

AWIPS Evolution

IV&V Test Plan for Task Order 8

National Weather Service

Apr, 2008

AE TO-8 IV&V Test Plan

Revision History

Rev. No.	Date	By	Description of Changes
0.1	3/13/08	Cliff Wong	Initial Draft
0.2	3/18/08	Cliff Wong	Incorporate comments and added additional test cases for SEC Support Branch
0.3	4/21/08	Cliff Wong	Remove TO8_0004 test case per GSD. Revised test objective for TO8_9001, TO8_9002, and TO8_9003.

AE TO-8 IV&V Test Plan

1	General Information	4
1.1	Purpose:.....	4
1.2	Scope	4
1.3	System Overview	4
2	Reference Documents	4
3	Acronyms and Abbreviations	4
4	Test Objects	6
4.1	Raytheon test cases	6
4.2	NWS Test Cases.....	6
4.2.1	GSD Test Cases	7
4.2.2	MDL Test Cases.....	9
4.2.3	NCEP Test Cases	9
4.2.4	SEC Test Cases.....	11
4.2.5	OPS Test Cases.....	13
5	Test Resources.....	14
5.1	Team Members	14
5.2	Test Machines.....	14
5.2.1	Hardware	14
5.2.2	Software	15
5.3	Test Facilities	16
5.3.1	GSD test site	16
5.3.2	MDL / OHD / OPS test site.....	16
5.3.3	NCEP test site	16
5.3.4	OST/SEC test site	16

AE TO-8 IV&V Test Plan

1 General Information

1.1 Purpose:

This document describes the test objects, the test objectives, the test strategy, the test types, the test resources, and the tools and automation of the test process for project **AWIPS Evolution**.

1.2 Scope

This document establishes the Software Test Plan (STP) for Task Order 8 (TO-8) deliverable of the AWIPS Development Environment (ADE) for the Advanced Weather Information Processing System (AWIPS).

1.3 System Overview

The Verification and Validation (V&V) is considered to be a life cycle process based on the principle that detecting problems early in the project will cost less than if they are detected later. Early detection allows more time for correction and allows more degrees of freedom for corrective actions.

For TO-8, the AWIPS ADE extends the ADE capabilities delivered under TO-6 AWIPS Continuous Technology Refresh (CTR) Re-Architecture initiative. The capabilities of ADE 1.0 provide the services support required for end-user applications.

This document describes the IV&V methodologies that are used to verify the above capabilities. It shall be used to assess that the coding is of sufficient quality, contains sufficient internal documentation, responds correctly to commands provided by the user, carries out the mathematical calculations to the required accuracy, and meets the performance requirements when applicable.

2 Reference Documents

- *AWIPS Software Product Improvement Plan*
- *Task-order 8 proposal by Raytheon*
- *Internal Software Test Plan by Raytheon*

3 Acronyms and Abbreviations

The following list of the acronyms and abbreviations are used in this document:

Acronym	Definition
ADE	AWIPS Development Environment
AWIPS	Advanced Weather Interactive Processing System
CAPE	Convective Available Potential Energy
CAVE	Common AWIPS Visualization Environment
CCB	Configuration Control Board
CIN	Convective Inhibition
CM	Configuration Management
CTR	Continuous Technology Refresh
DR	Discrepancy Reports

AE TO-8 IV&V Test Plan

Acronym	Definition
EDEX	Enterprise Data Exchange
FTD	Functional Test Driver
FTP	File Transfer Protocol
GRIB	GRIdded Binary
GSD	Global Systems Division
I&T	Integration and Test
IV&V	Independent Verification and Validation
MDL	Meteorological Development Laboratory
METAR	Meteorological Aviation Routine Weather Report
N-AWIPS	National Centers AWIPS
NCEP	National Centers for Environmental Prediction
NSHARP	National Centers Sounding Hodograph Analysis Research Program
NWS	National Weather Service
OHD	Office of Hydrologic Development
OPS	AWIPS Support Branch
OST	Office of Science and Technology
RTM	Requirements Traceability Matrix
SEC	System Engineering Center
STD	Software Test-Case Document
STP	Software Test Plan
TO	Task Order
TP	Test Procedure
V&V	Verification and Validation
WFO	Weather Forecast Office

AE TO-8 IV&V Test Plan

4 Test Objects

The team will perform the following NWS defined tests in addition to selected planned tests performed at the Raytheon Omaha test facility. This is intended for verifying tests carried out by Raytheon.

4.1 Raytheon test cases

The Raytheon test cases for TO-8 are mainly focused around TO-8 capabilities. The test cases are divided into subsystem (EDEX and CAVE) or nonfunctional (CM/Build/Deploy Pattern, ADE, Common, and General/Non-Functional) categories as outlined in the Requirements Traceability Matrix (RTM).

Test Name	Test location (s)
3_5_Panel_Display_1.0	GSD, MDL, NCEP,OHD, SEC
ColorMap_Editor_1.0	GSD, MDL, NCEP,OHD, SEC
Database_1.0	GSD, MDL, NCEP,OHD, SEC
Map_Service_1.0	GSD, MDL, NCEP,OHD, SEC
Meteogram_1.0	GSD, MDL, NCEP,OHD, SEC
Plot_Model_Maintenance_1.0	GSD, MDL, NCEP,OHD, SEC
Radar_Display_1.0	GSD, MDL, NCEP,OHD, SEC
Screen_Capture_1.0	GSD, MDL, NCEP,OHD, SEC
Skew_T_1.0	GSD, MDL, NCEP,OHD, SEC
SOA_Plugins_1.0	GSD, MDL, NCEP,OHD, SEC
Text_Display_Edit_1.0	GSD, MDL, NCEP,OHD, SEC
Vectors_1.0	GSD, MDL, NCEP,OHD, SEC
Volume_Browser_1.0	GSD, MDL, NCEP,OHD, SEC
WarnGen_1.0	GSD, MDL, NCEP,OHD, SEC
Workstation_Bundles_History_1.0	GSD, MDL, NCEP,OHD, SEC
Workstation_CAVE_1.0	GSD, MDL, NCEP,OHD, SEC
Workstation_Localization_1.0	GSD, MDL, NCEP,OHD, SEC
Workstation_Modes_1.0	GSD, MDL, NCEP,OHD, SEC

Table 4-1 Raytheon Test Cases

4.2 NWS Test Cases

Test	Test Location(s)
TO8_0001	GSD
TO8_0002	GSD
TO8_0003	GSD
TO8_0005	GSD
TO8_0006	GSD

AE TO-8 IV&V Test Plan

TO8_0007	GSD
TO8_0008	GSD
TO8_0009	GSD
TO8_0010	GSD
TO8_2001	MDL
TO8_2002	MDL
TO8_4201	NCEP
TO8_4202	NCEP
TO8_4203	NCEP
TO8_4301	NCEP
TO8_4302	NCEP
TO8_4302	NCEP
TO8_8001	SEC
TO8_8002	SEC
TO8_8003	SEC
TO8_8004	SEC
TO8_8005	SEC
TO8_8006	SEC
TO8_8007	SEC
TO8_8008	SEC
TO8_8009	SEC
TO8_8010	SEC
TO8_8011	SEC
TO8_9001	OPS
TO8_9002	OPS
TO8_9003	OPS

Table 4-2 NWS Test Cases

4.2.1 GSD Test Cases

Assumptions:

- Performance testing of TO8 will be conducted on both gwar and the new AWIPS II hardware. The gwar testing will allow comparison to TO6 performance.
- Both live and sample data will be used for testing.

4.2.1.1 TO8_0001

- Test objective: Determine the adequacy of the documentation and training for T08 testing.
- The type of information to be recorded: product name, scale.
- Test Level: Conducted at the system level.
- Test type or class: Human Factors.
- Qualification/Verification Method: Demonstration, Inspection, Similarity .

4.2.1.2 TO8_0002

- Test objective: Determine whether TO8 software can be successfully installed with the accompanying documentation/instructions.
- Type of information to be recorded: product name, scale, number of seconds.
- Test Level: Conducted at the system level.
- Test type or class: Human Factors.
- Qualification/Verification Method: Demonstration, Inspection, Similarity.

AE TO-8 IV&V Test Plan

4.2.1.3 TO8_0003

- Test objective: Determine whether Raytheon test procedures and results can be replicated at GSD using both real-time and supplied static data.
- The type of data to be recorded: product names in order of selection, scale, total number of seconds.
- Test Level: Conducted at the system level.
- Test type or class: Demonstration, Similarity.

4.2.1.4 TO8_0005

- Test objective: Compare TO8 performance with TO6 performance for test procedures that can be run on both builds.
- Type of information to be recorded: action, elapsed time.
- Test Level: Conducted at the system level.
- Test Type/Class: Regression & Performance Testing.
- Qualification/Verification Method: Test, Analysis.

4.2.1.5 TO8_0006

- Test Objective: Compare TO8 test procedures with same procedures run on an AWIPS build (i.e. side-by-side comparison). Look at user interface, performance, etc.
- Type of information to be recorded: Raytheon test procedure checklists
- Test Level: Conducted at the system level.
- Test Type/Class: Regression & Functional Testing.
- Qualification/Verification Method: Demonstration, Inspection, Test

4.2.1.6 TO8_0007

- Test Objective: Once we see exactly what is in the build, conduct additional tests that will utilize the system based on our knowledge of operational use.
- Type of information to be recorded: TBD
- Test Level: Conducted at the subsystem level.
- Test Type/Class: Functional Testing.
- Qualification/Verification Method: Demonstration

4.2.1.7 TO8_0008

- Test objective: Determine flexibility of Purger
- The type of data to be recorded: extract purger events from logs, inspect CAVE inventories.
- Test Level: Conducted at the subsystem level.
- Test Type/Class: Data Acquisition & Functional Testing
- Qualification/Verification Method: Demonstration, Inspection

4.2.1.8 TO8_0009

- Test objective: Add a new localization.
- The type of data to be recorded: visual comparison to D2D scales, local warning displays, WarnGen environment, Sunrise/Sunset default settings, etc.
- Test Level: Conducted at the subsystem level.
- Test Type/Class: Functional & Human Factors Testing.
- Qualification/Verification Method: Demonstration, Inspection.

4.2.1.9 TO8_00010

- Test objective: Determine data integrity.
- The type of data to be recorded: visual comparison, data sampling, listings of text-based data, others TBD.
- Test Level: Conducted at the subsystem level.
- Test Type/Class: Data Acquisition & Functional Testing.
- Qualification/Verification Method: Inspection, Analysis.

AE TO-8 IV&V Test Plan

4.2.2 MDL Test Cases

4.2.2.1 TO8_2001

- Test Objective: To verify TO8 functionality of the “Time of Arrival/Lead Time” tool in CAVE. The tester will be required to:
 - Load the application.
 - Use the application to track a feature over time, using each of the three display modes (point, polyline, circular front).
 - Compare the time of arrival estimation for consistency with the lead lime.
 - Compare the time of arrival and lead time estimations with for reasonable agreement with the information from the Distance/Speed tool.
- Test Level: Conducted at the system level.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.
- Special requirements: None

4.2.2.2 TO8_2002

- Test objective: To validate that the data and format in the plot models of various station report types (METARS, synoptic, buoys, ship reports, and MAROBS) is consistent with the D-2D’s display format. Issues to be examined will include:
 - Presence of fundamental display parameters (temperature, wind speed, dewpoint weather, etc.)
 - Plotting of conditional data (e.g., wind gusts, present weather). Note that the plot models are highly configurable in CAVE, but MDL will try to ensure that the default setup is the same as D-2D’s.
 - Comparisons of the plot model data to the raw observation from cursor sampling, to verify that the data is being displayed accurately.
 - Ad hoc comparisons of live data values in CAVE and D-2D, to verify reasonable agreement between the two displays (taking into consideration that information in the displays may differ due to varying station lists, update times, handling of specials/corrections, etc.)
- Test Level: Conducted at the system level.
- Special requirements: Live data feeds for METARs, maritime reports, synoptic reports, and MAROBS.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.
- Qualification method: Compare output values for consistency. Compare performance.

4.2.3 NCEP Test Cases

NCEP strategy is to run a suite of tests that test capabilities that are of particular relevance to NCEP requirements.

Assumptions:

- External grid datasets can be imported into ADE for testing purposes.
- External raw METAR datasets can be imported into ADE.
- Numerical grid values can be output from ADE for comparison purposes.
- ADE will allow dumping of raw and decoded METAR data.

4.2.3.1 TO8_4201 - Global Grid Ingest, Decode and Display Test

- Test objective: Verify proper ingest and decoding and display of GFS ½ degree global grid.
- Verify that ingest and decoding complete without errors
- Compare decoding of grid is correct by comparing select grid values to NAWIPS decoded values for same grids.
- Verify that global grid displays properly across geographic boundaries

AE TO-8 IV&V Test Plan

- Verify that CAVE can properly display all GFS forecast times
- Verify that CAVE can properly load and display more than one set of GFS forecast times using D2D pane mechanism
- Verify that CAVE contour and image fill work properly and perform acceptably
- Qualification method: Compare output values for consistency.
- Special requirements: N-AWIPS shall be used for comparison.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step

4.2.3.2 TO8_4202 - NDFD Ingest, Decode and Display Tests

- Test objective: Verify proper ingest, decode, and display of full domain NDFD datasets.
- Verify that ingest and decoding complete without errors
- Verify that CAVE can properly display all forecast times in CAVE
- Compare decoding of grid is correct by comparing select grid values to NAWIPS decoded values for same grids.
- Qualification method: Compare output values for consistency.
- Special requirements: N-AWIPS shall be used for comparison.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step

4.2.3.3 TO8_4203 - Ingest, Decode and Display Grids with Bitmaps/Missing Data

- Test objective: Verify proper ingest, decode, and display of grid datasets with bitmaps and/or missing data
- Verify that ingest and decoding complete without errors
- Compare decoding of grid is correct by comparing select grid values to NAWIPS decoded values for same grids.
- Verify that CAVE can properly display all forecast times in CAVE
- Qualification method: Compare output values for consistency.
- Special requirements: N-AWIPS shall be used for comparison.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step

4.2.3.4 TO8_4301 - METAR Decode and Display Test

- Test objective: Verify proper ingest, decode, and display of METAR data
- Verify that ingest and decoding complete without errors
- Compare decoded values in ADE with decoded values in N-AWIPS for consistency
- Verify that CAVE can properly display decoded data
- Qualification method: Compare decoded values in ADE to corresponding values in N-AWIPS for consistency.
- Special requirements: N-AWIPS shall be used for comparison.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step

4.2.3.5 TO8_4302 – TAF Decode and Display Test

- Test objective: Verify proper ingest, decode, and display of TAF data.
- Verify that ingest and decoding complete without errors.
- Compare decoded values in ADE with decoded values in N-AWIPS for consistency.
- Verify that CAVE can properly display decoded data.
- Qualification method: Compare decoded values in ADE to corresponding values in N-AWIPS for consistency.
- Special requirements: N-AWIPS shall be used for comparison.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.3.6 TO8_4303 – PIREP Decode and Display Test

- Test objective: Verify proper ingest, decode, and display of PIREP data.
- Verify that ingest and decoding complete without errors.
- Compare decoded values in ADE with decoded values in N-AWIPS for consistency.

AE TO-8 IV&V Test Plan

- Verify that CAVE can properly display decoded data.
- Qualification method: Compare decoded values in ADE to corresponding values in N-AWIPS for consistency.
- Special requirements: N-AWIPS shall be used for comparison.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.4 SEC Test Cases

4.2.4.1 TO8_8001

- Test objective: Test the throughput and latency of text, satellite, grib and radar messages passing through the ESB layer.
- Test Level: Conducted at the ESB level.
- Test type or class: Performance.
- Qualification method: Inspection.
- Special requirements: NWS provided test driver ESB endpoints.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.
- The assumptions and constraints are noted in each test procedure in the corresponding STD

4.2.4.2 TO8_8002

- Test objective: Test the latency of sending text messages with a large number of binary messages going across the ESB.
- Test Level: Conducted at the ESB level.
- Test type or class: Performance.
- Qualification method: Inspection.
- Special requirements: NWS provided test driver ESB endpoints.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.
- The assumptions and constraints are noted in each test procedure in the corresponding STD.

4.2.4.3 TO8_8003

- Test objective: Test all data ingested are correctly stored in the repository (DBMS/hdf5 metadata).
- Test Level: Conducted at the system level.
- Test type or class: Performance.
- Qualification method: Demonstration.
- Special requirements: NWS provided test driver ESB endpoints.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.
- The assumptions and constraints are noted in each test procedure in the corresponding STD.

4.2.4.4 TO8_0004

- Test objective: Selected Raytheon's OB8.1 System Integration Testing Test Cases (Table 4-3) to verify D2D, Volume Browser, Skew-T features in TO8.
- The type of data to be recorded: product name, decoder, number of seconds.
- Test Level: Conducted at the subsystem level.
- Test Type/Class: Data Acquisition & Functional Testing

AE TO-8 IV&V Test Plan

Adapted OB8.1 SIT test case name
baseline_cave_local_radar
baseline_cave_maps
baseline_cave_procedures
baseline_cave_raob
baseline_cave_regional_radar
baseline_CAVE_Skew-T
baseline_cave_vb_cross_section
baseline_cave_VB_Plan
baseline_cave_VB_sound
baseline_cave_VB_Time
baseline_cave_vb_time_height
baseline_cave_vb_variable_vs_height
baseline_cave_volume
baseline_textdb
baseline_textwks

Table 4-3

4.2.4.5 TO8_8005

- Test objective: Test the throughput and latency for ingesting and storing text, satellite, grib and radar messages for the current WFO data volume and twice this load.
- Test Level: Conducted at the ESB level.
- Test type or class: Performance.
- Qualification method: Demonstration.
- Special requirements: NWS provided data sets based on operational WFO systems.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.
- The assumptions and constraints are noted in each test procedure in the corresponding STD

4.2.4.6 TO8_8006

- Test objective: Graphics Card memory test. Verify CAVE properly handle overloaded imagery products without problem.
- Test Level: Conducted at the subsystem level.
- Test type or class: functional.
- Qualification method: Visual
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.4.7 TO8_8007

- Test objective: Evaluate performance of the EDEX server-side while ingesting live OAX SBN data in cluster mode running on "baseline" Dell 2950 servers on a dedicated Gig-E network. Determine whether all ingested data is processed and stored in a "timely" fashion. Cluster configuration will be based on Raytheon's own recommendations. We will evaluate cluster performance using different NAS hardware (Netapp, StorageTek, etc). Two- and three-node clusters will be evaluated. The Dell 2950 hardware specifications will match the known hardware specs of Raytheon's proposed PX replacements (i.e., proposed "AWIPS II server hardware").
- Test Level: Conducted at the system level.
- Test type or class: Performance.
- Qualification method: Visual
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.4.8 TO8_8008

- Test objective: Determine stability of the EDEX server-side while ingesting live OAX SBN data in cluster mode running on "baseline" Dell 2950 servers on a dedicated Gig-E network. This will

AE TO-8 IV&V Test Plan

focus on database and edex process stability over time (e.g., determine if postgres and hdf5 databases stay in sync over time, evaluate the effect of purging on database stability, etc).

- Test Level: Conducted at the system level.
- Test type or class: Stability.
- Qualification method: Visual
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.4.9 TO8_8009

- Test objective: Evaluate (remote) workstation performance and stability. The workstations will run CAVE only. The EDEX server-side will ingest live SBN data and run in cluster mode on "baseline" Dell 2950 servers. The workstations and cluster will reside on a dedicated Gig-E LAN. Evaluate response times for product call-up and display in CAVE. Attempt to load the network with several CAVE workstations and evaluate performance of the system.
- Test Level: Conducted at the system level.
- Test type or class: Performance.
- Qualification method: Visual
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.4.10 TO8_8010

- Test objective: Determine data volume during live SBN ingest when the EDEX server-side is running in cluster mode on Dell 2950 servers (MB of data per hour and number of ingested files per hour). Determine average and peak data volume (over all the ingested data and according to data type).
- Test Level: Conducted at the system level.
- Test type or class: Performance.
- Qualification method: Visual
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.4.11 TO8_8011

- Test objective: Experiment with ingesting other (non-OAX) SBN data. For example, ingest the normal LWX SBN load (as seen on NHDA or NMTW). Evaluate performance of the EDEX services. Determine average and peak data volumes of the ingested data.
- Test Level: Conducted at the system level.
- Test type or class: Performance.
- Qualification method: Visual
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.5 OPS Test Cases

4.2.5.1 TO8_9001

- Test objective: Test the techniques typically used by forecasters in manipulating the WarnGen warning polygon on the CAVE graphics display. This includes moving back and forth in time on the CAVE display, adjusting the storm track location for each radar frame and adjusting the warning polygon. Verify the WarnGen "redraw box" functions, use the mouse buttons to add/remove/adjust polygon vertices and to add/remove counties and portions of counties. For each polygon adjustment, use "create text" to verify that the correct counties are included in the product.
- Test Level: Conducted at the subsystem level.
- Test type or class: Functional.
- Qualification method: Inspection.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.5.2 TO8_9002

- Test objective: Test the accuracy of county portion descriptions and cities included in WarnGen products. This includes changing the warning polygon and storm track to test various combinations of county/CWA boundaries, various proximities to rural areas, category one, two

AE TO-8 IV&V Test Plan

and three WarnGen cities. For each polygon adjustment, use "create text" to verify that the correct county portions, cities and lat/lon coordinates are included in the product.

- Test Level: Conducted at the subsystem level.
- Test type or class: Functional.
- Qualification method: Inspection.
- Special requirements: None.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

4.2.5.3 TO8_9003

- Test objective: WFOs often customize WarnGen templates to meet local needs for the specific contents of short duration warning products. This test verifies that some of the most often customized items in WarnGen templates can be correctly customized. These include warning durations, portions of counties, including/excluding lists of cities, limiting the number of cities included, defining the distance of "over" or "near" a city, and modifying the Call to Action section.
- Test Level: Conducted at the subsystem level.
- Test type or class: Functional
- Qualification method: Inspection.
- The type of data to be recorded: Entries, results, and a pass/fail grade of each test step.

5 Test Resources

5.1 Team Members

The following organizations/ team members are involved in the IV&V:

- GSD – Joaane Edwards, Leigh Cheatwood, James Fluke
- MDL – Michael Churma, Cece Mitchell, Kenneth Sperow
- NCEP – David Plummer, Scott Jacob, Steve Gilbert
- OHD – XuNing Tan
- OST/SEC – Stowell Davison, Tom Kretz, Oanh Nguyen, Thomas McGuire, James Williams, Cliff Wong
- OPS – Mike Rega, Wayne Martin

5.2 Test Machines

5.2.1 Hardware

5.2.1.1 GSD

The following hardware items are configured as the test computer at GSD:

•AWIPS 2 Test Hardware

- Computer: Dell Optiplex Gx270t
- CPU: Intel 3.20 Ghz Piv (Single processor)
- Hard Disk: Seagate Barracuda 120 Gigabyte SATA
- CD-Writer Drive: Samsung 52/32/52x
- Graphics Card: Nvidia Geforce Fx 5200 128 MB AGP 8x VGA/DVI
- Memory: 2 Gigabyte RAM
- Monitor: Dell Ultrasharp 19 Inch Flat Panel Color W/Dvi
- Sound Card: Creative Labs Sound Blaster Live 5.1

•Collaboration test Hardware

- Computer: Dell Precision 690n
- CPU : Intel Xeon 2 x 2.33 Ghz, Dual Core
- Hard Disk: two Samsung 160 Gigabyte SATA
- CD-Writer Drive: Samsung 52/32/52x
- Graphics Card: Nvidia Quadro Fx 3450 with 256mb Video RAM, Dual VGA/DVI
- Memory: 2 Gigabyte RAM
- Monitor: Dell Ultrasharp 19 Inch Flat Panel Color W/Dvi

AE TO-8 IV&V Test Plan

- Sound Card: Integrated Intel Chipset
- AWIPS 1 Metrics Collection Hardware – Linux Data Server
 - Computer: dx: Dell Poweredge 2850 - Dual 3.2ghz w/ 4GB of RAM
 - Computer: px: Dell Poweredge 2650 - Dual 2.4ghz w/ 1GB of RAM
- AWIPS 1 Metrics Collection Hardware – Linux Workstation
 - Computer: HP Model EA322AV – XW6200 -- 2x 2.8ghz Xeon 64bit, 2mb cache
 - Hard Disk: Seagate Cheetah 36.7gb 15k RPM, 8mb cache, ultra320 scsi
 - CD Writer: Hitachi 48/24/48x
 - Ethernet Adaptor: Intel 10/100/1000
 - Graphics Cards: Nvidia Quadro Nvs 285 64mb Ddr Pci Vga/Dvi
Nvidia Geforce 7600gt 256mb Ddr3
 - Memory: 4x 2 Gigabyte RAM
 - Monitor: 3x Samsung SyncMaster 191n, 19 inch LCD
 - Soundcard: Integrated (Intel chipset)

5.2.1.2 NWS HQ

The following hardware items are configured as the test computer at NWS HQ:

- Linux – Current AWIPS baseline
 - Computer: Dell Poweredge 2850
 - Processors: Dual Intel Xeon 3.2 GHz
 - Memory: 4 Gigabyte RAM
 - Hard Drive: 72 Gigabyte SCSI
 - Video Card: G Force 7600 GT with 256 Megabytes RAM
 - Monitor: Three 19" LCD Monitors
- Linux - server
 - Computer: Dell Poweredge 2950
 - Processors: Quad-Core Intel Xeon 2.33 GHz
 - Memory: 8 Gigabyte RAM
 - Hard Drive: 72 Gigabyte SCSI
 - Video Card: G Force 7600 GT with 256 Megabytes RAM
 - Monitor: Three 19" LCD Monitors
- Windows
 - Computer: Dell Precision 380
 - Processors: Dual Pentium D 2.4GHz
 - Memory: 1.5 Gigabyte RAM
 - Hard Drive: 100 Gigabyte IDE Hard Drives
 - Video Card: NVIDIA Quadro FX 5500 with 256 Megabytes RAM
 - Monitor: 19" LCD Monitors

5.2.2 Software

5.2.2.1 GSD

The following software items are configured as the test computer at GSD:

- Linux
 - Red Hat Enterprise Linux (RHEL) 4 u2
 - JAVA 1.6 update 1
 - AWIPS OB7.1

5.2.2.2 NWS HQ

- Linux

AE TO-8 IV&V Test Plan

- Red Hat Enterprise Linux (RHEL) 4 u2
- JAVA 1.6 update 1
- AWIPS OB 8.2
- Windows
 - Microsoft Windows Professional XP Service Pack 2
 - JAVA 1.6 update 1

5.3 Test Facilities

5.3.1 GSD test site

The test facility for GSD (FSLC system) is the located in Boulder, CO.

5.3.2 MDL / OHD / OPS test site

The test facility NHDA and NHOW is located in 7F, 14F respectively, SSMC-2, Silver Spring, MD.

5.3.3 NCEP test site

The test facility for NCEP is the NCEP facility, Camp Spring, MD.

5.3.4 OST/SEC test site

The OST/SEC test facility is the located in the NAPO labotory, 12F, SSMC-2, Silver Spring, MD.