

Test Case Derived Parameters-Gridded

for the

AWIPS

Contract

DG133W-05-CQ-1067

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Revision History

Revision	Date	Affected Pages	Explanation of Change
1.0	20 June 2008	ALL	Initial Release
2.0	8 August 2008	7, 8	Added functionality
3.0	4 September 2008	ALL	Redlines per DT

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1.0 SCOPE

See the TO9 Software Test Plan.

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2.0 APPLICABLE DOCUMENTS

2.1 Source Documents

- None

2.2 Reference Documents

- TO9 Software Test Plan for the Advanced Weather Information Processing System Project, Contract #DG133W-05-CQ-1067, August 2008.
- The AWIPS D-2D User's Manual Build 8.1.
- 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 primarily demonstrates the capability of creating derived parameters from gridded fields. Selected parameters will be displayed during testing. In addition, streamline analysis of u- and v- wind components from gridded data will be demonstrated.

3.1 Assumptions, Constraints and Preconditions

- TO9 software has been installed successfully.
- CAVE, EDEX and pgAdmin III are running.
- An internet connection is available.
- Live gridded data flow. Canned data can be substituted if the live data flow does not contain the data required to test specific implemented derived parameters.
- Localization previously set.
- Data decode, ingest, and storage validation accomplished during the Preliminary Delivery Test (PDT); results available in PDT report.
- Verification of parameter accuracy conducted during software integration testing for derived parameters and again during PDT.
- A random sample of derived parameters will be demonstrated.

3.2 Recommended Hardware

See TO9 Software Test Plan, Section 2.2.

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 images and data will be displayed in CAVE.

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4.0 TEST SCENARIO

Step	Action	Result	Pass/Fail
1.	From the test workstation open CAVE.	CAVE successfully launches. The 5-D panel (4 smaller panels on the left and one larger main panel) displays.	
2.	Zoom so that a CONUS-sized area displays centered on approximately Kansas City.	The main panel displays an area centered on the CONUS that includes some of Mexico and Canada.	
3.	Open the Volume Browser by selecting 'Volume', 'Browser...'.	Volume Browser opens. The user is able to make selections from Sources, Fields, and Planes.	
Thickness (dZ)			
4.	Ensure the browser is in Plan view. Under Sources select 'Grid' and 'GFS 40'. For Fields select 'Hgt...Pres' and 'Thickness'. In Planes select 'Pres', 'Misc Layers', '1000-500mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter 1000-500mb thickness is displayed in the main CAVE window.	
5.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
6.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Relative Humidity (RH)			
7.	In the Volume Browser, under Sources, select 'Grid' and 'NAM 40'. For Fields select 'Moist' and 'RH'. In Planes select 'Pres', '500mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter relative humidity is displayed in the main CAVE window.	
8.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
9.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	

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Step	Action	Result	Pass/Fail
Wind Speed (wSp)			
10.	In the Volume Browser, under Sources, select 'Grid' and 'GFS 90'. For Fields select 'Wind' and 'Wind Isotachs'. In Planes select 'Pres', '250 mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter 250mb wind isotachs is displayed in the main CAVE window.	
11.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
12.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Dewpoint Dep (DpD)			
13.	In the Volume Browser, under Sources, select 'Grid' and 'NAM40'. For Fields select 'Moist' and 'Dewpoint Dep'. In Planes select 'Pres', '850mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter dewpoint dep is displayed in the main CAVE window.	
14.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
15.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Dewpoint Temperature (DpT)			
16.	In the Volume Browser, under Sources, select 'Grid' and 'NAM12'. For Fields select 'Moist' and 'Dewpoint'. In Planes select 'Pres', '700mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter dewpoint is displayed in the main CAVE window.	
17.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
18.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	

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Step	Action	Result	Pass/Fail
Specific Humidity (SHx)			
19.	In the Volume Browser, under Sources, select 'Grid' and 'RUC80'. For Fields select 'Moist' and 'Specific Humidity'. In Planes select 'Pres', '1000mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter specific humidity is displayed in the main CAVE window.	
20.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
21.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Equiv Potential Temperature (EPT)			
22.	In the Volume Browser, under Sources, select 'Grid' and 'NAM40'. For Fields select 'Moist' and 'ThetaE'. In Planes select 'Pres', '925mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter equiv. potential temperature is displayed in the main CAVE window.	
23.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
24.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Potential Temperature (PoT)			
25.	In the Volume Browser, under Sources, select 'Grid' and 'GFS40'. For Fields select 'Temp' and 'Potential Temp'. In Planes select 'Pres', '925mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter potential temperature is displayed in the main CAVE window.	
26.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
27.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	

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Step	Action	Result	Pass/Fail
Mixing Ratio (mixRat)			
28.	In the Volume Browser, under Sources, select 'Grid' and 'RUC40'. For Fields select 'Moist' and 'Mixing Ratio'. In Planes select 'Pres', '1000mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter mixing ratio is displayed in the main CAVE window.	
29.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
30.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Wet Bulb Temperature (TW)			
31.	In the Volume Browser, under Sources, select 'Grid' and 'GFS40'. For Fields select 'Temp' and 'Wet Bulb Temp. In Planes select 'Pres', '925mb'. Select 'Load'. Note: If there are multiple entries under the Product Selection List, select a single entry and then 'Load'.	The derived parameter wet bulb temperature is displayed in the main CAVE window.	
32.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
33.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
Streamline Analysis			
34.	In the Volume Browser, under Sources, select 'Grid' and 'GFS40'. For Fields select 'Wind Isotachs'. In Planes select 'Pres', '250'. Select 'Load'.	Isotachs for 250mb display.	
35.	RMB click and hold over the wind speed legend. Select "Load as Streamline". Turn off (Unload) the isotach display.	Streamlines for 250mb display. The isotach display is removed from the display.	
36.	RMB click and hold over the Streamline legend. Select "Load as Image".	Image of isotach speeds for 250mb displays under the streamlines. The streamlines should roughly follow the main band of jet stream winds.	
37.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	

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Step	Action	Result	Pass/Fail
38.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
39.	Repeat steps 34-38 using the NAM40 grid and 700mb for the pressure level.	Image of isotach speeds for 700mb displays under the streamlines. The streamlines should roughly follow the main band of jet stream winds.	
40.	From the menu bar change the density of the streamlines.	The number of streamlines either decreases or increases depending on the density chosen.	
41.	Repeat steps 34 and 35 (don't display as an image) using the NAM12 grid and 1000mb.	Streamlines for 1000mb display.	
42.	Zoom over a feature such as a "L" or "H" pressure center.	Streamlines increase in density and detail.	
43.	Select 'Clear' from the menu bar.	The prior display is cleared from the main CAVE window.	
44.	In the Volume Browser select 'Edit', 'Clear all'.	The prior Volume Browser selections are cleared.	
End of TO9 Test			

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5.0 T09 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)

Number	Description	Test Step(s)
SYSR2095	The AWIPS system shall implement a Meteo Library Extension for access by uEngine Tasks.	ALL
SYSR2096	The AWIPS system shall implement Derived Parameters for grid and point data.	ALL
SYSR1584	The user shall be able to display streamlines for wind data.	34-44

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