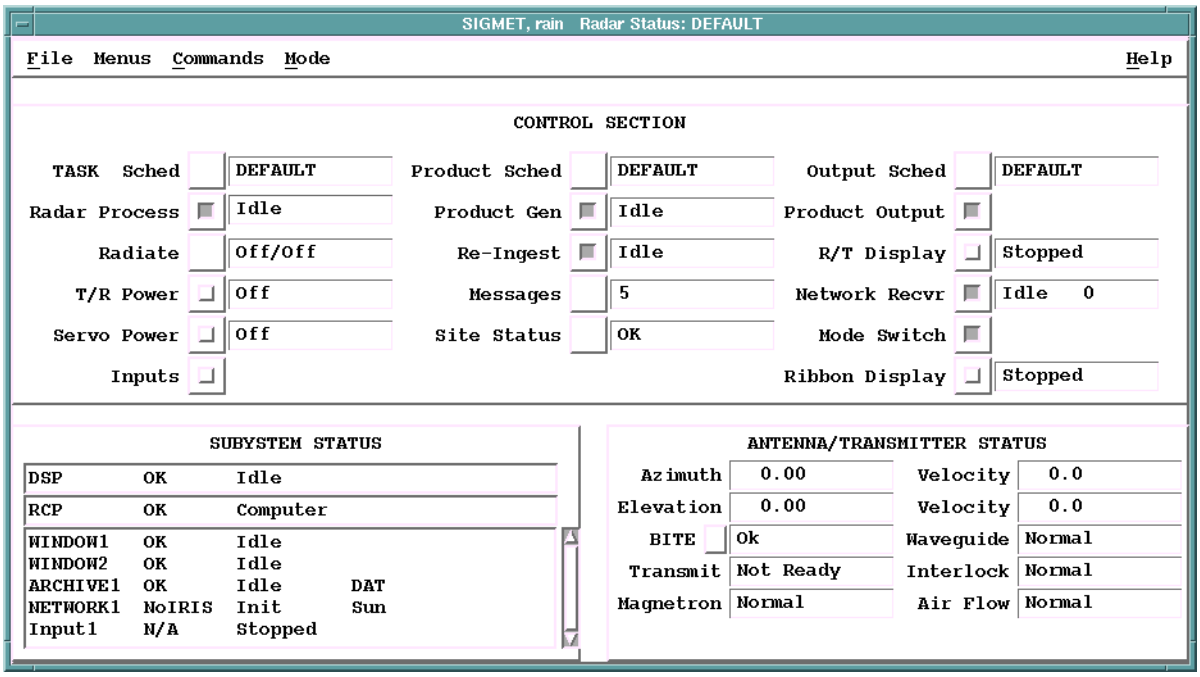
4. Radar Status Menu

The Radar Status menu provides the primary mechanism for controlling and monitoring an IRIS radar or analysis system.. The name assigned to the Radar Status Menu defines a complete mode of operation. Thus a mode of operation can be set–up and then captured by simply naming and saving the Radar Status Menu. Because it involves real-time processes, the Radar Status menu is an operator menu. Note, however, that anyone may view the menu.

Topics in this Chapter:

4.1 Radar Status Menu



To start the Radar Status Menu

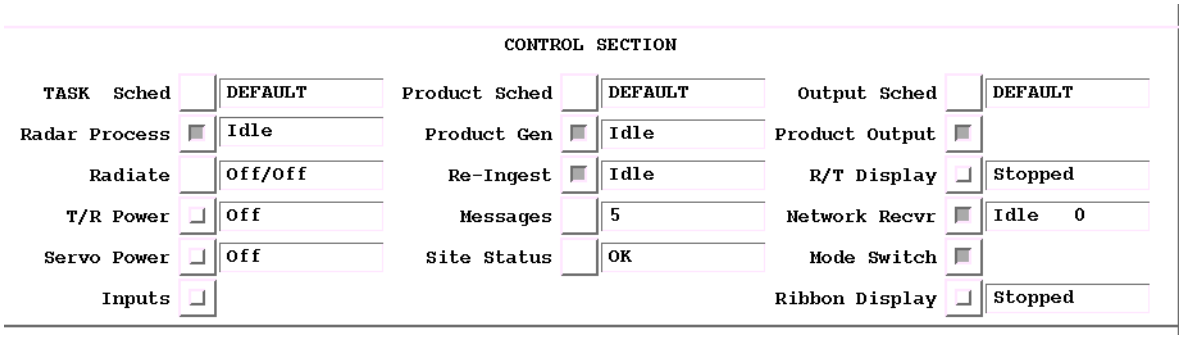
Choose **Menus–>Radar Status** from the IRIS menu bar or from any of the IRIS menus. When IRIS starts, the IRIS configuration named DEFAULT is loaded.

Control Section Section 4.1.1 — Contains all the major switches and status for IRIS operation. The IRIS configuration can be loaded or saved from the environment. Individual software processes may be turned on and off.

Subsystem Status Section 4.1.2 — For display only. This section of the window shows the status of the various devices connected to IRIS. The exact display depends on the devices purchased for a particular system.

Antenna and Transmitter Status Section 4.1.3 — Displays the status for the antenna, transmitter and BITE systems, including antenna position and velocity.

4.1.1 Control Section



⚠ **CAUTION: Set the DEFAULT IRIS configuration so Radiate and Antenna Servo Power are off if there is a possible hazard to personnel when IRIS starts.**

The control section of the menu shows the various configuration files that are active. It contains all of the control features for starting and stopping the major IRIS processes. It also provides control for the radar transmitter and allows you to perform device resets for selected equipment.

TASK Schedule

This field determines which TASK schedule is run. You can click on the button to pop up a list of available TASKS or enter the name of a schedule directly into the field.

Radar Process

The Radar Process field provides control and status for the software that runs the radar system and creates ingest files. Toggle this button on to start the radar process; toggle the button off to stop the antenna.

🛈 **The Radar Process Button, when toggled off/on, effects the Signal Processor and Radar Control Processor as follows.**

1. The RCP will be reset. This is a convenient way of resetting from a shutdown. Note that this will also cause the RCP reset output line to toggle, which may be configured to reset other equipment at the radar site.

2. The Signal Processor will take a noise sample before resuming data collection. This is a convenient way of forcing a noise sample.

The text area to the right of the toggle button shows the status of the radar process. The possible entries are:

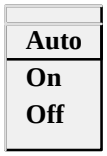
Running The current TASK is running normally.

Idle No TASK is running, but the radar process is ready to run TASKS. Either TASKS have not been scheduled, or it is not time for a scheduled TASK to run.

Stopped The radar process is off.

Radiate

This field controls the transmitter radiate. Click on the button and choose from the following pop-up menu:



Auto — For normal operation. IRIS turns the transmitter radiate on and off automatically. For example, if there is no TASK to be run for five minutes or more, IRIS temporarily turns the radiate off to preserve the life of the magnetron.

On — The transmitter radiate is on at all times during IRIS operation.

Off — The transmitter radiate is off at all times during IRIS operation. A warning message is generated if you run a TASK with Radiate turned off.

The Radiate status is reported as either "On" or "Off." See also the Antenna/Transmitter area of the menu, which provides additional information.

Transmitter/Receiver (T/R) Power

This toggle button controls power to the transmitter cabinet. The status is reported as either "On" or "Off." When power is turned off, the sensors for some of the Antenna/Transmitter status items do not function properly.

Servo Power

This switch turns the antenna servo drive power on and off. The status is reported as "On" or "Off."

Product Schedule

This field determines which product is generated. Click on the button to pop up a list of available products. Choose one from the list or enter the name directly into the field.

Product Generator

Toggles Product Generator process on and off. The status is shown as "Idle," "On," or "Off."

Reingest

The reingest process takes a RAW product file and makes ingest files, which can be processed to make products. There are three ways that the reingest process can be activated:

- Automatically, whenever a RAW product is restored from tape.
- Automatically, whenever a RAW product is received over the network.

The reingest process can be toggled on or off. The status is displayed as either "Idle," "Running," or "Stopped."

NORDRAD

If your system is licensed to receive product output from the Nordic Radar Network System (NORDRAD), this button lets you turn NORDRAD on and off, and the field shows the status of the receive process as either “Running,” “Idle,” or “Stopped.”

Messages

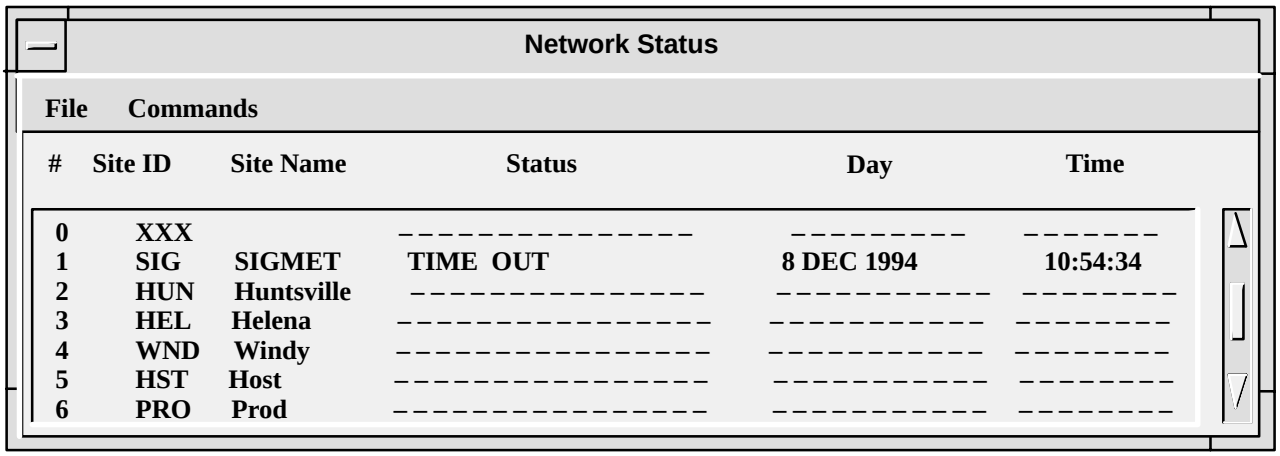
Pressing this button opens the Message Summary menu, described in Chapter 5. When you exit from the Message Summary menu, you return to the Radar Status menu.

Site Status

The Site Status menu gets its information from Status products that are either received over the network or made locally. These are made automatically at each radar site on a fixed schedule (e.g., every 10 minutes) as set in the setup/product utility (see the *IRIS Utilities Manual*). The Status product can then be sent automatically over the network via the Product Output Menu. For example in a radar network, each radar may send routine status products to a central maintenance facility.

If there is a fault in a Status product, or if a Status product fails to arrive in the expected time, this field turns red and shows the ID of the site where the problem occurred. If more than one site has encountered a fault or time out, the field displays the ID of the first site in the list that experienced the problem.

Clicking on the button next to the field pops up a menu showing all sites and their status.



Output Schedule

This field indicates which product is output to a display device. Click on the button to pop up a list of available products.

Product Output

This toggle button controls whether products can be output to various display devices or tape. It is a convenient way to stop all output to all users if a problem develops. This field does not display any status.

If you are configured for network operation to another computer, it is sometimes necessary to toggle the Product Output button off and on to reestablish the network output after a network connection has been broken.

Real Time (R/T) Display

If your system is equipped with a real time display, the real time display process can be turned off here. You might want to do this while performing system tests to prevent incorrect data on the display. Another reason for turning off the real time display on a busy system is that if no one is looking at it, there is no need to use the CPU and network resources to generate it. See Chapter 8 for details on the real-time display.

The status is reported as one of the following:

Running	The real time display is on and running for the current TASK.
Idle	The real time display is on but idle. Perhaps no active TASK needs to be displayed.
Stopped	The real time display is off.
N/A	The real time display is not available on your system.

Network Receiver

If your system is licensed to receive product output from another IRIS host or workstation, this field shows the status of the receive process, as either “Running,” “Idle,” or “Stopped.”

The field also displays the number of IRIS systems to which you are connected. If the number is “0,” you are not currently connected. The other computer may not be running IRIS or the connection may be broken. You can toggle this field on and off to attempt to reestablish a broken connection. Check with your system manager if you are uncertain.

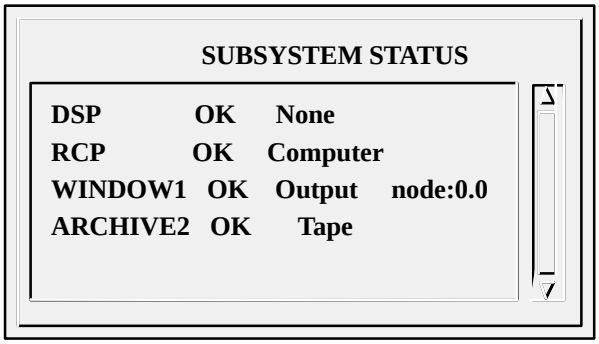
Mode Switch

When this button is pressed in, automatic reconfiguration is allowed, that is, IRIS automatically changes the configuration in response to a warning product. Use the Automatic Mode Switch menu to define the warning products to check and the configurations to load in the event of a warning. (See Section 4.4 for a description of the Automatic Mode Switch menu.)

Inputs

IRIS input process can be polling directories looking for arriving files. This is configured from the Input section on **setup**. The inputs switch turns the inputs on/off.

4.1.2 Subsystem Status



This area of the menu displays the status of the various subsystem devices connected to IRIS. The contents vary from system to system. The specific entries depend to some extent on the hardware options that have been purchased with the system.

Use the **setup** utility to configure the devices that appear in this area of the menu.

Depending on the device, the status is obtained from self-tests invoked when the Radar process is started and/or from Watchdog process that monitor the device during normal operations. Status information is displayed with an additional status message. “NA” (not available) indicates that a device has not been installed.

RCP (Radar Control Processor)

The Radar Control Processor (RCP) may be either “OK” or “Error,” and it may be set to either “Computer” or “Local” control by a switch at the radar site (typically on the radar console).

Important: The RCP must be set to “Computer” control for IRIS operation. “Local” control is for maintenance purposes only.

DSP (Doppler Signal Processor)

This may be either an RVP6 or RVP7 signal processor. Status may be either “OK” or “Error,” with an additional message if a problem occurs.

Window1 (X-Window Displays)

This entry shows the status of any X-window device, such as X-terminals or workstations running with a remote X-window. These devices are connected on the Ethernet LAN (local area network). The windows are created in the IRIS host, then displayed on the LAN X-window device.

The status information may show "OK" or "Error." When the window is successfully created, the node name is also displayed. When the status is "Error," the window X-device may be off. Check that the X-terminal or workstation is on and properly booted, leave the IRIS menus, and restart IRIS from the operating system prompt by typing:

```
restart
```

This restarts the process on the X-window device.

Net1 *Node Name* (Network Output)

This entry shows the status of the network output process — output to another network computer that is running IRIS. "Net1" identifies the IRIS output process. Note that there can be more than one network output.

The first few letters of the target node name are displayed to the right. If the status shows "Up Init," you are not connected. IRIS tries to reestablish a connection every minute. If it does not, toggle the Product Output button off and on to reestablish the connection. If you cannot get a connection, either the other IRIS is not running on the other computer, or the network has failed. Leave the IRIS menu and check to see if the other node is up. If the target node is up and you are authorized to do so, log on to the node, see if IRIS is running, and start it, if necessary.

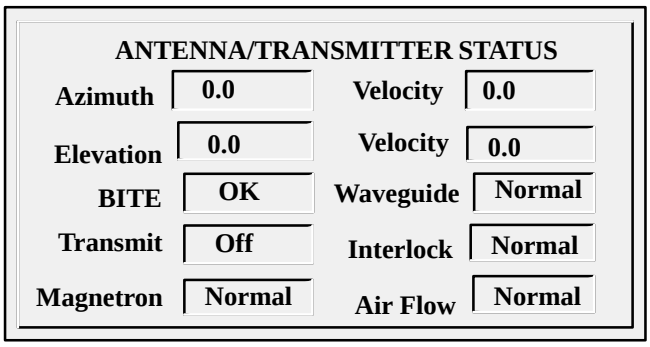
Archive1 and Archive2

You can have up to two archive drives on the system. These are either tapes or MO disks. The status is reported as "OK" or "Error," with an additional message to show the activity of the drive.

Printer 1 and Printer 2

These entries are the Canon PJ1080, DEC LJ250, or HP XL300 color printers. The status is reported as either "OK" or "Error," with an additional message to show the activity of the printer. The message shows either "Running" or "Free" (the device is available for system-wide use, not just IRIS).

4.1.3 Antenna/Transmitter Status



This area of the menu provides read-outs for the status reports typically available from the radar system built-in test equipment (BITE). The Setup utility configures the information displayed in this portion of the menu .

Azimuth and Elevation Antenna Position and Velocity

These fields show the position and speed of the antenna. For the sign of the velocity, clockwise and upward motion are taken as positive, while counterclockwise or downward motion are taken as negative. Antenna speeds are given in RPM.

Transmit

This entry shows the status of the transmitter as one of:

Not Ready	The transmitter is still warming up.
Standby	The transmitter is ready to transmit, but has not been set to radiate via the Radiate button.
Radiate	The transmitter is radiating.

See also the description of the Radiate button.

Safety Parameters

These entries display the status of various safety and monitoring parameters reported by the radar built-in test equipment. The specific reports depend on the installation, but typical examples are summarized below:

Air Flow	Shows whether the cooling air flow in the transmitter cabinet is “Normal” or “Fault.”
Interlock	Shows whether a safety interlock on a high voltage cabinet door is “Normal” (door closed) or “Fault” (door open).
Magnetron	Shows the magnetron current as “Normal” or “Fault.”
Waveguide	Shows the waveguide pressure as “Normal” or “Fault.”
BITE	Shows “OK” or “Fault” for the optional BITE unit.

If a fault is indicated, check the separate **bitex** utility described in the *IRIS Utilities Manual*.

Fault alarms sent to IRISnet

The fault indicator in IRISnet (red or yellow X) reflects the state of the Radar Status Menu on a host. Basically, a red field in Radar status menu causes a cross indicator to the IRISnet icon. The cross is red for critical alarms, and yellow for non critical ones.

There is one important exception: the Site Status field of radar status menu is not indicated in IRISnet. Since Site Status reflects other sites, it would be very confusing if a fault in Site A caused an IRISnet Red X on site B just because site B was receiving status products from A. A local fault can also cause the site status to go red, but that fault will be indicated somewhere else in the Radar Status Menu so there is no need for IRISnet to check the Site Status field.

Some faults can be set to critical/non critical by user. Examples of Critical and non–critical faults are:

- Radar, Product Generator or Output Processes turned–off (buttons at the top). These are always critical.
- DSP or RCP communication error (Sub system status fields). These are always critical.
- Antenna/Transmitter Status: BITE (configurable in **BITEX** to be null, critical or non–critical)
- Antenna/Transmitter Status: Air Flow, Waveguide, Interlock, Magnetron (configurable in **setup/rcp** to be critical or non–critical).

4.2 Running IRIS from the Radar Status Menu

Using the Radar Status menu, you can completely reconfigure and run IRIS with only a few keystrokes, as follows:

1. After IRIS is started, choose **Menus–>Radar Status** from the IRIS menu bar.

   Choose **File–>Open** and select a configuration file from the list. If you get the message, "IRIS is active," turn off the IRIS Radar and Product Processes and try again.

   The DEFAULT configuration is automatically loaded when IRIS first starts, and it should be configured to be either a benign, non-operating state, or the desired working state.

⚠ **Safety precaution: Do not set the DEFAULT IRIS configuration for the Radiate switch to come up as "On" or "Auto" if it could represent a hazard to personnel. For installations where this could be a problem, create a DEFAULT file which starts the radar with Radiate and Antenna Servo off, so the antenna does not start scanning automatically when the IRIS command is issued.**

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2. Check the status of the various devices to make sure all subsystems are functioning normally. In particular, check that the RCP status is "Computer" and not "Local." If "Local" is shown, set the mode switch on the radar console so IRIS can control the system.
3. Verify that the Radar Process, Product Generator and Product Formatter are turned on. The real time display can be toggled on or off, as required.
4. Toggle the T/R Power and Servo Power buttons on, and set Radiate to "Auto" or "On," as required. Remember that "Auto" allows IRIS to automatically turn the transmitter off when the system is idle.

If TASKS are scheduled and one is running, the Radar Process shows the name of the active TASK, and the antenna speed and position indicators show that the antenna is moving. At this point, you may schedule additional TASKS or products.

4.3 Mode Switching in IRIS

Mode switching is very complicated because there are lots of different possible configurations. There are five different types. This section explains their uses and interactions.

4.3.1 Manual Mode Switching

Manual mode switching is accomplished by using the Radar Status Menu to load a new configuration. It not available if either the RCP Mode Switching or the Socket Mode Switching are enabled, and that source is forcing the mode.

4.3.2 RCP Mode Switching

RCP mode switching is accomplished by allowing the RCP to control the mode of the system. It is only applicable to a Radar system. This is normally used for switching between redundant systems due to fault detection. While the RCP Mode Switching is enabled in IRIS, then Socket Mode Switching and Status Product Mode switching are not available. Note that the RCP has two choices: 1) It can force the mode to switch. This disables all other choices, so Manual Mode Switching and Automatic Mode Switching are disabled. 2) It can enable enable the other choices. Note that in RCP Mode Switching, the Automatic Modes Switching Button is controlled only by the RCP.

4.3.3 Socket Mode Switching

Socket mode switching is similar to RCP Mode Switching. In this case, modes are supplied by a socket message. It is only available when the RCP Mode Switching is disabled. This is normally used when you wish to mode switch based on input from another software system. Note that the RCP has two choices: 1) It can force the mode to switch. This disables all other choices, so Manual Mode Switching, Automatic Mode Switching, and Status Product Mode Switching are disabled. 2) It can enable enable the other choices. Note that in Socket Mode Switching, the Automatic Mode Switching Button is controlled only by the socket.

4.3.4 Status Product Mode Switching

Status Product Mode Switching allows a system to slave its configuration to a master system based on the status products from that master. Each time a status product arrives from that other system, the mode is forced to match. This is used as part of a passive IRIS system, or to slave a RPG computer to a RDA computer in redundant systems. Between times, the user can change modes through Manual Mode Switching or Automatic Mode Switching.

4.3.5 Automatic Mode Switching

In Automatic Mode Switching, mode transitions can be controlled by warning products. This is used to change modes based on weather. Between times, the user can change modes through other types of mode switching.

4.3.6 Automatic Mode Switching Button

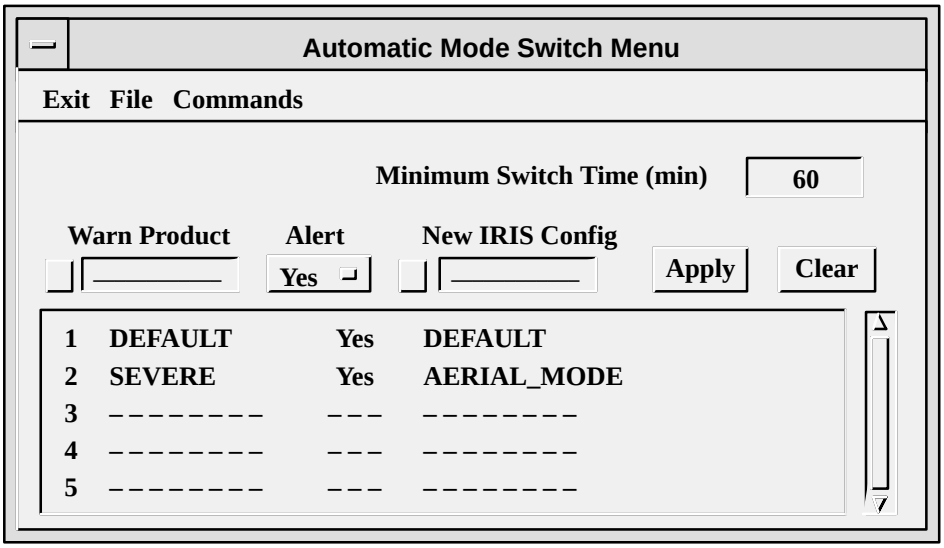
This button is used to turn on/off the Automatic Mode Switching. It is not under user control if we have RCP Mode Switching or Socket Mode Switching enabled.

4.4 Switching IRIS Configurations Automatically

You can define up to 16 situations in which the IRIS configuration is automatically switched. For example, you may want to switch configurations automatically when a wind shear is detected. Because configurations can also be switched when a warning is absent, you can define the conditions under which to automatically switch back to a default configuration. A series of warning products can be chained together, triggering a series of actions, each requiring a different configuration.

To define a series of automatic mode switches:

1. Pop up the Automatic Mode Switch menu, by choosing **Mode–>Auto Mode Switch** from the Radar Status menu bar.



2. Enter the information into the fields, as follows:

   Minimum Switch Time — Enter the number of minutes that must pass before the configuration can switch again.

   Warn Product — Enter the name of a warning product directly into this field, or pop up a list of products to choose from. When this warning is encountered (or when it is absent) the IRIS configuration switches automatically.

   Alert — Set the Alert field to “Yes” if the configuration should switch when the warning is encountered; set it to “No” if the configuration should switch when the warning is absent.

New IRIS Config — Enter the name of a configuration directly into the field, or pop up a list of configurations to choose from. This configuration is loaded into the Radar Status menu when the warning condition is met.

3. Click on the Apply button to add the definition to the list; click on Clear to erase the fields and start again.
4. Repeat Steps 2 and 3 for up to 16 warnings. If at any time you want to discard your definitions, choose **File–>Reload** from the pull-down menu. This loads the most recently saved definitions.
5. When you are satisfied, save the definitions by choosing **File–>Save** from the pull-down menu.

To enable automatic mode switching:

You can turn automatic mode switching on and off from the Radar Status menu. Press the Auto Mode button in to enable automatic switching, or press it out to disable this feature.

To change or delete a definition:

1. In the Automatic Mode Switch menu, select a definition from the list. Its warning and configuration names are displayed in the fields above the list.
2. Enter a new warning product or configuration name if you want to change the definition.

   Set the Alert field to "– – –" if you want to delete the definition.
3. Click on the Apply button to make the change or deletion.