

# **Test Case WarnGen\_1.0**

**for the**

**AWIPS**

**Contract**

**DG133W-05-CQ-1067**

DCN: AWP.TE.SWCTR/TO8-0018

Prepared for:

U.S. Department of Commerce  
NOAA/NWS Acquisition Management Division  
SSMC2, Room 17364  
1325 East-West Highway  
Silver Spring, MD 20910

Prepared by:

Raytheon Company  
STC Office  
6825 Pine Street  
Omaha, NE 68106

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Submitted By:

\_\_\_\_\_

Test Engineer

\_\_\_\_\_

Date

Approved By:

\_\_\_\_\_

Program Manager

\_\_\_\_\_

Date

\_\_\_\_\_

Mission Assurance Quality

\_\_\_\_\_

Date

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## Revision History

Revision	Date	Affected Pages	Explanation of Change
1.0	5 December 07	ALL	Initial Release
2.0	17 January 08	3-5	PDT Redlines/NWS Comments
3.0	29 January 08	ALL	DT Redlines

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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**

- Software Test Plan for the Advanced Weather Information Processing System Project, Contract #DG133W-05-CQ-1067, 4 December 2007
- Section 5 of the AWIPS D-2D User's Manual Build 8.1
- Existing AWIPS 1 test procedures:
  - Baseline\_WarnGen\_OB8.1
  - Checkout\_WarnGen\_OB8.1
- The VPN connection to the Silver Spring NWS AWIPS 1 test bed
- Release OB8.1 of the Weather Event Simulator (WES)

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### 3.0 TEST CASE DESCRIPTION

This test case illustrates the warning software tool used to create and issue NWS short duration warnings. Tornado and Severe Thunderstorm warnings will be supported in TO8. These warnings indicate severe weather is expected within the next few hours for locations in the warned area. This test case also illustrates the generation of VTEC coding associated with warning generation through WarnGen. The test includes verification of product content and format and will focus on a subset of product templates. Tests of WarnGen in test mode and practice mode are completed in test case Workstation\_Modes\_1.0.

#### 3.1 Assumptions, Constraints and Preconditions

- TO8 software has been installed successfully
- CAVE, EDEX and pgAdmin III are running
- Data has been ingested
- The Text Workstation has been started
- This test will include a subset of WarnGen templates (not a full suite)
- The clock is set to local time

#### 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.

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**4.0 TEST SCENARIO**

<b>Step</b>	<b>Action</b>	<b>Result</b>	<b>Pass/Fail</b>
1.	Start CAVE.	CAVE starts.	
2.	Zoom into a portion of the country familiar to the tester until the counties display in CAVE.	The county lines appear in the CAVE display.	
3.	From the 'Maps' dropdown menu, select 'County Names'.	The county names appear in the associated county.	
4.	From the 'Maps' dropdown menu, select 'CWAs'.	The CWAs appear in CAVE.	
5.	From the 'Maps' dropdown menu, select 'Cities'.	The Cities appear in CAVE.	
6.	Click mouse button (MB) 3 on the CWA product ID in the product legend and select 'Change Color'. Select yellow.	The CWA borders change to yellow.	
7.	Load an available reflectivity/velocity radar image from the 'koax' dropdown menu.	The koax reflectivity/velocity radar image displays in CAVE.	
8.	Click MB1 on the 'WarnGen' button in the tool bar.	The WarnGen application loads. A 'Drag me to Storm' labeled point displays in the center of the CAVE display. This point is in edit mode. A 'WarnGen' window appears.	
9.	Click and hold MB1 on the 'Drag me to Storm' point and drag it to another location (ideally on a feature picked up by the radar).	A first guess vector appears with the point near the center of the line, tick marks, and time values at the starting point, current/endpoint, and arrowhead. An initial warning area hatched box appears	DR #813
10.	Press the right arrow key on the keyboard once.	The oldest radar image in the loop displays. The point is relabeled 'Drag me to Storm' and appears at the starting point of the vector.	
11.	Click and hold MB1 on the 'Drag me to Storm' point and drag it to another location (ideally on the same feature picked up by the radar).	The vector is redrawn. The spacing between the tick marks adjusts accordingly. The warning box remains at its current position.	
12.	In the 'WarnGen' window, select the following: -Track type: One Storm -Edit: Box and Track	The selections are made as indicated by the radios.	
13.	Click MB1 on the 'Track' button under the 'Redraw Box on Screen from:' section.	The hatched box is redrawn on the vector.	
14.	Extend the hatched box beyond the CWA boundary by clicking and holding MB1 on a vertex and dragging it to another location outside the koax's CWA boundary.	The hatched area expands within the enclosed box up to the CWA boundary but does not cross over the CWA boundary.	
15.	Click MB1 on the 'Warned/Hatched Area' button under the 'Redraw Box on Screen from:' section.	The polygon's vectors are redrawn on the vector snapping back to the CWA border.	
16.	Click MB1 on 'Tornado' in the 'Product type' section.	The selection is made as indicated by the radio.	
17.	Verify the Optional bullets section updated when the Tornado option was selected.	The Optional bullets section updates.	
18.	Select the 'Duration:' to 60 min.	The duration is set to 60 min. The ending time of the warning updates with the change in duration. The vector expands and the time at the arrowhead modifies.	DR #813
19.	Using Control and MB1 within the Optional bullets section, select or deselect items such that the following	The Tornado Warning text appears in a 'Text Warngen' window.	

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Step	Action	Result	Pass/Fail
	Tornado Template Parameters are highlighted: <ul style="list-style-type: none"> <li>• BASIS FOR WARNING: Confirmed large tornado</li> <li>• CALL TO ACTIONS: Severe Tornado</li> <li>• CALL TO ACTIONS: If caught outside</li> <li>• CALL TO ACTIONS: Don't outrun in car</li> </ul> Then click MB1 on the 'Create Text' button.	An 'AWIPS Header Block' window appears.	
20.	Change Product Category to 'TOR'. Then click MB1 on 'Enter'.	The Tornado Warning text displays in the text window in edit mode.	DR #868 DR #870
21.	Verify the tornado warning text contains the Tornado Template Parameters selected.	The BASIS FOR WARNING and CALL TO ACTIONS exist in the tornado warning statement.	
22.	Verify the tornado warning text contains the current date and time attributes and the correct header information.	The date and time attributes exist. The header information is correct.	DR #782
23.	Verify the tornado warning text contains the counties encompassed by the quadrilateral. Use the hover text capability if necessary after the text window is closed. Verify cities near the warning vector are included in the pathcast.	The counties are listed in the tornado warning statement. The cities near the warning vector are included in the warning.	DR #869
24.	Verify the tornado warning text contains the VTEC code above the BULLETIN section. The VTEC code should resemble: /O.NEW.KOAX.TO.W.0001.070311T2112Z-070311T2212Z/ Where the date and time attributes in the VTEC code match the current date and time (UTC).	The VTEC code exists and is accurate.	
25.	Verify the Lat/Lon coordinates appear in the text warning product (E.g., LAT...LON 4471 9981 4488 9977...).	The Lat/Lon information exists in the text product.	
26.	Verify the location and motion of the weather event exists below the LAT...LON line in the text warning product.	The location and motion of the weather event exists below the LAT...LON line.	DR #782
27.	Verify the text warning contains a presence of closing \$\$.	The Tornado Warning text contains a presence of closing \$\$.	
28.	In the text window, replace the '!**NAME/INITIALS**!' line with 'Test1'. Click MB1 on the 'Save' button. Then click MB1 on the 'Send' button.	The Tornado Warning is saved. The text window displays the saved warning.	
29.	Note the VTEC code.		
30.	Close the text window.	The text window closes.	
31.	Create another tornado warning, modifying the warned area and the selections within the 'WarnGen: Operational' window.	The new Tornado Warning displays in the text window.	
32.	Verify the VTEC code in the warning is different from the first tornado warning (e.g., KOAX.TO.W.0001 becomes KOAX.TO.W.0002)	The VTEC code from the first warning was persisted. The second tornado warning contained different/updated VTEC code.	
33.	Close the text window.	The text window closes.	
34.	Repeat steps 11-30 for a Severe Thunderstorm Warning	The results for steps 11-30 verify for a Severe	DR #782

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<b>Step</b>	<b>Action</b>	<b>Result</b>	<b>Pass/Fail</b>
	and a line of storms.	Thunderstorm Warning.	DR #871
35.	Close the text window.	The text window closes.	
36.	Clear the main display.	The CAVE display clears.	
	End of test.		

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**5.0 REQUIREMENTS VERIFICATION TRACEABILITY MATRIX (RVTM)**

Number	Description	Test Step(s)
CAVE_TO8_013	CAVE shall contain a WarnGen capability	8
CAVE_TO8_013.1	A 'WarnGen: Operational' GUI shall display when the WarnGen button is selected from the menu bar	8
CAVE_TO8_013.3	WarnGen shall allow the user to designate the type of warning	16
CAVE_TO8_013.4	WarnGen shall allow the user to select to warn on a single storm	12
CAVE_TO8_013.5	WarnGen shall allow the user to select to warn on a line of storms	34
CAVE_TO8_013.5.2	WarnGen shall allow the user to issue a severe thunderstorm warning for a line of storms	34
CAVE_TO8_013.5.3	WarnGen shall allow the user to issue a tornado warning for a single storm	12
CAVE_TO8_013.16	WarnGen shall allow the user to designate the duration of the warning	18
CAVE_TO8_013.18	WarnGen shall allow the user to establish a storm track	9-11
CAVE_TO8_013.19	WarnGen shall allow the user to establish a warning area	14-15
CAVE_TO8_013.19.1	WarnGen shall allow the user to redraw the warning box in CAVE using MB1 in the WarnGen: Operational window	15
CAVE_TO8_013.20	WarnGen shall allow the user to select optional text bullets to be included in the warning text	17,19
CAVE_TO8_013.22	WarnGen shall allow the user to send the warning information to the text window	20
CAVE_TO8_013.28	WarnGen shall allow the user to Create the Text using MB1 on the 'Create Text' button	19
CAVE_TO8_013.28.1	WarnGen shall translate the storm path into text describing the speed and direction of the storm, and the counties and cities affected by the warning	23
CAVE_TO8_013.28.2	WarnGen shall generate the warning text that includes any optional bullets selected	21
CAVE_TO8_013.28.3	WarnGen text warning shall contain correct header information	24
CAVE_TO8_013.28.4	WarnGen text warning shall contain proper UGC and VTEC codes	24
CAVE_TO8_013.28.5	WarnGen text warning shall maintain time and Time Zone consistency	22
CAVE_TO8_013.28.6	WarnGen text warning shall contain correct product type	20-21,24
CAVE_TO8_013.28.8	WarnGen text warning shall contain a presence of closing \$\$	27
CAVE_TO8_013.31	CAVE shall have the ability to overlay WarnGen on displayed weather data	7-11,13-15
CAVE_TO8_013.32	CAVE shall contain the Warning by Polygon functionality	14-15
CAVE_TO8_013.32.1	CAVE shall draw a hatched area encompassed by the drawn polygon	9,13-15

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CAVE_TO8_013.32.2	The hatched area shall be described by the LAT...LON coordinates in the text warning product	25
CAVE_TO8_013.32.3	WarnGen shall not allow the warned area to cross over CWAs	15
CAVE_TO8_013.32.8	WarnGen shall encode the location and motion of the weather event below the LAT...LON line in the text warning product	26
CAVE_TO8_013.33	WarnGen shall be activated by using MB1 on the yellow WarnGen button on the CAVE menu bar	8
EDEX_T08_019.16	EDEX shall implement VTEC coding through WarnGen	29-32

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