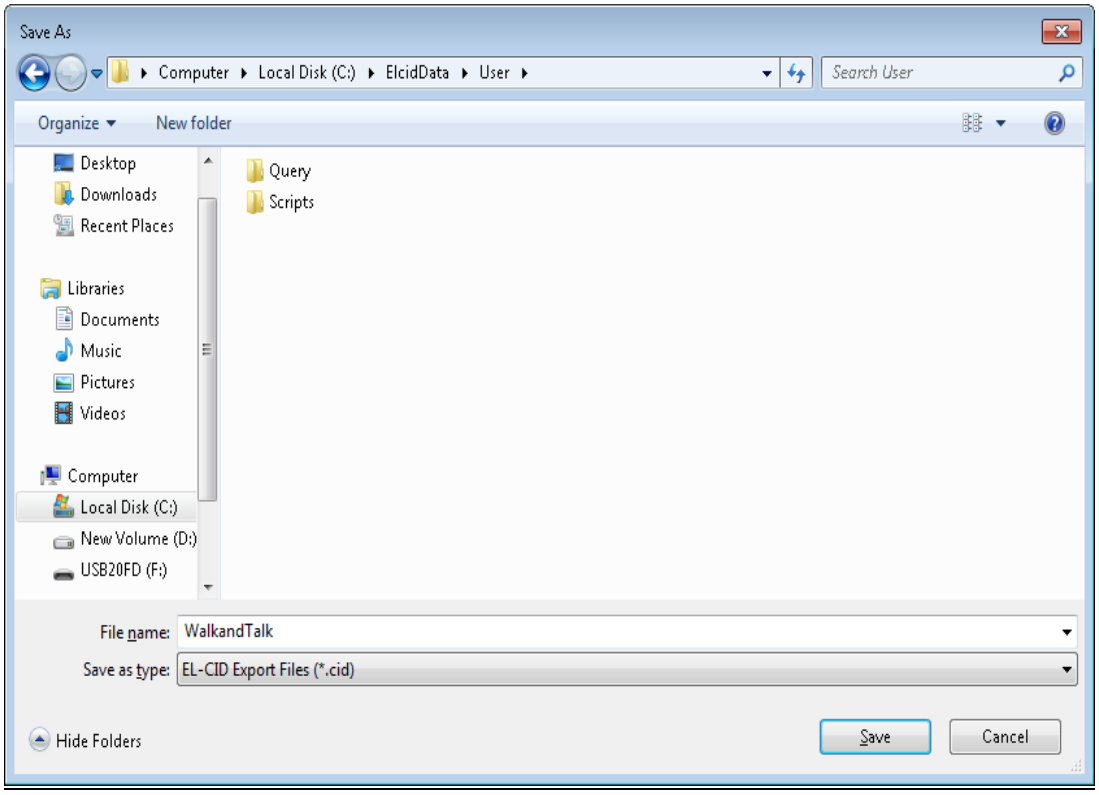
Step 1. Click the **Export** button on the tool bar.

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

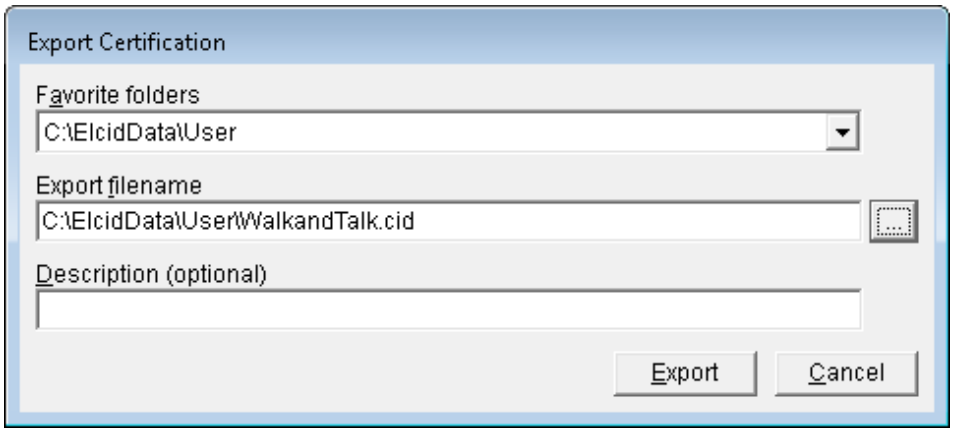


NOTE: The filename defaulted to **Certification_AR_12012015.cid** (i.e., Type of file(s) exported_Agency_Date), but you can specify a different filename.

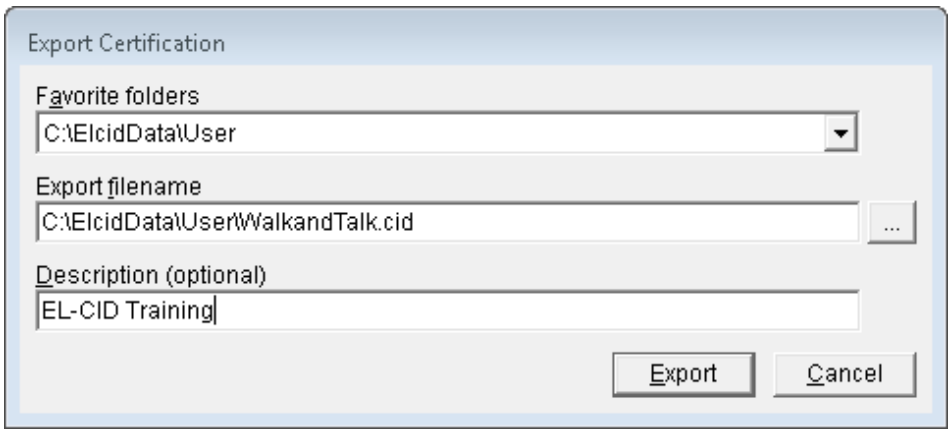
Step 2. Click the **Browse** button and enter **WalkandTalk** as the filename, as shown below.



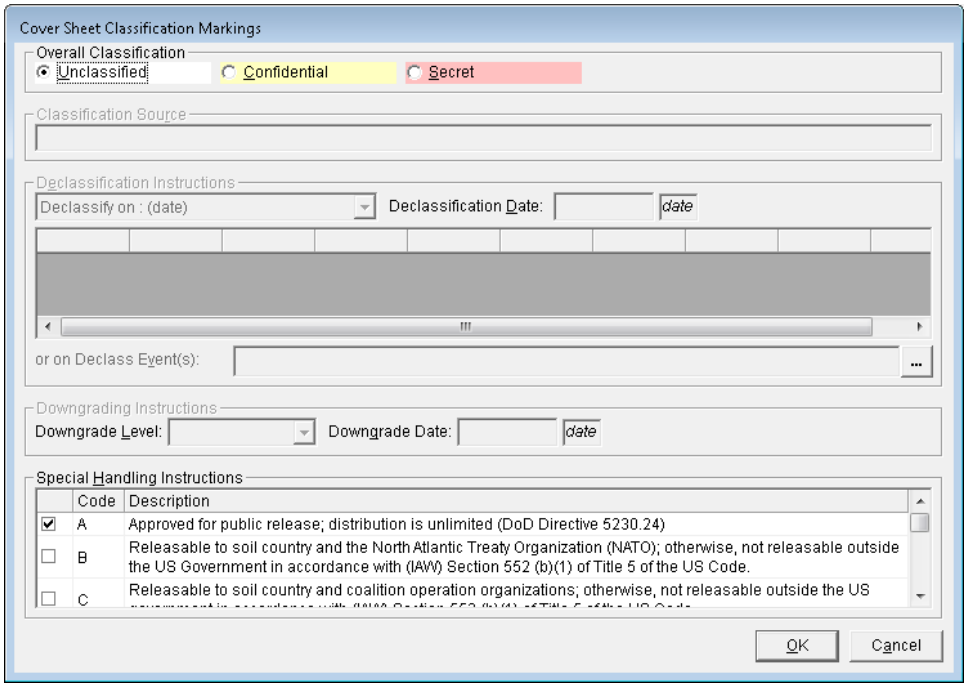
Step 3. Click **Save**. The **Export Certification** window is displayed again showing the path and filename that you selected.



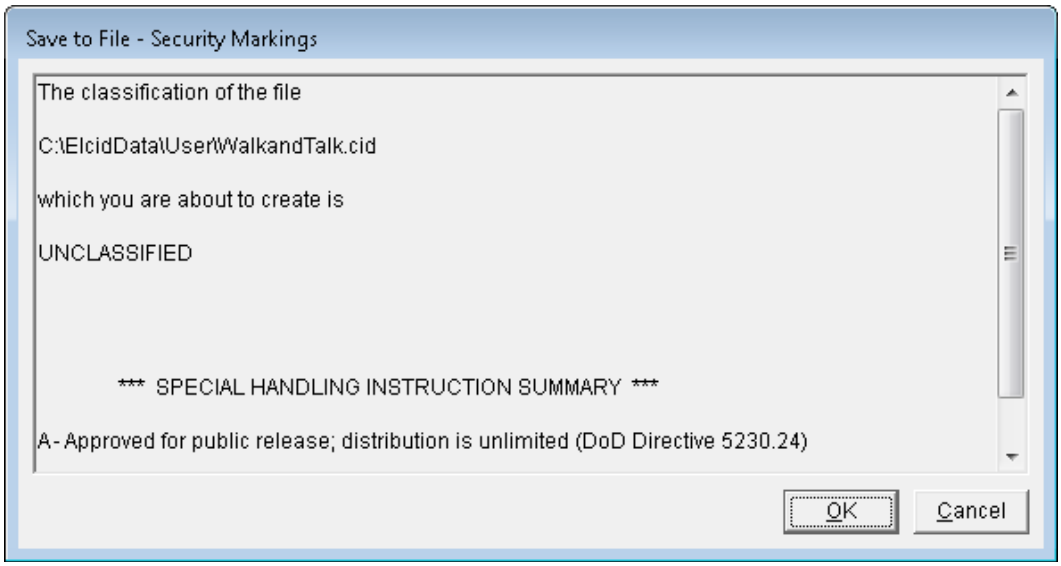
Step 4. Type **EL-CID Training** into the **Description** box.



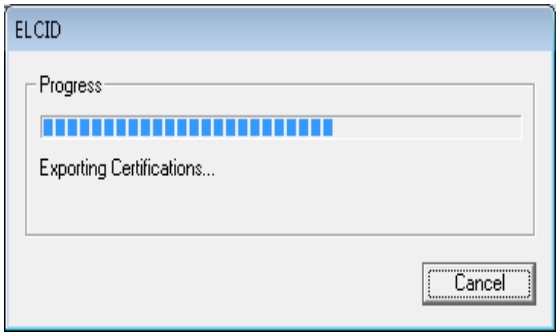
Step 5. Click **Export**. The **Cover Sheet Classification Markings** window is displayed.



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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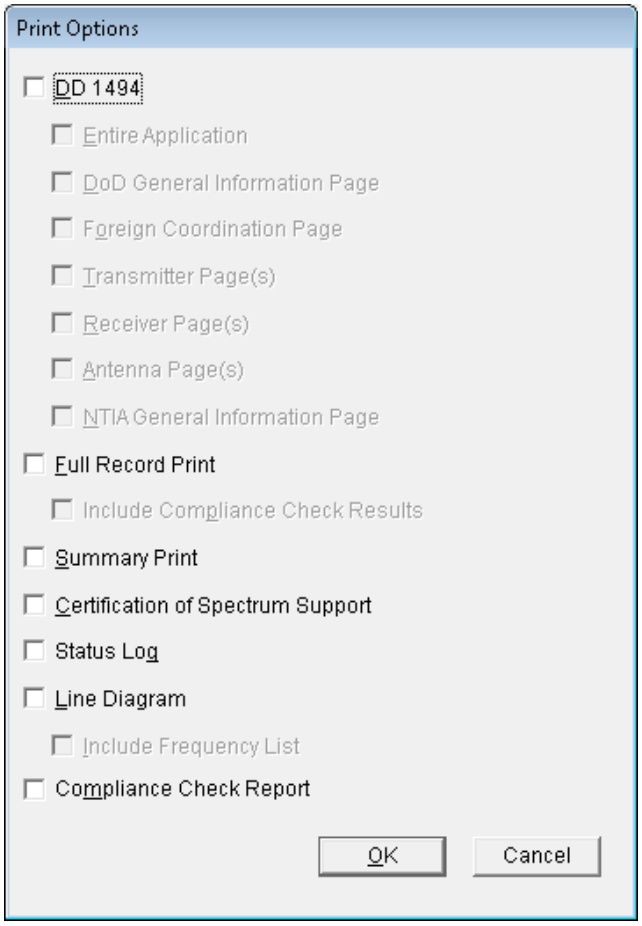
8.0 PRINTING A CERTIFICATION RECORD

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.

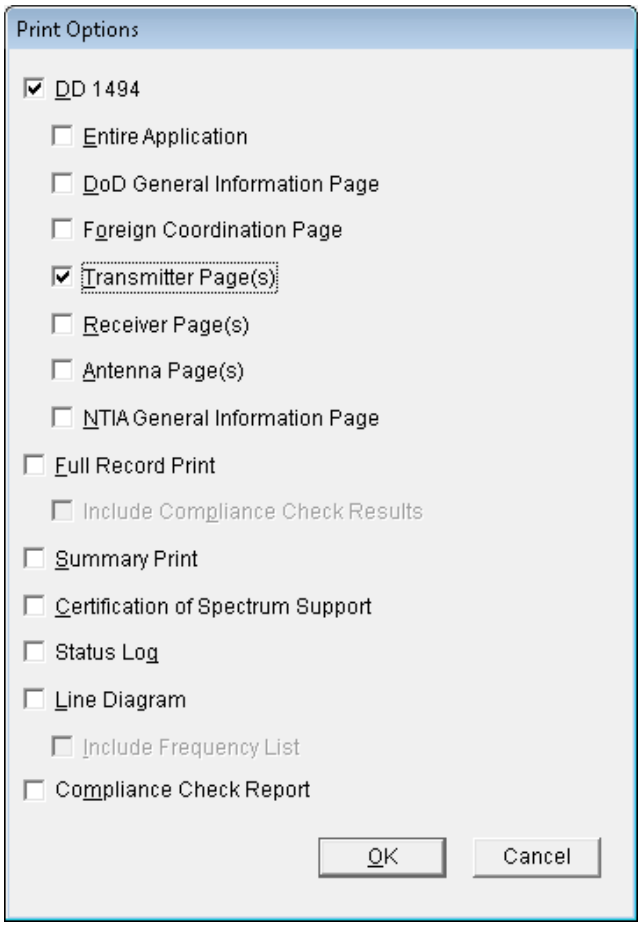
Step 1. Click the **Print** button  on the tool bar.

The **Print Options** window is displayed.

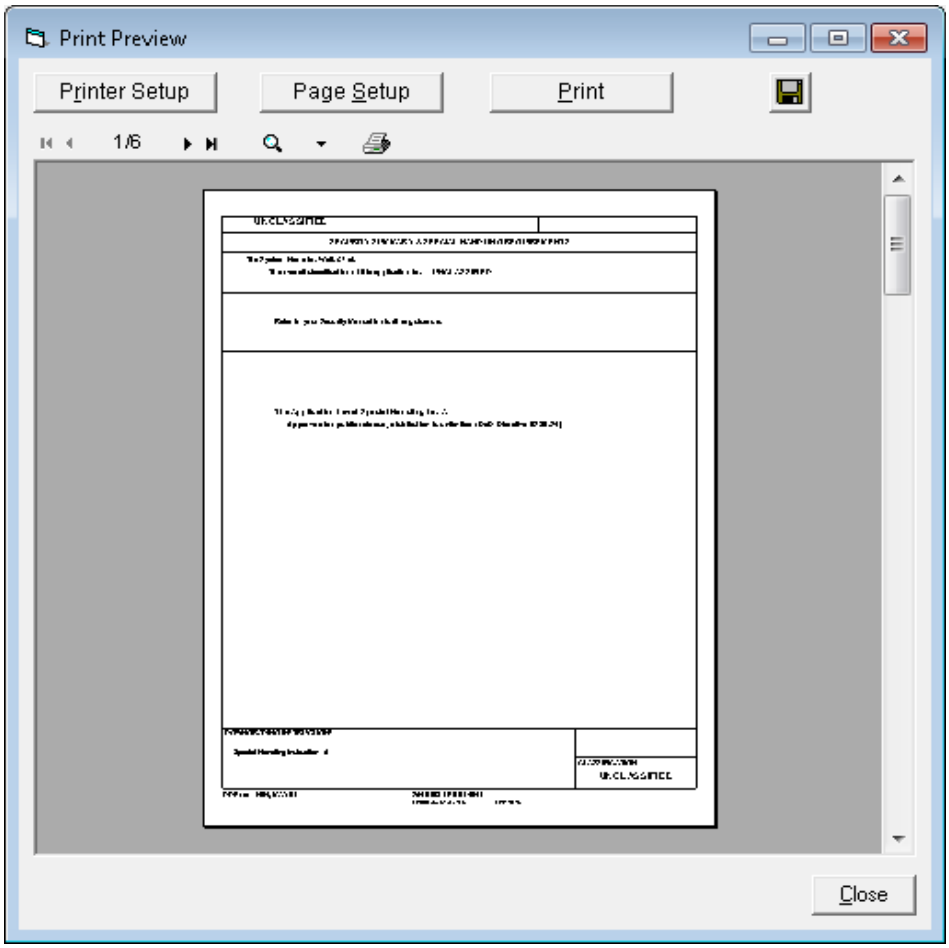


Step 2. Check the **DD 1494** check box and then you will see that additional options become active for the DD 1494 output.

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

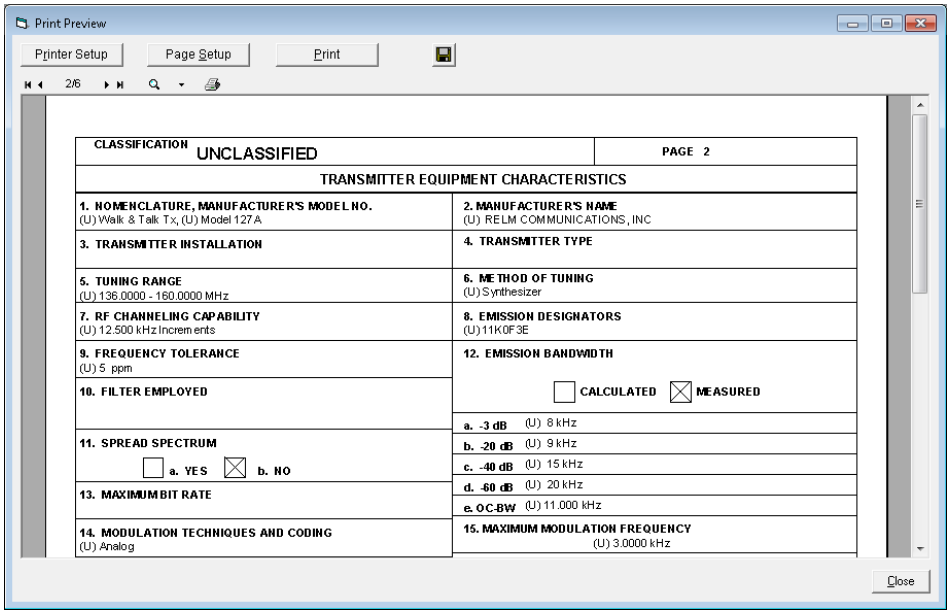


The **Print Preview** window is displayed showing the cover page for the DD 1494.



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.

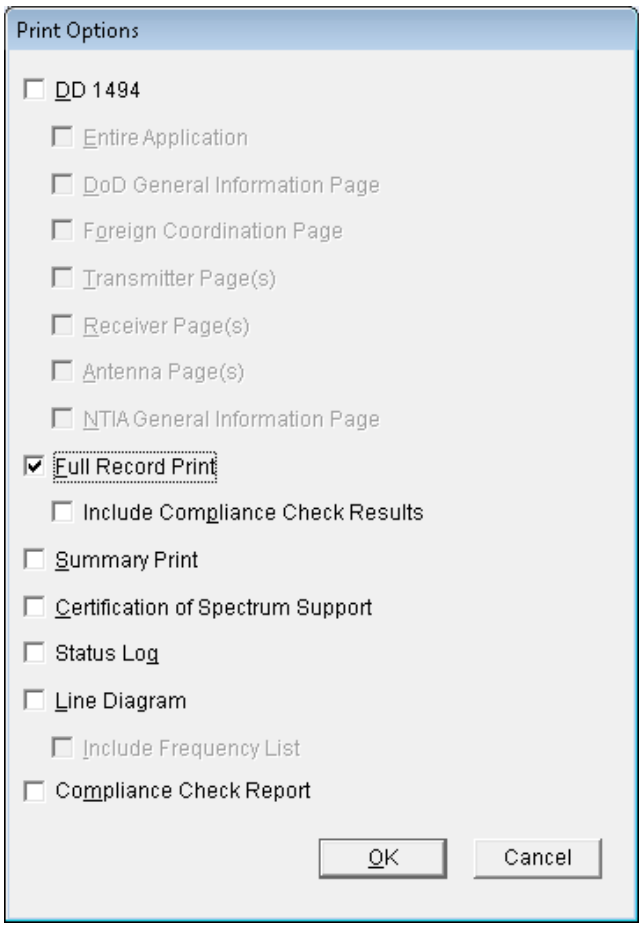


CLASSIFICATION UNCLASSIFIED	PAGE 2
TRANSMITTER EQUIPMENT CHARACTERISTICS	
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) Walk & Talk Tx, (U) Model 127A	**2. MANUFACTURER'S NAME** (U) RELM COMMUNICATIONS, INC
3. TRANSMITTER INSTALLATION	**4. TRANSMITTER TYPE**
5. TUNING RANGE (U) 136.0000 - 160.0000 MHz	**6. METHOD OF TUNING** (U) Synthesizer
7. RF CHANNELING CAPABILITY (U) 12.500 kHz Increments	**8. EMISSION DESIGNATORS** (U) 11K0F3E
9. FREQUENCY TOLERANCE (U) 5 ppm	**12. EMISSION BANDWIDTH** ☐ CALCULATED ☒ MEASURED
10. FILTER EMPLOYED	**a. -3 dB** (U) 8 kHz
11. SPREAD SPECTRUM ☐ a. YES ☒ b. NO	**b. -20 dB** (U) 9 kHz
	c. -40 dB (U) 15 kHz
13. MAXIMUM BIT RATE	**d. -60 dB** (U) 20 kHz
	e. OC-BW (U) 11.000 kHz
14. MODULATION TECHNIQUES AND CODING (U) Analog	**15. MAXIMUM MODULATION FREQUENCY** (U) 3.0000 kHz

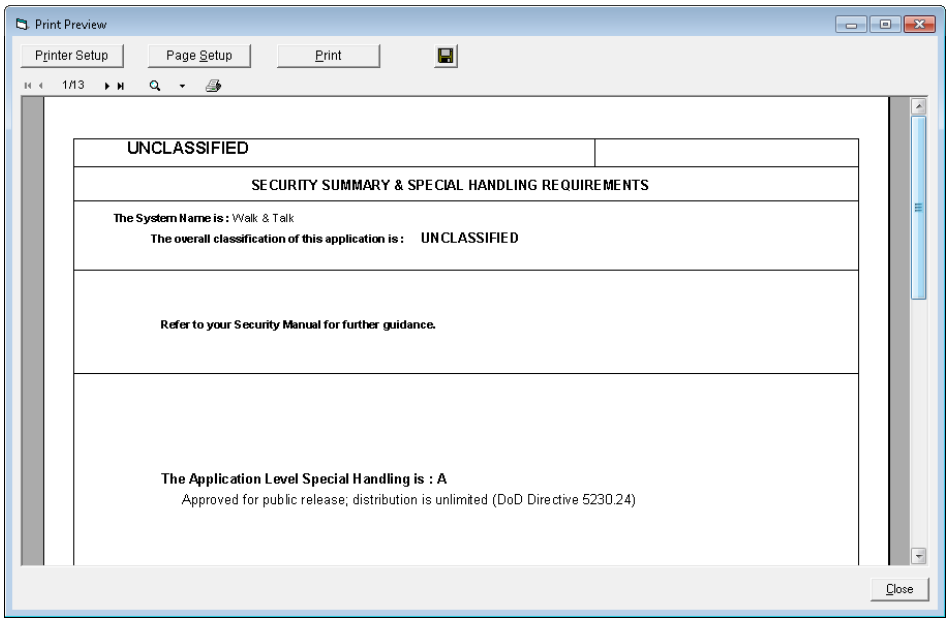
HINT: Hold down the **Ctrl** key and click with the left mouse button to zoom in. Hold down the **Ctrl** key and right-click to zoom out. Hold down the **Alt** key and right-click to page forward. Hold down the **Alt** key and click the left mouse button to page backwards.

Step 5. Click the **Close** button. The **Print Options** window is displayed.

Step 6. Uncheck the **DD 1494** check box, then select the **Full Record Print** check box and click **OK**.



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

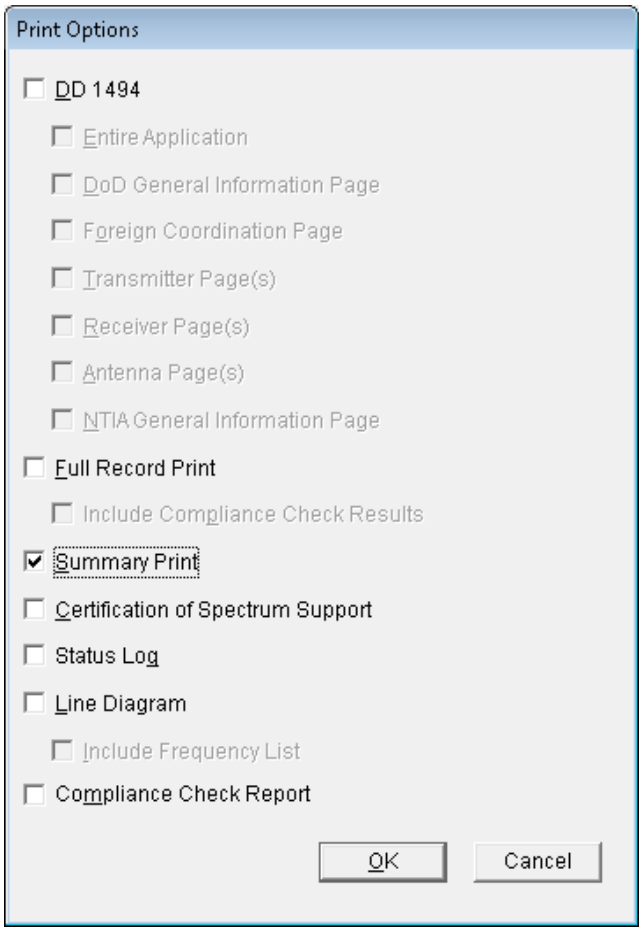


Step 7. **Review the various pages** of the output. If you want to actually print the document you would click the **Print** button (but don't actually print the document.)

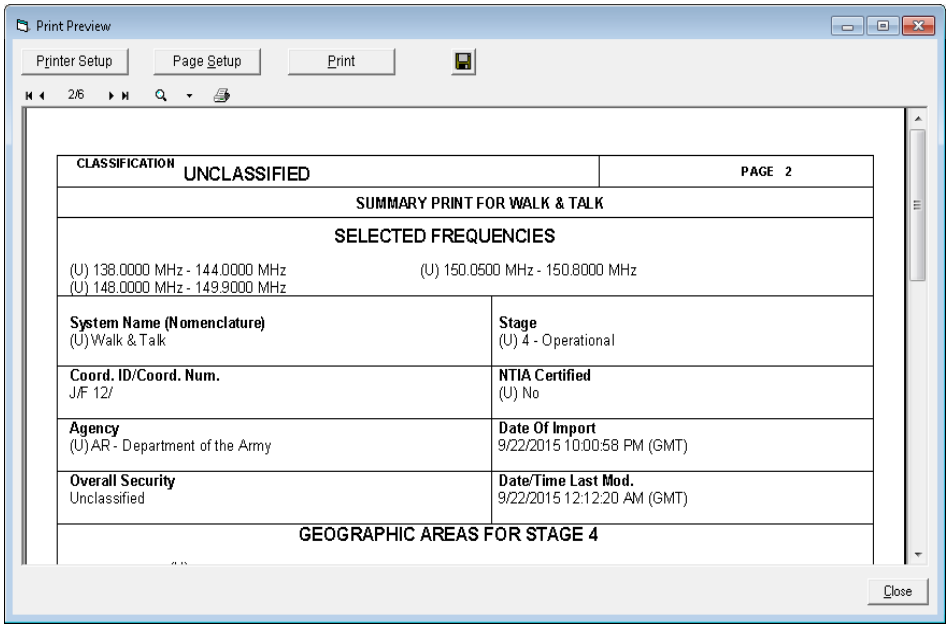
HINT: You can use the **PDF** button  to send the printout to a Portable Document Format file.

Step 8. Click the **Close** button. The **Print Options** window is displayed again.

Step 9. Uncheck the **Full Record Print** check box, then select the **Summary Print** check box and click **OK**.



The **Print Preview** window is displayed for the Summary Print.



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

Step 11. Click the **Close** button. The **Print Options** window is displayed once again.

Step 12. Click the **Cancel** button.

Step 13. Click **File | Close** on the main menu or use the 

button to close the current certification application.

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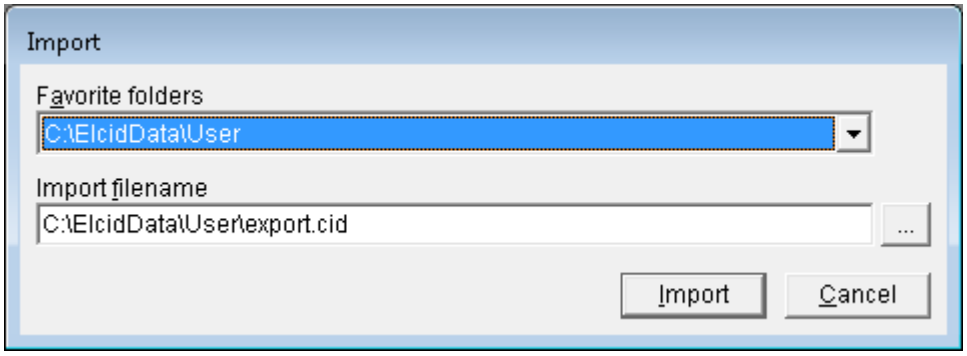
9.0 IMPORTING A CERTIFICATION APPLICATION

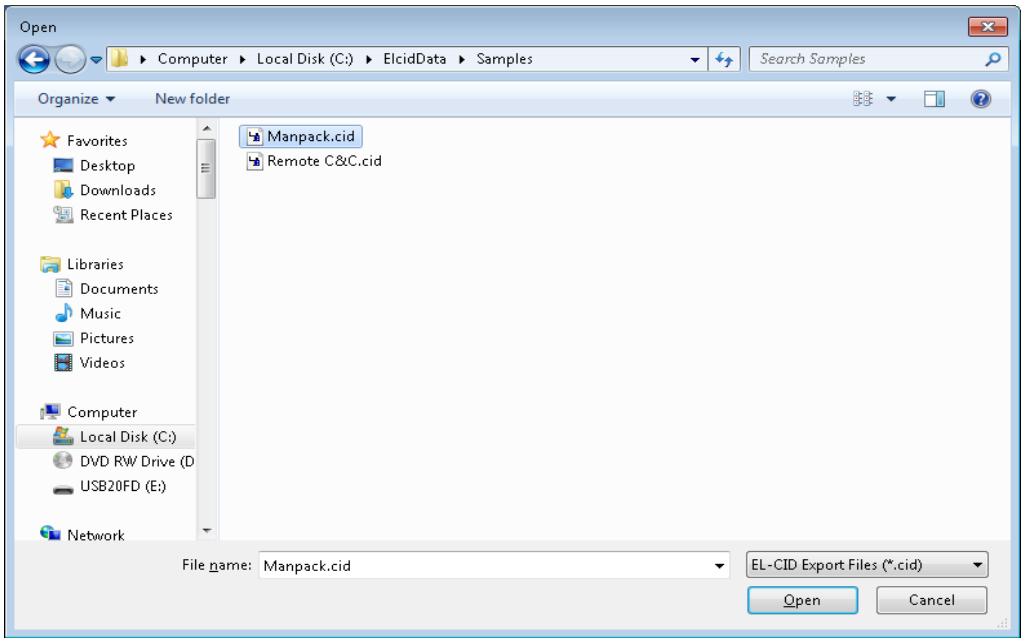
You may need to import a certification application that was prepared by someone else. The following steps will illustrate how to perform this import.

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

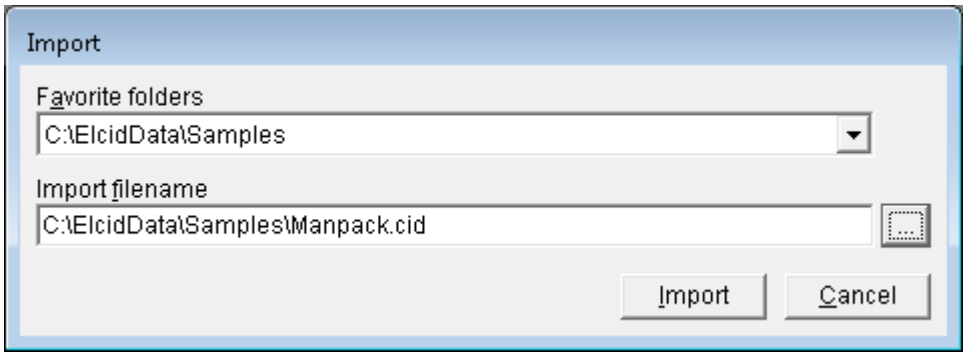
The **Import** window is displayed.



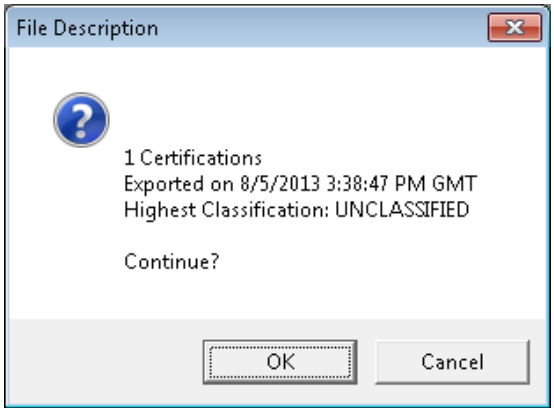
Step 2. Click the **browse** button to select the file to import. Navigate to the **Samples** folder in the EL-CID data folder (For training, this will be the **C:\ElcidData\Samples**). Highlight the filename **Manpack.cid** and then click **Open**.



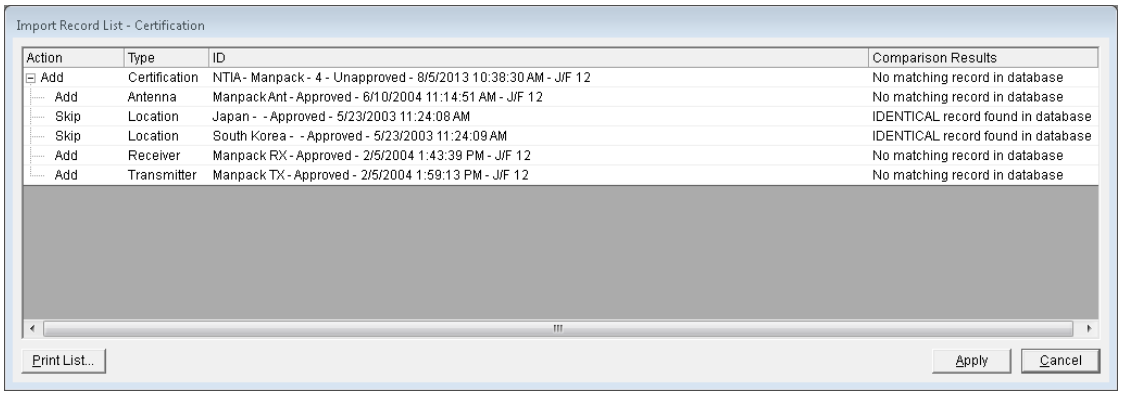
The **Import** window displays the selection.



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



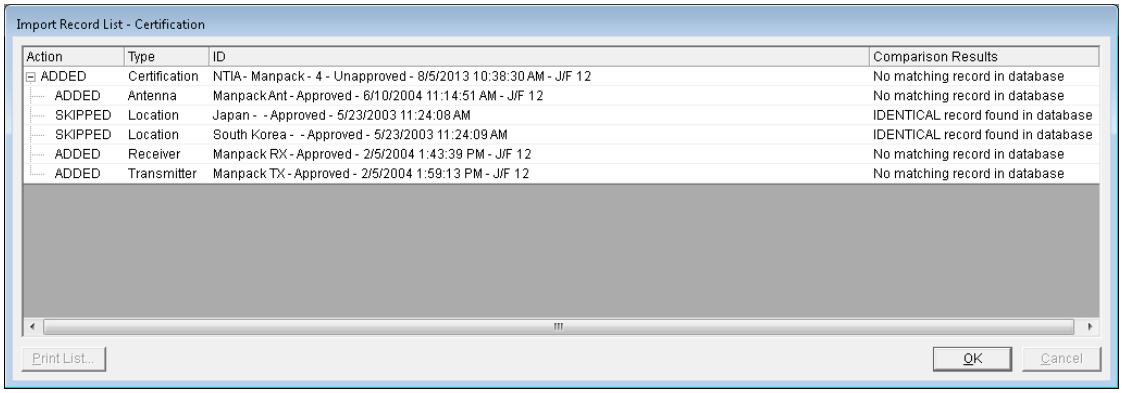
Step 4. Click **OK**. The **Import Record List - Certification** window is displayed.



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.

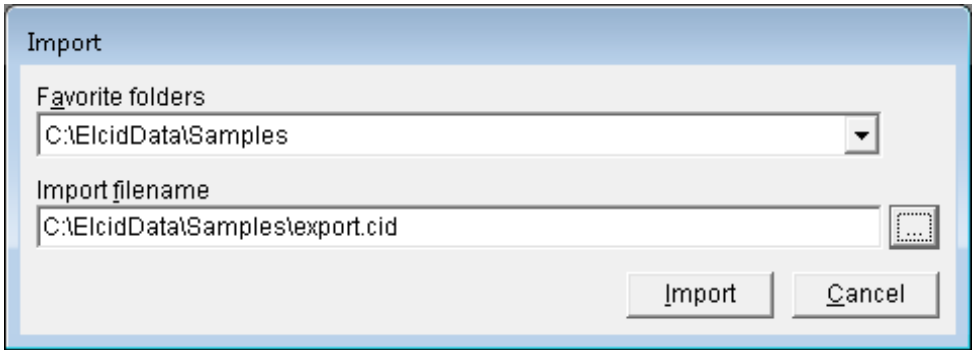


Step 6. Click **OK** to close the window.

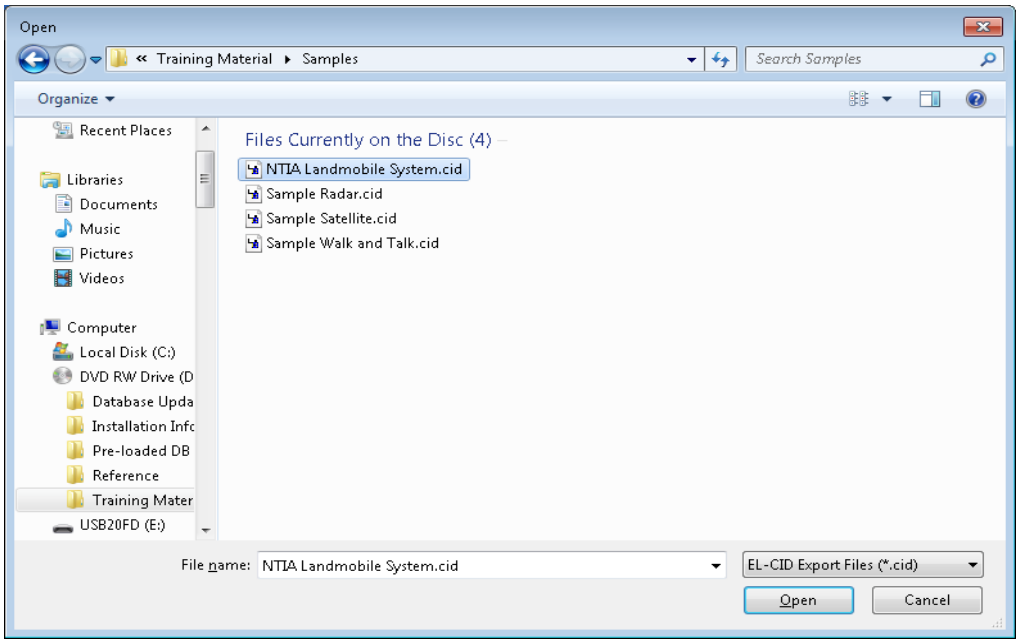
Step 7. Repeat the steps above to import the file named **NTIA Landmobile System.cid**, which you will find in the **Training Material\Samples** folder on your **Training CD**. We'll need this record in the next chapter.

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

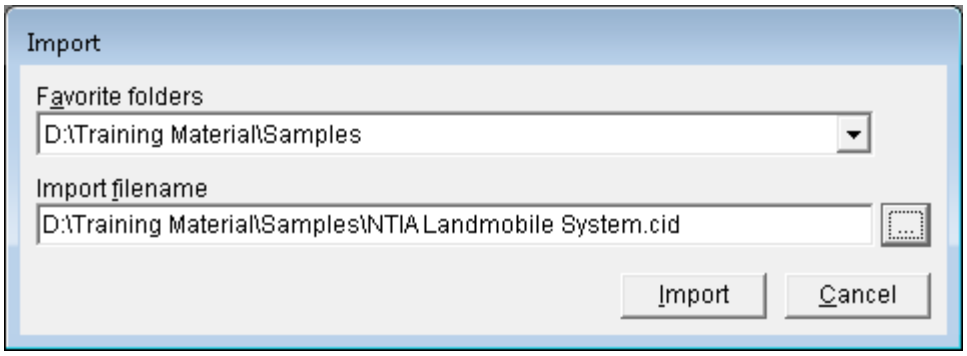
The **Import** window is displayed.



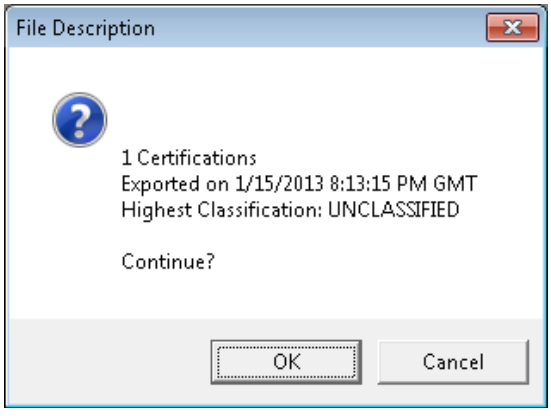
Step 9. Click the **browse** button to select the file to import. Navigate to the **Training Material\Samples** folder on your **Training CD** (For training, this will be the **D:\Training Materials\Samples**). Highlight the filename **NTIA Landmobile System.cid** and then click **Open**.



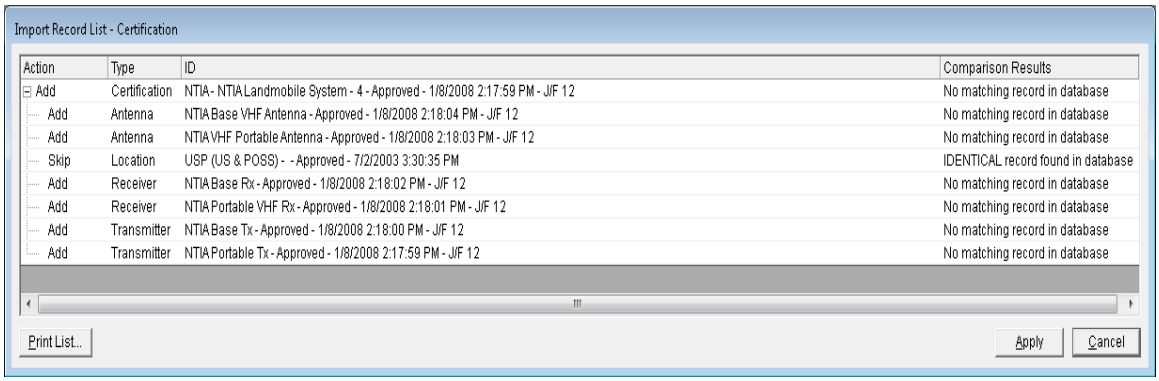
The **Import** window displays the selection.



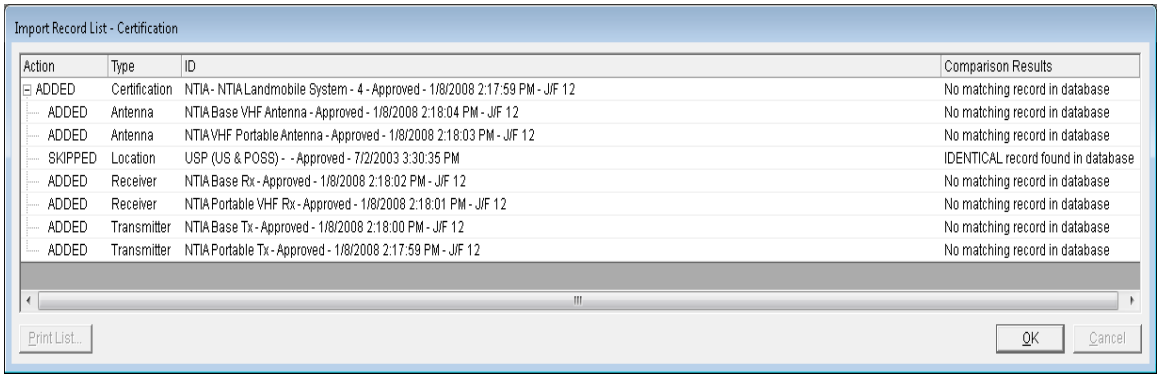
Step 10. Click **Import**. The **File Description** window is displayed.



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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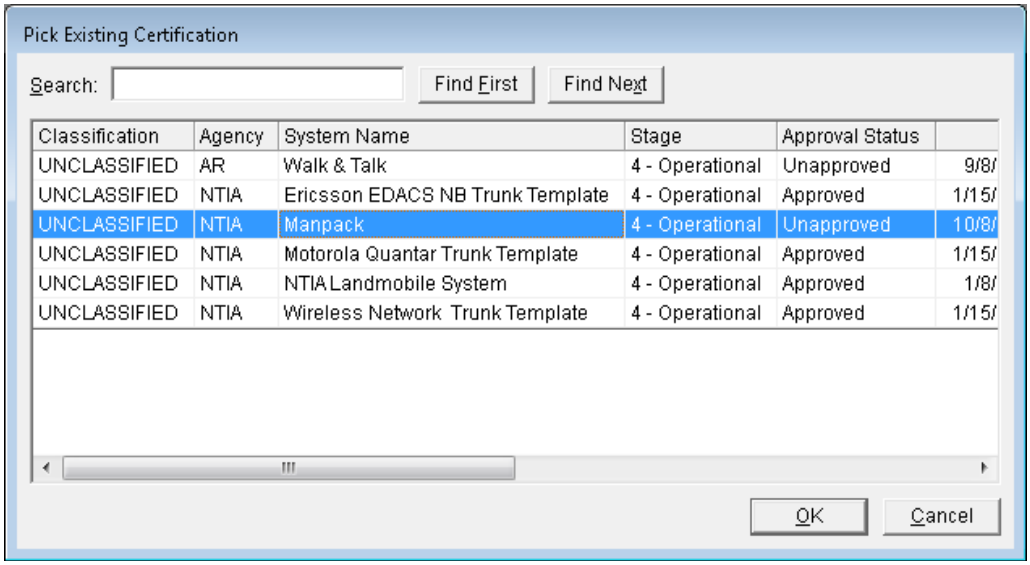
10.0 OPENING AND EDITING AN UNAPPROVED CERTIFICATION RECORD

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.

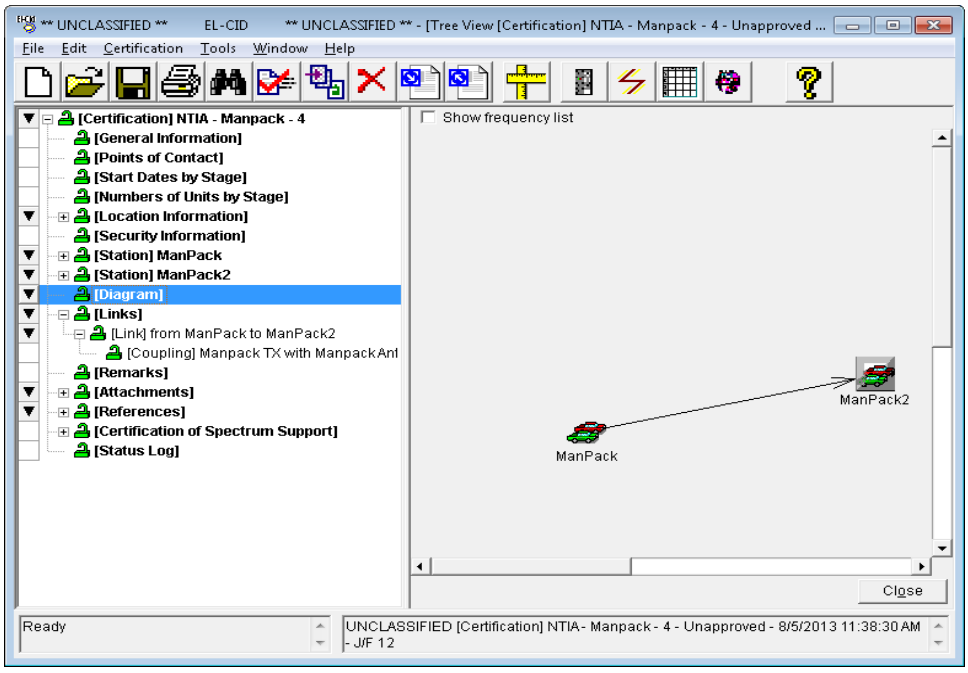
Step 1. Click the **Open** button to open a certification.

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

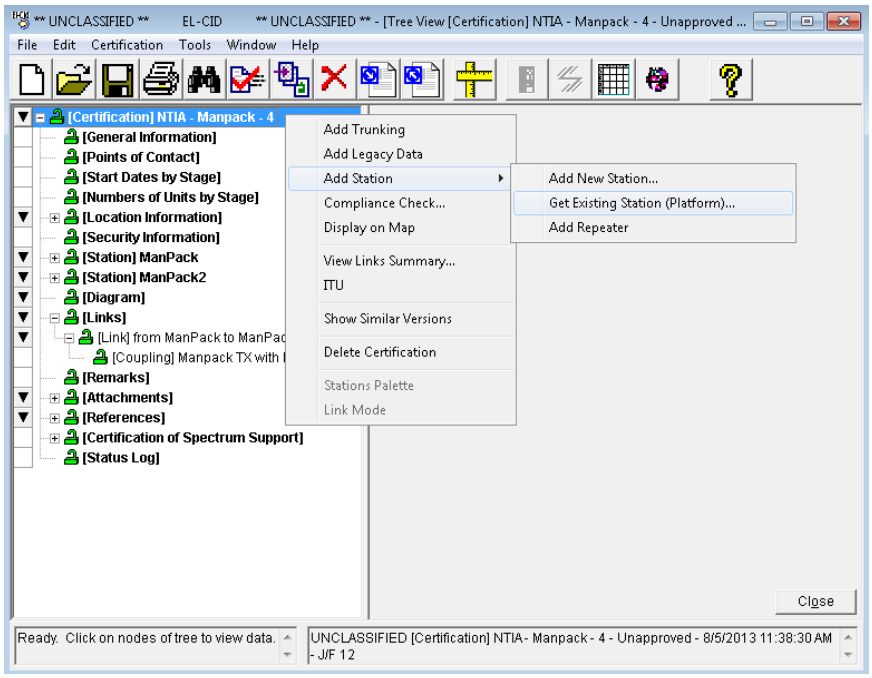


Step 2. Highlight the **Manpack** system and then click **OK**. The Certification's Tree View is displayed.

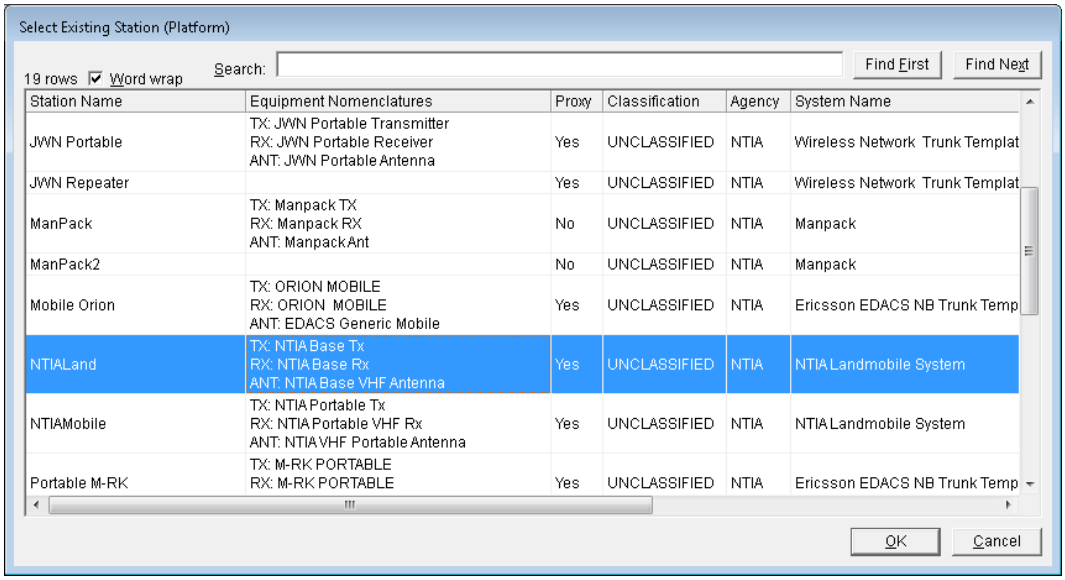
Step 3. Click **[Diagram].** The **Diagram** node is displayed.



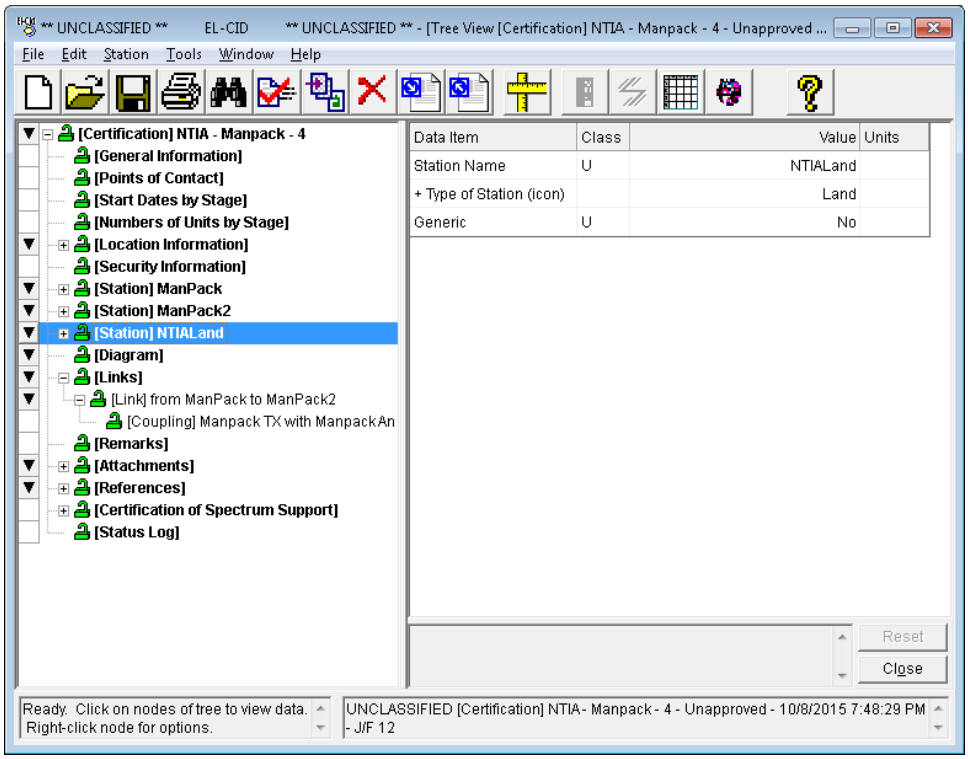
Step 4. To add an existing station to a certification, including its equipments and locations, **right-click** on the **[Certification] NTIA – Manpack – 4** node and select **Add Station | Get Existing Station (Platform)** in the menu that pops up.



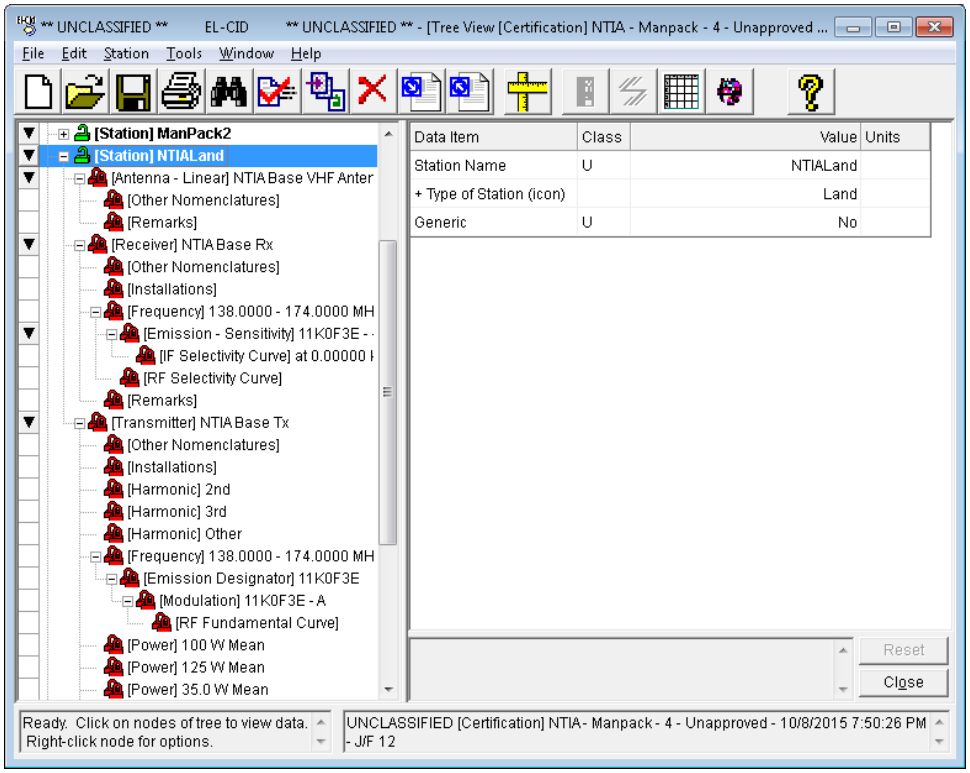
The **Select Existing Station (Platform)** window appears.



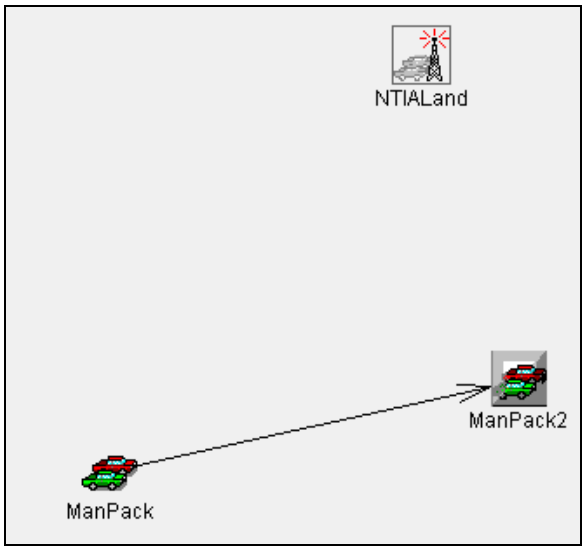
Step 5. Select the row with **NTIALand** in the **Station Name** column and click **OK**. The Tree View window reappears with the NTIALand station added to the Certification record.



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

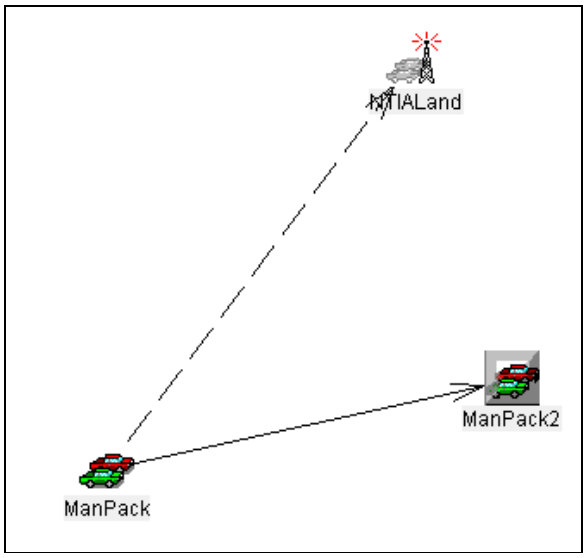


Step 7. Click on the **Diagram** node and **drag** the **NTIALand** node so that your diagram looks something like this.



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

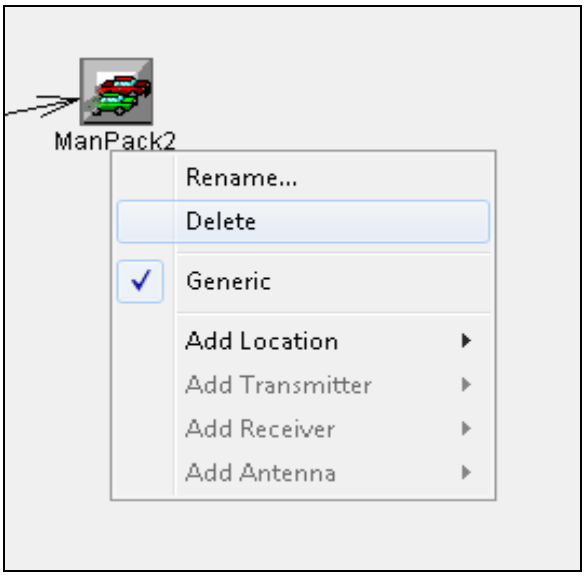
Step 9. Click on the **ManPack** icon, and then click on the **NTIALand** icon. A link from the **ManPack** Station to the **NTIALand** Station will be drawn, as shown below.



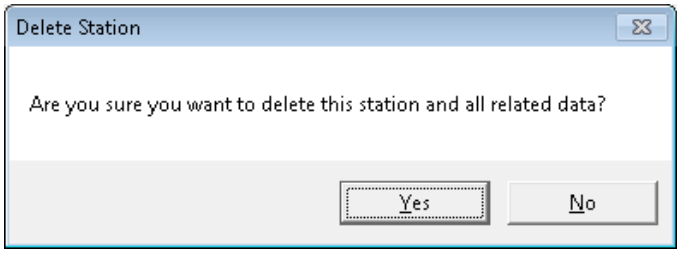
Step 10. Click on the **NTIALand** icon, and then click on the **ManPack** icon. A link from the **NTIALand** Station to the **ManPack** Station will be drawn (i.e., the link will be drawn with arrows at both ends of the link).

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**.

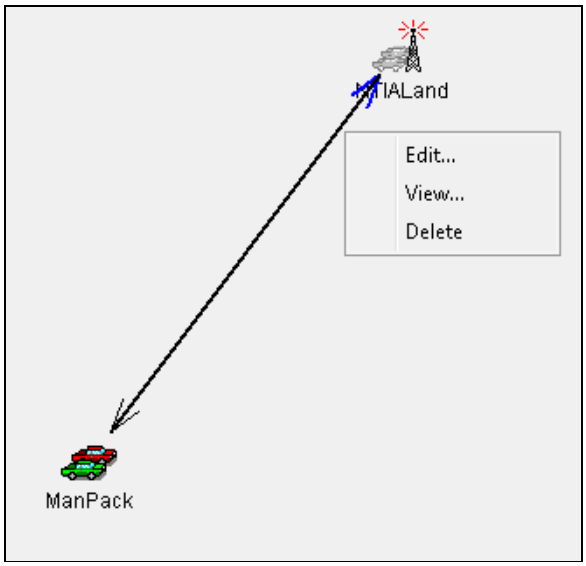


The **Delete Station** window appears.

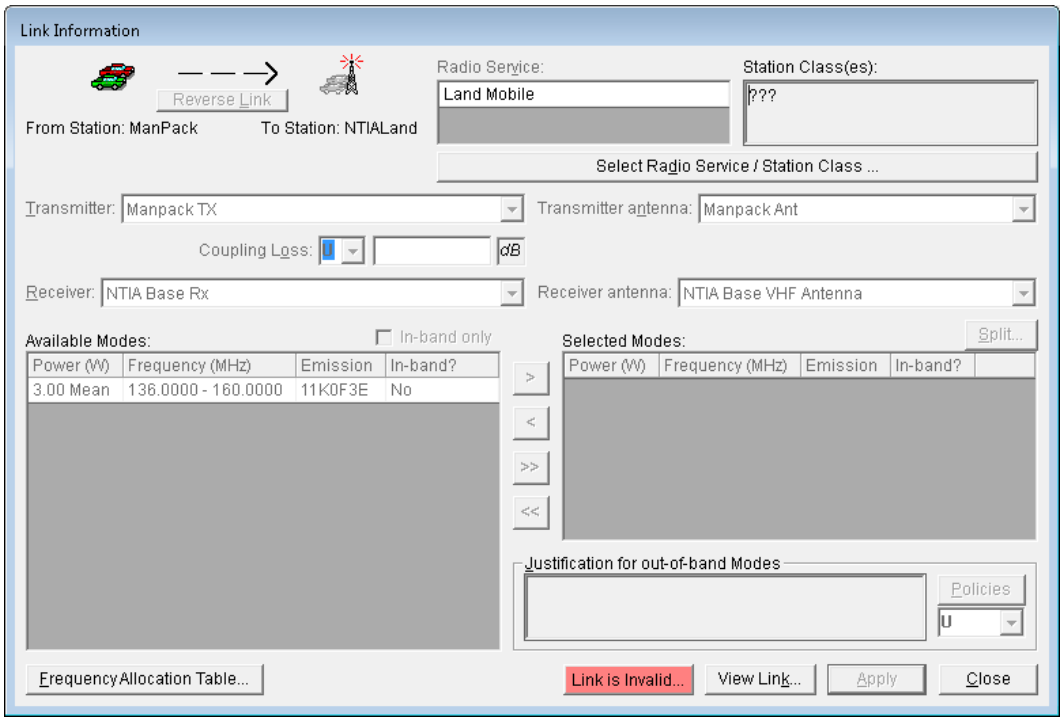


Step 13. Click **Yes**.

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

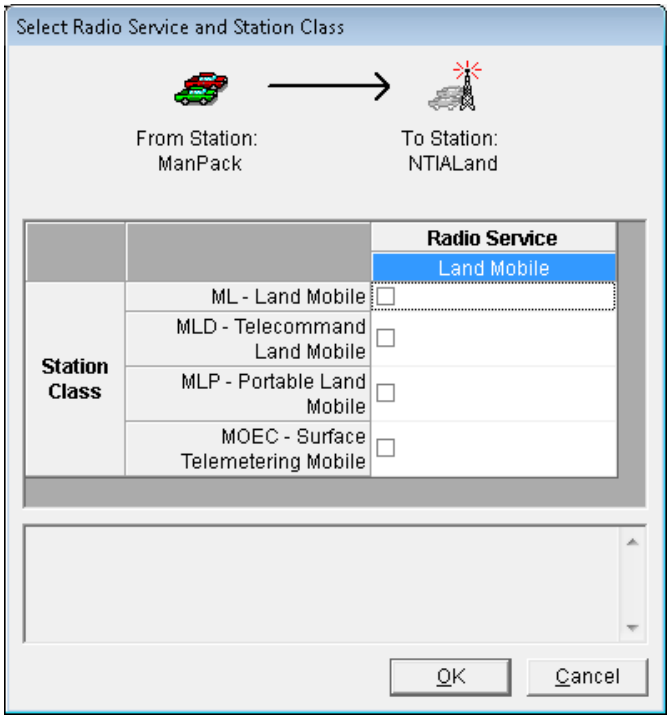


The **Link Information** window is displayed.

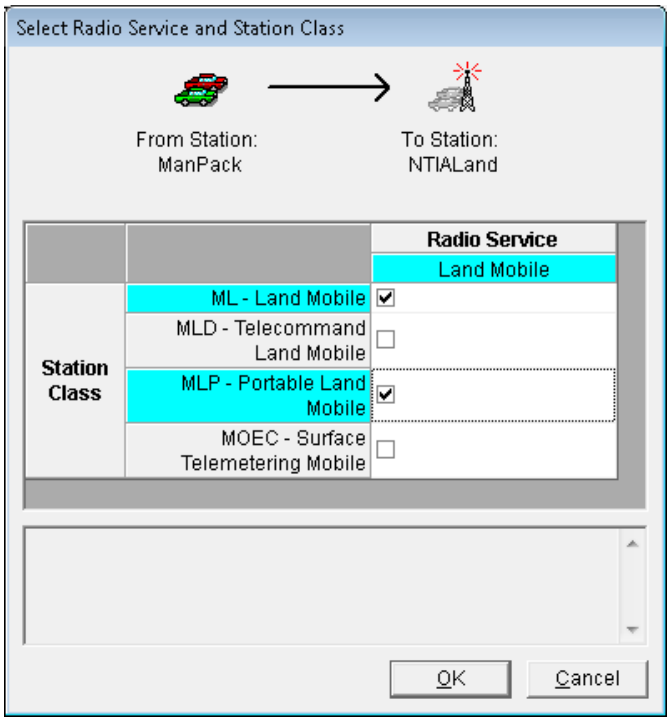


Step 15. Click the **Select Radio Service / Station Class** button.

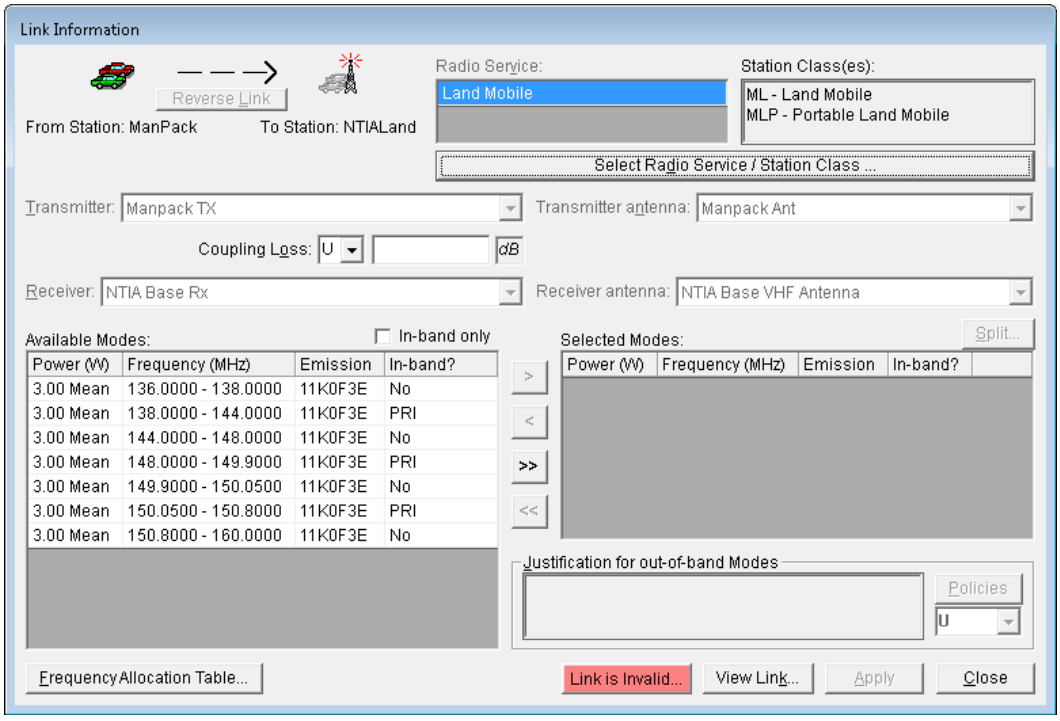
The **Select Radio Service and Station Class** window is displayed.



Step 16. Select station class **ML** and **MLP** by checking the respective check boxes, and then click **OK**.

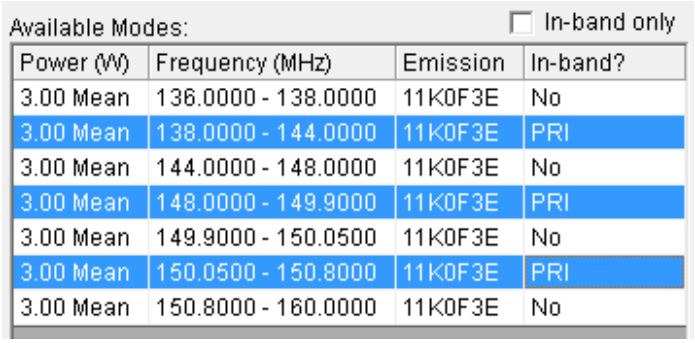


The **Link Information** window will be redisplayed.

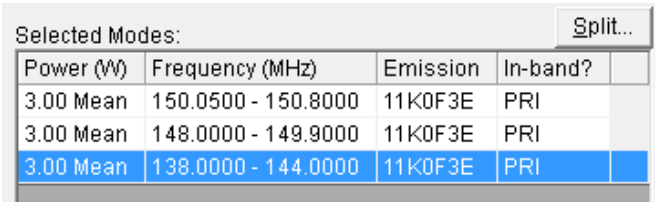


Since we only have one transmitter, receiver, and only one antenna at each station, all the pick lists are disabled. If you had more than one to choose from you could select from the lists by using the down arrow button beside each field.
Notice that you could change the classification and coupling loss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

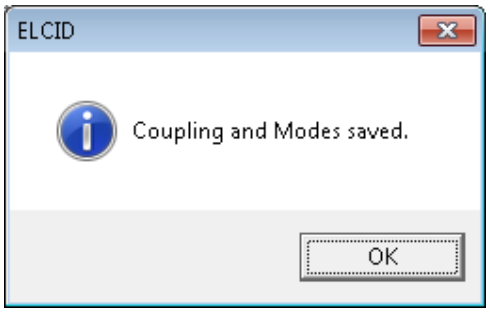
Step 17. Select from the available modes the modes that you want to certify. Hold down the **CTRL** key and then click the 3 rows of available modes that have a **PRI** in the **In-band?** column.



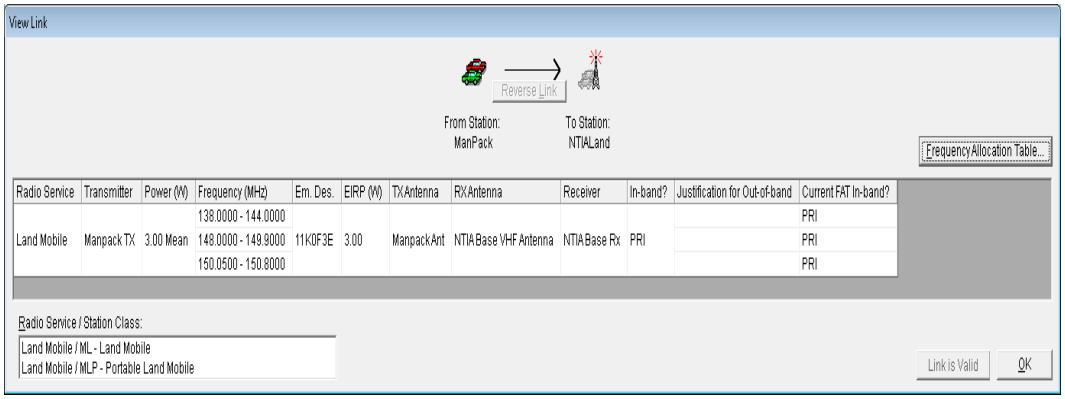
Step 18. Click the **right arrow** button to transfer the highlighted mode to the **Selected Modes** list.



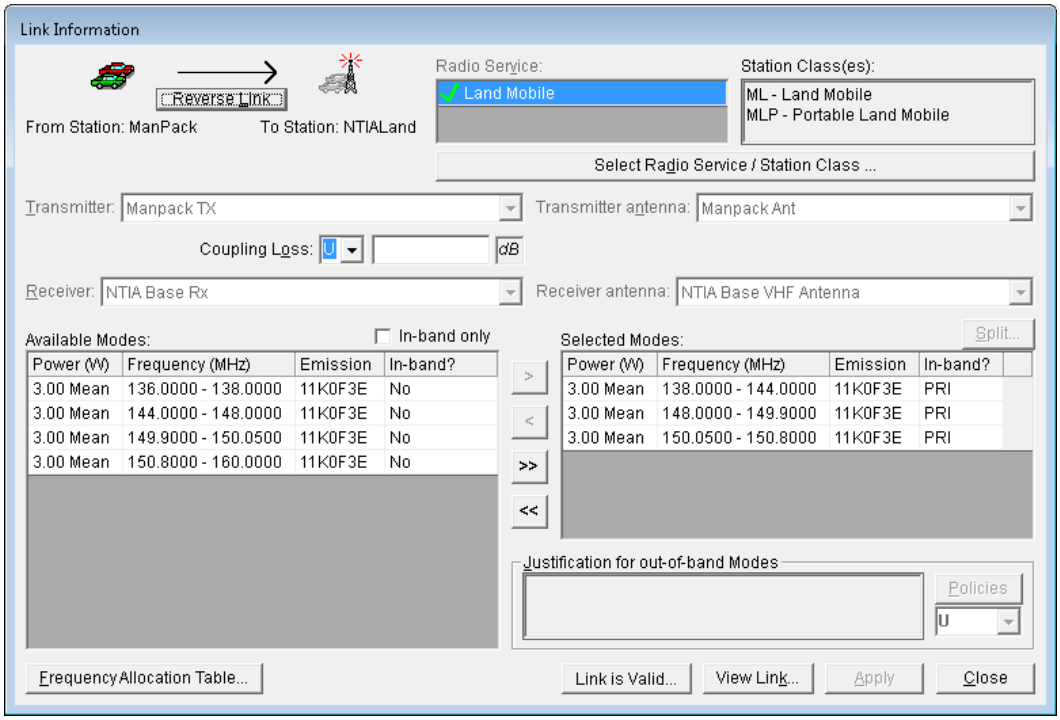
Step 19. Click **Apply** to save your choices. The following message appears. Click **OK** to acknowledge that the changes have been saved.



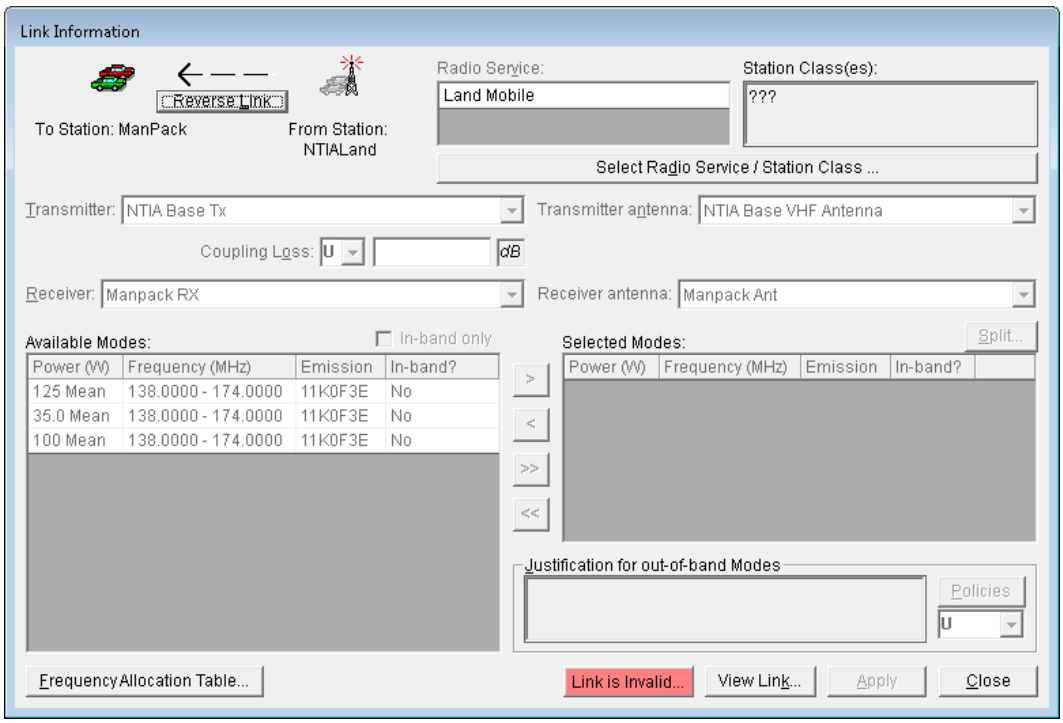
Step 20. Click the **View Link** button to see the link information that you have saved.



Step 21. Click **OK** to close the **View Link** window. Notice that the Link is Invalid... button has changed to Link is Valid....

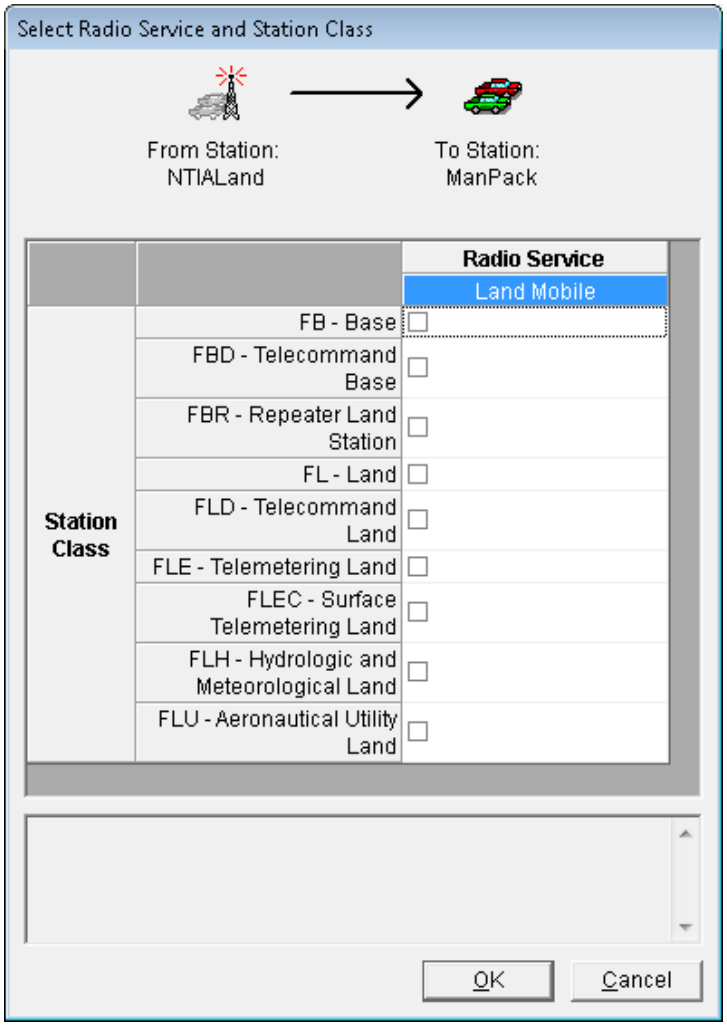


Step 22. Click the **Reverse Link** button Reverse Link to edit the reverse link data. The **Link Information** window for the reverse link will appear.

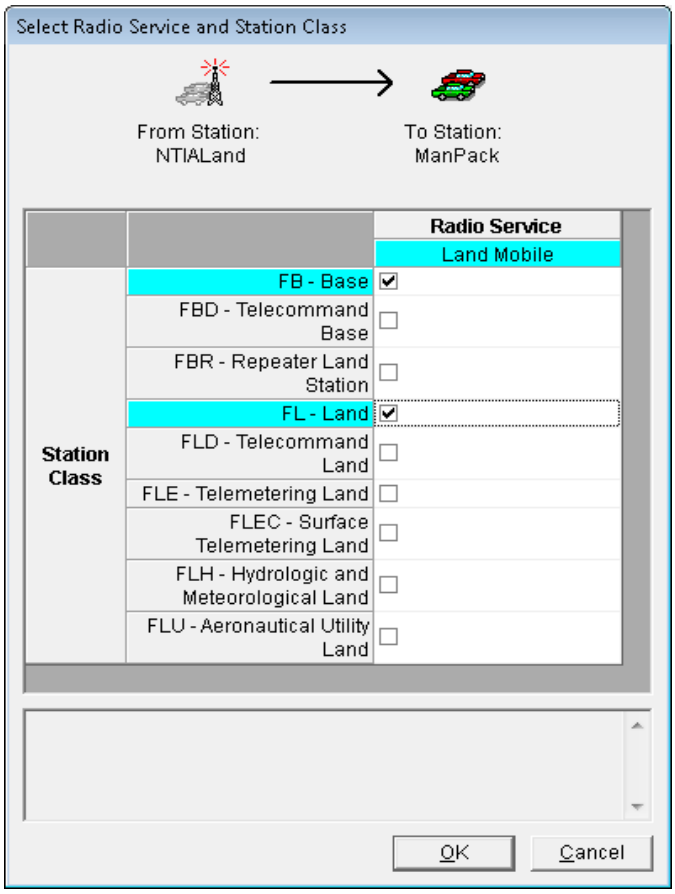


Step 23. Click the **Select Radio Service / Station Class** button.

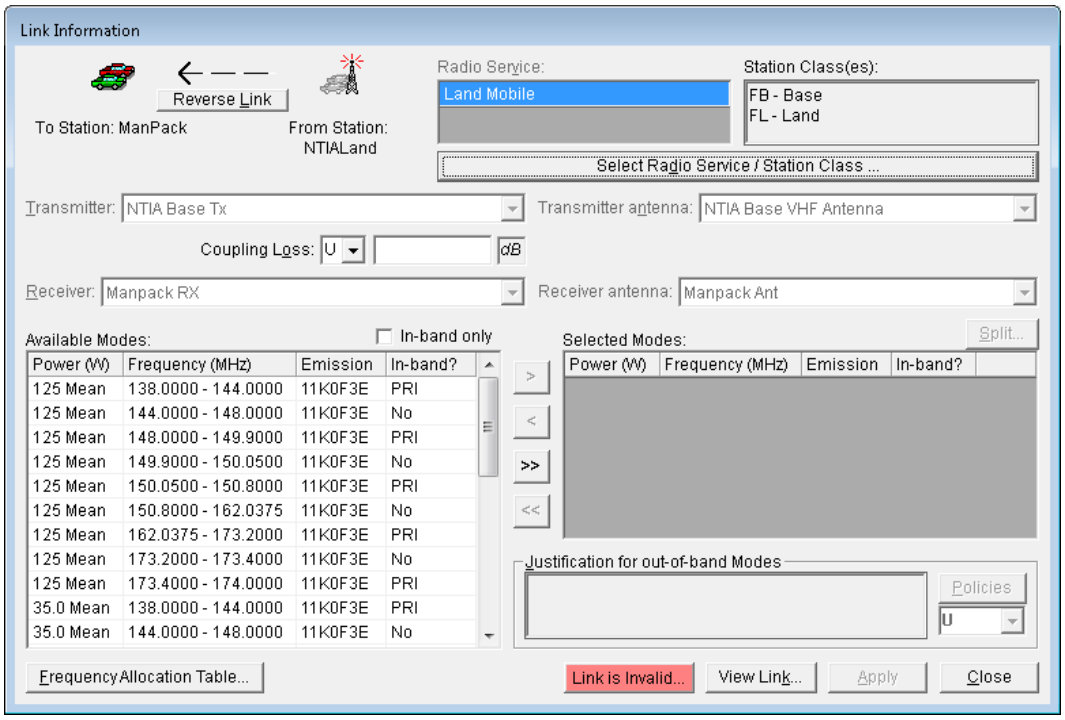
The **Select Radio Service and Station Class** window is displayed.



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

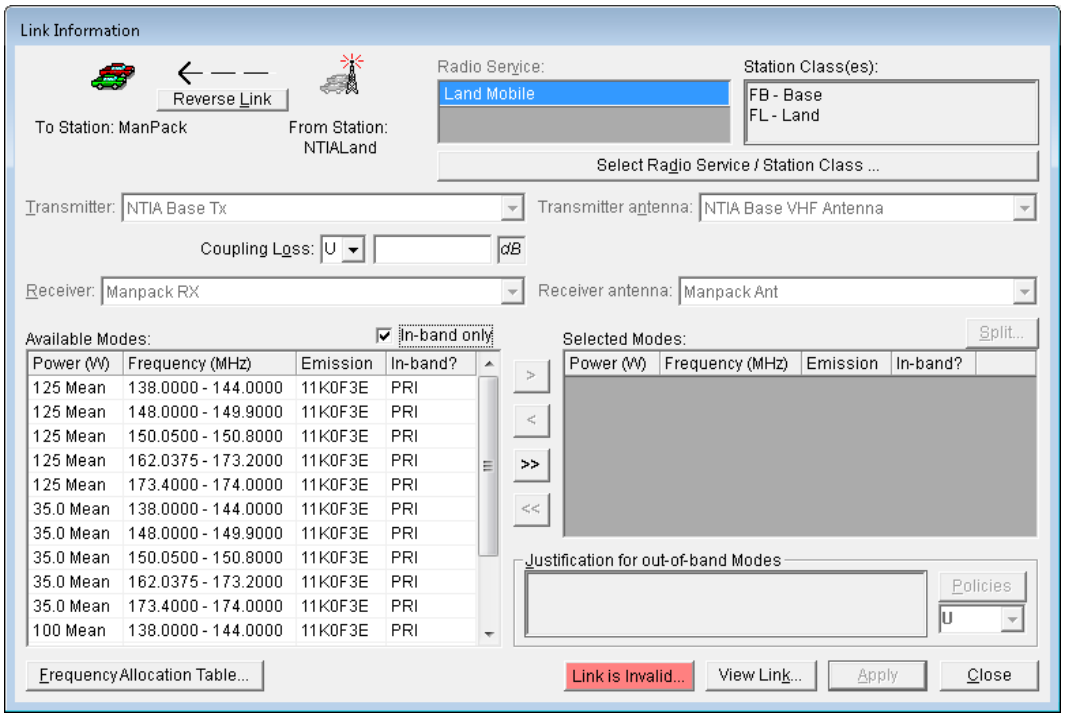


The **Link Information** window will be redisplayed.

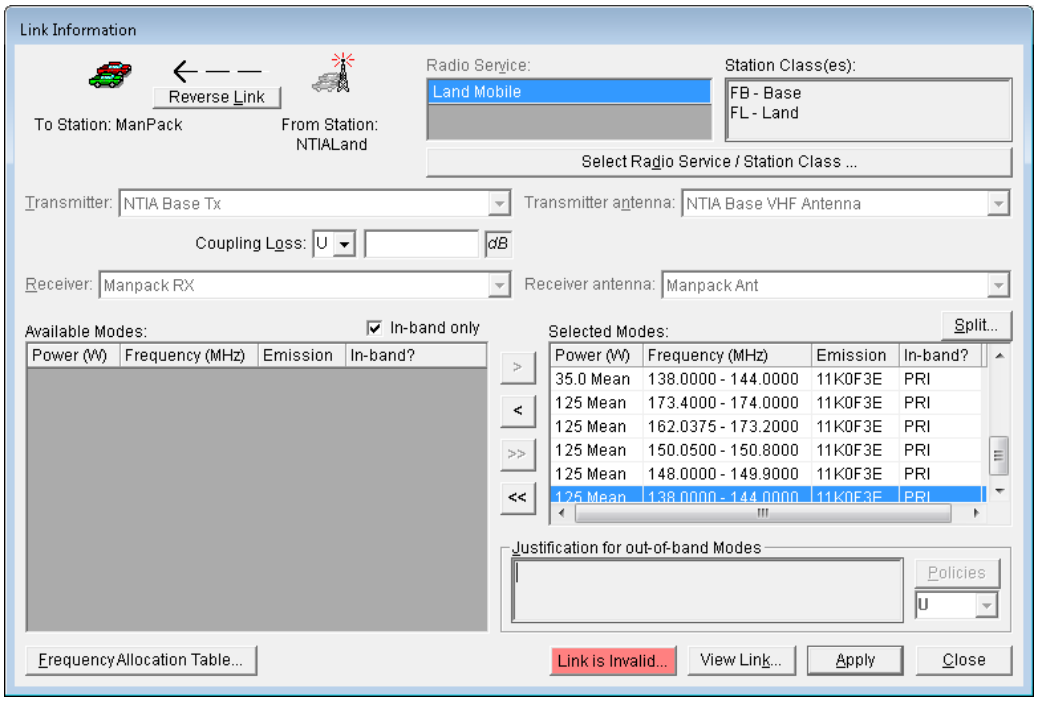


Step 25. On the **Link Information** window, check the **In-band only** check box 

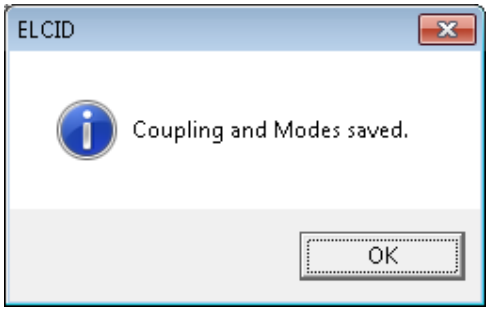
. Only the rows of available modes that have a **PRI** in the **In-band?** column now appear.



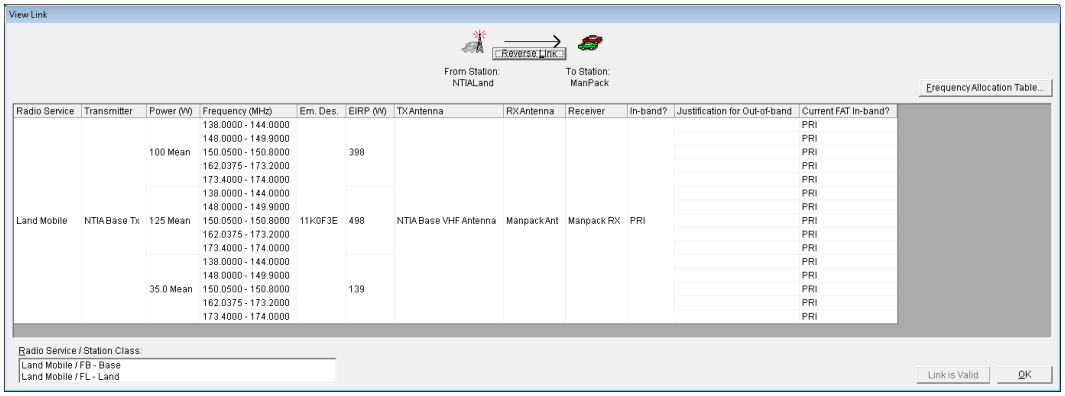
Select all the available **In-band** modes by clicking the **select all button** >>.



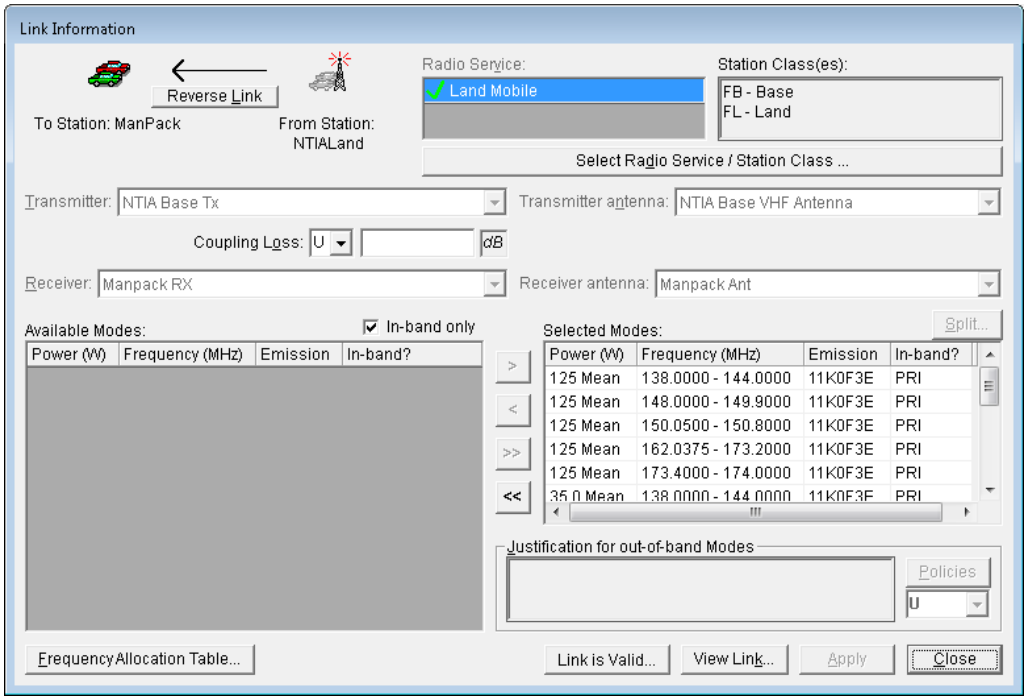
Step 26. Click **Apply** to save your choices. The following message appears. Click **OK** to acknowledge that the changes have been saved.



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

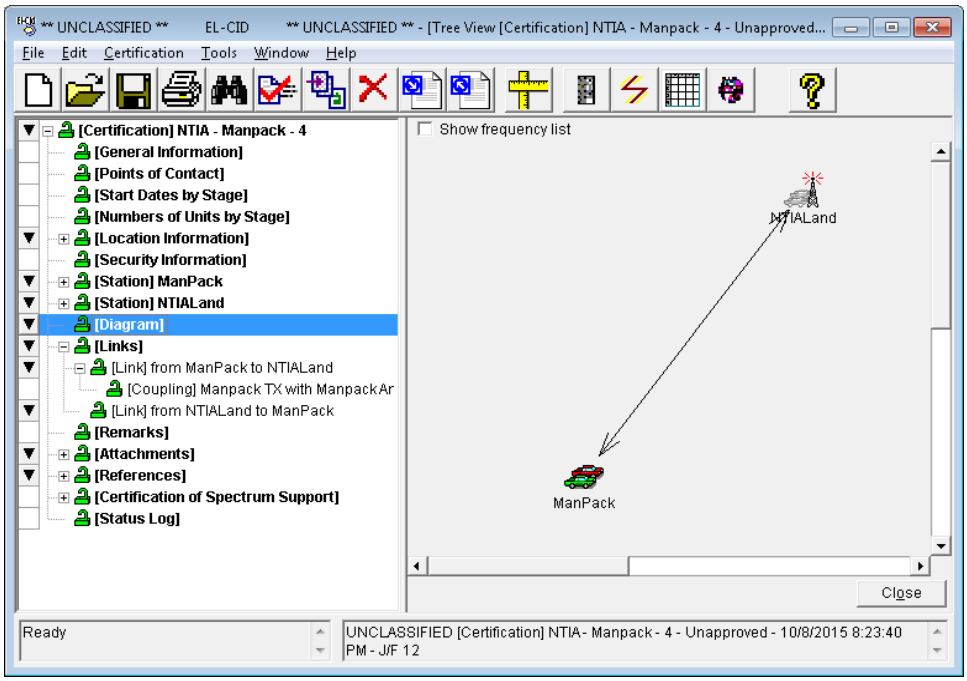


Step 28. Click **OK** to close the **View Link** window. Notice that the Link is Invalid... button has changed to Link is Valid....



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

Step 30. Click **[Diagram].** The **Diagram** node is displayed. Notice that the dashed lines between the links have become solid lines, indicating that data has been entered for the links.

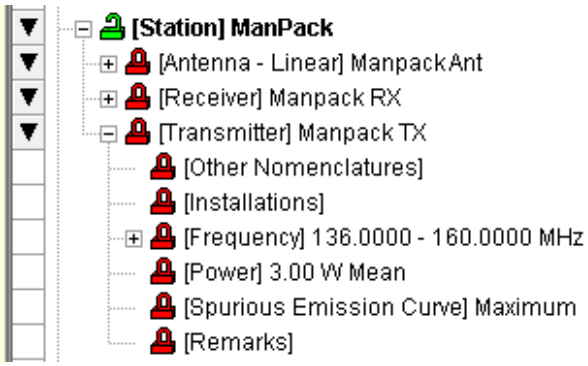


11.0 CLONING RECORDS

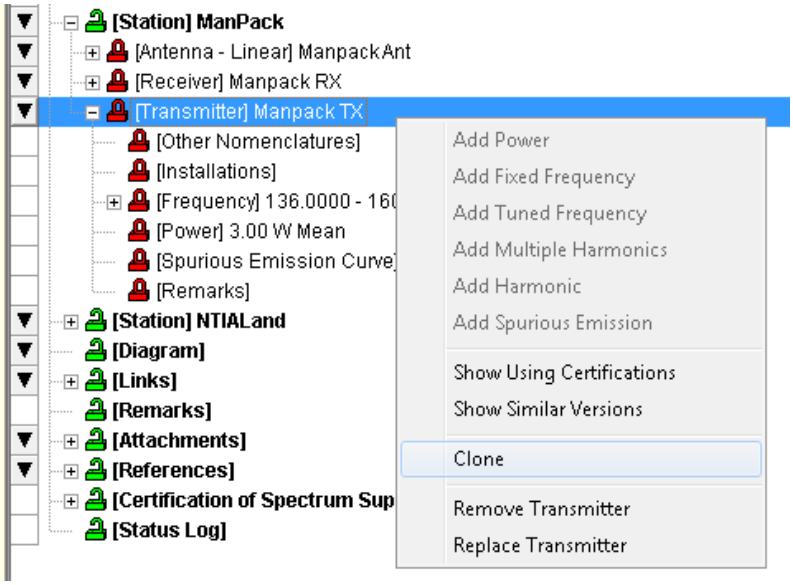
You can clone a Certification, Transmitter, Receiver, Antenna, or Location from the **Tree View**.

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

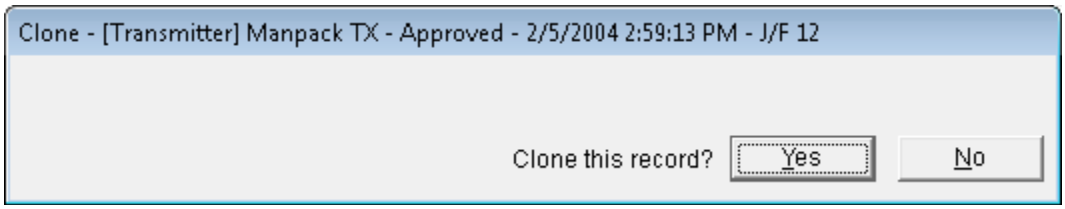
Step 1. **Expand** the **[Station] ManPack** node. **Click** on the **[Transmitter] Manpack TX** node to expand it as well. Note that the transmitter node is red padlocked (Approved). We want to create a new model of this transmitter with a dual power selector. Because it is locked, we will clone this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



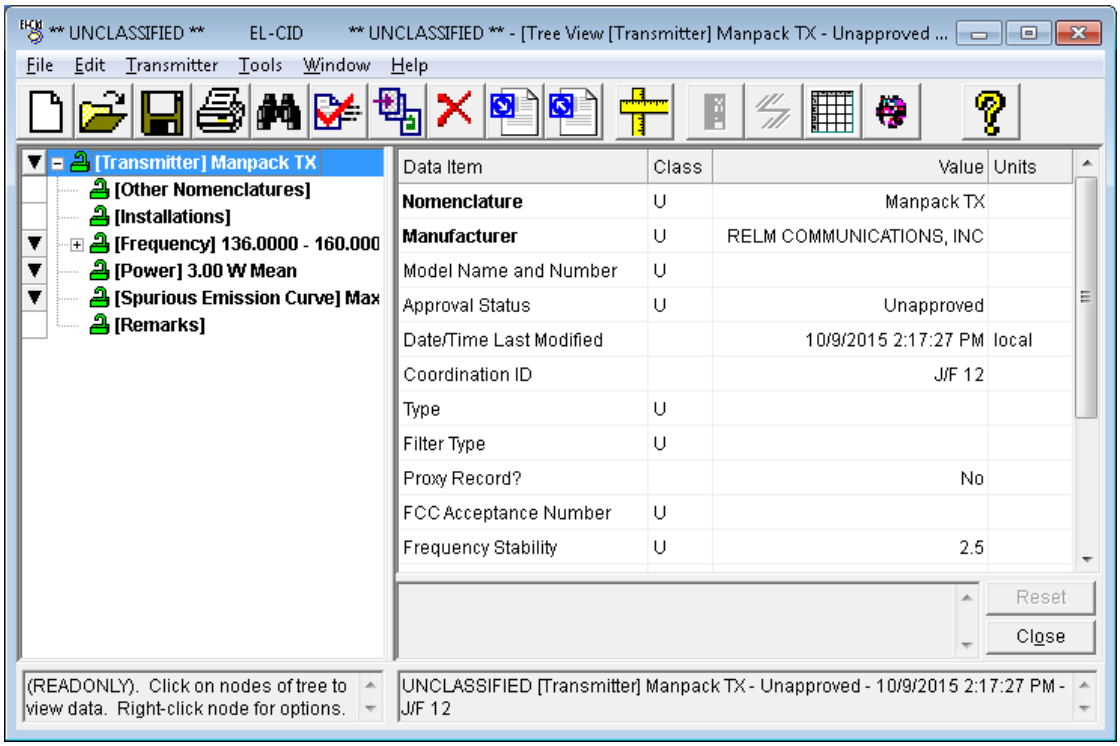
Step 2. **Right-click** on the **[Transmitter] Manpack TX** node and **select** **Clone**.



The **Clone** window is displayed.

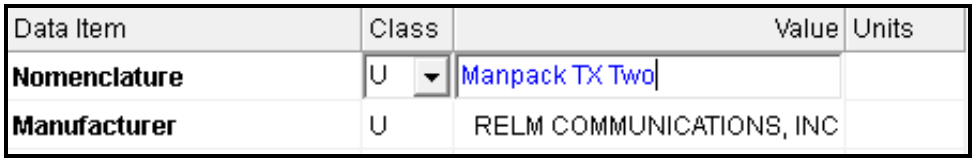


Step 3. Click **Yes** to clone the record. The cloned transmitter is displayed.



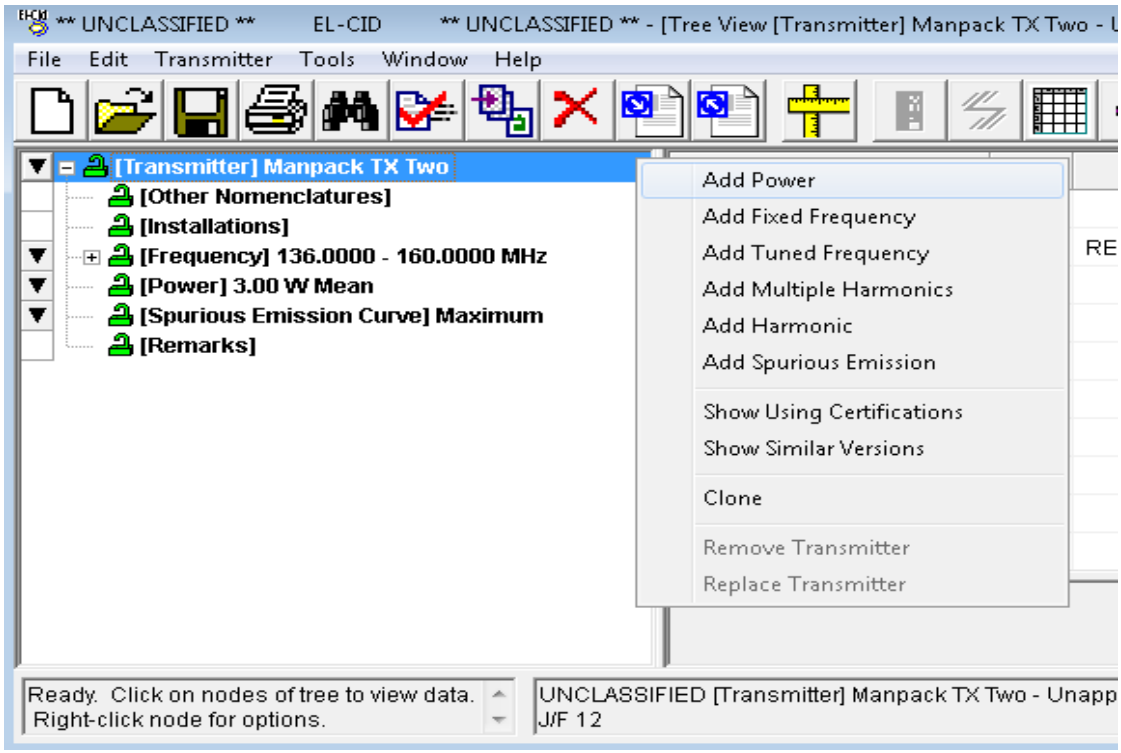
HINT: When you clone a record you are adding it to the database and not to the active certification. Notice that the **Red** locks have turned to **Green** locks. When you close this window you will return to the active application.

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.

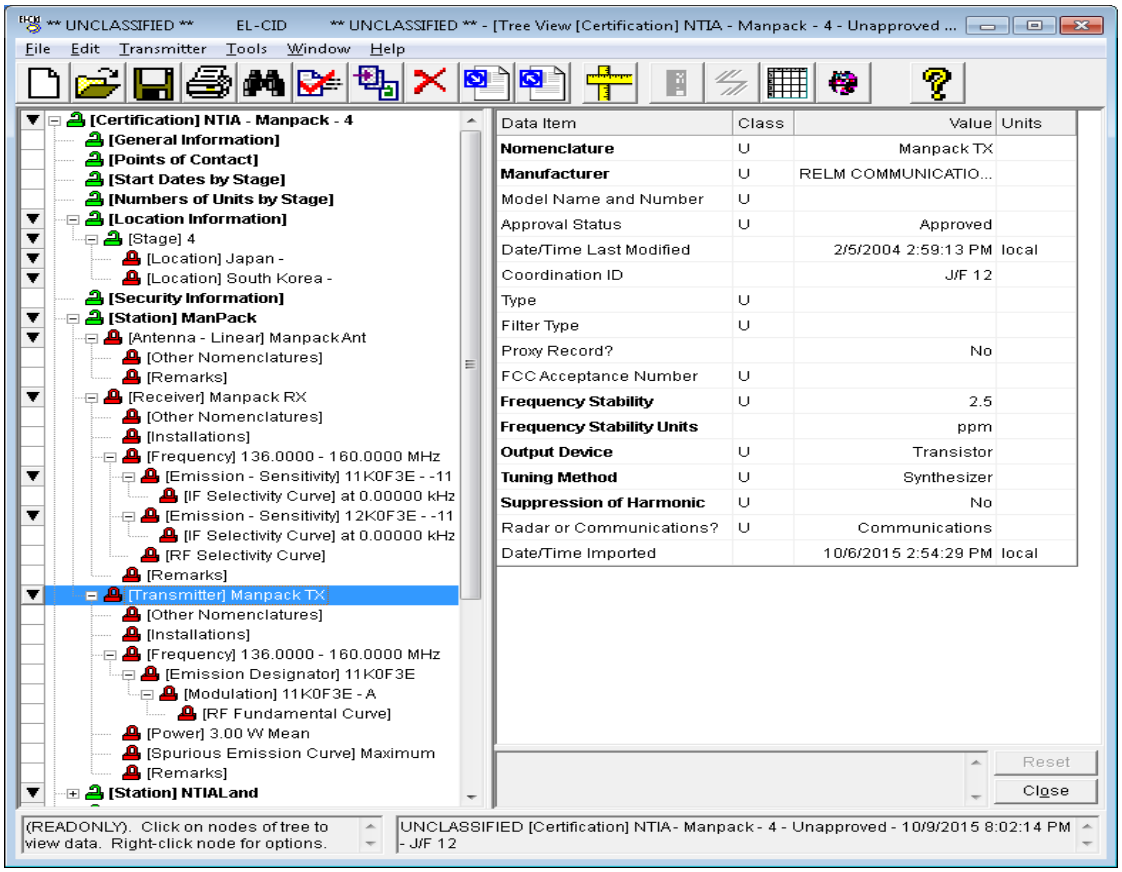
Data Item	Class	Value	Units
Power Type			
Power Lower Limit	U		W
Power Upper Limit	U		W

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

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

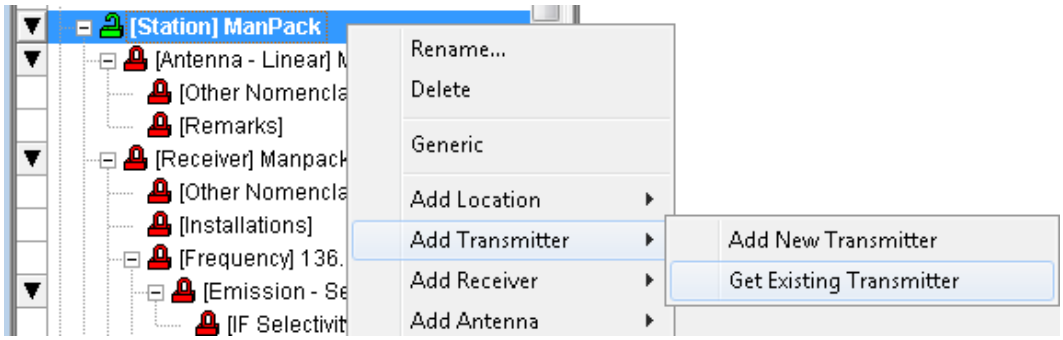
Step 7. **Save** the data.

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

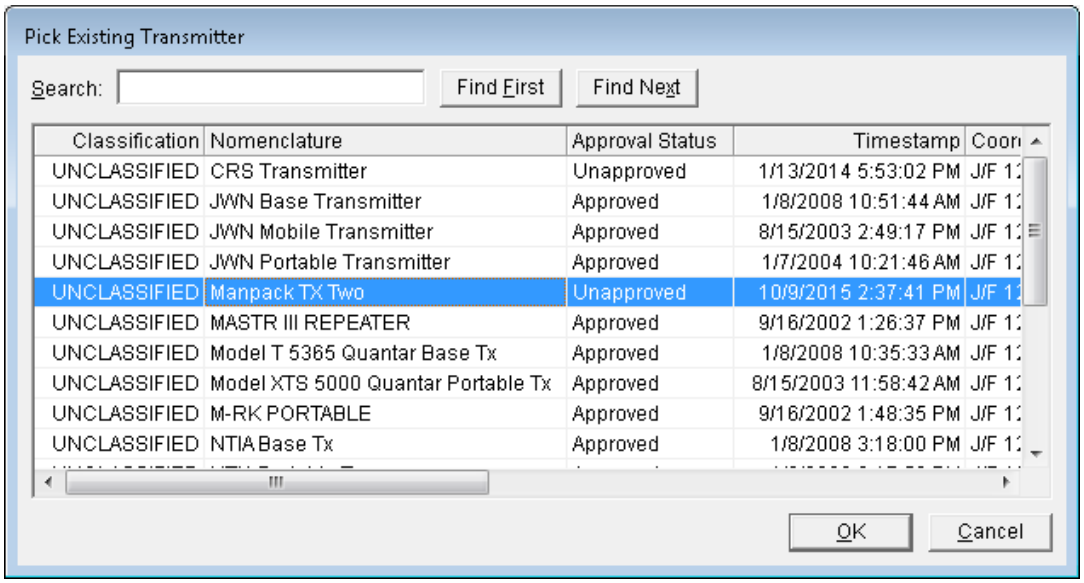


Now that we have a new transmitter record which was cloned (or copied) from an existing transmitter, we are going to add this new transmitter to the ManPack Station.

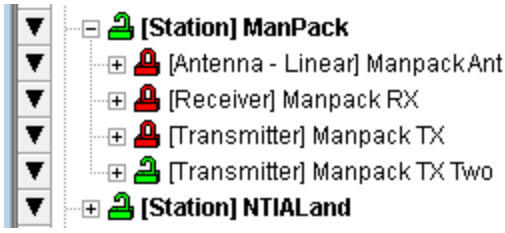
Step 9. **Right-click** on the **[Station] ManPack** node and select **Add Transmitter | Get Existing Transmitter**.



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.



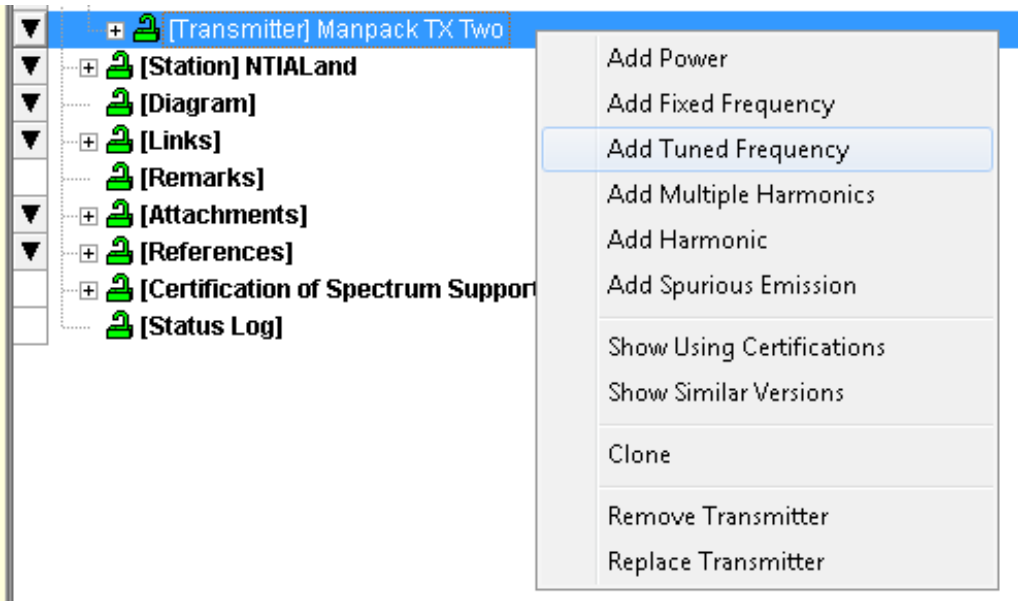
Step 10. Highlight **Manpack TX Two** and then click **OK**. The **Manpack TX Two** transmitter is added to your certification for the **[Station] ManPack**.



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.

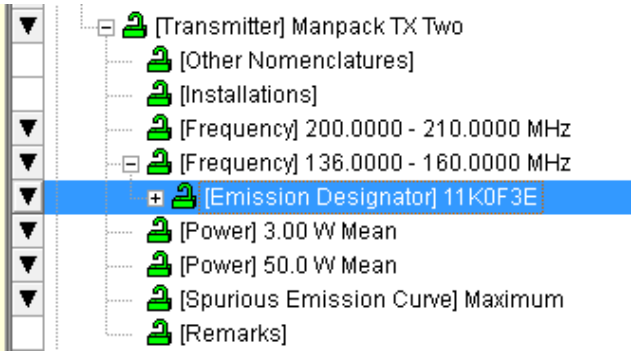
Data Item	Class	Value	Units
+ **Fixed Frequency?**		No	
+ **Lowest Tuned Frequency**	U		MHz
+ **Highest Tuned Frequency**	U		MHz
Tuning Increment	U		kHz
# of Frequencies Required for Operation	U		
Minimum Required Frequency Separation	U		MHz
Frequency Blocking Indicator	U	No	
Lowest Usable Channel	U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

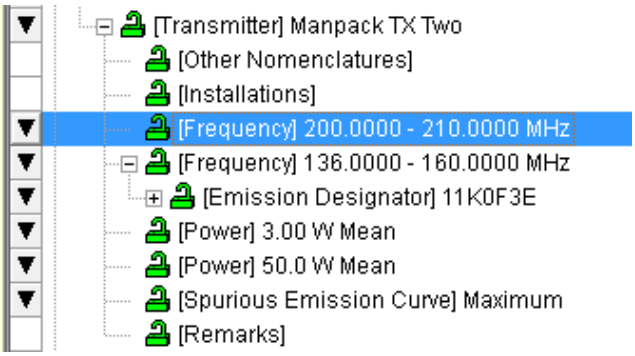
Step 15. If not already done, expand the **[Frequency] 136.00 – 160.00 MHz** node underneath node **[Transmitter] Manpack TX Two**. Click the **[Emission Designator] 11K0F3E** node to highlight it.



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

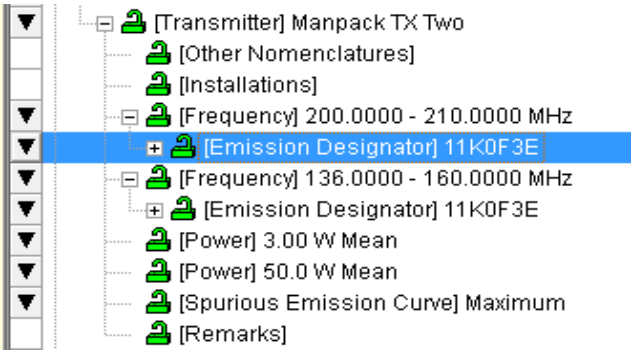
HINT: There will be no feedback on the screen.

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.

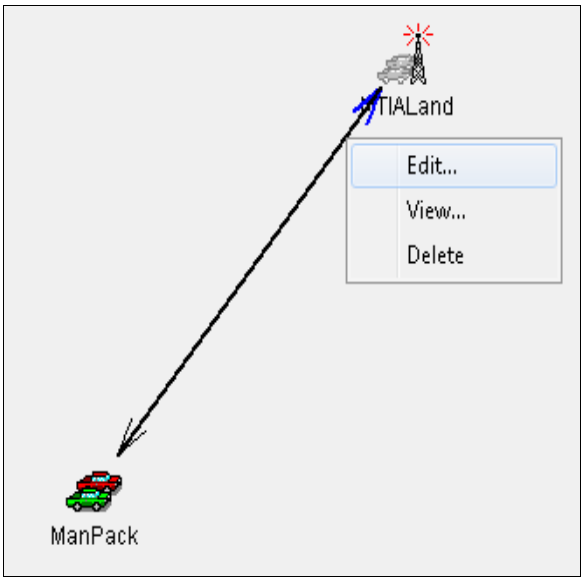
The emission designator **11K0F3E** will be copied to the **[Frequency] 200.00 – 210.00 MHz** node.



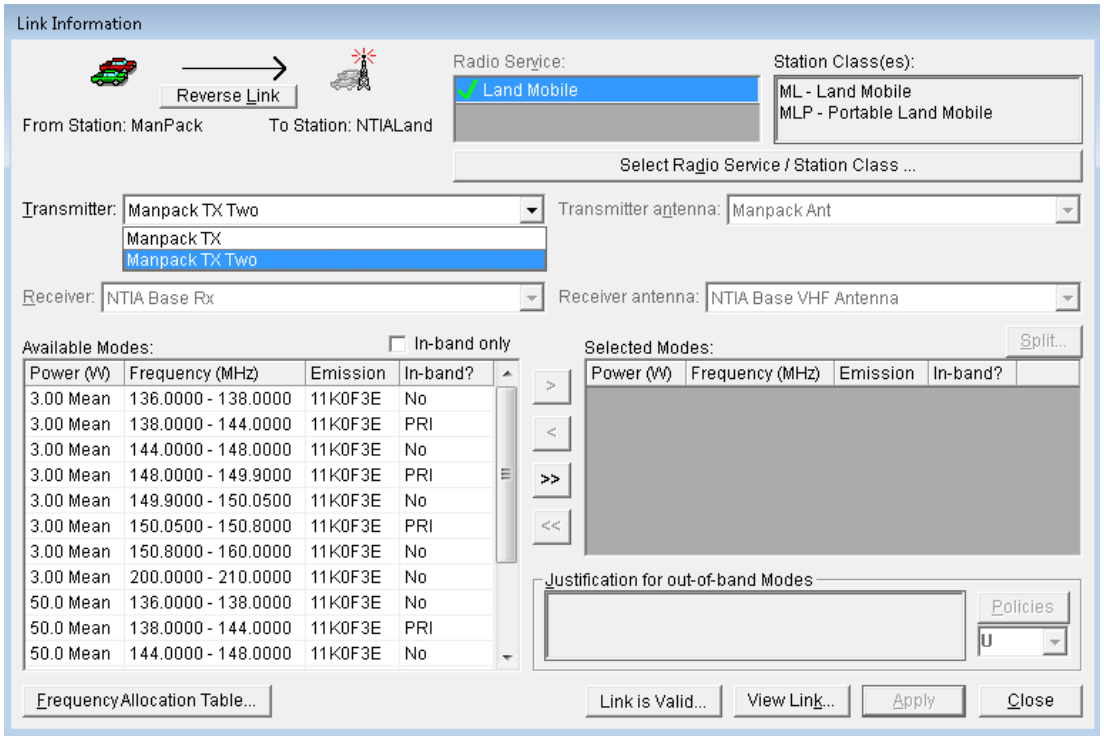
HINT: Expand the emission node to see that the modulation was also copied.

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

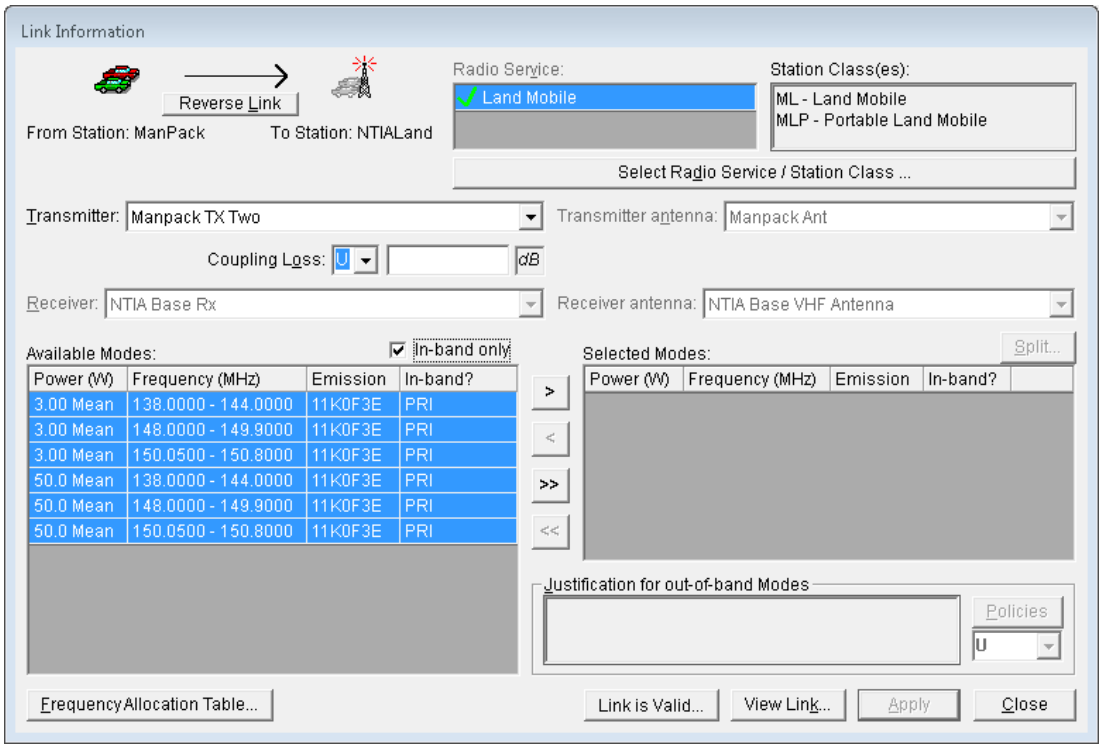
Step 19. Click on the Diagram node. **Highlight** the link from **Manpack** to **NTIALand**. **Right-click** and select **Edit**



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



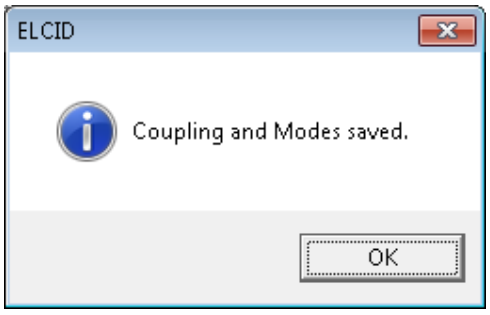
Choose the **ManPack TX Two** transmitter. Complete this link. Select the 6 available modes with the word **PRI in the In-band? column**.



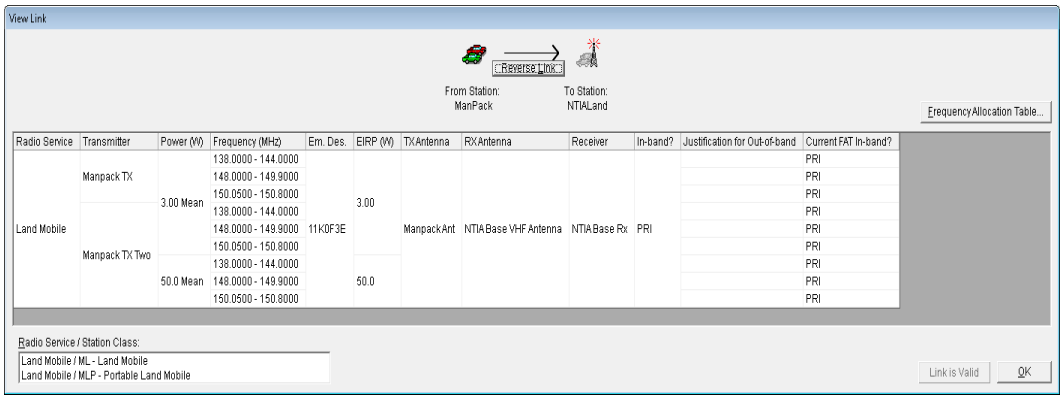
Move them to the **Selected Modes list** by clicking the **select all button** >>.

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

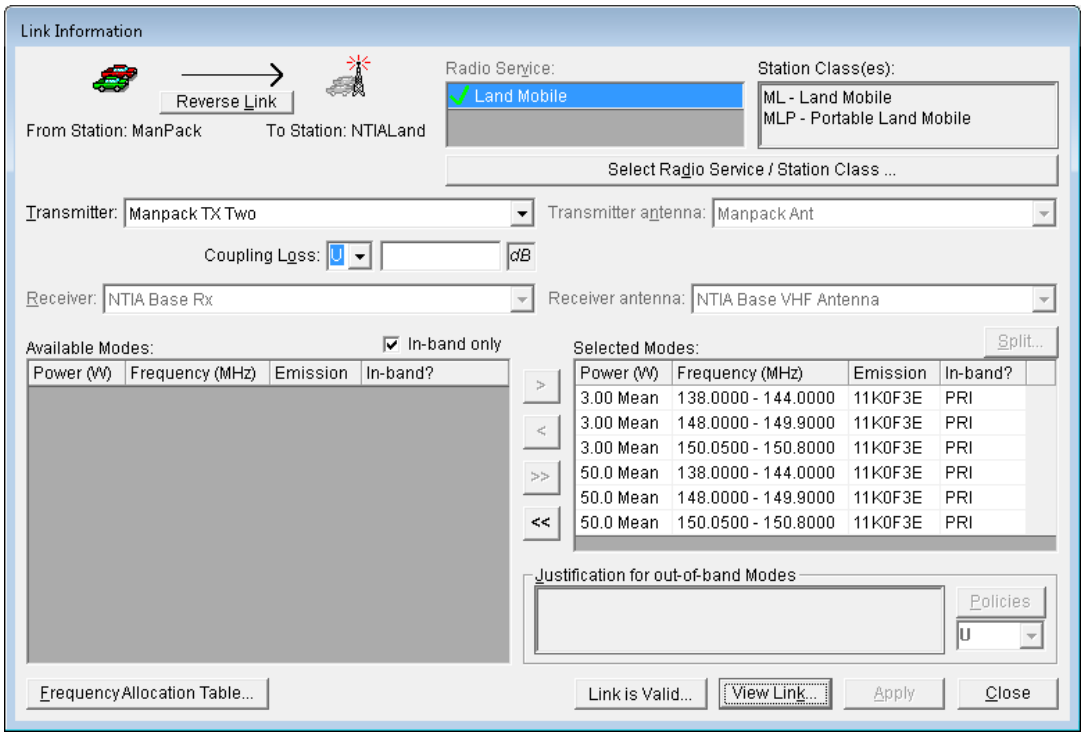
Step 21. Click **Apply** to save your choices. The following message appears. Click **OK** to acknowledge that the changes have been saved.



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



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



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

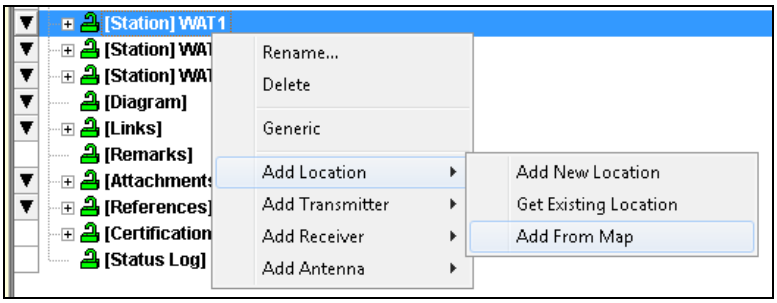
Step 25. Click **Close** to close the current certification application.

12.0 ADDING LOCATIONS FROM THE MAP

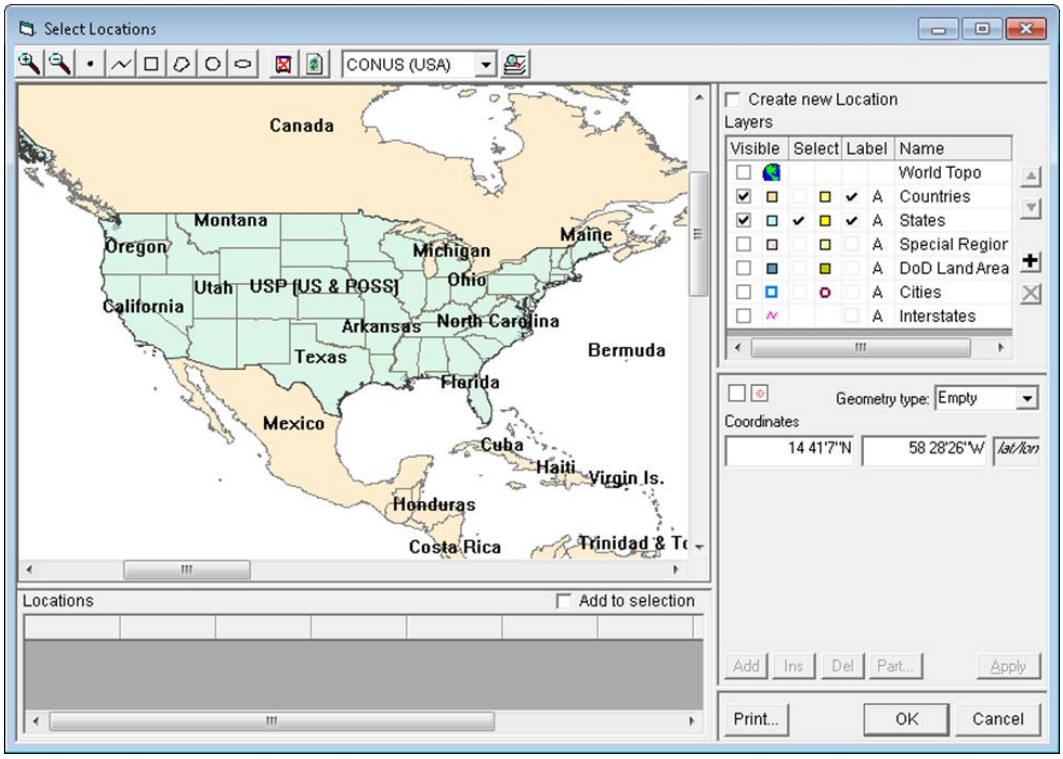
If you want to add a location to your certification record but do not know the detailed information, you may be able to find the location by using the Map to find the desired location. If it is a city already in the database, follow the steps below to select the city and add its location data to your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

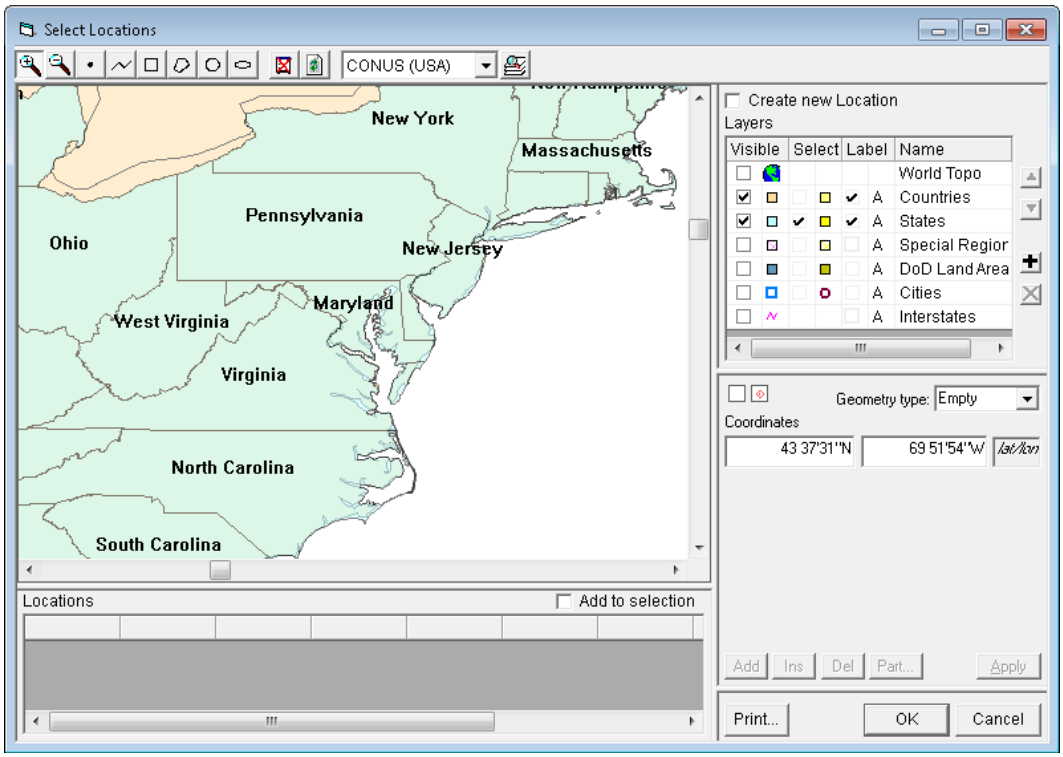


The **Select Locations** window is displayed.

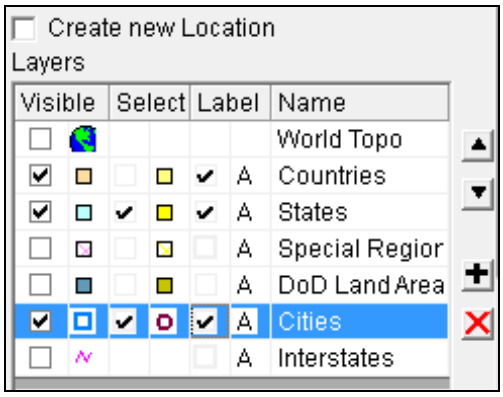


In the **Layers** grid on the right, check or uncheck boxes (if needed) to make your settings match those you see in the screen above.

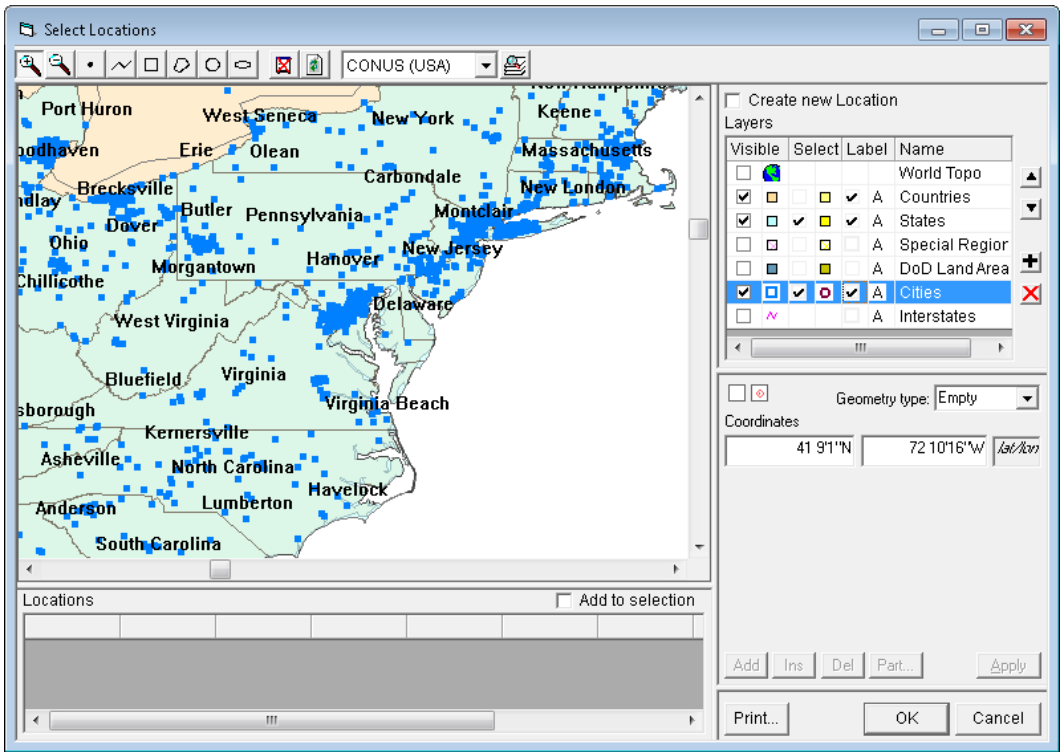
Step 3. Click on the **Magnify** button  and then place the mouse over the letter “y” in Maryland and click several times. You will zoom in on the Maryland area.



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

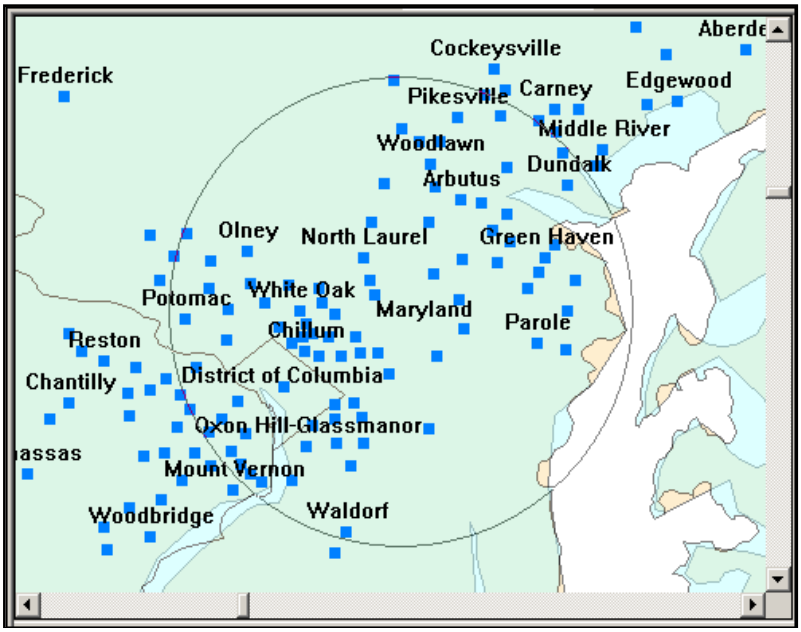


The **Select Locations** window will be displayed as shown below.

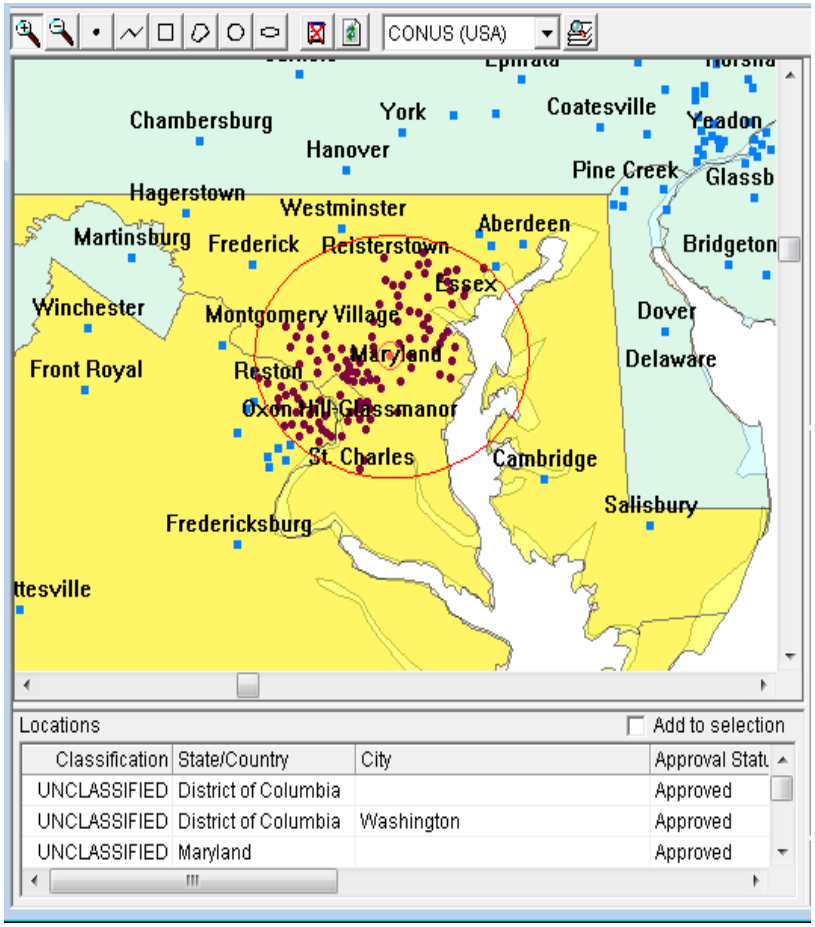


Step 5. **Zoom in** on the state of **Maryland** several times.

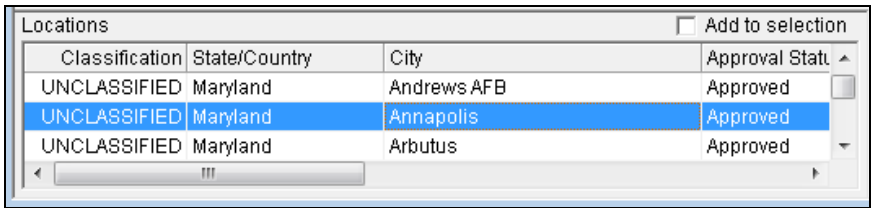
Step 6. Click the **Circle** button. Place the cursor over the **"a" in Maryland** and drag the mouse while holding down the left mouse button to create a **small circle.** Release the **mouse button**. Make sure the circle is big enough to encircle the Annapolis, MD area.



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 11:08:12 AM	local
+ Location Type	U	Single Point	
Geographic Coordinates	U	38 58'18"N 76 30'10"W	lat/lon
Map Layer		Cities	
Date/Time Imported		5/23/2003 12:27:47 PM	local

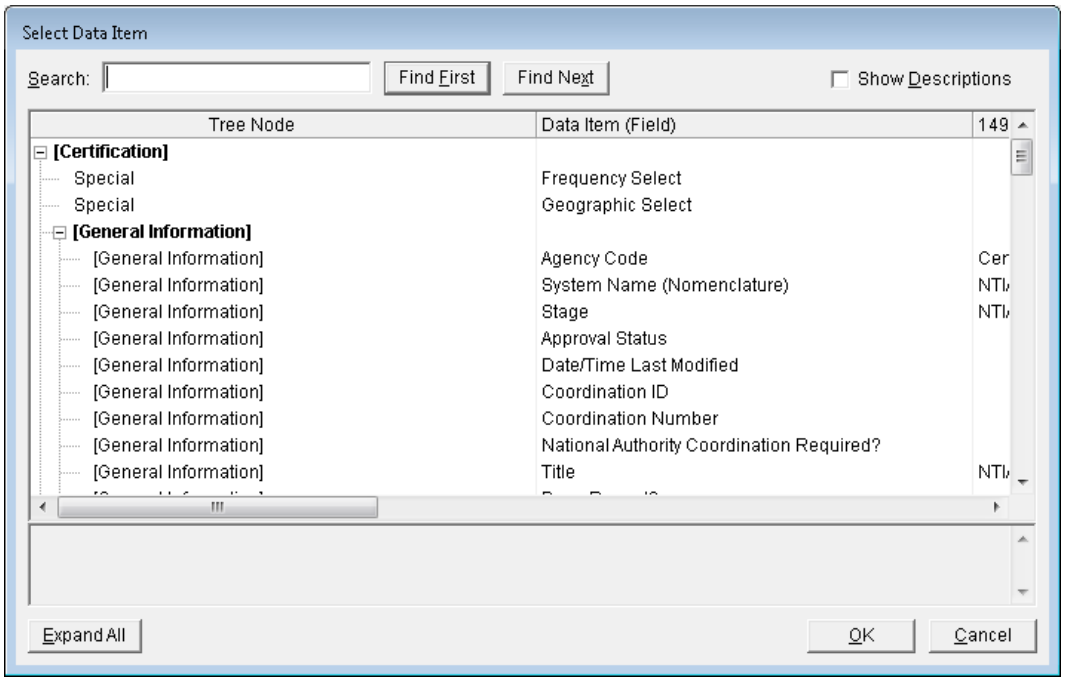
Step 8. Click the **Close** button.

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.

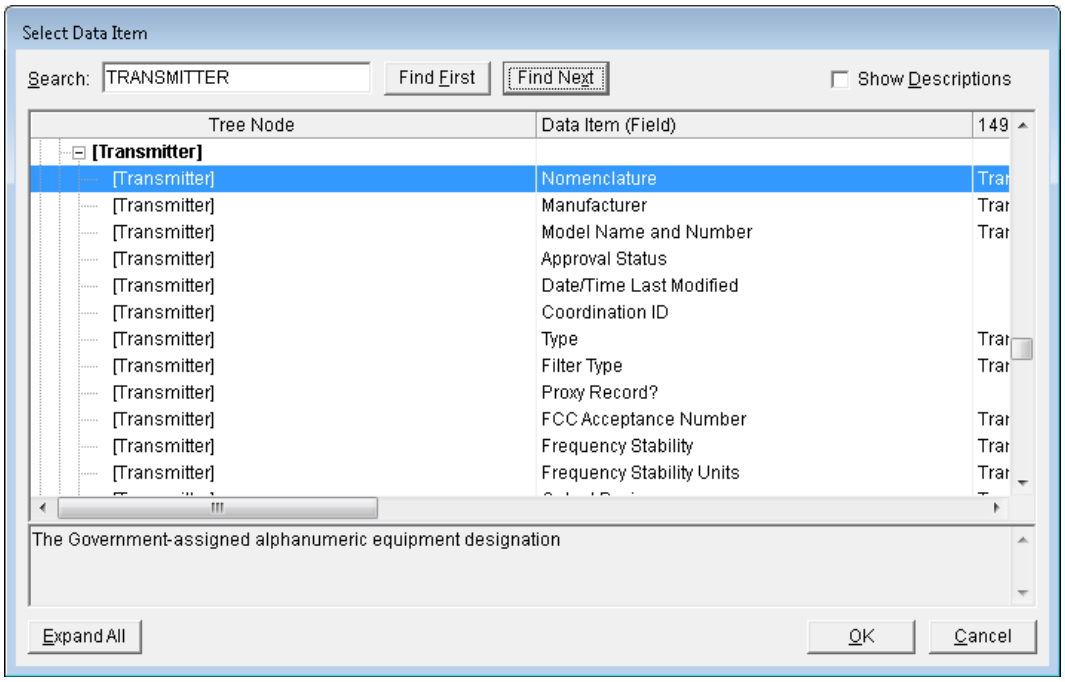
Step 1. Click the **New Query** button  on the tool bar.

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.

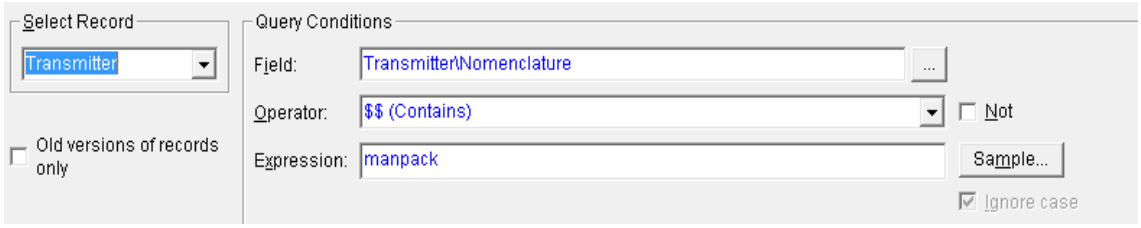
Step 4. Type **manpack** in the **Expression** box.

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

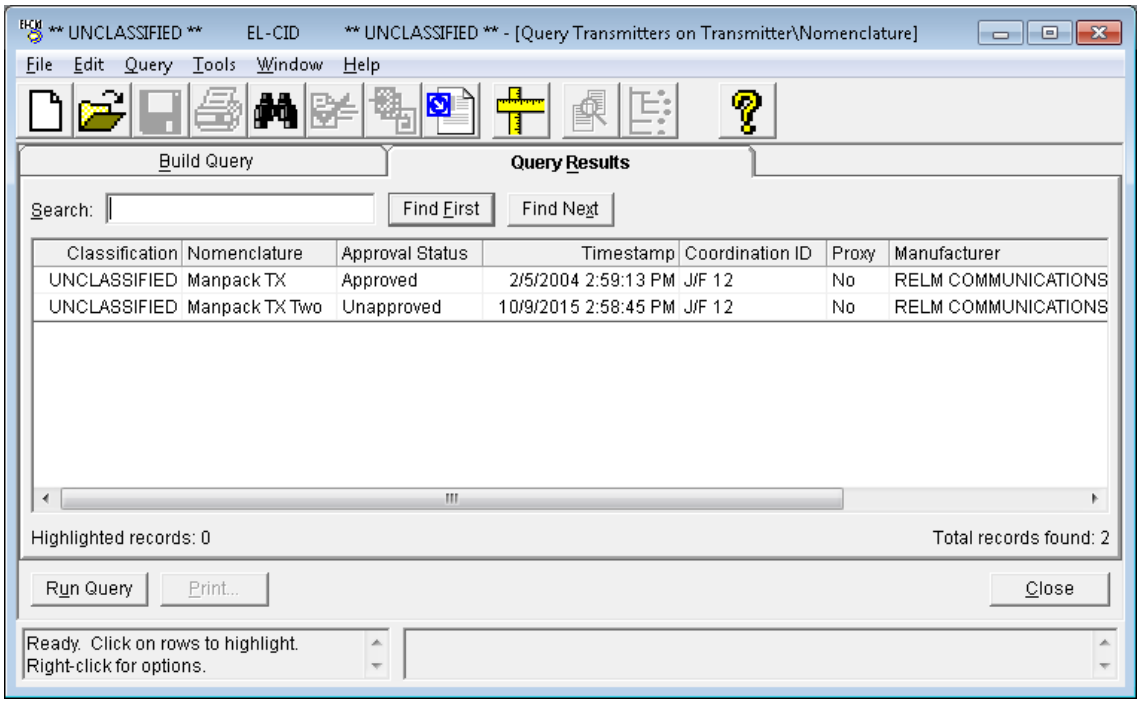
HINT: Upper- or lowercase does not matter for this particular field. You can tell this because the **Ignore case** check box is grayed out.

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

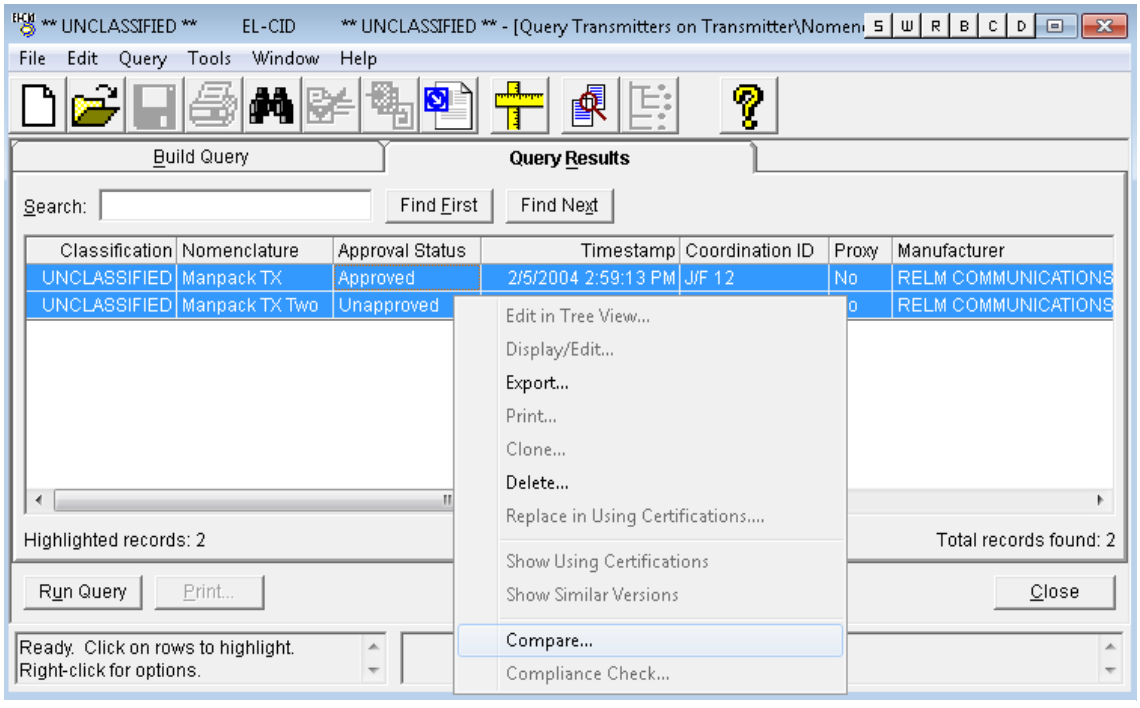
The **Build Query** window should resemble the following:



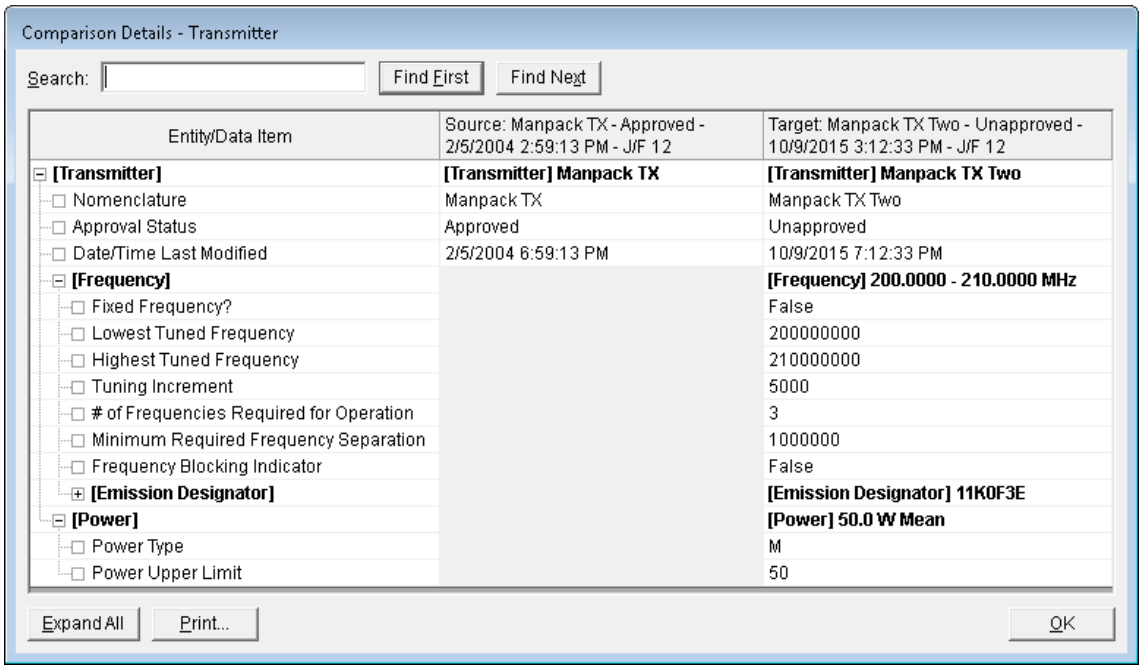
Step 6. Click the **Run Query** button, or click the **Query Results** tab to execute the query. Two records are found.



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



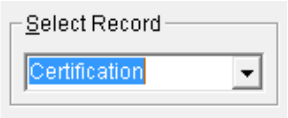
The **Comparison Details** window will be displayed showing the differences in the two records.



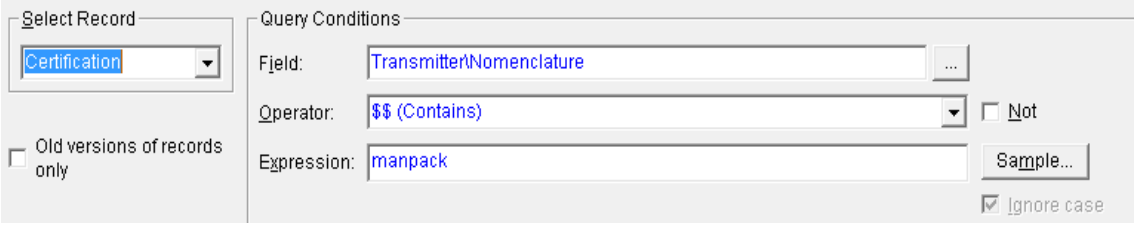
Step 8. Click **OK** to close the **Comparison Details** window.

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

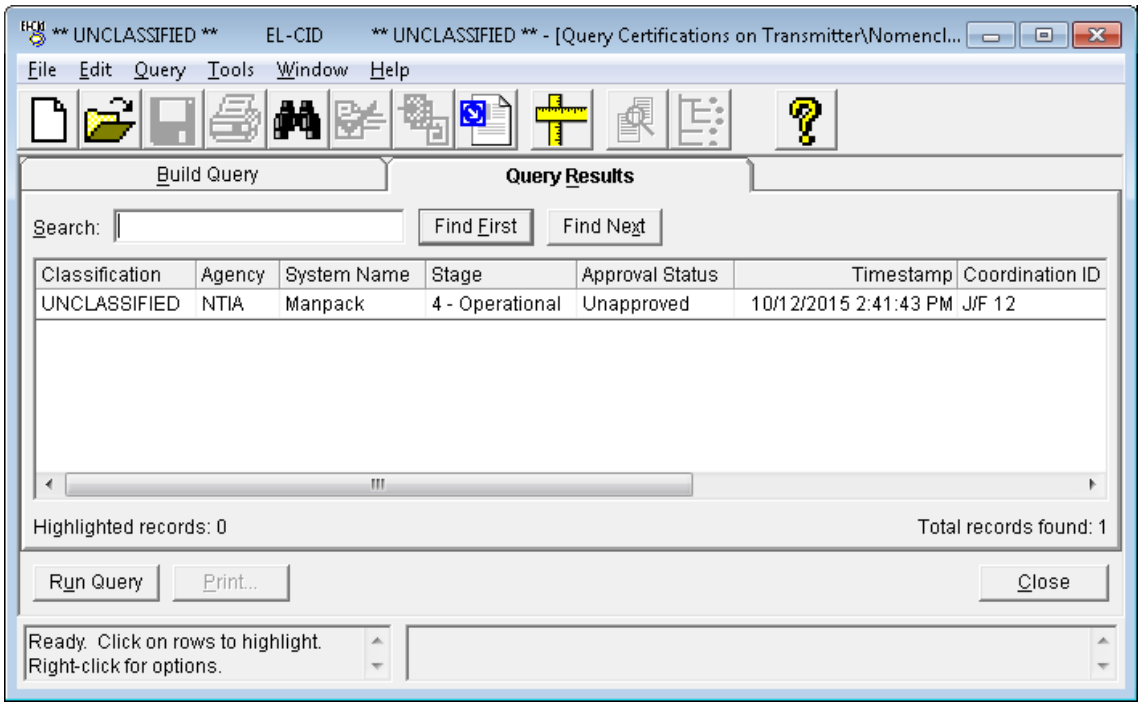
Step 10. In the previous query, we selected **Transmitter** records whose nomenclature contains **manpack**. This time, we'll select **Certification** records having any transmitter whose nomenclature contains **manpack**. Select **Certification** using the dropdown list button for the **Select Record**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



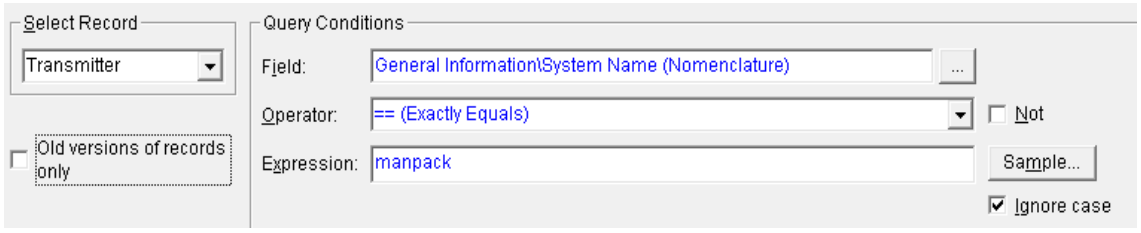
Your query should now resemble this.



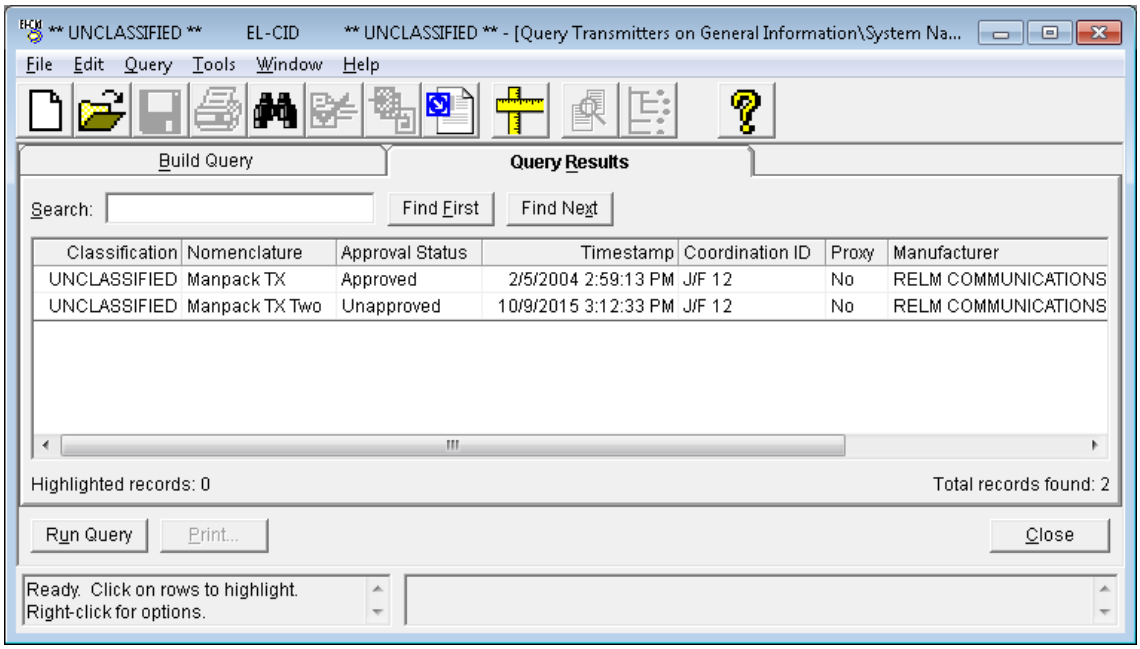
Step 11. Click the **Run Query** button. You'll get one **Certification** record in the **Query Results**.



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



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

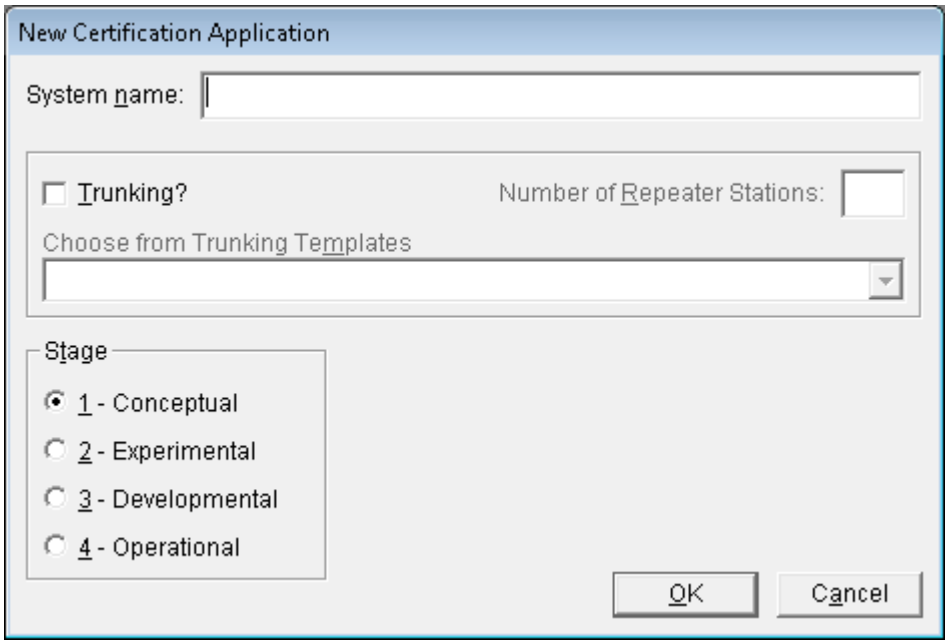


Step 14. Close the Query window.

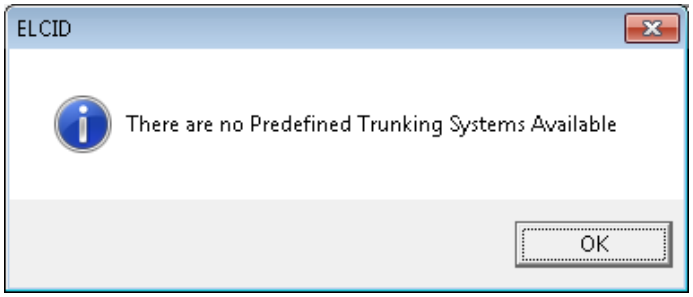
NOTE: The Query feature may be used to back up one or more certifications or the entire EL-CID Database. This process is illustrated in **Appendix D**.

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.

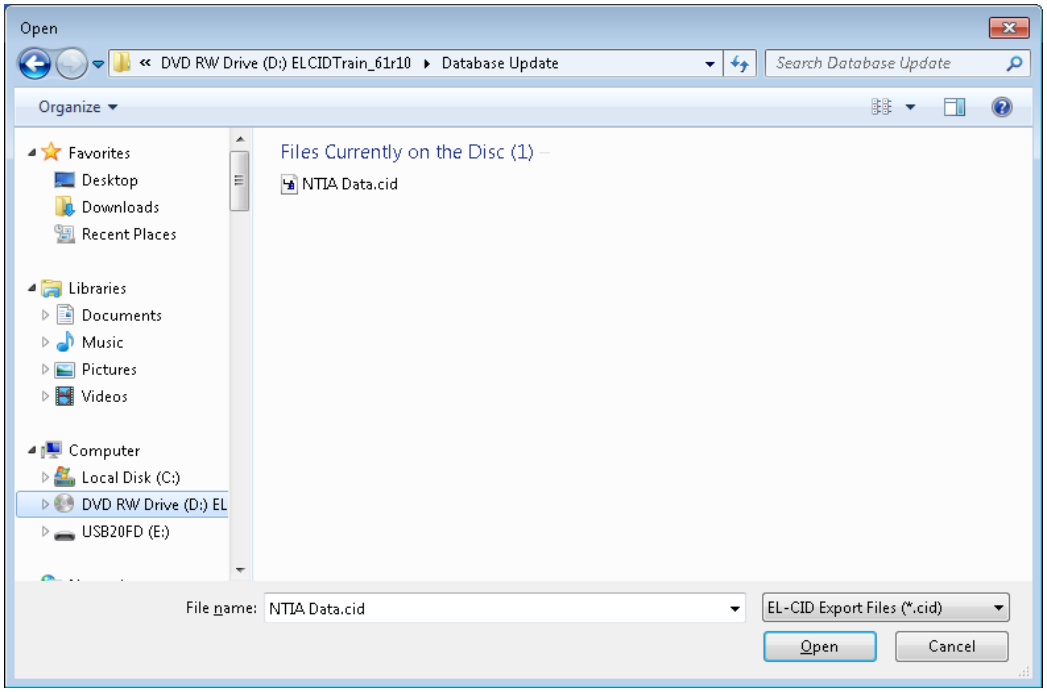


Click **OK**. There will be no Trunking Templates from which to choose. These must be imported from your **Training CD**. Click **Cancel** to close this window.

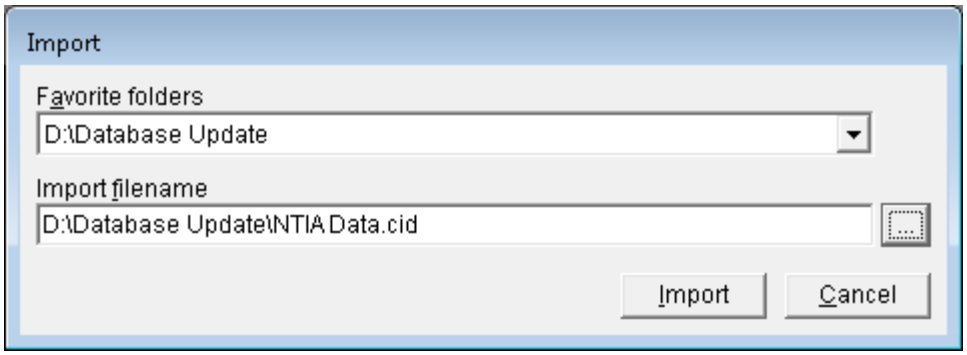
Hint: If the **NTIA Data.cid** has already been imported in **Section 4**, the Trunking Templates should be in your database and you can Skip to **Step 8.**

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

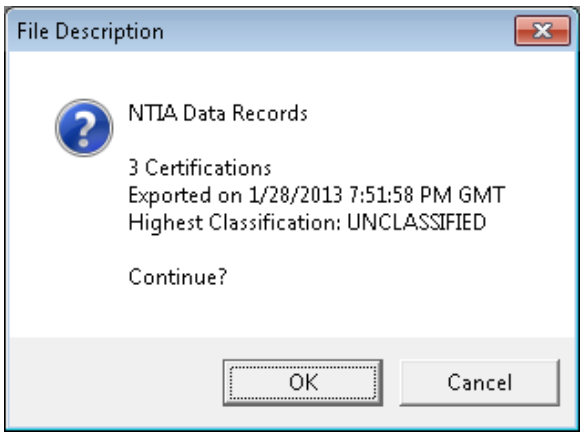
Step 4. Click the **Browse button** [...] to select the file to import. The folder we are using is on the **Training CD** and called **Database Update** (For training, this will be the **D:\Database Update**). Highlight the filename **NTIA Data.cid** and then click **Open**.



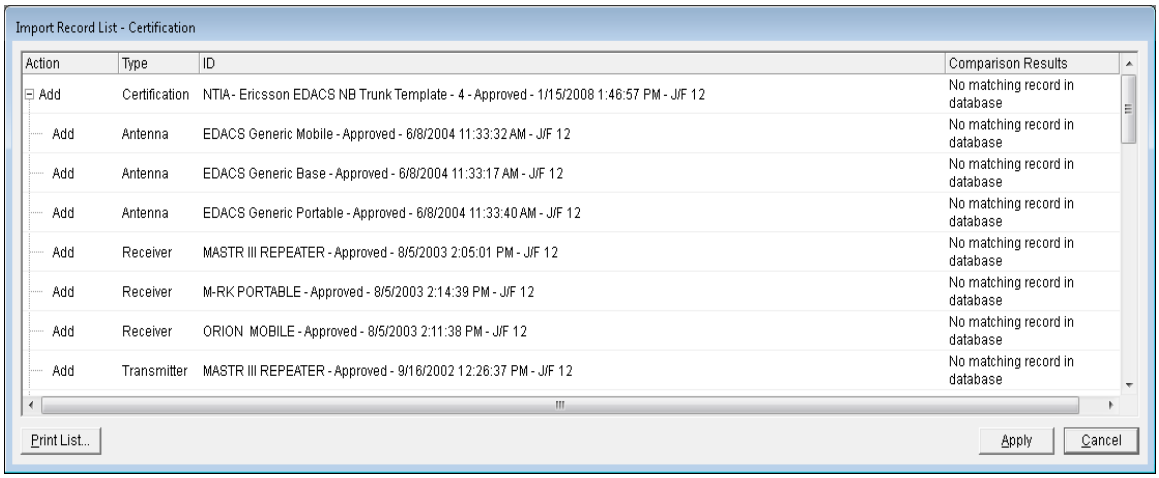
The **Import** window displays the selection.



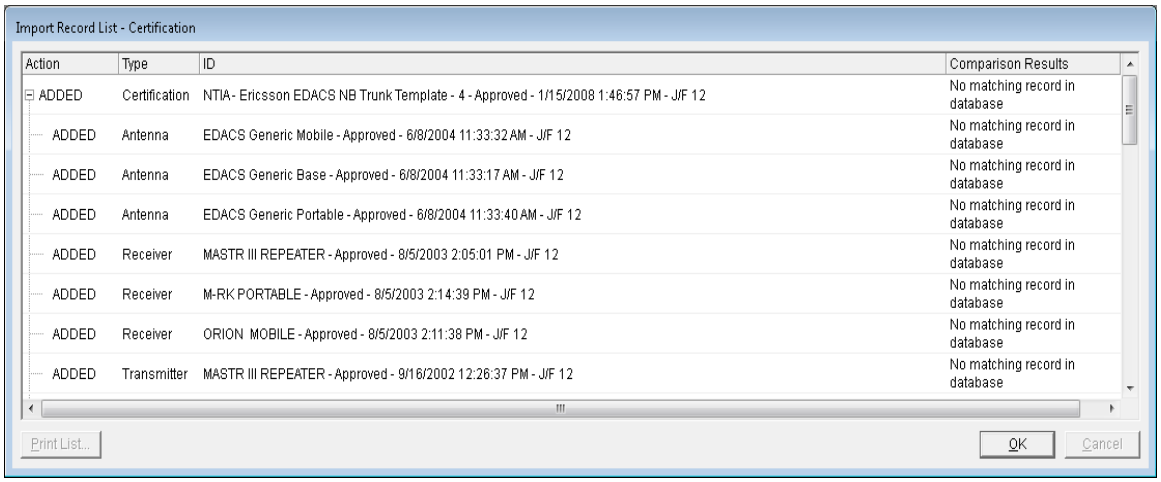
Step 5. Click **Import**. A progress window is displayed followed by the **File Description**.



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

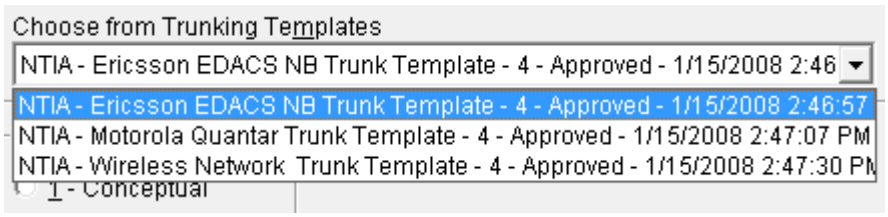


Step 7. Click **Apply**. The **Progress** window is briefly displayed and then the **Import Record List - Certification** window is again displayed.

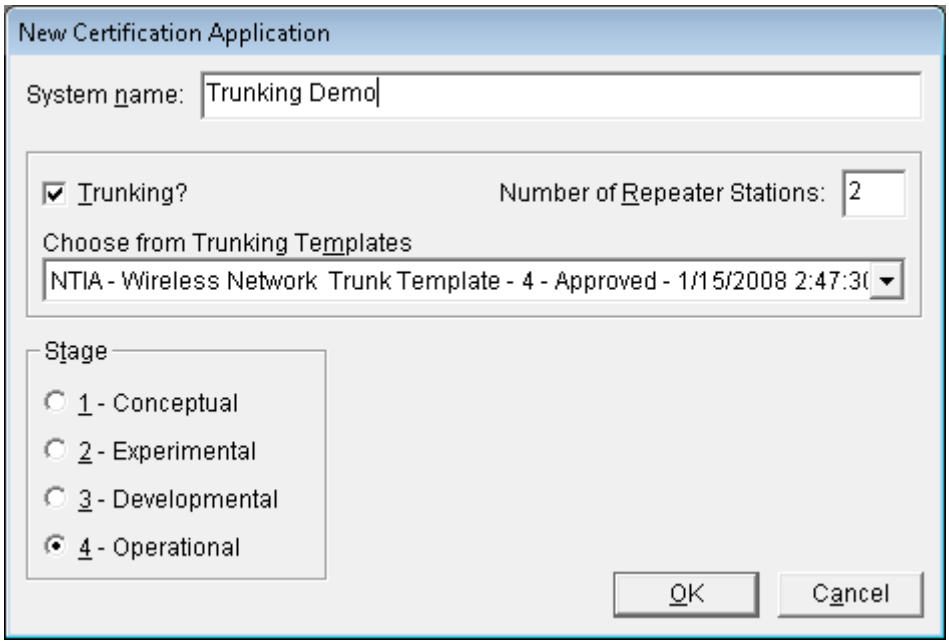


Notice that **Add** changes to **ADDED** in the **Action** column. At this point, the records have been added to the local EL-CID database.

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



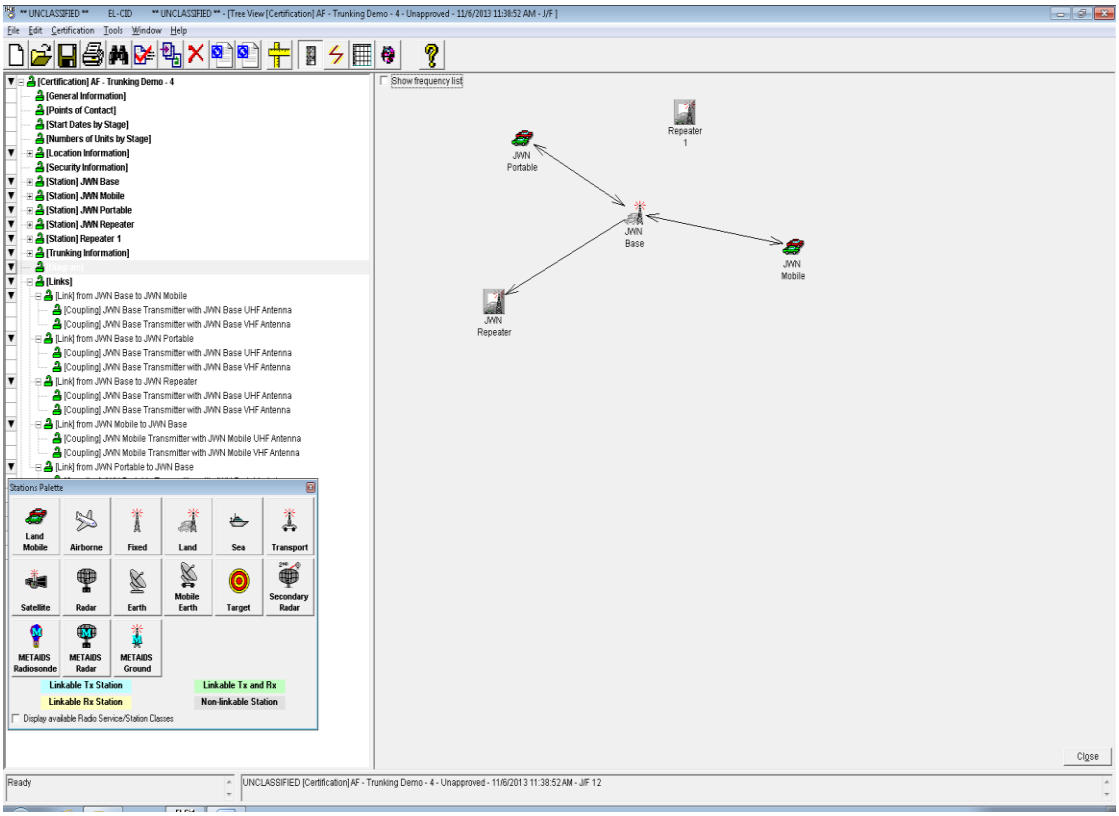
Step 9. Select the **NTIA-Wireless Network Trunk Template – 4** template.



Step 10. 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.



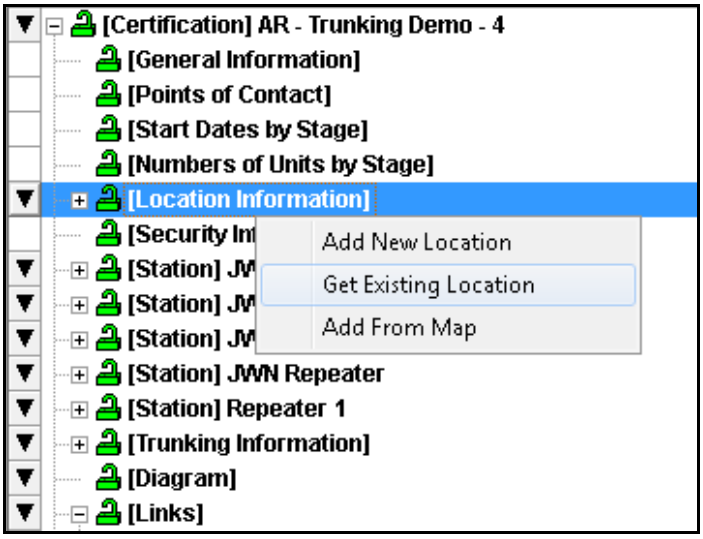
Step 11. Close the palette using the **X** in the upper right or by clicking the **Stations Palette button** on the tool bar.

Step 12. To see all the different tranmsitters, receivers, and antenna data, Expand the nodes using the ⊞ button.

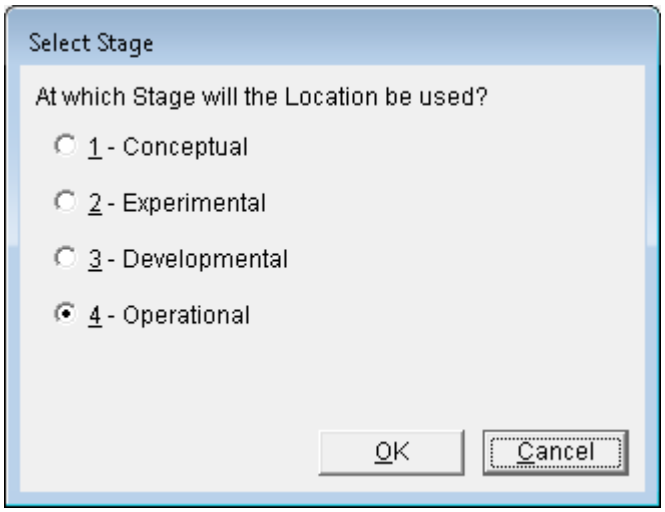
Hint: To expand the Tree View, highlight a node in the Tree View and press Shift →. All nodes under the highlighted node will be expanded.

To collapse the Tree View, highlight a node in the Tree View and press Shift ←. All nodes under the highlighted node will be collapsed.

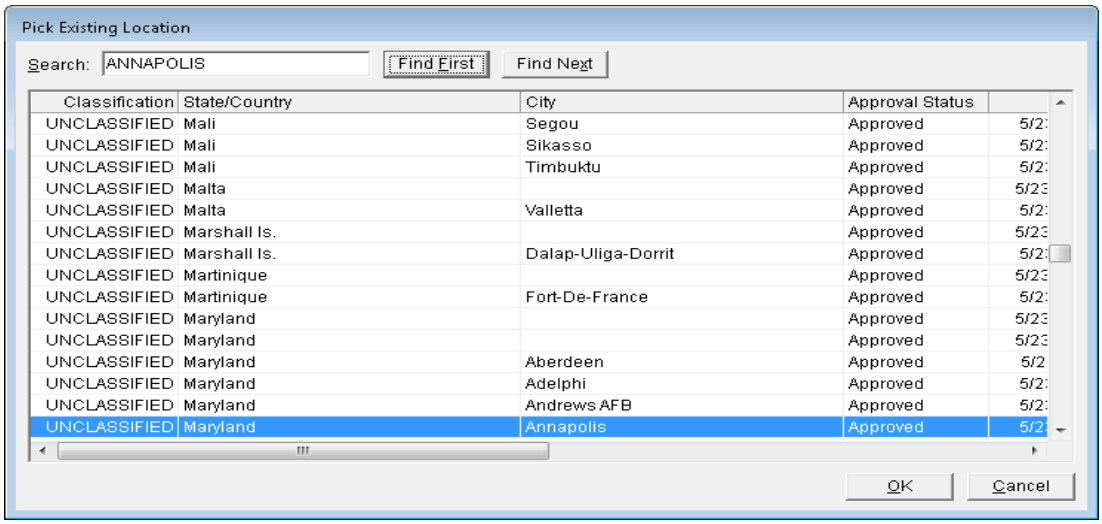
Step 13. **Right-click** on the **Location Information** node in the Tree View, then click **Get Existing Location**. Select **Stage 4** on the **Select Stage** screen and click **OK**.



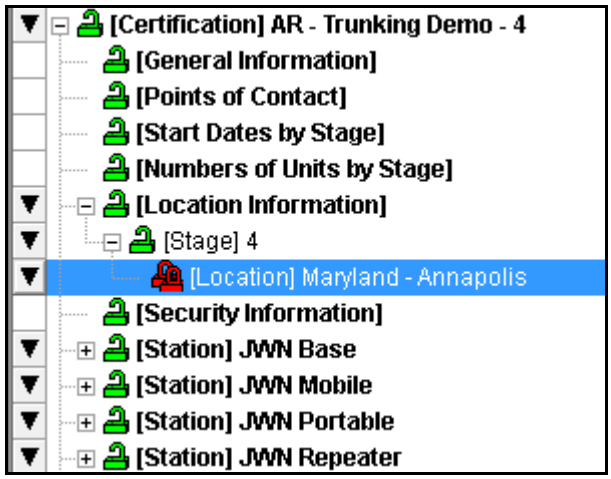
The **Select Stage** screen will appear. Click **OK**. The **Pick Existing Location** screen will appear.



Step 14. Type **ANNAPOLIS** and click **Find First**.

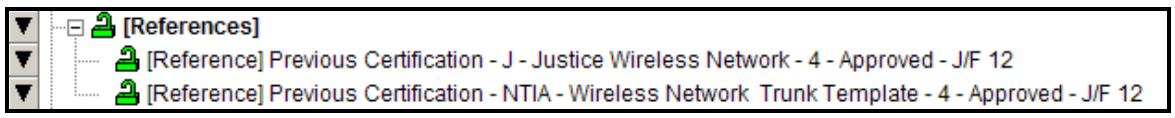


Step 15. When the **Annapolis** location appears, click **OK** and the location will be added to the **Location Information** node.



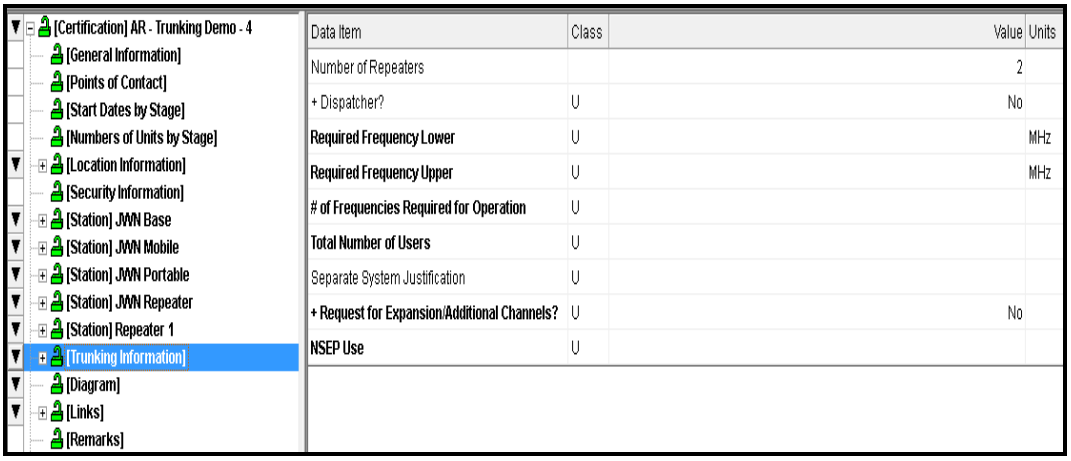
Note that the location is added for the whole certification, not under a particular station.

Step 16. 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.

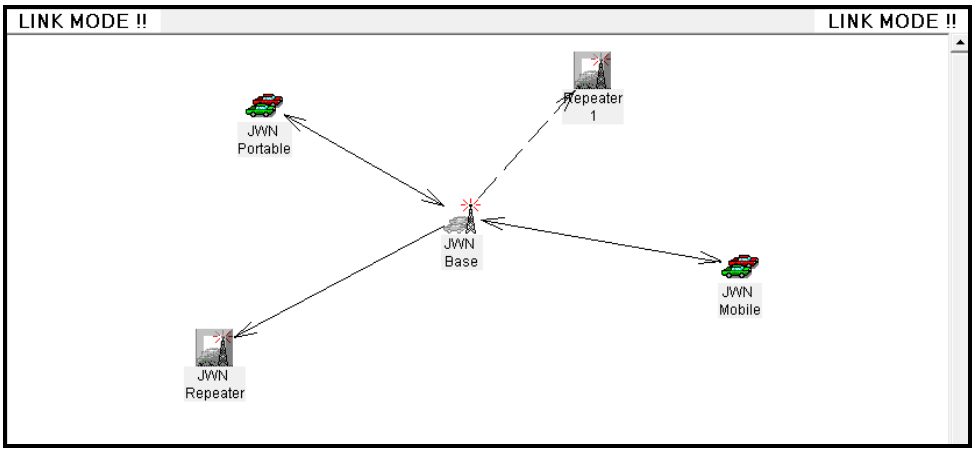
Step 17. Click on the **Trunking Information** node in the Tree View.



Step 18. 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 19. **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 20. Click the **Create New Links** button again to turn the **LINK MODE!!** off.

Step 21. 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**

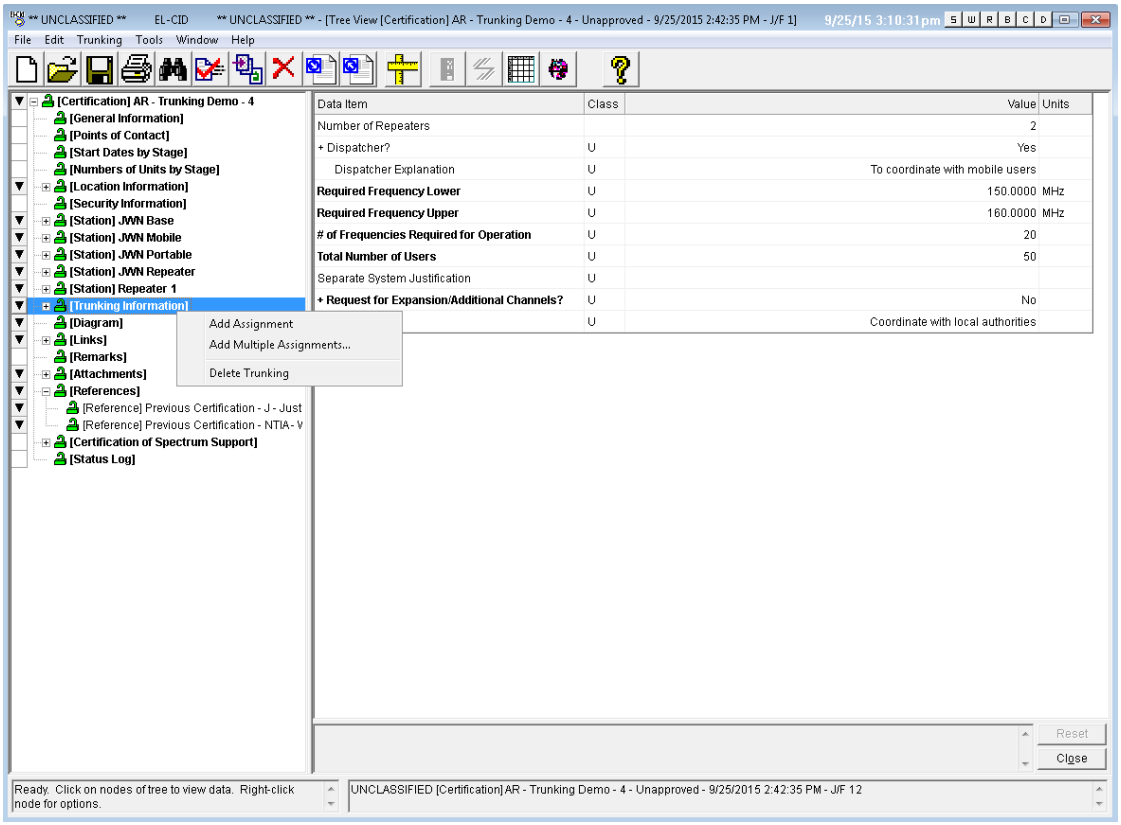
JWN Repeater

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

Repeater 1

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

Step 22. Right-click on the **Trunking Information** node in the Tree View and select **Add Assignment.**

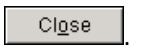


Step 23. Enter the information shown in the screen above and the table below and then **Save**.

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: _____

(This page intentionally left blank.)

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

(This page intentionally left blank.)

EL-CID Quick Reference
Version 6.1
Tool Bar
New
Open
Save
Print
Query
Compliance
Clone
Delete
Import
Export
Preferences
Station Palette
Link Mode
Link Summary
ITU
Help
Tree View
Station Palette
1. Click to select a Station icon.
Items you can link to/from are colored.
2. Drag icon to the Diagram View.
3. Check to show Radio Services and Station Classes.
Radio Services and Station Classes available from the selected icon to the icon under the mouse cursor.
1. Click a node to display data items
This item hides/unhides other items depending upon its value
Classification of data item
4. Click another node to save data
Bold items are required
Data item help displayed here
2. Click anywhere in row to change a data item
3. Click to restore original values
For more detailed information: Consult the EL-CID Help File
Rev 1.0

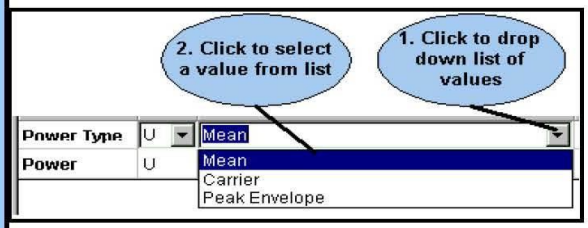
EL-CID Quick Reference
Version 6.1
Preferences
Preferred Settings
Default Units
General
Fonts and Colors
Large icons in toolbar
Compact database on startup
Open data item selector when creating new query
Display wizard on startup
Display release information on startup
Use mouse to enter point values in curve editor
Allow drag and drop in Tree View
Include XML-Schema (export.xsd) in export files
Warn about possible viruses when viewing attachments
Path to Satellite Registration (ITU):
Restore Map Defaults
OK
Cancel
Preferred Settings
Default Units
General
Data Item
Units
Significant Digits
Sample
Frequency MHz 5 0.000012346 MHz
Bandwidth/Selectivity kHz 5 0.012346 kHz
Frequency Tolerance kHz 5 0.012346 kHz
Tuning Increment kHz 5 0.012346 kHz
Data Rate bps 3 12.3 bps
Pulse Rate pps 3 12.3 pps
Chip Rate /sec 3 12.3 /sec
Code Repetition Rate /sec 3 12.3 /sec
Hop Rate /sec 3 12.3 /sec
Power W 3 12.3 W
Power Density W/Hz 3 12.3 W/Hz
Used For:
Frequency
Antenna - Linear
Accepted Mode
Frequency
Antenna Upper Frequency Limit
Low Frequency of Band or Discrete Frequency
OK
Cancel
Data Finder
1. Enter a search string here.
2. Click to locate data item containing search string.
3. Click to choose data item.
4. Click to expand or collapse entire tree.
Full description of highlighted data item appears here.
Screen is resizable.
Data Item Finder
Search
Find First
Find Next
Show Descriptions
Tree Node
Data Item (Field)
1494 Page
1494 Block
[Certification]
[General Information]
[General information]
Agency
Certification of Spectrum
Recipient Agency
System Name
NTIA General
1. Application Title, 2. System
Stage
NTIA General
3. Stage of Allocation
Approval Status
DateTime Last Modified
The code, as specified in Annex G of the NTIA Manual, which identifies the agency responsible for managing the frequency authorization or the certification application.
Expand All
OK
For more detailed information: Consult the EL-CID Help File

EL-CID Quick Reference
Version 6.1

Data Entry

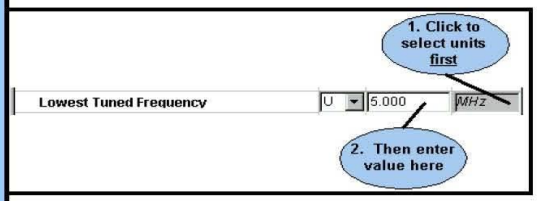
Edit Box

Pick List

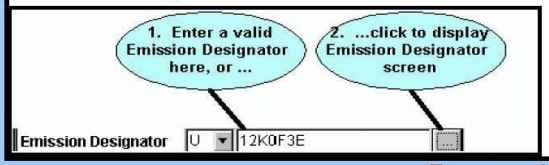


Database Pick List

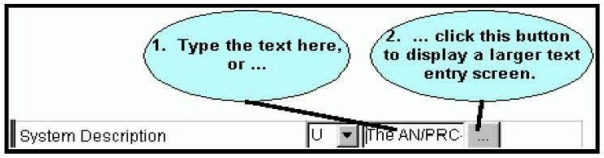
Numeric with units



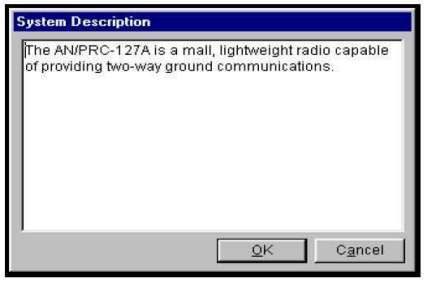
Emission Designator



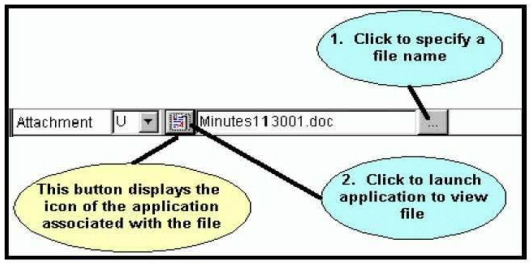
Memo Box



Memo Box Expanded

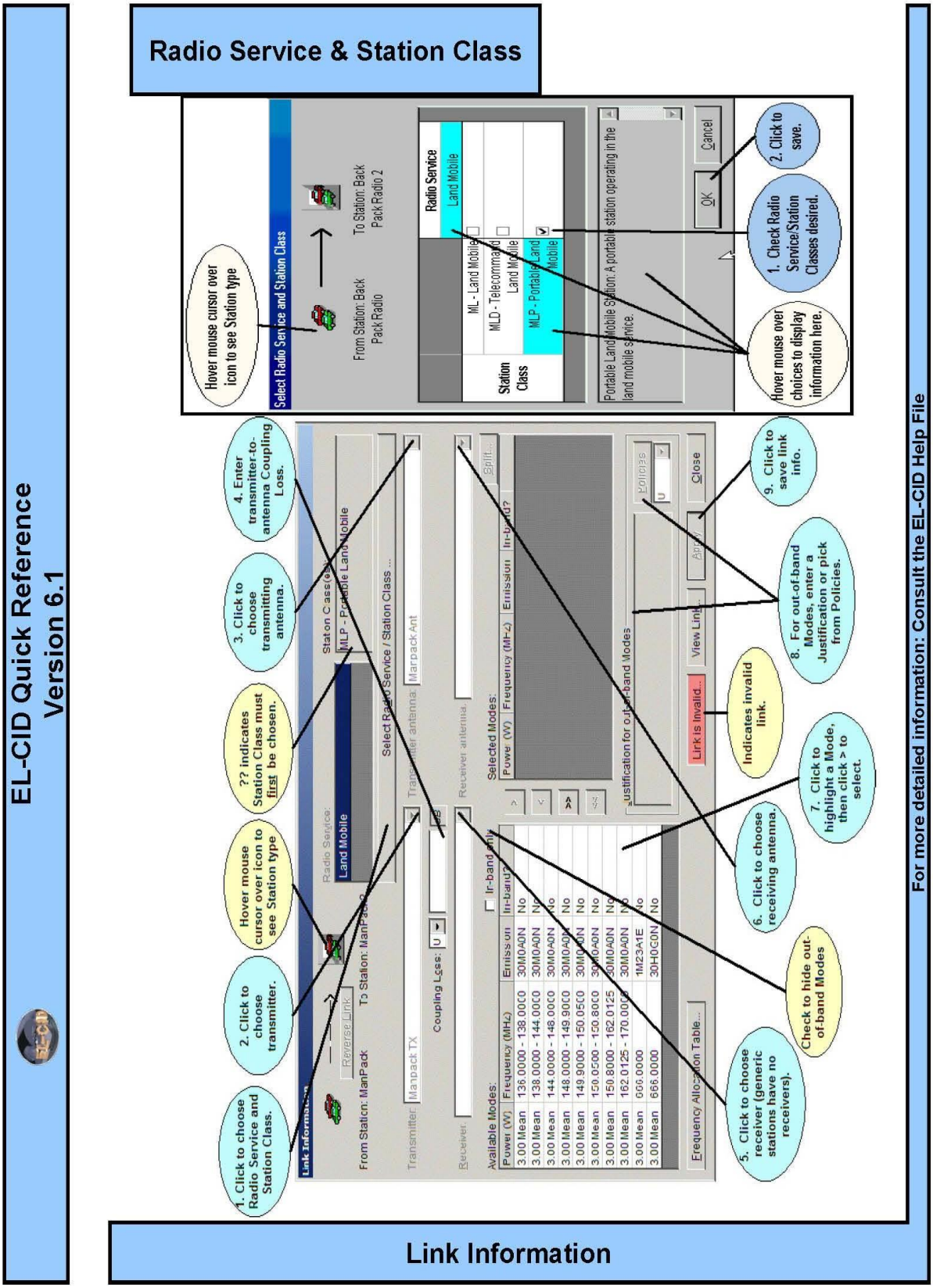


Attachment

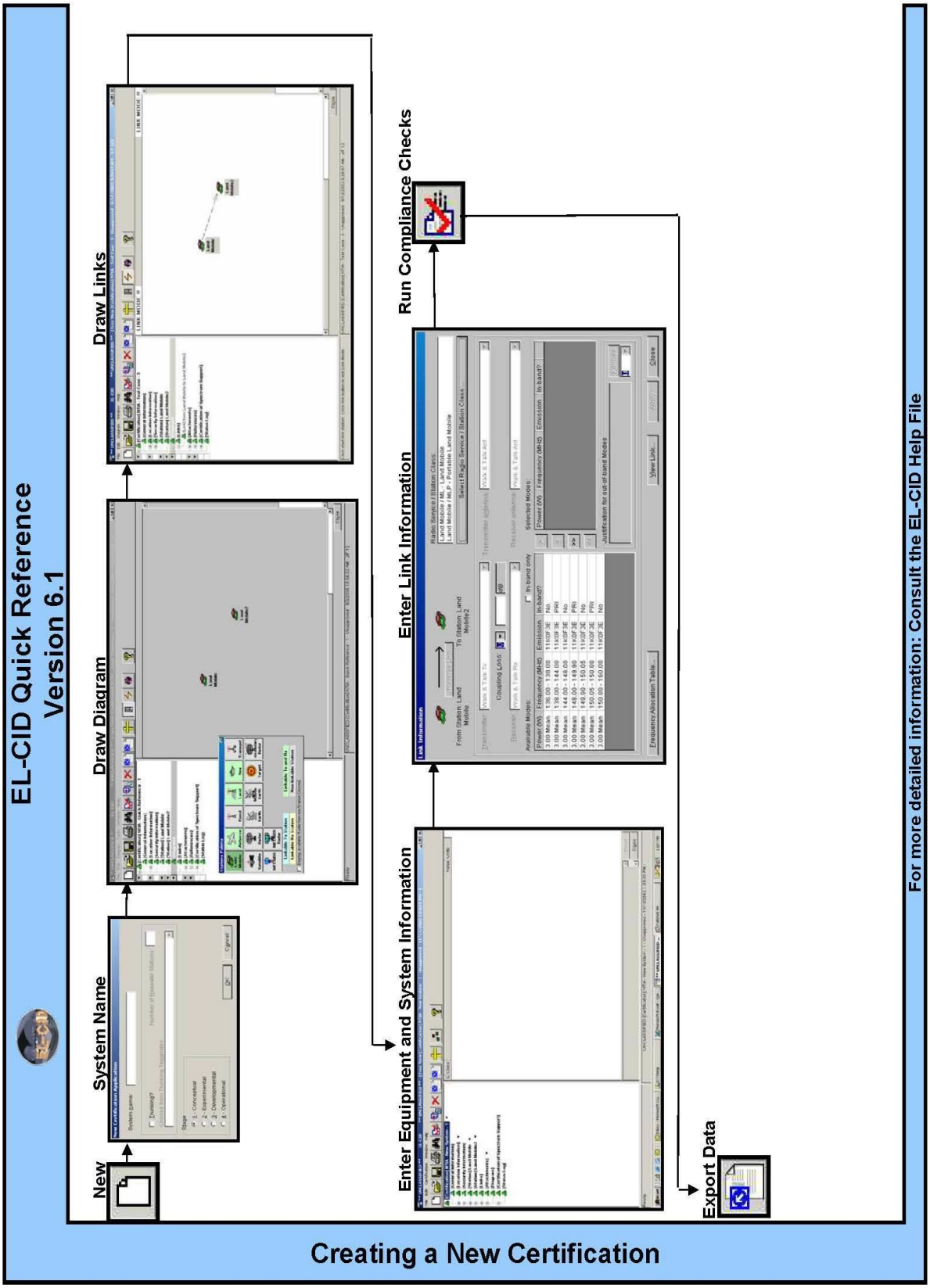


For more detailed information: Consult the EL-CID Help File

EL-CID Quick Reference
Version 6.1
Curve Editor
Set the classification of the entire curve.
If present, click to calculate the curve using a model.
If present, select Measured or Calculated.
Click to delete selected point or add a new point.
RF Fundamental Curve
Classification:
Measured or Calculated?:
Measured
Add Point
Delete Point
Freq offset (Fo):
Level:
45.000
-60.0
kHz
dB
ENTER HALF BANDWIDTHS!
Freq offset (Fo)
Level
7.5000
-3.00
13.000
-20.0
28.000
-40.0
45.000
80.0
Frequency = Fc+Fo
(Fc = Carrier frequency)
Log scale
Scale:
270
kHz
Autoscale
Reset
Close
Frequency offset (relative to the peak of the curve) for this point on the curve.
UNCLASSIFIED [Certification] NTIA - Remote C&C - 4 - Unapproved - 8/4/2004 10:08:49 AM - J/F 12
Increase/ decrease X axis scale or automaically size to fit.
Click a row of grid or click on a point to select a point.
Scroll X axis left or right
The X axis is this many kHz wide.
For more detailed information: Consult the EL-CID Help File


EL-CID Quick Reference
Version 6.1
Radio Service & Station Class
Hover mouse cursor over icon to see Station type
Select Radio Service and Station Class
From Station: Back Pack Radio
To Station: Back Pack Radio 2
Radio Service
Land Mobile
ML - Land Mobile
MLD - Telecommand Land Mobile
MLP - Portable Land Mobile
Station Class
Portable Land Mobile Station: A portable station operating in the land mobile service.
OK
Cancel
1. Check Radio Service/Station Classes desired.
2. Click to save.
Hover mouse over choices to display information here.
Link Information
1. Click to choose Radio Service and Station Class.
2. Click to choose transmitter.
Hover mouse cursor over icon to see Station type
?? indicates Station Class must first be chosen.
3. Click to choose transmitting antenna.
4. Enter transmitter-to-antenna Coupling Loss.
5. Click to choose receiver (generic stations have no receivers).
Check to hide out-of-band Modes
6. Click to choose receiving antenna.
Indicates invalid link.
7. Click to highlight a Mode, then click > to select.
8. For out-of-band Modes, enter a Justification or pick from Policies.
9. Click to save link info.
For more detailed information: Consult the EL-CID Help File

EL-CID Quick Reference
Version 6.1
View Link
Click and press Ctrl-C to copy grid to clipboard
Click to view opposite link (if enabled)
Click to change sort order
Drag divider to resize columns
Hover mouse cursor over icon to see Station type
Station name
Click and drag to change order of columns
Column order is remembered between viewings. Use Preferences to reset.
View Link Summary
Check to reduce number of columns displayed.
Click column header to change sort order.
Drag divider between columns to resize columns
Drag column headers to re-order columns
Click on a grid row, then click this button to display the corresponding band in the FAT
The window is resizable
For more detailed information: Consult the EL-CID Help File


EL-CID Quick Reference
Version 6.1
New
System Name
Draw Diagram
Draw Links
Enter Equipment and System Information
Enter Link Information
Run Compliance Checks
Export Data
For more detailed information: Consult the EL-CID Help File
Creating a New Certification

EL-CID Quick Reference
Version 6.1

Keyboard Shortcuts

Keyboard Shortcuts

The following tips will assist users who prefer to use the keyboard rather than the mouse.

Tab Key

In general, the Tab key should be used to move from one item to the next; not the Enter key.

F10

Press the F10 key for quick access to the main menu.

Grids

Throughout EL-CID a number of screens display data in a grid. To navigate up/down or left/right in these grids, use the arrow keys. One exception is the Tree View. On this screen, hold down the Shift key while using the arrow keys to navigate in the grid, or use the Tab key. At bottom of grid, press the Tab key to move off the grid elsewhere on the screen.

Pick Lists

When the cursor is on a pick list, press the down or up arrow keys to scroll through the pick list. Hold down the Alt key and press the down arrow key to drop the pick list down. In many cases, you can also select items in the pick list by typing the starting characters.

Tree View

To navigate within the data item grid, hold down the Shift key while pressing the arrow keys.
When the cursor is on a node of the tree, press the right arrow key to expand the node. Use the left arrow key to collapse the node. Use the up and down arrow keys to scroll through the tree.

Frequencies

When entering frequencies, you can use the standard MCEB format as a shortcut to entering the value and units. For example, entering K50, will enter a value of 50 and select kilohertz, regardless of the current units selected. Use a T for terahertz, G for gigahertz, M for megahertz, K for kilohertz, or H for hertz. The units may precede or follow the number. For example, K50 and 50K are both acceptable. You can also enter frequencies using scientific notation. For example 12000 would be entered as 12E3.

Diagram View

The Diagram View cannot be operated without a mouse.

Copying Data

Copying Grid Data to the Windows Clipboard

1. If focus is not currently on the grid, click somewhere in the grid to move focus to it.
2. Hold down the Ctrl key and press the C key. The Copy Grid To Clipboard Options screen appears.
3. If you want to copy only the highlighted cells of the grid to the clipboard, select the Highlighted cells only radio button . To copy the entire grid to the clipboard, select the Entire grid radio button. In the latter case, if you want to include the column headings of the grid, check the Include column headings check box.
4. Click OK or click Cancel to abandon copying.
5. To paste the clipboard contents into another application, switch to the other application, then hold down the Ctrl key and press the V key.

Map

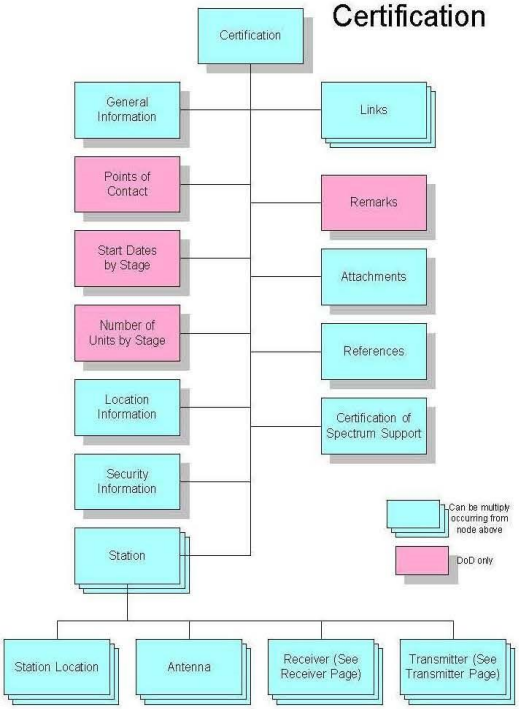
About the Map

Consult the help file for detailed information

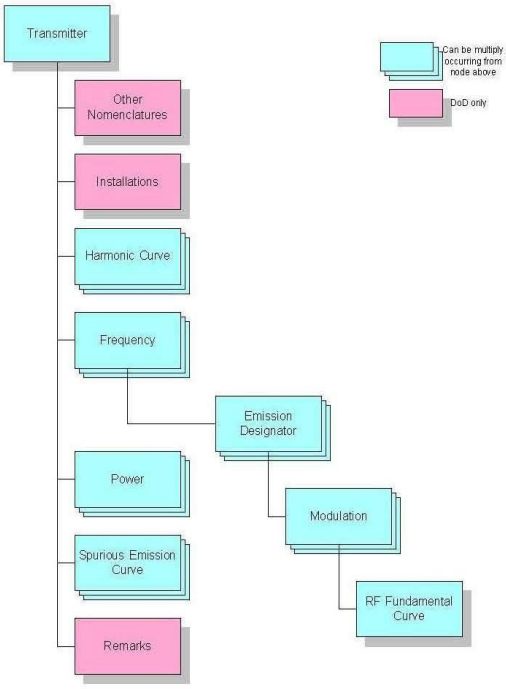
For more detailed information: Consult the EL-CID Help File

Data Flow Guide

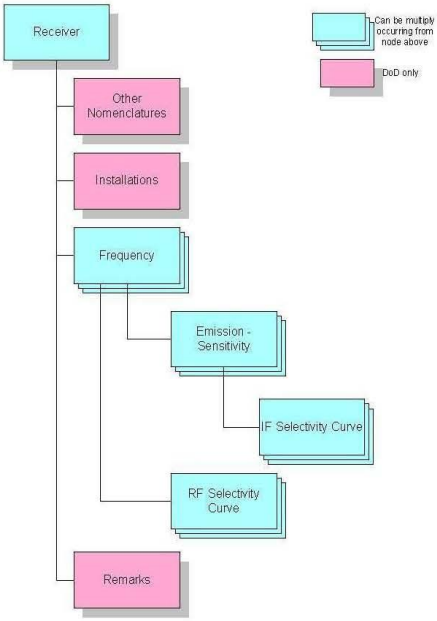
Certification



Transmitter



Receiver



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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.**

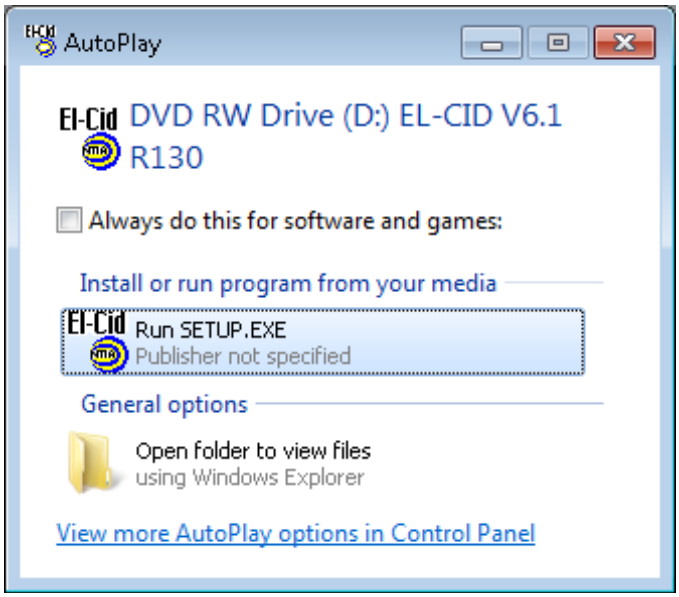
NOTE: **The following instructions are tailored for installing EL-CID on the course training machines. More complete instructions for installing EL-CID are available on the Training CD.**

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

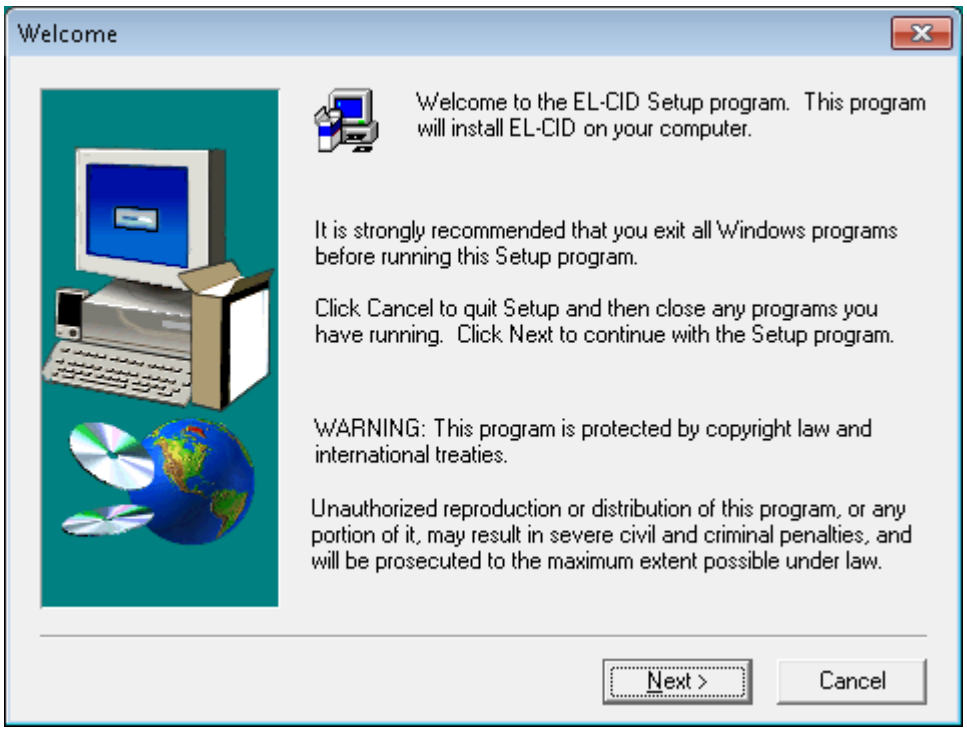
Step 1. **Login** using the **Admin** username and password on the PC.

Step 2. **Insert** the CD labeled "**Equipment Location – Certification Information Database**" into your CD/DVD drive.

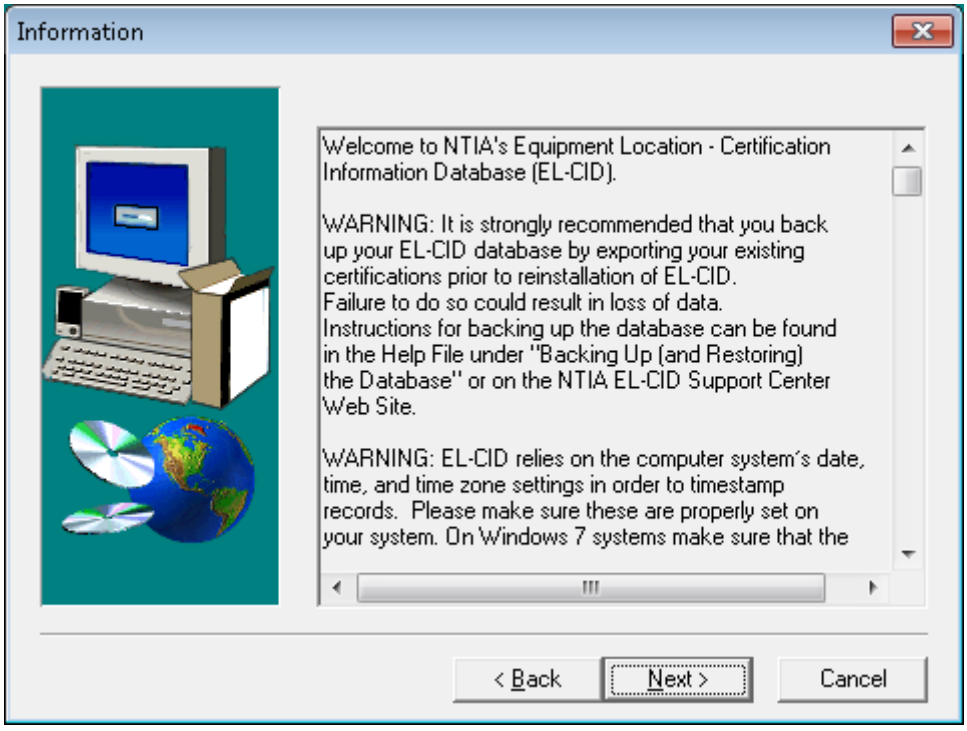
If the **AutoPlay** window is displayed, click on **Run SETUP.EXE**.



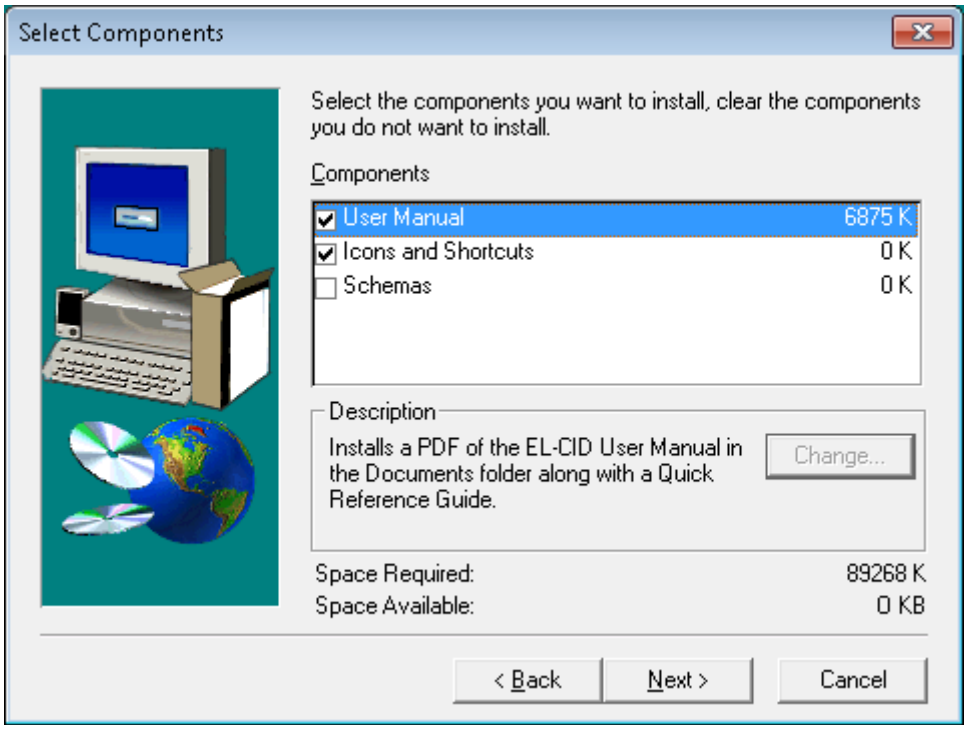
The **Welcome** window will appear. (If the **Welcome** window does not appear, use Windows Explorer to find your CD/DVD drive **D**. Then double click the file **Setup.exe**.)



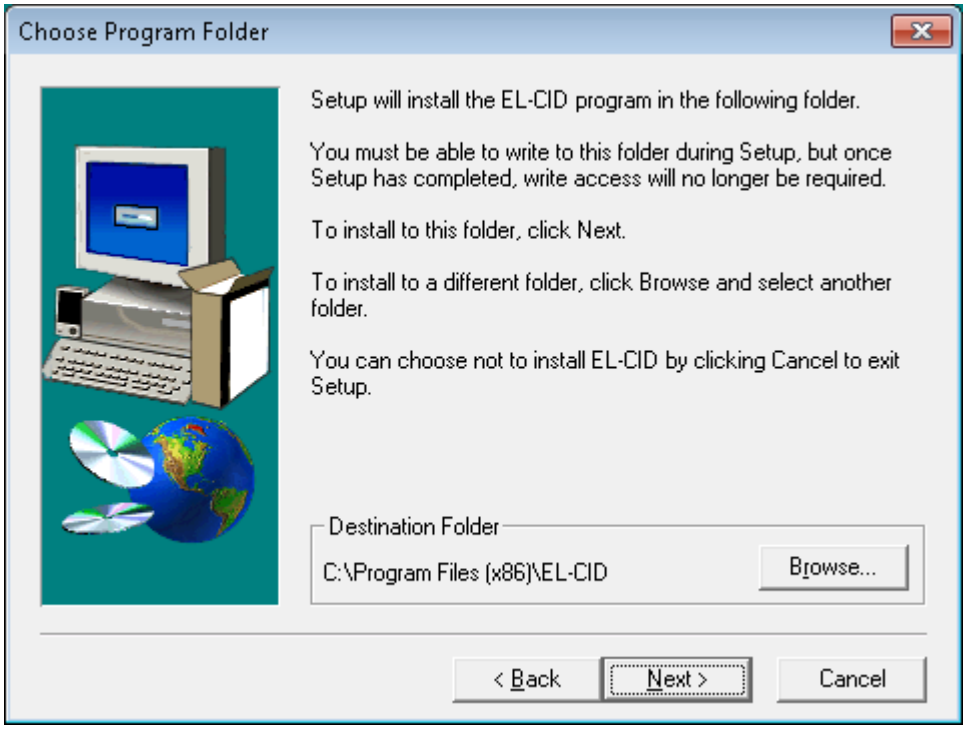
Step 3. Click the **Next >** button. The **Information** window will appear.



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.

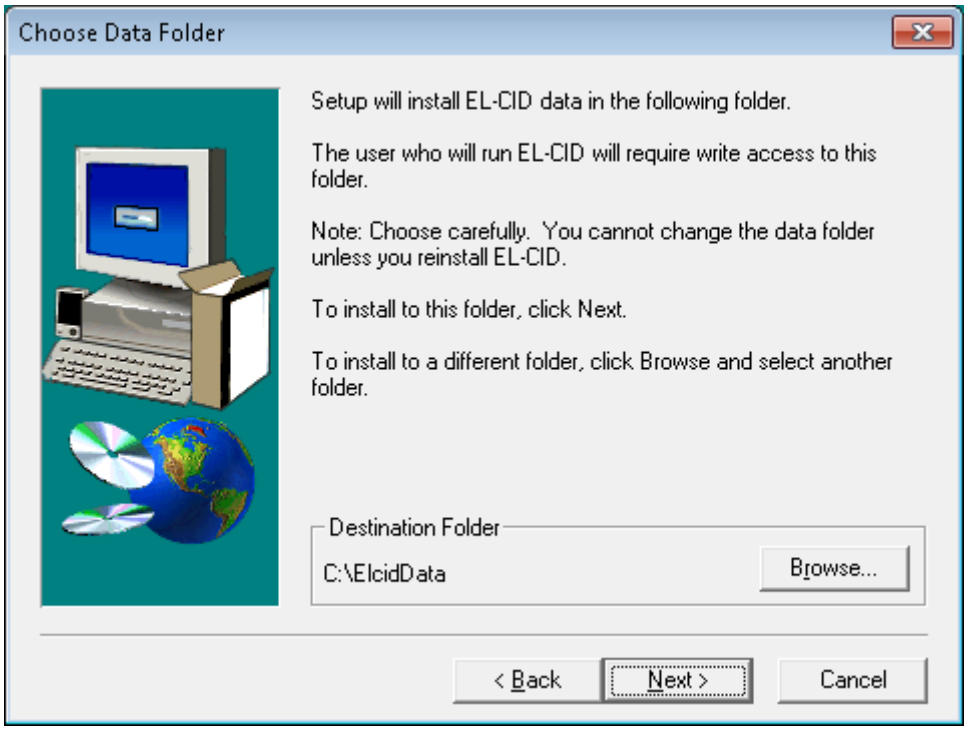


Step 5. Click the **Next >** button. The **Choose Program Folder** window will appear. The **Destination Folder** should default to **C:\Program Files (x86)\EL-CID**. If it does not, use the **Browse…** button to select this directory.

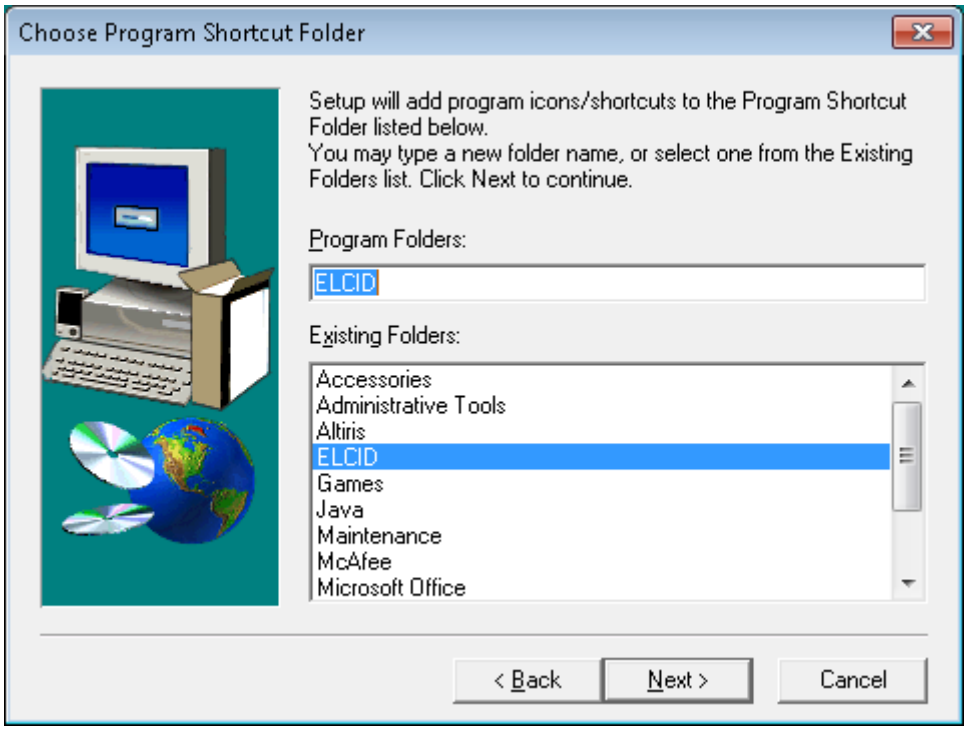


HINT: Notice the difference between the window title in the step above – **Choose Program Folder** – and the window in the next step – **Choose Data Folder**.

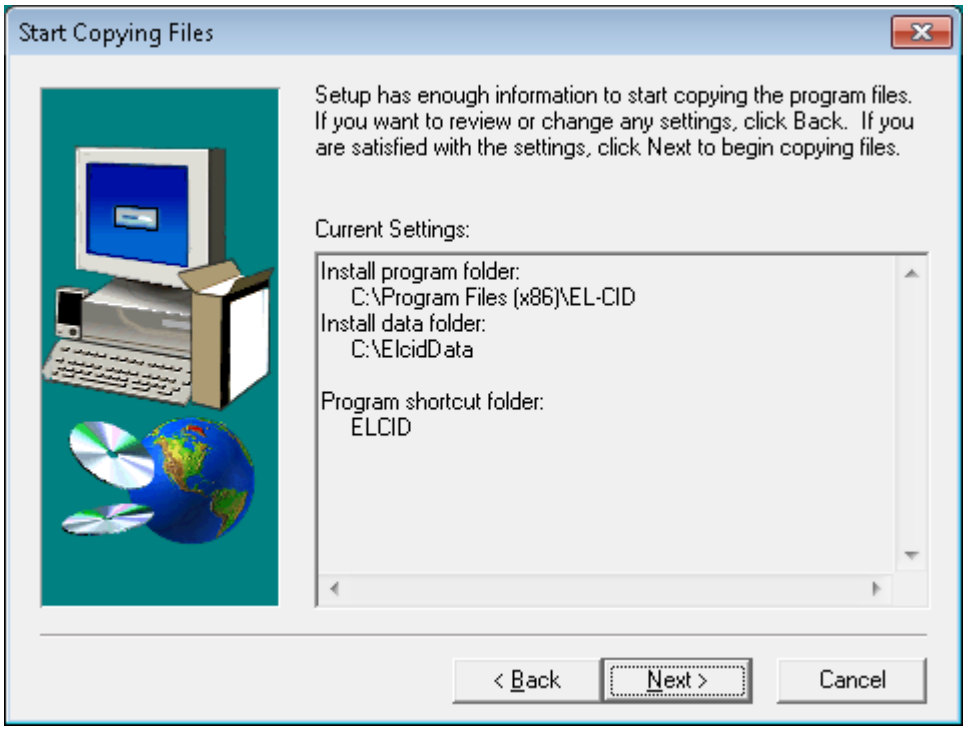
Step 6. Click the **Next >** button. The **Choose Data Folder** window will appear. The **Destination Folder** should default to **C:\ElcidData.**



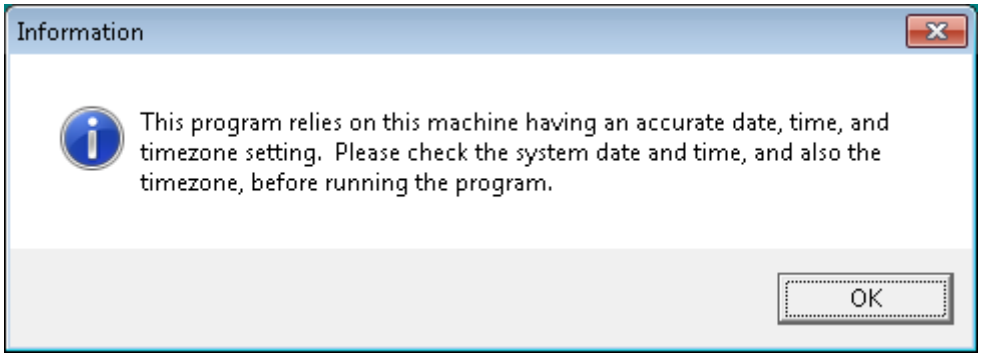
Step 7. Click the **Next>** button. The **Choose Program Shortcut Folder** window may appear with an older **ELCID** folder selected. (***HINT:*** Although the window calls this the "Program Shortcut Folder", it is actually where the menu entries on the Windows Start menu will be created and should not be confused with the Program Folder in Step 5 above.)



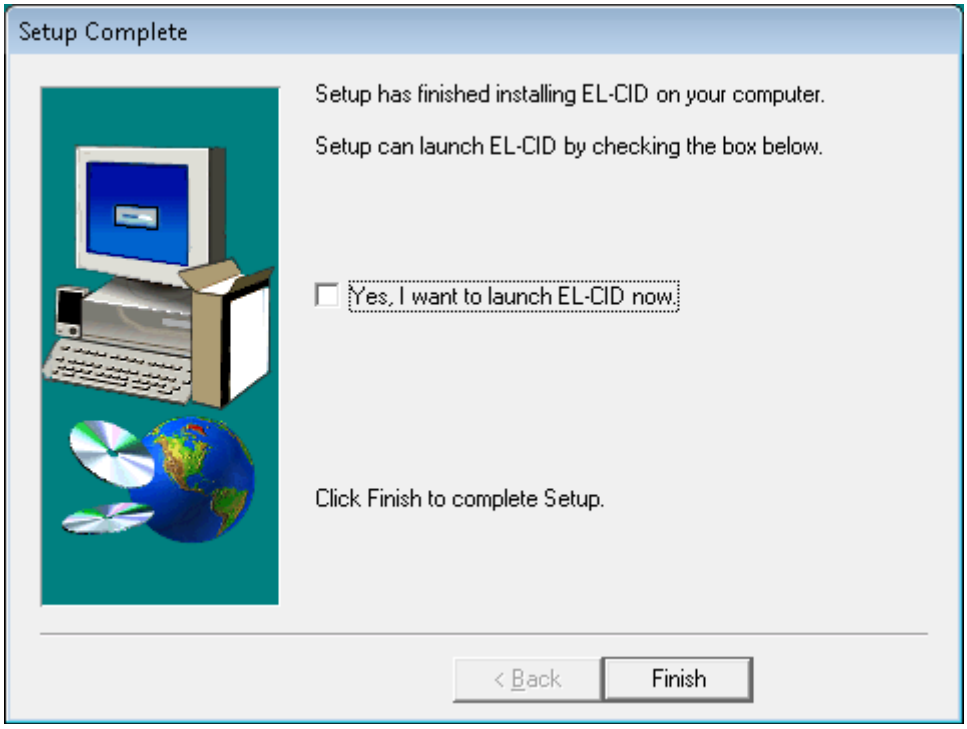
Step 8. Click the **Next >** button. The **Start Copying Files** window will appear. Confirm that the correct **Destination Folders** are selected.



Step 9. 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 10. Click **Ok**. The **Setup Complete** window will appear.



Step 11. 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 12. **Log out** of the Admin account.

Step 13. 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

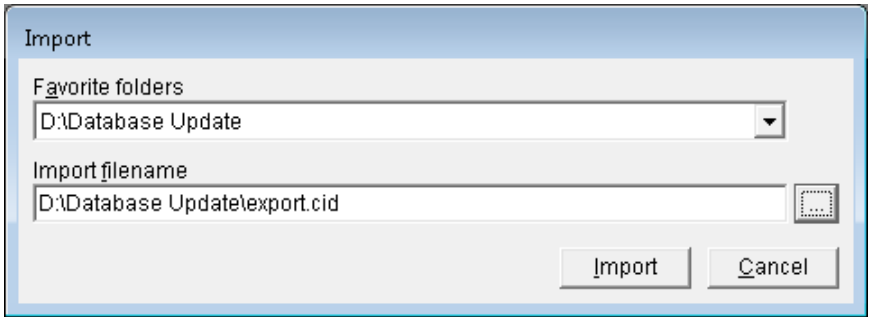
The following steps will illustrate how to perform the import of the updated Compliance Checks in *the purge and replace* mode. The updates are in two parts -- Compliance Checks and Snippets.

NOTE: Always update both the Compliance Checks and the Snippets.

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

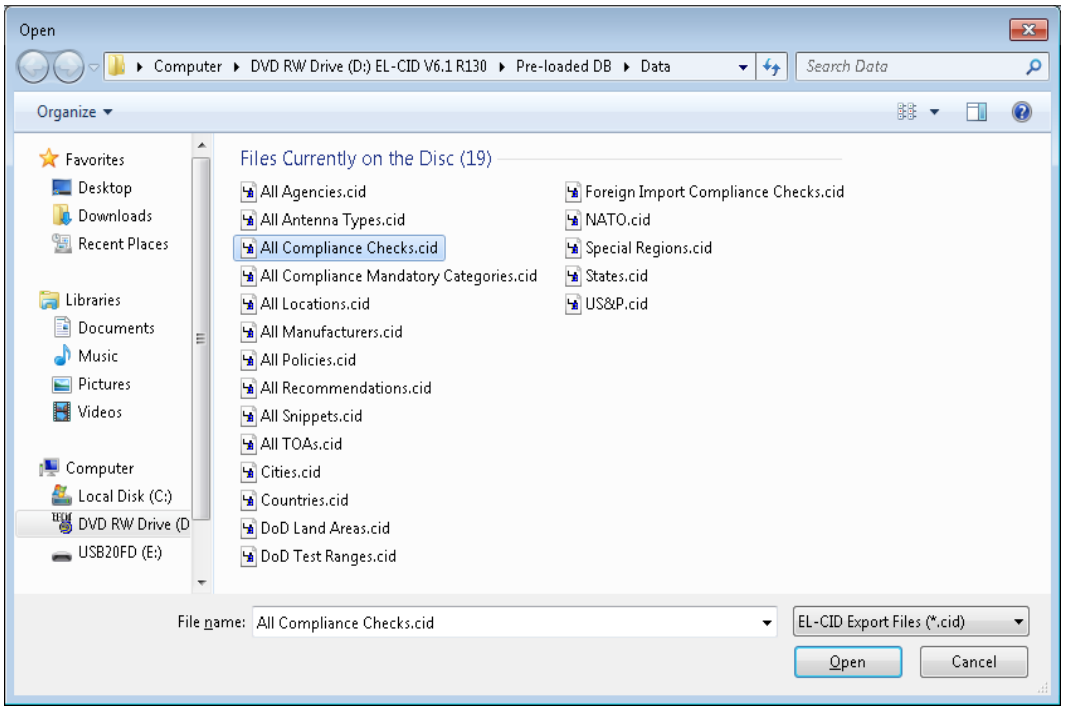
Step 2. Click the **Import** button  on the tool bar.

The **Import** window is displayed.

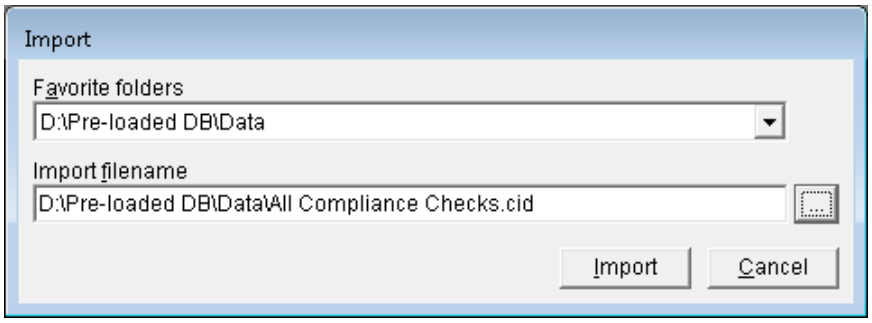


NOTE: This illustration shows the **Installation CD** located on the **D:** drive. If your CD/DVD drive is not assigned to drive letter **D**, you must navigate to the correct drive.

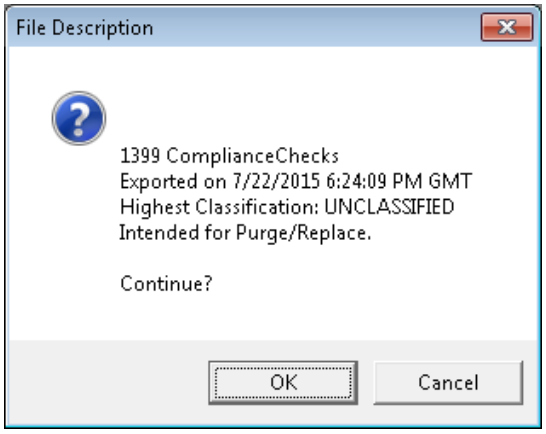
Step 3. Click the **Browse** button  to select the file to import. The folder we are using is on the **D:** drive. Go to **D:\Pre-loaded DB\Data.** Highlight the filename **All Compliance Checks.cid** and then click **Open**.



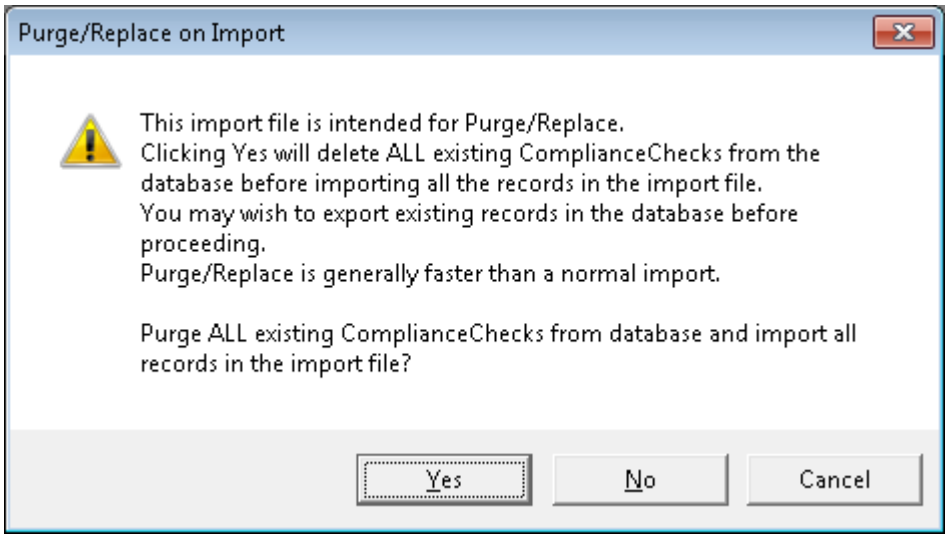
The **Import** window displays the selection.



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



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

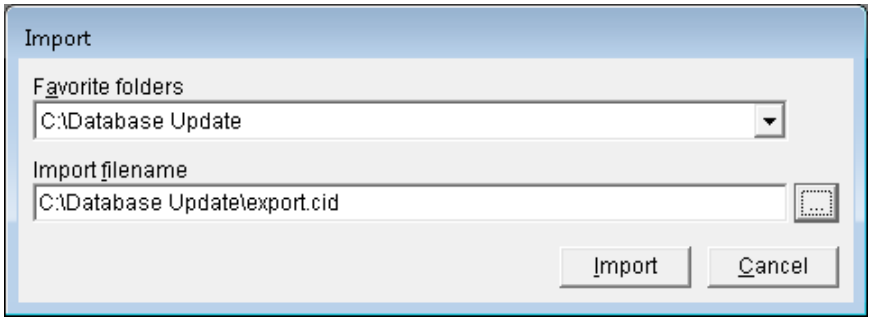


Step 6. Click **Yes**. The **Progress** window is briefly displayed and then disappears. The Compliance Checks have now been updated.

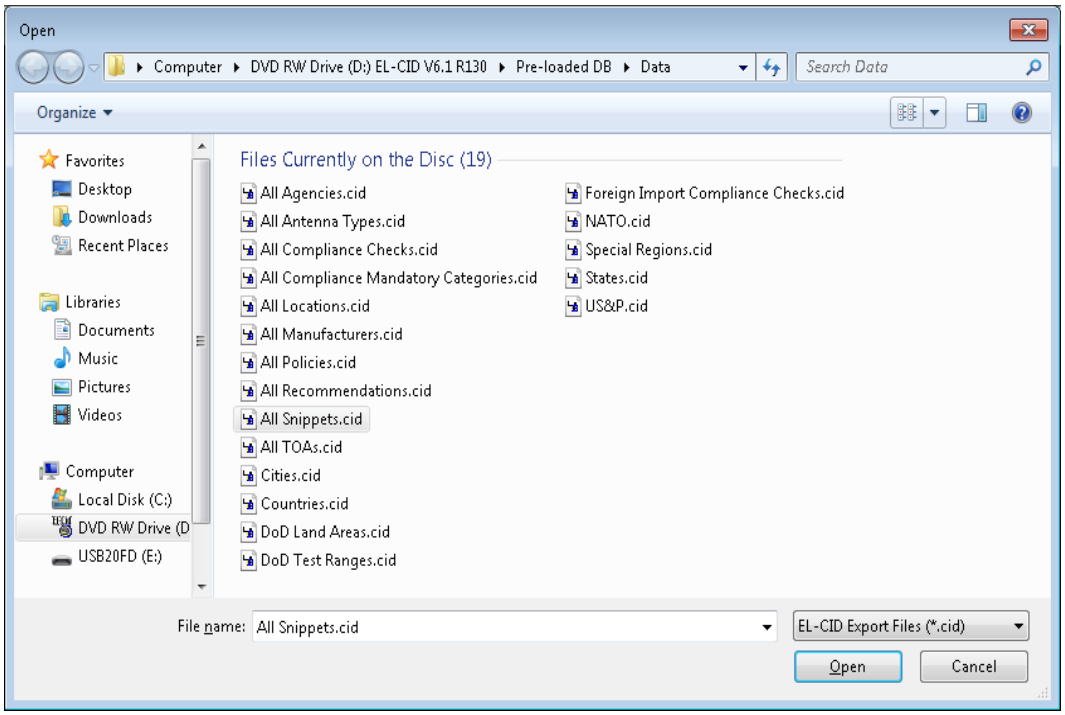
Step 7. Repeat the process, but this time choose **All Snippets.cid** from the import location.

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

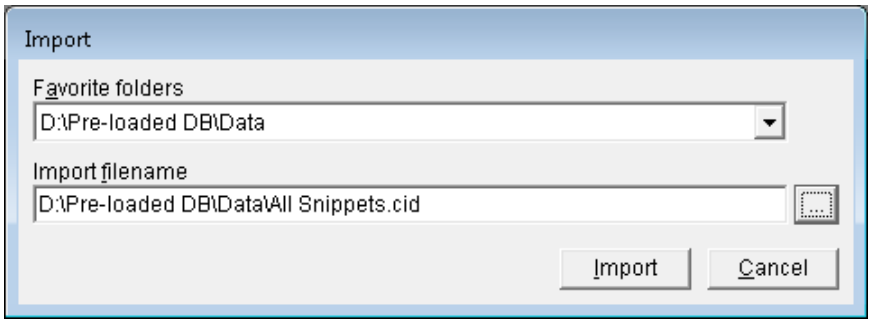
The **Import** window is displayed.



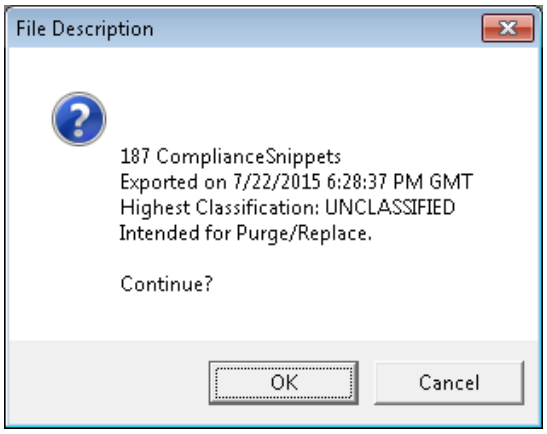
Step 9. Click the **Browse** button  to select the file to import. The folder we are using is on the D: drive. Go to **D:\Pre-loaded DB\Data.** Highlight the filename **All Snippets.cid** and then click **Open**.



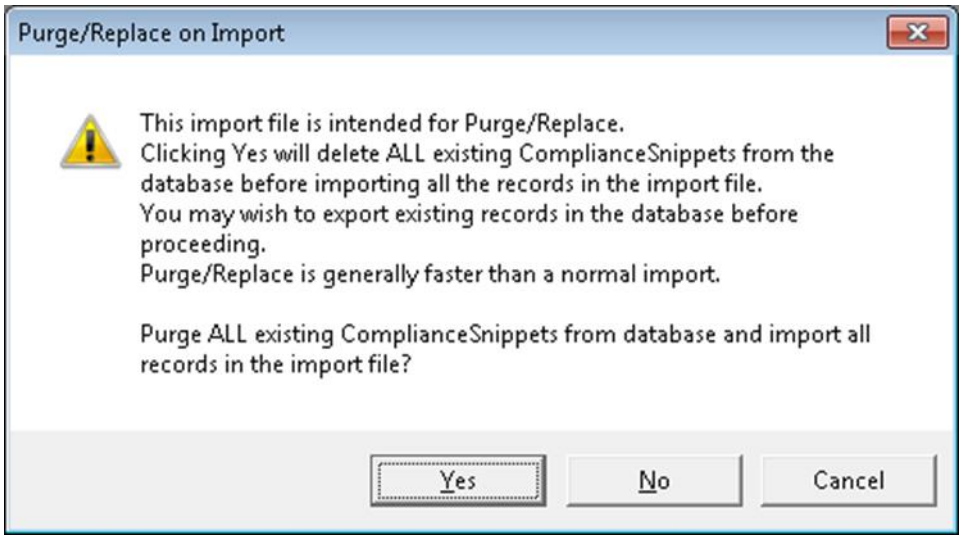
The **Import** window displays the selection.



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

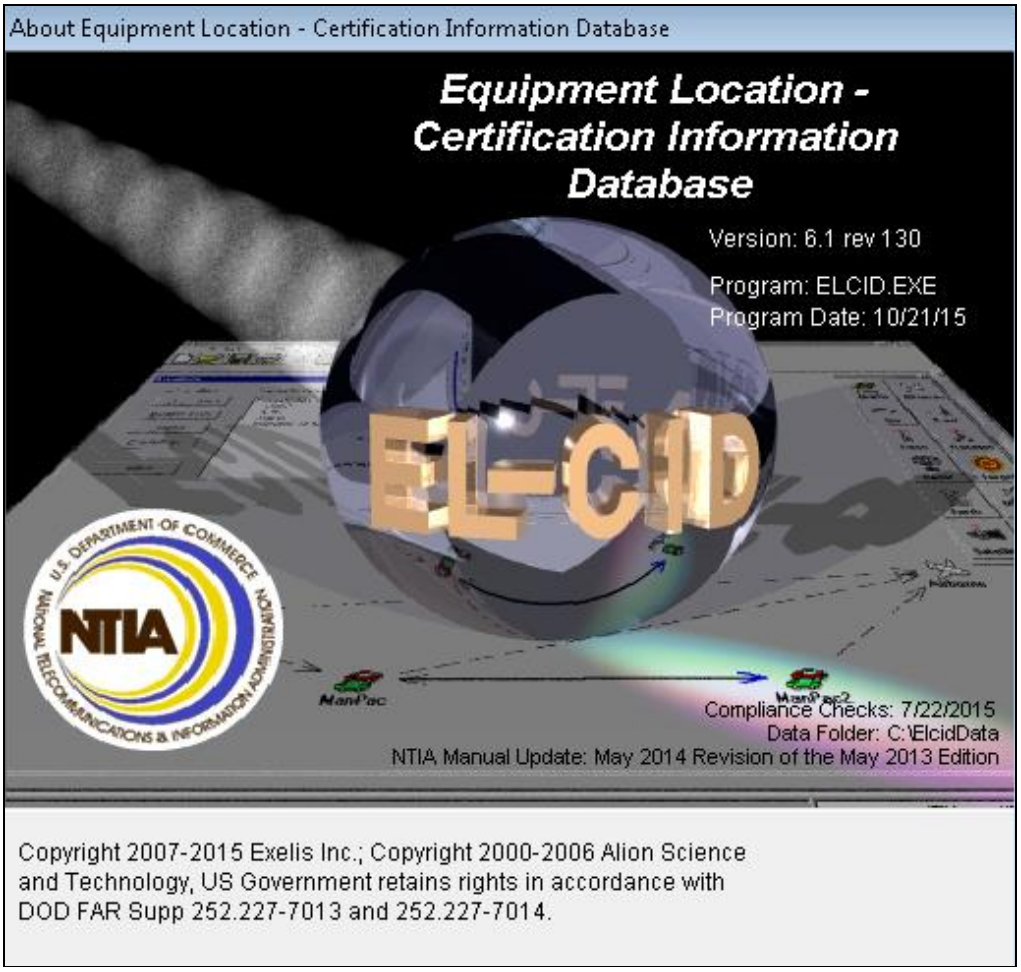


Step 11. Click **OK**. The **Purge/Replace on Import** window is displayed.



Step 12. Click **Yes**. The **Progress** window is briefly displayed and then disappears. The Snippets have now been updated.

NOTE: As a new feature in EL-CID Version 6.1, when the Compliance Checks are imported, either from the NTIA Web Site, the Installation CD, or from the **C:\ElcidData\Data** directory, the date of the current Compliance Checks will appear on the EL-CID Splash Screen, as shown below.



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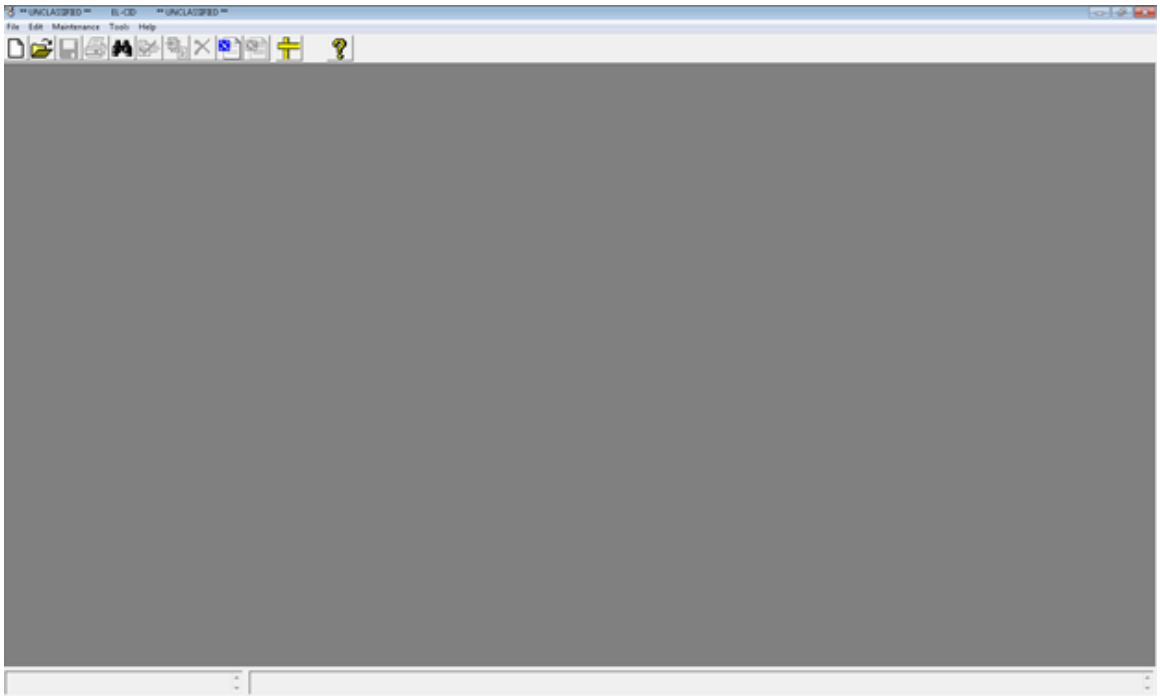
APPENDIX D - BACKING UP THE EL-CID DATABASE

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.

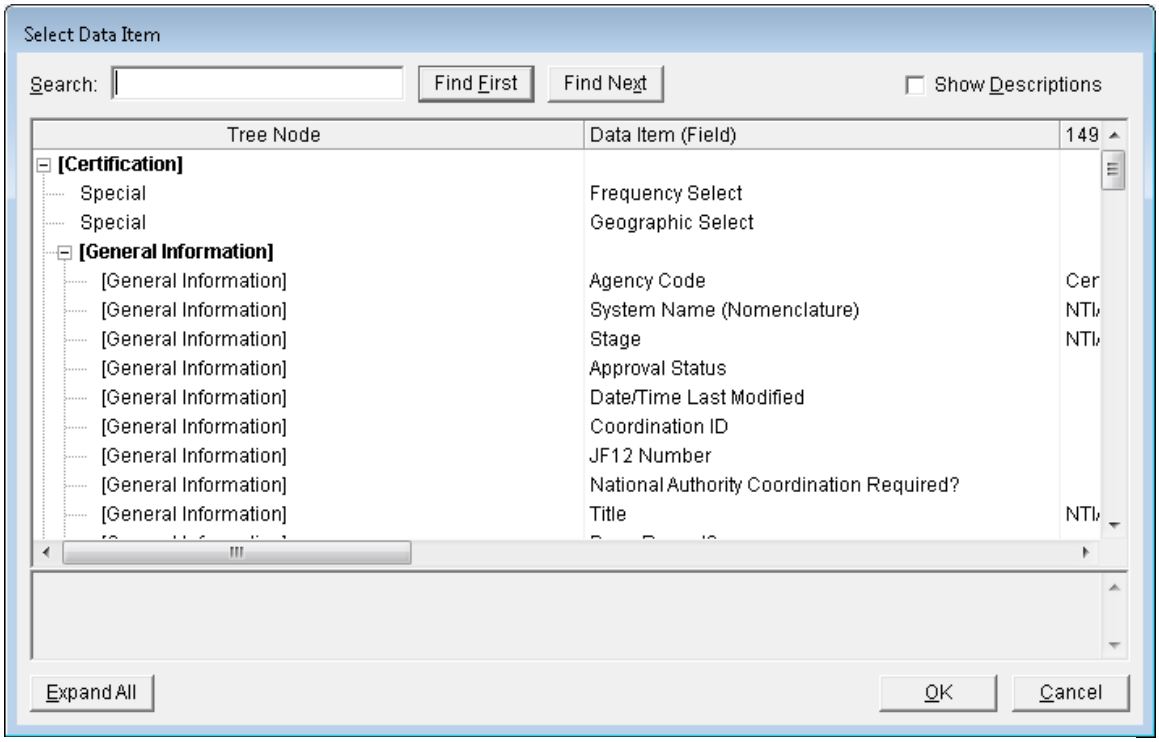
Step 1. Start the EL-CID program. If the Startup EL-CID Wizard window is displayed, click **Cancel** to dismiss this screen.

Step 2. The main screen appears.

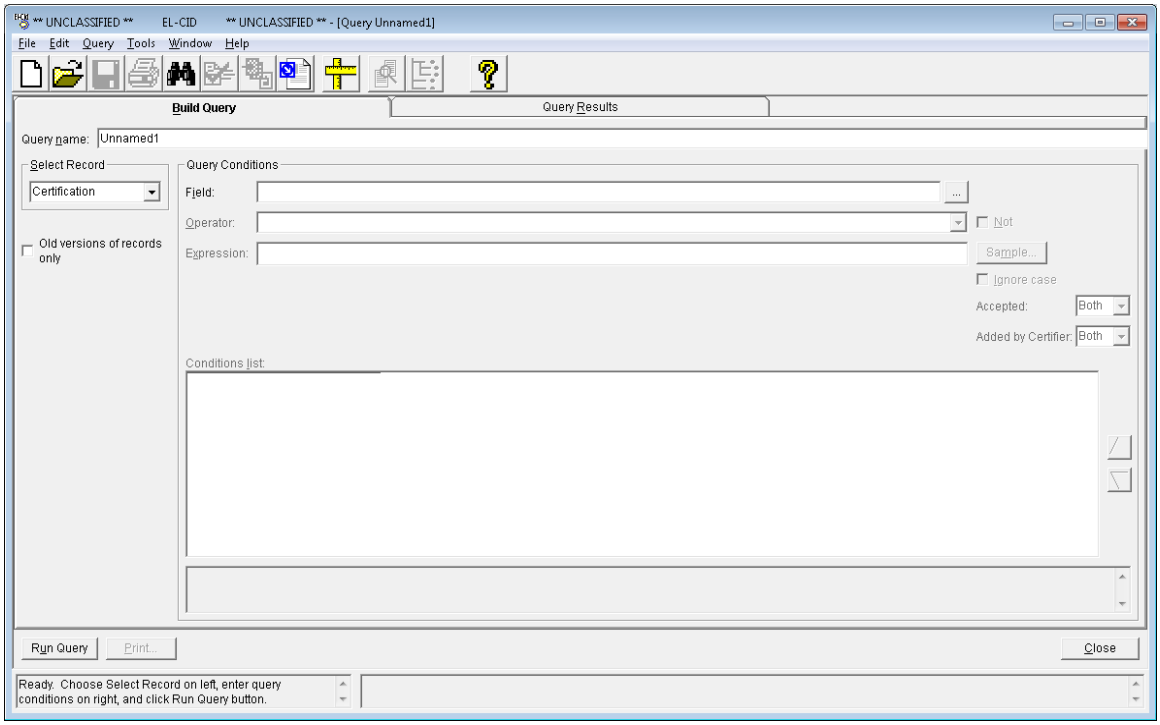


Step 3. Click the **New Query** button  on the tool bar.

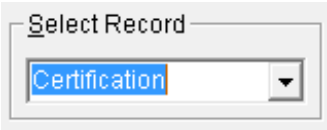
The **Build Query** window appears and (assuming that you have not disabled it in the Preferences) the **Select Data Item** window automatically appears. If the **Select Data Item** window is displayed, click **Cancel** .



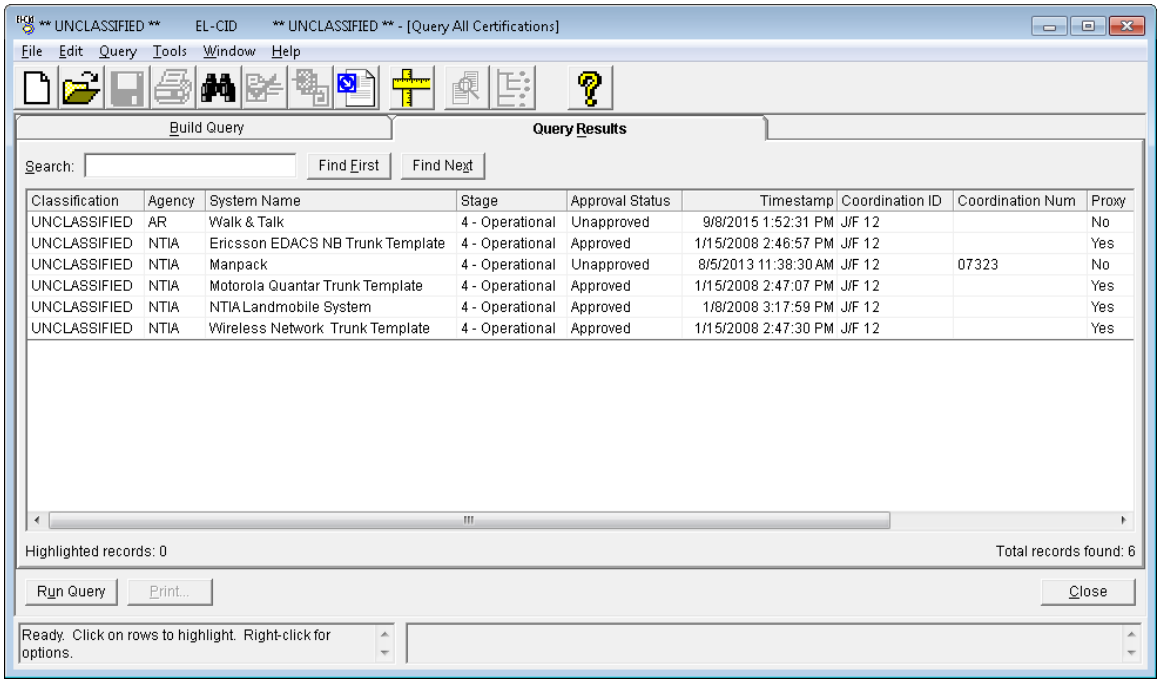
Step 4. The **Build Query** window appears.



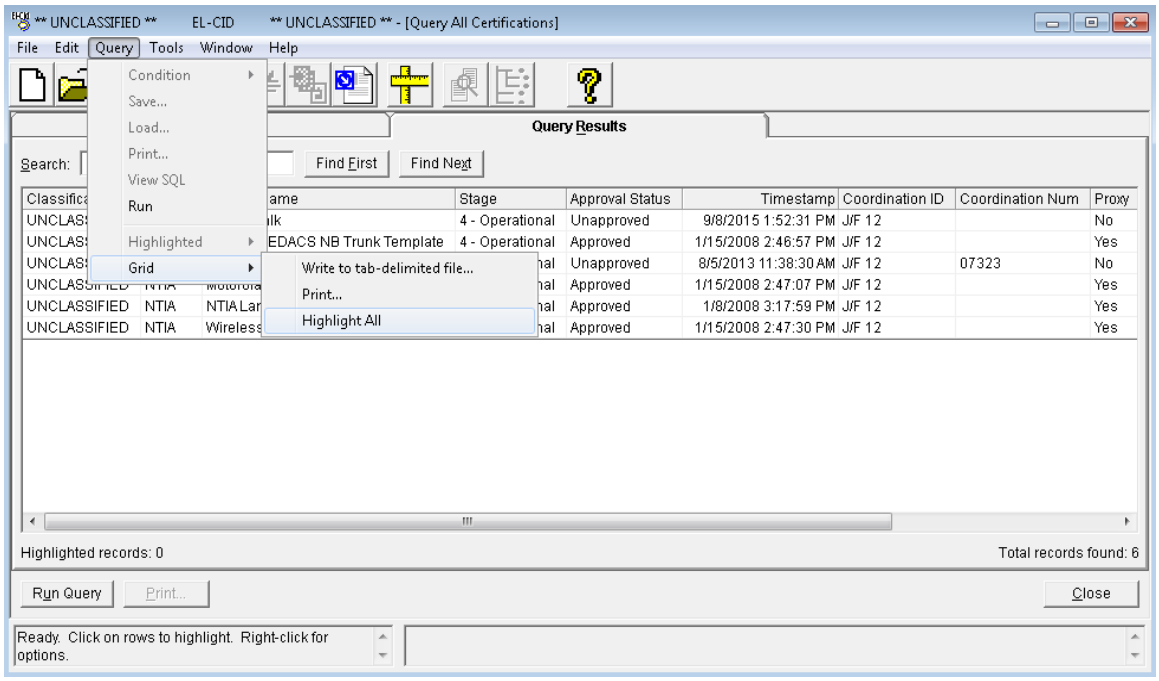
Step 5. Select **Certification** using the dropdown list button for the **Select Record** box.



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

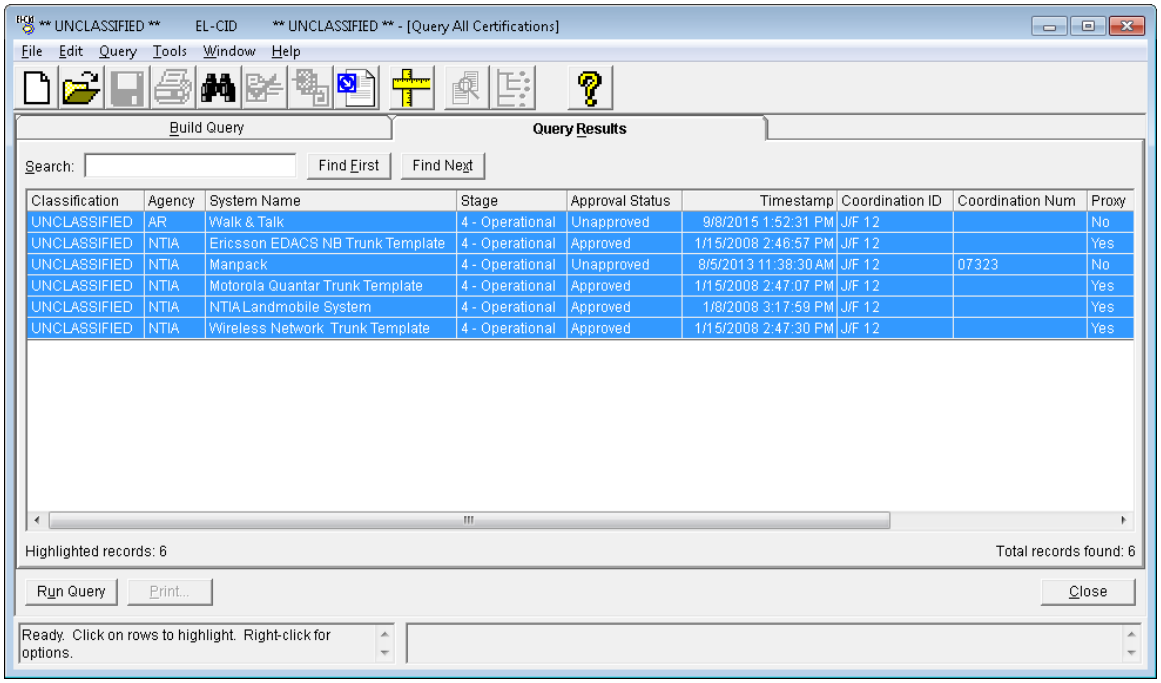


Step 7. Highlight all rows by selecting **Query** on the tool bar, then select **Grid** and **Highlight All** from the drop down list.

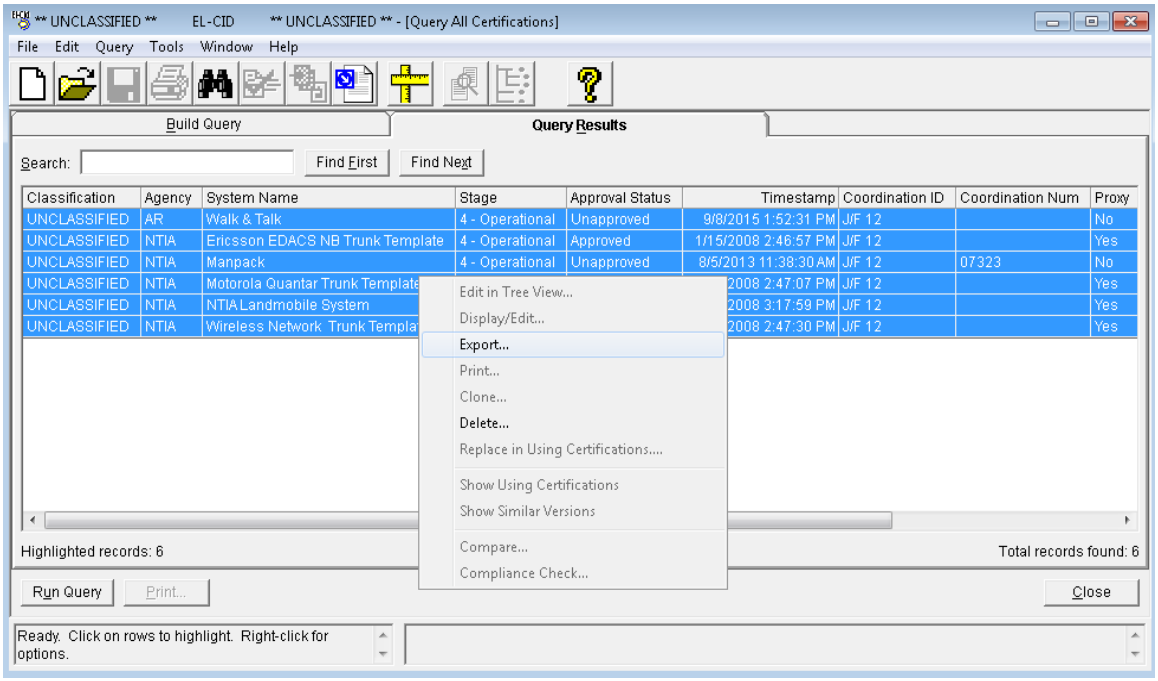


NOTE: If only one or more Certifications are to be exported, highlight only those rows that you wish to export. You can hold down the **Ctrl key** and click each row individually.

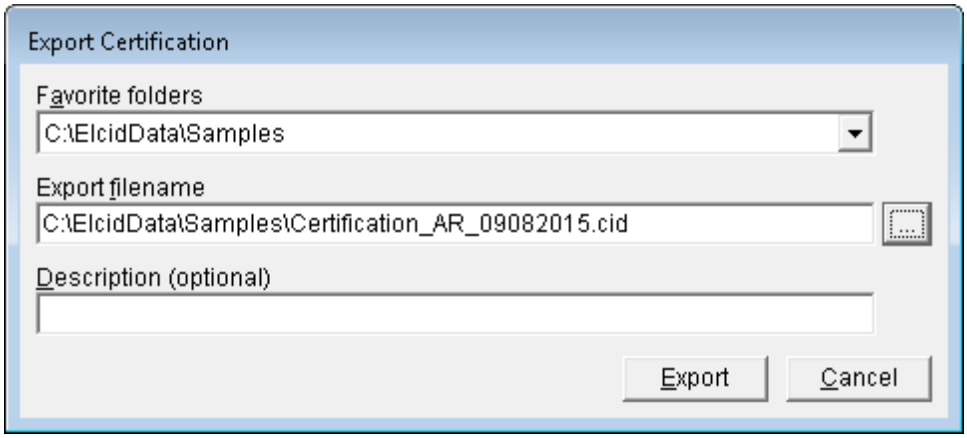
All Certifications have been selected and will be highlighted.



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

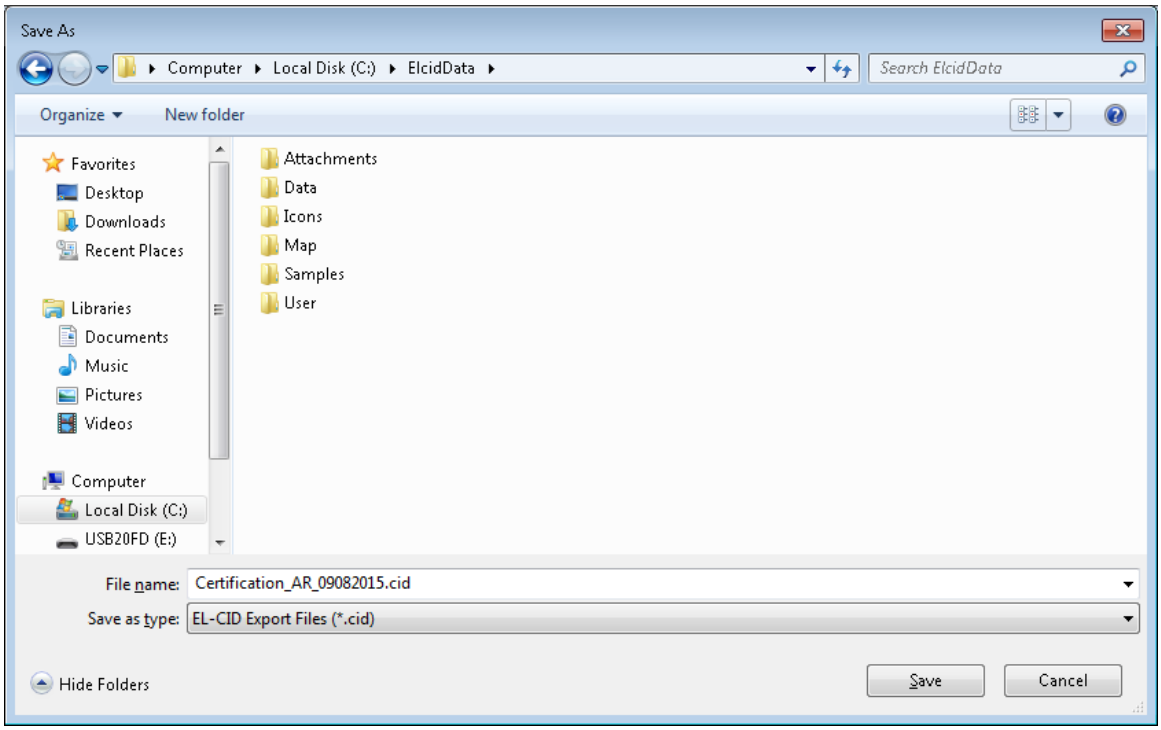


Step 9. The **Export Certification** window appears.

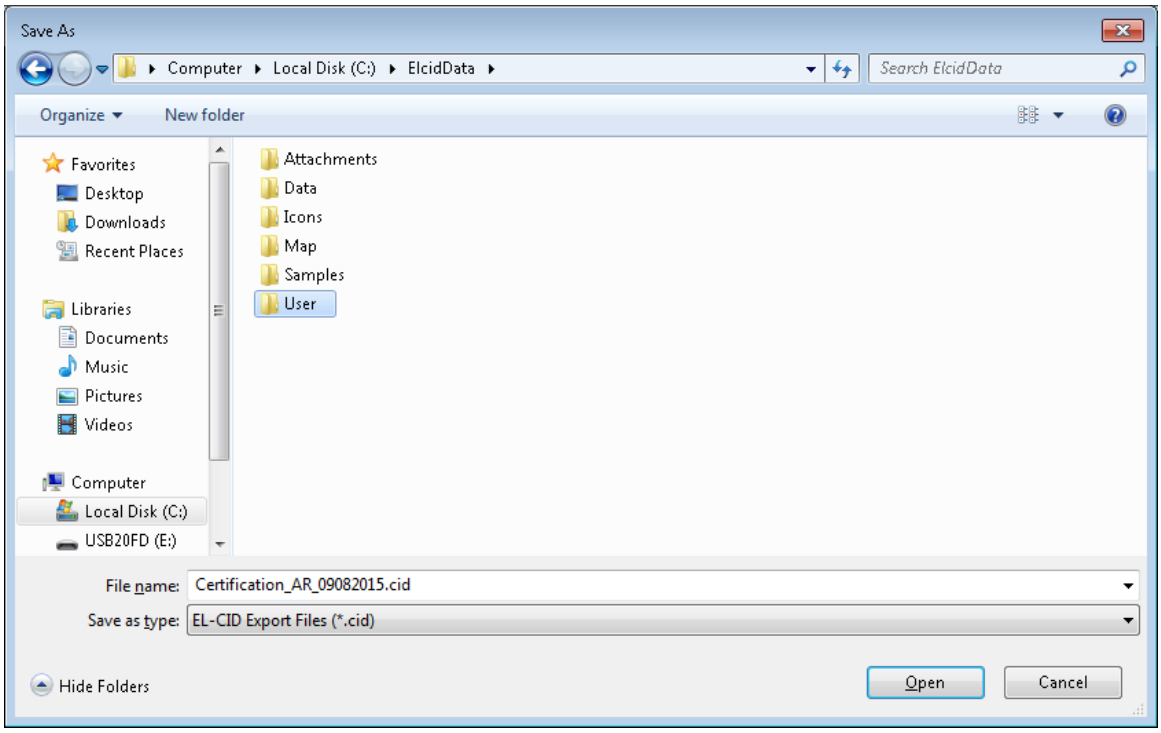


NOTE: The filename defaulted to **Certifications_AR_09082015.cid** (i.e., Type of file(s) exported_Agency_Date).

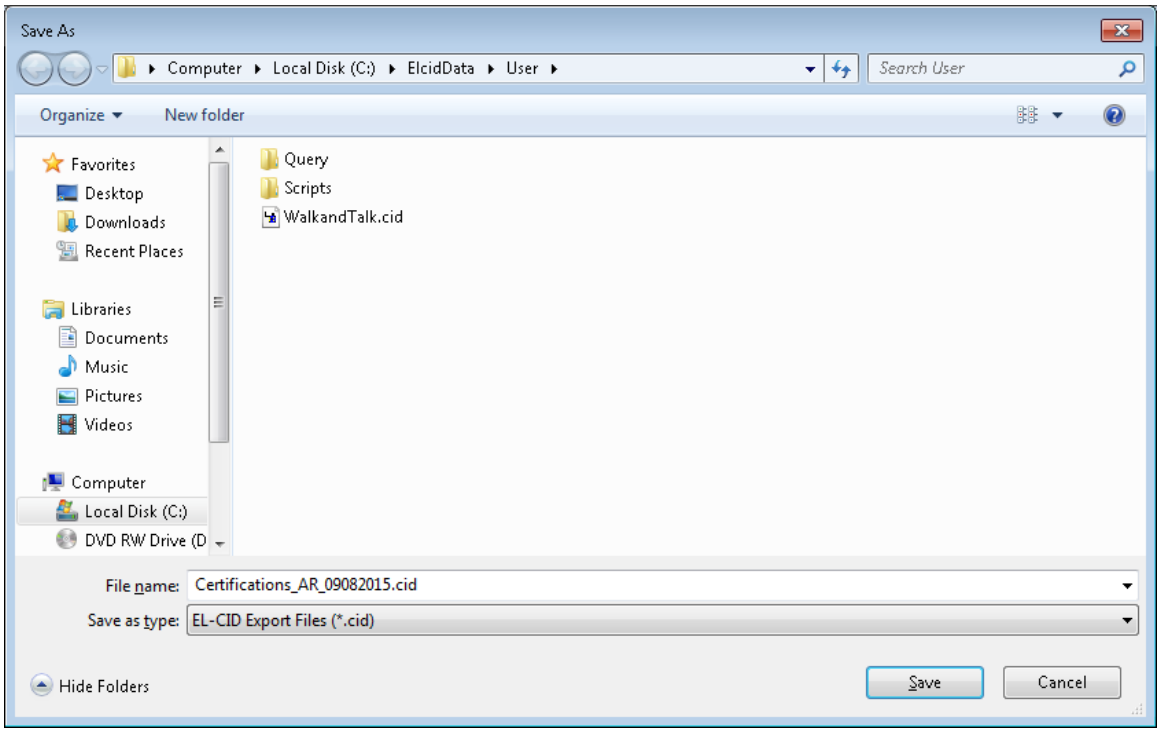
Step 10. Click the **Browse** button [...] to select the directory in which the files will be saved. Select the folder **D:\ElcidData**. Click **Open**.



Step 11. Select the **User** folder. Click **Open**.

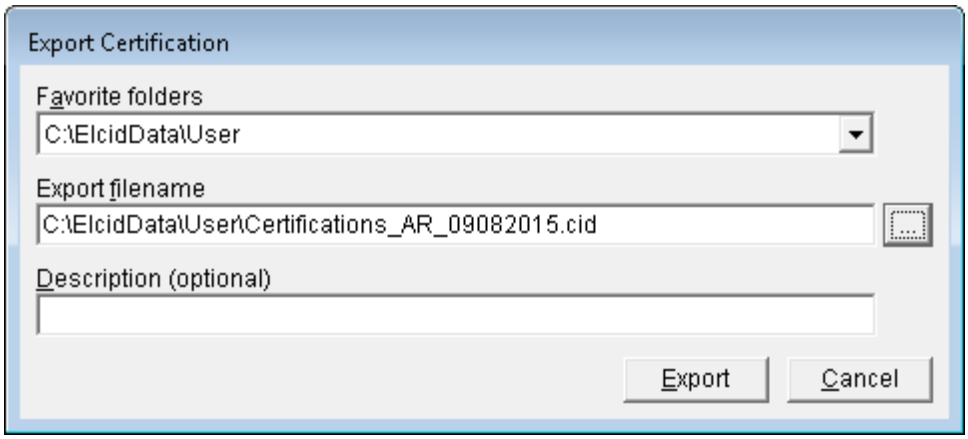


The **User** folder is displayed.

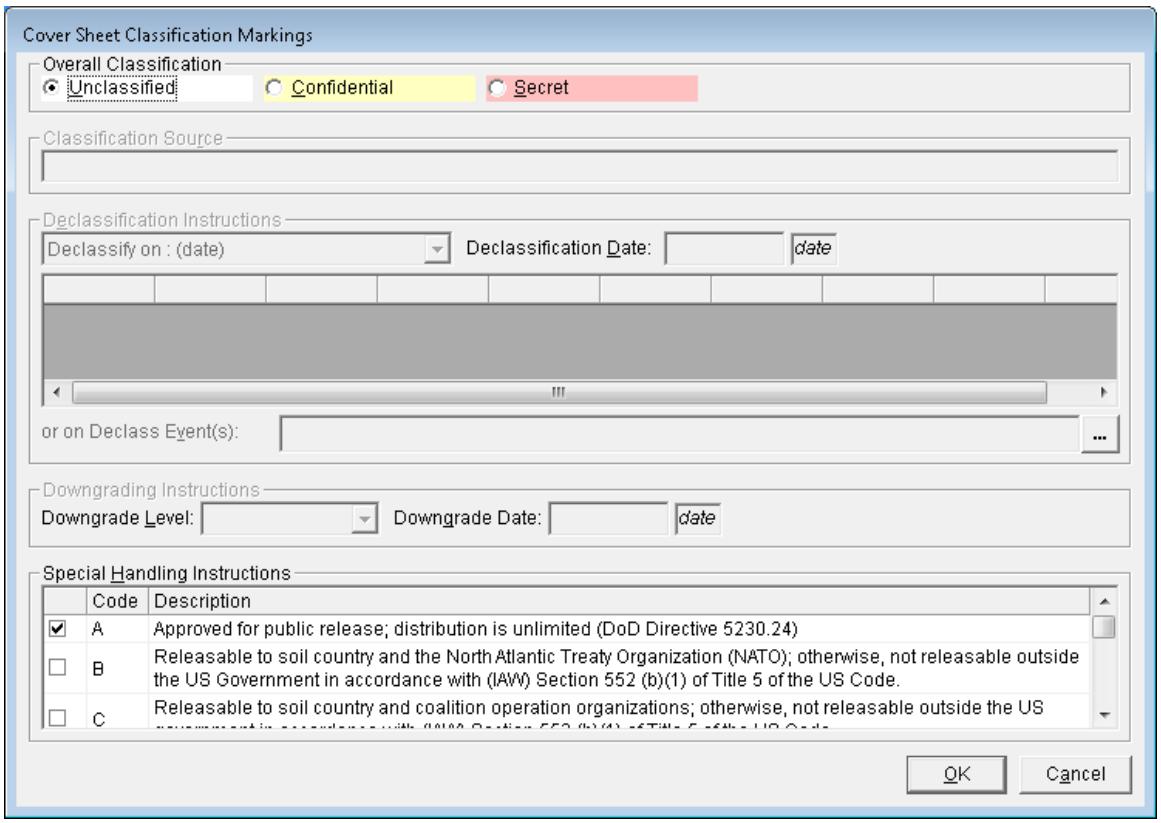


NOTE: The name in the **File name** box may be changed at this point. For this example we will keep the default name.

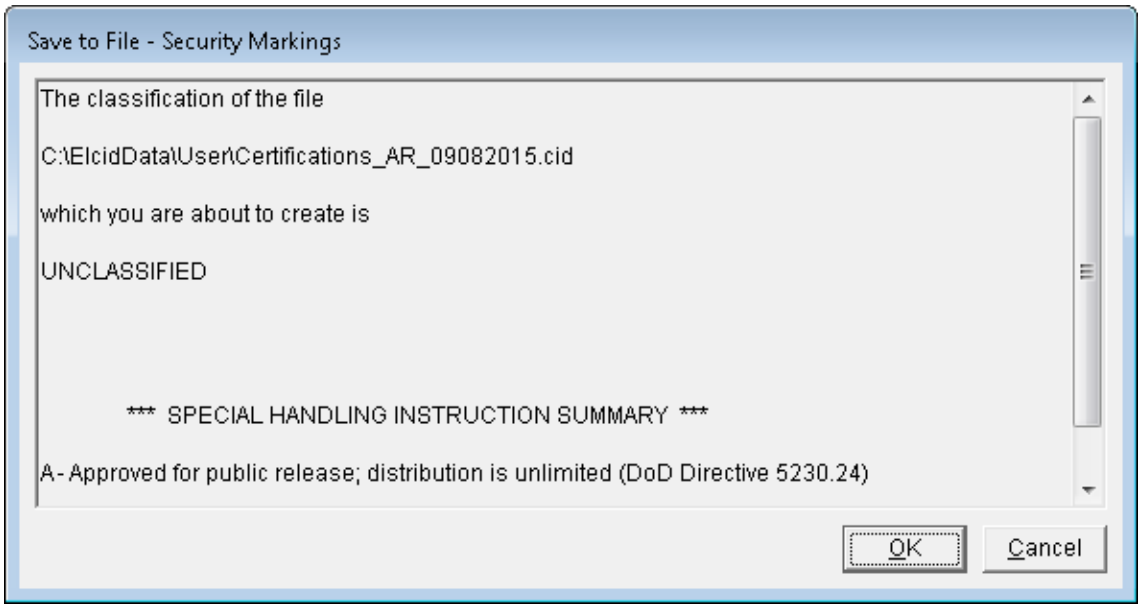
Step 12. Click **Save**. The **Export Certification** window is displayed again showing the path and filename that you selected. Additional information may be entered in the **Description** box.



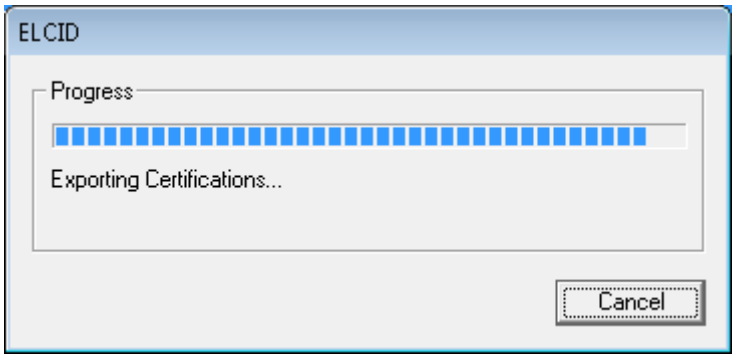
Step 13. Click **Export**. The **Cover Sheet Classification Markings** window is displayed. Select the appropriate Special Handling Instructions.



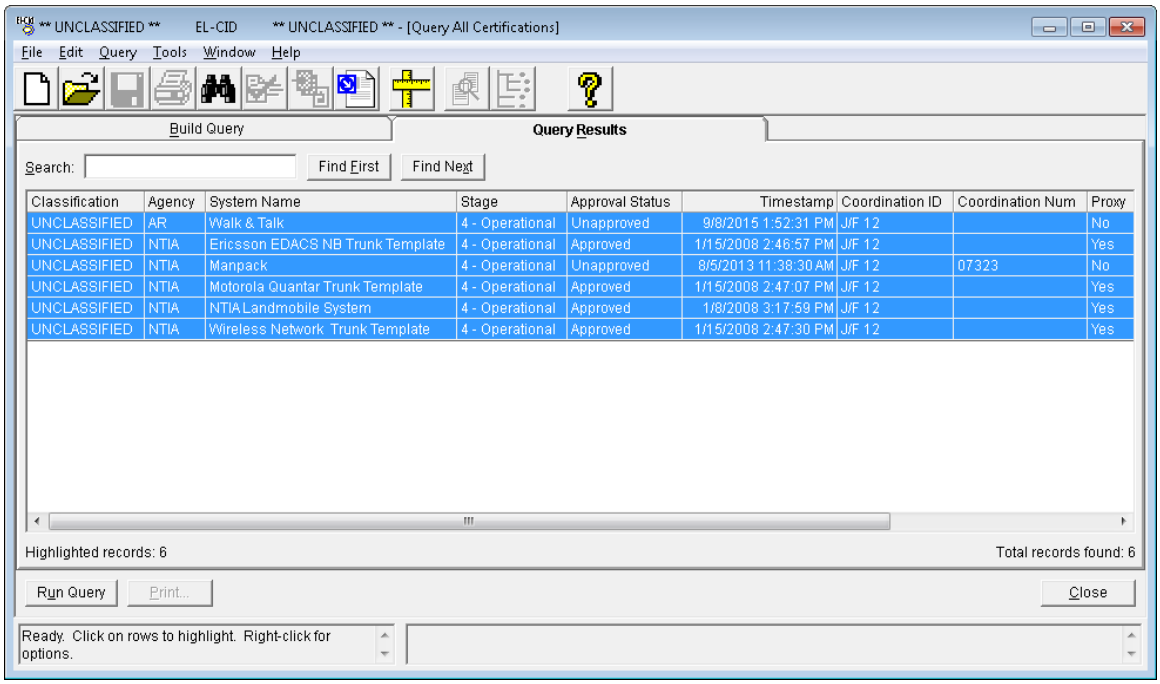
Step 14. Click **OK**. The **Save to File – Security Markings** window is displayed.



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.**

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.

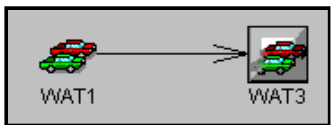
Send an email to the EL-CID Help Desk. Give the compliance check number and include a description of the problem. If possible, send the unclassified certification to the Help Desk. The Help Desk will notify NTIA that a potential problem exists. The Help Desk will further coordinate with NTIA to determine 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?

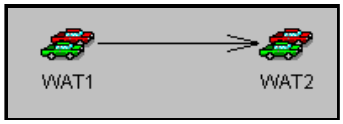
The link information that is gathered on the link node is most beneficial to NTIA. The link information gives the relationship between the transmitter, the transmitting antenna, transmitter power, and emission code. The applicable frequency bands are also listed.

The link can be drawn in three different ways.

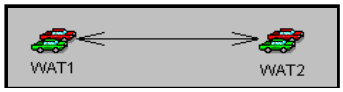
1. Terminate the link with a generic icon. This allows the link to be drawn and the transmitter information to be entered with no receiver information. This represents that you are probably communicating with similar equipment in the same frequency range.



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.

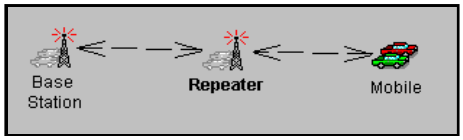


3. Drag an identical icon to the screen and put the full radio characteristics on the second icon. This will allow you to draw a link in the opposite direction. This represents that the radio will communicate with identical models of this radio.

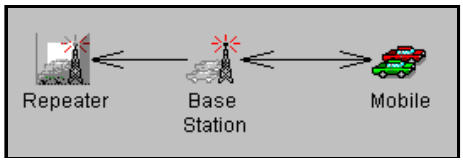


E.5 I don't understand how repeaters are represented on the trunking diagram.

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.

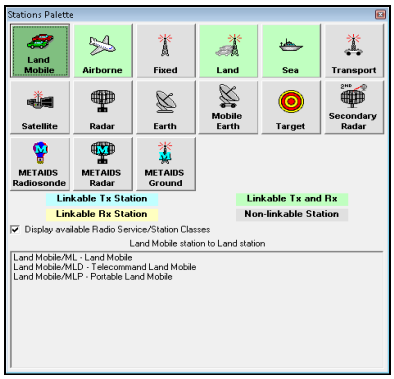
This situation can be caused by several reasons:

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?

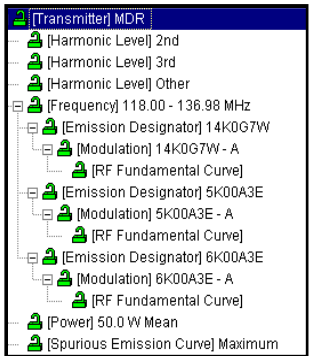
You should enter the operating range of the transmitting equipment. EL-CID will scan the frequency allocation table using the station class and radio service and display on the link information window the applicable frequency ranges that are available to use.

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: Hien Ly, Room 4600
1401 Constitution Avenue, N.W.
Washington, DC 20230

Or

Email: HLy@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	11/30/2016
System Description	The sample satellite will provide a platform for scientific data collected by onboard experiments.
Target Date for System Activation	04/30/2017
Target Date for System Termination	04/30/2027
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

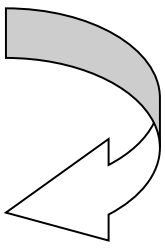
Location	
Field	**Value**
State, Country, or Location Name Part 1	Colorado
City or Location Name Part 2	Colorado Springs-USAF Academy
Location Type	Single Point
Geographic Coordinates	390021N 1043534W
Map Layer	Cities

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

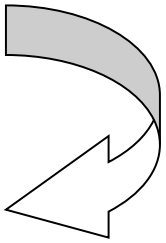
Earth Receiver Frequency Emission Sensitivity	
Field	**Value**
Emission Designator	80K0G2D
Performance Criteria	BER – Bit Error Rate
Performance Value	0.0001
Sensitivity	-124 dBm
Noise Figure	4.0 dB
Noise Temperature	438 K (use the calculator button)
Spurious Rejection Level	50 dB

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

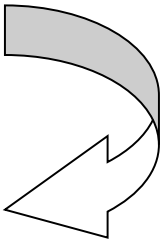
Satellite Receiver	
Field	**Value**
Nomenclature	Satellite Receiver
Manufacturer	SUR-TEC INC
Model Name and Number	S-Satellite-Rx
Frequency Stability	5
Frequency Stability Units	ppm
Image Rejection Level	60 dB
Local Oscillator Tuned Indicator	Below
Tuning Method	Fixed Crystal

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

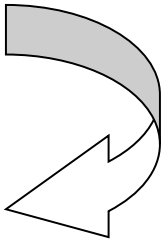
Sensitivity	-130 dBm
Noise Figure	2 dB
Noise Temperature	230 K (do not use the calculator button)
Spurious Rejection Level	50 dB

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

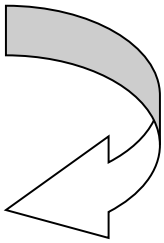
Satellite Transmitter Harmonic	
Field	**Value**
2nd Harmonic	-60 dB
3rd Harmonic	-60 dB
Other Harmonic	-60 dB

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 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 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:

[Station] Earth

WARNING NTIA Chapter 10: NTIA-CH10-8.2.04.b-W
Antenna altitude above ground will be required for each earth station in a Stage 4 space system. Specify the Antenna Height at this Station.

[Antenna - Aperture] Earth Antenna Receiving

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

WARNING NTIA Chapter 10: NTIA-CH10-8.8.f-1-A-W
Scan Characteristics (horizontal and vertical) should be specified for each Aperture antenna in a Stage 1 through 3 Certification.

[Emission - Sensitivity] 80K0G2D - -124 dBm

WARNING NTIA General: NTIA-Gen-0099-W
At stage 4, each Emission Designator Intermod Rejection and Spurious Rejection will be required.

[Transmitter] Earth Transmitter

[Transmitter] Satellite Transmitter

NOTE NTIA Chapter 10: NTIA-CH10-8.6.i-13
If this transmitter has been type accepted by the FCC, enter the FCC Acceptance Number.

[Emission - Sensitivity] 30K0F2D - -130 dBm

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)

WARNING NTIA General: NTIA-Gen-0099-W
At stage 4, each Emission Designator Intermod Rejection and Spurious Rejection will be required.

WARNING NTIA Chapter 8: NTIA-CH8-8.2.36.1.a-04-1-W

This Satellite link exceeds the Power Flux Density Limits of Table 8.2.36 (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 operating in the 2200-2290 MHz band, and you are failing by less than 16 dB, you may request a waiver from NTIA pursuant to SPS-12038/IRAC Doc. 31015/1.

NOTE NTIA Chapter 10: NTIA-CH10-8.2.05

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.

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	12/30/2016
Target Date for System Termination	12/30/2026
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 dB
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

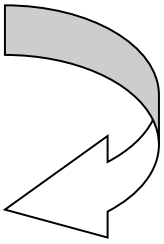
Antenna – Aperture	
Field	**Value**
Vertical Scan Characteristics Type	Electronic Scan Sector
Vertical Scan Speed (degrees per …)	1.0 per second
Vertical Scan Rate (scans per …)	8.0 per minute
Antenna Vert. Scan Maximum Elevation	5 Degrees
Antenna Vert. Scan Minimum Elevation	-3 Degrees
Antenna Horizontal 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
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
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

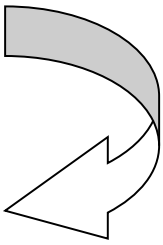
Radar Transmitter Harmonic	
Field	**Value**
2nd Harmonic	-74 dB
3rd Harmonic	-80 dB
Other Harmonic	-80 dB

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**
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)*

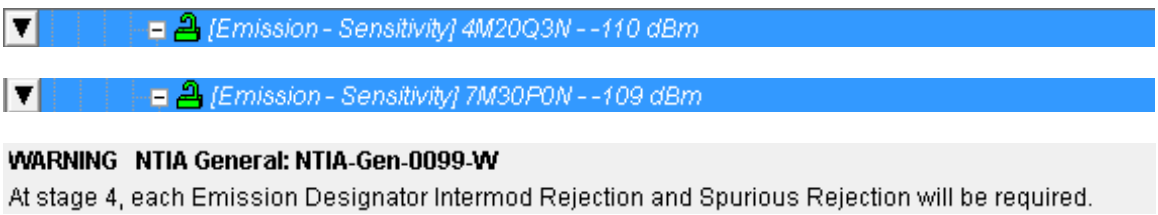
Remember that the curve editor wants frequency offset as an input (frequency offset =½ bandwidth)

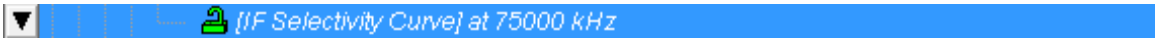
Radar Transmitter Power	
Field	**Value**
Power Type	Peak Envelope
Power Upper Limit	45000 Watts

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:



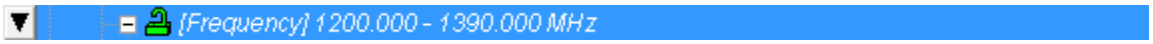


WARNING NTIA Chapter 5 RSEC: NTIA-CH5-5.5.7.3.RadarReceivers-1-W

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 5.5.7.3, Radar Receiversof the NTIA Manual.

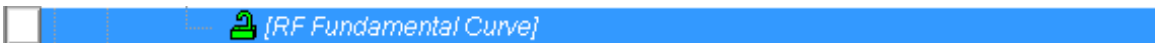
NOTE NTIA Chapter 10: NTIA-CH10-8.6.i-13

If this transmitter has been type accepted by the FCC, enter the FCC Acceptance Number.



WARNING NTIA Chapter 8: NTIA-CH8-8.2.55-W

Federal agencies requesting Stage 4 Spectrum Certification for systems operating in the 390-413 MHz and 960-1710 MHz bands must provide measurements of the emission levels generated in the frequency bands used by the Navstar Global Positioning System. The measurements of the wideband emission levels and narrowband emission levels are required in the 1164-1240 MHz and 1559-1610 MHz frequency bands. For pulsed systems operating in the 390-413 MHz and 960-1710 MHz frequency bands, a plot of the relative power level in the 1164.45-1188.45 MHz, 1215.6-1239.6 MHz, and 1563.42-1587.42 MHz bands as a function of time can also be submitted as an attachment. For systems operating in the subject bands, this requirement will become effective on July 1, 2009. Systems already operational, procured prior to July 1, 2009, or submitted for review by the Spectrum Planning Subcommittee prior to July 1, 2009 will be exempt from this requirement. The guidelines for making the emission level and temporal measurements are given in the NTIA Manual, Appendix M, Sub-Section M.2.1.F.



WARNING NTIA Chapter 5 RSEC: NTIA-AnnexJ-Radar-Non-FM-Pulse-W

The necessary bandwidth (-20 dB point) on this RF Fundamental curve of this non-FM pulse radar does not meet the formula as given in ANNEX J of the NTIA Manual.

WARNING NTIA Chapter 5 RSEC: NTIA-CH5-5.5.4.Eq.4b-W

This Group C non-FM pulse or coded pulse radar transmitter does not meet the standard emission bandwidth curve as required in section 5.5.4 Eq. 4b and 5.5.7.3 of the NTIA Manual. Note that Pavg = Peak Power * Pulse Repetition Rate * Pulse Width is used for Pt in the curve formula.

NOTE NTIA Chapter 10: NTIA-CH10-8.4

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).

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**.