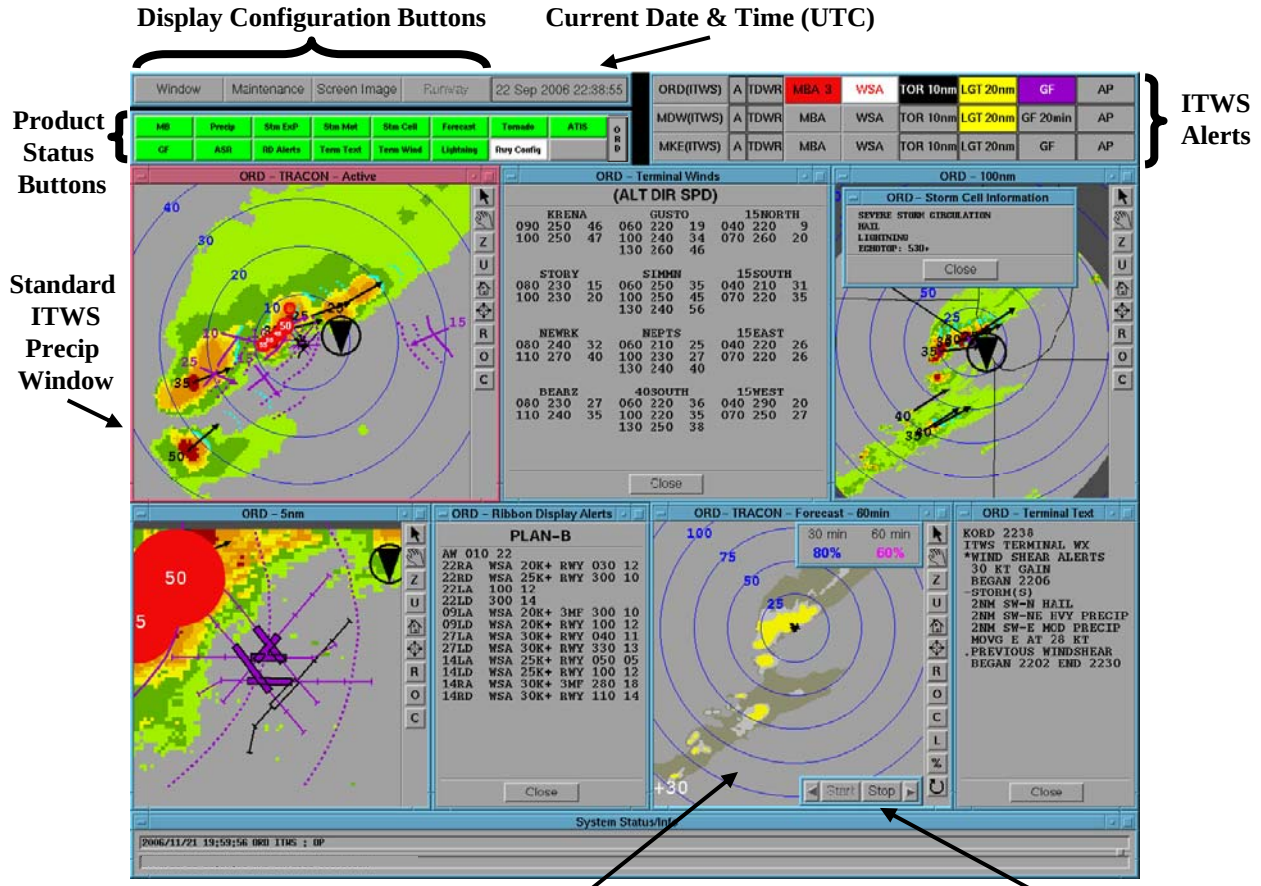
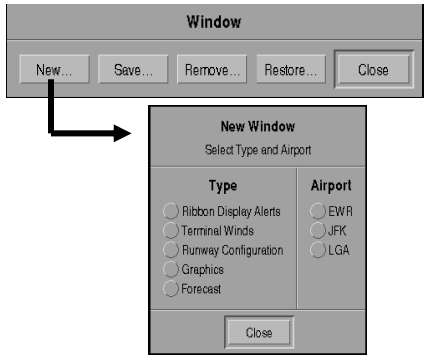
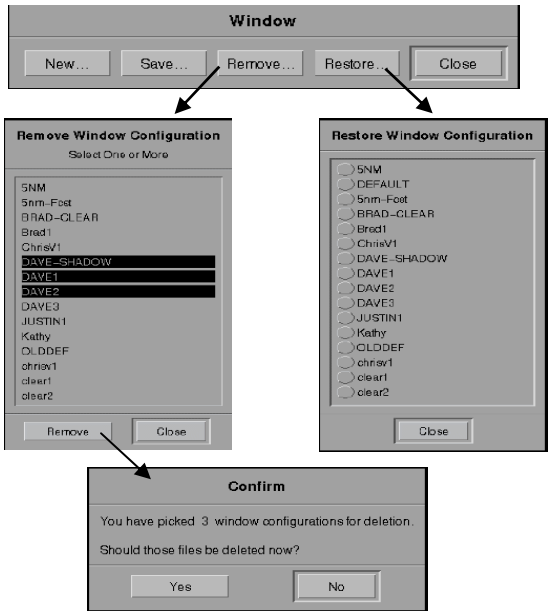
Features of the ITWS SD







Start/Stop Loop Control

This configuration controls the starting and stopping of the forecast loops. When the loop is stopped, each static image (past weather through forecast weather) is available for display.

v9005

Features of the ITWS SD

Display Configuration Buttons

Change Runway Configuration. Click left trackball button to Runway button then on the Install button, next click left trackball button to install desired runway configuration. Confirm if necessary. (ARTCC SDs are restricted from making runway configuration changes.)

Create a Window. Click the left trackball button on the Window button then on the New button. Click the left trackball button to choose window type (and Airport, where appropriate).

Window Configuration Buttons

Product Interaction Mode (arrow)

Pan Interaction Mode (hand)

Zoom In (Z)

Zoom Out or Un-zoom (U)

Home (house)

Re-center Interaction Mode (target)

Range Menu (R)

Overlay Menu (O)

Color bar Toggle (C)

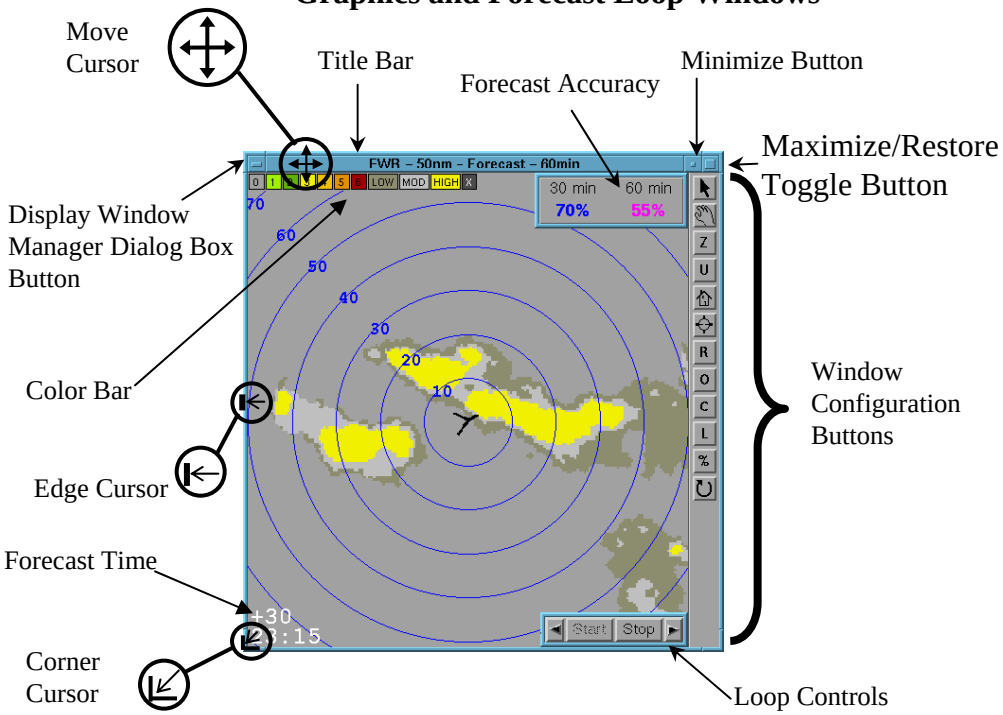
Loop Settings (L)

Forecast Accuracy (%)

Start/Stop Loop Control

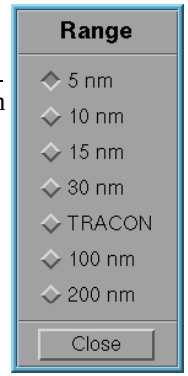
* Red text indicates buttons on the FORECAST window that are not present on the PRECIP graphics windows.

Graphics and Forecast Loop Windows



Graphics and Forecast Window Range Selection

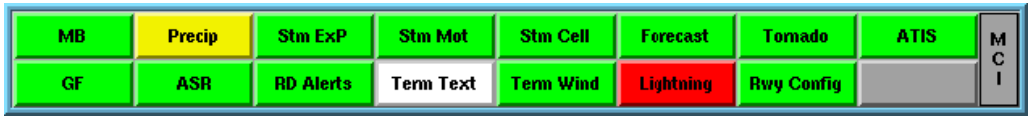
Range Option	Precipitation Product	Radar	Resolution	Update Rate
5 nm	TDWR	TDWR	0.13 nm	1 or 6 min
10 nm	TRACON	ASR		
15 nm	TRACON		0.5 nm	0.5 min
30 nm	TRACON			
50 nm	TRACON			
TRACON	TRACON			
100 nm	100 nm	NEXRAD + TDWR	0.5 nm	2.5 min
200 nm	200 nm	NEXRAD + TDWR	0.5 nm	2.5 min



v9005

Features of the ITWS SD

Product Status Buttons



Product Status Button Color

Product Display State	Product Available	Product Unavailable**
Displayed	Green	Red
Partially Displayed*	Yellow	Red
Not Displayed	White	Red

* For gust front forecasts and precipitation levels.

** At least one product associated with active airport and represented by the product status button is unavailable. Available products are displayable even while the button for the product suite remains red.

A label indicating the active airport appears to the right of the set of product status buttons.

Product Status Button Definitions

Button Text	Product Name
MB	Microburst
Precip	Precipitation
Stm ExP	Storm Extrapolated Position
Stm Mot	Storm Motion
Stm Cell	Storm Cell Information
Forecast	Terminal Convective Weather Forecast
Tornado	Tornado
ATIS	Automated Traffic Information Service
GF	Gust Front
ASR	AP-Flagged Precipitation
RD Alerts	Ribbon Display Alerts
Term Text	Terminal Text
Term Wind	Terminal Winds
Lightning	Lightning
Rwy Config	Runway Configuration

Alert Panel

Example of alert panel for a single-airport ITWS. The order of the boxes from left to right is 1) Airport/Product Display Operational Mode, 2) Mode Transition Indicator, 3) TDWR Backup Status Indicator, 4) Microburst ATIS timer, 5) Wind shear ATIS timer, 6) Tornado, 7) Lightning, 8) Gust front, and 9) AP. Alert buttons (4-9) are grey unless an alert is in effect.

Color Bars

The color bar for the TRACON PRECIP product contains eight squares corresponding to weather levels zero through six, and **X** (dark gray) for "no data" where radar coverage is not available. The color bars for the TDWR, 100 nm, and 200 nm products include an additional "**A**" (black) square for attenuation. For the AP-flagged product, this additional square is denoted "**AP**" (black) for anomalous propagation.

TRACON 

TDWR, 100 nm, and 200 nm 

AP-flagged 

The color bar for the Standard Forecast contains the eight basic squares denoting precipitation level and "no data". In addition, three rectangles correspond to forecasts of LOW (dark gray for level 1), MODerate (light gray for level 2), and HIGH (solid yellow for level 3+) intensity precipitation.

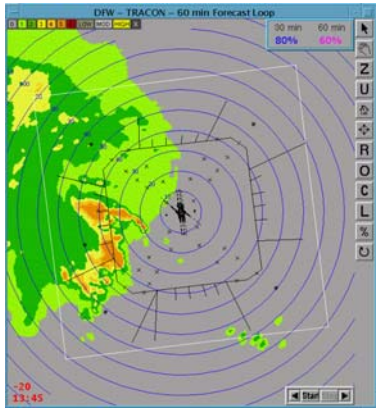
For the Winter Forecast, levels 2-6 are the same as the Standard Forecast, but level 1 is sub-divided into 1a, 1b, and 1c. Three rectangles correspond to forecasts of LOW (dark gray for level 1a), MODerate (light gray for level 1b), and HIGH (solid green for level 1c+) intensity precipitation .

Standard Forecast 

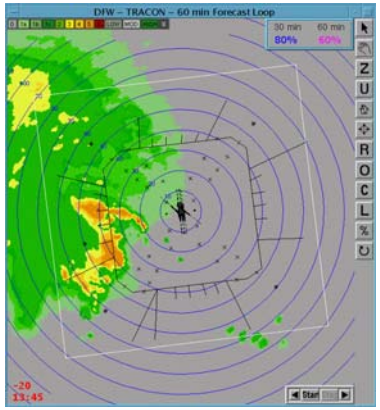
Winter Forecast 

Products on the ITWS SD

Precipitation Products



Standard Mode



Winter Mode

Standard Mode: Precipitation displayed in the precipitation graphics window and as past and current weather images in the Forecast Loop window. Precipitation is represented by seven intensity levels; light gray and greens denote lighter precipitation; yellows, oranges, and reds represent heavier precipitation.

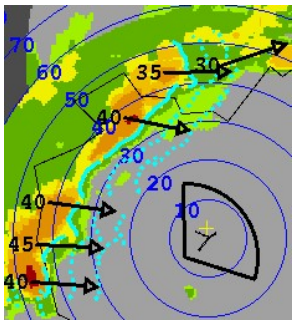
Winter Mode: Precipitation providing greater detail in light (Level 1) precipitation. Available as past and current weather images in Forecast Loop window **only**. Precipitation is denoted by nine intensity levels, with three lowest levels (Level 1a, 1b, 1c) enhancing depictions of weak precipitation characteristic of winter time snow events.

Range (and product source) is changed via the R button at right of the graphics window border. Display of color levels in the precipitation graphics window is controlled via the Precip product status button. Color levels may not be changed in the Forecast Loop window.

Display Control: Click the left trackball button on the Precip product status button to toggle between levels 1-6 and None. Click right trackball button to select precipitation levels to be displayed.

Lightning

Alert box turns yellow if cloud-to-ground lightning is detected within 20 nm of the airport.



Storm Motion and Storm Extrapolated Position

Storm Motion: Black arrow with black number indicates direction of motion and speed in knots of storm cell; black square is speed less than 5 knots.

Storm Extrapolated Position: Solid cyan line indicates leading edge of level 3 or greater weather. Dashed cyan lines indicate estimated location of level 3 or greater weather 10 and 20 minutes in the future.

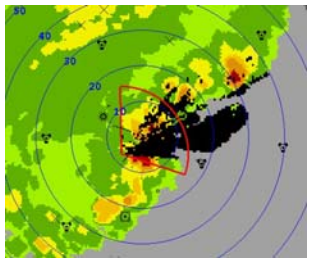
Display Control: Click the left trackball button on Stm Mot or Stm ExP product status buttons to toggle product.

To turn on products for selected storms, click the middle trackball button on the desired storm in a graphics window. To turn off products for selected storms, click right trackball button on the desired storm in a graphics window.

Tornado

Detection: Open black circle containing inverted triangle indicates possible tornadic storm.

Alert: Box turns black if a possibly tornadic storm is within 10 nm of the airport.



AP-Flagged Precipitation

Precipitation from individual ASR radars with AP shown in black. If operationally significant AP exists, the AP alert box turns black.

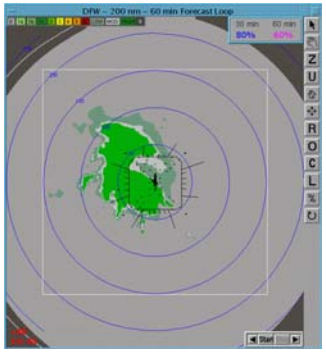
Display Control: Click the left trackball button on the ASR product status button to display the AP-Flagged product for the highest priority ASR radar containing AP. If there is no operationally significant AP, the AP-Flagged product for the highest priority ASR radar is displayed.

Otherwise, click the right trackball button on the ASR product status button and choose the desired radar from the ASR dialog box. Black radar buttons indicate the ASR radars affected by AP.

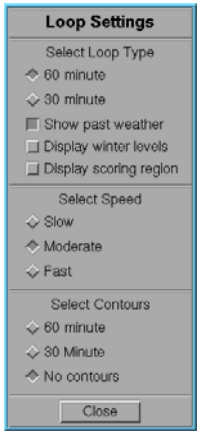
Products on the ITWS SD

Standard Mode

Precipitation Forecast

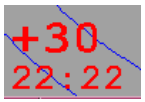


Winter Mode



Forecast Intensity	Standard Mode	Winter Mode
LOW	Level 1 (18-29 dBZ)	Level 1a (5-22 dBZ)
MODERATE	Level 2 (30-40 dBZ)	Level 1b (23-26 dBZ)
HIGH	Level 3+ (41+ dBZ)	Level 1c+ (27+ dBZ)

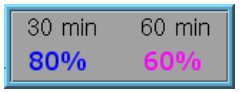
Forecast: Two modes: Standard mode provides forecasts of LOW, MODerate, and HIGH intensity precipitation corresponding to levels 1, 2, and 3+. Winter mode provides forecasts of LOW, MODerate, and HIGH intensity precipitation corresponding to levels 1a, 1b, and 1c+. Colors associated with the precipitation levels and forecasts are shown in the table above.



Forecast Time: Time appears in the lower left hand corner of the Forecast window. The relative Forecast time is on the top (negative for past weather images, positive for the forecast images); corresponding time in UTC is on the bottom. The font is white when the images are looping and red when the loop is stopped. (Loop is stopped by selecting "Stop" from the Start/Stop Loop Control Button.)

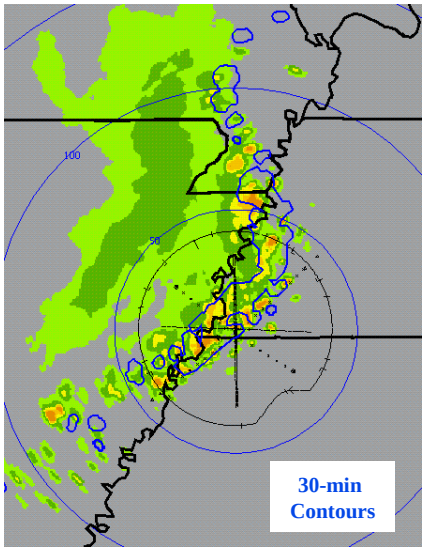
Display Control: The Precipitation Forecast product loops only in the Forecast Loop window from 30-min of past weather to 60-min forecasts in 10-min increments. If the end of loop is set to 30 min (Loop Settings dialog box), the product loops from 30-min of past weather to the 30-min forecast. Mode is toggled via the L button at the right of the Forecast Loop window and the Loop Settings dialog box. Range (and product source) is changed via the R button. Color levels may not be changed in the Forecast Loop window.

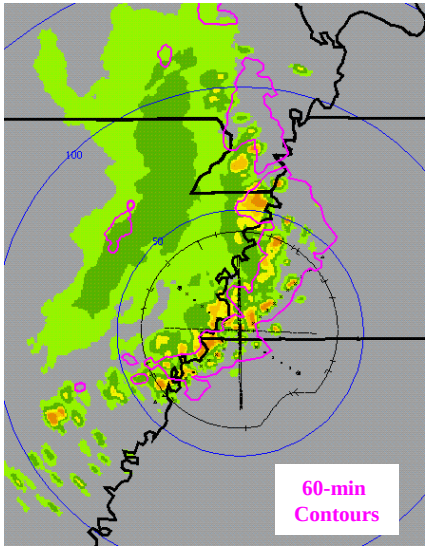
Forecast Accuracy



Real-time scores of precipitation forecast accuracy for the Regional or Airport views. Forecasts of HIGH intensity precipitation (level 3+ in standard mode or level 1c+ in winter mode) are scored. The regions within which Forecast Accuracy scores are computed may be displayed as a white box via the Display scoring region" option in the Loop Setting dialog box.

Display Control: Click the left trackball button on the % button on the right side of the Forecast Loop window to toggle display of the Forecast Accuracy scores.





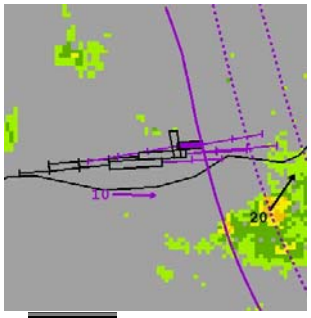
Forecast Verification Contours

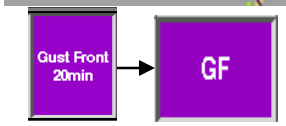
Contours of past HIGH intensity (level 3+ or level 1c+, depending on mode) forecasts are displayed over past and current images in the Forecast Loop window. The 30-min contours are blue and 60-min are magenta.

Display Control: Click the left trackball button on the L button at the right side of the Forecast Loop window to display the Loop Settings dialog box. Select "30 minute" to display the 30-min verification contours, "60 minute" to display the 60-min verification contours, or "No contours" to suppress the display of all verification contours.

Products on the ITWS SD

Gust Front





Solid purple line indicates current location of gust front. Dashed purple lines indicate estimated location of gust front 10 and 20 minutes in the future. Purple arrow and number indicate direction and speed of wind behind the gust front.

If a gust front is strong enough, it can generate a wind shear with gain alert on the ribbon displays and the alerted runways and/or runway extensions are purple.

Gust Front Impact Timer indicates when most imminent gust front is expected to arrive at the airport. A purple timer without a number indicates a gust front is on the airport.

Display Control: Click the left trackball button on GF product status button to toggle forecasts.

Terminal Winds

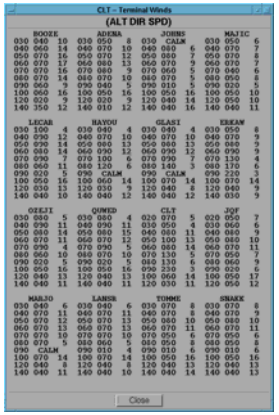


Table provides wind direction and speed at selected locations and altitudes.

Display Control: Click left trackball button on the Term Wind product status button to toggle window display or to bring window forward if in background.

ATIS Timers

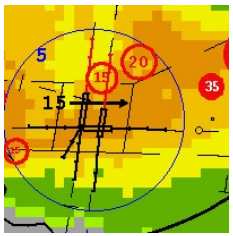
Countdown timers that help manage ATIS messages.

Buttons that are not gray and do not contain a number indicate there are active alerts. Buttons that are not gray and contain a number indicate that alerts have ended and the countdown timer is active. PIREPS may be entered or withdrawn by TRACON or tower SDs.

PIREP entry: Click left trackball button on appropriate MBA or WSA button and then confirm. (Permission to enter PIREPs is facility specific).

PIREP withdraw: Click right trackball button on appropriate MBA or WSA button and then confirm. (Permission to enter PIREPs is facility specific).

Microburst and Wind Shear



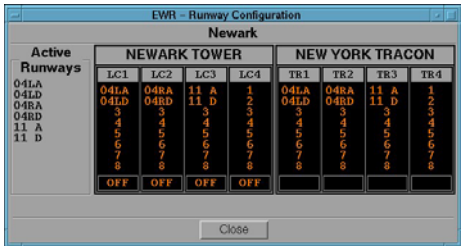
Microburst: Filled red circles with white numbering (30 kts or greater) indicate potential airspeed loss in knots.

Wind Shear: Open red circles with red numbering (between 15 and 30 knots) indicate potential airspeed loss in knots.

Alerted runways and/or runway extensions are red.

Display Control: Click the left trackball button on the MB product status button to clear red shapes for 5 seconds.

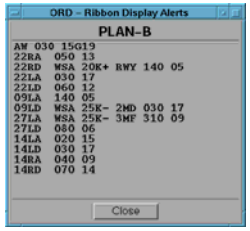
Runway Configuration



Text product shows runway configuration in use and mapping of runways to lines on the ribbon displays.

Display Control: Click left trackball button on RwyConfig product status button to toggle window display or to bring window forward if in background.

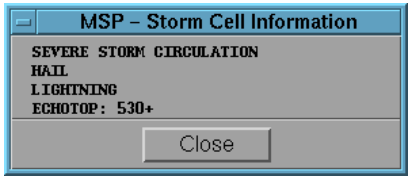
Ribbon Display Alerts



Text product shows runway configuration in use and ribbon display messages.

Display Control: Click left trackball button on RD Alerts product status button to toggle window display or to bring window forward if in background..

Storm Cell Information



Text window indicates presence of hail, lightning, severe storm circulation, and an estimate of echo top. Closes automatically after 30 seconds.

Display Control: Click left trackball button on the desired storm cell in a graphics window.