

**AWIPS Software Maintenance and Support (SMS)**

**AWIPS-II GOES-R Test Case**

**May 2014 Test (Test 2)**

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Advanced Weather Interactive Processing System (AWIPS)

Operations and Maintenance

Work Assignment 13.3

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### Revision History

This revision history is updated each time this document is updated. The history identifies the version number, the date the version was completed, the author of the changes, and a brief description of the changes.

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1. Scope

The objective of the second phase of AWIPS-II development and testing for GOES-R Readiness is to demonstrate the AWIPS II capabilities to concurrently receive/ingest, process and display data from a SBN feed, simulated GOES-R and GOES-S ABI Sectorized Cloud and Moisture Imagery provided by the RaFTR-CIMSS-SIM capability. Figure xx-x depicts the testbed setup with the RaFTR connected.

<Insert Figure>

Figure xx.x Testbed Setup with RaFTR

* 1. Summary of Test

This test procedure should be run at least two times. To attempt to observe system operation and performance in the most trying conditions, the first run should be done with the RaFTR providing Mode 3 data for both GOES-R West and GOES-R East. The RaFTR should remain in this configuration as long as possible, ideally through completion of functional portion of the test at **Step 246**.

The remainder of the test and all future runs can be accomplished with the RaFTR configured to provide data per the scenarios identified in Requirement 2815. Screen capture videos and performance data will be captured during the test for later review and analysis.

The test procedure steps in Section 4.0 have been arranged into ten subsections, each associated with the complete or partial verification of different requirements.

4.1 Pre-Test Preparations and Checks. Ensure that this test is being performed on an operationally-representative clustered environment system.

4.2 Baseline Performance. This section demonstrates the successful ingesting and initial processing of GOES-R imagery data.

4.3 Channel Differencing. This section demonstrates ABI channel differencing of GOES-R imagery data.

4.4 Display of GOES-R Imagery. This section demonstrates the successful display of GOES-R imagery data.

4.5 Subsampling ABI GOES-R imagery Data. This section demonstrates the ability of subsampling (decimating) ABI GOES-R imagery data.

4.6 Expanded Color Assignment Table. This section demonstrates the expanded color assignment table functionality.

4.7 Concurrent Processing and Display of GOES-R Imagery. This section demonstrates concurrent ingesting, decoding, processing and display of GOES-R imagery data.

4.8 AWIPS Performance. This section demonstrates AWIPS Performance in the processing of GOES-R imagery data.

4.9 Retention of AWIPS Data. This section will demonstrate the AWIPS II System’s Retention and Purging of GOES-R imagery data.

4.10 Verification of GOES-R Data Mode Operation. The section calls for testing the AWIPS II system with simulated GOES-R data as defined by the mode scenarios contained in Requirement 2815.

4.11 Testing Completion and Clean-up.

1. APPLICABLE DOCUMENTS
   1. Source Documents

* None
  1. Reference Documents
* Existing AWIPS I and AWIPS II test procedures
* GOES-R Series Ground Segment (GS) Project Functional Performance Specification (F&PS), Attachment 2 (G416-R-FPS-0089 v3.3), dtd 14 Dec 2012
* AWIPS-II GOES-R Test Case, dtd 11 Dec 2013
* GOES-R Ground Segment to Advanced Weather Interactive Processing System (AWIPS) Interface Control Document, Rev B.3, 25 March 2013.

1. Test Case description

|  |  |  |  |
| --- | --- | --- | --- |
| **GOES-R Test Case 2** |  |  |  |
| **Test Case Engineer** | J. Diaz | **Test Platform Used** |  |
| **Date Test Case Created** | 7 Apr 2014 | **Release Version** |  |
| **CI** |  | **Logged in User’s Role** |  |
| **Site Specific** |  | **Start Date / Time** |  |
| **TC Updated for Version** |  | **Completion Date/Time** |  |
| **Last Modified By** |  | **Total Test Time** |  |
| **Executable Steps** | 274 | **Pass/Fail/Pending** |  |

* 1. Assumptions, Constraints, Limitations and Preconditions
* Constraint: An AWIPS-II operationally-representative clustered environment shall be available for conducting this test.
* Constraint: AWIPS-II Build 14.3.1 or greater is installed.
* Constraint: Since AWIPS-II Build 14.3.1 is not baselined with GOES-R, the "***com.raytheon.uf.edex.plugin.goesr***" plugin must be deployed/installed on the test system prior to the start of testing.
* Constraint: RaFTR data flow will be used to provide simulated GOES-R and GOES-S ABI Sectorized Cloud and Moisture Imagery until the GOES-R data flow is operational.
* Constraint: The RaFTR will be capable of providing data consistent with GOES-R East and GOES-R West satellite operation will be available for the following GOES-R channels.
* Precondition: The ***byzanz*** recording application is installed and available on the testbed for use to record the screens as the test is being executed. The *byzanz-record* and *byzanz-playback* files are located at: *usr/bin/*. The *byzanz-playback* application is used to format the video into another data format.
* Precondition: CAVE and EDEX are running.
* Precondition: RaFTR data has been ingesting for 24 hours.
* Precondition: The RaFTR is capable of providing data in the following operation modes (Requirement 2815):
  + - GOES-R West Scan Mode (Mode 4) and GOES-R East Flex Mode (Mode 3)
    - GOES-R West Scan Mode (Mode 4) and GOES-R East Scan Mode (Mode 4)
    - GOES-R West Flex Mode (Mode 3) and GOES-R East Flex Mode (Mode 3)
    - GOES-R West Flex Mode (Mode 3) and GOES-R East Scan Mode (Mode 4)
* Precondition: Both the baseline and the test Performance metrics should be collected over the same full 24 hour period.
* Assumption: Performance Metrics data from a baseline build has been collected prior to the test.
* Assumption: sql queries contained in this test procedure were written specifically for GOES-16. Since the RaFTR will be providing GOES-R East and GOES-R West data, the sql queries contained in this test procedure will need to be modified for GOES-17 as needed in the respective test steps.
* Assumption: Although the requirements call for testing using “standard” available map projections, one of the key benefits of AWIPS II is that the user is able to modify the viewed projections “on-the-fly”. The procedures are written using some previously developed GOES-R projections, primarily to ensure that data specific to a particular region, i.e., Alaska, Hawaii and Puerto Rico is readily visible. The tester is not limited only GOES-R projections, but may modify the steps as necessary to view the data in a more appropriate projection.
* Limitation: Test Network Control Facility (TNCF) portion of requirements will not be demonstrated.
  1. REQUIREMENTS
* The requirements associated with the GOES-R Test-2 test case are listed in Section 5.0
* Test procedures contained in Section 4.0 describe the steps that will be taken during the AWIPS II test to verify achievement of the GOES-R requirement goals listed below:
  + - Ingest
    - Decode
    - Store/Retain
    - Display
    - Purge
    - Performance
  1. TEST TOOLS

The following scripts or configuration files should be available in a readily-accessible location prior to test start:

|  |  |
| --- | --- |
| * getStats.sh: | Performance Metrics collection |
| * GOESR-Scales.tgz: | Map scale localization configuration files need to be extracted to the localization perspective under D2D/MapScales. Make sure to copy the *scalesInfo.xml* file last. |

* 1. TEST ENVIRONMENT PREPARATION
* Prior to starting the test, the map scale localization configuration files need to be extracted from the GOESR-Scales.tgz file and placed into the D2D/MapScales folder in the Localization Perspective.

Known Issues with Test MapScales

* + - **GOES-R Mercator Map Scale.** When loading the Mercator map scale, disregard any AlertViz errors related to reprojecting the map. This is a known issue related to reprojecting the longitude lines for this scale. The display of the maps and products is not affected.
* Prior to starting test, the ***byzanz*** recording application is installed and configured on the testbed. This application will be used to record the desktop screens as the test is being executed.
  1. Test Inputs
* Data consistent with GOES-R East and GOES-R West satellite operation will be available for the following GOES-R channels:
  + - **CH-01: 0.47um**
    - **CH-02: 0.64um**
    - **CH-03: 0.87um**
    - **CH-04: 1.38um**
    - **CH-05: 1.61um**
    - **CH-06: 2.25um**
    - **CH-07: 3.90um**
    - **CH-08: 6.19um**
    - **CH-09: 6.95um**
    - **CH-10: 7.34um**
    - **CH-11: 8.50um**
    - **CH-12: 9.61um**
    - **CH-13: 10.35um**
    - **CH-14: 11.20um**
    - **CH-15: 12.30um**
    - **CH-16: 13.30um**
  1. Test Outputs
* The results outlined in Section 4.0 are met.

1. Test Scenario

This section contains the test scenario procedures for this test case. The full list of requirements is provided in Section 5.0, Requirements Traceability Verification Matrix.

**Table 1 - Test Steps and Expected Results**

| Step # | Actions / Inputs | Expected Results | | P/F | Comments |
| --- | --- | --- | --- | --- | --- |
| **IMPORTANT NOTE**  This test procedure should be run at least two times. The first run should be done with RaFTR providing Mode 3 data for both GOES-R West and GOES-R East. The RaFTR should remain in this configuration as long as possible, ideally through completion of **Step 246**. The remainder of the test and all future runs can be accomplished with the RaFTR configured to provide data per the scenarios identified in Requirement 2815. | | | | | |
| * 1. Pre-Test Preparations and Checks   Ensure that this test is being performed on an operationally-representative clustered environment system. As such, Requirement 2856 will be met upon successful completion of this test.  2856. Demonstration AWIPS-II Configuration. Demonstration should be performed on an operationally representative clustered environment.  2815 The RaFTR/TNCF/AWIPS-II will run flowing GOES East and West data for at least 24 consecutive hours in the following scenarios :  a. GOES West Scan Mode (Mode 4) and GOES East Flex Mode (Mode 3)  b. GOES West Scan Mode (Mode 4) and GOES East Scan Mode (Mode 4)  c. GOES West Flex Mode (Mode 3) and GOES East Flex Mode (Mode 3)  d. GOES West Flex Mode (Mode 3) and GOES East Scan Mode (Mode 4) | | | | | |
|  | Review Section 3.0 and verify with Configuration Management the AWIPS-II operationally-representative clustered environment. |  | |  |  |
|  | Start CAVE and select the Map Scale dropdown menu |  | |  |  |
| Expected Result:  If the GOES-R Map Scales are displayed as shown to the right, proceed to **Step 4**, otherwise continue to **Step 3**. |
|  | Execute this step only if the GOES-R Map Scales are not displayed as expected at Step 2:   * Extract the contents of the *GOESR-Scales.tgz* file to a temporary location. * Copy all files except the *scalesInfo.xml* into the D2D/Map Scales folder in the Localization Perspective. * Once the GOES-R Map Scale files are copied, then copy the *scalesInfo.xml* file into the D2D/Map Scales folder. | | | | |
|  | Ensure the RaFTR/TNCF/AWIPS-II is flowing GOES-R West Scan Mode (Mode 4) and GOES-R East Flex Mode (Mode 3) data to the system. | | |  | Requirement 2815 |
| Expected Result:  GOES-R West Scan Mode (Mode 4) and GOES-R East Flex Mode (Mode 3) data is flowing to the system. | | |
|  | Ensure the ***RaFTR/TNCF/AWIPS-II*** has been flowing data to the system for **24** hours. | | |  | Requirement 2815 |
| Expected Result:  The system has been processing data for 24 hours. | | |
|  | Create a new Editor Display having 96 frames per the following actions in CAVE:   * *Clear the main pane* * *CAVE 🡪 Export 🡪 Editor Display…* * *In the dialog,, name the file ‘goesR\_96frame.xml’ and click [OK] to save it to a known location (i.e., home directory)* * *Open the file using a text editor (i.e., vi)* * *Locate the line with “<numberOfFrames>” and replace the value ‘12’ with ‘96’* * *Save the file* | | |  | This Editor Display file will be used to testing Requirements 2809, 2810, and 3014. |
| Expected Result:   * *The Editor Display xml file is created* | | |
| * 1. Baseline Performance   This section demonstrates the successful ingesting and initial processing of GOES-R imagery data to partially verify the following requirements:  2809. EDEX Features. Demonstrate EDEX decode/store/retention/purge of the RaFTR stream.  2810. AWIPS performance. Ascertain and characterize the capability of the AWIPS software and development/test configuration to keep up with RaFTR's real-time transmission of the full GS-F&PS Appendix E data flow loading. Any chokepoints and/or bottlenecks shall be identified. This includes all of the AWIPS II functionality: ingest, decode, store, retain, display, and purge. | | | | | |
| Note: The sql commands contained in this test procedure were written only for GOES-16 data. Since the RaFTR will simulate both GOES-R East and GOES-R West data for this test, the sql commands steps will need to be repeated after being modified for GOES-17. | | | | | |
|  | In **pgadmin** open the appropriate server. | The server is opened showing a list of available databases. | |  |  |
|  | View the list of available databases and select the **metadata** database | The **metadata** database is selected. | |  |  |
|  | In the pgadmin menu bar click the SQL icon. | A query dialog is opened | |  |  |
|  | In the query dialog execute the following sql command to see which GOES-16 and GOES-17 data sectors/channels are available:  *select distinct creatingentity, sectorid, physicalelement from satellite where creatingentity like 'GOES-16' or creatingentity like 'GOES-17' order by creatingentity '* | | |  | Requirement 2809, 2810 |
| Expected Result:  The list of available products similar to that provided below is displayed | | |
|  | In CAVE select   * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 Satellite 🡪 GOES* | | |  | Requirement 2809, 2810 |
| Expected Result:  Results have the following form (this is only a sample list and does not reflect all possible or available sectors and channels: | | |
|  | Verify that the different GOES-R data products in Step 11 are consistent with Step 10 query results | The browser list matches the query results | |  | Requirement 2809, 2810 |
| Note: Menu Definition and Selection Paths:  BestRes products menu provides the BestRes East Conus product for the selected scale:  *GOES-R 🡪 BestRes East Conus🡪 <channel selection>*  Regional BestRes products menu provides the BestRes product for the selected region and scale:  *GOES-R 🡪 Regional BestRes 🡪 <Region> 🡪 <channel selection>*  Single-Channel products:  *GOES-R 🡪 By Sector 🡪 All Channels 🡪 <region> 🡪 <channel selection>*  Channel-Differencing products (Requirement 2816):  *GOES-R 🡪 By Sector 🡪 Derived 🡪 <region> 🡪 <product selection>*  RGB Composites:  *GOES-R 🡪 By Sector 🡪 RGB Composites 🡪 <region> 🡪 <product selection>*  Conus with Legacy menu:  *GOES-R 🡪 By Sector 🡪 Derived 🡪 <region> 🡪 <product selection>*  Automatic: This selection is not functional at this time, but is being provided as a conceptual option. Depending upon the availability of GOES-15 or GOES-13 data, this selection would automatically display the appropriate of the two blended configuration | | | | | |
|  | In CAVE cycle through and review the GOES-R menu selection options detailed in the previous note. | | |  | Requirement 2809, 2810 |
| Expected Result:  Menus are consistent with the screen capture provided below: | | | | |
| Note: The following are preliminary sample menus and may not reflect the final form, structure or all possible or available sectors and channels. | | | | |
|  | | | | |
|  | Verify that the different GOES-R data products listed in the menus in Step 13 are consistent with Step 10 query results and the Step 11 Product Browser results | The menus match the query results | |  | Requirement 2809, 2810 |
|  | * In pgadmin execute the following sql command to identify the oldest available processed GOES-R files from GOES-16 and GOES-17.   *select distinct count(distinct reftime), min(distinct reftime), max(distinct reftime), max(distinct reftime)-min(distinct reftime) as time\_interval, creatingentity, sectorid, physicalelement from satellite where creatingentity like 'GOES-16' or creatingentity like 'GOES-17' group by creatingentity, sectorid, physicalelement order by creatingentity*   * Export the resulting file to a location for later review. | | |  | Requirement 2809, 2810 |
| Expected Result:   * If the system has been running for 24 hours prior to test start, the largest time interval should be at least 24-25 hours (allowing for latest purge run). * Record the largest time interval and the max/min date/timestamps associated with that time interval:   **GOES-16:**  SectorID: \_\_\_\_\_\_\_\_\_\_\_  Channel: \_\_\_\_\_\_\_\_\_\_\_  Time Interval: \_\_\_\_\_\_\_\_\_\_\_  Min Timestamp: \_\_\_\_\_\_\_\_\_\_\_  Max Timestamp: \_\_\_\_\_\_\_\_\_\_\_  **GOES-17:**  SectorID: \_\_\_\_\_\_\_\_\_\_\_  Channel: \_\_\_\_\_\_\_\_\_\_\_  Time Interval: \_\_\_\_\_\_\_\_\_\_\_  Min Timestamp: \_\_\_\_\_\_\_\_\_\_\_  Max Timestamp: \_\_\_\_\_\_\_\_\_\_\_   * Record the location of the file(s):   File Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | In two terminal windows, ssh into dx3 and dx4. EDEX log files are captured on both boxes.   * *ssh awips@dx3-<serverID> (or dx4-)* | The user is logged into the nodes. | |  |  |
| **Note**: AWIPS II logs data on either or both dx3 and dx4, so expected messages may be found on either or both nodes. | | |
|  | Change to the edex logs directory   * *cd /awips2/edex/logs* | The working directory is changed to the location of the log files. | |  |  |
|  | Search the <dx3 and dx4 ingest logs> for the desired sectorID name (i.e., AKREGI, WFD, etc.) entries showing that data has been processed. | | |  | Requirement 2809, 2810 |
| Expected Result:  Entries indicate successful purging of GOES-R data have the following form:  *INFO yyyy-mm-dd hh:mm:ss,nnn [Purge-SATELLITE-Thread] PurgeLogger: EDEX - SATELLITE::Purged xx items for key [sectorID=AKREGI][physicalElement=CH-4-1.38um]* | | |
| * 1. Channel Differencing   This section demonstrates ABI channel differencing of GOES-R imagery data as defined by the following requirement:  2816. Channel Differencing. Provide Capability for ABI channel differencing e.g. 11.2um – 3.9um. | | | | | |
|  | Initiate video recording of test.   * Open a terminal on the monitor you wish to record * cd to the location where you wish to store the video captures. * Initiate *byzanz* video recording application by executing the following command, replace the xx in the stepxx with the step number:   + *byzanz-record --duration=300 --width=1280 --height=1024 ./stepxx.ogg*   + Record video filename and start time | | |  | * This command will record a 5 minute video file * The file is stored to the same folder from which the command was executed   Folder Path: \_\_\_\_\_\_\_\_\_\_\_\_\_  Filename: \_\_\_\_\_\_\_\_\_\_\_\_\_  Start time: \_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | Moisture: Band 14–15 (11.2 – 12.3um)  In CAVE select   * *Frames 🡪 12* * *Scale 🡪 North American* * *GOES-R 🡪 Derived 🡪 West Conus 🡪 Moisture (11.2-12.3u)* | | |  | Requirement 2816 |
| Expected Result:   * *Moisture (11.2-12.3u)* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 1 | | |  |  |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating | | |
|  | Cloud Phase: Band 11–14 (8.5 – 12.3um)  In CAVE select   * *Frames 🡪 12* * *Scale 🡪 North American* * *GOES-R 🡪 Derived 🡪 West Conus 🡪 Cloud Phase (8.5-11.2u)* | | |  | Requirement 2816 |
| Expected Result:   * *Cloud Phase (8.5-11.2u)* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 2 | | |  |  |
| Expected Result:   * The product is visible in the side pane * All products continue looping and updating | | |
|  | Fog: Band 7–14 (3.9 – 12.3um)  In CAVE select   * *Frames 🡪 12* * *Scale 🡪 North American* * *GOES-R 🡪 Derived 🡪 East Conus 🡪 Fog (3.9-11.2u)* | | |  | Requirement 2816 |
| Expected Result:   * *Fog (3.9-11.2u)* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 3 | | |  |  |
| Expected Result:   * The product is visible in the side pane * All products continue looping and updating | | |
|  | Snow: Band 2–5 (0.64 – 1.61um)  In CAVE select   * *Frames 🡪 12* * *Scale 🡪 North American* * *GOES-R 🡪 Derived 🡪 West Conus 🡪 Snow (0.64-1.61u)* | | |  | Requirement 2816 |
| Expected Result:   * *Snow (0.64-1.61u)* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 4 | | |  |  |
| Expected Result:   * The product is visible in the side pane * All products continue looping and updating | | |
|  | Vegetation: Band 2–3 (0.64 – 0.865um)  In CAVE select   * *Frames 🡪 12* * *Scale 🡪 GOES-R WConus* * *GOES-R 🡪 Derived 🡪 West Conus 🡪 Vegetation (0.64-0.87u)* | | |  | Requirement 2816 |
| Expected Result:   * *Vegetation (0.64-0.87u)* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product continues looping and updating | | |
|  | Move (swap) the product to any side pane | | |  |  |
| Expected Result:   * The Vegetation (0.64-0.87u) product is visible in the side pane * The product previously in the side pane is now displayed in the main pane * All products continue looping and updating | | |
|  | Clear the main pane | Pane is cleared | |  |  |
|  | Upper Level Information: Band 14–8 (11.2 – 6.19um)  In CAVE select   * *GOES-R 🡪 Derived 🡪 West Conus 🡪 Upper Level Info (11.2-6.19u)* | | |  | Requirement 2816 |
| Expected Result:   * *Upper Level Info (11.2-6.19u)* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product continues looping and updating | | |
|  | Move (swap) the product to any side pane | | |  |  |
| Expected Result:   * The *Upper Level Info (11.2-6.19u)* product is visible in the side pane * The product previously in the side pane is now displayed in the main pane * All products continue looping and updating | | |
|  | Move (swap) the products displayed in the side panes to the main pane until all the products have been swapped into the main pane and back to the side panes | | |  | Requirement 2816 |
| Expected Result:   * Products swap without issue * Products continue looping and updating * No system slowdowns or crashes occur | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| * 1. Display of GOES-R Imagery   This section demonstrates the successful display of GOES-R imagery data as detailed by the following set of requirements. This section includes demonstration of the following requirements:  2807. ABI Channels 1-5. Process/display enhanced spatial resolution RaFTR data from at least simulated ABI Channels 1-5. Rationale: These bands are 4 and 16 times the spatial resolution of the bands tested in Demo #1. Evaluate performance impact of the enhanced spatial resolution.  2808. Full Resolution Fixed Disk. Process Fixed Grid, Full Disk, Full Resolution RaFTR data (GOES East and West) and display in standard CAVE Map projections.  2814. Display Loading. AWIPS-II concurrent display capabilities (see Section 5.0 RVTM for details).  2815 24 Hour Product Flow. The RaFTR/TNCF/AWIPS-II will run flowing GOES East and West data for at least 24 consecutive hours (see Section 5.0 RVTM for details).  2816 Channel Differencing. Provide capability for ABI channel differencing, e.g. 11.2um–3.9um  2985. D2D selection menus. Be able to display any GOES-R ABI data on D2D via selection on satellite menu. | | | | | |
| Known Issue: When loading the Mercator map scale, disregard any AlertViz errors related to reprojecting the map. This is a known issue related to reprojecting the longitude lines for this scale. The display of the maps and products is not affected. | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
| Alaska Region | | | | | |
|  | In CAVE set the Frames to 15 | Frames are set to 15 | |  |  |
|  | Polar Stereographic  This step needs to be executed for both GOES-16 and GOES-17  In CAVE select   * *Scale 🡪 N. Hemisphere* * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 GOES-16🡪 AKREGI 🡪 CH-01-0.47um* | | |  | Requirement 2807, 2808 |
| Expected Result:  *CH-01-0.47um* product displays over the Alaska region of the N. Hemisphere projection. | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Polar Stereographic  In CAVE select   * *Scale 🡪 N. Hemisphere* * *GOES-R 🡪 By Sector 🡪 Derived 🡪 Alaska 🡪 Moisture (11.2-12.3u)* | | |  | Requirement 2807, 2808, 2815, 2816, 2985 |
| Expected Result:  *Moisture (11.2-12.3u)* product displays over the Alaska region of the N. Hemisphere projection | | |
|  | Review product for correct labels/legend displays | | |  | Requirement 2814 |
| Expected Result:  Product legends are formatted as shown: | | |
|  | Review and sample product for consistency between the colorbar and the product | | |  | Requirement 2814 |
| Expected Result:  Product samplings are consistent with the appropriate colorbars: | | |
| Single Channels | | | | |
| Channels 1-6 | | Channels 7 - 16 | | |
| Derived (Differenced) Channels | | | | |
| Derived – Moisture (11.2-12.3 u)    Derived Fog (3.9-11.2 u)    Derived – Snow (0.64-0.87 u)  Derived – Vegetation (0.64-0.87 u) | | Derived – Cloud Phase (8.5-11.2 u)    Derived Fog (3.9-11.2 u)    Derived – Upper Level Info (11.2-6.19 u) | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | North American  In CAVE select:   * *Scale 🡪 North American* * *GOES-R 🡪 By Sector 🡪 All Channels 🡪 Alaska 🡪 Channel 6(2.25u)* | | |  | Requirement 2807, 2808, 2815, 2985 |
| Expected Result:  *CH-06-2.25um* product displays over the Alaska region of the North American projection | | |
|  | Equidistant Cylindrical  In CAVE select *Scale 🡪 Eq Cylindrical* | | |  | Requirement 2807, 2808 |
| Expected Result:   * Scale is set to Eq Cylindrical * Frames are set to 15 * The product is visible, looping and updating | | |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| Mercator  In CAVE select *Scale 🡪 Mercator* | | |
| Expected Result:   * The Scale is set to the Mercator projection view (see below). * Frames are set to 15 * The product is visible, looping and updating | | |
|  | AK Region (Polar Stereographic)  In CAVE select *Scale 🡪 GOES-R AKREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Alaska projection view (see below). * Frames are set to 15 * The product is visible, looping and updating | | |
|  | West CONUS (Lambert Conformal)  In CAVE select *Scale 🡪 GOES-R WConus* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West CONUS projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | West Full Disk  In CAVE select *Scale 🡪 GOES-R WFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West Full Disk projection view (see below). * Frames are set to 15 * The product is visible, looping and updating | | |
|  | Return to the N Hemisphere scale then move (swap) the product into a side pane | | |  | Requirement 2807, 2808, 2814, 2815, 2816 |
| Expected Result:   * The scale is set * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Repeat Step 47 thru Step 57 for the following Alaska Region channels:   * *Regional Best Res: Channel 1(0.47u)* * *All Channels: Channel 12(9.61u)* * *Derived: Fog (3.9-11.2u)* * *RGB Composite: Icing (1.61,0.87,0.64)* | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| Hawaii Region | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | In CAVE set the Frames to 15 | Frames are set to 15 | |  |  |
|  | Polar Stereographic  This step needs to be executed for both GOES-16 and GOES-17  In CAVE select   * *Scale 🡪 N. Hemisphere* * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 GOES-16🡪 HIREGI 🡪 CH-02-0.64um* | | |  |  |
| Expected Result:  *CH-02-0.64um* product displays over the Hawaii region of the N. Hemisphere projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Polar Stereographic  In CAVE select:   * *Scale 🡪 N. Hemisphere* * *GOES-R 🡪 All Channels 🡪 Hawaii 🡪 Channel 2(0.64u)* | | |  | Requirement 2807, 2808, 2815, 2985 |
| Expected Result:  *Channel 2(0.64u)* product displays over the Hawaii region of the N. Hemisphere projection | | |
|  | Review product for correct labels/legend displays | | |  | Requirement 2814 |
| Expected Result:  Product legends are formatted as shown: | | |
|  | Review and sample product for consistency between the colorbar and the product | | |  | Requirement 2814 |
| Expected Result:  Product samplings are consistent with the appropriate colorbars: | | |
| Single Channels | | | | |
| Channels 1-6 | | Channels 7 - 16 | | |
| Derived (Differenced) Channels | | | | |
| Derived – Moisture (11.2-12.3 u)    Derived Fog (3.9-11.2 u)    Derived – Snow (0.64-0.87 u)  Derived – Vegetation (0.64-0.87 u) | | Derived – Cloud Phase (8.5-11.2 u)    Derived Fog (3.9-11.2 u)    Derived – Upper Level Info (11.2-6.19 u) | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Equidistant Cylindrical  In CAVE select:   * *Scale 🡪 Eq Cylindrical* | | |  | Requirement 2807, 2808 |
| Expected Result:   * Scale is set to Eq Cylindrical * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| Mercator  In CAVE select *Scale 🡪 Mercator* | | |
| Expected Result:   * The Scale is set to the Mercator projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | HI Region (Mercator)  In CAVE select *Scale 🡪 GOES-R HIREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Hawaii projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | West CONUS (Lambert Conformal)  In CAVE select *Scale 🡪 GOES-R WConus* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West CONUS projection view (see below). * Frames are set to 15 * A portion of the product may or may not be visible. If visible, the product continues looping and updating | | |
|  | West Full Disk  In CAVE select *Scale 🡪 GOES-R WFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West Full Disk projection view (see below). * Frames are set to 15 * The product is visible, looping and updating | | |
|  | Return to the HI Region scale then move (swap) the product into a side pane | | |  | Requirement 2807, 2808, 2814, 2815, 2816 |
| Expected Result:   * The scale is set * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Repeat Step 66 thru Step 75 for the following Hawaii Region channels:   * *Derived: Cloud Phase (8.5-11.2u)* * *All Channels: Channel 11(8.5u)* * *Regional Best Res: Channel 4(1.38u)* * *RGB Composite: Daytime Composite #1* | | |  | Requirement 2807, 2808, 2814, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| Puerto Rico Region | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | In CAVE set the Frames to 15 | Frames are set to 15 | |  |  |
|  | Polar Stereographic  This step needs to be executed for both GOES-16 and GOES-17  In CAVE select   * *Scale 🡪 N. Hemisphere* * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 GOES-16🡪 PRREGI 🡪 CH-10-7.34um* | | |  |  |
| Expected Result:  *CH-10-7.34um* product displays over the Puerto Rico region of the N. Hemisphere projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Polar Stereographic  In CAVE select:   * *Scale 🡪 N. Hemisphere* * *GOES-R 🡪 By Sector 🡪 All Channels 🡪 Puerto Rico 🡪 Channel 10(7.34u)* | | |  | Requirement 2807, 2808, 2815, 2985 |
| Expected Result:  *CH-10-7.34um* product displays over the Puerto Rico region of the N. Hemisphere projection | | |
|  | Review product for correct labels/legend displays | | |  | Requirement 2814 |
| Expected Result:  Product legends are formatted as shown: | | |
|  | Review and sample product for consistency between the colorbar and the product | | |  | Requirement 2814 |
| Expected Result:  Product samplings are consistent with the appropriate colorbars: | | |
| Single Channels | | | | |
| Channels 1-6 | | Channels 7 - 16 | | |
| Derived (Differenced) Channels | | | | |
| Derived – Moisture (11.2-12.3 u)    Derived Fog (3.9-11.2 u)    Derived – Snow (0.64-0.87 u)  Derived – Vegetation (0.64-0.87 u) | | Derived – Cloud Phase (8.5-11.2 u)    Derived Fog (3.9-11.2 u)    Derived – Upper Level Info (11.2-6.19 u) | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Equidistant Cylindrical  In CAVE select:   * *Scale 🡪 Eq Cylindrical* | | |  | Requirement 2807, 2808 |
| Expected Result:   * Scale is set to Eq Cylindrical * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | PR Region (Mercator)  In CAVE select *Scale 🡪 GOES-R PRREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Puerto Rico projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | East CONUS (Lambert Conformal)  In CAVE select *Scale 🡪 GOES-R EConus* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the East CONUS projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | East Full Disk  In CAVE select *Scale 🡪 GOES-R EFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the East Full Disk projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | West Full Disk  In CAVE select *Scale 🡪 GOES-R WFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West Full Disk projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | Return to the PR Region scale then move (swap) the product into a side pane | | |  | Requirement 2807, 2808, 2814, 2815, 2816 |
| Expected Result:   * The scale is set * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | If data is available, repeat Step 84 thru Step 93 for the following PR Region channels:   * *All Channel: Channel 8(6.19u)* * *Regional Best Res: Channel 16(13.3u)* * *Derived: Vegetation (0.64-0.87 u)* * *RGB Composite: Daytime Composite #5* | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| West CONUS / East CONUS | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | In CAVE set the Frames to 15 | Frames are set to 15 | |  |  |
|  | Lambert Conformal  This step needs to be executed for both GOES-16 and GOES-17  In CAVE select   * *Scale 🡪 CONUS* * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 GOES-17🡪 WConus 🡪 CH-03-0.87um* | | |  |  |
| Expected Result:  *CH-03-0.87um* product displays over the West CONUS region of the CONUS projection. | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
| West CONUS | | | | | |
|  | Polar Stereographic  In CAVE select   * *Scale 🡪 N. Hemisphere* * *GOES-R 🡪 All Channels 🡪 WConus 🡪 CH-03-0.87um* | | |  | Requirement 2807, 2985 |
| Expected Result:  *CH-03-0.87um* product displays over the West CONUS region of the N. Hemisphere projection. | | |
|  | Review product for correct labels/legend displays | | |  | Requirement 2814 |
| Expected Result:  Product legends are formatted as shown: | | |
|  | Review and sample product for consistency between the colorbar and the product | | |  | Requirement 2814 |
| Expected Result:  Product samplings are consistent with the appropriate colorbars: | | |
| Single Channels | | | | |
| Channels 1-6 | | Channels 7 - 16 | | |
| Derived (Differenced) Channels | | | | |
| Derived – Moisture (11.2-12.3 u)    Derived Fog (3.9-11.2 u)    Derived – Snow (0.64-0.87 u)  Derived – Vegetation (0.64-0.87 u) | | Derived – Cloud Phase (8.5-11.2 u)    Derived Fog (3.9-11.2 u)    Derived – Upper Level Info (11.2-6.19 u) | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Equidistant Cylindrical  In CAVE select *Scale 🡪 Eq Cylindrical* | | |  | Requirement 2807, 2808 |
| Expected Result:   * Scale is set to Eq Cylindrical * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| Mercator  In CAVE select *Scale 🡪 Mercator* | | |
| Expected Result:   * The Scale is set to the Mercator projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | AK Region (Polar Stereographic)  In CAVE select *Scale 🡪 GOES-R AKREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Alaska projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | West CONUS (Lambert Conformal)  In CAVE select *Scale 🡪 GOES-R WConus* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West CONUS projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | West Full Disk  In CAVE select *Scale 🡪 GOES-R WFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West Full Disk projection view (see below). * Frames are set to 15 * The product is visible, looping and updating | | |
|  | Return to the CONUS scale then move (swap) the product into a side pane | | |  | Requirement 2807, 2808, 2814, 2815, 2816 |
| Expected Result:   * The scale is set * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Repeat Step 102 thru Step 111 for the following West CONUS channels:   * *All Channels: Channel 15(12.3u)* * *Regional Best Res: Channel 9(6.95u)* * *Derived: Snow (0.64-1.61 u)* * *RGB Composite: Icing(1.61,0.87,0.64)* * *Conus With Legacy: GOES-R + GOES-15* | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| East CONUS | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | Repeat Step 102 thru Step 112 for East CONUS using the following channel selections:   * *All Channel: Channel 6(2.25u)* * *Derived: Vegetation (0.64-0.87 u)* * *Best Res East Conus: Channel 7(3.9u)* * *Best Res East Conus: Channel 14(11.2u)* * *Conus With Legacy: GOES-R + GOES-13*   Use the PRREGI scale in lieu of AKREGI and HIREGI scales, as appropriate.  Use Best Res East Conus selection options instead of Regional Best Res. | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| West Full Disk / East Full Disk | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | In CAVE set the Frames to 15 | Frames are set to 15 | |  |  |
|  | Polar Stereographic  This step needs to be executed for both GOES-16 and GOES-17  In CAVE select   * *Scale 🡪 N. Hemisphere* * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 GOES-17🡪 West Full Disk 🡪 CH-08-6.19um* | | |  |  |
| Expected Result:  *CH-08-6.19um* product displays over the Pacific and CONUS | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
| West Full Disk | | | | | |
|  | Polar Stereographic  In CAVE select   * *Scale 🡪 N. Hemisphere* * *GOES-R 🡪 All Channels 🡪 West Full Disk 🡪 Channel 14(11.2u)* | | |  | Requirement 2807, 2985 |
| Expected Result:  *CH-14-11.2um* product displays over the Eastern Pacific and CONUS region of the N. Hemisphere projection | | |
|  | Review product for correct labels/legend displays | | |  | Requirement 2814 |
| Expected Result:  Product legends are formatted as shown: | | |
|  | Review and sample product for consistency between the colorbar and the product | | |  | Requirement 2814 |
| Expected Result:  Product samplings are consistent with the appropriate colorbars: | | |
| Single Channels | | | | |
| Channels 1-6 | | Channels 7 - 16 | | |
| Derived (Differenced) Channels | | | | |
| Derived – Moisture (11.2-12.3 u)    Derived Fog (3.9-11.2 u)    Derived – Snow (0.64-0.87 u)  Derived – Vegetation (0.64-0.87 u) | | Derived – Cloud Phase (8.5-11.2 u)    Derived Fog (3.9-11.2 u)    Derived – Upper Level Info (11.2-6.19 u) | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Equidistant Cylindrical  In CAVE select *Scale 🡪 Eq Cylindrical* | | |  | Requirement 2807, 2808 |
| Expected Result:   * Scale is set to Eq Cylindrical * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| Mercator  In CAVE select *Scale 🡪 Mercator* | | |
| Expected Result:   * The Scale is set to the Mercator projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | AK Region (Polar Stereographic)  In CAVE select *Scale 🡪 GOES-R AKREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Alaska projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | HI Region (Mercator)  In CAVE select *Scale 🡪 GOES-R HIREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Hawaii projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | West CONUS (Lambert Conformal)  In CAVE select *Scale 🡪 GOES-R WConus* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West CONUS projection view (see below). * Frames are set to 15 * The product continues looping and updating | | |
|  | West Full Disk  In CAVE select *Scale 🡪 GOES-R WFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West Full Disk projection view (see below). * Frames are set to 15 * The product is visible, looping and updating | | |
|  | Return to the West Full Disk scale then swap the product into a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The scale is set * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Repeat Step 124 thru Step 134 for the following channels:   * *All Channels: Channel 5(1.61u)* * *Derived: Moisture (11.2-12.3 u)* * *Derived: Upper Level Info (11.2-6.19 u)* * *RGB Composite: Daytime Composite #1* * *Conus With Legacy: GOES-R + GOES-15* | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| East Full Disk | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | Repeat Step 124 thru Step 134 for East Full Disk using the following channel selections:   * *All Channel: Channel 13(10.35u)* * *All Channel: Channel 12(9.61u)* * *Derived: Vegetation (0.64-0.87 u)* * *Derived: Cloud Phase (8.5-11.2 u)* * *RGB Composite: Daytime Composite #5* * *Conus With Legacy: GOES-R + GOES-13*   Use the PRREGI scale in lieu of AKREGI and HIREGI scales, as appropriate | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| West Mesoscale / East Mesoscale | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | In CAVE set the Frames to 15 | Frames are set to 15 | |  |  |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| Mercator  This step needs to be executed for both GOES-16 and GOES-17  In CAVE select   * *Scale 🡪 Mercator* * *CAVE 🡪 Data Browsers 🡪 Product Browser 🡪 GOES-17🡪 WMESO 🡪 CH-08-6.19um* | | |
| Expected Result:  *CH-08-6.19um* product displays on the Mercator projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
| West Mesoscale | | | | | |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| Mercator  In CAVE select   * *Scale 🡪 Mercator* * *GOES-R 🡪 All Channels 🡪 West Mesoscale 🡪 Channel 8(6.19u)* | | |
| Expected Result:   * *Channel 8(6.19u)* product displays in the Mercator projection * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | Review product for correct labels/legend displays | | |  | Requirement 2814 |
| Expected Result:  Product legends are formatted as shown: | | |
|  | Review and sample product for consistency between the colorbar and the product | | |  | Requirement 2814 |
| Expected Result:  Product samplings are consistent with the appropriate colorbars: | | |
| Single Channels | | | | |
| Channels 1-6 | | Channels 7 - 16 | | |
| Derived (Differenced) Channels | | | | |
| Derived – Moisture (11.2-12.3 u)    Derived Fog (3.9-11.2 u)    Derived – Snow (0.64-0.87 u)  Derived – Vegetation (0.64-0.87 u) | | Derived – Cloud Phase (8.5-11.2 u)    Derived Fog (3.9-11.2 u)    Derived – Upper Level Info (11.2-6.19 u) | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2814, 2815 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Equidistant Cylindrical  In CAVE select *Scale 🡪 Eq Cylindrical* | | |  | Requirement 2807, 2808 |
| Expected Result:   * Scale is set to Eq Cylindrical * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | AK Region (Polar Stereographic)  In CAVE select *Scale 🡪 GOES-R AKREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Alaska projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | HI Region (Mercator)  In CAVE select *Scale 🡪 GOES-R HIREGI* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the Hawaii projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | West CONUS (Lambert Conformal)  In CAVE select *Scale 🡪 GOES-R WConus* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West CONUS projection view (see below). * Frames are set to 15 * A portion of the product may be visible. If so, the product continues looping and updating | | |
|  | West Full Disk  In CAVE select *Scale 🡪 GOES-R WFD* | | |  | Requirement 2807, 2808 |
| Expected Result:   * The Scale is set to the West Full Disk projection view (see below). * Frames are set to 15 * The product is visible and continues looping and updating | | |
|  | Swap the product into a side pane | | |  | Requirement 2814, 2815 |
| Expected Result:   * The scale is set * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Repeat Step 147 thru Step 156 for the following channels:   * *All Channel: Channel 13(10.35u)* * *Derived: Cloud Phase (8.5-11.2 u)* * *RGB Composite: Daytime Composite #5* * *Conus With Legacy: GOES-R + GOES-13* | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| East Mesoscale | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | If data is available, repeat Step 147 thru Step 156 for East Mesoscale (EMESO) data using the following channel selections:   * *All Channel: Channel 16(13.3u)* * *All Channel: Channel 9(6.95u)* * *Derived: Fog (3.9-11.2 u)* * *RGB Composite: Icing(1.61,0.87,0.64)* * *Conus With Legacy: GOES-R + GOES-15*   Use the PRREGI scale in lieu of AKREGI and HIREGI scales, as appropriate | | |  | Requirement 2807, 2808, 2814, 2815, 2816, 2985 |
| Expected Result:  The selected products are displayed in the different scales and continue looping and updating | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main screen and all side panes |  | |  |  |
| * 1. Subsampling ABI GOES-R imagery Data   This section demonstrates the ability of subsampling (decimating) ABI GOES-R imagery data as defined by the following requirement:  3065. Loop frame sub-sampling. Demonstrate the ability to subsample (or decimate) in time available ABI imagery data. For example, create a 64 image loop of 24 hour loop of Scan Mode (5 minute refresh) imagery, where not all available images are used. | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | In CAVE select   * *Frames 🡪 64* * *Scale 🡪 North American* * *GOES-R 🡪 All Channels 🡪 West Conus 🡪 CH-07-3.90um* | | |  |  |
| Expected Result:   * *CH-07-3.90um* product displays over the North American projection (see below) * Note the Frame Count: \_\_\_\_\_\_. * Note the newest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Note the oldest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | | |
|  | Swap (move the product into Side Pane 1 | | |  |  |
| Expected Result:  The product displays in the side pane | | |
|  | In CAVE select   * *Frames 🡪 64* * *Scale 🡪 North American* * *Options 🡪 Time Options (checkbox)* * *GOES-R 🡪 All Channels 🡪 West Conus 🡪 CH-07-3.90um* | | |  |  |
| Expected Result:   * Time Options dialog (see below) opens | | |
|  | In the Time Options dialog select [OK] to accept the default settings. | | |  |  |
| Expected Result:   * *CH-07-3.90um* product displays over the North American projection (see Step 165) * Record the Frame Count: \_\_\_\_\_\_. * Record the newest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Record the oldest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | Compare the results from Step 168 to those collected in Step 165 | | |  |  |
| Expected Result:   * Frames Count: Match * Latest Timestamp: Match (see note) * Oldest Timestamp: Match (see note)   Note: Allowing for the arrival of new data which may cause differences, based on these steps being executed within moments of each other, the frame counts match and the latest and oldest date/timestamps should be within minutes if not exact. | | |
|  | Swap (move the product into Side Pane 2 | | |  |  |
| Expected Result:  The product displays in the side pane | | |
|  | In CAVE select   * *Frames 🡪 64* * *Scale 🡪 North American* * *Options 🡪 Time Options (checkbox)* * *GOES-R 🡪 All Channels 🡪 West Conus 🡪 CH-07-3.90um* | | |  |  |
| Expected Result:   * Time Options dialog opens | | |
|  | In the Time Options dialog, note the Valid Times for the Default Time Resolution | | |  |  |
| Expected Result:   * All Valid Time options are enabled | | |
|  | In the Time Options dialog:   * Note the Valid Times for the Default Time Resolution * Time Resolution: 🡪 15 min | | |  | Requirement 3065 |
| Expected Result:   * On average, one of every three times is now selected (see the 5min default image and the 15min image provided below):   Note: This is not a definitive result and may differ depending on how many products are available, the selections may fluctuate.    5min Default 15min | | |
|  | In the Time Options dialog select [OK] to the selection. | | |  | Requirement 3065 |
| Expected Result:   * *CH-07-3.90um* product displays over the North American projection (see Step 165) * Expected Frame Count: 48 * Record the Frame Count: \_\_\_\_\_\_. * Record the newest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Record the oldest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | Compare the results to those from Step 165 and Step 168 | | |  | Requirement 3065 |
| Note 1: Allowing for the arrival of new data which may cause differences, based on these steps being executed within moments of each other, the frame counts match and the latest.  Note 2: The oldest date/timestamps may vary depending upon which products were selected by the system during the decimation process, but should be close. | | |
| Expected Result:   * Frames Count: Less than previous * Latest Timestamp: Match (Note 1) * Oldest Timestamp: May differ (Note 2) | | |
|  | Swap (move the product into Side Pane 3 | | |  |  |
| Expected Result:  The product displays in the side pane | | |
|  | In CAVE select   * *Frames 🡪 64* * *Scale 🡪 North American* * *Options 🡪 Time Options (checkbox)* * *GOES-R 🡪 All Channels 🡪 West Conus 🡪 CH-07-3.90um* | | |  |  |
| Expected Result:   * Time Options dialog opens | | |
|  | In the Time Options dialog:   * Note the Valid Times for the Default Time Resolution * Time Resolution: 🡪 30 min | | |  |  |
| Expected Result:   * On average, one of every six times is now selected (see the 5min default image and the 30min image provided below): | | |
| Note: This is not a definitive result and may differ depending on how many products are available, the selections may fluctuate. | | |
| 5min Default 30min | | |
|  | In the Time Options dialog select   * [OK] | | |  | Requirement 3065 |
| Expected Result:   * *CH-07-3.90um* product displays over the North American projection (see Step 165) * Expected Frame Count: 30 * Record the actual Frame Count: \_\_\_\_\_\_. * Record the newest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Record the oldest frame date/time stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_. | | |
|  | Compare the results to those from Step 165, Step 168 and Step 174 | | |  | Requirement 3065 |
| Expected Result:   * Frames Count: Less than previous * Latest Timestamp: Match (Note 1) * Oldest Timestamp: May differ (Note 2)   Note 1: Allowing for the arrival of new data which may cause differences, based on these steps being executed within moments of each other, the frame counts match and the latest.  Note 2: The oldest date/timestamps may vary depending upon which products were selected by the system during the decimation process, but should be close. | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Clear the main pane and all side panes. | All panes are cleared | |  |  |
| * 1. Expanded Color Assignment Table   This section demonstrates the expanded color assignment table functionality as defined by the following requirement:  3062. Color Table Size (prototype). Expand the AWIPS-II color assignment table to 16384 colors (14 bits). GOES-R ABI imagery will be provided with 12 and 14 bit dynamic range. AWIPS-II currently uses an 8-bit (256 color) assignment table to render imagery. There are some applications, such as visual smoke/ash detection, where operations have reported a need for full-scale color differentiation - i.e. a larger color table. | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | Note: The tester is not limited to use of East Mesoscale data or the channel specified in this procedure. | | | | |
| In CAVE select   * *Scale 🡪 Eq. Cylindrical* * *GOES-R 🡪 All Channels 🡪 East Mesoscale 🡪 CH-10-7.34um* | | |  |  |
| Expected Result:   * *CH-*10-7.3*4um* product displays | | |
|  | Zoom into the image until the product fills the pane. | | |  |  |
| Expected Result:   * Selected product displays | | |
|  | Locate an area with variety of colors in close proximity and continue to zoom in until definite pixelation is visible. | | |  |  |
| Expected Result:   * Pixelated product displays | | |
|  | MB3 on the product legend then select *Imaging*… | | |  |  |
| Expected Result:   * The *Imaging…* dialog displays | | |
|  | In the *Imaging*… dialog, click on the *Interpolate Image* checkbox | | |  |  |
| Expected Result:   * The interpolated imagery product displays * Note the distinct color bands      * Distinct color bands are more visible as you zoom further into the image | | |
|  | In the *Imaging*… dialog, click on the *Interpolate Colors* checkbox | | |  |  |
| Expected Result:   * The color bands are blended together more smoothly | | |
|  | Do a screen capture of the product | Screenshot is located at:  \_\_\_\_\_\_\_\_\_\_\_\_\_ | |  |  |
|  | Deselect *Interpolate Colors* then MB3 click (do NOT hold) on the product legend | | |  |  |
| NOTE: The *Interpolate Image* checkbox must remain selected in order to continue displaying the distinct color bands. | | |
| Expected Result:   * The Colormap dialog displays with the *Colomap size* dropdown displaying 256 * Note the distinct color bands in the product imagery | | |
|  | In the Colormap dialog, change the Colormap size from 256 to 512 | | |  |  |
| Expected Result:   * Blending of Color banding is improved but banding is still noticeable | | |
|  | In the Colormap dialog, change the Colormap size from 512 to 1024 | | |  |  |
| Expected Result:   * The blending of color bands becomes even smoother (much less distinct) * Some color banding may still be noticeable in areas (note the where the blue pushes into the green in the example below): | | |
|  | In the Colormap dialog:   * Change the Colormap size from 1024 to 2048 * Compare the image to that seen in Step 190 | | |  |  |
| Expected Result:   * The blending of color bars is almost seamless * The display appears to be the same as that collected in in Step 190 | | |
|  | In the Colormap dialog set the following:   * Use Color Model: Select HSB radio button * Colormap size: 256 * Upper Color   + Hue: 27   + Saturation: 100   + Bright: 100   + Alpha: 255   + MB1 [Set] * Lower Color   + Hue: 210   + Saturation: 100   + Bright: 100   + Alpha: 255   + MB1 [Set] * Upper Slide Bar: -29.169 * Lower Slide Bar: -109.0 * Select [Interpolate] | | |  |  |
| Expected Result:   * The non-gray/white portion of color bar displays a 6-color color gradient from mid-blue to orange-red * The product image changes to reflect the same color gradient * Note the different color bands are still visible in the displayed image | | |
|  | Monitor the image in the main pane and record the value setting for the Upper Slide Bar arrow as the Color Map Size is changed from 256 to 512, 1024 and 2048 | | |  |  |
| NOTE: As the number of colors change, the range of values is recalculated and as a result, may not correspond with those for the previous number of colors. Therefore, the Upper/Lower Slide Arrow values will reflect these changes. | | |
| Expected Result:   * The distinction between color bands diffuses as the Color Size is increased * Record the Upper Slide Bar value changes:   + 256: -29.169 \_\_\_\_\_\_\_\_\_\_\_\_\_\_   + 512: -29.252 \_\_\_\_\_\_\_\_\_\_\_\_\_\_   + 1024: -29.294 \_\_\_\_\_\_\_\_\_\_\_\_\_\_   + 2048: -29.315 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | In the Colormap dialog, right click and hold MB3 on the product legend and select “*Edit Colors…*” in the popup menu | The *Edit Colors* dialog displays for the default color map | |  |  |
|  | In the Edit Colors dialog’s “Use color model:” field   * Click on the color quantify selection dropdown and select the “*2048 Colors*” option * Select “*Save As…*” and name the save as “GOESR\_Test2” * Click [OK] | | |  | Requirement 3062  This section/step is in preliminary state and has not been fully developed. |
| Expected Result:   * The selection is made * Additional results TBD | | |
|  | Zoom into an area containing yellow or blue in the product | | |  |  |
| Expected Result:  A discernable gradiation of colors is visible as seen in the images provided below: | | |
|  | Right click and hold MB3 on the product legend and select “*Imaging…*” in the popup menu | | |  |  |
| Expected Result:   * The Imaging… dialog displays | | |
|  | In the Imaging… dialog’s second (lower) dropdown menu, select:  *Sat/IR/CIRA (IR Default) 🡪 <GOES-R>🡪 <2048 Color Map>* | | |  | Requirement 3062  This section/step is in preliminary state and has not been fully developed. |
| Expected Result:  Due to the increased number of colors, the previously discernable gradiation of colors is no longer apparent | | |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Close all dialogs and clear all panes |  | |  |  |
| * 1. Concurrent Processing and Display of GOES-R Imagery   This section demonstrates concurrent ingesting, decoding, processing and display of GOES-R imagery data as defined by the following requirements:  2807. ABI Channels 1-5. Process/display enhanced spatial resolution RaFTR data from at least simulated ABI Channels 1-5. Rationale: These bands are 4 and 16 times the spatial resolution of the bands tested in Demo #1. Evaluate performance impact of the enhanced spatial resolution.  2810. AWIPS performance. Ascertain and characterize the capability of the AWIPS software and development/test configuration to keep up with RaFTR's real-time transmission of the full GS-F&PS Appendix E data flow loading. Any chokepoints and/or bottlenecks shall be identified. This includes all of the AWIPS II functionality: ingest, decode, store, retain, display, and purge.  2812. Mesoscale Loops. Be able to display a loop of at least 48 consecutive mesoscale images at a rate of at least 10 frames/second.  2814. Display Loading. AWIPS-II concurrent display capabilities (see Section 5.0 RVTM for details).  2816. Channel Differencing. Provide Capability for ABI channel differencing e.g. 11.2um – 3.9um.  2985. D2D selection menus. Be able to display any GOES-R ABI data on D2D via selection on satellite menu.  3014. 96 Full disk Images in Loop. Evaluate performance impact due to increasing imagery loop length for full disk GOES-R imagery to 96 images in loop. | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | There should be one CAVE session in progress from the previous section. If not, start CAVE session 1. Ensure that all panes are cleared. | CAVE session 1 is available. All panes are cleared. | |  | Requirement 2814 |
|  | On a second terminal, start CAVE session 2. | CAVE session 2 is available | |  | Requirement 2814 |
| CAVE-1 Preparation | | | | | |
|  | CAVE 1 – Product 1  In CAVE-1 select   * *Frames 🡪 15* * *Scale 🡪 North American* * *GOES-R 🡪 All Channels 🡪 East Conus 🡪 CH-01-0.47um* | | |  | Requirement 2807, 2985 |
| Expected Result:   * *Frames are set to 15* * *No more than 15 is displayed in Frame counter* * *CH-01-0.47um* product displays over the North American projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 1 | | |  |  |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | CAVE 1 – Product 2  In CAVE-1 select   * *Frames 🡪 24* * *Scale 🡪 Eq Cylindrical* * *GOES-R 🡪 All Channels 🡪 West Full Disk 🡪 CH-04-1.38um* | | |  | Requirement 2807, 2985 |
| Expected Result:   * *Frames are set to 24* * *No more than 24 is displayed in Frame counter* * *CH-04-1.38um* product displays over the Eq Cylindrical projection | | |
|  | Loop the product and verify the product updates | | |  |  |
| Expected Result:   * The product is visible * No more than 24 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 2 | | |  |  |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | CAVE 1 – Product 3  In CAVE-1 select   * *Frames 🡪 48* * *Scale 🡪 GOES-R WConus* * *GOES-R 🡪 All Channels 🡪 West Conus 🡪 CH-08-6.19um* | | |  | Requirement 2807, 2985 |
| Expected Result:   * *Frames are set to 48* * *No more than 48 is displayed in Frame counter* * *CH-08-6.19um* product displays over the GOES-R WConus projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible * No more than 48 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 3 | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | CAVE 1 – Product 4  In CAVE-1 select   * *Frames 🡪 64* * *Scale 🡪 GOES-R AKREGI* * *GOES-R 🡪 Derived 🡪 Alaska 🡪 Cloud Phase (8.5-11.2u)* | | |  | Requirement 2807, 2812, 2985 |
| Expected Result:   * *Frames are set to 64* * *No more than 64 is displayed in Frame counter* * *Cloud Phase (8.5-11.2u)* product displays over the GOES-R AKREGI projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible * No more than 64 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 4 | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
| CAVE 1: Requirement 3014: 96-Frame Full Disk Images | | | | | |
|  | CAVE 1 – Product 5  Import the new Editor Display into CAVE-1:   * *CAVE 🡪 Import 🡪 Displays…* * *Locate the file ‘goesR\_96frame.xml’ and select [OK]* | | |  | Note: This action only affects the current main plane, not the previously loaded side panes. |
| Expected Result:   * *The Editor Display loads* * *The Frames: dropdown menu shows 96* | | |
|  | Perform the following actions in CAVE:   * *Scale 🡪 Eq. Cylindrical* * *GOES-R 🡪 All Channels 🡪 West Mesoscale 🡪 CH-10-7.34um* | | |  | Requirement 2807, 2810, 2812, 2816, 2985, 3014 |
| Expected Result:   * *Frames are set to 96* * *CH-10-7.34um* product displays over the Eq. Cylindrical projection * *The product displays and contains 96 frames* | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2812, 2814, 2816 |
| Expected Result:   * The product is visible * No more than 96 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to any side pane (all four side panes should be filled so it doesn’t matter which one is selected for the swap) | | |  | Requirement 2810, 2812, 2814, 2816, 3014 |
| Expected Result:   * The product in the side pane swaps with the 96-frame product in the main pane * Both products continue looping and updating * The product returned to the main pane contains the number of frames initially loaded * The 96-frame product that moved to the side pane now contains only 8 frames | | |
|  | Move (swap) the 96-frame product back to the main pane | | |  | Requirement 2810, 2812, 2814, 2816, 3014 |
| Expected Result:   * The 96-frame product is in the main pane * Both products continue looping and updating * The product returned to the side pane contains only 8 frames | | |
|  | Verify five different products are running in all five panes of the CAVE-1 session continue looping and updating | The products continue looping and updating | |  | Requirement 2807, 2810, 2812, 2814, 2816 3014 |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
| CAVE-2 Preparation | | | | | |
|  | Check to see if time has expired for video recording.   * + Restart if necessary using command provided in Step 19   + Record video filename and start time | | |  | * Filename:   \_\_\_\_\_\_\_\_\_\_\_\_   * Start time:   \_\_\_\_\_\_\_\_\_\_\_\_ |
| **Note:** This step will record a 5 minute video. This time can be modified for convenience of the test.  If desired, the duration can be extended to longer periods by increasing the “duration” parameter. | | |
|  | CAVE 2 – Product 1  In CAVE-2 select   * *Frames 🡪 15* * *Scale 🡪 N. Hemisphere* * *GOES-R 🡪 All Cannels 🡪 East Conus 🡪 CH-02-0.64um* | | |  | Requirement 2807, 2985 |
| Expected Result:   * *Frames are set to 15* * *No more than 15 is displayed in Frame counter* * *CH-02-0.64um* product displays over the N. Hemisphere projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2814 |
| Expected Result:   * The product is visible * No more than 15 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 1 | | |  | Requirement 2810, 2814 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | Note: Known Issue: There is a known issue related to reprojecting the longitude lines for the Mercator scale. The display of the maps and products is not affected. | | |  | Requirement 2807, 2808 |
| CAVE 2 – Product 2  In CAVE-2 select   * *Frames 🡪 36* * *Scale 🡪 Mercator* * *GOES-R 🡪 All Channels 🡪 East Conus 🡪 CH-03-0.87um* | | |
| Expected Result:   * *Frames are set to 36* * *No more than 36 is displayed in Frame counter* * *CH-03-0.87um* product displays over the Mercator projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2814 |
| Expected Result:   * The product is visible * No more than 36 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 2 | | |  | Requirement 2810, 2814 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | CAVE 2 – Product 3  In CAVE-2 select   * *Frames 🡪 48* * *Scale 🡪 GOES-R EConus* * *GOES-R 🡪 All Channels 🡪 East Conus 🡪 CH-05-1.61um* | | |  | Requirement 2807, 2812, 2985 |
| Expected Result:   * *Frames are set to 48* * *No more than 48 is displayed in Frame counter* * *CH-05-1.61um* product displays over the GOES-R EConus projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible * No more than 48 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 3 | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
|  | CAVE 2 – Product 4  In CAVE-2 select   * *Frames 🡪 64* * *Scale 🡪 GOES-R HIREGI* * *GOES-R 🡪 Derived 🡪 Hawaii 🡪 Moisture (11.2-12.3u)* | | |  | Requirement 2807, 2812, 2985 |
| Expected Result:   * *Frames are set to 64* * *No more than 64 is displayed in Frame counter* * *Moisture (11.2-12.3u)* product displays over the GOES-R HIREGI projection | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible * No more than 64 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to Side Pane 4 | | |  | Requirement 2810, 2812, 2814 |
| Expected Result:   * The product is visible in the side pane * The product continues looping and updating * No more than 8 frames are displayed in the side pane | | |
| CAVE 2: Requirement 3014: 96-Frame Full Disk Images | | | | | |
|  | CAVE 2 – Product 5  Import the new Editor Display into CAVE-2:   * *CAVE 🡪 Import 🡪 Displays…* * *Locate the file ‘goesR\_96frame.xml’ and select [OK]* | | |  | Note: This action only affects the current main plane, not the previously loaded side panes. |
| Expected Result:   * *The Editor Display loads* * *The Frames: dropdown menu shows 96* | | |
|  | Perform the following actions in CAVE:   * *Scale 🡪 Eq. Cylindrical* * *GOES-R 🡪 All Channels 🡪 West Full Disk 🡪 CH-12-9.61um* | | |  | Requirement 2807, 2810, 2812, 2816, 2985, 3014 |
| Expected Result:   * *Frames are set to 96* * *CH-12-9.61um* product displays over the Eq. Cylindrical projection * *The product displays and contains 96 frames* | | |
|  | Loop the product and verify the product updates | | |  | Requirement 2810, 2812, 2814, 2816 |
| Expected Result:   * The product is visible * No more than 96 frames are displayed * The product continues looping and updating | | |
|  | Move (swap) the product to any side pane (all four side panes should be filled so it doesn’t matter which one is selected for the swap) | | |  | Requirement 2810, 2812, 2814, 2816, 3014 |
| Expected Result:   * The product in the side pane swaps with the 96-frame product in the main pane * Both products continue looping and updating * The product returned to the main pane contains the number of frames initially loaded * The 96-frame product that moved to the side pane now contains only 8 frames | | |
|  | Move (swap) the 96-frame product back to the main pane | | |  | Requirement 2810, 2812, 2814, 2816, 3014 |
| Expected Result:   * The 96-frame product is in the main pane * Both products continue looping and updating * The product returned to the side pane contains only 8 frames | | |
|  | Verify five different products are running in all five panes of the CAVE-2 session continue looping and updating | The products continue looping and updating | |  | Requirement 2807, 2810, 2812, 2814, 2816 |
|  | Check the video file to ensure it was successfully captured. | The video displays | |  |  |
|  | Stop the video recording if not completed. | Video recording stopped | |  |  |
| COMPLETION OF GOES-R West (Mode 3) AND GOES-R East (Mode 3) TEST  At this point of the FIRST test run of this test procedure, the RaFTR can be reconfigured to operate per the scenarios identified in Requirement 2815. | | | | | |
| Concurrent Display and Performance | | | | | |
|  | * Allow the CAVE-1 and CAVE-2 sessions to continue to run to complete the current 24 hour period (from current test start). * Periodically monitor CAVE-1 and CAVE-2 sessions * Periodically swap products between the main and side panes in both sessions.   IMPORTANT: Always return the 96-frame product to the main pane. | | |  | Requirement 2807, 2810, 2812, 2814, 2816, 3014 |
| Expected Result:   * Products swap without issue * Products continue looping and updating * No system slowdowns or crashes occur | | |
|  | IMPORTANT: DO NOT STOP LOOPING OF ANY PRODUCT | | | | |
| * 1. AWIPS Performance   This section demonstrates AWIPS Performance in the processing of GOES-R imagery data as defined by the following requirements:  2809. EDEX Features. Demonstrate EDEX decode/store/retention/purge of the RaFTR stream.  2810. AWIPS performance. Ascertain and characterize the capability of the AWIPS software and development/test configuration to keep up with RaFTR's real-time transmission of the full GS-F&PS Appendix E data flow loading. Any chokepoints and/or bottlenecks shall be identified. This includes all of the AWIPS II functionality: ingest, decode, store, retain, display, and purge. | | | | | |
| Note: Both the baseline and the test performance metrics should be collected over a full 24 hour period, preferably starting at and covering the same period (i.e., 0600z – 0559z). | | | | | |
|  | Verify the system has been running for 24 hours | No issues or problems were experienced, all products continued to load, process and update. | |  |  |
|  | Open a terminal and execute the following performance metrics collection script:   * *getStats.sh* * Follow instructions as prompted: * Hitting return without entering a date/time will collect the latest 24-hr period | | |  |  |
| Expected Result:  A list of Ingest Processing Metrics is produced for the previous 24 hours (or the period set when executing the script) | | |
|  | Collect the following log(s) for later analysis and review: | | |  |  |
| Note: At this time GOES-R data is not captured in the satellite log. | | |
| * *edex-ingest-yyyymmdd.log* | | |
| Expected Result:  Logs are collected | | |
|  | Review/compare the Ingest Processing Metrics results against baseline performance to determine whether Satellite Ingest and Latency performance has been affected by the processing of GOES-R data | | |  | Requirement 2809, 2810 |
| Expected Result:   * Satellite Ingest performance is consistent with the Baseline Performance results collected previously * Satellite Latency performance is consistent with the Baseline Performance results collected previously | | |
|  | In the pgadmin menu bar click on the SQL icon. | A query dialog is opened | |  |  |
|  | In the pgadmin query dialog execute the following sql command to collect GOES-R processing statistics from the database:  *select*  *substring(grouping from 'value=\"(.\*?)\"') as pluginName,*  *field, TO\_char(endDate, 'YYYY-MM-DD HH24') as period,*  *SUM(sum)/SUM(count) as avg,*  *max(max) as max,*  *SUM(count) as totalCount*  *from metadata.events.aggregate*  *where eventtype='com.raytheon.uf.common.stats.ProcessEvent' and*  *substring(grouping from 'value=\"(.\*?)\"') = 'goes-r'*  *group by pluginName, field, period*  *order by period DESC, field DESC, pluginName;* | | | | |
| Expected Result:  GOES-R processing statistics are consistent with those of other satellite data processing statistics   * Results appear as shown below:   Sample Output:  *"pluginname";"field";"period";"avg";"max";"totalcount"*  *"goes-r";"processingTime";"2013-11-18 19";72.8064516129032;1434;93*  *"goes-r";"processingLatency";"2013-11-18 19";73.247311827957;1436;93*  *"goes-r";"processingTime";"2013-11-11 22";329;541;2*  *"goes-r";"processingLatency";"2013-11-11 22";556.5;995;2*  *"goes-r";"processingTime";"2013-11-08 21";104.6;547;10*  *"goes-r";"processingLatency";"2013-11-08 21";105.3;550;10* | | |  | Requirement 2809, 2810 |
|  | If the 96-frame product is still in the main pane, swap it with any side pane. | | |  |  |
| Expected Result:   * The product previously in the side pane is now displayed * All products continue looping and updating | | |
|  | Full-disk GOES-R imagery at 32 images in loop.   * *Set the D2D scale to GOES-R EFD* * Set the Frames to 32 * DO NOT STOP LOOPING * Wait 10 min then repeat Step 254 * Review the results and compare to the results collected in Step 254 | | |  | Requirement 2809, 2810 |
| Expected Result:   * GOES-R processing statistics are consistent with those of other satellite data processing statistics * No significant degradation of performance is noted from original run | | |
|  | Full-disk GOES-R imagery at 64 images in loop.   * Change the Frames to 64 * Start looping if not already in progress * Wait 10 min then repeat Step 254 * Review the results and compare to the results collected in Step 254 and in Step 256 | | |  | Requirement 2809, 2810 |
| Expected Result:   * GOES-R processing statistics are consistent with those of other satellite data processing statistics * No significant degradation of performance is noted from the previous runs | | |
|  | Move (swap) the 96-frame product back to the main pane. | | |  |  |
| Expected Result:   * The 96-frame product is displayed in the main pane * The product is still looping and updating * The product contains 96 frames | | |
|  | Full-disk GOES-R imagery at 96 images in loop.   * Wait 10 min then repeat Step 254 * Review the results and compare to the results collected at Step 254, Step 256 and Step 257 | | |  | Requirement 2809, 2810 |
| Expected Result:   * GOES-R processing statistics are consistent with those of other satellite data processing statistics * No significant degradation of performance is noted from previous runs | | |
|  | Repeat Step 254 during the ingest of a major model runs. i.e.   * GFS Model Runs at 00Z, 06Z,12Z, 18Z   e.g. The 12Z model run arrives at approximately 1630Z | | |  | Requirement 2810 |
| Expected Result:  GOES-R processing statistics are consistent with those of other satellite data processing statistics | | |
| * 1. Retention of AWIPS Data   This section will demonstrate the AWIPS II System’s Retention and Purging of GOES-R imagery data for partially verification of the following three requirements:  2809. EDEX Features. Demonstrate EDEX decode/store/retention/purge of the RaFTR stream.  2810. AWIPS performance. Ascertain and characterize the capability of the AWIPS software and development/test configuration to keep up with RaFTR's real-time transmission of the full GS-F&PS Appendix E data flow loading. Any chokepoints and/or bottlenecks shall be identified. This includes all of the AWIPS II functionality: ingest, decode, store, retain, display, and purge.  2811. Retain at least 24 hours of the full Appendix-E data stream. | | | | | |
| Note: System should have been running, ingesting and storing GOES-R imagery data for at least 24 hours prior to executing this test to ensure collection of sufficient data has taken place. | | | | | |
| Note: Purge runs on the half hour and may take at least 15 minutes to run. Thus, you may need to run the query several times to verify the GOES-R data purge. | | | | | |
|  | In a terminal window ssh to the machine with the location of the edex log files.   * *ssh awips@dx3-<serverID> (or dx4-)* | The user is logged into the node. | |  |  |
| **Note:** AWIPS II logs data on both dx3 and dx4. If the expected messages aren’t on one node check the other. | | |
|  | Change to the edex logs directory   * *cd /awips2/edex/logs* | The working directory is changed to the location of the log files. | |  |  |
|  | Search the <dx3 and dx4 ingest logs> for the desired sectorID name (i.e., AKREGI, WFD, etc.) entries showing that data has been processed. | | |  |  |
| Expected Result:  Entries indicate successful purging of GOES-R data have the following form:  *INFO yyyy-mm-dd hh:mm:ss,nnn [Purge-SATELLITE-Thread] PurgeLogger: EDEX - SATELLITE::Purged xx items for key [sectorID=AKREGI][physicalElement=CH-4-1.38um]* | | | | |
|  | Search the <dx3 and dx4 purge logs> for the desired sectorID name (i.e., AKREGI, WCONUS, etc.) and locate the purge entries. These entries will be listed under the ‘SATELLITE’ umbrella. | | |  | Requirement 2809, 2810 |
| Expected Result:  Entries indicate successful purging of GOES-R data have the following form:  *INFO yyyy-mm-dd hh:mm:ss,nnn [Purge-SATELLITE-Thread] PurgeLogger: EDEX - SATELLITE::Purged xx items for key [sectorID=AKREGI][physicalElement=CH-4-1.38um]* | | | | |
|  | In the pgadmin menu bar click on the SQL icon. | A query dialog is opened | |  |  |
|  | * In pgadmin execute the following sql command to identify the oldest available processed GOES-R files from GOES-16 and GOES-17.   *select distinct count(distinct reftime), min(distinct reftime), max(distinct reftime), max(distinct reftime)-min(distinct reftime) as time\_interval, creatingentity, sectorid, physicalelement from satellite where creatingentity like 'GOES-16' or creatingentity like 'GOES-17' group by creatingentity, sectorid, physicalelement order by creatingentity*   * Export the resulting file to a location for later review | | |  | Requirement 2809, 2810, 2811 |
| Expected Result:   * The largest time interval should be at least 24-25 hours (allowing for latest purge run). * Verify there is at least 24 hours of full-disk GOES-R data available. * Record the largest time interval and the max/min date/timestamps associated with that time interval:   **GOES-16:**  SectorID: \_\_\_\_\_\_\_\_\_\_\_  Channel: \_\_\_\_\_\_\_\_\_\_\_  Time Interval: \_\_\_\_\_\_\_\_\_\_\_  Min Timestamp: \_\_\_\_\_\_\_\_\_\_\_  Max Timestamp: \_\_\_\_\_\_\_\_\_\_\_  **GOES-17:**  SectorID: \_\_\_\_\_\_\_\_\_\_\_  Channel: \_\_\_\_\_\_\_\_\_\_\_  Time Interval: \_\_\_\_\_\_\_\_\_\_\_  Min Timestamp: \_\_\_\_\_\_\_\_\_\_\_  Max Timestamp: \_\_\_\_\_\_\_\_\_\_\_   * Record the path/location of the exported file(s):   File Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
|  | Compare the Step 266 query results from to the latest displayed product legends and verify the product and timestamps match. | The latest hour of GOES-R data is available. The products and /timestamps match | |  |  |
|  | Review the results collected at Step 266 to those previously collected at Step 15 and verify the oldest previously recorded file date/time stamps are no longer listed in the latest query. | The oldest file previously displayed is no longer listed. | |  | Requirement 2809, 2810 |
|  | Completed test for RaFTR/TNCF/AWIPS-II configuration:   * *GOES-R West Scan Mode (Mode 4) and GOES-R East Scan Mode (Mode 3)* | | |  | Requirement 2815 |
| Expected Result:  Successfully passes test | | |
| * 1. Verification of GOES-R Data Mode Operation   Repeat this test procedure with the RaFTR operating and providing simulated GOES-R data to the AWIPS II system as defined by the mode scenarios contained in Requirement 2815.  2815 The RaFTR/TNCF/AWIPS-II will run flowing GOES East and West data for at least 24 consecutive hours in the following scenarios :  a. GOES West Scan Mode (Mode 4) and GOES East Flex Mode (Mode 3)  b. GOES West Scan Mode (Mode 4) and GOES East Scan Mode (Mode 4)  c. GOES West Flex Mode (Mode 3) and GOES East Flex Mode (Mode 3)  d. GOES West Flex Mode (Mode 3) and GOES East Scan Mode (Mode 4) | | | | | |
|  | Configure the RaFTR to provide data while periodically changing mode per the scenarios identified in Requirement 2815 | | |  |  |
| Expected Result:  The RaFTR provides data per the scenarios | | |
|  | Repeat this Test Case while the data inputs are changing per the mode scenarios. | | |  | Requirement 2815 |
| Expected Result:   * Data products are able to be ingested * Data products are able to be decoded * Data products are able to be processed * Data products are able to be displayed * Data products are able to be retained/stored * Data products are able to be purged * Test passes successfully | | |
| * 1. Testing Completion and Clean-up | | | | | |
|  | Test Completion | Test successfully completes | |  | Requirement 2815, 2856 |
| Post-Test Data Collection | | | | | |
|  | Gather all data, screen captures, and videos collected during this test for later review and analysis. |  | |  |  |
| Clean-up before exiting | | | | | |
|  | Close all windows and log out as appropriate. |  | |  |  |
| End of the GOES-R Test 2 Test Case. | | | | | |

1. Requirements verification traceability matrix (RVTM)

If requirements are attached to the test cases, then maintain them together.

**Table 2 – Requirements Verification Traceability Matrix (RVTM)**

| Rqmt | | Description | Test Step (s) |
| --- | --- | --- | --- |
| **2807** | **TO** | **ABI channels 1-5**  Process/display enhanced spatial resolution RaFTR data from at least simulated ABI channels 1-5. Rationale: These bands are 4 and 16 times the spatial resolution of the bands tested in Demo #1. Evaluate performance impact of the enhanced spatial resolution. | **43,46,50–57,64, 68–71,81,85–91, 98,102, 103–108, 111, 113, 118, 122–129,132, 136, 139,143–147, 149, 152, 195,198, 201, 204,208 212, 214, 217,220, 223, 227, 231, 232** |
| **2809** | **TO** | **EDEX Features**  Demonstrate EDEX decode/store/retention/purge of the RaFTR stream. | **10–15,18,237,239, 241–243,249,251, 253** |
| **2810** | **TO** | **AWIPS performance**  Ascertain and characterize the capability of the AWIPS software and development/test configuration to keep up with RaFTR's real-time transmission of the full GS-F&PS Appendix E data flow loading. Any chokepoints and/or bottlenecks shall be identified. This includes all of the AWIPS II functionality: ingest, decode, store, retain, display, and purge. | **10–15,18,202,203, 206,208–213, 215, 216, 218,219, 221, 222, 224,225, 227–232,237, 239, 241,242, 244, 245, 249, 251, 253** |
| **2811** | **TO** | **Active data retention**  Retain at least 24 hours of the full Appendix-E datastream. | **251** |
| **2812** | **TO** | **Mesoscale Loops**  Be able to display a loop of at least 48 consecutive mesoscale images at a rate of at least 10 frames/second. | **202–206,208–212, 220–225,227–232** |
| **2814** | **TO** | **Display Loading**  Demonstrate the following AWIPS-II display concurrent capabilities:   1. At least two instances CAVE D2D running for demo (in five pane view) 2. At least five images loaded in D2D simultaneously - one image per D2D pane, including interchangeably any ABI channel 3. All panes looping with a minimum loop-size of 8 frames 4. Display images updating in real-time as new imagery becomes available 5. Existing product labels and color tables | **44, 45, 47–49, 56, 57, 62, 63, 65–67, 73, 74, 79, 80, 82–84, 90, 91, 96, 97, 99–101, 107, 108, 111, 116, 117, 119–121, 128, 129,132, 137, 138, 140–142, 148,149, 152, 193, 194, 209–212, 228–232** |
| **2815** | **TO** | **24 Hour Product Flow**  The RaFTR/TNCF/AWIPS-II will run flowing GOES-R East and GOES-R West data for at least 24 consecutive hours in the following scenarios:   1. GOES-R West Scan Mode (Mode 4) and GOES-R East Flex Mode (Mode 3) 2. GOES-R West Scan Mode (Mode 4) and GOES-R East Scan Mode (Mode 4) 3. GOES-R West Flex Mode (Mode 3) and GOES-R East Flex Mode (Mode 3) 4. GOES-R West Flex Mode (Mode 3) and GOES-R East Scan Mode (Mode 4) | **4, 5,44–46, 49, 50, 56, 57, 62–64, 67, 73, 74, 79–81, 84, 90, 91,96, 97, 101, 107,108, 111, 116, 117,121, 128, 129, 132,137, 138, 142, 148,149, 152, 254, 256, 257** |
| **2856** | **TO** | **Demonstration AWIPS-II Configuration**  Demonstration should be performed on a operationally representative clustered environment. | **257** |
| **3014** | **TO** | **96 Full disk Images in Loop**  Evaluate performance impact due to increasing imagery loop length for full disk GOES-R imagery to 96 images in loop. | **208,210–212, 227, 229, 230, 232** |
| **3065** | **TO** | **Loop frame sub-sampling**  Demonstrate the ability to subsample (or decimate) in time available ABI imagery data. For example, create a 64 image loop of 24 hour loop of Scan Mode (5 minute refresh) imagery, where not all available images are used. | **163–165, 169, 170** |
| **Applicable Requirements (for system modification)** | | | |
| **2816** | **R** | **Channel Differencing**  Provide Capability for ABI channel differencing e.g. 11.2um - 3.9um | **20, 23, 26, 29, 32, 36, 39, 46, 56, 57, 73,74, 90, 91, 107, 108,111, 129, 132, 149,152, 208–212, 227–232** |
| **3062** | **R** | **Color Table Size (prototype)**  Expand the AWIPS-II color assignment table to 16384 colors (14 bits). GOES-R ABI imagery will be provided with 12 and 14 bit dynamic range. AWIPS-II currently uses an 8-bit (256 color) assignment table to render imagery. There are some applications, such as visual smoke/ash detection, where operations have reported a need for full-scale color differentiation - i.e. a larger color table. | **187, 190** |
| **Deferred Requirements** | | | |
| **2808** | **R** | **Full Resolution Fixed Grid**  Process Fixed Grid, Full Disk, Full Resolution RaFTR data (GOES-R East and GOES-R West) and display in standard CAVE Map projections. | **43, 46, 50–57, 64, 68–74, 81, 85–91, 102–108, 111, 122–127,129, 132, 136, 139,143–147, 149, 152, 217** |
| **2985** | **R** | **D2D selection menus**  Be able to display any GOES-R ABI data on D2D via selection on satellite menu. | **46, 50, 57, 64, 74, 81,91,98,108, 111, 118,129, 132, 149, 152,195, 198, 201, 204,208, 214, 220, 223, 227** |
|  | |  |  |
| **Notes** | |  |  |
|  | | All F&PS Appendix E products are in NetCDF4 format as are all products coming across this interface. | |
|  | | The purpose of the December test and demonstration, besides showing development progress to date, is to help shape next steps for the next phase of development/testing (January-April 2014). | |