

Test Case GFE Spatial Editor (se 001-031)
for the
AWIPS
Contract
DG133W-05-CQ-1067

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Revision History

Revision	Date	Affected Pages	Explanation of Change
1.0	27 July 2008	ALL	Initial Draft
2.0	8 August 2008	ALL	Redlines per PDT
3.0	4 September 2008	ALL	Redlines per DT

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1.0 SCOPE

See Software Test Plan.

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2.0 APPLICABLE DOCUMENTS

2.1 Source Documents

- None

2.2 Reference Documents

- Legacy NWS GFE Acceptance Test Case ID Numbers: se001 – se031.
- Legacy NWS GFE Test Cases for Test Areas AC – VP.
- Section 3.1.3 of the AWIPS D-2D User's Manual Build 8.1.
- Software Test Plan for the Advanced Weather Information Processing System Project, Contract #DG133W-05-CQ-1067, August 2008.
- The Silver Spring NWS AWIPS 1 test bed application.
- Release OB8.1 and OB8.2 of the Weather Event Simulator (WES).
- Rational RequisitePro.

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3.0 TEST CASE DESCRIPTION

This test case verifies that the Spatial Editor NWS test cases.

3.1 Assumptions, Constraints and Preconditions

- Several weather elements are loaded
- There are multiple grids available for the weather elements (at minimum T, Td, Wind, Wx, and Hazards weather elements)
- TO9 software has been installed successfully
- CAVE, EDEX and pgAdmin III are running
- Data has been ingested
- Actions, Results, and Requirements highlighted in yellow indicate requirements and/or capabilities to be included in the scope of future task orders. They are included here for purposes of continuity and traceability with the original AWIPS I test case documents. Items highlighted in blue are capabilities added and/or Deficiency Reports (DRs) corrected since the Delivery Test.

3.2 Recommended Hardware

See Software Test Plan.

3.3 Test Inputs

Section 4.0 below contains the test procedures for this test case. Sections 2.2 – 2.9 of the Software Test Plan contain general test inputs applicable to all TO9 test cases.

3.4 Test Outputs

The results outlined in section 4.0 are met.

3.4.1 GFE GUIs Tested

- TBD

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4.0 TEST SCENARIO

Step #	Action	Result	Pass/Fail
se001 – SE Legend - click for visibility			
1.	From the CAVE window, Mouse Button (MB) 1 click the ‘Open Perspective’ icon and select ‘GFE’ from the dropdown menu.	The GFE perspective displays in CAVE.	
2.	Ensure that several Fcst weather elements are shown in the Grid Manager (GM). If not, use ‘ Weather Elements ’ -> ‘ Weather Element Browser ’ to bring up the Weather Element Browser dialog and load several weather elements.	The GM is populated with Fcst weather elements.	
3.	Ensure that the legend mode is set to ‘Show All Fcst Weather Elements’ by clicking the SE popup menu over the main area of the SE (not the legend area) and selecting ‘ Legends ’ -> ‘ Show All Fcst Weather Elements ’. If the legend is already in this mode, then the menu entry will not be available.	The legend mode is set to Show All Fcst Weather Elements.	DR #1372
4.	MB1 click over one of the legend entries that are grayed out that indicates <NoGrid>.	The legend entry shows it is visible by showing the legend entry in color. No other change to the SE display is observed.	
5.	MB1 click the same product ID (in step 4) in the legend that indicates <NoGrid>.	The legend entry changes to dimmed gray. No changes occur on the SE.	
6.	MB1 click over one of the legend entries that are grayed out that indicates a valid grid. If there aren't any, MB1 click on the Time Scale to position the current editor time (yellow line) to match up with some grids in the GM, then MB1 click the legend entry.	The grid becomes visible as contours. The legend entry displays as visible (non-grayed out).	
7.	MB1 click the same product ID (in step 6) in the legend that indicates a valid grid.	The gridded contours disappear and the legend entry displays as dimmed gray to indicate not visible.	
se002 – SE Legends - active clicks			
8.	Load a model weather element (keeping the previously loaded weather elements), such as the IFP database NAM12 T, by MB1 clicking ‘ Weather Elements ’ -> ‘ Weather Element Browser ’ to bring up the Weather Element Browser dialog .	The Weather Element Browser dialog opens.	

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Step #	Action	Result	Pass/Fail
9.	MB2 click over one of the Fcst legend entries that are grayed out that indicates <NoGrid>.	No change to the legend appearance or the SE appearance. The left status bar indicates a 'yellow' message indicating 'No grid to make editable' and a Significant Message dialog displays.	DR #1225 DR #1435 DR #1492
10.	MB2 click over one of the Fcst legend entries that are grayed out that indicates a valid grid. Note: If there aren't any, MB1 click on the Time Scale to position the current editor time (yellow line) to match up with some grids in the GM, then MB1 click the legend entry until the grid is not visible, then click MB2 on the legend entry.	The grid becomes visible, the legend entry displays as visible (non-grayed out), and the grid is made editable as indicated by (edit) in the legend.	
11.	MB2 click a legend that indicates a valid grid for the model weather element, such as NAM12 T.	No changes occur in the SE or on the SE legends. The left status bar indicates a 'yellow' message indicating 'Grid cannot be edited' and a Significant Message dialog displays.	DR #1435
12.	MB2 click the legend that is currently indicated as (edit).	The SE legend now indicates that the element is not editable, i.e., not marked as the active grid for editing. The grid remains visible.	DR #1225 DR #1492
13.	MB2 click the same legend from step #12.	The SE legend indicates that the element is editable with the (edit) indicator. No other changes were made to the SE data.	DR #1225 DR #1492
se003 – SE Legends - popup color table and graphic color			
14.	Ensure that at least 'T', 'Wind', 'Wx', and 'Hazards' are loaded into the GFE. If not, MB1 click ' Weather Elements ' -> ' Weather Element Browser ' to bring up the Weather Element Browser dialog and load the appropriate weather elements.	The appropriate weather elements are loaded.	
15.	Enable, if not already enabled, the 'Image On Edit' option by MB1 clicking ' GFE ' -> ' Viewing Preferences ' -> ' Image On Edit '.	The 'Image On Edit' option is enabled.	
SCALAR DATA			
16.	MB1 click on any 'T' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image. All other weather elements are not visible.	

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Step #	Action	Result	Pass/Fail
17.	MB3 popup on the SE legend that is currently visible, i.e., the grid that is displayed. Select 'Change Colormap' and select a color table.	The color table has changed as shown in the SE color bar and the displayed image.	
18.	Repeat step 17 with a different color table.	The color table has changed as shown in the SE color bar and the displayed image.	
19.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic.	
20.	MB3 popup on the SE legend that is currently visible. Select 'Change Color' and select a color.	The weather element displays with the new color.	DR #1360
21.	Repeat step 20 with a different color.	The weather element displays with the new color.	DR #1360
22.	MB3 popup on the SE legend that is currently visible. Select 'Change Color'.	The color chooser displays. In the 'OLD' and the 'NEW' panels of the dialog, it indicates the current color.	
23.	Manipulate the color chooser and select a new color. Then MB1 click 'OK'.	The dialog is dismissed and the graphic color changes to the new color.	
VECTOR DATA			
24.	Repeat steps 16-23 using 'Wind'.	Refer to the results in steps 16-23.	
WEATHER DATA			
25.	MB1 click on any 'Wx' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image along with the bounded area visualization. All other weather elements are not visible.	
26.	MB3 popup on the SE legend that is currently visible, i.e., the grid that is displayed. Select 'Change Color Table' and select a color table. (Note: Weather may be the only choice - if so, skip steps #27 and #28).	The color table changes as shown in the SE color bar and the displayed image.	
27.	Repeat step 26 with a different color table.	The color table changes as shown in the SE color bar and the displayed image.	
28.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic.	

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Step #	Action	Result	Pass/Fail
29.	MB3 popup on the SE legend that is currently visible. Select 'Change Graphic Color to' and select a color.	The weather element displays with the new color.	
30.	Repeat step 29 with a different color.	The weather element displays with the new color.	
31.	MB3 popup on the SE legend that is currently visible. Select 'Change Graphic Color to' -> 'Choose Color...'	The color chooser displays. In the 'OLD' and the 'NEW' panels of the dialog, it indicates the current color.	
32.	Manipulate the color chooser and select a new color. Then select 'OK'.	The dialog is dismissed and the graphic color is changed to the new color.	
DISCRETE DATA			
33.	MB1 click on any 'Hazards' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image All other weather elements are not visible.	
34.	MB3 popup on the SE legend that is currently visible, i.e., the grid that is displayed. Select 'Change Color Table to' and select a color table.	The color table changes as shown in the SE color bar and the displayed image.	
35.	Repeat step 34 with a different color table.	The color table changes as shown in the SE color bar and the displayed image.	
36.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic.	
37.	MB3 popup on the SE legend that is currently visible. Select 'Change Graphic Color to' and select a color.	The weather element displays with the new color.	
38.	Repeat step 37 with a different color.	The weather element displays with the new color.	
39.	MB3 popup on the SE legend that is currently visible. Select 'Change Graphic Color to' -> 'Choose Color...'	The color chooser displays. In the 'OLD' and the 'NEW' panels of the dialog, it indicates the current color.	
40.	Manipulate the color chooser and select a new color. Then select 'OK'.	The dialog is dismissed and the graphic color is changed to the new color.	
se004 – SE Legends - popup line width, line style for graphics			
CONTOURS			
41.	MB1 click on a 'T' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image. All other weather elements are not visible.	

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Step #	Action	Result	Pass/Fail
42.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as contours.	
43.	MB3 popup on the SE legend that is currently visible. Select 'Line Width' and select a value.	The contours show the new line width.	
44.	MB3 popup on the SE legend that is currently visible. Select 'Line Style' and select a value.	The contours show the new line style.	
WIND BARBS			
45.	MB1 click on a 'Wind' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image with overlaid wind barbs. All other weather elements are not visible.	
46.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as wind barbs.	
47.	MB3 popup on the SE legend that is currently visible. Select 'Line Width' and select a value.	The wind barbs show the new line width.	
48.	MB3 popup on the SE legend that is currently visible. Select 'Line Style' and select a value.	The wind barbs show the new line style.	
BOUNDED AREA			
49.	MB1 click on a 'Wx' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image along with the graphical bounded area visualization. All other weather elements are not visible.	
50.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as a bounded area.	
51.	MB3 popup on the SE legend that is currently visible. Select 'Line Width' and select a value.	The graphic shows the new line width.	
52.	MB3 popup on the SE legend that is currently visible. Select 'Line Style' and select a value.	The graphic shows the new line style.	

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Step #	Action	Result	Pass/Fail
se005 – SE Legends - popup density, magnification for graphics			
CONTOURS			
53.	MB1 click on a 'T' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image. All other weather elements are not visible.	
54.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as contours.	
55.	MB3 popup on the SE legend that is currently visible. Select 'Magnification' and select a value.	The contours labels are smaller or larger.	
56.	MB3 popup on the SE legend that is currently visible. Select 'Density' and select a value.	The contour spacing (i.e., interval) has increased or decreased.	
WIND BARBS			
57.	MB1 click on a 'Wind' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image along with wind barbs. All other weather elements are not visible.	
58.	Switch the image display to a graphic display using the MB3 popup on the SE legend and select 'Display As Graphic'.	The weather element displays as a graphic as wind barbs.	
59.	MB3 popup on the SE legend that is currently visible. Select 'Magnification' and select a value.	The wind barb size is longer or shorter.	
60.	MB3 popup on the SE legend that is currently visible. Select 'Density' and select a value.	The wind barbs are placed closer or farther from each other.	
BOUNDED AREA			
61.	MB1 click on a 'Hazards' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image. All other weather elements are not visible.	
62.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as a bounded area.	
63.	MB3 popup on the SE legend that is currently visible. Select 'Magnification' and select a value.	The bounded area labels are bigger or smaller in size.	

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Step #	Action	Result	Pass/Fail
64.	MB3 popup on the SE legend that is currently visible. Verify that there isn't a 'Density' selection.	No Density selection exists.	
65.	MB1 click on a 'Wx' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image. All other weather elements are not visible.	
66.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as a bounded area.	
67.	MB3 popup on the SE legend that is currently visible. Select 'Magnification' and select a value.	The bounded area labels are bigger or smaller in size.	
68.	MB3 popup on the SE legend that is currently visible. Verify that there isn't a 'Density' selection.	No Density selection exists.	
se006 – SE Legends - popup contour values for scalar graphics			
CONTOURS			
69.	MB1 click on a 'T' grid in the GM to make it the only visible weather element in the SE.	The grid displays as an image. All other weather elements are not visible.	
70.	Switch the image display to a graphic display using the MB3 popup on the SE legend and selecting 'Display As Graphic'.	The weather element displays as a graphic as contours.	
71.	MB3 popup on the SE legend that is currently visible. Select 'Set Contour Values...' and select a value (such as 10). MB1 click 'OK'.	The contour interval changes.	
72.	MB3 popup on the SE legend that is currently visible. Select 'Set Contour Values...' and select 0.001. MB1 click 'OK'.	A message displays indicating that the contour interval is too small.	
73.	Select 'Cancel' on the Contour Interval dialog.	The dialog is dismissed with no changes to the contour display; i.e., the contour interval is still set to that specified in step #6.	
VECTOR, WEATHER, DISCRETE			
74.	Disable, if not already disabled, the 'Image On Edit' option by MB1 clicking 'GFE' -> ' Viewing Preferences ' -> ' Image On Edit '.	The 'Image On Edit' option is disabled.	

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Step #	Action	Result	Pass/Fail
75.	MB1 click on a 'Wind' grid in the GM to make it the only visible weather element in the SE.	The Wind grid displays as wind barbs.	
76.	MB3 popup on the SE legend that is currently visible. Verify that 'Set Contour Values...' is not an available option.	Verified.	
77.	MB1 click on a 'Wx' grid in the GM to make it the only visible weather element in the SE.	The Wx grid displays as bounded areas.	
78.	MB3 popup on the SE legend that is currently visible. Verify that 'Set Contour Values...' is not an available option.	Verified.	
79.	MB1 click on a 'Hazards' grid in the GM to make it the only visible weather element in the SE.	The Hazards grid displays as bounded areas.	
80.	MB3 popup on the SE legend that is currently visible. Verify that 'Set Contour Values...' is not an available option.	Verified.	
se007 – SE Legends - popup toggle display image, display graphic			
81.	Enable, if not already enabled, the 'Image On Edit' option by MB1 clicking ' GFE ' -> ' Viewing Preferences ' -> ' Image On Edit '.	The 'Image On Edit' option is enabled.	
82.	Ensure that the legend mode is set to 'Show All Fcst Weather Elements' using the SE popup menu over the main area of the SE (not the legend area) and MB1 clicking ' Legends ' -> ' Show All Fcst Weather Elements '. If you are already in this mode, then the menu entry will not be available.	All weather elements display in the product legend.	
SCALAR			
83.	MB1 click on a 'T' grid in the GM to make it the only active and visible grid.	The temperature grid displays as an image in the SE.	
84.	MB3 popup on the SE legend for the element that is visible and select 'Display As Graphic'.	The display of the grid data changes from image to graphic.	
85.	MB3 popup on the SE legend for the element that is visible and select 'Display As Image'.	The display of the grid data changes from graphic to image.	

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Step #	Action	Result	Pass/Fail
VECTOR			
86.	MB1 click on a 'Wind' grid in the GM to make it the only active and visible grid.	The Wind grid displays as an image in the SE.	
87.	MB3 popup on the SE legend for the element that is visible and select 'Display As Graphic'.	The display of the grid data changes from image to graphic.	
88.	MB3 popup on the SE legend for the element that is visible and select 'Display As Image'.	The display of the grid data changes from graphic to image.	
WEATHER			
89.	MB1 click on a 'Wx' grid in the GM to make it the only active and visible grid.	The Wx grid displays as an image in the SE.	
90.	MB3 popup on the SE legend for the element that is visible and select 'Display As Graphic'.	The display of the grid data changes from image to graphic.	
91.	MB3 popup on the SE legend for the element that is visible and select 'Display As Image'.	The display of the grid data changes from graphic to image.	
DISCRETE			
92.	MB1 click on a 'Hazards' grid in the GM to make it the only active and visible grid.	The Hazards grid displays as an image in the SE.	
93.	MB3 popup on the SE legend for the element that is visible and select 'Display As Graphic'.	The display of the grid data changes from image to graphic.	
94.	MB3 popup on the SE legend for the element that is visible and select 'Display As Image'.	The display of the grid data changes from graphic to image.	
se008 – SE Legends - popup unload weather element			
95.	Save all data in the GFE using the GFE toolbar  button. Select all weather elements in the Save Forecast dialog and MB1 click the 'Save Forecast' button.	The Save Forecast dialog opens. The modified weather elements are saved.	
UNLOADING NON-MODIFIED DATA			
96.	MB3 popup on the SE legend over any SE legend, and select Unload.	The weather element is removed from the GM and the SE.	

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Step #	Action	Result	Pass/Fail
SAVE FIRST OPTION			
97.	MB3 over any Fcst grid in the GM and select the 'Assign <x>' option to set the grid to a single value. Note that <x> is really shown on the menu as a value, such as 'Assign -30' or 'Assign <NoWx>'.	The weather element is modified in preparation for the next step.	
98.	MB3 popup on the SE legend over the corresponding (i.e., same weather element click upon in step 97) SE legend and select 'Unload'.	A dialog appears allowing the user to 'Save First', 'Discard Edits', or 'Cancel'.	DR #1437
99.	MB1 click 'Save First'.	The dialog is dismissed and the weather element unloaded has been removed from the GM and SE.	
100.	Reload the weather element that was just unloaded by MB1 clicking ' Weather Elements ' -> ' Weather Element Browser ' to bring up the Weather Element Browser . MB1 click over the same grid as in step 97 and examine the data. Verify that the changes made in step 97 are there, which indicates that the 'Save First' option was successful.	The Weather Element Browser opens. The weather element is reloaded in the GM and SE legend. Verified.	
se009 – SE Legends - Grid Ops - normal parm, delete, fragment, display info, create from scratch, assign value			
101.	Position the SE time (e.g., time indicated by a vertical yellow line) to a time where there is no valid grid for T. MB1 click on that location in the GM in the 'T' pane.	The SE legend indicates '<NoGrid>' for the temperature weather element.	
102.	MB3 popup on the SE legend over the SE legend and MB1 click ' Grid Ops ' -> ' Create From Scratch '.	A grid of default values is created. A valid time is now shown. The grid appears in the GM.	
103.	Set the PickUp Value from the SE color bar to some value by MB1 clicking on the color bar.	The PickUp Value is set.	
104.	MB3 popup on the SE legend over the SE legend and MB1 click ' Grid Ops ' -> ' Assign <value> '.	The entire grid is assigned the given PickUp Value.	
105.	MB3 popup on the SE legend over the SE legend and MB1 click ' Grid Ops ' -> ' Delete Grid '.	The grid is deleted, the grid is removed from the GM and SE, the SE legend indicates <NoGrid>.	

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106.	MB3 popup on the SE legend over the SE legend and MB1 click ' Grid Ops ' -> ' Create From Scratch '. Then stretch the grid across a few hours by MB2 drag on the grid and dragging the cursor across several hours of grids.	A grid of default values is created. A valid time is now shown. The grid appears in the GM. The grid spans across several hours.	
107.	MB3 popup on the SE legend over the SE legend and MB1 click ' Grid Ops ' -> ' Fragment '.	The grid is fragmented into multiple grids.	
108.	MB3 popup on the SE legend over the SE legend and MB1 click ' Grid Ops '-> ' Display Info '.	The Grid Information dialog displays providing various information about the grid and weather element.	
se010 – SE Legends - Grid Ops - normal parm, copy, paste			
109.	MB1 click over a T grid in the GM.	The grid is loaded and the SE legend will indicate a grid is present, i.e., it will not show '<NoGrid>' for 'T'.	
110.	MB3 popup on the SE legend over the 'T' SE legend and MB1 click ' Grid Ops ' -> ' Copy '.	The grid is copied into the paste buffer. No changes occur on the screen.	
111.	Position the SE time (e.g., time indicated by the vertical yellow line) to a time where there is no valid grid for T. MB1 click on that location in the GM in the 'T' pane.	The SE legend indicates '<NoGrid>'. The grid will not appear in the SE.	
112.	MB3 popup on the SE legend and MB1 click ' Grid Ops ' -> ' Paste '.	The grid previously copied is pasted into the current time. The grid appears in the SE and GM. The duration of the grid will be one grid quantum (1 hour for T).	
113.	MB3 popup on the SE legend that does not share units (such as QPF) or is a different type (such as Wind). Attempt to copy the grid by MB1 clicking ' Grid Ops ' -> ' Paste '.	No 'Paste' option appears since the paste is not compatible.	

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Step #	Action	Result	Pass/Fail
se011 – SE Legends - Grid Ops - persistent parms			
114.	Close the GFE from the GFE Perspective tab.	GFE closes.	
<p>Note: Persistent parms need to be specially configured in the localConfig.py file. Create the following localConfig.py configuration file for this test and place it into the ../etc/SITE/localConfig.py location:</p> <pre> from serverConfig import * import serverConfig G1 = ('G1', SCALAR, '%', 'G1 TEST', 100.0, 0.0, 0, NO) G2 = ('G2', SCALAR, '%', 'G2 TEST', 100.0, 0.0, 0, NO) G3 = ('G3', SCALAR, '%', 'G3 TEST', 100.0, 0.0, 0, NO) GP = ([[G1, G2, G3],Persistent)] TestDB = ('TestDB',GRID,'',YES,NO,1, 48) dbs = [(TestDB, GP)] </pre> <p>Restart the IFP Server. The server creates the new 'TestDB' database.</p>			
115.	From the CAVE window, Mouse Button (MB) 1 click the 'Open Perspective' icon and select 'GFE' from the dropdown menu.	The GFE perspective displays in CAVE.	
116.	MB1 click ' Weather Elements ' -> ' Weather Element Browser ' to bring up the Weather Element Browser . Load just the G1, G2, and G3 weather elements from the TestDB database.	The Weather Element Browser opens. The selected weather elements are loaded in the GM and SE legend.	
117.	Find a SE legend that indicates '<No Grid>'. If none are available, make one available by MB3 popup on the SE legend and selecting ' Grid Ops ' -> ' Delete Grid '.	The grid is deleted from the GM. The SE legend indicated '<NoGrid>'.	
118.	Find a SE legend that indicates '<No Grid>' and MB3 popup on the SE legend and selecting ' Grid Ops ' -> ' Create From Scratch '.	A grid is created and the legend indicates 'Persistent'.	
119.	MB3 popup of the same SE legend and look for ' Grid Ops ' -> ' Fragment '.	The Fragment operation is not available since this is a Persistent grid.	
120.	From the same legend, MB3 popup and select 'Grid Ops' -> 'Display Info' .	The Grid Information dialog appears. Select Weather Element Info. The time constraint information indicates 'Persistent'.	

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Step #	Action	Result	Pass/Fail
121.	Dismiss the Grid Information dialog. Find a SE legend that indicates 'Persistent'. MB2 click on that legend to make the grid active. MB1 click on the colorbar to set the Pickup Value.	The Grid Information dialog closes. The grid becomes active. The Pickup Value is set.	
122.	MB3 popup of the same SE legend and select 'Grid Ops' -> 'Assign <value>'.	The entire grid is assigned the given Pickup Value.	
123.	MB3 popup of the same SE legend and select 'Grid Ops' -> 'Copy'.	The grid is copied into the paste buffer. No changes occur on the screen.	
124.	MB3 popup over a different SE legend and select 'Grid Ops' -> 'Paste'.	The grid is pasted into the new weather element.	
125.	MB3 popup over a SE legend that indicates 'Persistent' and select 'Grid Ops' -> 'Delete'.	The grid is deleted, the grid is removed from the SE, and the SE legend indicates <NoGrid>.	
126.	Remove the .../etc/SITE/localConfig.py* files. Stop and then restart the ifpServer.	The python files are removed. The ifpServer is stopped and restarted.	
127.	Close the GFE from the GFE Perspective tab.	GFE closes.	
128.	From the CAVE window, Mouse Button (MB) 1 click the 'Open Perspective' icon and select 'GFE' from the dropdown menu.	The GFE perspective displays in CAVE.	
se012 – SE Popup - zooming			
129.	MB3 over the SE main area (not the legend area) and select the zoom entry with the lowest number for maximum zoom, Zoom->xxx km.	The SE zooms into that area centered (if possible) on the location of the popup.	
130.	MB3 over the SE main area (not the legend area) and select the zoom entry with the highest number for minimum zoom, Zoom->xxx km.	The SE zooms out to its normal view (showing the whole grid plus a border).	
131.	SHIFT MB2 click over the SE.	The SE is zoomed in, centered at that location.	
132.	SHIFT MB1 click over the SE.	The SE is zoomed out, centered at that location (if possible).	
133.	SHIFT MB1 drag over the SE.	The SE will pan, but there may be a delay.	

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Step #	Action	Result	Pass/Fail
se013 – SE Popup - homogenous areas and fuzz			
134.	MB1 click a scalar (e.g., T) or vector (e.g., Wind) grid in the GM to make it visible in the SE.	The scalar or vector grid displays as an image in the SE.	
135.	MB3 popup over the SE and select ‘Set Fuzz Value...’. In the Fuzz Value dialog, set the value to ‘0.0’. Then dismiss the Fuzz Value dialog.	The Fuzz Value dialog appears. The Fuzz Value is set to ‘0.0’. The Fuzz Value dialog closes.	
136.	MB3 popup over a section of the grid on the SE and select ‘ Select Homogenous Area ’.	An area is selected based on the Fuzz Value. Since the Fuzz Value is zero, usually only a small area is selected (if this is a typical grid produced by smart initialization).	
137.	MB3 popup over the SE over the selected area and select ‘ Deselect Contiguous Area ’.	The edit area is deselected for all areas that are contiguous for the MB3 point.	
138.	MB3 popup over the SE and select ‘Set Fuzz Value...’. From the Fuzz Value dialog , set the value to the maximum allowed by the dialog. Then dismiss the Fuzz Value dialog.	The Fuzz Value dialog appears. The Fuzz Value is set to the maximum value. The Fuzz Value dialog closes.	
139.	MB3 popup over a section of the grid on the SE and select ‘ Select Homogenous Area ’.	An area is selected based on the Fuzz Value. Since the Fuzz Value is a larger number, a larger area is selected.	
140.	MB1 click a ‘Wx’ grid in the GM to make it visible in the SE.	The Wx grid displays as an image in the SE.	
141.	MB3 popup over the SE and verify that the ‘Set Fuzz Value...’ option is not present.	The Fuzz Value option is not available for Wx grids.	
142.	MB3 popup over a section of the grid on the SE and select ‘ Select Homogenous Area ’.	An area is selected for data that is contiguous.	
143.	MB1 click a ‘Hazards’ grid in the GM to make it visible in the SE.	The Hazards grid displays in the SE.	
144.	MB3 popup over the SE and verify that the ‘Set Fuzz Value...’ option is not present.	The Fuzz Value option is not available for DISCRETE grids.	
145.	MB3 popup over a section of the grid on the SE and select ‘ Select Homogenous Area ’.	An area is selected for data that is contiguous.	

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Step #	Action	Result	Pass/Fail
se014 – SE Popup - legend types			
Note: Ensure that there are both Fcst and non-Fcst (e.g., model) data loaded into the SE, and that map backgrounds are displayed. Add map backgrounds as needed. Load additional weather elements if needed through the Weather Element Browser .			
146.	MB1 click on any Fcst grid in the GM to make it visible and active.	The grid displays as an image in the SE.	
147.	MB3 popup over the SE and select 'Legends' -> 'Hide'.	Only the SE time is displayed in the legend area. No changes were made to the GM or the displayed data in the SE.	DR #1438
148.	MB3 popup over the SE and select 'Legends' -> 'Show Map'.	The map legends, such as 'States' or 'CWA' displays in the legend area. No changes were made to the GM or the displayed data in the SE.	
149.	MB3 popup over the SE and select 'Legends' -> 'Show All Active Weather Elements'.	The active weather element is the only legend appearing in the legend area. No changes were made to the GM or the displayed data in the SE.	
150.	MB3 popup over the SE and select 'Legends' -> 'Show All Fcst Weather Elements'.	All forecast weather elements are shown in the legend area. No changes were made to the GM or the displayed data in the SE.	
151.	MB3 popup over the SE and select 'Legends' -> 'Show All Weather Elements'.	All weather elements (fcst and the model) are shown in the legend area. No changes were made to the GM or the displayed data in the SE.	
se015 – SE Popup - executing tools			
152.	MB1 click on a T grid in the GM to make it active.	The temperature grid displays as an image in the SE.	
153.	Set up an edit area from the GFE main menu by selecting ' Edit Areas ' -> ' ISC ' -> ' ISC_OAX '.	The selected edit area is displayed.	
154.	Set the PickUp Value by MB1 clicking on a value in the SE color bar .	The PickUp Value is set.	
155.	MB3 popup over the SE (not in the legend area) and select 'Assign Value'.	The PickUp Value is assigned to the grid over the edit area ISC_OAX .	

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Step #	Action	Result	Pass/Fail
se016 – SE Map Legends - popup graphic color, line width, line style, toggling visibility, label. magnification			
156.	With map backgrounds loaded, ensure that the legend mode is set to ‘Show Map’ using the SE popup menu and selecting ‘Legends’ -> ‘Show Map’. If you are already in this mode, then the menu entry will not be available.	The map legends appear in the SE legend.	DR #1372
157.	MB3 popup on a map legend that is currently visible. Select ‘Change Color’ and select a color.	The map displays with the new color. The legend color changes to reflect the new map color.	DR #1360
158.	Repeat step 157 with a different color.	The map displays with the new color. The legend color changes to reflect the new map color.	DR #1360
159.	MB3 popup on a map legend that is currently visible. Select ‘Change Color’.	The color chooser displays. In the ‘OLD’ and the ‘NEW’ panels of the dialog, it indicates the current color.	
160.	Manipulate the color chooser and select a new color. Then MB1 click ‘OK’.	The dialog is dismissed. The map color and the legend color are changed to the new color.	DR #1359
161.	MB3 popup on a map legend that is currently visible. Select ‘Line Width’ -> ‘xxx’ and change the line width to another value.	The line width on the specific map background changes.	
162.	MB3 popup on a map legend that is currently visible. Select ‘Line Style’ -> ‘xxx’ and change the line style to another value.	The line style on the specific map background changes.	
163.	MB3 popup on a map legend that is currently visible. Select ‘Label’ -> ‘xxx’ and change the label attribute to another value (not <NoLabel>).	Text labels are added (or changed) on the map background.	
164.	MB3 popup on the same map legend as in step 163 . Select ‘Magnification’ and change the displayed value to another value.	The size of the text labels change according to the value selected.	
165.	MB3 popup on the same map legend as in step 163 that is currently visible. Unselect ‘Label’.	The text labels are removed from the specific map background.	

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Step #	Action	Result	Pass/Fail
166.	MB1 click on the map legend that reflects a map that is currently visible.	The map background is removed from the SE. The legend color dims to gray to indicate that the visibility has been turned off.	
167.	MB1 click on the same map legend in step 166. Then verify that the map background and the legend color are the same.	The map background is added to the SE The legend color changes from a dim gray to the current graphic color to indicate that the visibility has been turned on. Verified.	
se017 – SE Map Legends - unloading maps			
168.	Ensure that several map backgrounds are loaded into the GFE. Load additional ones if necessary through the Maps menu.	Several map backgrounds are loaded.	
169.	MB3 popup on a map legend and select 'Unload'.	The map background and map legend are removed from the SE.	
170.	From the GFE Main Menu, MB1 click ' Maps '. Verify the unloaded map background is not checked.	The unloaded map background is not checked.	DR #1443
se018 – SE Legends - topography operations			
Note: Topography is not loaded into the GFE, i.e., there is no Topography listed in the SE legends.			
171.	From the GFE Main Menu, select ' Maps ' -> ' Topography '.	The Topography grid is loaded as an image.	
172.	MB3 popup on the SE legend marked 'Topography' and select 'Change Colormap'. Select a color table.	The selected color table is assigned to the Topography grid.	
173.	MB1 click on the SE legend marked 'Topography'.	The topography field is made invisible. The topography legend dims to gray to indicate the weather element is toggled off.	
174.	MB1 click on the SE legend marked 'Topography'.	The topography field is made visible. The topography legend changes to white since topography is displayed as an image.	DR #1418 DR #1439
175.	MB3 popup on the SE legend marked 'Topography' and select 'Unload'.	The topography grid and topography legend are unloaded from the SE.	DR #1297

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Step #	Action	Result	Pass/Fail
se019 – SE Legends - current selection of maps and grids appear in popups			
176.	Ensure that the legend mode is set to ‘Show All Fcst Weather Elements’ using the SE popup menu over the main area of the SE (not the legend area) and selecting ‘Legends’ -> ‘Show All Fcst Weather Elements’. If you are already in this mode, then the menu entry will not be available.	The weather elements product IDs display in the product legend in the SE.	
177.	MB1 click on a ‘T’ grid in the GM to display it as an image in the SE. Use the MB3 popup menu over the SE legend to examine the current value, change it, and then verify that the current value indication has changed. Do this for the following entries: <ul style="list-style-type: none"> • Change Colormap 	The temperature grid displays as an image in the SE. The Colormap dropdown menu accurately reflect the current selection and when changed, then indicate the new selection.	
178.	Switch the display to a graphic by MB3 popup menu over the same SE legend . Select ‘Display as Graphic’. Use the MB3 popup menu over the SE legend to examine the current value, change it, and then verify that the current value indication has changed. Do this for the following entries: <ul style="list-style-type: none"> • Change Graphic Color To-> • Density • Magnification • Line Width • Line Style 	The grid displays as an image in the SE. The popup menus accurately reflect the current selection and when changed, then indicate the new selection.	DR #1440
179.	Ensure that the legend mode is set to ‘Show Map’ using the SE popup menu over the main area of the SE (not the legend area) and selecting ‘Legends’ -> ‘Show Map’.	The map background legends display in the SE.	

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Step #	Action	Result	Pass/Fail
180.	Use the MB3 popup menu over a SE map legend to examine the current value, change it, and then verify that the current value indication has changed. Do this for the following entries: <ul style="list-style-type: none"> • Change Graphic Color To-> • Magnification • Line Width • Line Style • Label 	The popup menus accurately reflect the current selection and when changed, then indicate the new selection.	DR #1440
se020 – SE Legends - current selection appear in popups for SEColorBar and Assign Value Dialog			
181.	Ensure that the legend mode is set to 'Show All Fcst Weather Elements' using the SE popup menu over the main area of the SE (not the legend area) and selecting 'Legends' -> 'Show All Fcst Weather Elements'. If you are already in this mode, then the menu entry will not be available.	The weather elements product IDs display in the product legend in the SE.	
182.	MB1 click on a scalar (e.g., 'T') or vector ('Wind') grid in the GM to display it in the SE. Use the MB3 popup menu over the SE color bar and select 'Change Color' to examine the current value of the color table, then change it, and then verify that the current value indication has changed.	The scalar or vector grid displays as an image in the SE. Popup menus accurately reflect the current selection and when changed, then indicate the new selection.	
183.	Use the MB3 popup menu over the SE color bar and select 'Set PickUp Value...' to bring up the PickUp Value dialog . In the PickUp Value dialog , examine the current value of the color table, then change it, and then verify that the current value indication has changed.	The popup menu accurately reflects the current section and when changed, then indicates the new selection.	

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Step #	Action	Result	Pass/Fail
se021 – SE Legends - current selection appears in popups for vector mode, combine mode, and zoom factor			
VECTOR			
184.	MB1 click on an unlocked (no red locks are shown) ‘Wind’ grid in the GM. Use the popup menu over the main area of the SE and select ‘Vector Edit Mode->’, then change it to another value. Bring up the popup menu over the main area of the SE again and select ‘Vector Edit Mode->’ and then verify that the current value indication has changed.	The Wind grid displays as an image in the SE. The popup menu reflects the currently set mode.	
185.	Use the MB3 popup menu over the SE color bar and select ‘Set PickUp Value...’ to bring up the PickUp Value dialog . Examine the dialog and verify that the vector mode indicated on the dialog reflects the last set value in step 184.	The popup menu reflects the currently set mode in step 184.	
186.	MB1 click ‘ GFE ’ -> ‘ Editing Preferences ’ -> ‘ Vector Edit Mode ’ menu and examine the current mode.	The current mode reflects the currently set mode in step 184.	DR #1440
187.	Repeat steps 184-186 and change the Vector Edit Mode to a different value.	The popup menu in the SE, the PickUp Value dialog, and the main menu's Vector Edit Mode are all in agreement.	DR #1440
WEATHER			
188.	MB1 click on an unlocked (no red locks are shown) ‘Wx’ grid in the GM. Use the popup menu over the main area of the SE and select ‘Weather Edit Mode->’, then change it to another value. Bring up the popup menu over the main area of the SE again and select ‘Weather Edit Mode->’. Verify that the current value indication has changed.	The Wx grid displays as an image in the SE. The popup menu reflects the currently set mode.	DR #1441
189.	Use the MB3 popup menu over the SE color bar and select ‘Set PickUp Value...’ to bring up the PickUp Value dialog . Examine the dialog and verify that the combine mode indicated on the dialog reflects the last set value in step 188.	The popup menu reflects the currently set mode in step 188.	
190.	MB1 click ‘ GFE ’ -> ‘ Editing Preferences ’ -> ‘ Wx/Discrete: Combine ’ menu and examine the current mode.	The current mode reflects the currently set mode in step 188.	

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Step #	Action	Result	Pass/Fail
191.	Repeat steps 188-190 and change the Weather Combine Mode to the other value.	The popup menu in the SE, the PickUp Value dialog, and the main menu's Wx/Discrete: Combine Mode are all in agreement.	
DISCRETE			
192.	<u>MB1 click</u> on an unlocked (no <u>red locks</u> are shown) 'Hazards' in the GM. Use the <u>popup menu over the main area of the SE</u> and select 'Discrete Edit Mode->', then change it to another value. Bring up the <u>popup menu over the main area of the SE</u> again and select 'Vector Edit Mode->' and then verify that the current value indication has changed.	The Hazards grid displays as an image in the SE. The popup menu reflects the currently set mode.	DR #1441
193.	Use the <u>MB3 popup menu over the SE color bar</u> and select 'Set PickUp Value...' to bring up the <u>PickUp Value dialog</u> . Examine the dialog and verify that the combine mode indicated on the dialog reflects the last set value in step 192.	The popup menu reflects the currently set mode in step 192.	
194.	MB1 click ' <u>GFE</u> ' -> ' <u>Editing Preferences</u> ' -> ' <u>Wx/Discrete: Combine</u> ' menu and examine the current mode.	The current mode reflects the currently set mode in step 192.	
195.	Repeat steps 192-194 and change the Weather Edit Mode to the other value.	The popup menu in the SE, the PickUp Value dialog, and the main menu's Wx/Discrete: Combine Mode are all in agreement.	
ZOOMING			
196.	From the <u>MB3 popup menu over the main area of the SE</u> , select 'Zoom->'. Note that one of the entries reflects the current zoom amount (expressed in kilometers of width of the SE). Zoom to another value. Bring up the popup menu again to verify that the entry matches the current zoom amount.	The map modifies to the selected zoom level. The popup menu reflects the current zoom amount.	DR #1443
se022 – SE Legends - current selection appears in popups pencil width, contour influence			
197.	<u>MB1 click</u> on a 'Wx' grid in the GM. The grid should be editable (i.e., not locked by someone else which would be indicated in <u>red</u> on the GM).	The Wx grid displays as an image in the SE.	

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Step #	Action	Result	Pass/Fail
198.	MB1 click on the Pencil Tool  . Use the popup menu over the main area of the SE to select 'Pencil Tool Influence', note the current value , then change it, and then select it again to verify that the current value indication has changed.	The popup menus accurately reflect the current selection and when changed, then indicate the new selection.	DR #1443
199.	MB1 click on a 'T' grid in the GM. The grid should be editable (i.e., not locked by someone else which would be indicated in red on the GM).	The temperature grid displays as an image in the SE.	
200.	MB1 click on the Contour Tool  . Use the popup menu over the main area of the SE and select 'Contour Adjust Influence', note the current value, then change it, and then select it again to verify that the current value indication has changed.	The popup menus accurately reflect the current selection and when changed, then indicate the new selection.	
se023 – Keyboard shortcuts – keypad			
201.	MB1 click on a scalar (e.g., 'T') or vector ('Wind') grid in the GM to display it in the SE.	The scalar or vector grid displays as an image in the SE.	
202.	Verify each of the following functions and the keys. Be sure the CAPS LOCK is not on.	Verified.	DR #1442

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Function	Key		
Step Back	Left Arrow		
Step Forwards	Right Arrow		
First Frame	Ctrl + Left Arrow		
Last Frame	Ctrl + Right Arrow		
Toggle Image	Keypad 0		
Toggle Overlays 1-9	Keypad 1-9		
Toggle Overlays 10-19	Shift + Keypad 1-9		
Legend Cycle 1. Show Grid Legends (all parameters) 2. Show Grid Legends (Fcst elements only) 3. Show Active Grid Legend only 4. No Map Legend 5. Show Valid Time 6. Show Map Legends	Keypad Enter		
Exit GFE	Ctrl + F4		
203.	Repeat the functions with CAPSLOCK on.	The results should be the same.	
se024 – <u>Editing Topography</u>			
204.	Invoke the GFE by issuing the runGFE command, specifying EditTopo as the configuration file (which is hidden on the startup screen , so type in into the config box).	The GFE comes up with no element seen in the GM area, and one element seen in the SE legends. No elements are toggled on for visibility.	
205.	MB1 over the SE legend to toggle on of the *Topo* elements.	If the legend indicates 'Persistent', then the grid appears. This topography grid is identical to the standard topography grid and has not been modified.	
206.	MB2 click over the SE legend to make the grid editable.	The topography grid displayed as an image and the legend indicates it is editable.	
207.	Edit the topo data dramatically, such as changing a large area to a constant value. Use any available technique to edit the grid .	The changes are made.	
208.	Save the data using the GFE toolbar. Verify that the changed elements are listed on the save weather element dialog.	Verified.	
209.	Close the GFE Perspective tab.	GFE closes.	

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Step #	Action	Result	Pass/Fail
210.	From the CAVE window, Mouse Button (MB) 1 click the 'Open Perspective' icon and select 'GFE' from the dropdown menu. Use the standard gfeConfig entry.	The GFE perspective displays in CAVE.	
211.	MB1 click 'Maps' -> 'Topography'.	The edited topography displays.	
212.	Close the GFE Perspective tab.	GFE closes.	
213.	From the CAVE window, Mouse Button (MB) 1 click the 'Open Perspective' icon and select 'GFE' from the dropdown menu. Specifying EditTopo as the configuration file (which is hidden on the startup screen).	The GFE perspective displays in CAVE.	
214.	Make the Topography grid editable using MB2 click over the SE legend.	The Topography grid is now seen as an image and the legend indicates it is editable. The previously edited grid displays.	
215.	Delete the edited topography grid by MB3 clicking over the SE legend and selecting 'Grid Ops' -> 'Delete Grid'. Then save the data using the  toolbar button.	The Topography grid is deleted.	
216.	MB1 click ' Maps ' -> ' Topography '.	The original, non-edited Topo grid displays.	
se025			
217.	Note: se025 does not exist.		
se026 – Visibility, editability, and display type in SE with Toggle ISC Mode button On. Note: Grids are available for both the home WFO and surrounding ISC sites. You can see if there is data available from other sites by clicking on the 'Show ISC Grid'  toolbar button, and MB1 clicking on various grids in the GM. If ISC data is available from other sites, then you will see the data appear for your adjacent site's areas of responsibility (CWA plus marine areas). If ISC data is not available, then you will only see data that covers your area of responsibility.			
218.	Toggle on the 'Show ISC Grid'  toolbar button.	The ISC grids display.	

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Step #	Action	Result	Pass/Fail
219.	In the SE legend, locate a currently non-visible weather element for which a grid exists at the current GFE time, i.e., the legend indicates an inventory time and not <No Grid>. This grid should also have a corresponding ISC data available, as determined in the Test Setup section. MB1 click on the time scale if needed to find an intersection between the GFE time and the weather elements.	A non-visible weather element grid displays.	
220.	MB1 click over that legend item.	The data for that grid becomes visible in the SE, and the legend item changes from grey to the graphic color of that weather element. Data displays for both the home WFO area as well as the surrounding sites from ISC.	
221.	MB1 click over the same legend item.	The data for that grid becomes invisible in the SE, and the legend item changes to grey to indicate the grid is no longer visible.	
222.	MB2 click over that legend item.	The data for that grid becomes 'editable' and visible in the SE, and the legend item changes from grey to the graphic color of that weather element. The notation '(edit)' appears pre-pended to the legend. Data displays for both the home WFO area as well as the surrounding sites from ISC.	
223.	MB1 click over a 'T' grid in the GM that also has ISC data available. Over the corresponding 'T' legend, MB3 popup and select 'Display as Graphic'.	The 'T' Fcst and 'T' ISC mosaic displays in the SE as graphics. Data displays for both the home WFO area as well as the surrounding sites from ISC.	
224.	Over the same 'T' legend as in step 223, MB3 popup and select 'Display as Image'.	The 'T' Fcst and 'T' ISC mosaic displays in the SE as an image. Data displays for both the home WFO area as well as the surrounding sites from ISC.	

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Step #	Action	Result	Pass/Fail
se027 – Color Table and Graphic Color in SE with Toggle ISC Mode button On.			
Note: Grids are available for both the home WFO and surrounding ISC sites. You can see if there is data available from other sites by clicking on the ‘Show ISC Grid’  toolbar button, and MB1 clicking on various grids in the GM. If ISC data is available from other sites, then you will see the data appear for your adjacent site's areas of responsibility (CWA plus marine areas). If ISC data is not available, then you will only see data that covers your area of responsibility. The GFE is running.			
225.	MB1 click on a Fcst grid in the GM that has corresponding ISC data available for it.	The composite (Fcst + ISC) grid displays in the SE and the (Fcst+ISC) information is in the SE legend.	
226.	In the SE legend, locate the corresponding legend for the grid that was clicked upon in step 225. Over that legend, MB3 popup menu and select ‘Change Color Table To->’. Select a different color table.	The image for the data reflects the color assignment of the new color table. The same color table is used for the Fcst portion (CWA) and the ISC portion (non-CWA) of the grid.	
227.	Over the same legend, MB3 popup menu and select ‘Change Color Table To’ -> ‘Brightness’. Select a different brightness value.	The image for the data reflects the brightness value set in the dialog. The same color table brightness is used for the Fcst portion (CWA) and the ISC portion (non-CWA) of the grid.	
228.	Over the same legend, MB3 popup menu and select ‘Display as Graphic’.	The Fcst portion (CWA) and the ISC portion (non-CWA) both display the data as graphics.	
229.	Over the same legend, MB3 popup menu and select ‘Change Graphic Color To->’. Select a different color.	The color for the graphic reflects the new color assignment. The same graphic color is used for the Fcst portion (CWA) and the ISC portion (non-CWA) of the grid.	
se028			
230.	Note: se028 does not exist.		
se029 – Display Attributes in SE.			
Note: The ‘GFE’ -> ‘Viewing Preferences’ -> ‘Image on Edit’ is enabled.			
SCALAR			
231.	MB1 click over a ‘T’ grid in the GM. Over the corresponding SE legend for ‘T’, MB3 popup and select ‘Display Attributes’ .	The Display Attributes dialog displays. There are both an ‘Image Visuals’ and a ‘Graphics Visual’ section. The Image section contains just ‘Image’; the Graphic section contains just ‘Contour’.	
232.	Toggle off ‘Image’ and MB1 click ‘Apply’.	An error box displays indicating that the user must select exactly one image type.	

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Step #	Action	Result	Pass/Fail
233.	MB1 click 'OK' on the error box dialog which dismisses the error box dialog. MB1 click 'OK' on the Display Attributes dialog .	The Display Attributes dialog is not dismissed and the same error box displays.	
234.	MB1 click 'OK' on the error box dialog.	The error box dialog is dismissed	
235.	Toggle on 'Image' and toggle on 'Contour'. MB1 click 'Apply'.	The grid displayed in the SE displays as an image with contours overlaid.	
236.	Toggle off 'Contour' and MB1 click 'OK'.	The dialog is dismissed and the grid displayed in the SE displays only as an image.	
237.	Over the same SE legend for 'T', MB3 popup and select 'Display as Graphic' .	The image is replaced with contours.	
238.	Over the corresponding SE legend for 'T', MB3 popup and select 'Display Attributes' .	The Display Attributes dialog displays. There is only a 'Graphics Visual' section. The Graphic Visual section contains just 'Contour'.	
239.	Toggle off 'Contour' and MB1 click 'Apply'.	An error box displays indicating that the user must select at least one graphic type.	
240.	MB1 click 'OK' on the error box dialog.	The error box dialog is dismissed.	
241.	MB1 click 'Cancel' on the Display Attributes dialog .	The dialog is dismissed and no changes occur on the SE.	
VECTOR			
242.	MB1 click over a 'Wind' grid in the GM. Over the corresponding SE legend for 'Wind', MB3 popup and select 'Display Attributes' .	A Wind grid displays in the SE. The Display Attributes dialog displays. There are both an 'Image Visuals' and a 'Graphics Visual' section. The Image section contains just 'Image'; the Graphic section contains ' WindBarb ' and ' WindArrow '.	
243.	Toggle the Graphic Visuals section on the dialog so that just 'WindArrow' is checked. MB1 click 'Apply'.	The grid displayed in the SE displays as an image with wind arrows overlaid.	
244.	Toggle on 'WindBarb' on the dialog and MB1 click 'OK'.	The grid displayed in the SE displays as an image with overlaid wind arrows and wind barbs. The dialog is dismissed.	
245.	Over the same SE legend for 'Wind', MB3 popup and select 'Display as Graphic' .	The image is replaced with wind barbs.	

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246.	Over the corresponding SE legend for 'Wind', MB3 popup and select 'Display Attributes' .	The Display Attributes dialog displays. There is only a 'Graphics Visual' section. The Graphic section contains 'WindBarb' and 'WindArrow'.	
247.	Toggle off 'WindBarb' and toggle on 'WindArrow'. MB1 click 'Apply'.	The wind field is now shown as wind arrows. The dialog is dismissed.	
248.	MB1 click 'Cancel' on the Display Attributes dialog .	The dialog is dismissed and the visualizations are reset back to the initial state when the dialog was first displayed, i.e., only wind barbs should be seen.	
WEATHER			
249.	MB1 click over a 'Wx' grid in the GM. Over the corresponding SE legend for 'Wx', MB3 popup and select 'Display Attributes' .	The Wx grid displays in the SE. The Display Attributes dialog displays. There are both an 'Image Visuals' and a 'Graphics Visual' section. The Image section contains just 'Image'; the Graphic section contains ' BoundedArea '.	
250.	Toggle the Graphic Visuals section on the dialog so that 'BoundedArea' is turned off. MB1 click 'Apply'.	The grid displayed in the SE displays as an image with no graphic overlay.	
251.	Toggle on 'BoundedArea' on the dialog and MB1 click 'OK'.	The grid displayed in the SE displays as an image with overlaid bounded area graphics. The dialog is dismissed.	
252.	Over the same SE legend for 'Wx', MB3 popup and select 'Display as Graphic' .	The image is replaced with a bounded area visualization.	
253.	Over the corresponding SE legend for 'Wx', MB3 popup and select 'Display Attributes' .	The Display Attributes dialog displays. There is only a 'Graphics Visual' section. The Graphic section contains 'BoundedArea'.	
254.	MB1 click 'Cancel' on the Display Attributes dialog .	The dialog is dismissed.	
DISCRETE			
255.	MB1 click over a 'Hazards' grid in the GM. Over the corresponding SE legend for 'Hazards', MB3 popup and select 'Display Attributes' .	The Hazards grid displays in the SE. The Display Attributes dialog displays. There are both an 'Image Visuals' and a 'Graphics' Visual section. The Image section contains just 'Image'; the Graphic section contains ' BoundedArea '.	
256.	Toggle the 'Graphic Visuals' section on the dialog so that 'BoundedArea' is turned off. MB1 click 'Apply'.	The grid displayed in the SE displays as an image with no graphic overlay.	

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257.	Toggle on 'BoundedArea' on the dialog and MB1 click 'OK'.	The grid displayed in the SE displays as an image with overlaid bounded area graphics. The dialog is dismissed.	
258.	Over the same SE legend for 'Hazards', MB3 popup and select 'Display as Graphic' .	The image is replaced with a bounded area visualization.	
259.	Over the corresponding SE legend for 'Hazards', MB3 popup and select 'Display Attributes' .	The Display Attributes dialog displays. There is only a Graphics Visual section. The Graphic section contains 'BoundedArea'.	
260.	MB1 click 'Cancel' on the Display Attributes dialog .	The dialog is dismissed.	
se030 – To test discrete auxiliary data.			
261.	Close the GFE Perspective.	GFE closes.	
262.	From the CAVE window, Mouse Button (MB) 1 click the 'Open Perspective' icon and select 'GFE' from the dropdown menu.	The GFE perspective displays in CAVE.	
263.	From the GM, scroll down to find 'Hazards'. MB3 click on a 'Hazards' grid and select 'Create From Scratch'.	A scratch Hazards grid is created.	
264.	Select the 'Draw Edit Area Tool'  and draw an area on the edit area of the SE.	An edit area appears in the SE.	
265.	MB3 click 'Set PickUp Value' from the colorbar. From the Set PickUp Value dialog, select 'TO.A (Tornado Watch)' from the pull-down menu and MB1 click 'Assign Value'.	The PickUp Value dialog opens. The area edited on the SE is highlighted.	
266.	Select the 'Sample Tool'  ³² , if not already selected, and click once over the highlighted area and once in the edit area of the SE.	The sample tool is activated. A sample is placed within the highlighted edit area ('TO.A') and outside the edit area ('<None>').	
267.	Select the 'Draw Edit Area Tool'  and draw an area over the 'Sample Tool' location in the edit area of the SE.	The edit area displays on the SE, encompassing the sample point in the highlighted/edit area.	

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Step #	Action	Result	Pass/Fail
268.	From the PickUp Value dialog, select 'TO.A (Tornado Watch)' from the pull-down menu and type '1234' in the adjacent window. Select 'Assign Value'. Verify that TO.A:1234 appears in the colorbar and that the highlighted area has TO.A:1234 as a 'Sample Tool' label.	The PickUp Value dialog box opens. TO.A:1234 is displayed in the upper left corner of the PickUp Value dialog box prior to assigning the value. The area edited on the SE is now highlighted. Verified.	
269.	Save the grids. Then exit the GFE Perspective.	The grids are saved. The GFE Perspective closes.	
270.	From the CAVE window, Mouse Button (MB) 1 click the 'Open Perspective' icon and select 'GFE' from the dropdown menu.	The GFE perspective displays in CAVE.	
271.	From the GM, scroll down to find 'Hazards'. MB1 click MB1 on the 'Hazards' forecast grid labeled '0'.	The saved edit grid displays.	
272.	Select the 'Sample Tool' () and place the 'Sample Tool' over both highlighted edit areas of the SE. Verify that one highlighted area is labeled TO.A and the other is labeled TO.A:1234.	Verified.	
se031 – Practice Mode Choices in Product Editor			
273.	MB1 click 'CAVE' -> 'Preferences'. In the Preferences window, set the mode to 'Practice'. Then, MB1 click a menu header in the menubar.	The Preferences dialog appears. CAVE is set to Practice mode as indicated by the orange background.	
274.	From the Hazards menu on the GFE main menu, select 'MakeHazard'.	The MakeHazard window opens.	
275.	Select a zone(s), time range, and WS.W - WINTER STORM WARNING from the Select Hazard list and then select 'Run/Dismiss'.	The Hazards grid is created.	
276.	From the Hazards menu on the GFE main menu, select 'MergeHazards'.	The Hazards grids merge into one grid and one weather element.	
277.	From the GFE main menu, MB1 click the Save Forecast  toolbar button. From the Save Weather Element(s) dialog, select 'Save Weather Element(s)'.	The Save Weather Element(s) window opens. The modifications to the weather elements are saved.	

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Step #	Action	Result	Pass/Fail
278.	From the Products menu on the GFE main menu, select 'Formatter Launcher...'	The Formatter Launcher dialog appears.	
279.	Under Products, select 'Hazard' -> 'Hazard_WSW (Winter Wx Product)'.	The Hazard_WSW (Winter Wx Product) tab appears below the menubar.	
280.	Select Run Formatter (⚙️) to run the hazard. Verify all VTEC Strings begin with '/O.' in the Product Editor and that no 'TEST' messages are shown.	Verified.	
281.	Select 'Nomal: NoVTEC' from the 'Formatting:' pull-down menu.	'Normal: NoVTEC' is selected.	
282.	Select Run Formatter (⚙️) to run the hazard and then select 'Yes'. Verify the VTEC Strings are not available and that no 'TEST' messages are shown.	Verified.	
283.	Select 'Nomal: E-Vtec' from the 'Formatting:' pull-down menu.	'Normal: E-Vtec' is selected.	
284.	Select Run Formatter (⚙️) to run the hazard and then select 'Yes'. Verify 'EXPERIMENTAL' appears in the MND Header, all VTEC Strings begin with '/E.', and no 'TEST' messages are shown.	Verified.	
285.	Select 'Nomal: X-Vtec' from the 'Formatting:' pull-down menu.	'Normal: X-Vtec' is selected.	
286.	Select Run Formatter (⚙️) to run the hazard and then select 'Yes'. Verify all VTEC Strings begin with '/X.' and that no 'TEST' messages are shown.	Verified.	
287.	Select 'Test: NoVTEC' from the 'Formatting:' pull-down menu.	'Test: NoVTEC' is selected.	
288.	Select Run Formatter (⚙️) to run the hazard and then select 'Yes'. Verify 'TEST' appears in the MND Header, the VTEC Strings are not available, and 'TEST' displays in all messages.	Verified.	
289.	Select 'Test: T-Vtec' from the 'Formatting:' pull-down menu.	'Test: T-Vtec' is selected.	

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Step #	Action	Result	Pass/Fail
290.	Select Run Formatter () to run the hazard and then select 'Yes'. Verify 'TEST' appears in the MND Header, all VTEC Strings begin with '/T.', and 'TEST' displays in all messages.	Verified.	
291.	Close the GFE Perspective tab.	GFE closes.	
	End of test.		

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5.0 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)

Number	Description	Test Step(s)
SYSR2551	The AWIPS GFESuite shall implement SE Legend - click for visibility.	1-7
SYSR2552	The AWIPS GFESuite shall implement SE Legends - active clicks.	8-13
SYSR2553	The AWIPS GFESuite shall implement SE Legends - popup color table and graphic color.	14-40
SYSR2554	The AWIPS GFESuite shall implement SE Legends - popup line width, line style for graphics.	41-52
SYSR2555	The AWIPS GFESuite shall implement SE Legends - popup density, magnification for graphics.	53-68
SYSR2556	The AWIPS GFESuite shall implement SE Legends - popup contour values for scalar graphics.	69-80
SYSR2557	The AWIPS GFESuite shall implement SE Legends - popup toggle display image, display graphic.	81-94
SYSR2558	The AWIPS GFESuite shall implement SE Legends - popup unload weather element.	95-100
SYSR2559	The AWIPS GFESuite shall implement SE Legends - Grid Ops - normal parm, delete, fragment, display info, create from scratch, assign value.	101-108
SYSR2560	The AWIPS GFESuite shall implement SE Legends - Grid Ops - normal parm, copy, paste.	109-113
SYSR2561	The AWIPS GFESuite shall implement SE Legends - Grid Ops - persistent parms.	114-128
SYSR2562	The AWIPS GFESuite shall implement SE Popup – zooming.	129-133
SYSR2563	The AWIPS GFESuite shall implement SE Popup - homogenous areas and fuzz.	134-145
SYSR2564	The AWIPS GFESuite shall implement SE Popup - legend types.	146-151
SYSR2565	The AWIPS GFESuite shall implement SE Popup - executing tools.	152-155
SYSR2566	The AWIPS GFESuite shall implement SE Map Legends - popup graphic color, line width, line style, toggling visibility, label.	156-167
SYSR2567	The AWIPS GFESuite shall implement SE Map Legends - unloading maps.	168-170
SYSR2568	The AWIPS GFESuite shall implement SE Legends - topography operations.	171-175
SYSR2569	The AWIPS GFESuite shall implement SE Legends - current selection of maps and grids appear in popups.	176-180
SYSR2570	The AWIPS GFESuite shall implement SE Legends - current selection appear in popups for SE Colorbar and Assign Value Dialog.	181-183
SYSR2571	The AWIPS GFESuite shall implement SE Legends - current selection appears in popups for vector mode, combine mode, and zoom factor.	184-196
SYSR2572	The AWIPS GFESuite shall implement SE Legends - current selection appears in popups pencil width, contour influence.	197-200
SYSR2573	The AWIPS GFESuite shall implement Keyboard shortcuts – keypad.	201-203
SYSR2574	The AWIPS GFESuite shall implement Editing Topography.	204-216
SYSR2575	The AWIPS GFESuite shall implement Visibility, editability, and display type in SE with Toggle ISC Mode button On.	218-224
SYSR2576	The AWIPS GFESuite shall implement Color Table and Graphic Color in SE with Toggle ISC Mode button On.	225-229
SYSR2577	The AWIPS GFESuite shall implement Display Attributes in SE.	231-260

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Number	Description	Test Step(s)
SYSR2578	The AWIPS GFESuite shall implement To test discrete auxillary data.	261-272
SYSR2579	The AWIPS GFESuite shall implement Practice Mode Choices in Product Editor.	273-291

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