Test Case Skew_T_1.0

for the

AWIPS

Contract

DG133W-05-CQ-1067

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Revision History

Revision	Date	Affected Pages	Explanation of Change
1.0	5 December 07	ALL	Initial Release
2.0	19 January 08	4-7(9)	PDT Redlines/NWS Comments
3.0	29 January 08	ALL	DT Redlines

Table of Contents

1.0 SCOPE

See Software Test Plan.

2.0 APPLICABLE DOCUMENTS

2.1 Source Documents

- None

2.2 Reference Documents

- Software Test Plan for the Advanced Weather Information Processing System Project, Contract #DG133W-05-CQ-1067, 4 December 2007
- Section 6 of the AWIPS D-2D User's Manual Build 8.1
- Existing AWIPS 1 test procedures:
    - D2D_RAOB_1.4.1.1
    - Check_out_4.1.2_Skew-T_OB8.1
- The VPN connection to the Silver Spring NWS AWIPS 1 test bed
- Release OB8.1 of the Weather Event Simulator (WES)

3.0 TEST CASE DESCRIPTION

This test case is to verify that local and model Skew-T displays load and are editable. This test case also demonstrates the interface and function with the Meteo Library by inference.

3.1 Assumptions, Constraints and Preconditions

- TO8 software has been installed successfully
- CAVE, EDEX and pgAdmin III are running
- Data has been ingested

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 TO8 test cases.

3.4 Test Outputs

The images and data will be displayed in CAVE.

4.0 TEST SCENARIO

Step	Action	Result	Pass/Fail
1.	Start CAVE.	CAVE starts.	
2.	From the 'Upper Air' dropdown menu in CAVE, select an available RAOB to display a sounding and hodograph.	A Skew-T tab appears with the most recent sounding for the selected site displayed in the large pane. A map in the upper left corner indicating its geographic location. Sounding parameters are listed in the lower right quadrant of the display.	
3.	Verify the Skew-T window displays: -displayed upper air sounding data -meteorological indices and values (Note: this step verifies (by inference) the Skew-T calls on meteoLib functions -an inset map with the sounding location plotted -a 24 hour temperature change chart -a Hodograph (Note: Not for model data) -Isobars, isotherms, dry adiabats, moist adiabats, and saturation mixing ratio lines	The Skew-T window displays the upper air sounding data, the listed meteorological indices and values, an inset map with the plotted sounding location, a 24 hour temperature change chart, a Hodograph, and isobars, isotherms, dry adiabats, moist adiabats, and saturation mixing ratio lines.	
4.	Select mouse button 2 on the Skew-T product ID in the product legend.	The Interactive Skew-T and Hodograph are now editable. 'Skew-T Controls' and 'Skew-T Parameters' windows open. Specific points appear on the Skew-T and Hodograph, which can be altered.	
5.	The 'Skew-T Controls' and 'Skew-T Parameters' windows may be closed. To edit the Skew-T, press and hold mouse button 1 on a point on the temperature curve and drag.	The selected point changes and the temperature line adjusts to the new value. Note that the data points are constrained to maintain their original pressure, so they can only be moved horizontally.	DR #833
6.	Select and hold mouse button 3 on one of the points on the temperature line. Then select 'Delete Vertex' from the menu.	The point is deleted from the temperature and dew point lines. The temperature and dew point curves modify interpolating between the data	

		points above and below the deleted point.	
7.	Repeat steps 5 and 6 for the dew point line.	The dew point curve is edited. A point is deleted from the temperature and dew point lines. The temperature and dew point curves modify interpolating between the data points above and below the deleted point.	DR #833
8.	Activate the sampling tool and hover the cursor on the Skew-T chart. Verify the following data from the original sounding is displayed: Parcel Data -Pressure (mb) -Height (m and ft) -Temperature (C and F) -Dew Point Temperature (C and F) -Wind direction (degrees) and wind speed (kts) -u (m/s) -v (m/s) -Theta (K) -Theta-e (K) -Mixing Ratio [w] (g/kg) Graphical Point Data -Pressure (mb) -Temperature (C and F) -Theta (K) -Theta-e (K) -Mixing Ratio [w] (g/kg)	The parcel data and graphical point data are displayed adjacent to the cursor.	DR #859
9.	Zoom into the Hodograph. Then select mouse button 1 on a point in the Hodograph, and drag to a new location.	The Hodograph point is moved.	
10.	Select and hold mouse button 3 on one of the points on the Hodograph line. Then select 'Delete Vertex' from the menu.	The point is deleted from the Hodograph line.	DR #822
11.	Close the Skew-T tab.	The Skew-T tab closes. The Map tab displays.	

12.	Repeat steps 3-8 and 11 for a sounding from model data as requested via the Volume Browser.	The edits are successful (refer to the result column in steps 3-8 and 11).	DR #859 DR #833
	End of test		

5.0 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)

Number	Description	Test Step(s)
CAVE_TO8_015	CAVE shall provide the capability to display a Skew-T product	2
CAVE_TO8_015.1	The Skew-T product shall contain Upper Air sounding data	2,3
CAVE_TO8_015.2	The Skew-T product shall contain a list of meteorological indices and associated values derived from the Upper Air sounding data	2,3
CAVE_TO8_015.3	The Skew-T product shall contain an inset map with the location of the plot origin	2,3
CAVE_TO8_015.4	The Skew-T product shall contain a 24 Hour Temperature Change chart	2,3
CAVE_TO8_015.5	CAVE shall allow the user to modify the Upper Air sounding	4-6
CAVE_TO8_015.6	CAVE shall overlay the editable sounding (over the original sounding) with vertices located at mandatory and significant data levels when the Interactive Skew-T put in edit mode	4,5
CAVE_TO8_015.8	CAVE shall allow the user to modify the temperature profile	5
CAVE_TO8_015.8.1	CAVE shall allow the user to modify the temperature profile using mouse button 1	5
CAVE_TO8_015.8.2	The modified temperature point shall find its resting place on a horizontal axis along its original pressure level	5
CAVE_TO8_015.8.7	CAVE shall allow the user to remove a vertex point on the temperature profile using mouse button 3	6
CAVE_TO8_015.8.8	The Skew-T temperature profile shall modify accordingly, interpolating between the point above and the point below a removed vertex point	5
CAVE_TO8_015.9	CAVE shall allow the user to modify the dew point temperature	7
CAVE_TO8_015.9.1	CAVE shall allow the user to modify the dew point temperature profile using mouse button 1	7
CAVE_TO8_015.9.2	The modified dew point temperature point shall find its resting place on a horizontal axis along its original pressure level	7
CAVE_TO8_015.9.7	CAVE shall allow the user to remove a vertex point on the dew point temperature profile using mouse button 3	7
CAVE_TO8_015.9.8	The Skew-T dew point temperature profile shall modify accordingly, interpolating between the point above and the point below a removed vertex point	6,7
CAVE_TO8_015.12	The Skew-T product shall contain a hodograph	2,3
CAVE_TO8_015.13	CAVE shall allow the user to modify the hodograph profile using the cursor	9
CAVE_TO8_015.14.3	CAVE shall allow the user to delete a point from the hodograph using mouse button 3	10
CAVE_TO8_015.16	CAVE shall allow the user to sample the data on the Skew-T	8
CAVE_TO8_015.16.1	The sample data shall display the parcel data for the level on	8

	which the cursor lies	
CAVE_TO8_015.16.2	The sample data shall display the graphical point data for the level on which the cursor lies	8
AWIPS_TO8_029	AWIPS shall contain a library of functions in the D2D meteolib baseline with APIs	3