



AWIPS Operational Build 21.4.1 Final Release Notes

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Advanced Weather Interactive Processing System (AWIPS)
Operations and Maintenance

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Overview

The Release Notes have been prepared for **AWIPS software release OB 21.4.1**. These Release Notes, which follow the standard format applied to most AWIPS Release Notes documents, consist of the following five sections:

- **Section 1. Requirements DRs.** This section lists the requirements Discrepancy Reports (DRs) identified for the current release.
- **Section 2. Passed DRs.** This section lists the **205 DRs** that were passed at the Raytheon Facility Test Labs and included in the current release, **OB 21.4.1**. This includes DRs written during the current release as well as DRs deferred from previous releases to this release. [*Note:* All DRs that were passed prior to this release can be accessed through the AWIPS O&M Redmine database.]
- **Section 3. Open DRs.** This section addresses open DRs and DCSs that have been deferred to the next immediate release. The DRs identified in this section may have been initiated during the current release or during a previous release. The DCSs may have been initiated from a previous release or initiated in the next immediate release.
- **Section 4. Design Changes and COTS FOSS Requests: 86 Design Changes and 69 CFRs** are summarized in this section.
- **Section 5. Known Problems, Workarounds, and Additional Release Notes.** This section lists any workarounds or additional release notes that have been issued for the current release. They are identified by their Release Note title. Also identified in this section are any known problems (Priority: 1-Critical), either in the current release or in previous releases, which have been deferred to an unnamed future release. These are identified by the Problem title.

1. Requirements DRs

This section is reserved for requirements Discrepancy Reports (DRs) identified for the current release. No such requirements DRs were identified for the current release.

2. Passed DRs

This section lists the **205 Discrepancy Reports (DRs)** passed at the Raytheon Facility Test Labs and included in the current release (OB 21.4.1). These DRs were either written during the current release or deferred from a previous release. [**Note:** All DRs that were passed prior to this release can be accessed through the AWIPS Redmine database.]

The following tables identify the DRs that have passed by Redmine DR number (see column 2), and briefly describes them (see column 3). Expanded descriptions follow the table. Sequential numbers in column 1 of the table cross-reference each of the DRs to its expanded description.

DRs: Release OB 21.4.1

| # | ID# | Subject |
|----|---------|-----------------------------------------------------------------------------------------------------------|
| 1 | 2002845 | Paint logging should only happen when it takes > 500ms |
| 2 | 2002846 | GFE formatters using incorrect hazard headlines in 21.4.1 |
| 3 | 2002847 | AbsTime needs to better implement datetime APIs to be more backwards compatible with 20.3.2 GFE localapps |
| 4 | 2002848 | Fix HWR reporting in GMT instead of local time |
| 5 | 2002851 | WarnGen: Extension Area Configuration Failing |
| 6 | 2002854 | Fix performance regression in DatabaseID.equals(Object) |
| 7 | 2002860 | Selecting a model from BOIVerify GUI takes too long to load |
| 8 | 2002862 | UGA Bug Fixes From Beta Testing |
| 9 | 2002867 | RCM Process fills /tmp inode count with keystore files |
| 10 | 2002868 | Hazard geometry is being corrupted for an event that is being continued with other events/zones added on. |
| 11 | 2002869 | AbsTime Errors |
| 12 | 2002871 | GFE service backup: failed site port set incorrectly in 21.4.1 |
| 13 | 2002874 | Unable to use GFE Fit to Data During a Shared Display Session in Collaboration |
| 14 | 2002877 | Error in date format when loading Best Estimate QPE in MPE |
| 15 | 2002879 | 21.4.1 - Remove awips2-gfsuite from AWIPS II Database Server group |
| 16 | 2002882 | Time Scale Ruler in Hazard Services Console Too Small and Not Resizable |
| 17 | 2002883 | WarnGen Snow Squall Template QC Fixes |
| 18 | 2002884 | D2D:ATCF - Name an Existing Storm: Cannot change or edit the storm name |
| 19 | 2002885 | D2D:ATCF - Enter Fix Data... - Satellite is saying it's not selected when it is |
| 20 | 2002886 | Update GFE Hazards.cmap files to be in sync with the contents of VTCTable.py |
| 21 | 2002892 | WarnGen Snow Squall Template CTA Fixes |
| 22 | 2002895 | D2D Radar: check in most recent NDM updates for radar |
| 23 | 2002896 | Need ability to disable Registry Status check for sites that don't use Registry |
| 24 | 2002898 | Prevent grid coverage error when loading radar cross section from Volume Browser |
| 25 | 2002900 | Service Accounts have Incorrect Environment Settings |
| 26 | 2002904 | Update build for ATCF |
| 27 | 2002913 | Unable to Use GFE Tools in Collaboration Session with Shared Display |

| # | ID# | Subject |
|----|---------|------------------------------------------------------------------------------------------------------------------|
| 28 | 2002917 | Add Tsunami EAS to AWIPS startup menu |
| 29 | 2002928 | UGA Bug Fixes From Early Forecaster Testing on TBW4 |
| 30 | 2002931 | AvnFPS: Python error when generating an amended TAF |
| 31 | 2002937 | blank satellite frames with null level |
| 32 | 2002938 | Offices missing ability to see available choices to compare to when setting a default CTA of impact |
| 33 | 2002939 | Hazard information in the WHAT... and WHEN... bullets match the order of the hazards in the Summary Headline |
| 34 | 2002940 | Add missing Hard Freeze Watch/Warning Requirements to the NPW HazSimp turnkey |
| 35 | 2002941 | When self.polygonBased is set to True, Hazard Services should query the warnngenloc table and not the city table |
| 36 | 2002942 | Unable to issue an FA.A.* and FF.A.* hazard events together in the same zone |
| 37 | 2002943 | GFE Interoperability Painting Errors and Performance Problems |
| 38 | 2002944 | GFE - Aviation_populate produces an ISC error message in AV |
| 39 | 2002948 | Developer deploy of edex doesn't work without OGC git repository's FOSS imported |
| 40 | 2002949 | Pypies MkdirLockManager.py uses os.errno which was removed in Python 3.7 |
| 41 | 2002959 | GFE: HLS fails in wind speed sampling |
| 42 | 2002960 | GFE: TCV fails to transmit due to space in PIL |
| 43 | 2002961 | DV2: Python Pypies Log Processes Not Starting with Python 3.8 |
| 44 | 2002963 | Alter functionality in the Procedure dialog fails for radar-&site> sources |
| 45 | 2002972 | NCTEXT menu missing from D2D at NCs |
| 46 | 2002977 | Unable to create new PythonScript |
| 47 | 2002978 | Volume Browser: baseline segments which are outside of the radar coverage area are still selectable. |
| 48 | 2002980 | Pyside2 permissions |
| 49 | 2002983 | UGA Bug Fixes From SWIT Cloud Testing |
| 50 | 2002991 | Request active table can fail due to logging error |
| 51 | 2002993 | BMH: Increase Emergency Override dialog duration limit |
| 52 | 2002994 | IRTManager can throw NullPointerException after clustered context failover |
| 53 | 2002995 | Python SyntaxWarnings for using "is" with a literal |
| 54 | 2002996 | Resolve time matching issues for GFE editor (Governance) |
| 55 | 2003007 | Tsunami EAS: the word "The" in product text is incorrectly used |
| 56 | 2003014 | Fix a2pgca's generation of JMS passwords.properties file on ignite cache VMs |
| 57 | 2003018 | Ignite: PyPies logging is not going in ignite-pypies log file |
| 58 | 2003019 | Missing Panels on Frames on Satellite Composite RGB products |
| 59 | 2003030 | Fix NullPointerException when restoring edit from local history in Localization Perspective for Eclipse 4.21 |
| 60 | 2003033 | Clean up hardcoded passwords from QpidSubscriber.py |
| 61 | 2003034 | Hazard Services Headlines request too slow |

| # | ID# | Subject |
|----|---------|-----------------------------------------------------------------------------------------------|
| 62 | 2003039 | GFE: Possible to skip ETN by saving WSW draft and then editing expiration time |
| 63 | 2003044 | Center Weather Advisories (CWAs) disappear when looping through data in D2D |
| 64 | 2003068 | UELE "bound must be positive" After Issuing River Flood Warning |
| 65 | 2003070 | Fix shortcomings in DR 21493 encrypting JMS passwords |
| 66 | 2003071 | IdM: a2pgca does not copy postgres and qpid certs to user's home directory |
| 67 | 2003072 | UGA: json file corruption |
| 68 | 2003074 | "Error determining intersecting map geometries for event" Error in Hazard Services |
| 69 | 2003089 | Hydrology VTEC Segment Ordering Problem |
| 70 | 2003096 | Grammatical Error in Winter Storm Warning Text |
| 71 | 2003098 | Rename convectprob references in comps.xml to probsevere |
| 72 | 2003116 | WarnGen Templates: Miscellaneous fixes in the 20.2.3 templates |
| 73 | 2003118 | Zone doesn't match hazard configured area |
| 74 | 2003121 | Improve logging where critical geometry operations are occurring |
| 75 | 2003125 | Radar VB source data displayed at constant height levels fails to autoupdate when loaded |
| 76 | 2003128 | Baseline GFE Tropical Text Product Issues |
| 77 | 2003131 | Some Cities Can't be Added to Pathcasts |
| 78 | 2003138 | D2D: multi panel layout: 2 panel layout loading error |
| 79 | 2003176 | CWA Generator issues prevent distribution on FAA systems |
| 80 | 2003200 | Fix ingestshapefiles.sh for pyshp upgrade |
| 81 | 2003207 | Modify rsync to not use PX rsync module |
| 82 | 2003214 | C-SIG Metwatch: Plotting Isolated Convsigmet graphics |
| 83 | 2003215 | Nsharp Display issues working in NCTEXT |
| 84 | 2003216 | Nsharp EditGraph Bug |
| 85 | 2003219 | Adjust pqact.conf entry for P-Surge data |
| 86 | 2003222 | Custom Plot Models - Symbol Plots |
| 87 | 2003223 | Removing NCTEXT multi-panel layout options |
| 88 | 2003224 | NSHARP Resource Editable checkbox not working |
| 89 | 2003226 | Pgen editable resource disabled panning map |
| 90 | 2003232 | Update HazardEventQueryRequest.java for baseline changes to RegistryUtil.java under RODO 5847 |
| 91 | 2003238 | Update postgresql.conf settings to meet security requirements |
| 92 | 2003244 | ETNs skipped for some product generation errors |
| 93 | 2003262 | Climate: AM CLI product not populating T (trace) for monthly precip |
| 94 | 2003263 | D2D Radar: kxxx four panel Menu Selection is missing entries for below 0.5 degree elevations |
| 95 | 2003266 | D2D Radar: Power Removed Control product shows incorrect date in the top left screen legend |
| 96 | 2003270 | D2D Radar: PRM radar product has incorrect resolution settings |

| # | ID# | Subject |
|-----|---------|--------------------------------------------------------------------------------------------------------|
| 97 | 2003281 | NWRWAVES: Unable to handle NHC's TCP products with the new CVT, GMT, and UTC time zones in 2020 season |
| 98 | 2003307 | SpellCheckTextViewer Needs To Preserve Pre-Existing StyleRanges |
| 99 | 2003310 | Remove Unused Database Tables And Associated Java Code From The ebxml Schema |
| 100 | 2003311 | NCTEXT: Pane Swapping Can Cause Unhandled Event Loop Exceptions |
| 101 | 2003321 | NCTEXT Hour Covered Duplicate Selections |
| 102 | 2003322 | NCTEXT Offshore Forecasts Retrieval |
| 103 | 2003323 | NCTEXT Aviation TAFs State Retrieval Bug |
| 104 | 2003324 | Non-Convective Icing SIGMET Decoder |
| 105 | 2003353 | D2D Radar: RPS list merges do not take product priority settings into account |
| 106 | 2003359 | Extra large object causes replication issues |
| 107 | 2003361 | RiverPro to Hazard Services Interop fails if the locarea table contains spaces |
| 108 | 2003362 | ordering of city lists for FF.A/FA.A |
| 109 | 2003371 | Potential NullPointers From AdjacentWfoMgr On Sites Like GUM |
| 110 | 2003372 | D2D Radar: remove products 28 and 65 from RPS list template files |
| 111 | 2003376 | Multiple Plot Parameter Definitions For qc, bufrascat plugins |
| 112 | 2003393 | AvnFPS- GLAMP/LAMP - Alaska Lightning data |
| 113 | 2003399 | Expiration Window behavior |
| 114 | 2003401 | Map Warning when going into Service Backup |
| 115 | 2003402 | Issues with GFE grid lock Message Dialog |
| 116 | 2003407 | PSH reports erroneous data from end of previous month |
| 117 | 2003409 | kwrite editor freezing RiverPro post May 2020 security patch |
| 118 | 2003411 | Add ability to filter by Domain in dual-domain sites for Hazard Services View Product menu |
| 119 | 2003414 | Hazard Services needs to limit the correction window by expiration time |
| 120 | 2003419 | Parsing error when lid has negative impacts defined in the floodstmt table |
| 121 | 2003421 | D2D Radar: cleanup radar RPS list template files |
| 122 | 2003428 | RFR: continue updating active FL.W when current river data reflects FL.A |
| 123 | 2003429 | NEW/CAN segments incorrectly created instead of EXT for FL.Ws |
| 124 | 2003432 | D2D Radar: remove duplicate requests from RMRs when present |
| 125 | 2003433 | Remove the auditableevent table from the ebxml schema |
| 126 | 2003434 | Ebxml slot table should use numeric id |
| 127 | 2003435 | Improve Validation Message on Product Issuance |
| 128 | 2003437 | activetable not purging FL.W events that cross into the new year |
| 129 | 2003441 | forecast bullet missing in rare oscillating scenario |
| 130 | 2003443 | bad phrasing in forecast bullet |
| 131 | 2003444 | Subscription data not accessible from volume browser |
| 132 | 2003457 | Can't Query From Edit Subscription Dialog Window |

| # | ID# | Subject |
|-----|---------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 133 | 2003459 | Unnecessary Warning In Registry Logs Whenever Hazard Services Objects Are Created |
| 134 | 2003460 | Remove All Shared Subscription Logic |
| 135 | 2003464 | If all config files are missing for the backup site, SBU will sometimes default to base configs instead of host configs due to race condition |
| 136 | 2003466 | D2DNsharpPaletteWindow Dialogs |
| 137 | 2003468 | Plot Model Custom Obs For NHC Issues |
| 138 | 2003471 | Wrong H-VTEC Attribute Could Be Assigned During A Correction |
| 139 | 2003473 | Clean Up Unused Interoperability Classes |
| 140 | 2003474 | Deleting Polygon Vertex May Not Work Correctly |
| 141 | 2003487 | Hazard Services interoperability failed to remove GFE Hazards grid |
| 142 | 2003494 | RVS Issue With Existing Hazards With Different VTEC Modes |
| 143 | 2003495 | Flood Recommender Results Dialog Is Inaccurate For Deleted Hazard |
| 144 | 2003496 | Buttons For Reordering Tab Sorts In HID/Spatial Settings Tab May Be Incorrectly Enabled |
| 145 | 2003497 | D2D Radar: when re-purposing dial radar for backup, the button to repurpose back to dial does not activate |
| 146 | 2003499 | D2D Radar: -1 in maxRpsListSize setting in radar server config allows RPS lists exceeding maximum permissible length to be sent to RPG |
| 147 | 2003501 | Vague error message when drawing polygon for incorrectly selected site in practice mode |
| 148 | 2003509 | ActiveEditor Not Set Upon Leaving Localization |
| 149 | 2003510 | NSharp Error When Clicking Just Above SiteId |
| 150 | 2003518 | Seasonal (Winter) Impacts Not Queried Correctly For FL.* |
| 151 | 2003519 | FFR Needs To Run Outside Host Domain In Service Backup |
| 152 | 2003520 | Extension Area Issues With The 180 Longitude Line For AFC |
| 153 | 2003523 | D2D Radar: modify KCRI radar to use 0.3 degrees as the lowest scan rather than 0.2 degrees |
| 154 | 2003527 | Corner Case Error with Edit Settings dialog, Service Backup, and User Level Recommenders |
| 155 | 2003528 | CTA With Phone Number Doesn't Work |
| 156 | 2003529 | Settings Are Not Loaded Correctly In Service Backup |
| 157 | 2003530 | Restore replacedBy Functionality To FL.Y->FL.W |
| 158 | 2003550 | Mouse Handler Error When Dealing With Multipolygons |
| 159 | 2003551 | Hatching Issues In Alaska |
| 160 | 2003555 | HS Needs To Make Registry Failures More Obvious To A User |
| 161 | 2003568 | AWIPS Only Retains 6 Hours Of Data. Query Time Range Should Reflect That |
| 162 | 2003625 | Shift NBM products from NMC2 to ADD (Data Delivery) channel |
| 163 | 2003795 | GFE froze on lx2-mkx |
| 164 | 2003850 | Warngen produces a sentence with improper grammar |

| # | ID# | Subject |
|-----|---------|-------------------------------------------------------------------------------------------------------------|
| 165 | 2003857 | BMH: Resolve INPUT_MESSAGE_PARSE_ERROR |
| 166 | 2003858 | BMH: Resolve PLAYLIST_MANAGER_ERROR |
| 167 | 2003945 | Additional swear word dictionary |
| 168 | 2003966 | Capture script needs to gather WarnGen specific information |
| 169 | 2004018 | Cancelled Flood warnings still showing on D2D display |
| 170 | 2004025 | PostGIS AsBinary, GeomFromText and SnapToGrid functions deprecated in 18.2.1 |
| 171 | 2004077 | CAVE does not render all Tiles in Satellite Image |
| 172 | 2004108 | LDM pqact.conf override pattern capability |
| 173 | 2004559 | Locally configured MPE related scripts get overwritten on AWIPS installs |
| 174 | 2028130 | D2D: Restore previous pane layout for non-square number of panes in an editor |
| 175 | 2028133 | GraphiDSS - paths in templates should be relative to icons directory |
| 176 | 2028134 | Only zip CAVE logs older than two days |
| 177 | 2028140 | D2D - CWA Generator: UELE when move the cursor off the window |
| 178 | 2028149 | NCEP Enhanced LX Heap Allocations - Cave ini files |
| 179 | 2028152 | Certain GOES satellite RGB Composite data does not display in D2D |
| 180 | 2028191 | Registry: Should not do 24 hour comparison check between central and site if the site needs a sync |
| 181 | 2028204 | Eastern Pacific National TCV Bug (tied to DCS 22721) |
| 182 | 2028212 | Merge fixes for 21.3.1 |
| 183 | 2028216 | Merge fixes for 21.4.1 |
| 184 | 2028380 | DatView can't display Forecast and Contingency plot data |
| 185 | 2029554 | ConfigParser (c.readfp) in a2dbauth will be deprecated causing all localapps to crash |
| 186 | 2029672 | Add entry for scipy.io and entry for matplotlib into sharedModules.txt |
| 187 | 2033486 | D2D: Restore previous settings in gridImageryStyleRules for interpolate, defaultColormap, and color scale |
| 188 | 2033487 | Backup Services: issue in the VizBackupServiceConstants class |
| 189 | 2033489 | When running the CWA tool an "Internal error has occurred" is displayed |
| 190 | 2033490 | GFE: Missing parameters from the D2DAccumulativeElements list for NationalBlend in the base serverConfig.py |
| 191 | 2033890 | Fix ISC Hazard Grid Transformations |
| 192 | 2033896 | IdM Phase 2 changes for NWPS and make_HTI |
| 193 | 2033901 | GFE/HS: Workstation import/installation failed error. |
| 194 | 2033902 | Hazard Services 21.4.1 hydrology issues |
| 195 | 2033916 | WarnGen: Other cities list yields malformed text in pathCast and shortPathCast macros |
| 196 | 2033976 | UGA/GraphiDSS: Memory Errors Using Application |
| 197 | 2033981 | OBS in D2D and AvnFPS displaying with the wrong site and associated values |
| 198 | 2034024 | Novrastats process using all timers cause other processes (sssd) to not start |
| 199 | 2034029 | UGA Migration Script Fails On Empty Directory |

| # | ID# | Subject |
|-----|---------|-------------------------------------------------------------------------------------------|
| 200 | 2034031 | Ignite: New verbose logging filling logs partition on cache VMs |
| 201 | 2034179 | Warngen: Wind speeds in follow-up (SVS) does not always match value from original warning |
| 202 | 2034194 | Griddednucaps decoder errors in 21.4.1 |
| 203 | 2034205 | Backup Services: UELE when selecting Review after moving a job to Send/Delete/Wait |
| 204 | 2035775 | GFE: Text formatters fail at sites where Hazard Services is not installed |
| 205 | 2035783 | Backup Services GUI: Message incorrectly says that failed jobs were successfully sent |

Listed below are the 205 DRs reported at the OB21.4.1 Readiness Review.

1. Problem: Paint logging should only happen when it takes > 500ms

During the operational beta for 21.4.1 at MKX, it looks like RODO 8343 is causing the home partition to fill up and cause problems at MKX. It looks like every paint event is being logged, and the performance logs are regularly growing in excess of 1GB, sometimes reaching 10GB or higher, and the paint logging accounts for 99% of the content.

Most of these messages are logging that it took 0ms for a paint event, so for this DR we're going to hard code a 500ms duration minimum for a paint event in order for it to be logged. This should rarely, if ever, happen, so it should alleviate the space issues in /home.

Operational Impact: If the /home partition fills up enough it has tremendous effect on the site with CAVE becoming basically unusable as they become unable to write anything to /home.

Required Behavior: N/A (DR 2002845)

2. Problem: GFE formatters using incorrect hazard headlines in 21.4.1

Operational beta site MKX is reporting numerous issues with GFE formatters and hazard headlines in release 21.4.1. This is caused by changes made as part of #8331 (DCS 22007). Based on email discussion, the NWS would like the following changes:

1. When retrieving hazard event dictionaries from Hazard Services add the following fields

- ```
<pre>
1. hdln: Mixed case description of hazard with no action or timing information
2. issueTime: Issue time of event in epoch seconds
3. officeid: 4-char site identifier of issuing site
4. seg: segment number
5. vtecstr: VTEC coded string representing the hazard event
6. createdByHs: Boolean flag that identifies if this event originated in Hazard Services or not
</pre>
```

2. Make fixes to the following fields returned in the dictionary:

- ```
<pre>
1. headlineStr: Ensure hazard type is in mixed case, not all caps
2. startTime: return time in epoch seconds, not millis
3. endTime: return time in epoch seconds, not millis
</pre>
```

3. Correct bug in DiscretePhrases.getHazardServicesHeadlineDicts identified by Bookbinder in last email chain

4. Change how we handle "headlineStr" in DiscretePhrases.makeHeadlinePhrases: The exact change here is where I'm most unclear as to what is being requested. I believe the correct change

is to only use "headlineStr" if the event originated in Hazard Services. If the event did not originate from Hazard Services, it will default to the original logic based on using "hdln".

Attached is the email chains where these proposed changes were discussed.

Operational Impact: GFE products are using incorrect headlines for effective hazards.

Required Behavior: N/A (DR 2002846)

3. AbsTime needs to better implement datetime APIs to be more backwards compatible with 20.3.2 GFE localapps

Due to a change in Python 3.8 and therefore awips 21.4.1 we had to stop having AbsTime extend datetime. While effort was put forth to make it backwards compatible, a number of non-baseline GFE procedures and localapps have broken due to AbsTime not having the same functionality available as datetime has. To remedy this, we should try to implement the datetime API so that operations with an AbsTime object work the same as with a datetime object. Known issues are add and sub should be improved to support mathematical operations with datetime and timedelta objects, str needs to be overridden, comparison operators such as greater than need to be improved to work with datetimes, replace() needs to be added, and the attribute tzinfo needs to be added. A list of known issues is here: https://docs.google.com/document/d/14C9-l6GVvN3c1w-wB6yi_TKvsuM2wxRKuvCMKPek2NM/edit#.

Operational Impact: Non-baseline GFE procedures and localapps will be broken.

Required Behavior: N/A (DR xxxxxx)

4. Fix HWR reporting in GMT instead of local time

Site called in TT INCB00000245154 reported that the hourly weather roundup is being reported in GMT time, instead of the local time of the site.

Site reported that they traced the problem to the file /awips/adapt/hwr/bin/gettimetz, and Jerry has supplied a possible fix for this file.

A preliminary look into this indicates that the gettimetz file has not changed between 20.3.2 and 21.4.1, but the issue was not reported until 21.4.1, which suggests the underlying python libraries changed how it handles timezone code.

Another possible fix is adding a call to time.tzset() after the TZ environmental variable is set, However, the developer will need to assess these possibilities and put in the appropriate fix.

Operational Impact: The hourly weather roundup is shown in GMT time.

Required Behavior: N/A (DR 2002848)

5. WarnGen: Extension Area Configuration Failing

Darrel Kingfield sent the following email regarding WarnGen extension areas in 21.4.1:

All,

I was writing documentation on how extension areas work in WarnGen vs. Hazard Services and I've discovered that extension areas do not work anymore in OB21.4.1 in WarnGen.

As part of DCS 22297, it was requested that the tornadoWarning.xml/.wm and specialMarineWarning.xml/.wm templates be removed and this was performed in this code review.

But I've discovered this morning that in WarnGenLayer.java in the getGeospatialDataAcessor() method there are hard-coded calls looking for these deleted templates.

Workarounds involve making symbolic links to these files for now...

```
cd /awips2/edex/data/utility/common_static/base/warnngen
ln -sf impactTornadoWarning.xml tornadoWarning.xml ; ln -sf impactTornadoWarning.vm
tornadoWarning.vm ; ln -sf impactSpecialMarineWarning.xml specialMarineWarning.xml ; ln -
sf impactSpecialMarineWarning.vm specialMarineWarning.vm
```

But in the future, this code below should change to reflect the updated templates.

Here's the problematic code in question...

```
private GeospatialDataAccessor getGeospatialDataAcessor(GeoFeatureType type)
    throws Exception {
    GeospatialDataList gdl = searchGeospatialDataAccessor(type);
    if (gdl == null) {
        // Cause county geospatial data to be loaded
        /*
         * TODO This code needs to be refactored because 'tornadoWarning'
         * should not be hard coded. What if the file tornadoWarning does
         * not exist in the base? The 'tornadoWarning' was originally not
         * the filename. What happens in the future if the base file gets
         * changed again? A ticket should be opened for this to be resolved.
         */
        String templateName;
        if (type == GeoFeatureType.COUNTY) {
            templateName = "tornadoWarning";
        } else if (type == GeoFeatureType.MARINE) {
            templateName = "specialMarineWarning";
        } else {
            throw new IllegalArgumentException(
                "Unsupported geo feature type " + type);
        }
    }
}
```



```

WarngenConfiguration config = WarngenConfiguration
    .loadConfig(templateName, getLocalizedSite(), null);
loadGeodataForConfiguration(config);
gdl = searchGeospatialDataAccessor(type);
}

// TODO: FIPS field should not be hardcoded.
AreaSourceConfiguration areaConfig = new AreaSourceConfiguration();
areaConfig.setFipsField(type.fipsField);

return new GeospatialDataAccessor(gdl, areaConfig);

```

Operational Impact: Extension areas will not work in Warngen

Required Behavior: N/A (DR 2002851)

6. Fix performance regression in DatabaseID.equals(Object)

On DR 21543, DatabaseID.equals(Object) was changed to try and fix an error where sorting DatabaseIDs sometimes violates the contract between equals() and compareTo(). This change caused a big performance regression as hundreds or even thousands of ParmIDs can be loaded into memory in a single GFE session and then ParmID.equals() will be called many times which calls DatabaseID.equals(). A simple example would be if(listOfParmIDs.contains(ParmID)) where the list has hundreds of ParmIDs. We also saw the original sorting error about the violation of the contract appear even after 21543 was deployed, so 21543 did not fix that error. Therefore, we should bring back the faster performance of DatabaseID.equals(). Fixing the contract between equals() and compareTo() can be fixed on a different ticket.

Operational Impact: This was causing the NIC NBMInit to take around an hour to execute. Many procedures use the affected operator.

Required Behavior: N/A (DR 2002854)

7. Selecting a model from BOIVerify GUI takes too long to load

Site reported they have been working with a couple codes that utilize the BOIVerify Software. Specifically the getBases method from the BOIVerifyUtility. They noticed that their codes are now pretty much useless due to how long getBases is taking to run.

To test, do the following (please keep in mind the environment being used to test must have a fully populated /data/verify/Grids directory)

1. Open GFE
2. Go to the Verify menu and open the BOIVerifyInfo GUI
3. Once the GUI is open Go to the left hand side of the GUI and Select the drop down menu for Model. Select a model from that menu. Previous to HCI this selection would be almost instantaneous to display all the Date/Cycle options. If one selects an hourly model (RAP, HRRR, CONSShort) it takes 20 to 30 seconds (and possibly more).

Why is this important? Because program called ModelCertainty that will utilize the BOIVerify Database to grab up to 6 previous cycles of all models contained within GFE/BOIVerify. In the code it calls getBases, which used to take 5 to 10 seconds (prior to HCI) to loop through all the models. Now it is taking 10-20 minutes depending on what models are selected and what element we are looking for. It has pretty much rendered this functionality contained within ModelCertainty useless. There are two other codes called dProgDt and ProbDProgDt that utilize the same method and are running into the same problem.

The problem...

In the getBases method it loops through all of the possible records from the netCDF file. This can be thousands of records. I.E in the HRRR I had 52K records. It is looping through the records of the netCDF file to append the bases to a list without duplicating the value. This must have changed due to the py2 -> py3 conversion. I believe rather than looping through all iterable records it would be better to set the list using the following syntax:

```
list_set = set(self.fncBtime[:])
Bases = (list(list_set))
```

I have checked and this seems to produce a unique list of base times. The previous method of looping through the iterable values of self.fnumRecs and then checking to see if the self.fncBtime[i] value exists in Bases would take upwards of 1 minute to run for the HRRR, it now takes less than a second.

The getBases method exists in BOIVerifyUtility Utility which is a baseline code.

Operational Impact: Can take up to 20 minutes to load model data.

Required Behavior: N/A (DR 2002860)

8. UGA Bug Fixes From Beta Testing

Contains bug fixes uncovered during beta testing. Most notably a couple of batch job fields not getting set correctly with dual GFE domains.

Operational Impact: Batch jobs do not work correctly for dual domain sites or when more than one site is activated in GFE.

Required Behavior: N/A (DR 2002862)

9. RCM Process fills /tmp inode count with keystore files

When RCM cannot decrypt the JMS password the files generated by the keystore code in /tmp should be cleaned up if things fail.

The current code just generates millions of files that only get cleaned up on exit of the application but the filesystem fills up before

this point. These file seem to be generated each time the following message appears in the radarserver.log file:

```
INFO 14:43:40 [TCM Read coax #2] RadarServer: Trying to connect to qpuid
ERROR 14:43:40 [TCM Read coax #2] RadarServer: Failed to connect to JMS queue null
(radarserver.dropbox):
com.raytheon.uf.common.jms.qpid.JMSConfigurationException: Could not decrypt JMS
password.
com.raytheon.uf.common.jms.qpid.JMSConfigurationException: Could not decrypt JMS
password.
at com.raytheon.uf.common.jms.qpid.QpidUFConnectionFactory.configureSSL(Unknown
Source)
at com.raytheon.uf.common.jms.qpid.QpidUFConnectionFactory.getConnectionURL(Unknown
Source)
at com.raytheon.rcm.server.dataarchive.DataArchiveEndpoint$Sender.tryConnect(Unknown
Source)
at com.raytheon.rcm.server.dataarchive.DataArchiveEndpoint$Sender.send2(Unknown Source)
at com.raytheon.rcm.server.dataarchive.DataArchiveEndpoint$Sender.send(Unknown Source)
at com.raytheon.rcm.server.dataarchive.DataArchiveEndpoint.handleRadarEvent(Unknown
Source)
at com.raytheon.rcm.server.RadarServer.handleRadarEvent(Unknown Source)
at com.raytheon.rcm.oldio.LinkManager.notifyMessage(Unknown Source)
at com.raytheon.rcm.oldio.TcmConnection.readProc(Unknown Source)
at com.raytheon.rcm.oldio.TcmConnection$1.run(Unknown Source)
at java.base/java.lang.Thread.run(Thread.java:829)
Caused by: java.lang.NullPointerException: null
```

Operational Impact: Server becomes unresponsive

Required Behavior: N/A (DR 2002867)

10. Hazard geometry is being corrupted for an event that is being continued with other events/zones added on.

Hazard geometry is being corrupted for an event that is being continued with other events/zones added on. This happens intermittently. At best, it is throwing an error that will confuse the user. At worst, the GFE grid will not be created. Was discovered after reverting DR 21452. Results in the warning 'Invalid geometry almost sent to GFE via Hazard Services Interoperability.' Hazard product is still issued.

Operational Impact: At best, it is throwing an error that will confuse the user. At worst, the GFE grid will not be created.

Required Behavior: N/A (DR 2002868)

11. AbsTime Errors

Josh Watson reported seeing 2 jep.JepException errors out of AbsTime.py when running the NBMinInit GFE procedure as well as the BOIVerifySave Procedure

```
!ENTRY com.raytheon.viz.gfe 2 0 2022-11-28 22:58:51.660
!MESSAGE Error in procedure NBMInit
!STACK 0
jep.JepException: <class 'TypeError'>; AbsTime constructor only supports ints, floats, or
java.util.Dates, but received a <class 'NoneType'>;
at /home/joshua.watson/caveData/common/base/gfe/python/AbsTime.__init__(AbsTime.py:72)
at /awips2/cave/etc/gfe/userPython/utilities/SmartScript.getGridHistory(SmartScript.py:617)
at
/home/joshua.watson/caveData/etc/site/OKX/gfe/userPython/procedures/NBMInit.execute(NBM
Init.py:267)
at
/home/joshua.watson/caveData/common/base/python/MasterInterface.runMethod(MasterInterfac
e.py:132)
at
/awips2/cave/etc/gfe/userPython/utilities/ProcedureInterface.runProcedure(ProcedureInterface.py
:111)
at <string>.<module>(<string>;1)
at jep.Jep.eval(Native Method)
at jep.Jep.eval(Jep.java:451)
at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:285)
at
com.raytheon.viz.gfe.procedures.ProcedureController.executeProcedure(ProcedureController.jav
a:160)
at
com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.execute(ProcedureJobPool.jav
a:381)
at
com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.processRequest(ProcedureJob
Pool.java:345)
at
com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.run(ProcedureJobPool.java:32
4)
at org.eclipse.core.internal.jobs.Worker.run(Worker.java:63)
```

Error #1 - AbsTime is not coded to recognize 'None' as an argument (refer to 20.3.2
AbsTime.py). None can be returned by getTimeModified().
if arg is None:
return None

AbsTime.py was hand-edited to add that code. That lead to a new error:

```
!ENTRY com.raytheon.viz.gfe 2 0 2022-11-28 23:00:03.669
!MESSAGE Error in procedure NBMInit
!STACK 0
jep.JepException: <class 'TypeError'>; AbsTime constructor only supports ints, floats, or
java.util.Dates, but received a <class 'jep.PyJObject'>;
at /home/joshua.watson/caveData/common/base/gfe/python/AbsTime.__init__(AbsTime.py:75)
```

```

at /awips2/cave/etc/gfe/userPython/utilities/SmartScript.getGridHistory(SmartScript.py:619)
at
/home/joshua.watson/caveData/etc/site/OKX/gfe/userPython/procedures/NBMInit.execute(NBM
Init.py:267)
at
/home/joshua.watson/caveData/common/base/python/MasterInterface.runMethod(MasterInterfac
e.py:132)
at
/awips2/cave/etc/gfe/userPython/utilities/ProcedureInterface.runProcedure(ProcedureInterface.py
:111)
at <string>.<module>(<string>:1)
at jep.Jep.eval(Native Method)
at jep.Jep.eval(Jep.java:451)
at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:285)
at
com.raytheon.viz.gfe.procedures.ProcedureController.executeProcedure(ProcedureController.jav
a:160)
at
com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.execute(ProcedureJobPool.jav
a:381)
at
com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.processRequest(ProcedureJob
Pool.java:345)
at
com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.run(ProcedureJobPool.java:32
4)
at org.eclipse.core.internal.jobs.Worker.run(Worker.java:63)

```

Error #2 - AbsTime does not recognize a jep.PyJObject. This is returned by getGridHistory() for the getUpdateTime()

AbsTime was changed significantly in 21.4.1 to account for the change to RedHat-provided Python (3.8) via CFR 23014/RODO #s 8511, 8764.

Operational Impact: GFE procedures that retrieve grid history will not work

Required Behavior: N/A (DR 2002869)

12. GFE service backup: failed site port set incorrectly in 21.4.1

During testing in the Raytheon test lab, a bug was discovered related to DCS 22288 in 21.4.1. The field SVCBU_FAILED_SITE_PORT was removed from the base level svcbu.properties, which results in the port in the failed site siteConfig.py getting written to a blank instead of '98000000'. This results in a failure of the site to activate in service backup.

It was possible in testing to work around the problem by commenting out line 261 in the baseline service backup script /awips2/GFESuite/ServiceBackup/scripts/process_configuration.

However in operations this would not be acceptable.

line 261: "sed -i "s/98000000/\$SVCBU_FAILED_SITE_PORT/" "\${failed_config}"

Operational Impact: GFE service backup will fail until the bug is fixed.

Required Behavior: N/A (DR 2002871)

13. Unable to use GFE Fit to Data During a Shared Display Session in Collaboration

When in a shared display session in Collaboration it was found that the attached error would occur when trying to fit the data that is being display, i.e. temperature, over a all grids or over a single grid. This error did not occur when not in a shared session in collaboration.

Operational Impact: Unable to fit data to a particular grid while in a shared display session in Collaboration

Required Behavior: N/A (DR 2002874)

14. Error in date format when loading Best Estimate QPE in MPE

A file not found error is returned when loading the Best Estimate QPE product in MPE. In 21.4.1, an error was returned complaining about a missing file.

From the App_defaults the xmrg files were written the format:

xmrgMMDDYYYYHHZ

MPE was looking for xmrg files with the following format:

xmrgYYYYMMDDHHZ

Once the I looked at belle/oma where the error wasn't happening I saw the properties
st3_date_form : Ymd

When that property was overridden file name was updated to the correct format and the data displayed successfully.

Operational Impact: Best Estimate QPE data fails to display in MPE

Required Behavior: N/A (DR 2002877)

15.21.4.1 - Remove awips2-gfesuite from AWIPS II Database Server group

awips2-gfesuite is included in "AWIPS II Database Server" group inside 21.4.1 comps.xml. This installs awips2-cave on dv1 as dependency. During new build installs, we run yum group update as part of dbRun script. awips2-cave can't be updated, so installer will see errors in dv1 install logs. After discussion, we don't need awips2-gfesuite on dv1. Removing awips2-cave from dv1, will also remove awips2-gfesuite as dependency.

Operational Impact: No impact.

Required Behavior: N/A (DR 2002879)

16. Time Scale Ruler in Hazard Services Console Too Small and Not Resizable

During 21.4.1 beta testing, Josh Watson noticed that the Time Scale ruler in the Time Scale column in the HS Console is too small and not resizable. This is not repeatable in 20.3.2.

See attached image for depiction of the problem.

So far we have not been able to attribute this to a particular change, but it seems like it is possibly related to some sort of Eclipse and/or SWT change in 21.3.1/21.4.1 since this area of code did not change after 20.3.2.

Operational Impact: The shrunk time scale bar makes it exceedingly difficult to select/filter for desired hazards and, conversely, easy to inadvertently filter/remove hazards you actually want to see

Required Behavior: N/A (DR 2002882)

17. WarnGen Snow Squall Template QC Fixes

The WarnGen Snow Squall Warning (SQW) templates in 21.4.1 (DCS 22976) are being tested by several WFOs before 21.4.1 beta testing (ATAN 1253). WFO BUF found that in some cases, a SOURCE could be chosen (or no source chosen) and the incorrect SNOW SQUALL tag is coded (e.g. radar source and tag "SNOW SQUALL...OBSERVED" (tag should be RADAR INDICATED)). The error would result in incorrect or confusing information for customers and partners in the protection of life and property. The fix adds template QC logic to verify forecaster selection of SOURCE items and HAZARD items on the WarnGen menu and warning messages to the forecaster (message is in the draft SQW product, not red banner messages) that an error exists and that the text workstation will not allow the product to be issued in the current incorrect format. The error is not a showstopper for 21.4.1 but AFS requires that the fix be fielded in 21.4.1. The fix requires simple testing of the SOURCE and HAZARD WarnGen menu items. There are only template logic changes, no WarnGen Java logic change.

Operational Impact: The SQW template permits inconsistent sources and Snow Squall tags which provide confusing information to the public in preserving life and property.

Required Behavior: N/A (DR 2002883)

18. D2D:ATCF - Name an Existing Storm: Cannot change or edit the storm name

https://docs.google.com/spreadsheets/d/1le-sW4ucpxGZUDKj-AB8_I7RSzxqjf8XzJ6EYIFfUjo/edit?pli=1#gid=306944993

manage-storm step 34: When trying to rename the storm I get the following error:
UpdateStormDialog - Failed to update storm SHILO,AL902022

manage-storm step 39: Produces the same error if you try to change the storm's name however it works if you change anything else. UpdateStormDialog - Failed to update storm SHILO,AL902022

Operational Impact: The inability to rename a storm could cause the field an issue if they misspell or mislabel data.

Required Behavior: N/A (DR 2002884)

19.D2D:ATCF - Enter Fix Data... - Satellite is saying it's not selected when it is

https://docs.google.com/spreadsheets/d/1le-sW4ucpxGZUDKj-AB8_I7RSzxqif8XzJ6EY1FfUjo/edit?pli=1#gid=306944993

Fixes step 9: 1. When I try to add a record for sat.-obj.Dvorak, a Satellite is selected. However when i try to add a record it keeps telling me I need to add a Satellite. I'm not sure what's wrong.
2. Analysis /synoptic is giving an unhandled event loop exception. AnalysisSynopticTab - Failed to parse date time group. java.time.format.DateTimeParseException: Text " could not be parsed at index 0 at
gov.noaa.nws.ocp.viz.atcf.fixes.enterfixdata.TabUtility.parseDtg(TabUtility.java:575) at
gov.noaa.nws.ocp.viz.atcf.fixes.enterfixdata.AnalysisSynopticTab.saveFieldsToRec(AnalysisSynopticTab.java:794) at
gov.noaa.nws.ocp.viz.atcf.fixes.enterfixdata.AnalysisSynopticTab.saveNewRecords(AnalysisSynopticTab.java:636)

Answer: It is a bug in the "DTG" parsing. I will get "Invalid DTG format" warning here.

Operational Impact: Forecaster will not be able to add fixes to current storm.

Required Behavior: N/A (DR 2002885)

20. Update GFE Hazards.cmap files to be in sync with the contents of VTECTable.py

Restore Hazards.cmap.
Path:edex/Osgi/com.raytheon.uf.common.dataplugin.gfe.utility/common_static/ase.colormaps/GFE/

Operational Impact: May confuse the forecaster on the hazard issued and what is displayed in GFE from a color standpoint.

Required Behavior: N/A (DR 2002886)

21. WarnGen Snow Squall Template CTA Fixes

The WarnGen Snow Squall Warning (SQW) templates in 21.4.1 (DCS 22976) are being tested by several WFOs before 21.4.1 beta testing (ATAN 1253). WFO BOU found the Pileup Safety Call to Action (CTA) confusing and NWS policy makers in AFS requested a fix in 21.4.1. The error is not a showstopper for 21.4.1 beta testing but AFS requires that the fix be fielded in 21.4.1. The fix is very simple and requires little regression testing. The fix is a simple change in literal text in the WarnGen template that WarnGen uses to code the Pileup Safety Call to Action. There is no template logic or WarnGen logic change.

Operational Impact: The SQW Pileup Safety CTA provides confusing instructions to the public in preserving life and property.

Required Behavior: N/A (DR 2002892)

22. D2D Radar: check in most recent NDM updates for radar

There have recently been a number of NDM updates that are not in the AWIPS baseline including AWIPS RC17698 and should be added for use by developers.

Operational Impact: None - these are being checked in to bring the development baseline up to date.

Required Behavior: N/A (DR 2002895)

23. Need ability to disable Registry Status check for sites that don't use Registry

National Centers do not currently use Registry, but the Registry Status Check added in 21.3.1/21.4.1 via DCS 21971 does not currently have the ability to create a site-level override to disable the check. Without being able to disable that check, NCs will receive constant AlertViz notifications that Registry is not running and their logs will be full of the same messages, both making operational tasks as well as troubleshooting valid issues more difficult. Need to add something like a "registry.healthcheck.enabled=[true or false]" token to the RegistryStatus.properties file.

Operational Impact: Frequent AlertViz alarms about a process that NCEP does not use would clutter workstations and distract from valid problems

Required Behavior: N/A (DR 2002896)

24. Prevent grid coverage error when loading radar cross section from Volume Browser

When loading a radar cross section from the Volume Browser, the data fails to load with the following error:

java.lang.UnsupportedOperationException: Coverage Information Not Specified yet


```

    at
com.raytheon.uf.common.gridcoverage.convert.GridCoverageConverter.toString(GridCoverage
Conv
erter.java:55)
    at
com.raytheon.uf.common.dataplugin.annotations.DataURIUtil$DataURIFieldAccess.toFieldStri
ng(
DataURIUtil.java:597)
    at
com.raytheon.uf.common.dataplugin.annotations.DataURIUtil$DataURIFieldAccess.getFieldStr
ing
(DataURIUtil.java:585)
    at
com.raytheon.uf.common.dataplugin.annotations.DataURIUtil.createDataURI(DataURIUtil.java:
12
7)
    at
com.raytheon.uf.common.dataplugin.PluginDataObject.getDataURI(PluginDataObject.java:218)
    at
com.raytheon.uf.common.dataplugin.PluginDataObject.hashCode(PluginDataObject.java:351)
    at com.raytheon.uf.common.dataplugin.grid.GridRecord.hashCode(GridRecord.java:239)
    at java.base/java.util.HashMap.hash(HashMap.java:340)
    at java.base/java.util.HashMap.put(HashMap.java:608)
    at java.base/java.util.HashSet.add(HashSet.java:220)
    at
com.raytheon.uf.viz.d2d.xy.adapters.crosssection.GridCSAdapter.getYRecords(GridCSAdapter.j
a
va:364)
    at
com.raytheon.uf.viz.d2d.xy.adapters.crosssection.GridCSAdapter.loadData(GridCSAdapter.java:
126)
    at
com.raytheon.uf.viz.xy.crosssection.rsc.AbstractCrossSectionResource.loadSlice(AbstractCros
09/21/2022 1/2
sSectionResource.java:242)
    at
com.raytheon.uf.viz.xy.crosssection.rsc.AbstractCrossSectionResource$DataRetrievalJob.run(A
bstractCrossSectionResource.java:535)
    at org.eclipse.core.internal.jobs.Worker.run(Worker.java:63)

```

Operational Impact: Radar cross sections fail to load from the Volume Browser.

Required Behavior: N/A (DR 2002898)

25. Service Accounts have Incorrect Environment Settings

/awips2/python/bin/activate.csh is preventing 'su - fxa -c' from working as prompt is undefined in this case. activate.csh fails with prompt undefined error, which causes csh to stop sourcing the

rest of the environment. This causes issues with MSAS/LAPS and other crons/scripts that source fxa environment. Preventing data from getting produced. Fix can be added in /etc/profile.d/awips2Python.csh to define prompt if it's not already defined.

Operational Impact: Service accounts (ldad,awips,gfecron,ldm,fxa) missing AWIPS env variables, MSAS/LAPS missing

Required Behavior: N/A (DR 2002900)

26. Update build for ATCF

Update the following parts of the build to fully enable ATCF for National Centers:

build.sh: Add the ATCF CAVE and EDEX feature to the build

comps.xml: Add the awips2-edex-atcf RPM to the awips2-ncap-plugins group.

nawips.product: Add the ATCF CAVE feature

Operational Impact: ATCF functionality will not be installed at National Centers.

Required Behavior: N/A (DR 2002904)

27. Unable to Use GFE Tools in Collaboration Session with Shared Display

When using collaboration and creating a shared session in the GFE perspective with another user I was unable to use any of the GFE tools from the GFE menu. I was able to use tools in the Edit Actions GUI (i.e. AdjustValue_Up, AdjustValue_Down, Smooth, etc), but tools on the menu such as the pencil tool, contour tool and edit area tool produced the attached error. In addition when exiting the shared display I would receive the recourse has been disabled error that is attached to the ticket as well.

Operational Impact: Not able to edit GFE Grids with GFE tools during a session with shared display.

Required Behavior: N/A (DR 2002913)

28. Add Tsunami EAS to AWIPS startup menu

The Tsunami EAS GUI needs to be added to the AWIPS startup menu for quick access. Related to DCS 22086. This is an appLauncher software config change in rehost-wfoa.

Operational Impact: Users won't be able to access Tsunami EAS as quickly.

Required Behavior: N/A (DR 2002917)

29. UGA Bug Fixes From Early Forecaster Testing on TBW4

Contains bug fixes uncovered during early forecaster testing on TBW4 system. Most notably basemap imagery tiles failing to download.

Operational Impact: Basemap tile layers fail to download and be available in application.

Required Behavior: N/A (DR 2002928)

30. AvnFPS: Python error when generating an amended TAF

When sending an amended TAF, this Python error is logged in the edex-request log, and the amended taf output file is not created with the correct naming format (per DCS 22669):

```
WARN 2022-08-03 16:13:50,864 3684 [TafQueueManager] TafQueueManager: EDEX -
Python error occurred while executing XmlTafEncoder - see me
ssage details.
jep.JepException: <class 'TypeError'>: not enough arguments for format string
    at /opt/rh/rh-
python38/root/usr/lib64/python3.8/logging/__init__.getMessage(__init__.py:373) ~[na:na]
    at /opt/rh/rh-python38/root/usr/lib64/python3.8/logging/__init__.format(__init__.py:668)
~[na:na]
    at /opt/rh/rh-python38/root/usr/lib64/python3.8/logging/__init__.format(__init__.py:929)
~[na:na]
    at
/awips2/edex/data/utility/common_static/base/python/UFStatusHandler.emit(UFStatusHandler.p
y:73) ~[na:na]
    at /opt/rh/rh-python38/root/usr/lib64/python3.8/logging/__init__.handle(__init__.py:954)
~[na:na]
    at /opt/rh/rh-
python38/root/usr/lib64/python3.8/logging/__init__.callHandlers(__init__.py:1661) ~[na:na]
    at /opt/rh/rh-
python38/root/usr/lib64/python3.8/logging/__init__.handle(__init__.py:1599) ~[na:na]
    at /opt/rh/rh-python38/root/usr/lib64/python3.8/logging/__init__.log(__init__.py:1589)
~[na:na]
    at /opt/rh/rh-python38/root/usr/lib64/python3.8/logging/__init__.info(__init__.py:1446)
~[na:na]
    at
/awips2/edex/data/utility/common_static/base/aviation/python/XmlTafEncoder.write(XmlTafEn
coder.py:784) ~[na:na]
    at <string>.<module>(<string>:1) ~[na:na]
    at jep.Jep.eval(Native Method) ~[jep-3.9.1.jar:na]
    at jep.Jep.eval(Jep.java:451) ~[jep-3.9.1.jar:na]
    at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:285)
~[com.raytheon.uf.common.python.jar:na]
    at com.raytheon.uf.common.python.PythonScript.execute(PythonScript.java:333)
~[com.raytheon.uf.common.python.jar:na]
```

```
        at
com.raytheon.uf.edex.aviation.TafQueueManager.generateIWXXMMessages(TafQueueManager
.java:273) ~[com.raytheon.uf.edex.aviation.
jar:na]
        at
com.raytheon.uf.edex.aviation.TafQueueManager.processSendJobs(TafQueueManager.java:162)
~[com.raytheon.uf.edex.aviation.jar:na
]
        at com.raytheon.uf.edex.aviation.TafQueueManager.run(TafQueueManager.java:460)
~[com.raytheon.uf.edex.aviation.jar:na]
        at java.base/java.lang.Thread.run(Thread.java:829) ~[na:na]
```

Operational Impact: WFOs would issue amended IWXXM TAFs in obsolete format, complicating interoperability and data exchange between ICAO/WMO member states.

Required Behavior: N/A (DR 2002931)

31. blank satellite frames with null level

When loading satellite, particularly "Imagery Channels", frames are split into 2 levels. The first level would contain only odd numbered frames and contain the right data (frame 1, time 6:01, frame 3, time 6:06, etc) and the even numbered frames would be blank, though they contain the same times.

This problem isn't there for other satellite options, like "Derived Products".

Operational Impact: There will be another level of frames with blank data.

Required Behavior: N/A (DR 2002937)

32. Offices missing ability to see available choices to compare to when setting a default CTA of impact

As part of the MetaDataDictionary.py migration, offices have the ability to customize what CTAs or impacts are selected by default. However, the list of available CTAs or impacts is not known so this makes it challenging to determine if a particular CTA can be added or removed.

Ref. AWIPS DEFECT #106775

Operational Impact: When the list of available CTAs or impacts is not known, it makes it challenging to determine if a particular CTA can be added or removed.

Required Behavior: N/A (DR 2002938)

33. Hazard information in the WHAT... and WHEN... bullets match the order of the hazards in the Summary Headline

WFO Boulder reported a scenario where having a high wind watch out for today and upgrading a high wind watch for tomorrow resulted in backwards wording in the WHAT... and WHEN... bullets when compared to the order of how the hazards are represented in the Summary Headline

Ref. AWIPS DEFECT #106774

Setup

Note: per dev can run for any localization.

- 1) Launch CAVE as WFO OAX, load GFE, launch Hazard Services
- 2) Load the NonPrecip settings file from the Hazard Services Console by going to Setup --> Load Settings... --> NonPrecip --> Load.
- 3) Load the Forecast Zones OAX map layer via Maps --> Forecast Zones OAX

Draw a HW.W

- 4) In the Hazard Services Console, go to 'Maps for Select by Area' --> Forecast Zones OAX
- 5) MB1 (left-click) on NEZ044 and MB3 (right-click) to complete the drawing process to launch the Hazard Information Dialog window.
- 6) Choose 'Non-Precipitation' for the Category and 'High Wind Warning (HW.W)' for the Type. Set the start time to 12 UTC tomorrow and the end time to 18 UTC tomorrow.
- 7) In the Hazard Information Dialog window, hit the 'Preview' button and the Product Editor window will launch.
- 8) With the 'Hazard Data Editor' tab selected under the 'What:' checkbox. Change the text to be "AAA".
- 9) Hit Issue All --> Issue to issue the HW.W.

Extend the HW.W

- 10) Select the ISSUED HW.W from the console and right-click (MB3) to add zone NEZ045 (it's neighbor on the right) on the spatial display to the hazard event.
- 11) In the Hazard Information Dialog window, hit the 'Preview' button and the Product Editor window will launch.
- 12) With the 'Hazard Data Editor' tab selected, verify both 'What:' bullet textboxes have a 'Previous Text' checkbox associated with it and checking both with return "AAA" for both segments.
- 13) Issue All --> Issue to issue the HW.W.

Draw a HW.A

- 14) In the Hazard Services Console, go to 'Maps for Select by Area' --> Forecast Zones OAX
- 15) MB1 (left-click) on NEZ044 and NEZ045 (the same zones as the HW.W) and MB3 (right-click) to complete the drawing process to launch the Hazard Information Dialog window.
- 16) Choose 'Non-Precipitation' for the Category and 'High Wind Watch (HW.A)' for the Type. Set the start time to 06 UTC tomorrow and the end time to 09 UTC tomorrow.
- 17) In the Hazard Information Dialog window, hit the 'Preview' button and the Product Editor window will launch.
- 18) With the 'Hazard Data Editor' tab selected, under the 'What:' bullet textbox. Change the text to be "For the High Wind Watch, DDD possible. For the High Wind Warning, EEE expected."
- 19) Hit Issue All --> Issue to issue both hazard events.

Upgrade the HW.A to a HW.W

20) In the Hazard Services Console, select the ISSUED HW.A hazard event.

21) In the Hazard Information Dialog window, change the Type: to "High Wind Warning (HW.W)"

22) In the Hazard Information Dialog window, hit the 'Preview' button and the Product Editor window will launch

23) With the 'Hazard Data Editor' tab selected, verify the order of the High Wind Warning times in the 'Summary Headlines:' text box matches the order of the information in the 'When:' text box. For example:

Summary Headlines:

...HIGH WIND WARNING IN EFFECT FROM 1 AM TO 4 AM CDT FRIDAY...

...HIGH WIND WARNING REMAINS IN EFFECT FROM 7 AM TO 1 PM CDT FRIDAY...

When:

For the first High Wind Warning, from 1 AM to 4 AM CDT Friday. For the second High Wind Warning, from 7 AM to 1 PM CDT Friday.

24) Hit Issue All --> Issue to issue both hazard events.

Operational Impact: Order of the what/when bullets not matching the order of the hazards listed under summary.

Required Behavior: N/A (DR 2002939)

34. Add missing Hard Freeze Watch/Warning Requirements to the NPW HazSimp turnkey

In addition to extreme heat/cold turnkeys, a turnkey and turnkey logic for hard freeze hazards needs to be added.

Ref. AWIPS DEFECT #106773

Operational Impact: User will not see options for Hard Freeze Watch (HZ.A) and Hard Freeze Warning (HZ.W) products.

Required Behavior: N/A (DR 2002940)

35. When self.polygonBased is set to True, Hazard Services should query the warnngenloc table and not the city table

VLab #81784 incorrectly implemented the requested behavior to allow for the warnngenloc table to be queried when self.polygonBased was set to True.

Ref. AWIPS DEFECT #106772

Operational Impact: Product may report incorrect data when self.polygonBased is set to True.

Required Behavior: N/A (DR 2002941)

36. Unable to issue an FA.A.* and FF.A.* hazard events together in the same zone

Several offices have reported that they are unable to issue an FA.A.* and FF.A.* watch products together in the same zone.

Edit attached files

GFE_Flood_Interop_Grid.png (173 KB) GFE_Flood_Interop_Grid.png Example of the painted GFE Interoperability Grid darrel.kingfield, 07/21/2022 09:48 PM

Ref. AWIPS DEFECT #106771

Setup

Note: per dev can use any localization.

- 1) Launch CAVE as WFO OAX, load GFE, launch Hazard Services
- 2) Load the Hydrology_All settings file from the Hazard Services Console by going to Setup --> Load Settings... --> Hydrology_All --> Load.
- 3) Load the Forecast Zones OAX map layer via Maps --> Forecast Zones OAX

Draw a FF.A.BurnScar Hazard Event

- 4) In the Hazard Services Console, use the Drawing Tools --> Draw Polygon tool and draw a polygon that in the middle of NEZ044 forecast zone. Right-click (MB3) to finish the drawing and launch the Hazard Information Dialog window.
- 5) Choose 'Hydrology' for the Category and 'Flash Flood Watch (FF.A.BurnScar)' for the Type. Set the start time to 14 UTC tomorrow and the end time to 18 UTC tomorrow.

Draw a FA.A Hazard Event

- 6) In the Hazard Services Console, go to 'Maps for Select by Area' --> Forecast Zones OAX
- 7) MB1 (left-click) on NEZ044 and all surround forecast zones and MB3 (right-click) to complete the drawing process to launch the Hazard Information Dialog window.
- 8) Choose 'Hydrology' for the Category and 'Flood Watch (FA.A)' for the Type. Set the start time to 12 UTC tomorrow and the end time to 16 UTC tomorrow.

Run the Hole Punch Tool

- 9) In the Hazard Services Console, select both the FA.A and FF.A.BurnScar hazard events. Selected events will be highlighted in dark blue.
- 10) In the Hazard Services Console go to Tools --> Hole Punch Tool.
- 11) In the Hole Punch Tool dialog window, choose the FA.A hazard event to be selected in the 'Select Hazard Event to Clip' dropdown menu and choose the FF.A.BurnScar hazard event to be checked on in the 'Clipping Features:' section. Click on the Run button

Verify Results 1 - GFE Interoperability Painting

- 12) With both hazard events selected in the Hazard Services Console, right-click on either event and choose 'Propose 2 Selected Pending'.

13) In the Grid Manager Tab, go to the 'Hazards' weather element and choose the grid from 14-16 UTC tomorrow. You should see a FF.A hazard event inside a larger FA.A grid. See GFE_Flood_Interop_Grid.png for an example of what this should look like.

Verify Results 2 - Ordering of the FF.A. and FA.A.* hazards in the FFA Product*

14) In the Hazard Information Dialog window for either event, left-click (MB1) on the Preview button to launch the Product Editor window.

15) For the segment with both the FF.A.* and FA.A.* hazards, verify the FF.A hazard event is listed above the FA.A hazard for both the P-VTEC lines and Summary headlines. An example of this is below.

NEZ044-220545-

```
/O.NEW.KOAX.FF.A.0001.220722T1400Z-220722T1800Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
/O.NEW.KOAX.FA.A.0001.220722T1200Z-220722T1600Z/
/00000.0.ER.000000T0000Z.000000T0000Z.000000T0000Z.OO/
```

Dodge-

Including the cities of Fremont and Fremont

442 PM CDT Thu Jul 21 2022

...FLASH FLOOD WATCH IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY AFTERNOON...

...FLOOD WATCH IN EFFECT FRIDAY MORNING...

16) Delete any framed text and left-click (MB1) on the Issue All and subsequent Issue buttons.

Operational Impact: Unable to issue an FA.A.* and FF.A.* hazard together in the same zone.

Required Behavior: N/A (DR 2002942)

37. GFE Interoperability Painting Errors and Performance Problems

WFO BYZ reported that when issuing a hazard event using the 'Maps for Select by Area' tool for forecast zones 171 and 298, GFE interoperability was painting the wrong grid cells in the incorrect zones and sometimes was throwing geometry errors (this was very inconsistent).

New polygon clean-up method needed to address these polygon errors and paint the appropriate zones with the appropriate colors.

Edit attached files

BYZ_MTZ171_Grid.png (45.8 KB) BYZ_MTZ171_Grid.png Example of how MTZ171 should be painted darrel.kingfield, 07/21/2022 09:26 PM

Operational Impact: Hazard event using "Maps for Select by Area" paints wrong grid cells in incorrect zones and throws grid errors.

Required Behavior: N/A (DR 2002943)

38. GFE - Aviation_populate produces an ISC error message in AV

Able to reproduce on TBW4 (21.1.4-12)

Steps:

Open GFE

Click on Populate > Aviation_populate

If the system says its already running and do you want to continue click yes.

Error is produced at this point:

Error running procedure Aviation_Populate

jep.JepException: <class 'KeyError'>; ISC

```

    at
    /awips2/cave/etc/gfe/userPython/procedures/Aviation_Populate.makeDatabaseIDDict(Aviation_Populate.py:1063)
    at
    /awips2/cave/etc/gfe/userPython/procedures/Aviation_Populate.execute(Aviation_Populate.py:183)
    at
    /home/salvatore.rowe/caveData/common/base/python/MasterInterface.runMethod(MasterInterface.py:132)
    at
    /awips2/cave/etc/gfe/userPython/utilities/ProcedureInterface.runProcedure(ProcedureInterface.py:111)
    at <string>.<module>(<string>;1)
    at jep.Jep.eval(Native Method)
    at jep.Jep.eval(Jep.java:451)
    at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:285)
    at
    com.raytheon.viz.gfe.procedures.ProcedureController.executeProcedure(ProcedureController.java:160)
    at
    com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.execute(ProcedureJobPool.java:381)
    at
    com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.processRequest(ProcedureJobPool.java:345)
    at
    com.raytheon.viz.gfe.procedures.ProcedureJobPool$ProcedureJob.run(ProcedureJobPool.java:324)
    at org.eclipse.core.internal.jobs.Worker.run(Worker.java:63)

```

Operational Impact: Aviation_populate fails to run due the ISC error

Required Behavior: N/A (DR 2002944)

39. Developer deploy of edex doesn't work without OGC git repository's FOSS imported

Due to changes to the feature layout of FOSS in EDEX to support security patching FOSS, the developer deploy now requires the FOSS in the OGC repository to be imported into Eclipse. Developers shouldn't have to do this, they should be able to deploy EDEX with just the four primary git repositories cloned and imported. Fix this issue by moving the FOSS plugins from the OGC repo to the AWIPS2_foss repo. Then developers will be able to get a successful EDEX deploy without having the OGC repo cloned and imported.

Operational Impact: None, this only affects developers

Required Behavior: N/A (DR 2002948)

40. Pypies MkdirLockManager.py uses os.errno which was removed in Python 3.7

This was reported by a Hazard Services developer. In some of the exception handling code in MkdirLockManager.py, the code is checking error numbers against os.errno. os.errno was removed in Python 3.7, see the bottom of this section:

<https://docs.python.org/3/whatsnew/3.7.html#changes-in-the-python-api>

Update the code to import errno to fix the problem. Also search through the baseline for any other instances of os.errno and fix those if found.

Operational Impact: Python error handling will not be as graceful and some error messages may be lost

Required Behavior: N/A (DR 2002949)

41. GFE: HLS fails in wind speed sampling

The HLS failed due to an error in 21.4.1 regression testing, see below.

Matt Belk said that the error message indicates that the additional sampler for the tropical wind speed probabilities was not created. This would be done in the `_createSamplers` method for the TCv. There would need to be at least a setting `self._samplerWindSpeedProb = None` in either the `__init__` method of the `HLSTCV_Common TextProduct` class, or within the HLS itself, so the name was at least defined. That is so we can reuse the `HLSTCV_Common` code. The HLS does not require this specific sampler per se, because it does not provide a specific wind forecast.

2011-08-25 05:12:35,073:FormatterRunner:ERROR:Error generating text product

Traceback (most recent call last):

File `"/awips2/cave/etc/gfe/userPython/textUtilities/FormatterRunner.py"`, line 121, in `executeFromJava`

`forecasts = runFormatter(databaseID=databaseID, site=site, forecastList=forecastList, testMode=testMode,`

File `"/awips2/cave/etc/gfe/userPython/textUtilities/FormatterRunner.py"`, line 295, in `runFormatter`

`forecast = formatter.getForecast(forecastType, argDict)`

```

File "/awips2/cave/etc/gfe/userPython/textUtilities/TextFormatter.py", line 184, in getForecast
    text = product.generateForecast(argDict)
File "/home/laura.kowal/caveData/etc/configured/MHX/gfe/userPython/textProducts/HLS.py",
line 493, in generateForecast
    self._sampleHLSData(argDict)
File "/home/laura.kowal/caveData/etc/configured/MHX/gfe/userPython/textProducts/HLS.py",
line 2141, in _sampleHLSData
    statList = self.getStatList(wholeDomainSampler,
File "/awips2/cave/etc/gfe/userPython/textUtilities/Interfaces.py", line 97, in getStatList
    stats = self.getStatDict(
File "/awips2/cave/etc/gfe/userPython/textUtilities/Interfaces.py", line 115, in getStatDict
    return Analysis.Analysis(sampler).createStats(
File "/awips2/cave/etc/gfe/userPython/textUtilities/Analysis.py", line 83, in createStats
    stats = method(parmHisto, timeRange, component, args)
File "/awips2/cave/etc/gfe/userPython/textUtilities/SampleAnalysis.py", line 617, in
vectorModeratedMax
    result = self.createStats(parmHisto, timeRange, componentName, args, primaryMethod)
File "/awips2/cave/etc/gfe/userPython/textUtilities/SampleAnalysis.py", line 1800, in
createStats
    result = eval(primaryMethod)
File "<string>", line 1, in <module>
File "/awips2/cave/etc/gfe/userPython/textUtilities/SampleAnalysis.py", line 2151, in
getModeratedMinMax
    minMod, maxMod = self.getModeratedLimits(parmHisto, timeRange, componentName)
File "/awips2/cave/etc/gfe/userPython/textUtilities/SampleAnalysis.py", line 266, in
getModeratedLimits
    modDict = self.moderated_dict(parmHisto, timeRange, componentName)
File "/awips2/cave/etc/gfe/userPython/textProducts/HLSTCV_Common.py", line 230, in
moderated_dict
    elif self._samplerWindSpeedProb is not None:
AttributeError: 'TextProduct' object has no attribute '_samplerWindSpeedProb'

```

Operational Impact: HLS will fail to be generated.

Required Behavior: N/A (DR 2002959)

42. GFE: TCV fails to transmit due to space in PIL

During regression testing of 21.4.1, The TCV product generated but failed to transmit due to a space in the PIL. Instead of TCVMHX, the PIL was TCV MHX.

WTUS82 KMHX 251040

TCV MHX

It appears the problem is caused by a space in the code where the header is put together in processWmoHeader.

```
def processWmoHeader(self, wmoHeader):
```

```

    text = f"{wmoHeader['TTAAii']} {wmoHeader['fullStationID']}
{wmoHeader['ddhhmmTime']}\n"
    text += f"{wmoHeader['productID']} {wmoHeader['siteID']}\n"
    return text

```

The space between productID and siteID should be removed as follows:

```

def processWmoHeader(self, wmoHeader):
    text = f"{wmoHeader['TTAAii']} {wmoHeader['fullStationID']}
{wmoHeader['ddhhmmTime']}\n"
    text += f"{wmoHeader['productID']}{wmoHeader['siteID']}\n"
    return text

```

Update 6/9/23: Updated to cover extra space in header per TBW TT 248529.

Operational Impact: TCV will fail to transmit.

Required Behavior: N/A (DR 2002960)

43.DV2: Python Pypies Log Processes Not Starting with Python 3.8

Justin Mayfield:3 pypies python processes for logging were not running. I had to modify /etc/init.d/httpd-pypies and change the logging command to use python3.8 vs 3.6.It looks like that may have been an issue with the 21.3.1-33 release which included the python 3.8 upgrade. We see the issue on tbw3 (21.3.1-35) and tbw4 (21.4.1-09).

Fix in /etc/init.d/httpd-pypies:
 loggingCmd="\${PYTHON_INSTALL}/bin/python -u
 \${PYTHON_INSTALL}/lib/python3.8/site-packages/pypies/logging/logProcess.py"

Operational Impact: None, the /tmp/pypiesLoggingService.log not created.

Required Behavior: N/A (DR 2002961)

44.Alter functionality in the Procedure dialog fails for radar- <site>; sources

After copying in/saving a bundle for a radar product displayed via Volume Browser using Source radar-<site>;, the bundle fails to be

Altered and displayed for the selected alternate site.

Altering radar data/sites is successful when loaded from the D2D menu rather than the Volume Browser.

Note: Radar data is no longer dependent on the Home location.

Operational Impact: Forecasters cannot display the requested radar data for other sites via Altered bundles created using a radar source from the Volume Browser.

Required Behavior: N/A (DR 2002963)

45. NCTEXT menu missing from D2D at NCs

The NCTEXT menu was removed from D2D menus at WFOs, but should still be present in the ATAN. Add the NCTEXT menu back to the D2D->Tools menu.

Operational Impact: Unable to access NCTEXT menu option from D2D

Required Behavior: N/A (DR 2002972)

46. Unable to create new PythonScript

The attached error was returned when starting up Hazard Services (related to Python 3.8 upgrade)

The issue appears to be related to how HazardServicesImporter is executing the following import: `from mpl_toolkits.mplot3d import Axes3D`. Somehow that is a namespace import instead of a path import. The upgrade of matplotlib changed what gets imported when HS imports matplotlib. Regardless of how it happens, the fix is to make the HazardServicesImporter not do its thing when it encounters namespace paths.

The proposed fix is to add the following change to the top of the `find_module()` method:

```
<pre>
if package_path is not None and type(package_path) is not list:
    return None
</pre>
```

Operational Impact: Hazard Services won't work

Required Behavior: N/A (DR 2002977)

47. Volume Browser: baseline segments which are outside of the radar coverage area are still selectable.

The Volume Browser displays baseline segments as select-able when they are outside of the selected radar coverage area.

Note: this is created from DCS 22626.

To reproduce:

1. load the D2D perspective in CAVE.
2. from the top menu, load the local radar.
3. from the top menu select Tools->Baselines
4. move line A--A' (if necessary) to be within the radar coverage area.
5. from the top menu select Volume->Browser
6. in the Volume Browser select Edit->Clear All to clear out any prior selections.
7. from the top menu in Volume Browser select Plan View->Cross Section
8. from the top menu in Volume Browser select Log 1050-150->0-60 kft AGL
9. under Sources select Volume->Radar->(local radar name)

10. under Fields, select Other->Reflectivity.
 11. under Planes open the Specified drop down and verify LineA is available for selection but do not select it.
 12. on the map display, click-and-drag line A--A' well outside the radar coverage area.
- Expected result: In the Volume Browser, open the Specified drop down and verify LineA is no longer available for selection.
- Actual result: LineA is still selectable.

Operational Impact: The Volume Browser displays baseline segments as select-able when they are outside of the

selected radar coverage area.

Required Behavior: N/A (DR 2002978)

48. PySide2 permissions

The PySide2 install rpm needs to update some permissions on some files in order to provide executable permissions.

/awips2/python/bin/ - all pyside2 script wrappers are broken as the exe they point to in the site-packages PySide2 do not have the correct execute permissions (designer, uic, rcc, lupdate). So we need to ensure the executables these wrapper scripts point to have execute permissions.

/awips2/python/lib/python3.6/site-packages/PySide2/Qt/libexec/QtWebEngineProcess also needs these execute permissions so WebView works in PySide2 which is what is used to display the documentation on VLab.

Operational Impact: Unable to view documentation in UGA GraphiDSS Application. Also not able to launch and use designer application to graphically build user interfaces or use the uic tool to convert ui files to python code.

Required Behavior: N/A (DR 2002980)

49. UGA Bug Fixes From SWIT Cloud Testing

Contains bug fixes uncovered during initial cloud testing of 21.3.1. Most notably automated unit tests not defaulting to OUN and instead using the EDEX localization site of OAX.

Operational Impact: Automated unit tests not defaulting to OUN and instead using the EDEX localization site of OAX. Also templates not saving correctly causing failures in loading for templates and roadway shields.

Required Behavior: N/A (DR 2002983)

50. Request active table can fail due to logging error

Site found the following error on dx4-spike in /awips2/GFESuite/logs/OAX/20220331/dx4-spike/requestAT.log

```
ERROR 2022-03-31 17:45:44,499 [57843:140006811039488] requestAT.py: Error requesting
active table
Traceback (most recent call last):
File "/awips2/edex/data/utility/common_static/base/vtec/requestAT.py", line 150, in
runFromJava
execute_request_at(serverHost, serverPort, serverProtocol, mhsid,
File "/awips2/edex/data/utility/common_static/base/vtec/requestAT.py", line 128, in
execute_requ
est_at
msgSendDest, xml = irt.createDestinationXML(destSites, sourceServer)
File "/awips2/edex/data/utility/common_static/base/gfe/python/isc/IrtAccess.py", line 561, in cr
eateDestinationXML
self.logEvent("Requesting Server:", self.printServerInfo(requestingServer))
File "/awips2/edex/data/utility/common_static/base/gfe/python/isc/IrtAccess.py", line 83, in log
Event
self.getLogger().info(iscUtil.tupleToString(*msg))
File "/awips2/edex/data/utility/common_static/base/gfe/python/isc/IrtAccess.py", line 101, in ge
tLogger
if today > self.__loggerDate:
TypeError: '>' not supported between instances of 'datetime.date' and 'int'
```

Site has not yet traced down if it is related to an upgrade to Python 3 or an upgrade from Python 3.6 to 3.8.

From Rodo 8839

If you look at dx4-spike (21.3.1 testbed), there are hs_err_pid files in /awips2/edex/bin. Some are really old and those we are not concerned with. More concerning is the ones that started in March of 2022 about the time that Python 3.8 began to be used on the testbed. Investigating these, these are crashes in libpython3.8 itself, not one of our libraries. Also, many of them have in the stacktrace RetrieveRemoteActiveTableHandler. With this knowledge I was able to repeat the crash on my development laptop by installing 21.3.1 and running the /awips2/GFESuite/bin/requestAT script repeatedly. Since the crash is in libpython, and we don't have hs_err_pid files from the previous months, I do not think it occurred in Python 3.6. Also we do not have equivalent crashes on redbaron (RHEL 8 testbed) so that complicates understanding of what is going on. It may be a timing problem/race condition in Python itself.

Operational Impact: Failure to keep active tables in sync, potential loss of data

Required Behavior: N/A (DR 200291)

51. BMH: Increase Emergency Override dialog duration limit

Duration limit in the Emergency Override dialog needs to be increased to 99.5 hours. Currently it is set to 6 hours.

Operational Impact: Without this fix the the SAME duration cannot be increased to 99.5 hours (per FEMA and EAS standards) in the Emergency Override dialog.

Required Behavior: N/A (DR 2002993)

52. IRTManager can throw NullPointerException after clustered context failover

During testing of the python 3.8 build of swit_21.3.1, EDEX threw the following exception while trying to activate a new site:

```
<pre>
java.lang.NullPointerException
at com.raytheon.edex.plugin.gfe.isc.IRTManager.activateSite(IRTManager.java:119)
at com.raytheon.edex.plugin.gfe.isc.IscServiceProvider.activateSite(IscServiceProvider.java:176)
at
com.raytheon.edex.plugin.gfe.config.GFESiteActivation.internalActivateSite(GFESiteActivation.java:443)
at
com.raytheon.edex.plugin.gfe.config.GFESiteActivation.activateSite(GFESiteActivation.java:293)
at com.raytheon.uf.edex.site.SiteAwareRegistry.handleMessage(SiteAwareRegistry.java:300)
at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at
java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
at
java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
at java.base/java.lang.reflect.Method.invoke(Method.java:566)
at org.apache.camel.support.ObjectHelper.invokeMethodSafe(ObjectHelper.java:372)
at org.apache.camel.component.bean.MethodInfo.invoke(MethodInfo.java:489)
at org.apache.camel.component.bean.MethodInfo$1.doProceed(MethodInfo.java:311)
at org.apache.camel.component.bean.MethodInfo$1.proceed(MethodInfo.java:281)
at
org.apache.camel.component.bean.AbstractBeanProcessor.process(AbstractBeanProcessor.java:145)

```



```
at org.apache.camel.component.bean.BeanProcessor.process(BeanProcessor.java:68)
at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:312
)
at org.apache.camel.processor.Pipeline$PipelineTask.run(Pipeline.java:90)
at
org.apache.camel.impl.engine.DefaultReactiveExecutor$Worker.schedule(DefaultReactiveExecu
to
r.java:148)
at
org.apache.camel.impl.engine.DefaultReactiveExecutor.scheduleMain(DefaultReactiveExecu
j
ava:60)
at org.apache.camel.processor.Pipeline.process(Pipeline.java:147)
at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:312
)
at
org.apache.camel.impl.engine.DefaultAsyncProcessorAwaitManager.process(DefaultAsyncProc
esso
rAwaitManager.java:83)
at org.apache.camel.support.AsyncProcessorSupport.process(AsyncProcessorSupport.java:41)
at
org.apache.camel.component.jms.EndpointMessageListener.onMessage(EndpointMessageListen
er.ja
va:130)
at
org.springframework.jms.listener.AbstractMessageListenerContainer.doInvokeListener(Abstract
MessageListenerContainer.java:736)
at
org.springframework.jms.listener.AbstractMessageListenerContainer.invokeListener(AbstractM
e
ssageListenerContainer.java:696)
at
org.springframework.jms.listener.AbstractMessageListenerContainer.doExecuteListener(Absrac
tMessageListenerContainer.java:674)
at
org.springframework.jms.listener.AbstractPollingMessageListenerContainer.doReceiveAndExec
ut
e(AbstractPollingMessageListenerContainer.java:318)
at
org.springframework.jms.listener.AbstractPollingMessageListenerContainer.receiveAndExecute
(
AbstractPollingMessageListenerContainer.java:257)
at
org.springframework.jms.listener.DefaultMessageListenerContainer$AsyncMessageListenerInvo
ke
r.invokeListener(DefaultMessageListenerContainer.java:1189)
```

```

at
org.springframework.jms.listener.DefaultMessageListenerContainer$AsyncMessageListenerInvo
ke
r.executeOngoingLoop(DefaultMessageListenerContainer.java:1179)
at
org.springframework.jms.listener.DefaultMessageListenerContainer$AsyncMessageListenerInvo
ke
r.run(DefaultMessageListenerContainer.java:1076)
at
java.base/java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1128)
at
java.base/java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:628)
at java.base/java.lang.Thread.run(Thread.java:829)
</pre>

```

After further investigation it was determined that this `NullPointerException` occurred because of a bug in `ISCSERVICEProvider`. The class needs to flip its internal `activeInstance` flag when failing the clustered context between cluster nodes. Otherwise, EDEX will attempt to run ISC jobs on multiple cluster nodes.

History

D.Gillingham was able to trace it back to release 14.4.1 based on the software history entries in the source code. The bug existed since the class was originally introduced which happened to be part of RODO DR 4128, which was part of release 14.4.1.

Operational Impact: When this bug occurs, GFE site activation is broken. This would not allow the server to enter service backup mode if required by a failing partner site.

Required Behavior: N/A (DR 2002994)

53. Python SyntaxWarnings for using "is" with a literal

Python 3.8's compiler produces syntax warnings when it detects questionable use of the word "is" in Python code. "is" is an identity comparison, i.e. the exact same object, whereas `==` or `!=` are equality comparisons and typically what someone is checking for (except when checking is `None`, because `None` is a singleton). The warnings in the baseline in `swit_21.3.1` when starting GFE perspective of CAVE are shown below:

```

<pre>
/common/njensen/git/swit_21.3.1/AWIPS2_baseline/cave/com.raytheon.viz.gfe/localization/gfe/
userPyt
hon/utilities/ModelBlendUtility.py:111: SyntaxWarning: "is not" with a literal. Did you mean
"!="?
if ((id is not "") and (id not in DbaseIDs)):
/common/njensen/git/swit_21.3.1/AWIPS2_baseline/cave/com.raytheon.viz.gfe/localization/gfe/
userPyt

```

```
hon/procedures/StormInfo.py:315: SyntaxWarning: "is not" with a literal. Did you mean "!="?
if response is not "":
INFO:FormatterRunner:TextProduct FormatterLauncher Processing...
/common/njensen/git/swit_21.3.1/AWIPS2_baseline/cave/com.raytheon.viz.gfe/localization/gfe/
userPyt
hon/textUtilities/HazardsTable.py:1901: SyntaxWarning: "is" with a literal. Did you mean "=="?
if action is 'NEW' or \
INFO:FormatterRunner:TextProduct FormatterLauncher Done....
</pre>
```

Since it's the compiler generating the warning, you have to remove .pyc files to get the warning to show up in the console. For more information about this feature, see <https://adamj.eu/tech/2020/01/21/why-does-python-3-8-syntaxwarning-for-is-literal/>

We need to fix these pieces of code to not produce the warning and be more correct. The code causing the warnings may not be working correctly, hence the warning. Some quick testing in the Python interpreters indicates using is with non-empty strings does not work as intended in Python 2.7, 3.6, and 3.8.

Additional instances found by searching the code base:

```
</pre>
com.raytheon.edex.plugin.gfe/utility/common_static/base/gfe/textproducts/templates/product/GL
F.py:1316
if wavestats is "None" or wavestats is None:
```

```
gov.noaa.gsd.common.hazards.utilities.hazardservices/utility/common_static/base/HazardService
s/python/utilities/GridUtilities.py:406
if g.geom_type is 'GeometryCollection':
</pre>
```

Operational Impact: Incorrect output may be produced. For procedures, grids may not change the way expected; for text formatters, product may be wrong; and for hazard services the text in product may be wrong.

Required Behavior: N/A (DR 2002995)

54. Resolve time matching issues for GFE editor (Governance)

Resources loaded in a single editor must display similar or same time frame when looping through them using left/right arrow keys.

Need to fix the following issues

- (1) make HS time displayed in Legend from GFE perspective;
- (2) make sure the HS legend time in GFE always matches the yellow line in the Grid Manager
- (3)* make the arrow keys (right/left) functioned in order to change the HS time in Legend;

(4)* make the time scale RED line in HS Console in GFE behaved as D2D for HS time in legend;

Note: * is optional

Operational Impact: Low, in GFE, the HS legend time does not match the selected grid time.

Required Behavior: N/A (DR 2002996)

55. Tsunami EAS: the word "The" in product text is incorrectly used

In the Tsunami EAS utility, the word "The" is sometimes placed before geographical areas, which results in awkward wording.

For example, if running as the Guam office, the Applicable Zones available are Guam, Saipan, Tinian, Rota and American Samoa.

If any one of them is selected, the resulting practice product contains text "The Guam", "The Saipan", "The Tinian", etc.

Operational Impact: No serious impact: though the text of warning products could contain awkward wording.

Required Behavior: N/A (DR 2003007)

56. Fix a2pgca's generation of JMS passwords.properties file on ignite cache VMs

#8723(SS 22938:21.3.1) updated a2pgca to generate a JMS client passwords.properties file on cache VMs. The jms_password.py file looks up some jars in /awips2/edex/lib to do so. #8762 (SS 23003: 20.3.2) moved the jars on cache VMs to be under /awips2/ignite/lib, so this no longer works.

Update jms_password.py to look for jars in /awips2/ignite/lib as well as /awips2/edex/lib.

Operational Impact: Fails to create passwordJMS/Qpid communication will not work on ignite cache servers. This breaks the data storage auditing done under 22753, which may allow the database and data store to get out of sync.

Required Behavior: N/A (DR 2003014)

57. Ignite: PyPies logging is not going in ignite-pypies log file

The ignite-pypies-<date>.log file is empty on the cache servers in 21.4.1. This appears to be due to semi-duplicate pypies logging config entries in ignite-logback.xml. Fix this so that PyPies logging within ignite goes in the ignite-pypies file.

Operational Impact: None

Required Behavior: N/A (DR 2003018)

58. Missing Panels on Frames on Satellite Composite RGB products

There's a small glitch with the new caching added from DR22589 in the `SatResourceData.getAvailableTimes()`. See the attached root cause analysis and patch fix.

Operational Impact: Panels will go missing when Satellite composite rgb products are loaded. This occurs with new incoming frames.

Required Behavior: N/A (DR 2003019)

59. Fix NullPointerException when restoring edit from local history in Localization Perspective for Eclipse 4.21

Backport the eclipse bug fix for the org.eclipse.compare plugin for Eclipse 4.21. See DR #8722 (DR 22945) for more information.

Operational Impact: Unable to restore edits from local history via Localization perspective

Required Behavior: N/A (DR 2003030)

60. Clean up hardcoded passwords from QpidSubscriber.py

In investigating #8725, I found a couple of hardcoded passwords in `QpidSubscriber.py` that are totally unnecessary and should be removed:

line 56: `SSL_PASSWORD`: This is passed into the qpid-proton API code to read password-protected private keys, but using None worked just as well.

line 58: `QPID_PASSWORD`: This is used as part of the connection URL, but `amqs://guest@qpid-broker:5672` works just as well.

It would good to remove these so no future security scans find these items. There is some additional cleanup in this code that could be done (remove unused variables, use more python3 language features), but these are higher priority.

Operational Impact: None. Code cleanup for security purposes. The script is currently operating as expected.

Required Behavior: N/A (DR 2003033)

61. Hazard Services Headlines request too slow

The ZFP formatter performance testing is failing in 21.3.1. We have narrowed this down to the retrieval of Hazard Services Headlines.

Much of this time is spent in two places:

1. Initializing a `PythonScript` instance for each request
2. Retrieving Hazard Services events from the registry

Potential solutions are:

1. Reuse the PythonScript instance to avoid the overhead of initializing it each time
2. Cache HS events to avoid retrieving them from the registry on every call

Operational Impact: ZFP formatter too slow

Required Behavior: N/A (DR 2003034)

62. GFE: Possible to skip ETN by saving WSW draft and then editing expiration time

Two sites have recently reported issues where VTEC ETNs were skipped after extending the expiration time of the products using the box in the bottom right of the GUI.

CAR reported that WC.Y skipped over ETN 2 to ETN 3 on 1/10/2022 in TT 222829.
MFR reported that WW.Y skipped from ETN 34 to 38 on 12/23/2021 in TT 221284.
The CAR issue was replicated on a testbed. Presumably the ETN skipped multiple numbers at MFR due to multiple edits to the product before transmitting.

Instructions to replicate:

Generate a WSW with some kind of NEW hazards

Save this edited product as a draft

Issue the WSW

Call up that draft in the product editor

Adjust the product end time in the bottom right spin box

Issue that WSW

Operational Impact: Products with incorrect VTEC can be sent out.

Required Behavior: N/A (DR 2003039)

63. Center Weather Advisories (CWAs) disappear when looping through data in D2D

The following issue was reported by the Aviation Weather Center (AWCN) in Kansas City as well as the ZAU CWSU in Chicago. Greg Noonan at central region headquarters helped confirm the problem and provide testing instructions. See attached .gif.

The issue is that Center Weather Advisories (CWAs) will flicker on and off in the D2D display when looping through radar or satellite data.

Based on the code history, it appears this issue dates back several years.

To reproduce:

Load the Satellite > GOES-East and GOES-West By Sector > East MesoScale1 >
Imagery Channels > 0.64 Red Visible Band (Ch 02)

Increase the Frames to 64

Load Upper Air > Aviation > Center Weather Advisories

Load Upper Air > Aviation > AIRMET > IFR

All you need to do is load a satellite or a radar loop (which becomes the time match basis) - it doesn't matter which is loaded.

Notice that every product in the Aviation menu will remain constant on the screen, EXCEPT the Center Wx Advisories (in green) which blink on and off. (see attached gif)

That's the problem. They should remain constant on the screen just like the other products on this menu. This can be reproduced on both the HCI, legacy and a Windows Thin Client pointed to the HCI side. And what is being reported at the CWSUs.

Operational Impact: Situational awareness may be decreased as advisories display intermittently in D2D.

Required Behavior: N/A (DR 2003044)

64. UELE "bound must be positive" After Issuing River Flood Warning

Unable to reproduce.

Operational Impact: The impact is minimal since this error has only been encountered once and has not been able to be reproduced. It occurred when issuing a flood warning and had no noticeable impact other than the error being reported, as the warning still successfully issued.

Required Behavior: N/A (DR 2003068)

65. Fix shortcomings in DR 21493 encrypting JMS passwords

DR 21493 adds a password to the JMS credentials passed to qpid. A delta script was written to apply this password to EXISTING users. However a2pgca is ultimately used to manage the users .qpid credentials, and this script was not updated to create the properly formatted credentials. Therefore if a new user is created, or if a new certificate is created, or if a users credentials need to be fixed, a2pgca will not install credential files that will work with the 21.3.1 software.

Operational Impact: New or broken users will not get the correct .qpid credentials necessary to connect to qpid, which will cause CAVE client errors.

Required Behavior: N/A (DR 2003070)

66. IdM: a2pgca does not copy postgres and qpid certs to user's home directory

I believe a2pgca is currently written to look in /etc/passwd (getpwnam) for the user directory information. Its unclear how a2pgca gets the list of users.

But with IdM, the user information is no longer stored in /etc/passwd, so the lookup for users on the local device will not work, ergo the script will not update any IdM users certificate directories (.postgresql and .qpid). This is not normally an issue as the certificate does not change often, but this means the script cannot be used to fix issues with a users certificate directories, add the certificate directories for new users, update user certificate directories if the certificate is updated, or software changes require an update to the certificates.

I recommend changing how users and their home directories are determined. Potential users should be gathered from the directories in /home. Each directory maps to a user. Then a lookup of the users ID (eg in linux: `id <username>`). If the user exists, then that user and home directory is valid, and .postgresql and .qpid should be managed in that home directory. This will prevent errors from occurring for non user directories when a chown is run for an invalid user.

Operational Impact: If a user's certificate directories are broken, missing, or need a software required update then a2pgca refresh will not correct them. Without correction, the user will experience many issues with CAVE clients as they will be unable to connect to postgres or qpid.

Required Behavior: N/A (DR 2003071)

67. UGA: json file corruption

Several sites are reporting that site level /etc/XXX/PriSample and SecSample json files are becoming corrupted, causing GDSS image generation to fail on the json decoder.

Operational Impact: Failure to generate GDSS image.

Required Behavior: N/A (DR 2003072)

68. "Error determining intersecting map geometries for event" Error in Hazard Services

When attempting to create a hazard in Hazard Services that uses the forecast zones I get the following error when I attempt to Preview the hazard from the Hazard Information Dialog. On the map in the D2D perspective several of the counties selected for the flood watch will not get a hatching after clicking preview, and I appear to get an individual error in AV for each county that does not get the hatching. I tested this on builds prior to 21.4.1 and did not get this error.

Error determining intersecting map geometries for event: HZ-2021-OAX-OAX-21469

```
java.util.concurrent.ExecutionException: java.lang.NullPointerException
at java.base/java.util.concurrent.FutureTask.report(FutureTask.java:122)
at java.base/java.util.concurrent.FutureTask.get(FutureTask.java:191)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities.getIntersectingMapGeometries(GeoMapUtilities.java:781)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities.getIntersectingMapGeometries(GeoMapUtilities.java:638)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities.getIntersectingMapGeometries(GeoMapUtilities.java:591)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities.buildIntersectionStrategyUGCs(GeoMapUtilities.java:2629)
```

at
com.raytheon.uf.viz.hazards.sessionmanager.events.geometry.impl.SessionEventGeometryManager.buildHazardAreas(SessionEventGeometryManager.java:386)
at
com.raytheon.uf.viz.hazards.sessionmanager.events.impl.SessionEventManager\$SetEventTypeRunnable.run(SessionEventManager.java:4822)
at org.eclipse.swt.custom.BusyIndicator.showWhile(BusyIndicator.java:74)
at
com.raytheon.uf.viz.hazards.sessionmanager.events.impl.SessionEventManager.setEventType(SessionEventManager.java:1116)
at
com.raytheon.uf.viz.hazards.sessionmanager.events.impl.SessionEventManager.setEventType(SessionEventManager.java:1)
at
gov.noaa.gsd.viz.hazards.hazarddetail.HazardDetailPresenter\$6.stateChanged(HazardDetailPresenter.java:647)
at
gov.noaa.gsd.viz.hazards.hazarddetail.HazardDetailPresenter\$6.stateChanged(HazardDetailPresenter.java:1)
at
gov.noaa.gsd.viz.hazards.ui.StateChangeHandlerDelegate\$1.run(StateChangeHandlerDelegate.java:64)
at org.eclipse.swt.widgets.RunWithLock.run(RunnableLock.java:40)
at org.eclipse.swt.widgets.Synchronizer.runAsyncMessages(Synchronizer.java:185)
at org.eclipse.swt.widgets.Display.runAsyncMessages(Display.java:5101)
at org.eclipse.swt.widgets.Display.readAndDispatch(Display.java:4579)
at
org.eclipse.e4.ui.internal.workbench.swt.PartRenderingEngine\$5.run(PartRenderingEngine.java:1150)
at org.eclipse.core.databinding.observable.Realm.runWithDefault(Realm.java:338)
at
org.eclipse.e4.ui.internal.workbench.swt.PartRenderingEngine.run(PartRenderingEngine.java:1041)
at org.eclipse.e4.ui.internal.workbench.E4Workbench.createAndRunUI(E4Workbench.java:155)
at org.eclipse.ui.internal.Workbench.lambda\$3(Workbench.java:644)
at org.eclipse.core.databinding.observable.Realm.runWithDefault(Realm.java:338)
at org.eclipse.ui.internal.Workbench.createAndRunWorkbench(Workbench.java:551)
at org.eclipse.ui.PlatformUI.createAndRunWorkbench(PlatformUI.java:156)
at
com.raytheon.uf.viz.personalities.cave.component.CAVEApplication.startComponent(CAVEApplication.java:173)
at com.raytheon.uf.viz.application.VizApplication.start(VizApplication.java:102)
at org.eclipse.equinox.internal.app.EclipseAppHandle.run(EclipseAppHandle.java:203)
at
org.eclipse.core.runtime.internal.adaptor.EclipseAppLauncher.runApplication(EclipseAppLauncher.java:136)

```
at
org.eclipse.core.runtime.internal.adaptor.EclipseAppLauncher.start(EclipseAppLauncher.java:10
4)
at org.eclipse.core.runtime.adaptor.EclipseStarter.run(EclipseStarter.java:401)
at org.eclipse.core.runtime.adaptor.EclipseStarter.run(EclipseStarter.java:255)
at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at
java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.ja
va:62)
at
java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccesso
rImpl.java:43)
at java.base/java.lang.reflect.Method.invoke(Method.java:566)
at org.eclipse.equinox.launcher.Main.invokeFramework(Main.java:659)
at org.eclipse.equinox.launcher.Main.basicRun(Main.java:596)
at org.eclipse.equinox.launcher.Main.run(Main.java:1467)
at org.eclipse.equinox.launcher.Main.main(Main.java:1440)
Caused by: java.lang.NullPointerException
at
com.raytheon.uf.common.dataplugin.events.hazards.utilities.CachedGeometryUtil.intersection(C
achedGeometryUtil.java:390)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities.testInclusion(GeoMapU
tilities.java:1901)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities.access$1(GeoMapUtilit
ies.java:1853)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities$1.call(GeoMapUtilities.
java:759)
at
com.raytheon.uf.viz.hazards.common.session.geomaps.GeoMapUtilities$1.call(GeoMapUtilities.
java:1)
at java.base/java.util.concurrent.FutureTask.run(FutureTask.java:264)
at
java.base/java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1128)
at
java.base/java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:628)
at java.base/java.lang.Thread.run(Thread.java:829).
```

Operational Impact: Unable to issue a county based hydro product for many of the counties in the CWA. Even when selecting all the counties in the CWA, in the final product many counties are left out of the hazard..

Required Behavior: N/A (DR 2003074)

69. Hydrology VTEC Segment Ordering Problem

It was discovered in the swit_21.3.1 that some code went missing during a git merge.

The _vtecRecordsGroupSort method is missing the following code during its first 2 sort priorities that is causing some test VTEC harness failures and will cause problems with operational hydrology products if not addressed.

```
if aIndex > bIndex:  
    return 1  
elif aIndex < bIndex:  
    return -1
```

Without this code in place for the first two sort priorities, segment-ordering will be sorted by the earlier start time instead of the either the VTEC action or hazard significance.

As a result, issuing a Flood Watch (FA.A) from 12-16 UTC and then attempting to issue another Flood Watch (FA.A) from 19-22 UTC will show the CON segment before the NEW segment, when the opposite is needed.

This ticket will address this issue and fix other errors that is causing the VTEC test harness to fail.

Operational Impact: Segment-ordering will be sorted by the earlier start time instead of the either the VTEC action or hazard significance

Required Behavior: N/A (DR 2003089)

70. Grammatical Error in Winter Storm Warning Text

While testing Vlab 83054 for DCS 22305 a minor grammatical issue was discovered. The "What" portion of the WSW read: "Heavy snow expected. Total snow accumulations of 3 to 5 inches except of 10 to 13 inches in the testing domain". The word "of" before the second snowfall totals should be replaced with "between".

Operational Impact: The forecaster may need to manually remove the word "of" and replace it with the word "between".

Required Behavior: N/A (DR 2003096)

71. Rename convectprob references in comps.xml to probsevere

19.2.1 "convectprob" plugins were renamed "probsevere" as part of DCS 20816 ("Gerrit changeset":https://vlab.noaa.gov/code-review/c/AWIPS2_CIMSS/+16982), references in comps.xml in the AWIPS_build repo's branches for >= 21.3.1.

Operational Impact: None.

Required Behavior: N/A (DR 2003098)

72. WarnGen Templates: Miscellaneous fixes in the 20.2.3 templates

Various fixes are needed in the 20.2.3 WarnGen templates (request that this be included in 21.4.1):

1. The 20.2.3 Impact Special Weather Statement headline violates NWS policy - needs to be changed from mixed case to upper case. (TT 211997 WFO BGM)
 2. ImpactSPS menu text "BASIS FOR ADVISORY" should be "BASIS" (in NEW and COR sections)
 3. impactSPS xml file, line 29, change "impactTornadoWarning.vm file" to "the template's vm file."
 4. ImpactSPS wind tag corrections: remove 30 mph option, change 40 mph to say "Winds up to 40 mph"
 5. ImpactSPS sub severe hail damage (< one inch) should be changed from "Minor damage to outdoor objects is possible" to "Minor damage to vegetation is possible"
 6. ImpactSPS "DESTRUCTIVE" word conflict fix (Greg Schoor and Evan)
 7. In the impactTOR vm file (line 568) change "mile" to "point."
 8. ImpactSVS CAN/EXP wording change xml bulletText from "a threat" to "possible" (to coincide with wind/hail "still a threat" changed to "gusty winds/small hail are still possible.")
- For details see email from Evan Bookbinder Aug 10, 2021

Operational Impact: Impact SPS Headline violates NWS policy, the headline needs to be upper case instead of mixed case

Required Behavior: N/A (DR 2003116)

73. Zone doesn't match hazard configured area

Original description:

MTZ138 edit area does not match up with the hazard grid created. After issuing a WSW for MTZ138 using hazard services, I brought up the formatter launcher and loaded in the WSW, and it tried to EXA with MTZ057, the zone bordering MTX138. After viewing MTZ138 edit area over the hazard in the hazard grid, 3 grid boxes of the hazard are extended past the edit area into MTZ057.

Update 8/5/21:

I found certain forecast zones that were not painted correctly in the LWX localization (e.g., MDZ508). I've been working away at a fix and believe I have one that will result in far fewer paint problems.

The original issue has been addressed, but this SwIT DR is being opened to address the update on 8/5.

Operational Impact: Forecast zones for LWX would be painted incorrectly, which could result in generating bad hazards for the public in and around Washington, DC

Required Behavior: N/A (DR 2003118)

74. Improve logging where critical geometry operations are occurring

Original description: There are several critical operations (intersections, unions) that are performed along the way during product generation. Several sites are having geometry errors (invalid intersections, null geometries) and the logging is inadequate to diagnose the problem. This ticket will add logging to the critical pieces in the code.

During 21.3.1 testing of 22305, it was found that the code changes in a later iteration of #87972 is hiding the errors that should've been thrown with an earlier version of this ticket. Therefore, 87972 has been removed from 22305 and a fix that does a better job of showing the appropriate error messages will be checked in against this SWIT DR.

Operational Impact: Without proper alertviz messages, user will not get proper feedback

Required Behavior: N/A (DR 2003121)

75. Radar VB source data displayed at constant height levels fails to autoupdate when loaded

When radar data is displayed using the Radar source in the Volume Browser, using a fixed height plane (e.g., 1 km AGL), the data fails to automatically update in the main pane as new data arrives. This was repeatable on 21.4.1, 20.3.1, and 20.2.3. Displaying the same data on a constant radar tilt (e.g., 0.5 degrees) does update as expected.

Operational Impact: Radar data displayed using the Radar source at a constant height via Volume Browser doesn't update, therefore displaying old data to the forecaster

Required Behavior: N/A (DR 2003125)

76. Baseline GFE Tropical Text Product Issues

There is an issue with baseline GFE code that generates the Tropical expressions of uncertainty in the ZFP and CWF text products. Beyond period 6, the Wind/Seas should drop out if "Tropical Storm Conditions Possible" or "Hurricane Conditions Possible" are triggered. From periods 1-6 the phrase should just be generated along side all the other phrases in the periods. We were seeing periods in the CWF where the winds/seas were kept past period 6 which should not happen (MLB and MFL offices experienced this)

Anyway, the suggested fix is below from Matt Belk at BOX, this method overrides pws_words from VectorRelatedPhrases.py and should replace it. (ER offices use this override but it is not in the baseline GFE code right now for SR offices unless they install it).

Thanks so much for sending me the VectorRelatedPhrases module. After looking at it more closely, there is indeed an issue with the baseline file. If we examine the block of code starting at line 882 of that file, we would see this:

```
# COMMENT: If we have words from the pws_phrase during tropical cyclones
```

```
# the following lines of code will make sure wind_summary is
# not printed out.
if words is not None and len(words.strip()) > 0:
    # Remove the wind sumamry phrase from this component and any local
    # effect areas - no need to replace undesirable phrases later on
    self.removeComponentPhrases(tree, node, "wind_summary",
        areaLabels=[node.getAreaLabel(),
            node.getComponent().getAreaLabel()
        ])

```

In case the format gets messed up in this email, the only phrase being removed is the "wind_summary" phrase. This phrase produces text like "breezy", and only exists in the ZFP. Compare that code with the equivalent block of text in the override I sent originally:

```
#-----
# If this is the ZFP

if productType == "ZFP":

    # Remove the wind summary phrase from this component and all
    # local-effect areas
    self.removeComponentPhrases(tree, node, "wind_summary",
areaLabels=[node.getAreaLabel(), node.getComponent().getAreaLabel()])

#-----
# Otherwise, if this is beyond the 6th period in the CWF

elif compPeriod > 6:
    print("Beyond 6th period - Only uncertainty phrase and weather included in CWF")

    # Remove all possible wind phrases from this component and all
    # local-effect areas
    self.removeComponentPhrases(tree, node, "marine_wind_phrase",
areaLabels=[node.getAreaLabel(), node.getComponent().getAreaLabel()])
    self.removeComponentPhrases(tree, node, "marine_wind_withGusts_phrase",
areaLabels=[node.getAreaLabel(), node.getComponent().getAreaLabel()])

    # Remove all possible wave phrases from this component and all
    # local-effect areas
    self.removeComponentPhrases(tree, node, "wave_phrase",
areaLabels=[node.getAreaLabel(), node.getComponent().getAreaLabel()])
    self.removeComponentPhrases(tree, node, "wave_withPeriods_phrase",
areaLabels=[node.getAreaLabel(), node.getComponent().getAreaLabel()])
    self.removeComponentPhrases(tree, node, "chop_phrase",
areaLabels=[node.getAreaLabel(), node.getComponent().getAreaLabel()])

```


As should be obvious, the ER override removes the explicit forecast phrases from the CWF when the probabilistic wind speed phrases are used in the 6th period and beyond. Explicit wind and wave forecasts will be kept for the first 5 periods of the CWF, regardless.

So, if that is the desired behavior, then simply install this new override into your site level CWF overrides file. For any office using the ER CWF formatter, this equivalent override is already installed. The file attached to this email is fully Python3 compatible.

If the issue is something else, please let me know and I can dig into it. I will look at your products online and see if something is there. Perhaps another baseline file is the one we need to examine.

Operational Impact: The CWF does not comply with the approved policy.

Required Behavior: N/A (DR 2003128)

77. Some Cities Can't be Added to Pathcasts

Certain cities aren't being added to the pathcast even when a centroid passes directly over them. These specific examples seem to be major cities - this was reported by Milwaukee, Pittsburgh, and Omaha, and I myself replicated this problem as OAX in which a SVR with a centroid that passes directly over Omaha still does NOT include Omaha in the list of cities in a pathcast.

There are reports of non-major cities being left off the pathcasts for lines of storms from sites in another trouble tickets, but a workaround exists for them in which they can add centroids to the pathcast line which will pass over these minor cities and then they will be included. This workaround does NOT work for major cities like Omaha, and so is a separate, more serious problem.

Operational Impact: Major cities such as Milwaukee are left off a pathcast in the text product.

Required Behavior: N/A (DR 2003131)

78. D2D: multi panel layout: 2 panel layout loading error

When you go to 4 panel layout then zoom in to number 1,2,3,4 then switch to 2 panel layout it freezes. any other panel will load properly.

Per Tim Jensen: The problem is specifically seems to be that if you switch the number of panels to a smaller number while zoomed in it doesn't revert to the zoomed out, multipanel display. If you are on a panel number that would exist in the new layout, it shows you that panel. If you go to one that would not exist (ie. panel 4 in a 2 panel layout) you get a gray screen. This also has the problem for other panel layouts like going from 9 or 16 down to 4.

Operational Impact: The 2 panel layout will not load at all if you are zoomed into the any of the 4 panels then try to switch to 2 panel.

Required Behavior: N/A (DR 2003138)

79. CWA Generator issues prevent distribution on FAA systems

Three issues with the CWA Generator were discovered during testing at several CWSUs:

- The "Valid until" line in the product should not end with a "Z"
- The word wrapping logic was causing issues with the FAA processing
- An undefined timezone was preventing product distribution

Operational Impact: Center Weather Advisories issued by the CWSUs will not be recognized by the FAA product distribution/display systems.

Required Behavior: N/A (DR 2003176)

80. Fix ingestshapefiles.sh for pyshp upgrade

pyshp is being upgraded from 1.2.11 to 2.1.3 as part of this ticket:
https://vlab.ncep.noaa.gov/read_only_o_and_m_redmine/issues/21521

This breaks the ingestshapefiles.sh functionality. Fix it to work with the latest pyshp version.

Operational Impact: Hazard Services shape files will not be able to be ingested into the system, hindering the usage of recommenders/tools that utilize these shapes.

Required Behavior: N/A (DR 2003200)

81. Modify rsync to not use PX rsync module

The irt software uses a "grids" rsync module configured on the site's PXs, which allows it to sync data from that directory without a password. Security has asked us to discontinue that practice. The software will now use an ssh key to connect to the PXs without a password.

Operational Impact: This is to facilitate the work for DCS 21267

Required Behavior: N/A (DR 2003207)

82. C-SIG Metwatch: Plotting Isolated Convsigmet graphics

SIGMET or Significant Meteorological Information is a weather advisory that contains meteorological information concerning the safety of all aircraft.

A Convective SIGMET bulletin (text product) is issued for convection over the Continental U.S.

The text of the bulletin consists of either observation and a forecast or just a forecast.

Polygons should be rendered for all Convective SIGMETs, regardless of type, or the text of the Convective SIGMET bulletin.

Convective SIGMETs can be one of the following types, denoted by the following keywords that appear in the Convective SIGMET bulletin:

ISOL - isolated (weather forecast)
AREA
LINE

Polygon plotting for Convective SIGMETs does not work when the bulletin has the text

1. ISOL SEV TS (reported as previously being fixed)
2. ISOL TS
3. The type is preceded by "DVLPG", "INTSF", or "DMSHG"

Convective SIGMET bulletins can have qualifiers ("DVLPG", "INTSF", or "DMSHG") before or after the type keyword (ISOL, AREA, LINE). Polygons for the Convective SIGMET should be rendered in all of those cases.

Tested as working:

1. DVLPG AREA EMBD TS (23E)
2. DVLPG LINE EMBD TS (24E)
3. DMSHG AREA EMBD TS (50E)

To Test:

DVLPG ISOL EMBD TS
INTSF ISOL EMBD TS
DMSHG ISOL EMBD TS

ISOL EMBD TS (5E) - works
ISOL SEV TS (35E) - works
ISOL SEV EMBD TS

ISOL TS (38E) - works
DVLPG ISOL TS
INTSF ISOL TS
DMSHG ISOL TS

Analysis:

1. Polygon rendering for ISOL SEV TS does not work because ConvSigmetCastDataAdapter.convertIsol() has a conditional that will never be met, resulting in null AdvisoryRecord objects always being returned. Such objects contain the information needed to draw isolated thunder storms.

2. Updating the condition in number 1 brings back a problem from an earlier ticket: a bar of color across the top of the map in D2D. - Not True In 19.3.5-ncepPERF

3. Polygons rendering for ISOL TS not work due a faulty regular expression with an extra white space in ConvSigmetParser.processPhenomena(String)

Original Description:

Conv - convective

SIGMET - Significant Meteorological Event

ISOL - Isolate weather forecast.

In the previous ticket, 79536, we got part of the fix so that now Convective SIGMETs with the string " ISOL SEV TS " in their bulletin will render polygons. So, this ticket completes that work to cover the rendering for other " ISOL " type Conv SIGMETs. The boxed text under requirement 2 is there to show the possible variables around the keywords of "AREA" and "LINE"

The key issue with this ticket: polygon rendering issues when the sigmet type is preceded by "DVLPG", "INTSF", "DMSHG"

ISOL TS SIGMETs (without SEV attribute) do not plot and don't render polygons. SIGMETs for ISOL events can include multiple word qualifiers before and after the keyword ISOL in the Convective SIGMET bulletin text. In fact, all of the SIGMETs can include qualifiers around the keywords of AREA and LINE as well.

D2D should render polygons for Isolated Convective SIGMETs with any possible type of qualifiers.

ATAN 48 brought a partial fix to the plotting of Isolated Convective SIGMETs. It handled this Convective SIGMET:

CONVECTIVE SIGMET 07E
VALID UNTIL 2155Z
ME
60ESE MLT
ISOL SEV TS D20 MOV FROM 24020KT. TOPS TO FL450.
HAIL TO 1 IN...WIND GUSTS TO 50KT POSS
But not this SIGMET:

CONVECTIVE SIGMET 96E
VALID UNTIL 2155Z
NY NJ AND CSTL WTRS
10SW JFK
ISOL TS D30 MOV FROM 24010KT. TOPS TO FL370.

The format for Isolated Convective SIGMETs for the From Line and the body is this, where bracketed items are optional:

VCNTY CCC | 999<dir> CCC
<DVLPG|INTSF|DMSHG>; ISOL <SEV>; TS D99 MOV (FROM dddffKT|LTL).
TOPS TO FL999.

D2D Functional Requirements:**[REQ-1]**

D2D shall decode and render plot displays for Convective SIGMET graphics of types ?ISOL TS?

For example, ?CONVECTIVE SIGMET 96E? for reporttype phenom ?ISOL TS?:

```
CONVECTIVE SIGMET 96E
VALID UNTIL 2155Z
NY NJ AND CSTL WTRS
10SW JFK
ISOL TS D30 MOV FROM 24010KT. TOPS TO FL370.
```

[REQ-2]

D2D shall support the capability to render plots for all Isolated Convsigmet of formats option formats listed in the table below:

```
VCNTY CCC | 999<dir> CCC
<DVLPG|INTSF|DMSHG> ISOL <SEV> TS D99 MOV (FROM dddffKT|LTL).
TOPS TO FL999.
```

(The format for Isolated Convective SIGMETs for the From Line and the body like above, where bracketed items are optional.)

D2D should have the capability to render Convective SIGMET graphics plots for convsigmet significant hazard types:

- Lines of Thunderstorms
- Area of Thunderstorms
- Embedded or Severe

SIGMETs for ISOL events can include multiple word qualifiers before and after the keyword ISOL in the Convective SIGMET bulletin text. SIGMET can include qualifiers around the keywords of AREA and LINE as well.

```
DVLPG LINE TS 30 NM WIDE MOV LTL. TOPS TO FL390. DVLPG LINE TS 25 NM
WIDE MOV FROM 34005KT. TOPS TO FL340.
DVLPG LINE TS 30 NM WIDE MOV LTL. TOPS TO FL370. WST ISSUANCES
EXPD..DMSHG LATER IN PD. REFER TO MOST RECENT
WST ISSUANCES EXPD..DMSHG MOST AREAS LATER IN PD. REFER TO MOST WST
ISSUANCES EXPD..DMSHG LATER IN PD. REFER TO MOST RECENT DVLPG LINE TS
25 NM WIDE MOV FROM 18005KT. TOPS TO FL380.
```

```
CONVECTIVE SIGMET 58E
VALID UNTIL 2255Z
NC SC GA AL
FROM 50W GSO-30WNW ODF-30NNW LGC
DVLPG LINE TS 30 NM WIDE MOV LTL. TOPS TO FL370.
```

```
OUTLOOK VALID 150055-150455
FROM 40ENE MSL-200S CEW-140ESE LEV-LCH-80E BRO-BRO-70SSE
```

LRD-DLF-SAT-GGG-40ENE MSL

WST ISSUANCES EXPD..DMSHG LATER IN PD. REFER TO MOST RECENT ACUS01 KWNS FROM STORM PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS.

REFER TO MOST RECENT WTNT24 KNHC FROM NATIONAL HURRICANE CENTER

See [https://docs.google.com/document/d/1A7re1C1710bzDeMxCBS-](https://docs.google.com/document/d/1A7re1C1710bzDeMxCBS-RUtvtyOqIH_NfGYIABkXR1A)

RUtvtyOqIH_NfGYIABkXR1A

Operational Impact: Convective SIGMET products aren't all rendering the products correctly.

Required Behavior: N/A (DR 2003214)

83. Nsharp Display issues working in NCTEXT

XXXXXXXXXX

Operational Impact: Loading the NSHARP D2D tool alongside NCTEXT D2D Tool causes display issues and unexpected behavior.

Required Behavior: N/A (DR 2003215)

84. Nsharp EditGraph Bug

Seems like editing the sounding is hard to do in NSHARP. Clicking one of the points or lines in the graph tends to graph the whole graph rather than just the line.

Requirements

Moving sounding points with EditGraph(On) should not move the NsharpEditor sounding display.

See https://docs.google.com/document/d/1tEVHGpCy80N5QtbxAReSm3QP_47b3x_u5X-f_MG8Ysg/edit

Operational Impact: Moving sounding point with EditGraph(On) moves the NsharpEditor sounding display.

Required Behavior: N/A (DR 2003216)

85. Adjust pqact.conf entry for P-Surge data

Charleston SC WFO noticed a strange looking directory in the /data_store/grib2 directory named (KWEV:yyyy)(KWEV:mm)17. The other directories parallel to it are named by the date, e.g., 20210217.

The directory appears to be related to this entry in pqact.conf:

```
# //////////////////////////////////////////
# Probabilistic storm Surge (P-Surge) 625m 6 hourly
```

```
# //////////////////////////////////////
#
ANY    ^(\Y[ACDEGH][A-Z][A-F][012][0-9]) (KWEV) (..)(..)(..)
      FILE -overwrite -log -close -edex
/data_store/grib2/(\2:yyyy)(\2:mm)\3\4/PSURGE/GRID374\4\5Z_\1_\2_\3\4\5_(seq).grib2.%Y
%m%d%H
```

This entry should be adjusted so the data will be stored similarly to others.

Operational Impact: There is no impact other than that the directory looks odd and does not give the full date of the data received.

Required Behavior: N/A (DR 2003219)

86. Custom Plot Models - Symbol Plots

The ATAN delivered svg files for the custom plot models do not plot symbols.

Symbol types: wx_present, pressChangeChar, etc.

The current svg files that are delivered with the current NAWIPS Migration ATAN 1226 software updates do not plot the required symbols for many symbol data types. This problem likely applies to other *.svg files

See the original description of the issue at
<https://docs.google.com/document/d/12n2K6mq7RZPU-LxwuQ3gkhX7ADyX31EINg1bv0Qr3w4/>

Operational Impact: Some custom plots will be missing some required symbols

Required Behavior: N/A (DR 2003222)

87. Removing NCTEXT multi-panel layout options

Multi Panel Layouts do not apply to NCTEXT. Selecting them does not switch the panel layout. The request is that these options be removed from the mouse click menu.

Requirements

Remove the mouse right-click menu options for multi-panel layouts in NCTEXT.

Operational Impact: Misleading option for multi-panel layouts for NCTEXT

Required Behavior: N/A (DR 2003223)

88. NSHARP Resource Editable checkbox not working

Disable NSHARP Resource (Green Diamonds in the Map Editor) by unchecking ?Editable? in the resource menu is not Working.

Operational Impact: NSHARP's Resource Editable checkbox currently does not function

Required Behavior: N/A (DR 2003224)

89. Pgen editable resource disabled panning map

Convective SIGMET Desk Forecasts reported running into a case where if Pgen is editable this can cause effectively turn off map panning.

Interestingly, this variance was captured on both of the two days testing operational readiness. Note that both users made remarks that this does not always seem to happen though.

Requirements

Review Pgen code for possible bugs that could cause map panning to become disabled

See

https://docs.google.com/document/d/1B_vmPpx9WZSAJngxEODaE0oxtJN3BhZrpoMrtICfF7c

Operational Impact: Map panning may turn off if Pgen is editable

Required Behavior: N/A (DR 2003226)

90. Update HazardEventQueryRequest.java for baseline changes to RegistryUtil.java under RODO 5847

The id of registry entries changed under this RODO 5847. There is now a compile error in HazardEventQueryRequest that needs addressed.

Operational Impact: Code does not compile, Hazard Services Registry code out of sync with baseline changes.

Required Behavior: N/A (DR 2003232)

91. Update postgresql.conf settings to meet security requirements

Security findings for the PostgreSQL server running in AWIPS found a vulnerability with the SSL settings that need to be remediated in the baseline. Puppet is currently "enforcing" these settings, but as they are controlled by the awips2-database-*-configuration rpms, and are tied to the postgresql version, which could be updated in the future, so the baseline configuration should be modified. The following setting should be uncommented out and assigned the following value:

```
ssl_ciphers = 'ECDHE-RSA-AES256-SHA384:AES256-SHA256:HIGH:!RC4:!MD5:!aNULL:!EDH:!EXP:!SSLv2:!SSLv3:!TLSv1:!TLSv1.1:!eNULL'
```

Operational Impact: N/A

Required Behavior: N/A (DR 2003238)

92. ETNs skipped for some product generation errors

Sites have reported ETNs occasionally getting skipped in their products. One case that has been reproduced is when GSP attempted to transition and FF.W.Convective to FA.W. Product issuance failed and the new FA.W got the next ETN when the user re-drew the hazard. Other scenarios may exist.

Operational Impact: ETNs are skipped if an error occurs on issuance that prevents the product from going out.

Required Behavior: N/A (DR 2003244)

93. Climate: AM CLI product not populating T (trace) for monthly precip

When running the morning (AM) daily climate product (CLI), if there is a trace of precipitation (T) for the month-to-day total, a zero is formatted instead of "T". Once there is measurable precipitation for the month (≥ 0.01 "), the monthly precipitation is reported properly.

This works properly for the Intermediate and Evening CLI products, it appears to only be an issue for the AM CLI product.

Operational Impact: Unless manually corrected with each product issuance until there is measurable precipitation for the month, incorrect climate data will be reported to the public. This is especially troublesome for sites who receive little precipitation, making it more likely that a station will have a trace of rain for a longer amount of time each month.

Required Behavior: N/A (DR 2003262)

94. D2D Radar: kxxx four panel Menu Selection is missing entries for below 0.5 degree elevations

The radars which ingest below 0.5 degree elevations are still using the dual pol best res four panel menus which do not include the lower elevations - this was an oversight of the original implementation. There should be a separate menu file for radars with elevations below 0.5 degrees, which will also allow sites to customize if they wish without causing a conflict with the dual pol display version of the four panel display.

ITO Power Workaround: This can be addressed with baseline configuration modifications to radar menus (power users only).

Operational Impact: Sites using the radars with below 0.5 degree elevations will not be able to display below 0.5 degree elevations in the best res four panel display without impacting dual pol radar best res four panel displays.

Required Behavior: N/A (DR 2003263)

95.D2D Radar: Power Removed Control product shows incorrect date in the top left screen legend

During the RPB Build 19.1 testing, it was found that the screen legend in the top left for the Power Removed Control product shows an incorrect date. This was tracked down to an incorrect minute reference in the product dependent parameters used for date generation in AWIPS. Attached images show displays before/after the fix.

Operational Impact: Users will be confused by the incorrect date reference.

Required Behavior: N/A (DR 2003266)

96.D2D Radar: PRM radar product has incorrect resolution settings

The ROC started Confidence Testing for RPG Build 19.1 and while testing out the PRM product with No Filter and All Bins settings noticed an issue. While having a clutter censor zone defined between 2 and 32 nmi between 155 and 300 deg azimuth, the PRM product in AWIPS showed No Filter bins for 2 to 64 nmi between 155 and 300 deg azimuth. This was determined to be caused by the incorrect resolution settings in the radar configuration in EDEX and Radar Server. The attached images show the before and after the fix displays. **Operational Impact:** Sites displaying PRM will see incorrect product resolution.

Required Behavior: N/A (DR 2003270)

97.NWRWAVES: Unable to handle NHC's TCP products with the new CVT, GMT, and UTC time zones in 2020 season

On September 7th of 2020, Steven Taylor from WFO CHS reported TCP malformed for TD18 (NWRWAVES Forum) because of the new CVT time zone. In 2020 season, NHC has introduced a new CVT, GMT and UTC time zones in the TCP WMO header. Evan Bookbinder opened NCF trouble ticket 289792 and provided an interim CVT fix. Lately, Gail Hartfield of WFO RAH reported a similar TCP problem for tropical storm Theta with the new GMT time zone. This small DR will correct the parsing problem to handle the new time zones in the TCP products.

Operational Impact: The sites will not be able to broadcast the TCP product correctly.

Required Behavior: N/A (DR 2003281)

98.SpellCheckTextViewer Needs To Preserve Pre-Existing StyleRanges

There is the desire to color framed text inside the Hazard Service's Product Editor so that it is easier to see and modify. However it was found that in order to do that StyleRanges have to be used and when spell checking is activated, the spell checking code is not accounting for non spelling related style ranges.

Here is the existing HS DR:

<https://vlab.ncep.noaa.gov/redmine/issues/26999>

Operational Impact: This prevents the framed text coloring from being implemented on the HS Product Editor. Which prevents the forecaster from being able to quickly identify it and replace it.

Required Behavior: N/A (DR 2003307)

99. Remove Unused Database Tables And Associated Java Code From The ebxml Schema

There are over 50 database tables in the ebxml schema that do not contain any data. These tables are related to other tables that are used and some changes to the database may require needlessly consulting with the empty tables, for example whenever orphan slots are purged it is necessary to query every table. Although querying empty tables is fast, the extra complexity will have some overhead and makes it more difficult to analyze and improve performance. We should delete the unused tables and all the associated java code unless we have plans to use them in the future.

These are tables which are currently empty and can likely be deleted:

authenticationexceptiontype, authorizationexceptiontype, catalogingexceptiontype, catalogobjectsrequest, catalogobjectsresponse, comment, deliveryinfo, dynamicobjectref, emailaddress, entry, externalidentifier, filteringexceptiontype, filterobjectsrequest, filterobjectsresponse, invalidrequestexceptiontype, map, objectexistsexceptiontype, objectnotfoundexceptiontype, organization_emailaddress, organization_organization, person_emailaddress, query, queryexceptiontype, queryexpression, queryrequest, queryresponse, quotaexceededexceptiontype, referencesexistsexceptiontype, registryexception, registryobject_classification, registryobject_externalidentifier, registryrequest, registryresponse, removeobjectsrequest, service, service_serviceendpoint, servicebinding, serviceendpoint, serviceinterface, stringqueryexpression, submitobjectsrequest, subscription, subscription_deliveryinfo, timeoutexceptiontype, unresolvedreferenceexceptiontype, unsupportedcapabilityexceptiontype, updateobjectsrequest, validateobjectsrequest, validateobjectsresponse, validationexceptiontype, vocabularyterm, workflowaction, xmlqueryexpression.

Operational Impact: This is a database performance enhancement.

Required Behavior: N/A (DR 2003310)

100. NCTEXT: Pane Swapping Can Cause Unhandled Event Loop Exceptions

While testing #80427, it was discovered that swapping panes back and forth in NCTEXT, then clicking on the map can trigger the following UELE:

Unhandled event loop exception: java.lang.NullPointerException
at com.raytheon.uf.viz.core.AbstractView.screenToGrid(AbstractView.java:141)

at
com.raytheon.uf.viz.core.drawables.AbstractRenderableDisplay.screenToGrid(AbstractRenderableDisplay.java:316)
at com.raytheon.viz.ui.panes.VizDisplayPane.screenToGrid(VizDisplayPane.java:774)
at com.raytheon.viz.ui.panes.PaneManager.translateClick(PaneManager.java:287)
at com.raytheon.viz.ui.editor.AbstractEditor.translateClick(AbstractEditor.java:146)
at
gov.noaa.nws.ncep.ui.nctextui.rsc.NctextuiMouseHandler.handleMouseUp(NctextuiMouseHandler.java:117)
at com.raytheon.viz.ui.input.InputAdapter.handleMouseUp(InputAdapter.java:73)
at com.raytheon.viz.ui.input.InputManager.handleMouseUp(InputManager.java:221)
at com.raytheon.viz.ui.input.InputManager.handleEvent(InputManager.java:144)
at org.eclipse.swt.widgets.EventTable.sendEvent(EventTable.java:84)
at org.eclipse.swt.widgets.Display.sendEvent(Display.java:5219)
at org.eclipse.swt.widgets.Widget.sendEvent(Widget.java:1340)
at org.eclipse.swt.widgets.Display.runDeferredEvents(Display.java:4553)
at org.eclipse.swt.widgets.Display.readAndDispatch(Display.java:4143)
at
org.eclipse.e4.ui.internal.workbench.swt.PartRenderingEngine\$4.run(PartRenderingEngine.java:1121)
at org.eclipse.core.databinding.observable.Realm.runWithDefault(Realm.java:336)
at
org.eclipse.e4.ui.internal.workbench.swt.PartRenderingEngine.run(PartRenderingEngine.java:1022)
at org.eclipse.e4.ui.internal.workbench.E4Workbench.createAndRunUI(E4Workbench.java:150)
at org.eclipse.ui.internal.Workbench\$5.run(Workbench.java:687)
at org.eclipse.core.databinding.observable.Realm.runWithDefault(Realm.java:336)
at org.eclipse.ui.internal.Workbench.createAndRunWorkbench(Workbench.java:604)
at org.eclipse.ui.PlatformUI.createAndRunWorkbench(PlatformUI.java:148)
at
com.raytheon.uf.viz.personalities.cave.component.CAVEApplication.startComponent(CAVEApplication.java:173)
at com.raytheon.uf.viz.application.VizApplication.start(VizApplication.java:102)
at org.eclipse.equinox.internal.app.EclipseAppHandle.run(EclipseAppHandle.java:196)
at
org.eclipse.core.runtime.internal.adaptor.EclipseAppLauncher.runApplication(EclipseAppLauncher.java:134)
at
org.eclipse.core.runtime.internal.adaptor.EclipseAppLauncher.start(EclipseAppLauncher.java:104)
at org.eclipse.core.runtime.adaptor.EclipseStarter.run(EclipseStarter.java:388)
at org.eclipse.core.runtime.adaptor.EclipseStarter.run(EclipseStarter.java:243)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
at java.lang.reflect.Method.invoke(Method.java:498)
at org.eclipse.equinox.launcher.Main.invokeFramework(Main.java:673)
at org.eclipse.equinox.launcher.Main.basicRun(Main.java:610)

at org.eclipse.equinox.launcher.Main.run(Main.java:1519)
at org.eclipse.equinox.launcher.Main.main(Main.java:1492)

Operational Impact: Swapping NCTEXT panes can cause UELEs.

Required Behavior: N/A (DR 2003311)

101. NCTEXT Hour Covered Duplicate Selections

Origination: AWC Convective SIGMET Desk Operational Readiness Testing

In certain instances, Nctext D2D can end up selecting more than one option in Hour Covered.

Requirements

NCTEXT D2D shall not select more than one option in the Hour Covered box.

Review how NCTEXT handles Hour Covered selections on products not available within a certain range.

See https://docs.google.com/document/d/1MgczBqsnT8WqzkQ9BIhrs4zveSY_MiMpkbCGav-c7-8/edit

Operational Impact: Users may incorrectly request non-latest TAFs data.

Required Behavior: N/A (DR 2003321)

102. NCTEXT Offshore Forecasts Retrieval

Background

NCTEXT offshore stations will load with the state option, but not the station option.

Requirements

Revise how NCTEXT retrieves Offshore Forecasts by the state in the Text Report window.

See

https://docs.google.com/document/d/1eqwYR8Nvd7aW_fPana4thdBSQMHOtRBYGKqMg2_twDc/edit

Operational Impact: NCTEXT offshore stations will load with the state option, but not the station option.

Required Behavior: N/A (DR 2003322)

103. NCTEXT Aviation TAFs State Retrieval Bug

Background

When selecting TAFs by state in NCText, users got stations that weren't in the state. For example, a user selected Tennessee and got the Memphis TAF, but also got Altoona PA, Galveston TX, and Minneapolis MN. Users took 2 screenshots of the NCText window. After further diagnosis, users noticed that NCText is displaying all TAFs issued at the same time as the station requested.

Requirements

NCTEXT Aviation TAFs state Text Report shall only list records of TAFs for the state selected.

See <https://docs.google.com/document/d/1ExkjPF-6qoxV47Y-j-vhvFcTEehv-iUizsHBmTqgbac/edit>

Operational Impact: Extra Aviation TAFs data may be retrieved.

Required Behavior: N/A (DR 2003323)

104. Non-Convective Icing SIGMET Decoder

The problem was observed sometime last winter in the Postgres database. This particular problem was associated with Non-Convective SIGMETs for Icing; Non-Convective SIGMET Decoder Issue with Icing SIGMETs.

Hazard Type flagged as ?UNKNOWN? for ICING SIGMETs when the Icing Location is specified as ICGIC. The expected hazard type should be flagged as 'ICGIC'. The decoder appears to be working correctly when the Icing Location is specified as ICGICIP. The hazard type field is referenced for identifying active Non-Convective SIGMETs issued for Turbulence, Icing, or Volcanic Ash.

The following are examples of Icing SIGMETs with the "Icing Location" set as ?ICGIC? (Icing In-Cloud) and ?ICGICIP? (Icing In-Cloud In-Precipitation).

?ICGICIP? (Icing In-Cloud In-Precipitation) Non-Convective SIGMET example:

CHIO WS 212039

SIGMET OSCAR 1 VALID UNTIL 220039

NE KS IA MO IL OK CO

FROM MCW TO 40ESE UIN TO 50NE MMB TO 20ESE AKO TO MCW

OCNL SEV CLR ICGICIP BTN 050 AND 150. RPTD BY ACFT. CONDS CONTG BYD 0039Z.

....

NNNN

Postgres was able to decode "ICGICIP" and store that value as a hazardtype. However, Postgres was unable to decode the hazardtype ?ICGIC? and called it "UNKNOWN".

?ICGIC? (Icing In-Cloud) Non-Convective SIGMET example:

CHIO WS 212037

SIGMET OSCAR 1 VALID UNTIL 220037

NE KS IA MO IL OK CO

FROM MCW TO 40ESE UIN TO 50NE MMB TO 20ESE AKO TO MCW
OCNL SEV RIME ICGIC BTN 050 AND 150. RPTD BY ACFT. CONDS CONTG BYD
0037Z.

....

NNNN

ICGIC and ICGICIP are the only two potential values. ICGIC is associated with RIME icing where ICGICIP is associated with MXD, CLR, MXD/CLR, and RIME/MXD icing.

CAVE Requirements

Review ICING SIGMET hazardtype with ICGIC flag in metadata when decoded as Unknown hazardtype using nonconvsigmet decoder plugin

Perform code review on nonconvsigmet decoder plugin when storing ICING SIGMET to Postgres. Disallow storage for ICING SIGMET flagged as unknown hazardtype.

[REQ 1]

Review Postgres valid hazardtype values and investigate what may have caused the expected hazardtype 'ICGIC' to be decoded and stored as hazardtype ?UNKNOWN?.

Add the capability to store hazardtype 'ICGIC' to Postgres.

Refer to Postgres metadata Table ?awips.nonconvsigmet?.

See

<https://docs.google.com/document/d/12DrKq90otAeskI5L6QATHyesvwyfZhrRGMcnYmyO2zw>

Operational Impact: Some SIGMET products will be marked as UNKNOWN type.

Required Behavior: N/A (DR 2003324)

105. D2D Radar: RPS list merges do not take product priority settings into account

During testing radar backups in an effort to alleviate important product load shedding on backup lines with limited bandwidth, one of the options considered was elevating product priorities in the RPS list which in turn would direct the RPG to prioritize the elevated priority requests and to shed other products first. It was then discovered that if a user modifies a priority setting for a product that happens to be in both the national RPS list and a local RPS list, or else adds a product with a higher priority that matches the existing national list entry in other ways, the merge will prioritize the national list entry with the lower priority setting during the merge. Also, the merge will prioritize requests with more elevations included in a single request, but lower priority over the ones with fewer elevations, but higher priority.

19.2.1 DR19222 erroneously removed the checks for priorities during RPS list merges, since these were not in use in the field. However, what should have been done was to use a more

tailored approach for merges such as to accurately compare requests with the same product codes and merge based on all existing criteria.

Operational Impact: Sites that may wish to use product priority settings in the RPS lists may not be successful in doing so without employing workarounds where the national list may have to be changed.

Required Behavior: N/A (DR 2003353)

106. Extra large object causes replication issues

While an AJK site employee was testing out Hazard Services (front end) performance with product generation with very large/complex polygons, it was seen that the replication failed and took 12 minutes per attempt. The code re-tries 2 more times, for a total of 36 minutes of wasted time and effort. This leads to a queue backup. While looking at the "content" slot, it was seen that the object was around 384MiB in size and mostly raw hex data of geometry information.

While the above may not be a everyday real world scenario, the Hazard Services team has been discussing other workflow/configuration options to improve the front end performance. Options include hand drawing the polygons so that all the complexity of the shapefile is not maintained in the hazard polygon, or even creating a greatly simplified version of the forecast zones shapefile (maybe others) and have them use "Select By Area" with that map overlay instead of using the baseline forecast zones directly.

However, data delivery code could build in checks to

- 1) possibly restrict the max file size of objects that can be replicated.
 - 2) when the first attempt throws an exception and exceeds a certain time out threshold, remove the 2nd and 3rd retries.
 - 3) Add more logging so that the exact cause of failure is available.
- This would ensure that a rogue object will not harm rest of the DD system.

NOTE: If the issue occurs, contact the NCF to remove the offending event from the Central Registry. Sample sql to run:

```
delete from registry_replication_events where objectid = 'HZ-2020-AJK-AJK-1414-0767ed1e-0f74-4590-9d48-5328861685d0'
```

(Use appropriate value for the objectid in the above sql)

Operational Impact: Extra large objects have the potential to considerably slow down the data flow between the central and the sites, which could delay warnings

Required Behavior: N/A (DR 2003359)

107. RiverPro to Hazard Services Interop fails if the locarea table contains spaces

It was recently found that if the locarea table contains any spaces it will cause interop to fail. Nulls are correctly handled but it appears white space is not. This breaks interop completely and Hazard Services events are not created.

Here is the error:

```
java.lang.IndexOutOfBoundsException: Index: 0, Size: 0
at java.util.ArrayList.rangeCheck(ArrayList.java:653) ~[na:1.8.0_144]
at java.util.ArrayList.get(ArrayList.java:429) ~[na:1.8.0_144]
at
com.raytheon.uf.edex.hazards.interop.WarningToHazardTransformer.createGeometryFromCoordinateString(WarningToHazardTransformer.java:1145)
~[com.raytheon.uf.edex.hazards.interop.jar:na]
at
com.raytheon.uf.edex.hazards.interop.WarningToHazardTransformer.createGeometryFromLocarea(WarningToHazardTransformer.java:1216) ~[com.raytheon.uf.edex.hazards.interop.jar:na]
at
com.raytheon.uf.edex.hazards.interop.WarningToHazardTransformer.createGeometry(WarningToHazardTransformer.java:1182) ~[com.raytheon.uf.edex.hazards.interop.jar:na]
at
```

Operational Impact: This breaks interop completely and Hazard Services events are not created when something is issued from RiverPro

Required Behavior: N/A (DR 2003361)

108. ordering of city lists for FF.A/FA.A

The ordering of the cities in the city lists may be randomized in the process of getting them from the generator to the formatter. The cities should be ordered by zone in the city list.

Operational Impact: city lists appear in discernible order in the product

Required Behavior: N/A (DR 2003362)

109. Potential NullPointers From AdjacentWfoMgr On Sites Like GUM

The following null pointer was seen while starting Hazard Services for GUM. This was done in a Service Backup scenario at HFO and it was noted that the Service Backup Banner in the Hazard Service Console did not appear due to this error.

```
ERROR 2020-08-13 22:20:49,480 0911 [main] CaveLogger: Unhandled event loop exception
java.lang.NullPointerException: null
```

at
com.raytheon.uf.common.monitor.data.AdjacentWfoMgr.readAdjXml(AdjacentWfoMgr.java:124)
at
com.raytheon.uf.common.monitor.data.AdjacentWfoMgr.<init>(AdjacentWfoMgr.java:102)

at
com.raytheon.uf.viz.hazards.sessionmanager.product.impl.PartsOfGeographicalAreas.initializeAllGeometries(PartsOfGeographicalAreas.java:206)

at
com.raytheon.uf.viz.hazards.sessionmanager.product.impl.SessionProductManager.changeSite(SessionProductManager.java:22)

Operational Impact: In Hazard Services, in a Service Backup Scenario this prevents the Service Backup Banner from being displayed in the console. This can lead to confusion for the forecaster as they may think that entering Service Backup failed. Note this only occurs for sites with no adjacent wfos configured (GUM, HFO, PPG, SJU)

Required Behavior: N/A (DR 2003371)

110. D2D Radar: remove products 28 and 65 from RPS list template files

This is a housekeeping DR. Mike Istok noticed that multiple sites were still centrally collecting products 28 and 65, 8-level base Spectrum Width, and Layer Composite Reflectivity respectively. The central collection was supposed to have stopped per tin15-13: Dissemination of three WSR-88D Products via SBN/NOAAPORT and RPCCDS to cease May 13, 2015 or Thereafter. To remedy the issue, both products have been removed from the prodList.txt NDM file to stop central collection. Mike indicated that these products should also come out of the RPS List template files. Sites that do not have local RPS lists configured for their RPG connections and rely on template RPS list files to generate product lists for the said RPG connections will no longer ingest products 28 and 65 after the change. If the sites wish to continue to receive these products they will need to generate local RPS list files for each VCP.

Operational Impact: Sites that do not have local RPS lists in place are receiving products 28 and 65 via RPG connections. This in itself is not a problem.

Required Behavior: N/A (DR 2003372)

111. Multiple Plot Parameter Definitions For qc, bufrascats plugins

Receiving 2 plot parameter messages whenever CAVE and Plot Model Manager are opened.

The only requirement is to give the affected Plot Parameters discrete ?displayName? definitions in order to avoid missing plot parameters in Edit Plot Models. The affected plot parameters:

'windBarb' for plugin 'qc'
'windDir' for plugin 'bufrascat'

plotParameters_bufrascat.xml

· Update the baseline plotParameters_bufrascat XML for plotParameter displayName ?windDir? to display the Arrows plot model.

plotParameters_qc.xml

· Update the baseline plotParameters_qc XML for plotParameter ?windBarb? to display the mph and m/s plot models.

Plugin | Base plotParameter XML | plotParameterDefinition displayName | Ex svg | Affected Plot Parameters*

qc | plotParameters_qc.xml | windBarb | ldadQCfailDesign | windBarb (kts), windBarb (mph) - Missing, windBarb (m/s) - Missing

bufrascat | plotParameters_bufrascat.xml | windDir | ascotPlotDesign | windDir (Text), windDir (Arrows) - Missing

· As shown in Edit Plot Model Plot Parameters box

plotParameters_qc.xml

```
<plotParameterDefinition displayName="windBarb" displayType="BARB"
param="windSpeed,windDir" sampleValue="16,17" unit="kts" />
<plotParameterDefinition displayName="windBarb" displayType="BARB"
param="windSpeed,windDir" sampleValue="16,17" unit="mph" />
<plotParameterDefinition displayName="windBarb" displayType="BARB"
param="windSpeed,windDir" sampleValue="16,17" unit="m/s" />
```

plotParameters_bufrascat.xml

```
<plotParameterDefinition displayName="windDir" displayType="TEXT" format="%3.0f"
param="windDir" sampleValue="0" svgClass="text" symbol="@" />
<plotParameterDefinition displayName="windDir" displayType="ARROWUV"
param="windSpd,windDir" sampleValue="0,1" unit="kts" />
```

See also

<https://docs.google.com/document/d/1C9qNwB2vFM6jOBbVvLcKOikmCiXkYAbt1l51srD8>

Operational Impact: Configuration options will be missing for affected plot models without making local overrides to configuration files.

Required Behavior: N/A (DR 2003376)

112. AvnFPS- GLAMP/LAMP - Alaska Lightning data

When testing DCS 21314: "Update AWIPS/AvnFPS for changes to LAMP Station Guidance (BUFR format)" it was found that the 'rltg' was not displaying and the LP1- 1hr lightning probabilities under the GLAMP/LAMP table option was not displaying data. It was confirmed that the lightning data was not included by the LAMP team members.

Chenjie added 'we're still waiting to receive the correct AK convection and lightning probabilities IDs to make it right for them.'

Operational Impact: Alaska Region will not be able to use Lamp data to assess lightning in their region

Required Behavior: N/A (DR 2003393)

113. Expiration Window behavior

HS expiration behavior needs to be adjusted to better match the behavior of the legacy applications and to take advantage of HS process improvements as follows:

- When the EXP window is entered, an event should not have its status set to ending.
- If a user simply follows up an event, an EXP should be issued and the event should disappear from the console
- If a user ends the event, a CAN should be issued and the event should disappear from the console
- If the user changes the end time in the HID, as long as the expiration/end time has not been reached, an EXT may be issued

Operational Impact: Forecasters are restricted in what they can do when the expiration window is entered.

Required Behavior: N/A (DR 2003399)

114. Map Warning when going into Service Backup

A site can configure local maps to automatically be loaded when certain settings are selected. It was found that when a site enters backup mode for another site, it can potentially attempt to load a map that it does not contain the map bundle for. For example here is a site override that manifested the issue:

```
Hydrology_All = {
  "displayName": "Hydrology - All",
  "visibleTypes": [ "_override_replace_", "FA.W", "FA.Y", "FF.W.NonConvective", "FA.A",
"FL.W", "HY.O", "FL.Y", "FF.W.BurnScar", "FF.A", "HY.S", "FF.W.Convective", "FL.A" ],
  "defaultCategory": "Hydrology",
```

```

"visibleColumns" : [ "_override_replace_", "Event ID", "Lock Status", "Hazard Type",
"Status", "Stream", "Point ID", "Start Time", "End Time", "Expiration Time", "VTEC Actions",
"Time to Expiration", "User Name", "ETNs" ],
"possibleColumns" : [ "_override_replace_", "Status", "Hazard Type", "Phen", "PILs", "User
Name", "Issue Time", "Location Name", "Point ID", "Creation Time", "Event ID", "Lock
Status", "Start Time", "VTEC Mode", "River Mile", "Sig", "Workstation", "VTEC Actions",
"Time to Expiration", "ETNs", "Site ID", "Expiration Time", "Stream", "SubStatus", "End Time"
],
"rowSortOrder" : [ "_override_replace_", {
  "name" : "Event ID",
  "sortDir" : "ASC"
}, {
  "name" : "Issue Time",
  "sortDir" : "ASC"
} ],
"visibleStatuses" : [ "_override_replace_", "elapsed", "ending", "proposed", "pending",
"elapsing", "issued", "potential" ],
"toolbarToolNames" : [ "_override_replace_", "DamLeveeFlood", "BurnScarFlood",
"RiverFloodRecommender", "FlashFloodRecommender", "CreateRvsTool" ],
"selectedMaps" : [ "_override_replace_", "Forecast Zones ILM", "County Names" ],
"hazardDetailTabConfig" : [ "_override_replace_", {
  "name" : "streamName",
  "sortDir" : "ASC"
}, {
  "name" : "riverMile",
  "sortDir" : "DESC"
}, {
  "name" : "eventID",
  "sortDir" : "ASC"
} ]
}

```

Note this results in a simple Warning: "Map "Forecast Zones DMX" not found."

This does not impact Service Backup at all, the site can still load the generic map overlays and create hazards that way.

Operational Impact: An error message is thrown that can confuse the user.

Required Behavior: N/A (DR 2003401)

115. Issues with GFE grid lock Message Dialog

From GJT 276142:

See Screen shot from 6/6, that message box caused Cave to lock up causing a reboot.

Upon investigation it appears to be an issue with the built-in SWT MessageBox class. We have moved to a custom dialog for most other pop ups and need to do the same here. I was not able to replicate the lockup, but if another dialog is also displayed then there are issues with the buttons working correctly. Also this message box "locks up" text workstation dialogs until it is closed.

EDIT 10/29/20: Developers were unable to replicate the CAVE lockup portion of this, but did find the issue(s) with the message box that caused the apparent lockup of the text workstation dialogs. This DR will address the MessageBox pop ups to prevent them from causing the text workstation to appear to lock up when another dialog is displayed. If the CAVE lockup is reported again and can be replicated, then a new ticket and DR can be opened to address that issue.

Operational Impact: Dialog buttons may not function properly.

Required Behavior: N/A (DR 2003402)

116. PSH reports erroneous data from end of previous month

WFO New Orleans (LIX) reported the following issue that occurred when generating Post Storm Report for Cristobal on June 8th:

I tried to use it to pull the ASOS data this afternoon, and while it pulls some data correctly, there is a lot of erroneous data showing up with a date of the 30th and completely unreasonable values for the last few days (like maximum sustained winds of 10kts in Slidell).

This issue was duplicated yesterday (7/9) at the site. The attached screenshots for 24-hour and 48-hour station data for BTR showed values from 6/30. The issue seems to occur when data (text products) from the previous month are still available (see the available Metar products for the BTR station in the attached CSV file).

Operational Impact: Post Storm Reports may file erroneous results.

Required Behavior: N/A (DR 2003407)

117. kwrite editor freezing RiverPro post May 2020 security patch

Many sites including DVN, ARX, GYX, RIW, ILM, and others have reported that occasionally when generating a product in RiverPro, when the kwrite editor pops up to edit the product, the editor freezes. Possible workaround options have included opening a new text editor to issue the product, finding and killing a hung ibus process, and as a last but reliable resort rebooting the workstation to clear any hung processes and then the user is able to bring up RiverPro and issue the product. RedHat support has been contacted, but a root cause of the problem has not been determined. It may be related to a hung ibus process.

Rather than wait for RedHat to determine exactly what the issue is with kwrite, it would be better to switch to using gedit or nedit, as the change is simple and both of these have been tested successfully in the field. The preferred option right now is gedit.

The baseline fix is to the file:

/awips/hydroapps/whfs/local/bin/whfs_editor.baseline

The site level file which is present at each site and is the version that RiverPro utilizes is:

/awips/hydroapps/whfs/local/bin/whfs_editor

While all sites have the override whfs_editor, a check of several sites found that at most, the override version was identical to the baseline version. The sites that had overrides were to change the editor from kwrite to something else like nedit.

The proposed fix is to change all instances of KWRITE to GEDIT and kwrite to gedit in /awips/hydroapps/whfs/local/bin/whfs_editor.baseline and then have sites copy this to the site level whfs_editor.

Operational Impact: Sites can experience kwrite/text editor freezes during flooding situations that result in lost time.

Required Behavior: N/A (DR 2003409)

118. Add ability to filter by Domain in dual-domain sites for Hazard Services View Product menu

AFC is reporting an issue with the Hazard Services View Product menu. They can see all three "sites" in the filter options (AFC, ALU, and AER). However, when querying for only one domain, products issued from all three appear. Site is requesting ability to filter out Hazards by individual domain

Operational Impact: View product menu is full of irrelevant products for current operations

Required Behavior: N/A (DR 2003411)

119. Hazard Services needs to limit the correction window by expiration time

Currently all hazards are limited to correction within 10 minutes of issuance. This is consistent with WarnGen, but not with the other applications. Correction limits should be based on the expiration time of the product and allowed up to that time.

Operational Impact: Users cannot correct text issues with products after 10 minutes, even when allowed by other applications.

Required Behavior: N/A (DR 2003414)

120. Parsing error when lid has negative impacts defined in the floodstmt table

Caused by: jep.JepException: <type 'exceptions.ValueError'>; could not convert string to float:
 at
 /home/cgray/caveData/common/base/HazardServices/python/textUtilities/CrestsAndImpactsUtil.
 createImpactsData(CrestsAndImpactsUtil.py:233)
 at
 /home/cgray/caveData/common/base/HazardServices/python/textUtilities/CrestsAndImpactsUtil.
 getSelectedImpacts(CrestsAndImpactsUtil.py:46)

Causes issues with this parsing method:

```
def createImpactsData(self, values):
    """
        An example value is: impactCheckBox_HG_23.50-01/01-12/31-Rising
    """
    tupleList = []
    tupleMap = { }
    for value in values:
        # Split out the float value
        strings = value.split('-')
        trend = strings[3]
        strings = strings[0].split('_')
        pe = strings[1]
        floatValue = float(strings[2])
        impactTuple = (floatValue, trend, pe)
        tupleList.append(impactTuple)
        tupleMap[impactTuple] = value
    return tupleList, tupleMap
```

Operational Impact: impact statements may not be displayed in the HID

Required Behavior: N/A (DR 2003419)

121. D2D Radar: cleanup radar RPS list template files

RPS list functionality uses RPS list template files in the absence of local RPS list configurations. Additionally, the template RPS list files serve as a starting point for when users wish to create local RPS lists for any given VCP. Additional details can be found here: https://www.roc.noaa.gov/WSR88D/Operations/AWIPS_RPS_List_Guidance.aspx with the caveat that if a Local RPS List does not exist for a specific radar and VCP mode, that specific radar will merge the National RPS List with a template files list to request products if the WFO is the transmitting site for that RPG.

The multiple request capability of the AWIPS radar request mechanism facilitates the ability to significantly clean up RPS list templates which will result in shorter, more readable RPS lists for both use and editing via the RPS List Editor, in addition to removing duplicate requests currently contained in most of the templates while preserving all the existing requests. This DR will accomplish the said cleanup.

Operational Impact: No impact - this is just a file cleanup.

Required Behavior: N/A (DR 2003421)

122. RFR: continue updating active FL.W when current river data reflects FL.A

The RFR has logic to handle most situations, but doesn't have anything to address the situation where an FL.A is now recommended, but an FL.W is currently issued for the same point. Recommendations from the field are to keep the warning going and update its data. If the site has FL.As, the recommendation would be to end the FL.W and issue an FL.A. If the site has removed them from the RFR, it will maintain the FL.W, but with the old data from the previous issuance.

Operational Impact: If the user doesn't notice, the product will be sent out with old forecast data and VTEC/HVTEC times

Required Behavior: N/A (DR 2003428)

123. NEW/CAN segments incorrectly created instead of EXT for FL.Ws

It is possible to get NEW and CAN segments for FL.Ws when the start/end time based on the current recommended event is completely outside of the start/end time of the previous issuance. This can happen if the RFC forecast changes considerably from one run to the next or if only a short period above flood is forecast. An alertviz error about combining lat/lon strings is thrown on product generation. The product can't be issued.

Operational Impact: user cannot issue the product as is. They need to modify the product and regenerate.

Required Behavior: N/A (DR 2003429)

124. D2D Radar: remove duplicate requests from RMRs when present

It is possible for users to request duplicate products when generating RMRs currently, and so it is possible to send data over the network that takes more bandwidth than is necessary for the users to receive all the same information. RPS lists already have a duplicate filtering mechanism in place that can be leveraged to de-dup RMRs. This fix will compliment the effort in the RPG Build 20 to prevent duplicate products being sent from the RPG.

Operational Impact: If a site generates an RMR that contains duplicate requests, duplicate data will be sent in response from the RPG since RMRs are treated as a series of OTRs. Unnecessary bandwidth usage will result.

Required Behavior: N/A (DR 2003432)

125. Remove the auditableevent table from the ebxml schema

The auditableevent table and its related tables within the ebxml schema are some of the largest tables. Modifications made to them are creating a performance bottleneck. They are not used for anything within the system. They were originally intended to provide a history of changes to objects, however that role is better filled with our current logging because logging does not have an affect on performance. This task should remove the following tables:

ebxml.action
ebxml.auditableevent
ebxml.auditableevent_action
ebxml.notification
ebxml.notification_auditableevent

Operational Impact: Problems in the auditableevent table contribute to sites falling behind in replication.

Required Behavior: N/A (DR 2003433)

126. Ebxml slot table should use numeric id

The slot table is one of the largest tables in the ebxml schema. The use of a 1024 var char as the primary key is inefficient and slower than a numeric id. The slot table should be using a integer sequence to generate a numeric id to save space and improve performance.

Operational Impact: Inefficient storage causes degraded performance when too many objects are in the registry

Required Behavior: N/A (DR 2003434)

127. Improve Validation Message on Product Issuance

When a product is previewed and sits in the Product Editor and a time boundary is reached, the displayed product is no longer valid and the forecaster will receive an error message stating that the VTEC actions have changed.

This message needs to be clearer for the average forecaster and more descriptive to indicate that they should dismiss and re-preview the hazard to get the new product.

This is the result of NCF TT RLX 273509

Operational Impact: When a forecaster previews and lets the product sit in the Product Editor there is possibility that certain time boundaries can be crossed and the product is no longer valid. In these cases the forecaster will be prevented from issuing it. The message displayed to the forecaster may confuse them and prevent them from getting a product out in a timely manner or lead them to believe there is a larger issue with the software.

Required Behavior: N/A (DR 2003435)

128. activetable not purging FLW events that cross into the new year

During hazard services deployment, it was discovered that the activetable was not being purged of FLWs that began in one year and ended in the next. Events that began in 2019 were still in the activetable as of June 2020. This caused HS to use the ETN from the last record of the previous year as the highest ETN and incremented from there.

The test steps are pretty generic and will need some work when the developers get to them.

Power USER/ITO Workaround: manually delete activetable entries

10/23/20 update:

It was determined that the real issue behind this DR is the issue described in canceled DR 19610. That DR was canceled because it was thought at the time that there would be any impact beyond the display in GHG monitor, but it turns out Hazard Services is impacted. Below is the description from 19610. To fix this DR, we need to address the PIL mapping issues in 19610 as described in that DR. See also the full text from 19610 for further information.

Jonathan from WFO Charleston, SC reported that the Flood Warning records were stored under two different PILs - FLW and FLS. The Flood Warning hazard is first issued in a FLW product, but updates (CON, EXT) are sent in FLS products.

In AWIPS I, the VTECDecoder remaps the FLS PIL to FLW for this hazard so the updates are also stored in the active table under the FLW pil. The following variable from VTECPartners.py specifies the PIL mapping for relevant hazard/PIL combinations:

```
VTEC_MAPPED_PILS = {
('TO','W','SVS'): 'TOR', ('SV','W','SVS'): 'SVR', ('FF','W','FFS'): 'FFW',
('FL','W','FLS'): 'FLW', ('MA','W','MWS'): 'SMW', ('EW','W','SVS'): 'EWW',
('FA','W','FLS'): 'FLW',
}
```

Proper updates/evolution of the related VTEC records depend on the PIL replacements.

Operational Impact: hazard services will use the wrong ETN

Required Behavior: N/A (DR 2003437)

129. forecast bullet missing in rare oscillating scenario

When the forecast series is oscillating up and down and either min or max value is exactly = to flood level, a forecast bullet will not be produced.

In ForecastStageText.py, the following changes are needed:

Lines 314, 317, 325 (2 places) should be ">= self.floodLevel" as opposed to "> self.floodLevel"

In the event that these lines change, the code is in the "oscillate" block of `getComplexForecastDescription`

Operational Impact: forecast bullet won't be produced in this scenario and an error will be thrown. Product still can be issued.

Required Behavior: N/A (DR 2003441)

130. bad phrasing in forecast bullet

In the following scenario, the forecast stage text may return an improper phrase.

obs above flood, next forecast value is the crest, then falls below flood stage, then bounces back above.

Text is: The river is forecast to rise above flood stage Sunday morning and continue rising to a crest of 15.7 feet this afternoon.

Note that the rise above time occurs after the crest time, so the rise above time and crest time are reported in the wrong order

Issue occurred at GRB 4/1/2020 around 13:00Z

Operational Impact: poor wording in FL.Ws for the forecast bullet

Required Behavior: N/A (DR 2003443)

131. Subscription data not accessible from volume browser

In the Volume Browser, there are DataDelivery options ... when I select my subscription data from the product browser, the data is shown in the spatial display; however, when I select the same data from the volume browser, it doesn't show any available data.

Operational Impact: Users cannot load some types of NOMADS data from the volume browser

Required Behavior: N/A (DR 2003444)

132. Can't Query From Edit Subscription Dialog Window

If I right click on a subscription and select edit .. the subscription name in the Data Delivery Subset Manager - xxx is greyed out. There are active Continue... and Query buttons; however, if I click Query it fails with a Duplicate Query Name info pop up window stating 'A query with this name already exists. Please enter a different name.'. So it is not possible to perform a query from a subscription edit since you can't change the subscription name.

Operational Impact: Users are led to believe they can query for data while editing a subscription but it won't work.

Required Behavior: N/A (DR 2003457)

133. Unnecessary Warning In Registry Logs Whenever Hazard Services Objects Are Created

After the changes to DR 21754 there are warnings there are warnings in the hazard services logs that say "SubmitObjectsRequest has no source", these warnings do not indicate a problem and cause confusion when troubleshooting. Normal object creation should not generate warnings.

Operational Impact: Confusing warnings make it more difficult to diagnose actual problems.

Required Behavior: N/A (DR 2003459)

134. Remove All Shared Subscription Logic

The NWS is going to reallocate the SBN channel that is being used for shared subscriptions. There is a substantial amount of code that is dedicated to managing shared subscription and this needs to be removed to make the codebase easier to manage. This should include any code that is used to create shared subscription, put shared subscriptions in the database, manage the bandwidth for shared subscriptions, code for downloading data for shared subscriptions on the central registry and code for ingesting the shared subscription data that was sent over the sbn.

Operational Impact: None.

Required Behavior: N/A (DR 2003460)

135. If all config files are missing for the backup site, SBU will sometimes default to base configs instead of host configs due to race condition

If a primary site starts SBU for a backup site, but doesn't have any config files for that backup site, a race condition in the code can cause base config to sometimes be used instead of host configs. Note that this is a corner case and an unlikely operational situation due to HS copying backup configs automatically.

While working DR #21937 and DR #21939, it was advised to make use of `PythonBuildPaths.getSiteUsedForIncludePath()` to get the site value for use in the logic added to the method `SessionConfigurationManager.getLocalizationContexts()`. Its use would account for the desired behavior/scenario noted above. The `getLocalizationContexts()` method is called from `identifyAvailableSettings()` and `loadCommonSettings()`.

However, when attempting to make use of `PythonBuildPaths.getSiteUsedForIncludePath()`, a race condition was encountered and the wrong site value was returned from `PythonBuildPaths.getSiteUsedForIncludePath()` when `getLocalizationContexts()` was called from `identifyAvailableSettings()`. So it was agreed upon to use `ServerConfigLookupWrapper.getCurrentSite()` instead of `PythonBuildPaths.getSiteUsedForIncludePath()`. A TODO comment that references this DR was added to `getLocalizationContexts()`, and indicates

PythonBuildPaths.getSiteUsedForIncludePath() is the more appropriate method to call, but the race condition currently prevents its usage. The race condition needs to be fixed so PythonBuildPaths.getSiteUsedForIncludePath() can be used, or another solution needs to be implemented.

Essentially, it appears when changing the site in Hazard Services (and entering service backup mode), the state of PythonBuildPaths gets updated in one thread, and the SessionConfigurationManager.getLocalizationContexts() method (called by identifyAvailableSettings() and getloadCommonSettings()) is called in another thread. But the state of PythonBuildPaths is not completely re-initialized before getLocalizationContexts() is called, and therefore getLocalizationContexts() can get the wrong site when it calls PythonBuildPaths.getSiteUsedForIncludePath().

Operational Impact: Cannot perform SBU using backup or host site config files.

Required Behavior: N/A (DR 2003464)

136. D2DNsharpPaletteWindow Dialogs

When NSHARP dialogs are open, users require the functionality to interact with NsharpEditor.

Item Information

NsharpEditor refers to the D2D sounding display plugin. D2D Nsharp Palette Window refers to the NSHARP palette window.

The D2D NsharpEditor Nsharp Palette Window contains various radio buttons. Clicking one of these buttons open message boxes and dialogs which the user can interact with to control and configure the NsharpEditor display.

Currently, the user must explicitly dismiss NSHARP modal dialogs before returning to or doing anything else in NsharpEditor; Nsharp palette window dialogs disable NsharpEditor content.

Requirements

Implement functionality allowing users to interact with NsharpEditor when NSHARP dialogs are open.

[REQ] Make NSHARP NsharpPaletteWindow dialogs nonmodal

True for all applicable NSHARP radio buttons and dialog views.

True for all NSHARP Display Pane Configurations

- D2D Skewt Standard Screen Configuration
- SPC Wide Screen Configuration
- D2D Lite Screen Configuration
- OPC Screen Configuration

See:

https://docs.google.com/document/d/1_Bq12GHq4RqiMoNCFaf_n7157WVb2KR3G4X09eXFT98

Operational Impact: Users cannot interact with other GUIs while dialog is open.

Required Behavior: N/A (DR 2003466)

137. Plot Model Custom Obs For NHC Issues

During testing and implementing custom obs for NHC, I found a few issues with the plot Model editor.

1. In maritimeDesign.svg, the chngCharText parameter will not plot the pressure tendency symbol since the sampleValue is not defined. I was able to manually edit the svg to give the needed display however, it is overwritten when adjusting the parameter in the plotModel gui.

Original svg entry:

```
<text stroke="rgb(255,255,0)" id="chngCharText" style="text-anchor: start;"
transform="scale(1.4)" plotParam="pressChangeChar" fill="rgb(255,255,0)" baseline-shift="-
0.4em" font-weight="bold" stroke-width="1px" plotMode="PLOT" font-family="Courier"
class="weather" x="19px" y="0" font-size="0.8em"/>
```

My svg entry:

```
<text stroke="rgb(255,255,0)" id="chngCharText" style="text-anchor: start;"
plotLookupTable="press_change_char_lookup.txt" transform="scale(1.7)"
plotParam="pressChangeChar" fill="rgb(255,255,0)" baseline-shift="-0.4em" font-
weight="bold" stroke-width="1px" class="weather" font-family="Courier" plotMode="PLOT"
x="25px" y="-5px" font-size="0.8em">KOAX</text>
```

2. The wind gust parameter is displaying with more than 8 significant digits, I was able to get the needed display by adding the format tag.

Original plotParameters_sfcobs.xml entry:

```
<plotParameterDefinition displayName="windGust (kts)" displayType="TEXT"
param="windGust" sampleValue="8" unit="kts" />
```

My plotParameters_sfcobs.xml entry:

```
<plotParameterDefinition displayName="windGust (kts)" displayType="TEXT"
param="windGust" format="%02.0f" sampleValue="8" unit="kts" />
```

3. Plot Model editor causing PartRenderingEngineLimbo display when switching to localization with the editor still up.

4. METAR stdObsDesign.svg visibility parameter no text or size control in the plot Model gui.

5. METAR stdObsDesign.svg presWeather not displaying, fixed by adding a 0 for the sampleValue.

```
<text x="-20px" font-size="1em" fill="rgb(255,0,231)"
plotLookupTable="wx_symbol_trans.txt" plotParam="presWeather" class="weather"
id="presWeather" stroke="rgb(255,0,231)" stroke-width="1px">0</text>
```

6. After adding a new parameter to plotParameters_sfcobs.xml or plotParameters_obs.xml and restarting CAVE adding the parameter to the edit list requires the plot model gui to be restarted before any text changes go into effect.

Operational Impact: Some plot models will not display correctly.

Required Behavior: N/A (DR 2003468)

138. Wrong H-VTEC Attribute Could Be Assigned During A Correction

In Legacy_Base_Generator.py, a syntax error found in the updateVtecRecordForCOR() method that could result in the wrong value being assigned to either the "riseAbove", "crest", or "fallBelow" attribute of the H-VTEC record.

~Line 1099

```
valueToUse = VTECConstants.UFN_TIME_VALUE_SECS
```

should be

```
valueToUse = VTECConstants.UFN_TIME_VALUE_SECS
```

Since the H-VTEC attribute setting line is:

```
hvttec[attribute] = valueToUse
```

Anything assigned to "valueToUse" will not be used and instead, whatever the previous "valueToUse" value was will be set for the attribute in its place.

The larger block of code this is located in (typo in final else statement):

```
hvttec = vtecRecord.get('hvttec') # must have hvttec dictionary defined
if hvttec:
    # Need to do some attribute checking on the events
    # to ensure they are all still valid.
    for attribute in ["riseAbove", "crest", "fallBelow", "floodRecord", "immediateCause",
"floodCategoryObserved", "floodCategoryForecast", "floodSeverity"]:
        attributeValues = set()
        for event in events:
            attributeValues.add(event.get(attribute))
        # Hopefully there is only one value for each attribute
        if len(attributeValues) > 1:
            self.logger.error('Invalid HVTEC attributes for COR. Multiple values for { }:'
{'}.format(attribute, attributeValues))
```

```

    valueToUse = None
    if (len(attributeValues) > 0):
        # Always default to the first value
        valueToUse = attributeValues.pop()

    if attribute in ["riseAbove", "crest", "fallBelow"]:
        if valueToUse and valueToUse != HazardConstants.MISSING_VALUE:
            valueToUse = valueToUse / 1000
        else:
            valueToUse = VTECConstants.UFN_TIME_VALUE_SECS
        hvtec[attribute] = valueToUse
        vtecRecord['hvtec'] = hvtec
        vtecRecord['hvtecstr'] = VTECFormatUtil.formatHVTECStrings(vtecRecord,
event.get('geoType'))

```

Operational Impact: During corrections HVTEC Rise/Crest/Fall times may be set incorrectly

Required Behavior: N/A (DR 2003471)

139. Clean Up Unused Interoperability Classes

Most of the classes in the com.raytheon.uf.common.dataplugin.hazards.interoperability plugin appear to be unused, and should be deleted.

Operational Impact: None, code clean up only. Will not impact functionality.

Required Behavior: N/A (DR 2003473)

140. Deleting Polygon Vertex May Not Work Correctly

Trying to delete the first-drawn vertex of a polygon does not work correctly. You have to middle-click it twice in order to delete it, instead of only once.

This appears to be because the last vertex is the same as the first vertex for polygons, and SelectionAction.SelectionHandler.deleteVertex() does not account for this by also deleting the last vertex when it deletes the first vertex. Updating that method to also delete the last vertex in this scenario should fix the issue.

Operational Impact: Additional button click required by the forecaster. They would have to mouse button 2 click twice to remove the vertex in this specific case.

Required Behavior: N/A (DR 2003474)

141. Hazard Services interoperability failed to remove GFE Hazards grid

WFO Detroit reported an issue with Hazard Services interoperability. When he created a Hazards grid with a segment number in GFE and issued the FFA product, the event correctly

shows up in the Hazard Services console. When he tried to cancel the event from Hazard Services, the event disappeared from Hazard Services but the GFE Hazards grid was not deleted.

Operational Impact: User in GFE may not recognize that the Hazard has been canceled and may therefore not recognize that a new hazard grid may need to be generated for that area.

Required Behavior: N/A (DR 2003487)

142. RVS Issue With Existing Hazards With Different VTEC Modes

The RVS Tools will fail to create a product if you have pre-existing FL.* events with different VTEC modes from the currently select vtec mode of the session. The attached screen shot will be presented which halts product generation from running.

The RVS framework/tool needs to take into account the vtec mode of hazards during execution.

Required Behavior: N/A (DR 2003494)

143. Flood Recommender Results Dialog Is Inaccurate For Deleted Hazard

If you have a potential/pending FL hazard in the Console, and the data for that gauge decreases so that that hazard is no longer valid, the River Flood Recommender recommends that hazard with a deleted status, which causes it to be removed from the session. However, the Flood Recommender Results dialog doesn't report this accurately, instead making it appear that that hazard was newly recommended as a potential hazard.

Operational Impact: Forecaster has to manually delete the non-issued events via the console MB3 menu.

Required Behavior: N/A (DR 2003495)

144. Buttons For Reordering Tab Sorts In HID/Spatial Settings Tab May Be Incorrectly Enabled

When there is only one tab sort, the down button is incorrectly enabled, and clicking it results in this error:

```
java.lang.IndexOutOfBoundsException: Index: 1, Size: 0
at java.base/java.util.ArrayList.rangeCheckForAdd(ArrayList.java:787)
at java.base/java.util.ArrayList.add(ArrayList.java:512)
at
gov.noaa.gsd.viz.hazards.setting.HIDSpatialTab.handleSortPriorityChange(HIDSpatialTab.java:
350)
...
```

I think this can be fixed by updating `HIDSpatialTab.updateTableButtonStates()` to be something like this:

```
private void updateTableButtonStates() {  
    int index = sortTable.getSelectionIndex();  
    removeBtn.setEnabled(index >= 0);  
    upBtn.setEnabled(index > 0);  
    downBtn.setEnabled(index >= 0 && index < sortTable.getItemCount() - 1);  
}
```

Operational Impact: A nuisance error will occur if the forecaster attempts this. But the software will continue to work as expected.

Required Behavior: N/A (DR 2003496)

145. D2D Radar: when re-purposing dial radar for backup, the button to repurpose back to dial does not activate

When performing radar service backup steps as described in SMM Chapter 7.8, after a radar in the dial section is re-purposed for backup (i.e. ORPG Backup is activated), there is no way to use the RadarServer Configuration GUI to exit service backup if the radar does not also have dial permissions configured because the 'Repurpose for dial access' button never appears, but is instead a grayed out 'Repurpose for Backup Transmission' button. If the radar does have dial permissions configured, then the 'Repurpose for dial access' button activates, which is how Radar Service Backup is currently exited. This DR is to address the case where a site may be configured for WAN Dedicated functionality, but not WAN OTR/dial access for a particular radar. Currently in the field, if a site has a radar configured for WAN Dedicated functionality, they also have it configured for WAN OTR, so this condition does not exist in operations, but some RCs may change this configuration in the future and it can also impact developers. It was also noticed that disabling transmission of products does not always result in halting of sending of environmental data.

Operational Impact: Users will not be able to re-purpose the backup radar back to dial via the push of a button and may be confused about how to exit radar service backup. Environmental data may continue to be sent out from sites repurposing line 29 for backup, which would result in duplicate data being collected for a given radar.

Required Behavior: N/A (DR 2003497)

146. D2D Radar: -1 in maxRpsListSize setting in radar server config allows RPS lists exceeding maximum permissible length to be sent to RPG

DMX had '-1' for the `maxRpsListSize` in their `rcm config.xml`. The result was that the RadarServer reports that it "Cannot determine maximum RPS list size" and, so, it allows the entirety of the list that is generated to be sent to the RPG. Here is one snippet from DMX's log when in VCP212 with SAILSx3 active:

radarserver.2020-03-20.log-INFO 05:23:17 [TCM Read kdmx #2] RadarServer: kdmx: message code=2 size=200 opMode=storm vcp=212 cuts=[5, 9, 5, 13, 18, 5, 24, 31, 40, 51, 5, 64, 80, 100, 125] rdaOp=online rdaStat=operate rdaAlarm= dte=refl,vel,sw,dual-pol rpgOp=online rpgStat=operate rpgAlarm=none avail=avail suppl=AVSET,SAILSx3,RxRN rdaVer=18.2 rpgVer=18.2

radarserver.2020-03-20.log:WARN 05:23:17 [TCM Read kdmx #2] RadarServer: Cannot determine maximum RPS list size for kdmx

radarserver.2020-03-20.log:INFO 05:23:17 [TCM Read kdmx #2] RadarServer: kdmx: Sending RPS list with 60 entries (312 requests)

Note: ROC CCR 21-0008 for Line 29 will increase the WAN Dedicated product limit to 300 from the current 65. To accommodate that, this DR sets the limit for all products to 300.

Operational Impact: Sites may not receive all the products they requested via the RPS list from the RPG if the list length exceeds the maximum permissible number of products and will not know why since the log simply notes it sent the full list.

Required Behavior: N/A (DR 2003499)

147. Vague error message when drawing polygon for incorrectly selected site in practice mode

When in practice mode for Hazard Services, if you change the site in the HS drop down menu to a site other than the one the site is localized to by edex/cave, and you draw a polygon, a vague error message is thrown in CAVE- "Exception TypeError: "'NoneType' object is not callable" in <bound method LGEOS340.__del__ of <shapely.geos.LGEOS340 object at 0x7fb6fba9ec0>> ignored"

The site would like a more accurate error message to be displayed when this happens.

Operational Impact: Users receive a vague error message when drawing a polygon for an incorrectly selected site while in practice mode

Required Behavior: N/A (DR 2003501)

148. ActiveEditor Not Set Upon Leaving Localization

Related to VLAB issue: <https://vlab.ncep.noaa.gov/redmine/issues/73364>

If you leave the localization perspective and switch to D2D, sometimes the active editor is not set correctly. This causes null pointers to occur if you attempt to delete a PENDING hazard.

Caused by: java.lang.NullPointerException: null
at
gov.noaa.gsd.viz.hazards.display.HazardServicesAppBuilder\$23.run(HazardServicesAppBuilder.java:1908)
at org.eclipse.swt.widgets RunnableLock.run(RunnableLock.java:35)
at org.eclipse.swt.widgets.Synchronizer.runAsyncMessages(Synchronizer.java:182)

Null pointer occurred on this line: `IDisplayPane[] displayPanels = editor.getDisplayPanels();`

For the time being, to fix ticket #73364, a null check was inserted on the editor inside `sessionEventRemoved()` inside `HazardServicesAppBuilder.java`.

Traced the null editor back through
`EditorUtil.getActiveVizContainer()`
`EditorUtil.getActiveVizContainer(IWorkbenchWindow window)`
`EditorUtil.getActiveEditorAs(IWorkbenchWindow window, Class<T> clazz) -->`
 returns a null `IEditorPart` because part was not an instance of `IDisplayPaneContainer.class`.
 Logged this out and it was still the `PyEdit` object upon re-entering D2D perspective
`EditorUtil.getActiveEditor(IWorkbenchWindow window)`
`getActiveEditor(IWorkbenchWindow window)` from `VizWorkbenchManger.java`

Then took a look at how parts were being put into the `activeEditorMap`. Put logging inside of `partActivated()` and `partvisible()`. Seems like there might be an issue with these two methods fighting over the `activeEditorMap` by inserting the same `WorkbenchWindow` object over each other.

Operational Impact: If the active editor is not set correctly it can lead to situations where the Hazard Services console and/or spatial display fail to update correctly. This can lead to deleted hazards still being displayed and cause forecaster confusion. Also alert viz errors will be thrown.

Required Behavior: N/A (DR 2003509)

149. NSharp Error When Clicking Just Above SiteId

Clicking just above the site ID of the loaded sounding returned the following error:

```
Unhandled event loop exception
java.lang.IndexOutOfBoundsException: Index -1 out of bounds for length 2
at java.base/jdk.internal.util.Preconditions.outOfBounds(Preconditions.java:64)
at java.base/jdk.internal.util.Preconditions.outOfBoundsCheckIndex(Preconditions.java:70)
at java.base/jdk.internal.util.Preconditions.checkIndex(Preconditions.java:248)
at java.base/java.util.Objects.checkIndex(Objects.java:372)
at java.base/java.util.ArrayList.get(ArrayList.java:458)
at
gov.noaa.nws.ncep.ui.nsharp.display.rsc.NsharpResourceHandler.handleClickOnStationId(
NsharpResourceHandler.java:1472)
at
gov.noaa.nws.ncep.ui.nsharp.display.NsharpTimeStnPaneMouseHandler.handleMouseUp(Nsharp
pTimeStnPaneMouseHandler.java:93)
at com.raytheon.viz.ui.input.InputAdapter.handleMouseUp(InputAdapter.java:73)
at com.raytheon.viz.ui.input.InputManager.handleMouseUp(InputManager.java:221)
at com.raytheon.viz.ui.input.InputManager.handleEvent(InputManager.java:144)
at org.eclipse.swt.widgets.EventTable.sendEvent(EventTable.java:89)
at org.eclipse.swt.widgets.Display.sendEvent(Display.java:5874)
```

```
at org.eclipse.swt.widgets.Widget.sendEvent(Widget.java:1400)
at org.eclipse.swt.widgets.Display.runDeferredEvents(Display.java:5138)
at org.eclipse.swt.widgets.Display.readAndDispatch(Display.java:4663)
at
org.eclipse.e4.ui.internal.workbench.swt.PartRenderingEngine$5.run(PartRenderingEngine.java:
1173)
at org.eclipse.core.databinding.observable.Realm.runWithDefault(Realm.java:338)
at
org.eclipse.e4.ui.internal.workbench.swt.PartRenderingEngine.run(PartRenderingEngine.java:10
62)
at org.eclipse.e4.ui.internal.workbench.E4Workbench.createAndRunUI(E4Workbench.java:155)
at org.eclipse.ui.internal.Workbench.lambda$3(Workbench.java:635)
at org.eclipse.core.databinding.observable.Realm.runWithDefault(Realm.java:338)
at org.eclipse.ui.internal.Workbench.createAndRunWorkbench(Workbench.java:559)
at org.eclipse.ui.PlatformUI.createAndRunWorkbench(PlatformUI.java:150)
at
com.raytheon.uf.viz.personalities.cave.component.CAVEApplication.startComponent(CAVEAp
plication.java:173)
at com.raytheon.uf.viz.application.VizApplication.start(VizApplication.java:102)
at org.eclipse.equinox.internal.app.EclipseAppHandle.run(EclipseAppHandle.java:203)
at
org.eclipse.core.runtime.internal.adaptor.EclipseAppLauncher.runApplication(EclipseAppLaunc
her.java:137)
at
org.eclipse.core.runtime.internal.adaptor.EclipseAppLauncher.start(EclipseAppLauncher.java:10
7)
at org.eclipse.core.runtime.adaptor.EclipseStarter.run(EclipseStarter.java:400)
at org.eclipse.core.runtime.adaptor.EclipseStarter.run(EclipseStarter.java:255)
at java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at
java.base/jdk.internal.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.ja
va:62)
at
java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccesso
rImpl.java:43)
at java.base/java.lang.reflect.Method.invoke(Method.java:566)
at org.eclipse.equinox.launcher.Main.invokeFramework(Main.java:660)
at org.eclipse.equinox.launcher.Main.basicRun(Main.java:597)
at org.eclipse.equinox.launcher.Main.run(Main.java:1468)
at org.eclipse.equinox.launcher.Main.main(Main.java:1441)
```

Operational Impact: Error is returned, but does not affect functionality.

Required Behavior: N/A (DR 2003510)

150. Seasonal (Winter) Impacts Not Queried Correctly For FL.*

Many WFOs have seasonal impact statements. In the hydro DB, these are recorded like 11/2-4/1 for winter impacts and 4/2-11/1 for summer. HS doesn't recognize the winter impacts and doesn't make it available in the HID.

Operational Impact: Winter impacts will not be available in HS.

Required Behavior: N/A (DR 2003518)

151. FFR Needs To Run Outside Host Domain In Service Backup

From NCF TT: 262983

When running the Hazard Services Flash Flood Recommender in Service Backup mode, it appears the tool is still being run over LCH's FFMP domain instead of the backup site's FFMP domain. We are only able to generate potential hazard results immediately adjacent to our CWA. In this case, I ran the Flash Flood Recommender with the settings:

Over LIX's CWA domain with a Time Duration of 3 hours and an FFMP ratio of 20 percent or greater. Based on the FFMP display this should have yielded around 3 results (Screenshot 2020-03-05 00-09-36). Instead, only one result is returned which appears to be clipped to the LCH FFMP domain (Screenshot 2020-03-05 00-10-05). When the Flash Flood Recommender was run with a Time Duration of 1 hour and an FFMP ratio of 20% (Screenshot 2020-03-05 00-08-16), no results were returned (Screenshot 2020-03-05 00-08-26). Based on FFMP, at least one potential hazard should have been returned. I have been able to replicate this behavior when running Hazard Services in service backup mode for site LIX and HGX. We are able to run the River Flood Recommender for our backup sites and get appropriate results returned.

Robert's analysis:

I did a quick scan of the FlashFloodRecommender.py and think I may have found the issue. It is always grabbing the Primary domain/wfo from the FFMPRunConfig. I assume that logic is not correct for Service Backup. This could likely be fixed by an override. But either way it seems like a DR is likely needed.

```
def localize(self):
    runConfigMgr = FFMPRunConfigurationManager.getInstance()
    domains = runConfigMgr.getDomains()
```

```
self.wfo = None
```

```
for i in range(domains.size()) :
    domain = domains.get(i)
    if domain.isPrimary():
        self.domain = domain
        self.wfo = domain.getCwa()
        break
```

```
if not self.wfo :
    self.logger.info("FFMP Run Configuration Manager unable to get WFO from available
Domains..")
    raise LookupError('Unable to determine the primary FFMP CWA.')
```

```
if self.qpeSourceName in ["DPR", "DHR"]:
    self.dataKey = self.siteKey = self.radar.lower()
else:
    for product in runConfigMgr.getProducts():
        if self.qpeSourceName == product.getProductname():
            self.dataKey = self.siteKey = product.getProductKey()
    self.ffmpTemplates= FFMPTemplates.getInstance(self.domain, self.siteKey,
FFMPTemplates.MODE.CAVE)
```

Operational Impact: Flash flood recommender will not produce events for office being backed up.

Required Behavior: N/A (DR 2003519)

152. Extension Area Issues With The 180 Longitude Line For AFC

If you draw a simple 4 point box polygon over islands that span the 180 line, that polygon should not have change if it is fully covered by the configured extension area. After some investigation it was found that the extension area used did not seem to work/span correctly with the 180 line.

Note: it was also found that setting the extension area to large would cause it to not work at all. For example I used 200 miles and it had no impact on the clipping, however reducing it to 50 or 20 seemed to work correctly with most polygons except those that crossed the 180 line.

Related to AWIPS Defect #63970

Operational Impact: Extension areas do not work for any UGC that crosses the 180 longitude line.

Required Behavior: N/A (DR 2003520)

153. D2D Radar: modify KCRI radar to use 0.3 degrees as the lowest scan rather than 0.2 degrees

The ROC indicated that the lowest elevation scan they will be using going forward is 0.3 degrees. This should be the baseline setting as opposed to the current 0.2 degrees.

Operational Impact: None - this is a test radar

Required Behavior: N/A (DR 2003523)

154. Corner Case Error with Edit Settings dialog, Service Backup, and User Level Recommenders

This was found while testing 72727, Cave was localized to MHX but Edex was OAX. The USER level override was picked up and displayed in the "Edit Settings" dialog under the Recommender tab. It should not be displayed there because USER level overrides are not applied in a service backup scenario. That is what lead to the below Key Error.

```

Recommender DR72727_Recommender is unable to be instantiated
jep.JepException: &lt;type 'exceptions.KeyError'&gt;; ('DR72727_Recommender',)
at
/home/dking/caveData/common/base/python/MasterInterface.instantiate(MasterInterface.py:128)
at jep.Jep.eval(Native Method)
at jep.Jep.eval(Jep.java:609)
at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:285)
at com.raytheon.uf.common.python.PythonScript.execute(PythonScript.java:333)
at
com.raytheon.uf.common.dataplugin.events.hazards.scriptcontroller.HazardServicesScriptContro
ller.instantiatePythonScript(HazardServicesScriptController.java:177)
at
com.raytheon.uf.common.recommenders.AbstractRecommenderScriptManager.setMetadata(Abs
tractRecommenderScriptManager.java:269)
at
com.raytheon.uf.common.recommenders.AbstractRecommenderScriptManager.initializeScript(
AbstractRecommenderScriptManager.java:204)
at
com.raytheon.uf.common.dataplugin.events.hazards.scriptcontroller.HazardServicesScriptContro
ller.verifyScriptIsLoaded(HazardServicesScriptController.java:345)
at
com.raytheon.uf.common.recommenders.AbstractRecommenderScriptManager.getScript(Abs
tractRecommenderScriptManager.java:330)
at
com.raytheon.uf.common.recommenders.executors.RecommenderLoaderInventoryExecutor.exe
cute(RecommenderLoaderInventoryExecutor.java:57)
at
com.raytheon.uf.common.recommenders.executors.RecommenderLoaderInventoryExecutor.exe
cute(RecommenderLoaderInventoryExecutor.java:1)
at
com.raytheon.uf.common.python.concurrent.PythonInterpreterThreadPoolExecutor$PythonListe
nableFutureTask$1.call(PythonInterpreterThreadPoolExecutor.java:233)
at java.util.concurrent.FutureTask.run(FutureTask.java:266)
at
com.raytheon.uf.common.python.concurrent.PythonInterpreterThreadPoolExecutor$PythonListe
nableFutureTask.run(PythonInterpreterThreadPoolExecutor.java:219)
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)

```

```
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
at java.lang.Thread.run(Thread.java:748)
at
com.raytheon.uf.common.python.concurrent.PythonThreadFactory$PythonThread.run(PythonThreadFactory.java:121)
```

Operational Impact: Invalid recommender overrides will be displayed in the Settings Dialog. Errors can occur if the user attempts to add them to the session.

Required Behavior: N/A (DR 2003527)

155. CTA With Phone Number Doesn't Work

Adding CTA with office phone number breaks product validation ?Product Generation Error ?Primary VTEC not right after UGC?? - Error is thrown by TextSegmentCheck.py around line 164. Upstream parser logic appears to be Raytheon Java that we don't have access to. Phone number format is 555-555-5555.

Operational Impact: Products with phone numbers fail validation and throw warnings during product generation.

Required Behavior: N/A (DR 2003528)

156. Settings Are Not Loaded Correctly In Service Backup

Found by Nicole at Tulsa, OK:

If a site has a SITE settings file that does not exist at BASE and set that as the default (StartupConfig override), anytime another site enters service backup they will get the following error:

AlertVis error: No settings exist with id of Hydrology_HazSimp

This is because identifyAvailableSettings() in SessionConfigurationManager does not request the localization files correctly and it is using the Caves site to retrieve files, instead of the active HS site.

Operational Impact: Non baseline settings can not be loaded in Service Backup.

Required Behavior: N/A (DR 2003529)

157. Restore replacedBy Functionality To FL.Y->FL.W

The addReplacementAttributes method is no longer called in the RFR->mergeHazardEvents method in the if block where the FL.Y is being replaced by the FL.W. Similar logic exists for FL.A to FL.W. The headlines don't contain the replaced by verbiage.

Operational Impact: When doing a replacement, the product text of a FL.Y cancellation does not mention that it is being replaced by a more severe product.

Required Behavior: N/A (DR 2003530)

158. Mouse Handler Error When Dealing With Multipolygons

The following stack trace was seen when doing Select By Area for counties/zones that also included islands. After you created the initial hazard with Select By Area, if you attempt to drag a vertex the stack trace will be seen.

```
ERROR 2020-01-28 17:38:50,919 9561 [main] CaveLogger: Unhandled event loop exception
java.lang.IndexOutOfBoundsException: Index: 17, Size: 13
  at java.util.ArrayList.rangeCheck(ArrayList.java:653)
  at java.util.ArrayList.set(ArrayList.java:444)
  at
gov.noaa.gsd.viz.hazards.spatialdisplay.mousehandlers.SelectionAction$SelectionHandler.handleMouseDownMove(SelectionAction.java:664)
  at
gov.noaa.gsd.viz.hazards.spatialdisplay.SpatialDisplay.handleMouseDownMove(SpatialDisplay.java:740)
  at com.raytheon.viz.ui.input.InputManager.handleMouseMove(InputManager.java:355)
  at com.raytheon.viz.ui.input.InputManager.handleEvent(InputManager.java:150)
  at org.eclipse.swt.widgets.EventTable.sendEvent(EventTable.java:84)
  at org.eclipse.swt.widgets.Display.sendEvent(Display.java:5219)
  at org.eclipse.swt.widgets.Widget.sendEvent(Widget.java:1340)
  at org.eclipse.swt.widgets.Display.runDeferredEvents(Display.java:4553)
```

Operational Impact: A stack trace will be seen when trying to drag/move a vertex when dealing with a multi-polygon. Note the error only occurs once, then things seem to work as expected.

Required Behavior: N/A (DR 2003550)

159. Hatching Issues In Alaska

See screenshot of AFC polygon. Looks "correct" when you are zoomed out, but if you zoom in on the edges of the hazard you can see that the hatching is not correct. Sometimes it will not hatch enough and other times the hatching can bleed outside of the polygon.

This is believe to be a map projection issue.

Related to Hazard Services - AWIPS Defect #63970

Operational Impact: Hazard polygons for warnngen hazard types will not be hatched correctly in Alaska.

Required Behavior: N/A (DR 2003551)

160. HS Needs To Make Registry Failures More Obvious To A User

On TBW3, we had registry issues after an install. HS started up without error and displayed the ongoing events in the console. However, when the users tried to generate a product, they received a 'product generator failed' error in a dialog box. Looking at the cave logs, it was clear that this was due to a registry connection error. HS needs to clearly define this in the message to the user.

Operational Impact: Users have no specific information why the generator failed.

Required Behavior: N/A (DR 2003555)

161. AWIPS Only Retains 6 Hours Of Data. Query Time Range Should Reflect That

When querying for data in data delivery user can enter a time range larger than the range where data is available. This can confuse users because they do not get data for the entire selected range. When this occurs the user should be notified of the actual range of times where data will be requested.

Operational Impact: Users are confused if retrieval does not get data for entire selected range.

Required Behavior: N/A (DR 2003568)

162. Shift NBM products from NMC2 to ADD (Data Delivery) channel

All National Blend Models (NBM) are transmitted by TOC to NCF on Line 236. At present, NBM data is ingested over NMC2 channel. Due to high volume and latency, it is decided to separate this data and ingest using AWIPS Data Delivery (ADD) channel. As part of the effort, a new interface will be created to receive NBM data from TG at ANCF/BNCF. Once received, the data will be disseminated to SBN using ADD channel.

There are 2 parts to implementing this change; an LDM code change on the uplink side (NCF) and LDM configuration changes on the downlink side (all sites). This DR (21798) addresses the changes necessary to the LDM code on the uplink side (NCF). DR 21848 addresses the LDM configuration changes necessary on the downlink side (all sites).

Operational Impact: If NBM remains on NMC2 channel, sites will continue to see higher latency.

Required Behavior: N/A (DR 2003625)

163. GFE froze on lx2-mkx

Note: _This race condition is very difficult to reproduce and requires exactly the right conditions, therefore the frequency of occurrence in the field would be expected to be rare._

MKX reported a GFE session on lx2-mkx froze. Capture was run and the CAVE session had to be killed and restarted.

Investigation of the capture information revealed the following:

The hang was due to a SmartTool somehow finished (probably abnormally) without releasing the inParmEdit lock.

The main UI thread hung attempting to acquire the inParmEdit lock when the forecaster attempted to delete a grid from the grid manager.

From what I can tell the forecaster somehow ended up with two instances of ESTF_Data_Load_and_Blend running simultaneously.

This procedure (and possibly other tools/procedures that were run) call the Smooth smart tool repeatedly (1423 times) in total.

Once procedure found at MKX has options to run the Smooth tool up to 30 times in succession. This places a significant load on GFE to run a smartTool that many times in succession. It would be much better to add an option to the Smooth.py tool to allow it loop internally in a single invocation of the tool (or maybe just find a better smoothing algorithm).

Further investigation of the CAVE logs found a number of different issues which may have contributed to the SmartTool failing and the eventual hang.

16:22:23 The Smooth smart tool failed (see attached DatabaseIDComparison.txt for stack trace). This was due to an issue with the .equals() and/or .compareTo() methods in the DatabaseID.java not behaving as expected.

16:28:36 A Smooth smart tool was finishing up when it experienced a ConcurrentModification exception (see ConcurrentModification.txt for stack trace).

This appears to be due to multiple instances of the Smooth smart tool running finishing up on separate threads both calling ParmManger.updateDatabaseLists() simultaneously. Some sort of synchronization may be necessary to prevent two threads from updating this list simultaneously..

16:28:41 DatabaseID comparison issue occurred while running the Smooth smartTool

16:29:09 DatabaseID comparison issue occurred while running the Smooth smartTool

16:30:53 the forecaster ran the Adjust smartTool which failed because the Topo grid was null (see attached nullTopo.txt for stack trace).

This issue was a result of a change in 18.2.1 and is the subject of DR 21296.

17:46:58 another instance of the DatabaseID comparison issue occurred while running the Smooth smartTool.

17:51:07 instance of the null Topo issue occurred while running the Smooth_InLandLakes_Temps procedure.

18:16:51 another instance of the DatabaseID comparison issue occurred while running the Smooth smartTool.

18:16:54 another instance of the DatabaseID comparison issue occurred while running the Smooth smartTool.

18:32:37 Procedure ESTF_Data_Load_and_Blend attempted to run a non-existent smartTool WindGust_QC.

This is probably a typo in the procedure as there is a WindGustQC smartTool.

18:32:44 Repeat of the previous issue

20:16:14 another instance of the DatabaseID comparison issue occurred while running the Smooth smartTool.

20:16:14 another instance of the ConcurrentModification exception

20:16:15 At this time a series of repeated errors begins (see PhaserOverload.txt for stack trace). This indicates a large backlog of notification jobs have been queued up to run on the ParmManager's notification JobPool.

20:16:15 "NoneType object has no attribute smooth" error when running the Smooth smartTool (see SmoothNone.txt for stack trace).

More errors after this but this covers all the major issues.

RECOMMENDATIONS:

1. Fix DR 21296 so Topo is never null
2. Add a None check in the Smooth.py smartTool to avoid the NoneType error.
3. Add methods to Parm.java to query if the current thread owns the inParmEdit lock and modify Tool.java to ensure it fully releases the lock when a tool completes/fails.
4. Fix the DatabaseID .equals() and compareTo() methods to meet the contract for a Comparable
5. Use some sort of synchronization around the available database lists in ParmManager to avoid ConcurrentModificationExceptions
6. Limit the size of the workQueue to less than the maximum (65535) number of parties supported by the Phaser class. Attempts to add additional jobs to the workQueue should fail or block the caller.
7. Eliminate the need to call the Smooth tool in rapid succession adding an optional repeat argument into the tool so it can repeat internally during a single invocation of the tool.

Operational Impact: Under just the right (wrong?) circumstances CAVE can hang.

Required Behavior: N/A (DR 2003795)

164. WarnGen produces a sentence with improper grammar

Issue 1: "WarnGen: When user selects ""Lightning in addition to hail/winds"" under MISCELLANEOUS CALLS TO ACTION, WarnGen produces a sentence with improper grammar, something like

Large hail and damaging winds and lightning is occurring with this storm.

Problem is in base impactSevereThunderstormWarning.vm. file."

Issue 2 (from DR 22964):

Tim Humphrey at site CRP reported a typo in a baseline warnngen template file.

The typo can be found on line 449 of impactSignificantWeatherAdvisory.vm

This file can be found at /awips2/edex/data/utility/common_static/base/warngen.

Line 449:

Conditions are favorable for the development of weak, brief funnel clouds. Theis type of funnel cloud is harmless, but on rare occasions they can briefly touch down, producing wind gusts over 50 mph. If a funnel cloud is spotted move indoors and report your sighting to the National Weather Service.

"Theis type of funnel cloud is harmless," should say "This", not "Theis".

Operational Impact: Bad grammar needs to be manually corrected.

Required Behavior: N/A (DR 2003850)

165. BMH: Resolve INPUT_MESSAGE_PARSE_ERROR

Various sites are getting the following error in their edex-bmh logs on the px machines -

```
ERROR 2019-07-06 15:35:24,177 2409 [Camel (clusteredBmhDirectoryScanner) thread #9 -
file:///awips2/bmh/data/nwr/ready] InputMessageParser: INPUT_MESSAGE_PARSE_ERROR:
BMH - BRLRVDBRL.1_06153517 failed to parse
java.nio.file.AccessDeniedException: /awips2/bmh/data/nwr/ready/BRLRVDBRL.1_06153517
    at sun.nio.fs.UnixException.translateToIOException(UnixException.java:84)
    at sun.nio.fs.UnixException.rethrowAsIOException(UnixException.java:102)
    at sun.nio.fs.UnixException.rethrowAsIOException(UnixException.java:107)
    at sun.nio.fs.UnixFileSystemProvider.newByteChannel(UnixFileSystemProvider.java:214)
    at java.nio.file.Files.newByteChannel(Files.java:361)
    at java.nio.file.Files.newByteChannel(Files.java:407)
    at java.nio.file.Files.readAllBytes(Files.java:3152)
    at
com.raytheon.uf.edex.bmh.msg.validator.InputMessageParser.parse(InputMessageParser.java:16
2)
```

This also generates an alertviz banner on the lx machines. Seen at sites BYZ and DVN. Looks like permissions issues, but it's not clear how they could be messed up when written to the "/awips2/bmh/data/nwr/ready/" directory. Determine root cause and resolve.

Operational Impact: It is possible that affected products may not reach the radio.

Required Behavior: N/A (DR 2003857)

166. BMH: Resolve PLAYLIST_MANAGER_ERROR

Various sites are getting the following error in their edex-bmh logs on the px machines -

```
ERROR 2019-05-11 21:02:18,270 1281 [BMH.Schedule-1] PlaylistManager:
PLAYLIST_MANAGER_ERROR: BMH - Unable to write message file.
java.nio.file.FileAlreadyExistsException:
/awips2/bmh/data/playlist/CLT/messages/619585_1557608538147.xml
    at sun.nio.fs.UnixException.translateToIOException(UnixException.java:88)
    at sun.nio.fs.UnixException.rethrowAsIOException(UnixException.java:102)
    at sun.nio.fs.UnixException.rethrowAsIOException(UnixException.java:107)
    at sun.nio.fs.UnixFileSystemProvider.newByteChannel(UnixFileSystemProvider.java:214)
    at java.nio.file.Files.newByteChannel(Files.java:361)
    at java.nio.file.Files.createFile(Files.java:632)
    at com.raytheon.uf.common.util.file.Files.createFile(Files.java:128)
    at
com.raytheon.uf.common.util.file.IOPermissionsHelper.getOutputStream(IOPermissionsHelper.j
ava:199)
```

This also generates an alertviz banner on the lx machines, which leads the forecaster to think that the product has not been broadcast, when in fact, it has been broadcast. But the forecaster needs to check to be sure, which ends up in wasted time.

This has been seen at sites BYZ and GSP.

Operational Impact: Forecaster has to take the time to check whether the product has actually been broadcast, potentially wasting time if it's a false alarm.

Required Behavior: N/A (DR 2003858)

167. Additional swear word dictionary

Site reported that they have a station called NEZ and their spell checker is trying to relabel it NAZI or NAZIS. Ray has been adding both words to the bad words file, but w/each build the file is overwritten. He would like NAZI and NAZIS added to the file at the master level.

Operational Impact: Bad words may not be caught by spell checker

Required Behavior: N/A (DR 2003945)

168. Capture script needs to gather WarnGen specific information

The capture script needs to have a special -warngen parameter that will capture the following information:

1. Backup all users' caveData logfiles for the current day and previous day (or set an option for the script to define a date in the format YYYYMMDD such that it will capture all logs in /home/*/caveData/logs/consoleLogs/*/ with a filename that includes *YYYYMMDD*) because

many users can issue products during the lifetime of 1 warning and its many follow-ups, so we'd want to capture the logs for all users that were logged in during the time in question.

2. Dump the database tables `fxatext` and `stdtextproducts` and metadata; warning, both of these tables are critical in again nailing down timelines and seeing the actual products. The warning table can be large, though, which can cause disk space issues when writing to backup as well as performance issues while it is actually writing, so this one may need some additional consideration.

3. edex logs: (if these are not captured by the current version of the capture script)

4. A current copy of the `/awips2/edex/data/utility/common_static/site/XXX/warngen` directory: There have been instances where an issue occurs because a site made a template modification and between the issue and us troubleshooting it, it got changed back/fixed and it makes it tough to know what changes were made. This is not common, but these files are typically small, so they should not take up much space.

Operational Impact: Needed to troubleshoot critical WarnGen issues.

Required Behavior: N/A (DR 2003966)

169. Cancelled Flood warnings still showing on D2D display

Numerous flood warning still show as active on the Local(/Regional) Warning Plots in D2D. See the problem description in INCA00000220781 for a more extensive explanation.

When sampling the FL.W.0006 polygon in the far western part of the PBZ CWA (yellow), it shows as valid 08:35Z Fri 15Feb19 through 03:14Z Tue. This made no sense since WFO PBZ made over a dozen subsequent statements to this flood warning, including a final cancellation statement on the 18th. The cause of this seems to be related to the "Until further notice" being set, causing the products to show even after a cancellation.

The expected behaviour of this is to have all CAN and EXP warnings, both VTEC and non-VTEC, removed from the display, but only from times after the issuance of the CAN or EXP. All warnings should be displayed in the timeperiods that they were active when looping through the warning displays, only removing sections or entire warnings when the CAN or EXP would go into effect.

Operational Impact: Cancelled flood warnings are still displayed on the D2D display.

Required Behavior: N/A (DR 2004018)

170. PostGIS AsBinary, GeomFromText and SnapToGrid functions deprecated in 18.2.1

`AsBinary()` function works for 18.1.3 but not 18.2.1/18.2.2.

<pre>

----- Forwarded message -----

From: Matthew Duplantis - NWS Federal <matthew.duplantis@noaa.gov>
Date: Wed, Mar 6, 2019 at 2:28 PM
Subject: Re: 18.2.1/18.2.2 Beta Update
To: Baoyu Yin - NOAA Federal <baoyu.yin@noaa.gov>
Cc:

Baoyu,

An issue came up here at SHV the last few days. We are configuring a new version of the PSH tool (post tropical cyclone report generator) that was installed with 18.1.1. In that code there is an sql call that does something like this: `psql -U awips -d metadata -c 'select AsBinary(the_geom) from common_obs_spatial limit 1'`

I have had multiple sites around me that are 18.1.3 test that sql code, and it works. But, for us on 18.2.1/18.2.2, it will not. Did PostGIS get upgraded during the builds?

I've been working with Srinivas Moorthy at the NCF who states that the "AsBinary()" function has been deprecated with the latest PostGIS and replaced with "ST_AsBinary()". To test whether or not we have the latest PostGIS, we changed the sql query to:

```
psql -U awips -d metadata -c 'select ST_AsBinary(the_geom) from common_obs_spatial limit 1'
```

This worked on our system. Can others on 18.2.1/18.2.2 test that updated sql query to see if, in fact, a change that has occurred?

Thanks,
Matthew

</pre>

While these functions were deprecated by the postgis work done in 17.3.1, the install scripts always restored the deprecated calls until 18.2.1, so this is a SWIT DR. The AsBinary, GeomFromText and SnapToGrid legacy functions need to be updated AWIPS-Wide to use the "ST_" prefix in the new calls.

The AsBinary legacy call is in the following projects:

```
gov.noaa.nws.ncep.standalone
gov.noaa.nws.ncep.viz.common
gov.noaa.nws.viz.rsc.aww
gov.noaa.nws.ocp.viz.psh
```

Details on workaround applied at all tropical sites on 6/4/20 (as mentioned in the Work Around above):

```
/awips2/psql/bin/psql -U awipsadmin -f /awips2/postgresql/share/contrib/postgis-2.3/legacy.sql -d [metadata|ncep|maps] (just do 1 at a time)
```

NOTE: This DCS needs to be worked in conjunction with 21179

Operational Impact: Unable to configure PSH METAR stations.

Required Behavior: N/A (DR 2004025)

171. CAVE does not render all Tiles in Satellite Image

Matt Foster reported that CAVE is failing to render all Tiles in a Satellite image. He says sometimes it fails.

Attached are two screenshots. One shows the missing tiles in CH 02 in the bottom-right pane of a 4-panel display. The other image shows the same timestep that clearly shows all of the tiles are present. EDEX seems to be ingesting normally, so this appears to be a CAVE-side issue.

Vada Dreisbach replicated this issue on testbed workstation(attached image).

Additional info from Greg Noonan at BCQ on 2/13/19:

UNR has noticed the following with regards to the Satellite tiles dropping out.

<https://drive.google.com/file/d/1kPKMzqbYT4C4HwLFjVUJRdYXWBWSP8dk/view> If you load the CIRA GeoColor image first (which comes in every 15 min) as the Time Matching product?.you don?t see any satellite tiles dropping out with any subsequent satellite imagery that is loaded.

And I believe that something similar has been mentioned before with regards to this ticket, that if you reload the missing tile/s will re-appear.

Thus it seems the display isn?t double checking to make sure that all available tiles have been plotted.

The issue occurs as new images come in. When you first load a loop of imagery, typically all of the tiles will be there. Let the loop sit for a couple of hours, though, and there will likely be some frames that do not have all of the tiles. The issue does not have anything to do with CONUS vs Full Disk. To reproduce, simply load a loop of any GOES-East CONUS channel (using more frames than default will increase the likelihood of seeing the issue), and let it sit for a couple of hours. You will likely see frames with missing tiles. If you clear the loop and reload it, the missing tiles will then load.

Operational Impact: Forecasting operations could be impeded because of distraction.

Required Behavior: N/A (DR 2004077)

172. LDM pqact.conf override pattern capability

Sites can add to SBN pqact patterns but cannot override or change a pattern in the baseline files. Add the capability to remove patterns from the baseline template files when building the operational version of pqact.conf. This could be as simple as a new pqact.conf.ignore file that is used to filter out patterns.

Operational Impact: N/A

Required Behavior: N/A (DR 2004108)

173. Locally configured MPE related scripts get overwritten on AWIPS installs

There are several scripts related to MPE (e.g. mpe_fieldgen) in /awips2/edex/data/share/hydroapps/precip_proc/bin and /awips2/edex/data/share/hydroapps/precip_proc/local/bin that need to be modified locally in order for MPE to work, but they are overwritten at every AWIPS-2 Build.

NOTE that there were several other changes beyond not overwriting files in hydroapps that were requested with this DR that are reflected in the attached 20201_Changes.txt file

Operational Impact: MPE will not work locally after an AWIPS install.

Required Behavior: N/A (DR 2004559)

174. D2D: Restore previous pane layout for non-square number of panes in an editor

Previously if you loaded a multi-pane layout in a single editor/tab, such as a 6 panel display, the panes would display with 3 rows and 2 columns. In 21.4.1 this behavior changed and a 6 panel now lays out with 2 rows and 3 columns. This was traced to Omaha 8453 and users do not like this. Restore the previous behavior.

Operational Impact: Pane layout confusion could affect the accurPane layout confusion could affect the accuracy of and time it takes to generate the forecast and/or take considerable time to re-do bundles and procedures to adjust to the pane layout changeacy of and time it takes to generate the forecast and/or take considerable time to re-do bundles and procedures to adjust to the pane layout change.

Required Behavior: Restore previous panel layout for non-square number of panes in an editor, which was to have more rows than columns (e.g. for 6 pane layout, should be 3 rows and 2 columns) (DR 2028130)

175. GraphiDSS - paths in templates should be relative to icons directory

Icon/Image Items and Background Image Items are failing to load from templates in GraphiDSS due to relative file path issues. The current templates have a relative file path from the bin directory but with the separation of locations from source code and configurations between /awips2/apps/graphidss and /awips2/edex/data/share/graphidss this path is no longer correct and GraphiDSS cannot find these files. The relative paths in the current templates should be relative to the sites icons directory and not from the source code bin directory.

Operational Impact: Images produced by graphiDSS don't have the appropriate icons denoting the threats/threat levels in the area.

Required Behavior: Images produced by graphiDSS SHOULD have the appropriate icons denoting the threats/threat levels in the area. (DR 2008133)

176. Only zip CAVE logs older than two days

DCS 22483 implemented zipping all CAVE logs at CAVE shutdown. We received numerous complaints from beta sites because this makes it extremely difficult to search for CAVE logs to do debugging. Since leaving all CAVE logs unzipped would fill up the /home partition, we need to implement it so that CAVE logs older than two days are zipped, and the logs from the past two days remain unzipped. This should be done at CAVE shutdown, as it is done now.

Operational Impact: Zipping all CAVE logs makes it extremely difficult to search/find CAVE logs and troubleshoot issues being currently investigated.

Required Behavior: N/A (DR 2028134)

177. D2D - CWA Generator: UELE when move the cursor off the window

In the CWA Generator tool, moving the cursor away from the CWA Formatter window causes a UELE to occur.

Operational Impact: This does not seem to affect the operation of the CWA Generator. However, it is an unnecessary nuisance error.

Required Behavior: N/A (DR 2028140)

178. NCEP Enhanced LX Heap Allocations - Cave ini files

Testing was done on the new enhanced LX workstations for National Centers. Changes were found to be needed to the /awips2/cave/ncp.ini, as well as logic added to use the ncep.ini when the LX has over 120GB of memory. This is to take advantage of the additional RAM and faster graphics card. caveUtils.sh will be modified to always use the ncep.ini in the event an LX has the memory for it.

ncep.ini is created during the build, so memorySettings.xml needs to be changed to pick up these changes.

Concerns were raised to the government about using 40GB for each CAVE instance. In the event of an NC using 3 separate CAVE instances, this would leave a small amount of memory for the rest of the system. They responded that extensive testing was performed and these values will be fine.

Change the -Xmx parameter on line 31 to:
-Xmx40960M

Operational Impact: None.

Required Behavior: N/A (DR 2028149)

179. Certain GOES satellite RGB Composite data does not display in D2D

In D2D, when selecting certain GOES RGB Composite data, the following AV error is received and the data does not display (even though the menu suggests current data is available):

```
No data available for resource com.raytheon.uf.viz.truecolor.rsc.TrueColorResourceGroupData
com.raytheon.uf.viz.core.exception.NoDataAvailableException: No Data Available
    at
com.raytheon.uf.viz.core.rsc.AbstractRequestableResourceData.construct(AbstractRequestableR
esourceData.java:246)
    at
com.raytheon.uf.viz.core.drawables.ResourcePair.instantiateResource(ResourcePair.java:217)
    at
com.raytheon.uf.viz.core.drawables.ResourcePair.instantiateResource(ResourcePair.java:232)
    at
com.raytheon.uf.viz.core.rsc.ResourceList.instantiateResources(ResourceList.java:931)
    at com.raytheon.viz.ui.BundleLoader$InstantiationTask.run(BundleLoader.java:94)
    at java.base/java.lang.Thread.run(Thread.java:829)
```

This error occurs for the following GOES RGB Composite products:

Simple: VIS/IR sandwich

All products in the 'Advanced' Section

Old RGBs: Day Ocean Cloud Convection

TEST confirmed that the same products can be displayed on 20.3.2 test bed.

Operational Impact: Certain GOES satellite products will not be able to be displayed

Required Behavior: N/A (DR 2028152)

180. Registry: Should not do 24 hour comparison check between central and site if the site needs a sync

Site MRX reported an issue in TT 339463 where several of their hazards disappeared. There was an issue that resulted in NCF dropping their registry using the dd-database-drop.sh script. When registry started back up, it did not re-sync with Central immediately to re-populate the hazards. Before it was able to resync, the 24 hour comparison check between the central server and the site ran, which incorrectly resulted in some of the hazards being removed. To prevent this from happening, the 24 hour comparison check should not run if the site has not synced with the central server.

Richard Peter confirmed the code that needs to be changed is on the local registry side.

Operational Impact: Hazards can be improperly removed from AWIPS.

Required Behavior: N/A (DR 2028191)

181. Eastern Pacific National TCV Bug (tied to DCS 22721)

In trying to put together the test instructions for DCS 22721 Shannon W. found a gap with the national TCV. The CreateNatlTCVZoneGroups procedure has some code that is changing all ETNs to be 1000 series. I think it would be best to have that changed to be better aligned with all basins rather than Atlantic only.

Operational Impact: Incorrect ETNs will be included in TCV

Required Behavior: N/A (DR 2028204)

182. Merge fixes for 21.3.1

Merge/Build Support

Operational Impact: TBD

Required Behavior: N/A (DR 2028212)

183. Merge fixes for 21.4.1

Merge/Build Support

Operational Impact: TBD

Required Behavior: N/A (DR 2028216)

184. DatView can't display Forecast and Contingency plot data

Site called in saying that the DatView application for RFC's, which runs on the archive server, cannot display forecaster and contingency data. When she, or any RFC, tries to plot this data, the

X axis is fumbled and unintelligible and the data does not appear. See the attached example. See TT#219037 for more information.

This application is primarily used to gather data for upper management, so not being able to plot data is significant.

For an example of how the plots should correctly be displayed, see https://www.nws.noaa.gov/oh/rfcdev/docs/J2_datviewOB83_v2.pdf

Operational Impact: This application is primarily used to gather data for upper management, so not be able to plot data is significant.

Required Behavior: N/A (DR 2028380)

185. ConfigParser (c.readfp) in a2dbauth will be deprecated causing all localapps to crash

The following error appears in the logs or output to screen for any process that uses a2dbauth in 21.4.1 (and beyond):

```
<pre>
/awips2/fxa/bin/a2dbauth:78: DeprecationWarning: This method will be removed in
future versions. Use 'parser.read_file()' instead.
  c.readfp(StringIO('[default]\n' + text))
</pre>
```

This error can be found in the edex-ingest and edex-ingest-ohd logs associated with the legacyDhrDspProcess and Josh Watson reported it as part of a localapp as well:

```
<pre>
Example function generating the Warning from
/localapps/runtime/AppsAwips/GridDatabaseManagement/bin/gridInventory.sh

gettimes () {
# Array of times in format 2013-05-29_12:00:00
  mtimes=(`a2dbauth psql -d metadata -P pager=off -tA -c "SELECT DISTINCT to_ch
ar(a.reftime,'YYYYMMDD_HH24MI') as ref from grid a,grid_info b WHERE b.datasetid
='$1' AND b.id=a.info_id ORDER BY ref DESC"`)
}

/awips2/fxa/bin/a2dbauth:78: DeprecationWarning: This method will be removed in
future versions. Use 'parser.read_file()' instead.
  c.readfp(StringIO('[default]\n' + text))
</pre>
```

More details can be found here:

<https://docs.python.org/3/library/configparser.html#configparser.ConfigParser.readfp>

Although this is a warning message, when a2dbauth is used inside scripts and localapps (e.g. ECLAIRS, Snoopy, etc...), the warning message itself is getting processed as a string and causes all local apps to crash. Because /awips2/fixa/bin is not mounted, the fix will need to be deployed to all servers and workstations.

Operational Impact: Warning message causes all localapps to crash.

Required Behavior: Warning message does not cause all localapps to crash. (DR 2029554)

186. Add entry for scipy.io and entry for matplotlib into sharedModules.txt

As we continue our development on Integrated Hazard Services, we need to add an entries for scipy.io, matplotlib and shapely.speedups into sharedModules.txt in ufcore/common/com.raytheon.uf.common.python/utility/common_static/base/python/sharedModules.txt

UPDATE 4/12/2023: This change has been shown to fix a TT opened by AJK where CAVE crashed when going into service backup and when localization perspective files were saved. NCF TT was: *AJK High Ticket B242309 Hazard Service Unable to go into backup mode*

Operational Impact: CAVE crashes when going into service backup and when localization perspective files are saved.

Required Behavior: CAVE does not crash when going into service backup and when localization perspective files are saved. (DR 2029672)

187. D2D: Restore previous settings in gridImageryStyleRules for interpolate, defaultColormap, and color scale

MKX noted several changes with their D2D/grid imagery after installing 21.4.1. First, many of their model-reflectivity images were blocky, especially when zoomed in. Second the default color map and value range for gridded reflectivity was different, which made the image appear different than expected. See attached image for reference.

All of these changes in appearance/display are attributed to changes made to gridImageryStyleRules in 21.4.1 via RODO 8462 and were made to support the changes for DCS 22626 / 2001408 (WA66: Implement Select FSI Capabilities). It has been requested that these changes be reverted for now to make the gridded radar displays appear as they did in 20.3.2 and these changes will be revisited for 23.2.1.

Operational Impact: Imagery is difficult to interpret, which makes it hard to use for forecasting

Required Behavior: Restore defaultColormap to Radar/Storm Total Precip and color scale to 0-80 and remove interpolate tag for RR/CXR/LLR. (DR 2033486)

188. Backup Services: issue in the VizBackupServiceConstants class

so as you can see the search should produce 0 result when saved however it's producing this one result

if i do Domain = mxh or Sender = BOX nothing shows up which is the opposite of what i should see. something isn't working right

image.png

And it produces the following error:

the alertviz error message comes up when the filter field name is set to Domain. This didn't come up for me when it was filtered on Sender.

Unable to send request to server to get Incoming Backup Service Jobs.

java.lang.IllegalStateException:

org.hibernate.resource.jdbc.internal.LogicalConnectionManagedImpl@45bae0df is closed

at

org.hibernate.resource.jdbc.internal.AbstractLogicalConnectionImplementor.errorIfClosed(AbstractLogicalConnectionImplementor.java:37)

at

org.hibernate.resource.jdbc.internal.LogicalConnectionManagedImpl.getPhysicalConnection(LogicalConnectionManagedImpl.java:137)

at

org.hibernate.resource.jdbc.internal.LogicalConnectionManagedImpl.getConnectionForTransactionManagement(LogicalConnectionManagedImpl.java:273)

at

org.hibernate.resource.jdbc.internal.AbstractLogicalConnectionImplementor.rollback(AbstractLogicalConnectionImplementor.java:121)

at

org.hibernate.resource.transaction.backend.jdbc.internal.JdbcResourceLocalTransactionCoordinatorImpl\$TransactionDriverControlImpl.rollback(JdbcResourceLocalTransactionCoordinatorImpl.java:304)

at org.hibernate.engine.transaction.internal.TransactionImpl.rollback(TransactionImpl.java:142)

at

com.raytheon.uf.edex.backupsvc.database.BackupSvcIncomingDao.getAllIncomingJobs(BackupSvcIncomingDao.java:276)

at

com.raytheon.uf.edex.backupsvc.handlers.IncomingBackupJobsHandler.handleRequest(IncomingBackupJobsHandler.java:86)

at

com.raytheon.uf.edex.backupsvc.handlers.IncomingBackupJobsHandler.handleRequest(IncomingBackupJobsHandler.java:1)

at
com.raytheon.uf.edex.requestsrv.RequestServiceExecutor.execute(RequestServiceExecutor.java:190)
at
com.raytheon.uf.edex.requestsrv.serialization.SerializingStreamExecutor.execute(SerializingStreamExecutor.java:107)
at
com.raytheon.uf.edex.requestsrv.serialization.ByteLimitingStreamExecutor.execute(ByteLimitingStreamExecutor.java:76)
at
com.raytheon.uf.edex.requestsrv.http.HttpRequestServiceExecutor.execute(HttpRequestServiceExecutor.java:102)
at jdk.internal.reflect.GeneratedMethodAccessor230.invoke()
at
jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
at java.lang.reflect.Method.invoke(Method.java:566)
at org.apache.camel.support.ObjectHelper.invokeMethodSafe(ObjectHelper.java:381)
at org.apache.camel.component.bean.MethodInfo.invoke(MethodInfo.java:494)
at org.apache.camel.component.bean.MethodInfo\$1.doProceed(MethodInfo.java:316)
at org.apache.camel.component.bean.MethodInfo\$1.proceed(MethodInfo.java:286)
at
org.apache.camel.component.bean.AbstractBeanProcessor.process(AbstractBeanProcessor.java:146)
at org.apache.camel.component.bean.BeanProcessor.process(BeanProcessor.java:81)
at org.apache.camel.component.bean.BeanProducer.process(BeanProducer.java:41)
at org.apache.camel.processor.SendProcessor.process(SendProcessor.java:172)
at
org.apache.camel.processor.errorhandler.RedeliveryErrorHandler\$RedeliveryTask.doRun(RedeliveryErrorHandler.java:812)
at
org.apache.camel.processor.errorhandler.RedeliveryErrorHandler\$RedeliveryTask.run(RedeliveryErrorHandler.java:720)
at
org.apache.camel.impl.engine.DefaultReactiveExecutor\$Worker.schedule(DefaultReactiveExecutor.java:187)
at
org.apache.camel.impl.engine.DefaultReactiveExecutor.scheduleMain(DefaultReactiveExecutor.java:64)
at org.apache.camel.processor.Pipeline.process(Pipeline.java:184)
at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:398)
at
org.apache.camel.component.jetty.CamelContinuationServlet.doService(CamelContinuationServlet.java:245)
at org.apache.camel.http.common.CamelServlet.service(CamelServlet.java:130)
at javax.servlet.http.HttpServlet.service(HttpServlet.java:790)

```

at org.eclipse.jetty.servlet.ServletHolder.handle(ServletHolder.java:799)
at org.eclipse.jetty.servlet.ServletHandler$ChainEnd.doFilter(ServletHandler.java:1656)
at org.eclipse.jetty.servlet.ServletHandler.doHandle(ServletHandler.java:552)
at org.eclipse.jetty.server.handler.ScopedHandler.nextHandle(ScopedHandler.java:233)
at org.eclipse.jetty.server.handler.ContextHandler.doHandle(ContextHandler.java:1440)
at org.eclipse.jetty.server.handler.ScopedHandler.nextScope(ScopedHandler.java:188)
at org.eclipse.jetty.servlet.ServletHandler.doScope(ServletHandler.java:505)
at org.eclipse.jetty.server.handler.ScopedHandler.nextScope(ScopedHandler.java:186)
at org.eclipse.jetty.server.handler.ContextHandler.doScope(ContextHandler.java:1355)
at org.eclipse.jetty.server.handler.ScopedHandler.handle(ScopedHandler.java:141)
at org.eclipse.jetty.server.handler.HandlerWrapper.handle(HandlerWrapper.java:127)
at org.eclipse.jetty.server.Server.handle(Server.java:516)
at org.eclipse.jetty.server.HttpChannel.lambda$handle$1(HttpChannel.java:487)
at org.eclipse.jetty.server.HttpChannel.dispatch(HttpChannel.java:732)
at org.eclipse.jetty.server.HttpChannel.handle(HttpChannel.java:479)
at org.eclipse.jetty.server.HttpConnection.onFillable(HttpConnection.java:277)
at
org.eclipse.jetty.io.AbstractConnection$ReadCallback.succeeded(AbstractConnection.java:311)
at org.eclipse.jetty.io.FillInterest.fillable(FillInterest.java:105)
at org.eclipse.jetty.io.ChannelEndPoint$1.run(ChannelEndPoint.java:104)
at org.eclipse.jetty.util.thread.strategy.EatWhatYouKill.runTask(EatWhatYouKill.java:338)
at org.eclipse.jetty.util.thread.strategy.EatWhatYouKill.doProduce(EatWhatYouKill.java:315)
at org.eclipse.jetty.util.thread.strategy.EatWhatYouKill.tryProduce(EatWhatYouKill.java:173)
at org.eclipse.jetty.util.thread.strategy.EatWhatYouKill.run(EatWhatYouKill.java:131)
at
org.eclipse.jetty.util.thread.ReservedThreadExecutor$ReservedThread.run(ReservedThreadExec
utor.java:409)
at org.eclipse.jetty.util.thread.QueuedThreadPool.runJob(QueuedThreadPool.java:883)
at org.eclipse.jetty.util.thread.QueuedThreadPool$Runner.run(QueuedThreadPool.java:1034)
at java.lang.Thread.run(Thread.java:829)

```

Operational Impact: Currently the filtering will not work properly and will produce an improper result

Required Behavior: When Domain/sender is selected it should be filtering the variable in that section. (DR 2033487)

189. When running the CWA tool an "Internal error has occurred" is displayed

Found while testing #2028140

After the CWA generator has been closed and then it's opened again, an internal error occurs because a timer thread is trying to update a disposed text widget.
(see attached text file for details of the error).

Operational Impact: There are no operational impacts to the CWA generator functionality, but the error may cause the user to believe something is wrong when that's not the case.

Required Behavior: The internal error message should not be displayed at any time. (DR 2033489)

190. GFE: Missing parameters from the D2DAccumulativeElements list for NationalBlend in the base serverConfig.py

Add following D2D elements in the NationalBlend D2DAccumulativeElements list in the base serverConfig.py that was removed in 21.4.1.

pop12hr, pop, pop6hr, tp1hr, tp6hr, thp3hr, thp6hr, thp12hr, totn1hr, totn6hr, ficeac1hr, ficeac6hr, hindex6hr

Without it NationalBlend data is put into the wrong time slot causing problems with forecasts.

Operational Impact: The missing parameters will not be displayed in GFE when loading the NationalBlend/NBM

Required Behavior: Add the missing parameters back into serverConfig.py (DR 2033490)

191. Fix ISC Hazard Grid Transformations

Last hurricane season (2022) there were several times when NHCN noticed that some of the hazards they had requested via ISC had values that didn't match what the WFO they came from had. HPCN then saw this occur multiple times in the winter 2022-2023 season, this time with a few examples being obviously wrong without having to check the source WFO, like having marine hazards over land, which should never happen.

We need to figure out why this problem is occurring and fix it.

Operational Impact: This problem has a critical impact at NHCN when in hurricane operations. When ISC hazards transform from something non-tropical (e.g. a SC.Y in the Gulf Coast) to something tropical (e.g. TR.U for the East Coast for a land-falling tropical storm), the National TCV product ends up getting issued for areas far outside of the area(s) of impact for the tropical system.

Required Behavior: Upon ingest via ISC at a National Center, hazards issued from WFOs should remain as the correct, intended hazard type (e.g. SC.Y) and not transform into a tropical hazard type (e.g. TR.U). (DR 2033890)

192. IdM Phase 2 changes for NWPS and make HTI

Without these changes, NWPS and make_hti won't work for IdM Phase II sites that use them (coastal/tropical sites), if a CAC is in the reader of the workstation where they are being launched.

The changes involve adding the use of nohup to ssh commands within these files, and replacing instances of xterm with nohup ssh

Affected Files:

/awips2/cave/etc/gfe/userPython/procedures/Run_NWPS.py
/awips2/cave/etc/gfe/userPython/gfeConfig/gfeConfig.py

Provided by the following packages:

awips2-cave
awips2-cave-gfeclient
awips2-cave-ncep

For compatibility with IdM Phase II, specifically with SSH agent auto-prompting, the following changes are required:

os.system(xterm...) replaced with os.system(nohup ssh...)
os.system(ssh...) replaced with os.system(nohup ssh...)

The attached files include the required updates, which were devised by Ernie Jillson at TBW. Both have been tested at TBW and MOB.

The implementation of SSH Agent auto-prompting upon terminal startup, to preload a user's CAC credentials for the session, necessitates the modification of two baseline GFE Python files. The files requiring modification make use of xterm and ssh/scp commands which trigger the auto-prompting mechanism without the ability for the user to provide a PIN. Therefore modifications have been made to the following baseline GFE Python files to work with IdM Phase II.

The baseline GFE configuration file, /awips2/cave/etc/gfe/userPython/gfeConfig/gfeConfig.py, has been modified so that the command to, ?Make and Send HTI:? no longer utilizes xterm.

The baseline GFE procedure, /awips2/cave/etc/gfe/userPython/procedures/Run_NWPS.py, has been modified to replace the use of xterm, and to add the use of nohup to ssh and scp commands within the procedure.

The removal of xterm from these GFE Python files results in altered behavior when the modified scripts are run. Once xterm is replaced, an xterm window for monitoring script progress is no longer displayed upon script launch. The SSH connections are instead executed in the background and the script or procedure completes without a pop-up xterm window.

Operational Impact: NWPS and make_HTI do not work correctly for IdM Phase 2 sites that use them (coastal/tropical sites), if a CAC is in the reader of the workstation where they are being launched.

Required Behavior: NWPS and make_HTI work correctly for IdM Phase 2 sites that use them (coastal/tropical sites), if a CAC is in the reader of the workstation where they are being launched. **(DR 2033896)**

193. GFE/HS: Workstation import/installation failed error.

When working in GFE there is an interoperability error in HS that creates the following issue.

WORKSTATION|(LocalizationInterface) LocalFileInstaller import/instantiation failed, falling back to AppFileInstaller

error was discovered from Nate that:

That message is coming out of 18-

Hazard_Services/common/gov.noaa.gsd.common.hazards.utilities/utility/common_static/base/HazardServices/python/localizationUtilities/LocalizationInterface.py.

Operational Impact: User will get this warning message that could cause confusion that an actual error is present.

Required Behavior: When running in GFE or HS this error should not be triggered:

WORKSTATION|(LocalizationInterface) LocalFileInstaller import/instantiation failed, falling back to AppFileInstaller. (DR 2033901)

194. Hazard Services 21.4.1 hydrology issues

WFOs participating in ATAN 1242 with the same Hazard Services that is being delivered in 21.4.1 discovered a few bugs after the code check-in for 21.4.1. GSL has addressed them in the ATAN and needs to check them into the AWIPS baseline in the 21.4.1 beta period. These fixes relate primarily to burn scars and areal flood watches. They were identified in the Atmospheric River events earlier this year.

These changes were made to the ATAN version of Hazard Services and field tested over the last several months.

Operational Impact: In the AR events earlier this year, flood watch products were often poorly formatted when burn scar watches and widespread areal flood watches were present. Resulting GFE grids used by the WR hazard viewer were also incorrect.

Required Behavior: Hazard services needs to correctly issue burn scar flood watches along with areal flood watches. (DR 2033902)

195. WarnGen: Other cities list yields malformed text in pathCast and shortPathCast macros

In 21.4.1 WarnGen testing, an issue was identified with the otherCities in the pathcast since DR 22724 fixed the defect preventing these cities from getting into the pathcast at all. When using the WarnGen pathcast option, warngenlev 3/4 locations are included outside of the main pathcast text. When 3 or more locations meet these criteria, the output results in an improperly formatted sentence with a free-standing comma prior to the last location.

Bad output: "Other locations impacted include Location A, Location B , and Location C." (note the extra space after Location B)

With code changes installed for VM_global_library.vm and a restart of WarnGen, the same resulting text should yield proper Oxford comma English. For example "Location A, Location B, and Location C"

Operational Impact: BMH handling, and perhaps customer processing of the malformed text could yield mispronunciation of impacted warning locations

Required Behavior: The other cities list should use proper Oxford comma English. **(DR 2033916)**

196. UGA/GraphiDSS: Memory Errors Using Application

OB21.4.1 Operational beta sites reported issues with GraphiDSS usually dealing with sending images to LDAD. Upon investigation logs showed Out Of Memory errors occurring occasionally when starting a subprocess. The default Linux way to start a subprocess is to fork the parent process and this requires the same amount of memory to be available as the parent process. Troubleshooting showed a few areas where GraphiDSS memory usage was growing over time which could help lead to this situation. This DR covers memory optimizations and fix leaks discovered in operational beta.

Operational Impact: Images may not get sent to LDAD to get posted to the web.

Required Behavior: UGA/GraphiDSS should operate without memory errors. **(DR 2033976)**

197. OBS in D2D and AvnFPS displaying with the wrong site and associated values

21.4.1 beta sites are reporting that there have been occurrences where their OBS sites are overwritten by the wrong OBS station and its associated values. This is affecting D2D and AvnFPS and may also impact GFE. This issue has been reported by 20.3.2 and earlier sites, as well, but the issue at 21.4.1 sites seems to be slightly different because it was occurring at all 21.4.1 sites at the same time while it was not occurring at 20.3.2 sites at that same time. Therefore, this issue is being investigated as a potential SwIT issue.

Operational Impact: While this issue is occurring, inspecting current conditions via D2D would make accurate forecasting and warning decision support impossible and would lead to bad TAFs being generated in AvnFPS

Required Behavior: In D2D and AvnFPS METAR sites should only show METAR data for the expected site in the expected site's location. **(DR 2033981)**

198. Novrastats process using all timers cause other processes (sssd) to not start

On CPV1 servers at sites, novramon and novrastats processes are used to monitor and collect stats from Novra DVB receivers. Novrastats use POSIX timers to keep track of the interval expiration after which the process reads the stats from the memory and writes the disk. The novrastats process creates a timer each time but it was not deleted. This resulted in exhausting all the timers provided by the Linux kernel. Hence other processes like sssd that uses timers was not able to start due to the unavailability of the Linux timers.

Operational Impact: Cannot monitor or troubleshoot ldm/qpid related processes if cpv1 is not accessible due to sssd being down.

Required Behavior: On cpv1, both sssd and novrastats processes should be up and running. (DR 2034024)

199. UGA Migration Script Fails On Empty Directory

When running the migration script if the original directory was empty the rysnc command would fail and the migration script would not run to completion. Need to check for empty directories before running rsync and also catch and log any exceptions.

Operational Impact: Migration script can fail causing sites to not have all of their UGA/GraphiDSS configurations in the baseline.

Required Behavior: Migration script does not fail and exit if a source folder is empty. (DR 2034029)

200. Ignite: New verbose logging filling logs partition on cache VMs

NCF reported a trend with 21.4.1 sites where /awips2/ignite/logs is filling up. Analysis showed that the cause is due to the performance logging changes for WA 61, on RODO 8374, DCS 22483, cloud redmine 2001428 where every request to PyPIES is now being logged. Solution is to check the logger to see if debugging is enabled and then if enabled log the object being sent (which includes that giant records and metadata stuff). If debugging is not enabled, just log the filename corresponding to the request. That would leave the same number of log messages (one for every request) for some traceability but significantly shorten them unless debug logging was turned on.

NOTE: We also reduced the number of days the logs are stored from 60 to 30.

Operational Impact: Unsure if Ignite or any forecaster operations are impacted if /awips2/ignite/logs fills up, but a burden is put on support staff (e.g. ITOs, NCF, ENV) having to manually purge logs

Required Behavior: Logging should be verbose enough to assist in troubleshooting, but not so much that the logs partitions need to be manually purged. (DR 2034031)

201. Warnngen: Wind speeds in follow-up (SVS) does not always match value from original warning

HUN and EAX recently noticed an issue where they issued a SVR for a storm with X wind speeds in the text of the warning and when they went to issue a follow-up, the auto-selected bullet for wind speeds was higher than X (e.g. the SVR had 70 MPH winds and the SVS was trying to use 80 mph). The WG template team reports that this is an edge case that can occur with very fast moving storms when the IBW tag is looking for one speed, but the storm motion is faster than that (e.g. the IBW tag is "70 MPH", but the storm speed was 80 MPH). The fix involves an update to the follow-up templates.

HUN TT 245420
EAX TT 367475

Operational Impact: A SVS (follow-up) can go out with the incorrect information and may over-alert and de-sensitize the public. In the words of the forecaster at HUN: "This may sound like not a big issue, however if I didn't stop to take a second to double check the selected hazards in Warn Gen and sent out the product blindly, WEA alerts would of been sent out for Destructive Thunderstorm Warnings 2 times that were not meant to be and 1 for an even higher Destructive Tstorm Warning of 100 mph!"

Required Behavior: By default, the SVS should use the same wind speeds that the SVR used. (DR 2034179)

202. Griddednucaps decoder errors in 21.4.1

VRH reported that the griddednucaps data is not being decoded in 21.4.1. It is throwing the following error in edex-ingest:

```
ERROR 2023-04-27 00:23:11,497 3848 [Timer-494] griddednucaps:
Exchange[ExchangePattern: InOnly, BodyType: String, CaughtExceptionType: java.lang.Exception, CaughtExceptionMessage: Failed to decode file:
[/data_store/nucaps/20230427/00/ARH_UAF_IUTN06_KNES_270001.hdf.029-853550f8.nowmo.gn.nc,/data_store/nucaps/20230427/00/ARH_UAF_IUTN06_KNES_270004.hdf.033-853550f9.nowmo.gn.nc], StackTrace: java.lang.Exception: Failed to decode file:
[/data_store/nucaps/20230427/00/ARH_UAF_IUTN06_KNES_270001.hdf.029-853550f8.nowmo.gn.nc,/data_store/nucaps/20230427/00/ARH_UAF_IUTN06_KNES_270004.hdf.033-853550f9.nowmo.gn.nc]
    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.GriddedNucapsPythonDecoder.decode(GriddedNucapsPythonDecoder.java:75)
    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.GriddedNucapsDecoder.decode(GriddedNucapsDecoder.java:41)
    at jdk.internal.reflect.GeneratedMethodAccessor868.invoke(Unknown Source)
```

```
    at
java.base/jdk.internal.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccesso
rImpl.java:43)
    at java.base/java.lang.reflect.Method.invoke(Method.java:566)
    at org.apache.camel.support.ObjectHelper.invokeMethodSafe(ObjectHelper.java:381)
    at org.apache.camel.component.bean.MethodInfo.invoke(MethodInfo.java:494)
    at org.apache.camel.component.bean.MethodInfo$1.doProceed(MethodInfo.java:316)
    at org.apache.camel.component.bean.MethodInfo$1.proceed(MethodInfo.java:286)
    at
org.apache.camel.component.bean.AbstractBeanProcessor.process(AbstractBeanProcessor.java:
146)
    at org.apache.camel.component.bean.BeanProcessor.process(BeanProcessor.java:81)
    at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:398
)
    at org.apache.camel.processor.Pipeline$PipelineTask.run(Pipeline.java:109)
    at
org.apache.camel.impl.engine.DefaultReactiveExecutor$Worker.schedule(DefaultReactiveExecu
tor.java:187)
    at
org.apache.camel.impl.engine.DefaultReactiveExecutor.scheduleMain(DefaultReactiveExecutor.
java:64)
    at org.apache.camel.processor.Pipeline.process(Pipeline.java:184)
    at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:398
)
    at org.apache.camel.component.direct.DirectProducer.process(DirectProducer.java:96)
    at org.apache.camel.processor.SendProcessor.process(SendProcessor.java:172)
    at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:398
)
    at
org.apache.camel.impl.engine.CamelInternalProcessor.process(CamelInternalProcessor.java:398
)
    at
org.apache.camel.impl.engine.DefaultAsyncProcessorAwaitManager.process(DefaultAsyncProc
essorAwaitManager.java:83)
    at
org.apache.camel.support.AsyncProcessorSupport.process(AsyncProcessorSupport.java:41)
    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.TimeBasedAggregationStrategy.processFileBat
ch(TimeBasedAggregationStrategy.java:173)
    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.TimeBasedAggregationStrategy.notifyEvent(Ti
meBasedAggregationStrategy.java:219)
    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.TimedChecker.fire(TimedChecker.java:89)
```

```

    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.TimedChecker$1.run(TimedChecker.java:77)
    at java.base/java.util.TimerThread.mainLoop(Timer.java:556)
    at java.base/java.util.TimerThread.run(Timer.java:506)
Caused by: com.raytheon.edex.exception.DecoderException: <class 'TypeError': Error
converting parameter 1: Expected java.lang.String but received a numpy.bytes_
    at com.raytheon.uf.edex.python.decoder.PythonDecoder.decode(PythonDecoder.java:120)
    at
gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.GriddedNucapsPythonDecoder.decode(Gridded
NucapsPythonDecoder.java:62)
    ... 28 more
Caused by: jep.JepException: <class 'TypeError': Error converting parameter 1: Expected
java.lang.String but received a numpy.bytes_
    at
/awips2/edex/lib/plugins/gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.jar/GriddedNucapsDe
coder.createRecord(GriddedNucapsDecoder.py:477)
    at
/awips2/edex/lib/plugins/gov.noaa.nws.sti.mdl.edex.plugin.griddednucaps.jar/GriddedNucapsDe
coder.decode(GriddedNucapsDecoder.py:551)
    at
/awips2/edex/data/utility/common_static/base/python/DecoderInterface.decode(DecoderInterface
.py:58)
    at <string>.<module>(<string>:1)
    at jep.Jep.eval(Native Method)
    at jep.Jep.eval(Jep.java:451)
    at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:285)
    at com.raytheon.uf.common.python.PythonScript.execute(PythonScript.java:333)
    at com.raytheon.uf.common.python.PythonScript.execute(PythonScript.java:313)
    at com.raytheon.uf.edex.python.decoder.PythonDecoder.decode(PythonDecoder.java:116)
    ... 29 more

```

Looks like this is caused by either the Python 3.8 upgrade or the associated COTS/FOSS (e.g. numpy) upgrades associated with 21.4.1.

Operational Impact: No griddednucaps data.

Required Behavior: Griddednucaps data should successfully decode and store. **(DR 2034194)**

203. Backup Services: UELE when selecting Review after moving a job to Send/Delete/Wait

After sending a NEW job to send/delete/wait status in backup services and then selecting Review (+with no job selected+) a UELE is given

Operational Impact: If a user accidentally hits the Review button with nothing selected and encounter the UELE, it may cause them to think that the service is not working correctly.

Required Behavior: UELE should not be encountered while working in backup service.s (DR 2034205)

204. GFE: Text formatters fail at sites where Hazard Services is not installed

NHCN installed 21.4.1 today and since the install, they are unable to run any GFE text formatters. Here is the error:

```
ERROR:FormatterRunner.TextFormatter.TextFormatter:Caught Exception:
Traceback (most recent call last):
  File "/awips2/cave/etc/gfe/userPython/textUtilities/TextFormatter.py", line 259, in __loop
    subText = forecast.generateForecast(argDict)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 617, in
generateForecast
    changesMade = self.traverseTree(self.__narrativeTree)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 711, in
traverseTree
    childChanged = self.traverseTree(child)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 711, in
traverseTree
    childChanged = self.traverseTree(child)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 711, in
traverseTree
    childChanged = self.traverseTree(child)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 687, in
traverseTree
    done = method(self.__narrativeTree, node)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 328, in
hazards_words
    words = self.getHazardString(tree, node, editAreas)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 1827, in
getHazardString
    headlineDicts_HS = self.getHazardServicesHeadlineDicts(tree, node, fcstArea)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 1877, in
getHazardServicesHeadlineDicts
    raise e
  File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 1855, in
getHazardServicesHeadlineDicts
    response = RequestRouter.route(request, "hazard.services.headlines")
RuntimeError: java.lang.IllegalStateException: There is no registered router for service
[hazard.services.headlines]. The request cannot be processed!
ERROR:FormatterRunner>Error generating text product
Traceback (most recent call last):
  File "/awips2/cave/etc/gfe/userPython/textUtilities/TextFormatter.py", line 259, in __loop
    subText = forecast.generateForecast(argDict)
  File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 617, in
generateForecast
```



```

    changesMade = self.traverseTree(self.__narrativeTree)
File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 711, in
traverseTree
    childChanged = self.traverseTree(child)
File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 711, in
traverseTree
    childChanged = self.traverseTree(child)
File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 711, in
traverseTree
    childChanged = self.traverseTree(child)
File "/awips2/cave/etc/gfe/userPython/textUtilities/ForecastNarrative.py", line 687, in
traverseTree
    done = method(self.__narrativeTree, node)
File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 328, in
hazards_words
    words = self.getHazardString(tree, node, editAreas)
File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 1827, in
getHazardString
    headlineDicts_HS = self.getHazardServicesHeadlineDicts(tree, node, fcstArea)
File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 1877, in
getHazardServicesHeadlineDicts
    raise e
File "/awips2/cave/etc/gfe/userPython/textUtilities/DiscretePhrases.py", line 1855, in
getHazardServicesHeadlineDicts
    response = RequestRouter.route(request, "hazard.services.headlines")
RuntimeError: java.lang.IllegalStateException: There is no registered router for service
[hazard.services.headlines]. The request cannot be processed!

```

The above exception was the direct cause of the following exception:

Traceback (most recent call last):

```

File "/awips2/cave/etc/gfe/userPython/textUtilities/FormatterRunner.py", line 121, in
executeFromJava
    forecasts = runFormatter(databaseID=databaseID, site=site, forecastList=forecastList,
testMode=testMode,
File "/awips2/cave/etc/gfe/userPython/textUtilities/FormatterRunner.py", line 295, in
runFormatter
    forecast = formatter.getForecast(forecastType, argDict)
File "/awips2/cave/etc/gfe/userPython/textUtilities/TextFormatter.py", line 184, in getForecast
    text = product.generateForecast(argDict)
File
"/home/jeffrey.lewitsky/caveData/etc/site/NH1/gfe/userPython/textUtilities/NH1_Overrides.py",
line 1769, in generateForecast
    fcst = self._preProcessArea(fcst, editArea, areaLabel, argDict)
File
"/home/jeffrey.lewitsky/caveData/etc/configured/NH1/gfe/userPython/textProducts/OFF.py",
line 968, in _preProcessArea
    headlines = self.generateProduct("Hazards", argDict, area = editArea,

```


File "/awips2/cave/etc/gfe/userPython/textUtilities/Interfaces.py", line 175, in generateProduct
fcst = getForecast(productName, argDict)
File "/awips2/cave/etc/gfe/userPython/textUtilities/TextFormatter.py", line 172, in getForecast
text = self.__loop(argDict, forecast, forecastDef)
File "/awips2/cave/etc/gfe/userPython/textUtilities/TextFormatter.py", line 262, in __loop
raise Exception from e
Exception

There is an if block in DiscretePhrases.py that is supposed to check if Hazard Services is not installed and just log it and move on, but that code is apparently not working properly.

Operational Impact: Cannot issue any text products in GFE.

Required Behavior: GFE text formatters should work without error in 21.4.1 even without Hazard Services installed in CAVE. (DR 2035775)

205. Backup Services GUI: Message incorrectly says that failed jobs were successfully sent

In the Backup Service GUI, when a job is sent but the process fails, the status changes to FAILED but the message at the bottom of the GUI tells the user that the job was sent successfully (see attached image).

Operational Impact: A user may not know if a job was sent successfully or if it failed since there are conflicting messages given.

Required Behavior: Backup Services status message should inform the user of the correct job status. (DR 2035783)

3. Open DRs and DCSs

This section addresses open DRs and DCSs that have been deferred to the next immediate major release. The DRs identified in this section may have been initiated during the current release or during a previous release. The DCSs may have been initiated from a previous release or initiated in the current release. The CFRs are initiated in the current release.

DRs, DCSs or CFRs for Future Release

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 2001353 | DCS | GFE ISC: National centers need unique office types to prevent data from being overwritten or sampling incorrectly |
| 2001366 | DCS | Add Impact Based Warning (IBW) Tags to Snow Squall Warnings (SQW) |
| 2001394 | DCS | CWA generator drawing accuracy |
| 2001397 | DCS | Update Puerto Rico domain grid points for ESTOFS v2.0.3 |
| 2001402 | DCS | Support for HiResW v8 and HREF v3 Upgrades |
| 2001403 | DCS | Update to the AvnFPS IWXXM product generation software |
| 2001408 | DCS | WA66: Implement Select FSI Capabilities |
| 2001414 | DCS | BMH - Increase SAME expiration time limit from 6 hours to 99.5 hours |
| 2001417 | DCS | Ingest and display MRMS v12.1.0 new products |
| 2001418 | DCS | TC Wind Hazard Recommender Enhancements II |
| 2001419 | DCS | Add ability to move grids forward in time |
| 2001420 | DCS | WTCM - TCV/CWF/ZFP Sampling Change |
| 2001421 | DCS | PGEN Functionality: PGEN GFA Attributes Desk Enhancement |
| 2001422 | DCS | D2D Radar: Remove obsolete product 27 from radar software and move products 19 and 20 to legacy products |
| 2001423 | DCS | Nsharp D2D Load Performance enhancement |
| 2001424 | DCS | Add capability to duplicate NSBN data feed for National Centers |
| 2001426 | DCS | New Features for NSHARP Turbulence/Icing Displays |
| 2001427 | DCS | Registry synchronization reports success even when exceptions occur |
| 2001428 | DCS | Add CAVE loggings - WA 61 (Part 1) |
| 2001432 | DCS | D2D Radar: Add Capability to Change VMI From AWIPS to the VCP Change Request GUI |
| 2001433 | DCS | Addition to ProbSevere plugin to handle WMO headers |
| 2001435 | DCS | Nsharp(Tool) D2D Point Forecast Retrieval Requirements |
| 2001436 | DCS | NCTEXT Aviation TAFs Hour Covered Selection Disabled And Selection Always Set to "Latest" |
| 2001441 | DCS | NCText TAF Plot issues |
| 2001442 | DCS | A2 Climate refresh application is overwriting the SITE version of globalDay.properties file. |
| 2001446 | DCS | Enable Winter Wx in Hazard Services |
| 2001447 | DCS | Add back in support for decoding and display of BUFR wind profiler data. NOAA/PSL will distribute data via LDM to NWS sites via region HQ. |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2001449 | DCS | Due to the Hazard Simplification VTEC Consolidation, the following hazards should be removed from the selection list in GFE/GHG and adjusted for making the hazard grid |
| 2001450 | DCS | Due to the Hazard Simplification VTEC Consolidation, the following hazards should be removed from the selection list in GFE/GHG or WarnGen (for certain products) and adjusted for making the hazard grid |
| 2001451 | DCS | GFE Service Backup: Grid clipping for backup site utilizes primary site svcbu.properties clip rather than backup svcbu.properties |
| 2001452 | DCS | Resolve HTI Collision Situations/Impacts |
| 2001454 | DCS | Feature request for non-weather emergency message formatters in GFE |
| 2001455 | DCS | use the warnngenloc functionality for long-fused hazards |
| 2001457 | DCS | NSharp D2D performance improvements |
| 2001458 | DCS | NCText D2D Performance Improvements |
| 2001459 | DCS | D2D functionality: Convective SIGMET Plots rendering enhancements |
| 2001460 | DCS | Non-Convective SIGMET graphics plot revisions |
| 2001462 | DCS | D2D NSHARP (TOOL) Enhancements |
| 2001463 | DCS | D2D Multi Panel Layout Enhancements |
| 2001464 | DCS | propose saves grids to fcst database |
| 2001468 | DCS | GFE: Update ONA and ONP domain in serverConfig.py |
| 2001471 | DCS | D2D: Sixteen Panel Layout Key Bindings |
| 2001474 | DCS | Allow the super-res and 8-Bit SRM products to have their own unique color curve |
| 2001479 | DCS | modify Hazard Services for event-driven archiving |
| 2001481 | DCS | Climate RER: Legacy local scripts to alert user of record event not working with climate refresh - need baseline functionality |
| 2001482 | DCS | New features to better support Digital Aviation Services at WFOs |
| 2001485 | DCS | GOES Fog and Low Stratus (FLS) Product Configurations |
| 2001486 | DCS | NWRWAVES: Alert user if product goes to TROUBLE directory/fails to be sent to BMH |
| 2001487 | DCS | GOES Multi-sat composite configuration updates |
| 2001497 | DCS | Unified Graphics Application (Phase I - non-remote access) |
| 2001498 | DCS | Standardized Local WFO Tsunami Warning Broadcast and EAS Activation GUI (CARDS 17-014) |
| 2001499 | DCS | D2D Radar: remove Product List Message from TDWR products |
| 2001505 | DCS | Add Edit Plot Attributes to Metar Precip Plots |
| 2001508 | DCS | Add Model Source Time To GFE Grids Loaded In D2D |
| 2001509 | DCS | Port NSHARP Into D2D |
| 2001514 | DCS | GFE needs access to the Hazard Services' Headline information |
| 2001515 | DCS | EDEX restarts: Add more positive notification of Qpid communication being restored and EDEX and/or GFE services being restarted |
| 2001518 | DCS | Add Selected Time Mode to Settings |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 2001520 | DCS | Hazard Services: Registry Outage Logging |
| 2001521 | DCS | Partial replacement of flood watch has incorrect wording |
| 2001528 | DCS | D2D Radar: add new GSM data fields for VCP Supplemental Data |
| 2001536 | DCS | Automated Tropical Cyclone Forecast System (ATCF) |
| 2001537 | DCS | Hydro Perspective displays M (missing) for min/max in Point Data Control even when values exist in DB |
| 2001549 | DCS | Route TDWR data to additional interface (RPCDDS) from MHS NCF Servers |
| 2001559 | DCS | Updates required to support NBM 4.0 |
| 2001560 | DCS | Enhance Center Weather Advisory (CWA) software to support CWSU operations |
| 2001569 | DCS | Enhance hydro capability of the DAF |
| 2001578 | DCS | Increase CAVE memory from 6GB to 8GB |
| 2001585 | DCS | D2D Radar: remove from AWIPS those products that are obsolete in TDWR Build 10 |
| 2001587 | DCS | Encrypt JMS password |
| 2001593 | DCS | hazard Services: Non-Precipitation Weather HazSimp Consolidation and Reformatting and Common Alerting Protocol (CAP) in Hazard Services |
| 2001596 | DCS | Localization Perspective (LP) editor needs to be able to read properly formatted XML and force documents to be properly formed in order to save. |
| 2001606 | DCS | GFE: SPCGuide ? Add all available model elements to GFE SPC database |
| 2001627 | DCS | Follow-up actions necessary to finish implementing CFR 19895 for deprecated Postgis function calls. |
| 2001679 | DCS | Add optional force recalculation flag in smartInits |
| 2001680 | DCS | Gridded LAMP domain expansion and going out to 38 h for Ceiling & Visibility |
| 2001692 | DCS | D2D Radar: Remove obsolete CFC from radar software |
| 2001704 | DCS | Contour labeling should be sped up |
| 2001781 | DCS | Digital Cursor Readout tool will allow forecasters to display severe weather parameters values along with radar data. |
| 2001800 | DCS | Implement central wavelength functionality and add column to satellite table |
| 2002002 | DCS | BMH no 1650 Hz tone to send for testing via BMH |
| 2002129 | DCS | GFE: Add virtual ISC (VModule) capability IceAccum |
| 2029546 | DCS | Add CAVE preference to enable/disable well-formed XML validation when user saves an XML file in the Localization Perspective |
| 2029646 | DCS | Eastern Pacific National TCV Update |
| 2029654 | DCS | WA 60 ? Backup Services Enhancements |
| 2029697 | DCS | Address Hibernate upgrade workaround |
| 2000828 | CFR | Update PostGIS to 2.5.9 |
| 2000869 | CFR | Upgrade PyTables to 3.7.0 |
| 2000870 | CFR | Switch to Red Hat provided Python 3.8 |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--------------------------------------------------------------------------------------------------------|
| 2000873 | CFR | Upgrade Apache Logging to 1.2 |
| 2000874 | CFR | Upgrade Spring Framework to 5.3.13 |
| 2000875 | CFR | Upgrade Apache Camel to 3.14 |
| 2000877 | CFR | Upgrade to matplotlib 3.4.3 |
| 2000884 | CFR | Update python library h5py to at least version 3.3.0 |
| 2000888 | CFR | Add Gson to AWIPS |
| 2000889 | CFR | Update javax.activation to jakarta.activation version 1.2.2 |
| 2000890 | CFR | Upgrade com.sun.jna.platform to 5.8.0 |
| 2000891 | CFR | Upgrade com.sun.jna to 5.8.0 |
| 2000892 | CFR | Upgrade org.apache.xerces to 2.12.1 |
| 2000893 | CFR | Update javax.annotation to jakarta.annotation-api version 1.3.5 |
| 2000894 | CFR | Upgrade Eclipse to 4.21 (2021-09) |
| 2000895 | CFR | Update Jackson to 2.12.5 |
| 2000899 | CFR | Upgrade Security package - hdf5 to 1.12.1 |
| 2000903 | CFR | Remove obsolete python FOSS module backports.functools-lru-cache |
| 2000906 | CFR | Remove obsolete packages contextlib2, pbr, zipp |
| 2000907 | CFR | Upgrade to pygobject 3.40.1 |
| 2000908 | CFR | Upgrade to pycairo 1.20.1 |
| 2000909 | CFR | Upgrade to appdirs 1.4.4 |
| 2000910 | CFR | Upgrade to zc.lockfile 2.0 |
| 2000911 | CFR | Upgrade to werkzeug 1.0.1 |
| 2000912 | CFR | Upgrade to shapely 1.7.1 |
| 2000913 | CFR | Upgrade to setuptools-scm 5.0.2 |
| 2000914 | CFR | Upgrade to python-netcdf4 1.5.6 |
| 2000916 | CFR | Upgrade to pkgconfig 1.5.2 |
| 2000917 | CFR | Upgrade numexpr to 2.7.3 |
| 2000918 | CFR | Upgrade to more-itertools to 8.8.0 |
| 2000919 | CFR | Remove mock from the install packages |
| 2000920 | CFR | Upgrade to matplotlib 3.4.3 |
| 2000921 | CFR | Upgrade to jep 3.9.1 |
| 2000922 | CFR | Add packages jaraco.collections version 3.2.0, jaraco.text version 3.5.0, jaraco.classes version 3.2.1 |
| 2000923 | CFR | Upgrade to cheroot 8.5.2 |
| 2000924 | CFR | Upgrade to cftime 1.4.1 |
| 2000926 | CFR | Upgrade to pytz 2019.3 |
| 2000927 | CFR | Upgrade to numpy 1.17.3 |
| 2000944 | CFR | Add handlebars to AWIPS |
| 2000952 | CFR | Upgrade MetPy to 0.12.2 |
| 2000961 | CFR | Add pytest framework with pytest-qt plugin |
| 2000976 | CFR | Add python module zipp |
| 2000983 | CFR | Add Whoosh (version 2.7.4) |
| 2000984 | CFR | Add Qtawesome (version 1.0.2) |

| Redmine | DR, DCS or CFR | Description |
|---------|-------------------|-----------------------------------------------------------------------|
| 2000985 | CFR | Add PySide2 (version 5.15.2) |
| 2000986 | CFR | Add Pyresample (version 1.19.0) |
| 2000987 | CFR | Add Pyenchant (version 3.2.0) |
| 2000988 | CFR | Add Pint (version 0.16.1) |
| 2000989 | CFR | Add Natsort (version 7.1.1) |
| 2000990 | CFR | Add Mercantile (version 1.0.0) |
| 2000991 | CFR | Add Marshmallow (version 3.12.1) |
| 2000992 | CFR | Add Imageio-ffmpeg (version 0.4.3) |
| 2000993 | CFR | Add Imageio (version 2.9.0) |
| 2000994 | CFR | Add Geojson (version 2.5.0) |
| 2000995 | CFR | Upgrade PostGIS to 2.5.5 |
| 2000996 | CFR | Install new Python Modules for CHPS |
| 2000997 | CFR | Install "casadi" Python Module for CHPS on LX workstation |
| 2001002 | CFR | Install "pymoca" Python Module for CHPS on LX workstation |
| 2001003 | CFR | Add python module cached-property |
| 2001004 | CFR | Update python library h5py to version 3.1.0 |
| 2001012 | CFR | Replace AWIPS Java Distribution With RHEL Java |
| 2001013 | CFR | Replace AWIPS Python Distribution With RHEL Python |
| 2001014 | CFR | Remove LZ4 Filter From Baseline |
| 2001052 | CFR | Add importlib_resources module to baseline Python |
| 2001075 | CFR | Additional Python Modules |
| 2001076 | CFR | Replace basemap with cartopy |
| 2001107 | CFR | Add python "MetPy" to facilitate NAWIPS-to-AWIPS migration activities |
| 2001136 | CFR | Upgrade Security package - hdf5 >=1.12.0 |
| 2030142 | CFR | Upgrade to cherrypy 18.6.1 |

4. Design Changes and COTS/FOSS Requests

86 Design Changes and 69 CFRs for release 21.4.1 are summarized in this section.

1. Redmine DCS 2001353

GFE ISC: National centers need unique office types to prevent data from being overwritten or sampling incorrectly

WPC is sending ISC grids for collaboration with WFOs. When the WFOs sample these grids they can get incorrect or missing values in areas where the HUS ISC area overlaps other National Center (NC) ISC areas (e.g. NHA).

It was determined that due to the design of ISC dating back to AWIPS I, the problem is that overlapping grids for offices of the same type (wfo, rfc, nc) are not allowed. Therefore with the overlap of the ISC_HUS and ISC_NHA edit areas, the HUS grids in this case ended up getting clipped to the NHA edit area.

A TIM was held with NWS and it was agreed that the best solution going forward is to have each NC use a unique office type. NHA will continue to use ?nc? so as not to disrupt their existing configuration for Tropical collaboration.

The following changes need to be made to the baseline serverConfig.py:

```
# Change HUS and HAK office types to ?wpc?
```

```
# Add ([QPF, SnowAmt, IceAccum, SnowRatio], 'wpc') to EXTRA_ISC_PARMs
```

2. Redmine DCS XXXXXXXXXX

Add Impact Based Warning (IBW) Tags to Snow Squall Warnings (SQW)

Add Source and Impact tags to the Snow Squall Warning (SQW) product. Analyze, Forecast and Support (AFS) Requirements can be found here:

"Winter SQW IBW Requirements for AWIPS
XX.XX":<https://docs.google.com/document/d/1aJxk4bS6NjRRhpN3pZi4x3TuA5-bYuExfAKBnreZ5kw/edit>

The potential source will be chosen from the following:

SOURCE

Radar Indicated

Public

Trained spotter

Law Enforcement

Emergency Management

Webcams/Reporting Station

IMPACT

General

Travel will become difficult and potentially dangerous within minutes.

Significant

Dangerous and life-threatening travel conditions are expected to develop rapidly in the warning area.

HAZARD SELECTIONS

Wind Gusts

up to 20 mph

up to 35 mph

greater than 35 mph

greater than 50 mph

Visibility

poor - 1/4 SM or greater

less than 1/4 SM

whiteout - near zero

Flash Freeze

Flash Freeze conditions likely

Changes to the WarnGen Templates will need to be made for these changes. The WarnGen Template Team will develop these changes.

&

LAT...LON 4428 7297 4448 7287 4439 7214 4383 7252

TIME...MOT...LOC 2240Z 292DEG 22KT 4428 7262

SNOW SQUALL...OBSERVED

SNOW SQUALL IMPACT...SIGNIFICANT (if GENERAL is selected then this tag will not appear)

\$\$

3. Redmine DCS 2001394

CWA generator drawing accuracy

Miami uses <https://www.weather.gov/zse/cwagenerator> to draw point/line/polygon for the CWA. Using this tool it would show the actual mouse drawing (the purple line) and the VOR line (the blue line) at the same time. The VOR line here is the right-clicked mouse point translated to VOR points and back to screen point. This VOR line/blue line gives the user an idea how accurate the drawing vs the actual VOR in the CWA generator product. There's a reference point radius input in the URL, by entering a number (0-1000) in NM the site would plot all stations with dashed lines in 16 directions up to 300 NM. These lines also help users draw VORs points more accurately.

The CWA generator currently does not have anything to show/adjust the accuracy of the drawing. This task is to add the same functionality above to the A2 CWA generator.

1. The CWA generator shall be able to draw the reference point radius on the map.
2. The CWA generator shall be able to show the VORs points as the user draws point/line/polygon on the map.

To use <https://www.weather.gov/zse/cwagenerator>
on the left side of screen

1. Type in a CWSU ID: ZAU, ZHU, etc
2. Type user initial: test
3. Change the accuracy: 1 or other number
4. Click on type of CWA: thunderstorm
5. Select polygon as shape
6. Use the right mouse button to click on the screen to draw a polygon

Note there's a green line and a purple line in the drawing.

One is the drawing by the mouse pointer, and the other one is converted back from the VORs to lat/lon.

What's not in the scope:

The accuracy and the limit inputs in the <https://www.weather.gov/zse/cwagenerator> don't impact the drawings or the drawing accuracy. They do change the VOR format to latitude and longitude format (Example: N4619 W12738). However, the FAA and the CWA decoder do not support the latitude and longitude format at this moment.

4. Redmine DCS 2001397

Update Puerto Rico domain grid points for ESTOFS v2.0.3

SCN 21-58: https://www.weather.gov/media/notification/pdf2/scn21-58_estofs_global_upgrade_2.0.3.pdf

CONUS East or *CONUS West* : removing the baseline subgrid for grid184 allowed the full domains to store and display. For coastal offices, they won't have this issue as the default center for subgrids is the CWA.

Puerto Rico domain. Baseline model definition for the grid has 339x227 grid points. Files in noaaport/ are 339x225, which matches a different baseline grid, NBM_PR (gridNBM_PR.xml). So either the grib2 files need to be on the original domain or the NBM_PR domain needs to be added to the estofs model grid list.

On 20.2.3 at VUY, estofsPR is being stored as GribModel:7:4:14, nx=339, ny=225.

Alaska and Hawaii data ingest and display fine. Localized as Omaha, Josh Watson had to make an edit to get the Alaska data to store (removed the baseline subgrid).

5. Redmine DCS 2001402

Support for HiResW v8 and HREF v3 Upgrades

High-Resolution Window (HIRESW) v8.

SCN 21-38 https://www.weather.gov/media/notification/scn21-38hiresw_v8_hrefaaa.pdf

Changes to GRIB and BUFR HIRESW output products provided on the SBN/NOAAPort. See SCN 21-38 for details.

A real-time feed of HIRESWv8 is available on para NOMADS for both NCEP Web services and NOAAPORT output here:

<http://para.nomads.ncep.noaa.gov/pub/data/nccf/com/hiresw/para/>

<http://para.nomads.ncep.noaa.gov/pub/data/nccf/noaaport/hiresw/>

6. Redmine DCS 2001403

Update to the AvnFPS IWXXM product generation software

The WMO has posted an update of the IWXXM schemas that incorporates minor updates and new features introduced with Amendment 79 to the ICAO Annex 3. It will go into effect in November 2021. The WMO posting of the new schemas (specifically the TAF schema) requires a small update to the AvnFPS IWXXM product generation software.

Minor changes to IWXXM TAF schema is included in this update from the WMO. As a result, a AvnFPS configuration file needs to be modified to reflect the update.

Originator Priority : 3

7. Redmine DCS 2001408

WA66: Implement Select FSI Capabilities

Make grid horizontal cross section interactive allowing for movement between user defined levels

Make vertical cross section interactive allowing for vertical cross section to move on fly.

8. Redmine DCS 2001414

BMH - Increase SAME expiration time limit from 6 hours to 99.5 hours

The current Valid Time Period for the SAME encoding for alerts issued by BMH over NOAA Weather Radio (NWR) is six hours. Per FEMA and EAS standards, this should be increased to 99.5 hours.

9. Redmine DCS 2001417

Ingest and display MRMS v12.1.0 new products

New MRMS v12.1.0 products were activated the week of February 23.

Requirements:

Add pqact pattern and make grib table changes for new CONUS, AK, and HI MRMS products listed in MRMS_SCN_v12.1_Upgrade_Supplemental.pdf.

Products must ingest successfully and display in D2D

Products must be listed in CAVE MRMS submenus. For example:

##* Precipitation Products > FLASH

##* Reflectivity Products

Reference: SCN: https://www.weather.gov/media/notification/pdf2/scn21-17mrms_v12_1.pdf

CONUS

* YAUE01 Flooded Locations and Simulated Hydrographs (FLASH) Coupled Routing and Excess Storage (CREST) Unit Streamflow

* YAUE04 FLASH Sacramento Soil Moisture Accounting (SAC) Unit Streamflow

* YAUE06 FLASH SAC Soil Saturation

* YAUE09 FLASH Precipitation Average Recurrence Interval

* YAUE10 FLASH Quantitative Precipitation Estimate to Flash Flood Guidance (QPE-to-FFG) Ratio

* YAUS09 Probability of Severe Hail

* YAUF01 Probability of Severe (JSON format)

** Note: changes for YAUF01 (ProbSevere JSON format) were delivered with DCS 22416 for 21.3.1.

Alaska

* YAAC01 Composite Reflectivity

* YAAP02 PrecipRate

* YAAP03 RadarOnly_QPE_01H, 03H, 06H, 12H, 24H, 48H, 72H

* YAAP04 MultiSensor_QPE_[01,03,06,12,24,48,72]H_Pass1

* YAAP06 MultiSensor_QPE_[01,03,06,12,24,48,72]H_Pass2

Hawaii

* YAHP02 PrecipRate

* YAHP03 RadarOnly_QPE_01H, 03H, 06H, 12H, 24H, 48H, 72H

* YAHP04 MultiSensor_QPE_[01,03,06,12,24,48,72]H_Pass1

* YAHP06 MultiSensor_QPE_[01,03,06,12,24,48,72]H_Pass2

10.Redmine DCS 2001418

TC Wind Hazard Recommender Enhancements II

This DCS implements the following enhancements to the TC Wind WW Recommender software suite. None of these enhancements affect the overall design.

- ? The number of bins (simultaneous storms) was increased from 5 to 10.
- ? The number of storms per year was increased from 30 to 99.
- ? A number of changes were made to accommodate other national centers (HFO, GUM)
- ? Objective guidance generated by RecommendWindWW is now included in the JSON file. This provides WFO forecasters with new Wind Hazards guidance.
- ? Old Greek letter-based supplemental storm names have been replaced with a predefined set of new names.
- ? The directory location of the data tables was moved to accommodate the testing facility.

11.Redmine DCS 2001419

Add ability to move grids forward in time

Provide ability to move grids forward in time as approved by NOAA Hurricane Conference and SPT.

Files:

- * TCFloodingRainThreat
- * TCStormSurgeThreat
- * TCTornadoThreat
- * TCWindThreat

12. Redmine DCS 2001420

WTCM - TCV/CWF/ZFP Sampling Change

This reduces the gap between the deterministic wind phrase and the safety margin built in the threat/potential impact statement of the TCV that comes from the WindThreat grid. This will work best as long as offices are running single segment in the ZFP as well.

Threat grids are currently sampled at 95th percentile and Hazards grids at 97th. For consistency, a consideration would be to do all, Wind, Threat, and Hazard grids, at 97th percentile.

13. Redmine DCS 2001421

PGEN Functionality: PGEN GFA Attributes Desk Enhancement

Background

A G-AIRMET is a graphical advisory of weather that may be hazardous to aircraft, but are less severe than SIGMETs. They are only

valid at specific time "snapshots". Forecasters create graphical objects depicting the areas and attributes of AIRMET hazards, which

are distributed in BUFR file format. G-AIRMETs are issued at discrete times 3 hours apart for a period of up to 12 hours into the

future (00, 03, 06, 09, and 12 hours). They are issued at 03:00, 09:00, 15:00 and 21:00 UTC (with updates issued as necessary).

AIRMET are issued by the AWC for the lower 48 states and adjacent coastal waters.

Task Description

PGEN Functionality: Add 4th desk "R", to G-AIRMET GFA Attributes Widget.

Current legacy process for generating G-AIRMETs uses desk "R" as the 4th desk if needed. The Desk pull-down in the

GFA-Attributes needed to be updated to include the fourth Desk "R", in addition to Desk W, Desk C, and Desk E.

Task Requirements

[REQ]

GFA Attributes shall have another option Desk, 'R', made available as an option to list and select under GFA Attributes main

window, 'Desk: ', dropdown menu.

* The Desk pull-down in the GFA-Attributes needs to be updated to include the fourth desk "R".

* Fourth in the order of appearance, below Desk: E.

See https://docs.google.com/document/d/1QmW0_zOyycMpK8xX0OYnFrER501G38bnH4z8bNodsGk

14.Redmine DCS 2001422

D2D Radar: Remove obsolete product 27 from radar software and move products 19 and 20 to legacy products

Products 19 (R), 20 (R) and 27 (V) are the legacy 16 data level Base Reflectivity and Base Velocity products. The requirement for Level III archiving of these products is being removed from the RPG in Build 21. Products 19 and 20 will be removed from the AWIPS National RPS list, but will continue to be used as background images for Clutter Filter Editor and PRF Control in the RPG. Product 27 will simply be removed and will also need to be removed from AWIPS.

15.Redmine DCS 2001423

Nsharp D2D Load Performance enhancement

Clicking the 'Load' button in the D2D Nsharp Palette takes longer than expected to open the Load Dialog. These requirements intend to optimize Nsharp inventory retrieval through configuration capabilities to reduce the time taken to load the Nsharp Load dialog by reducing inventory calls on the tool startup.

The following scenario depicts the current performance as reported by the site in ATANs 50-57.

Open Nsharp Tool

User clicks on the 'Load Button'

CAVE begins updating available inventory?

(db queries, data request, reloads maps)

1+ minute elapses...

(this metrics is more often ~15-20 seconds)

Load dialog becomes responsive and made available to the user

Requirements

REQ-1 Enhance Nsharp Load Dialog Sounding File Type configuration capabilities

Provide the capability to discreetly configure D2D Nsharp Model Sounding Types.

Currently, clearing entries from nsharpConfig.xml gribModelTypeList tag will look at datasetInfo to get all grid model entries not using CAVE resources efficiently.

Context: D2DNSharpToolPaletteWindow, AbstractNsharpLoadDialog, NsharpPfcSoundingDialogContents, NsharpModelSoundingQuery, NsharpObservedSoundingQuery, dataplugin.soundingrequest.SoundingServiceRequest

Desired configuration type Localization XML file. Currently, the only known file to support Nsharp data type configuration is nsharpConfig.xml and the gribModelTypeList tag for Model Type Soundings.

REQ-2 Enhance Nsharp PFC Sounding configuration capabilities

Provide the capability to configure PFC File Sounding Types

NC Users require the ability to view ARW and RAP member soundings in Nsharp.

Missing control over data configurations for PFC sounding data types.

See <https://docs.google.com/document/d/1-GkhIP6Z6QpBI-DH8gJwJYuerutA36MkKpBksmm8fyc/>

16.Redmine DCS 2001424

Nsharp D2D Load Performance enhancement

As part of the transition to HCI, NCs will be standing up duplicate servers. However, NSBN data flow changes are slow to implement so during testing at least a workaround is needed to be able to duplicate the NSBN data flow going into the normal system to also flow to the HCI system.

This capability should be disabled by default and configurable through localization/properties files.

17.Redmine DCS 2001426

New Features for NSHARP Turbulence/Icing Displays

AWC requests a readout feature for the turbulence and icing displays similar to the skew-T display providing the site ID, timestamp, and data source as well as a display sampling feature with altitude in pressure (mb) and height (ft).

Requirement(s)

1. Include a sample readout feature in the turbulence and icing displays with site ID (e.g. KPBZ), timestamp (e.g. 210108/12Z), and data source (e.g. BUFRUA) similar to the NSHARP skew-T display readout feature.

2. Include a display sampling feature in the turbulence and icing displays with altitude in pressure (mb) and height (ft) for the cursor location for Observed and Model forecasts.
3. Include a right-click menu option to toggle ?Sample? on or off for the new sampling feature.
4. The new sampling feature shall only be supported in NSHARP turbulence and icing displays

New Features for NSHARP Turbulence/Icing Displays

https://docs.google.com/document/d/1fSofcA5CW8b1L_3zkAG54pUzyVi-pvuSf_-xFVII3Og/edit?usp=sharing

18.Redmine DCS 2001427

Registry synchronization reports success even when exceptions occur

It is possible for registry synchronization to report success, while some components of the synchronization has failed.

19.Redmine DCS 2001428

Add CAVE loggings - WA 61 (Part 1)

Add logging in CAVE for the following functions:

1. Logging of all CAVE and PYPIES requests and response time
2. UI Thread Monitoring. Log a stack trace of the UI thread any time the thread is stalled for more than a configurable timeout
3. Log local stats
 - a. Add logging of resource paint times
 - b. Move performance logging into a separate log file from user actions/general logging
4. Add zipping and rolling for CAVE logs
5. Update SDD to document new logging capabilities and log files

20.Redmine DCS 2001432

D2D Radar: Add Capability to Change VMI From AWIPS to the VCP Change Request GUI

The ROC SW CCR, NA20-00395 (ADD CAPABILITY TO CHANGE VMI TO AWIPS COMMAND/CONTROL) has been approved for implementation for RPG Build 21 necessitating a corresponding change in AWIPS. The ability to change the Velocity Measure Increment (0.5 m/s or 1.0 m/s) will be added to the AWIPS Command/Control on the RPG. This will give the user the ability to conveniently change the VMI when the weather situation warrants from AWIPS where the change will be implemented as part of the the VCP Change Request GUI. This will be especially useful during hurricane situations when winds can exceed 63.5 m/s. The RPG will assign a new version number for the Command Parameter Message. The version of the message sent to AWIPS will be controlled by RPG adaptation data to allow AWIPS time to implement support.

21. Redmine DCS 2001433

Addition to ProbSevere plugin to handle WMO headers

The ProbSevere plugin was originally designed to work with data files that do not contain a three line WMO header appended to the top of the file. This addresses and fixes the issue and works with files with or without a WMO header.

File should be ingested by ProbSevere plugin and processed accordingly with or without a WMO header.

22. Redmine DCS 2001435

Nsharp(Tool) D2D Point Forecast Retrieval Requirements

The reporting site provided the following feedback on NSHARP functionality testing in ATAN 1226 Sprint 48.

Forecast Retrieval on any model point forecast sounding is forecast hour 11 with the last retrievable sounding at forecast hour 11. Testing Point Forecast Soundings (PFC) for the NAM and GFS found the sounding did not go to forecast hour 0, but instead to forecast hour 11. In the previous ATAN Sprint 47, we jumped to the last hour of the model run which was past forecast hour 120. The thought was that maybe hour 11 was somehow tied to the default frame count which is 12, so changed the frame count from 12 to 24. This did not change anything. It still wants to load forecast hour 11. Now, every time a new sounding is loaded, we jump to Forecast Hour 11.

In Sprint 48, an attempt to fix an issue with the default loading times to the initial forecast time of FH00. That fix did not work. The system now resorts to loading forecast hour 11, on every sounding loaded. Initially, this appears to be tied to the frame count, which is 12. But, this is not the case; Adjusting the frame count to 20 did not fix the issue, as the system wants to load forecast hour 11. The system previously was able to load soundings to the end of the model run, but now is not able to.

Functional Requirements

D2DNSharpPaletteWindow, NsharpEditor, NsharpTimeStnPaneResource

Point Forecast Sounding (PFC) Forecast Hour Requirements.

Refer to Test Steps for requirements 1 - 3.

[REQ 1]

Nsharp Point Forecast Sounding retrieval should load to Forecast Hour Zero.

[REQ 2]

Requirement 1 shall apply to PFC Soundings for the NAM and GFS File Types.

[REQ 3]

Requirements 1 and 2 shall apply to NsharpEditor Pane Configuration Selections accessed through NsharpPaletteWindow Display Pane Configuration.

The fourth requirement addresses a bug discovered in Sprint 48 where both the ?NSHARP? & ?NSHARP? dialog can open simultaneously in D2D if ?Blinking? is turned on for the NSHARP Resource. With the NSHARP dialog open in D2D, a secondary ?NSHARP? (legacy GUI) will spontaneously open. There appears to be a discrepancy between NSHARP and NSHARP in CAVE.

[REQ 4]

Review and fix Nsharp bugs in Sprint 48 caused by turning on the ?Blinking? function for NSHARP Resource (Editable).

Perform code review to fix the following unexpected events:

Unexpected event (1) A second ?NSHARP? dialog window appears in D2D, in addition to NSHARP.

Unexpected event (2) CAVE locks up. Restart is required to regain functionality.

Unexpected event (3) Active ?NSHARP? dialog on CAVE restart.

Unexpected event (4) Should not have to restart CAVE to clear the NSHARP dialog window pane.

This ticket is specifically for the changes in AWIPS2_Dev_Baseline.

23.Redmine DCS 2001436

NCTEXT Aviation TAFs Hour Covered Selection Disabled And Selection Always Set to "Latest"

NCText- Unable to select the time range for TAFS. It is ghosted out and stuck on 24 hours. This applies to the States option.

Requirements

Revise how NCTEXT retrieves Offshore Forecasts by the state in the Text Report window.

See https://docs.google.com/document/d/1rKPgcNsV_Wf4jzOAhRQddf62p5meWa-VsTDPbhSgrqY/edit

24.Redmine DCS 2001441

NCText TAF Plot issues

Issues reported by the site after testing NCTEXT functionality for data type TAFs in sprints 42, 43.

Site feedback

The timestamp of the TAFs that are accessible within NCTEXT was found to be lagging behind the TAFs accessible within the TextWS. For example, when testing the TAFs at 1740Z 6/4, the latest TAF for KMCI airport was reported with a timestamp of 0850Z 6/4. The same TAF, called within text workstation, the latest timestamp for MCI was 1730Z.

Additionally, the MCI TAF in NCTEXT was part of a KWBC collective under the header of FTUS80 KWBC with other TAFS: KMSP, KPIT, and KSSF. Whereas the individual TAF observed in TextWS was under the FTUS80 KMCI header.

Further examination of neighboring TAFS, showed the latest TAFS throughout the system being often times associated with the 06Z cycle when the expectation the TAFS should be associated with the 18Z cycle.

Another observation is that the TAFs appear to be tied to the KWBC headers, rather than to the local WFO based headers.

Requirements on TAFs in Nctext

[REQ]

The TAFs retrieved in NCTEXT should be matching those retrieved from the Text Workstation.

Make Nctext retrieve the same TAF products that would be available in TextWS

[REQ]

TAF headers in NCTEXT should match those of the same Header/PIL retrieved in TextWS.

See: <https://docs.google.com/document/d/1kr9-O667lKSnlWm9qJJOZhFWjUodS6MUdPqRpA9r8jc>

Related tickets: Slow Loading Times for Observed Data Products, # 21838

25.Redmine DCS 2001442

A2 Climate refresh application is overwriting the SITE version of globalDay.properties file.

The request is to update the new A2 climate software to read only the SITE version of globalDay.properties and stop overwriting it.

26.Redmine DCS 2001446

Enable Winter Wx in Hazard Services

Winter Wx hazards were originally scheduled to be included in HS version 2 deployed in 20.2.1, but were held back for scheduling concerns. This DCS would allow winter hazards to be "On" by default in version 3 of HS and would include improvements/fixes made to HS in the interim. The winter wx elements are being tested by a select group of WFOs as an ATAN this winter season and bug fixes/workflow enhancements are inevitable.

27.Redmine DCS 2001447

Add back in support for decoding and display of BUFR wind profiler data. NOAA/PSL will distribute data via LDM to NWS sites via region HQ.

Background

NOAA/PSL has a network of wind profiler stations, primarily in the NWS Western Region, but now expanding to other NWS regions (e.g., Alaska). The hourly summary observations are distributed in BUFR format via LDM. Until AWIPS 18.1.1, core AWIPS code existed that enabled the display of time-

height cross sections of wind profiles as well as plan view time sequences at various height levels. PSL distributed localization files for the menus, stations and distribution files needed to override the default NPN profiler sites and resources in AWIPS. This capability was being used in several Western Region sites and was particularly useful for forecasting wind-related weather events, such as snowstorms along the Colorado Front Range. In version 18.2, the profiler ingest and display capability was removed from AWIPS.

Requirement(s)

Restore the code for ingest and display of wind profiler data as a plugin, making any modifications necessary for changing APIs. Except for those necessary changes, the code has already been through code review. PSL will provide updated resource files for station locations, distribution and purge mechanisms and menus appropriate for the PSL profiler network. PSL will distribute the BUFR files via LDM and provide documentation. Relevant packages are:

com.raytheon.uf.common.dataplugin.profiler

com.raytheon.edex.plugin.profiler

com.raytheon.uf.viz.profiler

Some ancillary files from other packages will need to be updated or amended to restore functionality (e.g., derivedParameters)

Design document:

<https://docs.google.com/document/d/1qBEV3UYI7TjBu3xTYK3u5NvshQGOJXeWuzso2x5COxE>

28.Redmine DCS 2001449

Due to the Hazard Simplification VTEC Consolidation, the following hazards should be removed from the selection list in GFE/GHG and adjusted for making the hazard grid

With the Hazard Simplification Consolidation and Reformatting, all Long Duration Marine (MWW) and Non-Precipitation hazards should not be issued from GFE/GHG. Also note, the Wind Chill Hazards will be consolidated into the Cold Weather Hazards and switch Product IDs (PIDs) from WSW to NPW.

Also, the following hazards have been consolidated.

+Winter Weather Hazards:+

The following hazard will be consolidated into the Extreme Cold Watch (EC.A), which is issued under the NPW header:

* Wind Chill Watch (WC.A)

The following hazard will be consolidated into the Extreme Cold Warning (EC.W), which is issued under the NPW header:

* Wind Chill Warnings (WC.W)

The following hazard will be consolidated into the new Cold Weather Advisory (WC.Y), which will be issued under the NPW header:

- * Cold Weather Advisory (WC.Y)

+Non-Precipitation Hazards (NPW):+

A new Cold Weather Advisory (WC.Y) hazard will be added.

The Excessive Heat Watch (EH.A) and Warning (EH.W) hazards will be renamed Extreme Heat Watch (EH.A) and Warning (EH.W).

+Long Duration Marine Hazard (MWW):+

The following hazards will be consolidated into the Small Craft Advisory (SC.Y):

- * Small Craft Advisory for Hazardous Seas (SW.Y)

- * Small Craft Advisory for Rough Bar (RB.Y)

- * Small Craft Advisory for Winds (SI.Y)

***** Update 5/7/2021*****

(Ashley Kells)

WARNGEN ITEMS TO ADD TO DCS 22297

A frequent cause of frustration in troubleshooting and configuring WarnGen templates is that there are various obsolete WarnGen templates in the baseline that cause confusion for the WFOs and support staff. The following three changes would resolve many WarnGen template troubleshooting and configuration issues:

1) Remove the following obsolete WarnGen template files from the baseline.

The following obsolete files have updated impact based versions of the product:

tornadoWarning.vm and .xml

severeThunderstormWarning.vm and .xml

severeWeatherStatement.vm and .xml

specialMarineWarning.vm and .xml

specialMarineWarningFollowup.vm and .xml

The following is being retired in OB20.2.3:

significantWeatherAdvisory.vm and .xml

The following change is due to an error in DCS 22061 (20.2.3 reformat SPS to IBW format and retire Significant Weather Advisory):

rename impactSignificantWeatherAdvisory.vm and .xml to impactSpecialWeatherStatement.vm and .xml

2) Write a deltaScript to remove all of the obsolete WarnGen templates from the WFO base/site/user areas. Evan Bookbinder will coordinate with Darrel Kingfield to write the script.

3) Update WarnGen template names in the baseline WarnGen menu file config.xml:

```
<pre>
```

```
<defaultTemplate>impactSevereThunderstormWarning</defaultTemplate>
```

```
<mainWarnGenProducts>Tornado/impactTornadoWarning,Severe
Thunderstorm/impactSevereThunderstormWarning,Severe Weather
Statement/impactSevereWeatherStatement</mainWarnGenProducts>
```

```
<otherWarnGenProducts>Special Weather Statement/impactSpecialWeatherStatement,Snow
Squall Warning/impactSnowSquallWarning,Snow Squall Warning
Followup/impactSnowSquallWarningFollowup,Short Term
Forecast/shortTermForecast</otherWarnGenProducts>
```

```
</pre>
```

29. Redmine DCS 2001450

Due to the Hazard Simplification VTEC Consolidation, the following hazards should be removed from the selection list in GFE/GHG or WarnGen (for certain products) and adjusted for making the hazard grid

With the Hazard Simplification Consolidation and Reformatting, all short duration hazards should not be issued from WarnGen. This should include the removal of these hazards from the WarnGen java infrastructure, menu and the removal of baseline templates.

The short duration hazards are:

- * Urban and Small Stream Flood Advisory (FA.Y)
- * Arroyo and Small Stream Flood Advisory (FA.Y)
- * Small Stream Flood Advisory (FA.Y)
- * Flood Advisory (FA.Y)
- * Hydrologic Advisory (FA.Y)
- * Flash Flood Warning and Statement (FF.W)

With the Hazard Simplification Consolidation and Reformatting, all Hydrological and Winter Weather hazards should not be issued from GFE/GHG.

Also, the following hazards have been consolidated or reformatted and should be removed from the GFE/GHG infrastructure.

+Hydrological Hazards:+

The following hazards will be reformatted:

- * Flood Watch (FA.A)
- * Flash Flood Watch (FF.A)

+Winter Weather Hazards:+

The following hazards will be consolidated into the Winter Storm Watch (WS.A):

- *Ice Storm Watch (IS.A)
- *Blizzard Watch (BZ.A)
- *Lake Effect Snow Watch (LS.A)

The following hazards will be consolidated into the Winter Weather Advisory (WW.A):

- *Freezing Rain Advisory (FZ.Y)
- *Lake Effect Snow Advisory (LS.Y)

30. Redmine DCS 2001451

GFE Service Backup: Grid clipping for backup site utilizes primary site svcbu.properties clip rather than backup svcbu.properties

Site EWX reported the following through detailed investigation:

When sending grids to NDFD or back to the failed site, the primary grid clip is utilized rather than the backup site clip from the backup svcbu.properties.

The default clip for SVCBU_GRIDArea is set to ISC_SendAll, which clips to the WFO boundaries. Offices currently have issues with the clip when receiving grids because we cannot use tools with the missing values in the domain around the WFO borders - there are many different tools/procedures out there offices do to fill in the areas around the clip so that forecasters can then edit the grids. We would like to fix this by sending back and forth what is needed. In the EWX/CRP backup case, it's desired to use the edit area Entire_Domain, so in SVCBU_GRIDArea is set to Entire_Domain.

The purpose of this DCS is to change any place that SVCBU_GRIDAREA is referenced so that it pulls it from

FAILED_SITE and not AW_SITE_IDENTIFIER. This appears to be in the following scripts: export_grids, export_grids_to_failed_site, and export_bksite_grids.

Below is the additional information provided by John Sullivan.

/awips2/GFESuite/ServiceBackup/scripts/serviceBackupUtil.sh uses AW_SITE_IDENTIFIER to read in the SITE svcbu.properties file.

This script is sourced by these scripts that reference SVCBU_GRIDAREA for the AW_SITE_IDENTIFIER properties file:

- /awips2/GFESuite/ServiceBackup/scripts/export_grids * this script should probably not change because it is used to send grids to NDFD and WFO clip is desired for that.

- /awips2/GFESuite/ServiceBackup/scripts/export_grids_to_failed_site

- /awips2/GFESuite/ServiceBackup/scripts/export_bksite_grids

If I understand correctly, the AW_SITE_IDENTIFIER will always be the primary site. In fact, it is used in the /awips2/GFESuite/ServiceBackup/scripts/process_configuration script to set/check the primary site. When exporting backup site's grids, we need to read in the SVCBU_GRIDAREA for the FAILED_SITE and not AW_SITE_IDENTIFIER. It appears export_grids_to_failed_site and export_bksite_grids would need to use the FAILED_SITE's svcbu.properties file.

serviceBackupUtil.sh does the leg work in figuring out whether to use base or site override for the primary site's svcbu.properties variables. It looks like everything in the primary site's svcbu.properties file applies when running GFE for a FAILED_SITE except this one variable SVCBU_GRIDAREA. This is probably why the issue was overlooked when written initially. That one variable is tied to the primary site only, but is used in the backup scripts to export FAILED_SITE grids back. There is one other variable that could be site specific and that is SVCBU_TRIM_ELEMS, but a strange quirk is that it appears to only be used in the export_grids script for a primary site and not the other two export scripts for the FAILED_SITE. Because of this, the FAILED SITE is always sent back all of the elems in the grids and not a subset. It's possible subsetting the grids was a later addition? That might be something to look at for cleanup as well, since it seems to me that we would only want to send back the grids that we pulled down from the central server for the backup site. That might be a bigger picture question though. It just seems strange to have the primary site sending up a subset of grids, but the backup site sending up everything and ignoring that setting. I am not sure if that is worth including here.

export_grids_to_failed_site sends the FAILED_SITE's grids to the central server

export_bksite_grids sends the FAILED_SITE's grids back to the site directly?

It seems like the simple solution is to just read the SVCBU_GRIDAREA for the FAILED_SITE where it is needed in export_grids_to_failed_site and export_bksite_grids instead of using the variable sourced in from the serviceBackupUtil.sh script. That is pretty straightforward since those two scripts are passed the FAILED_SITE identifier and it is just a matter of reading the correct GRIDAREA from the proper file. Would just need to read base and check for a FAILED_SITE svcbu.properties override similar to what is done in the serviceBackupUtil.sh script.

31. Redmine DCS 2001452

Resolve HTI Collision Situations/Impacts

Two forecasters were working on HTI at the same time at WFO LIX - one of the workstations was providing service back-up for LCH - and they clobbered each other. Need to find a solution that will allow HTI to detect these types of situations and gracefully resolve them.

Possible Coding Options:

- # Create directories for different WFOs under data (substantial change)
- # Check built in to ensure an HTI run is completed before initiating another.

Possible Operational Procedure Options

- # Additional options need to be discussed before an approach is selected

Will need to explore the pros/cons of the aforementioned options, in addition to exploring other alternatives

32. Redmine DCS 2001454

Feature request for non-weather emergency message formatters in GFE

Site sent the following:

Thank you for opening ticket 260707 for missing headline placeholders in NWEM or "CivilEmerg" text products in GFE. The language I've added to my SITE overrides is...

```
|* ...HEADLINE REQUIRED FOR NIDS DISSEMINATION... *|
```

...and is found approximately starting on lines 57 and 58 under the _makeProduct method as...

```
fcst = fcst + "|*...HEADLINE REQUIRED FOR NIDS DISSEMINATION... *|\n\nThe following message is transmitted " + \
```

```
"at the request of the " + self._source + "."
```

I added this headline placeholder the files with the naming convention "CivilEmerg_NNN_Local.py" where NNN is one of the following...

ADR
AVA
AVW
CAE
CDW
CEM
EQR
EQW
EVI
FRW
HMW
LAE
LEW
NUW
RHW
SPW
TOE
VOW

33.Redmine DCS 2001455

use the warnngenloc functionality for long-fused hazards

based on the experience thus far in the field with HS, it is preferable to use the wangeloc table and associated logic to determine the city lists and other locations fields in long-fused events.

34.Redmine DCS 2001457

NSharp D2D performance improvements

This document details the results of the site NSharp testing done over two days. It was reported that general performance improvements are needed for NSharp D2D.

Comparing NSharp on N-AWIPS

Response times of < 1 seconds for RAOB soundings, and < 10 seconds for Point Forecast Soundings for 5 frames per sounding location. For Model Interpolated soundings, this is about 12 seconds.

NSHARP - Raobs

Map with points, and associated soundings on the Map < 1 Second

Map with points - Initial load 10 seconds. Once in Cache < 1 second.

Forecast Soundings for NAM/GFS/RAP

Loop of 5 frames takes < 5 seconds to load. Normally forecasters pick from the time selection dialog box a range of times they want to load.

NAM - Entire model run takes 12 seconds with 84 hour forecast.

Model Soundings - Take about 12 seconds per point.

User feedback

Site NSHARP D2D testing.

Point Forecast Soundings - The system sets the default to NAM, but will not show the points for the NAM until you switch to the GFS model. Once the selection points are shown, the time required to load sounding ranges from 42 seconds to 1.5 minutes. This is similar to what was seen in the previous testing.

RAOB Soundings - Times to load each sounding takes around 10 seconds.

RAOBS observed soundings were tested first, followed by the Model PFC soundings. The RAOBS worked OK, taking about 10 seconds to retrieve data for each sounding location selected. The Model PFC soundings did not work initially with the default NAM point forecast soundings, and CAVE was restarting. To make the PFC model soundings work, switch to GFS soundings, first, followed by the NAM soundings seconds. This would allow the plan view selection map to work. Retrieval times ranged from 40 seconds to 2 minutes. The behaviors observed were similar to those observed before, changes to the memory settings were then made.

Slow Performance Issues in retrieving Observed and PFC soundings on point-by-click map. Observed Soundings can take 7 to 15 seconds to retrieve the sounding.

PFC soundings for GFS can take 40 to 120 seconds per point or longer. Loading PFC Soundings for the NAM model, the points map may not load, until switching to the GFS soundings instead.

Slow Performance Issues in retrieving Observed and PFC soundings on point-by-click map. ?Observed? can take 7 to 15 seconds to retrieve an observed sounding. If one tries to load PFC soundings for the NAM model, the points map may not load, until one switches to the GFS soundings instead. PFC soundings for GFS can take 40 to 120 seconds per point or longer.

Functional Requirements

Assumption: Taking the site reported RAOB Soundings as the acceptable performance baseline loading in less than 10 seconds.

[REQ]

Make NSHARP show click points on the map when the Load button is invoked.

For example, Load dialog defaults to File Type NAM for PFC Soundings, however, the points will not plot on the map until you switch File Type to the GFS.

[REQ]

D2D NSHARP should open in .1 seconds after clicking on the tools menu item NSHARP.

The D2D NSHARP Load dialog window should load in less than .1 seconds after clicking on the Load menu button.

AWC Non-Convective Sigmet Test Plan

AWC G-AIRMET Sigmet Test Plan

AWC Low-Level Graphics Test Plan

Note: Currently, this requirement is being met when NSHARP is opened for a second time during the active CAVE session. It is not being met when NSHARP is launched for the first time in the current active session.

Work to decrease the initialization time of the tool when it is started for the first time in a CAVE session.

[REQ]

Sounding Type PFC Soundings should load in 10 seconds or less after the selected point it clicked on the map.

Applies to both NAM and GFS File Types.

Refer to the PFC SoundingServiceRequest log.

See <https://docs.google.com/document/d/1S8P75Un1BexxIn19BV9TKCnRHuOrYTNxUCRZh4fxzs>

35. Redmine DCS 2001458

NCText D2D Performance Improvements

This document details the results of the site NCTEXT testing done over two days. It was reported that general performance improvements are needed for NCTEXT D2D.

Comparing NCTEXT on N-AWIPS

With NCTEXT software, response times of < seconds, even on state loads.

NCTEXT - METARS and TAFS, single point or state take < 1 Second load

Site feedback

Observed METARs

Day 1. NCTEXT METARs. When loading metars by State, it can take upwards of 15 seconds to load metars by state. For example, the State of Kansas takes 15 seconds. Additionally, certain requests made by State are missed until a second left mouse click is issued.

Very slow loading Surface hourlies data by a point or by the state in comparison to actual NWX software. Loading obs for a whole state takes 15 seconds. This is because of issues in pulling from the database. Improvement needed.

NCTEXT States output will double print the METAR for each site causing unnecessary clutter on the display.

Day 2. Single point data took about 5 seconds to load per point. Loading Observed METARs by State took about 5 minutes to load the point-and-click plot resource data (diamonds) over KS the first time. The first time meaning the first action chosen by the user after opening the application.

NCTEXT software for the METARS by the state at 1 PM CDT. The response for retrieval by the state was similar to before ranging from 6 to 15 seconds, with typical times around 10 seconds. Yesterday, experienced the 5-minute delay for loading METARs by the state may have been coincident to the Grid Ingest for GFS Op25 data, but unsure if they should be related.

NCTEXT, Text Report windows

Contract EA133W-17-CQ-0082 / AWPR.RLSN.OB21.4.1-01.00 / June 29, 2023

– Hard copy uncontrolled. Verify effective date prior to use. –

Pane Swap issues with NCText Windows. The pane will swap, but when swapping back, receive alertViz warning: Error during pane swap. In the main cave Window: Pane manager for Editor is null or doesn't extend AbstractNcPaneManager. Cave has to be restarted to clear this error.

Must drag NCTEXT pane left to get to the menu to switch between station and state.

Text output windows suffer a cluttering of the words "Surface Hourlies: Station" on each station, the line for line distracting from the actual content, and repeats the observation on the next line. NWX does not suffer this issue.

Functional Requirements

[REQ]

When the ?Hour Covered? ?Select By? is set to ?state?, NCTEXT should not duplicate station reports when retrieved to display in the Text Report window.

Remove the leading ?-- Surface Hourlies: Station:? and trailing ?\$ --? from station reports when viewing station text readouts in Text Report.

Model the NCTEXT ?Text Report? output format similar to the station data readout in NWX

[REQ]

Improve NCTEXT station text readout retrieval times into the Text Report window for Hour Covered Select By is set to state.

[REQ]

Improve NCTEXT map editor zooming and panning performance. CAVE will often freeze and lock up when zooming in on display plots full of diamonds. There is often a significant difference in delay from when a diamond on the map is selected to the time when the text is shown. This can range from a few seconds to a few minutes.

Performance is mostly impacted when Select By state, and Surface Hourlies are turned on.

[REQ]

Provide NCTEXT the capability to swap panes. Swapping the NCTEXT Editor pane should not throw errors. Error during pane swap.

Refer to errors.

[REQ]

Make the NCTEXT Window not cutoff static menus when resized.

Add a horizontal scrollbar to the bottom of the NCTEXT window to do this. Similar to the scrollbar below Text Report.

NctextuiPaletteWindow.class - gov.noaa.nws.ncep.ui.nctextui.palette.NctextuiPaletteWindow

See https://docs.google.com/document/d/1qEb_coHiLtjkuoHkn19-sfhG4ZkBLKDyC739_zhlb68

36. Redmine DCS 2001459

D2D functionality: Convective SIGMET Plots rendering enhancements

The site reports Convective SIGMET Displays do not properly render SIGMETs for Isolated Thunderstorms.

Convective SIGMET Displays do not properly render isolated thunderstorm (convective) SIGMETs.
Format Example: CONVECTIVE SIGMET 7C\nVALID UNTIL 2255Z\nNM\n40ESE FTI\nISOL TS D30 MOV FROM 33015KT. TOPS TO FL240.

Convective SIGMET Plots are accessed via CAVE Menus: Upper Air ? Aviation ? Convective SIGMET and render a label for the SIGMET which are approximate as to where the SIGMET is. Random line segments are plotted elsewhere on the map.

Item Information

US Convective SIGMETs

Convective SIGMETs are issued in the conterminous U.S. if these conditions are occurring or expected to occur:

Line of thunderstorms at least 60 miles long with thunderstorms affecting 40% of its length.

Area of thunderstorms covering at least 40% of the area concerned and exhibiting a very strong radar reflectivity or a significant satellite or lightning signature.

Embedded or severe thunderstorms expected to occur for more than 30 minutes.

Special issuance criteria include:

tornado hail greater than or equal to 3/4 inches in diameter wind gusts greater than or equal to 50 knots

Any convective SIGMET implies severe or greater turbulence, severe icing, and low-level wind shear.

A convective SIGMET may be issued for any convective situation which the forecaster feels is hazardous to all categories of aircraft. Bulletins are issued hourly at Hour+55. The text of the bulletin consists of either observation and a forecast or just a forecast. The forecast is valid for up to 2 hours.

Functional Requirements

[REQ] D2D Aviation Convective SIGMET Plots must properly render Isolated Thunderstorm Convective SIGMETs.

D2D Convective SIGMET Plots need to be plotted based on the stored attributes.

Expected Results: Should be similar to N-AWIPS, with a circle representative of the Diameter of the TS associated with the ISOLD Convective SIGMET.

[REQ] D2D shall be enhanced with the option to toggle on/off sampling readout for Convective SIGMET Product displays.

Add a new resource menu item with a checkbox for, ?Sample Readout?. When true the sample hover functionality with show Convective SIGMET Text Readout. When false, hovering over the SIGMET Polygon will readout null. However, this should not impact the SIGMET Text label attributed to the polygon.

[REQ] D2D Sample needs to readout Convective SIGMET product text when cursor (user) hovers over the SIGMET Polygon.

True for C-SIGMET Text, Nowcast, 1hr Fcst, and Outlook resources.

For instance, hovering your cursor over CONVECTIVE SIGMET 27E should popup readout SIGMET text/bullmessage for all default bundle resources. Meaning that if only C-SIGMET Text and 1hr C-SIGMET Fcst are turned on, the readout can still be allowed to read out the text message for C-SIGMET Nowcast and C-SIGMET OUTLOOK. In other words, no need to filter readouts by enabled resources.

WSUS31 KPCI 261255

SIGE

MKCE WST 261255

CONVECTIVE SIGMET 27E

VALID UNTIL 1455Z

FL CSTL WTRS

FROM 20NE OMN-150ENE TRV-110E PBI-40NNE PBI-20NE OMN

AREA EMBD TS MOV FROM 20015KT. TOPS TO FL410.

REF INTL SIGMET LIMA SERIES.

OUTLOOK VALID 261455-261855

FROM 140SSE CHS-170E PBI-60E PBI-130SSE MIA-40SSW

EYW-RSW-CTY-140SSE CHS

WST ISSUANCES POSS. REFER TO MOST RECENT ACUS01 KWNS FROM STORM

PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS.

See also: <https://docs.google.com/document/d/1SzhOdoHJEgWdxzaQszHKioj7-jV9QpF9WGXKzNNNLrg>

37. Redmine DCS 2001460

Non-Convective SIGMET graphics plot revisions

Non-Convective SIGMETs are loaded via the Upper-Air Menu in D2D. ?Upper Air? ? Aviation ? (Icing, Turbulence, Volcanic Ash) ? SIGMET menus.

Requirements

Currently, SIGMET resources are plotted for one frame during the hour they were issued. These graphics include a label containing a Series Number followed by an FA Region.

[REQ]

Make Non-Convective SIGMET plot with the Series Name and Number

[REQ]

UA SIGMET graphics should time match to the underlying image but only over the range of the life of the SIGMET, from start to end time.

[REQ]

For SIGMET products that are updated with a new Series Number, but at the same time keep the same Series Name, should supersede previously issued SIGMET for that Series Name.

For example, SIGMET YANKEE 2 supersedes SIGMET YANKEE 1. In this case, SIGMET YANKEE 1 should be excluded from the resource graphics plot.

The preceding SIGMET should be removed off the display.

[REQ]

For SIGMETs in a given Series Name that are canceled, the SIGMET should continue to plot as part of the resource until the cancellation time is reached on Time Matched resources.

After the cancellation time is reached, the SIGMET should no longer be included in the resource graphic on the display.

See <https://docs.google.com/document/d/1IQUBJ5vRMao95sCi2RTO-2qxZB0MbH8eIJKjQH3gRPY>

38. Redmine DCS 2001462

D2D NSHARP (TOOL) Enhancements

General requirements for Nsharp(Tool) D2D:

- Remove NHARP Resource (Editable) as a legend when NsharpEditor is closed (test steps 2).
- Suppress certain errors when clicking on buttons where functionality isn't supported (test steps 3).
- Merge numerous popup dialog boxes notifying Failed or Unavailable data into a single notification/dialog, or, into alertViz.

Site specific requirements for Nsharp(Tool) D2D:

Forecast Model Sounding Time (frame) Navigation Controls. Request the capability to load a specific forecast hour of interest. Specifically in the near term. The desired behavior is to load the initial hour of the time frames.

- Noticed issues with not able to load soundings in the near term. The Point Forecast Model Soundings load the latest forecast hour time frame by default.
- Taking the NAM for example. The first frame loads up the 84 Hour Forecast. It is only possible to navigate 5 frames back to the 79 Hour Forecast.
- For the GFS, the 180 Hour Forecast loads. Can only navigate back to hour 177.

Discrepancy with frames loaded Observed Sounding. Initially, the number of Observed sounding frames loaded varies between 10-12. However, switching to PFC Sounding and then back to an Observed Soundings only retrieves the latest frame.

Load dialog gets disrupted. If you load a sounding then close the load dialog and try to reopen the load dialog you get a UELE error.

(see test steps 1)

When attempting to reproduce this, the UELE did not occur every time. See attached document for stack trace.

See <https://docs.google.com/document/d/1drUQYHu-mOvRQQb8YD5LQYafE1JnDpmdZwU896pjXoI>

39.Redmine DCS 2001463

D2D Multi Panel Layout Enhancements

NHC reported multi panel layout display issues. If the view is changed to one panel the right-click option to go back to 4 panels does not exist. Attempts by the site to work around this bug resulted in the other 3 panels not reloading properly and only left the last panel that was successfully loaded.

When I clicked the "2 panel" option, nothing happened on my screen, it still just showed a single panel. Then when right clicked again, "4 panel layout" showed up this time, and when I selected it, it took me to a 4 panel layout, but sometimes without all of the data, I had originally loaded in the bottom 2 panels (panels 3 and 4).

Users ran into two issues. The first is choosing new Panel Layout types (for a second time) within a previously chosen Panel Layout does not work. The second is changing Panel Layouts clears procedure displays. This document describes the work needed to fix these issues.

D2D Functional Requirements

[REQ 1]

In D2D, the map display right-click panel layout menu needs to include all default paneling options.

You should be able to get back to the 4 panel view by clicking the "Four Panel Layout" (same function as the "End" key) ?I was given a number of other options, none of which were for 4 panels (2, 9, or 16).

Condition: For any given time in all panel layout.

[REQ 3]

The same functionality shall also apply to D2D Default, Three, Four, and X Pane Layouts where X is the number of Side View Pane Layouts created in the D2D Procedure or Perspective Display.

Assumption: More than four side view panes are

Conditions:

True for D2D Map Editor Displays; D2D side panel editors

True for Change D2D Layout function and View Pane Layout options accessed in the toolbar

View ? Default Pane Layout

View ? Three Pane Layout

For Panel Layout selections that are already selected. Choosing the same panel layout should do nothing. For example, if the user is in a Four Panel Layout and then again chooses Four Panel Layout the response should not change the map layout.

[REQ 4]

Multi Panel Layout options need to be applied to work when zoomed into a single panel within a multi panel display.

See <https://docs.google.com/document/d/1JbV97vHJjFHotRqJrv7jDhxLGalRR50dH97SUgpGn4>

40.Redmine DCS 2001464**propose saves grids to fcst database**

Per WFO ABQ:

Our current workflow during the issuance of the routine package is to issue the AFD, send legacy products (e.g. ZFP, SFT, PFM, etc.), then immediately create and issue our long-fused watches and warnings. Prior to this, we generate a hazard grid in GFE to allow the anticipated headline(s) to appear in the W/W/A section of the AFD and the ZFP for the appropriate zones. When querying our neighboring offices, it sounds like their workflows are rather similar. During our most recent flash flood situation, we noticed Hazard Services does not write the FFA to the GFE database until after the product has been issued. From my understanding, this is by design by the software ? so there are no software ?bugs? to report. To address the ?missing? headlines in our legacy products, our forecasters issued the FFA within Hazard Services before the routine/update packages. This was a very logical approach and probably something our NWS partners would appreciate. There was also some discussion about creating a

?dummy? hazard grid in GFE to get the legacy products out the door quickly, then delete the GFE grid prior to the issuance in Hazard Services. Personally, I feel this option is undesirable and a bit dangerous.

With that said, Flash Flood Watches are pretty quick and can easily be done before the AFD/ZFP issuance. However, as we migrate to the winter weather ATAN, this will likely be a bigger challenge as WSWs can take upwards of 30-45 minutes to create for our CWA, especially during complex weather situations. Do you have any ideas or recommendations going forward? I think a reasonable option is to have Hazard Services write to the GFE database whenever a long-fused watch/warning is ?proposed? within Hazard Services. This would allow our legacy products to see the grid in GFE and doesn?t require WFOs to adjust their workflows.

41. Redmine DCS 2001468

GFE: Update ONA and ONP domain in serverConfig.py

The baseline file `common_static/base/gfe/config/serverConfig.py` needs an update to the 2 GFE domain definitions for the Ocean Prediction Center. The domains are ONA and ONP.

ONA and ONP are using a different grid than what is defined in the baseline `serverConfig.py` and apparently it is causing confusion for Raytheon when troubleshooting an ISC pixel data value problem (DR 21954).

The 2 lines in `serverConfig.py` currently read as follows:

```
'ONA': ([244, 383], (68.9375, 19.5625), (15.1875, 23.875), 'EST5EDT', Grid211, "wfo"),
```

```
'ONP': ([396, 415], (8.1875, 21.5625), (24.6875, 25.875), 'PST8PDT', Grid211, "wfo"),
```

They need to be updated to:

```
'ONA': ([371, 455], (1550.0, 633.0), (185.0, 227.0), 'EST5EDT', NDFD_Oceanic_10K, "wfo"),
```

```
'ONP': ([359, 567], (1015.0, 645.0), (179.0, 283.0), 'PST8PDT', NDFD_Oceanic_10K, "wfo"),
```

Our `localConfig.py` defines our domains correctly but we really need to get our definition into the baseline, since we are not on Grid211.

If the developers want to check with me when they are ready to update the baseline code that would be great.

Please let me know if you have any questions.

Thanks,

Christopher Juckins

Meteorologist/Programmer

NCEP Ocean Prediction Center

<https://ocean.weather.gov>

42. Redmine DCS 2001471

D2D: Sixteen Panel Layout Key Bindings

The new "Sixteen Panel Layout" option in D2D currently only has key bindings for panels 1-9. Panels 10-16 need to have key bindings set as well.

Functional Requirements

[REQ]

Insert and assign baseline key assignments in CAVE Key preferences for navigating multi panel layouts with greater than 9 displays.

Currently, this requirement only applies to the recently added Sixteen Panel Layout baseline option.

CAVE -> Preferences -> General -> Keys

Suggested baseline CAVE KeyBindings:

Ctrl + Alt + 0 ? Rotate to panel 10 of 16

Ctrl + Alt + 1 ? Rotate to panel 11 of 16

Ctrl + Alt + 2 ? Rotate to panel 12 of 16

Ctrl + Alt + 3 ? Rotate to panel 13 of 16

Ctrl + Alt + 4 ? Rotate to panel 14 of 16

Ctrl + Alt + 5 ? Rotate to panel 15 of 16

Ctrl + Alt + 6 ? Rotate to panel 16 of 16

With keys assigned to 10-16 panels, Users can go in and edit the default assigned values accordingly.

43. Redmine DCS 2001474

Allow the super-res and 8-Bit SRM products to have their own unique color curve

The default color curve applied from radarImageryStyleRules.xml is currently tied to the source velocity's product code (i.e. 154 or 99), thus you cannot change the super-res or 8-Bit SRM color curve w/o changing the source product code. The DCS is to allow the super-res and 8Bit SRM products to have their own color curve independent of the source velocity's product code.

44. Redmine DCS 2001479

modify Hazard Services for event-driven archiving

To accommodate the WES, HS needs to write out each hazard event as it is issued to the archive. HS prunes the geometries from the events, so collecting HS entries after the events will not produce an event that can be played back.

45. Redmine DCS 2001481

Climate RER: Legacy local scripts to alert user of record event not working with climate refresh - need baseline functionality

Although there was no functionality in the legacy climate application to notify when record events occurred and a Record Event Report (RER) had been run, many sites had set up text triggers for the RERXXX products which ran simple scripts to notify the users that a RER had been created.

In the AWIPS II climate refresh, there is no functionality to allow a popup for a RER, and the legacy triggers will not work.

The preferred solution is to build in a baseline capability into the AWIPS II climate software that generates a popup message for the user when a new Record Event Report has been generated.

Multiple sites have reported this issue, including BYZ (TT 279582) and JAX (TT 255537).

46. Redmine DCS 2001482

New features to better support Digital Aviation Services at WFOs

Digital Aviation forecasting is still maturing. As forecasters have been using DAS, weaknesses in the software have been exposed and areas for improvement identified. This software packages includes new features that will enhance the quality and consistency of the aviation forecasts and the TAF product derived from it.

Initial DCS#20193 document for initial check in:

https://docs.google.com/document/d/1xQi2JsR2L6o0Q7IP5KPxc87LW3a6izNRBS7QduDw_Mg/edit

Link to CONOPS/Operation Requirements Document:

https://drive.google.com/file/d/19EEFEubtF_Y_4Y8DJdzS_Aby9e1ZX-4l/view?usp=sharing

47. Redmine DCS 2001485

GOES Fog and Low Stratus (FLS) Product Configurations

This request is to provide AWIPS baseline configurations for the GOES-16 and GOES-17 Fog and Low Stratus (FLS) products. This task originally derived from an SREC recommendation and associated DCS 17839. This activity was placed on hold until the data became operationally available from NESDIS, and in a format that is compatible with AWIPS. NESDIS is declaring the FLS product for AWIPS operationally ready and available on PDA in late June 2020. NWS/Obs has worked closely with NESDIS/STAR and NESDIS/OSPO to evaluate, test, and verify that the new products are compatible with AWIPS using the existing GOES-R plugin. The proposed work under this DCS implements configurations into AWIPS 21.3.1 for FLS. This change implements into operations the FLS products w/the same plugin, "look, and feel" that sites have been accessing from CIMSS for many years.

48. Redmine DCS 2001486

NWRWAVES: Alert user if product goes to TROUBLE directory/fails to be sent to BMH

An issue was reported recently by site MPX in TT 274168 where a warning product went to the TROUBLE directory. DR 22103 has been written to provide additional logging, as well as verify that only one nwrTrans.pl process is running at a time.

This small enhancement DCS is to produce an AlertViz banner so that the user knows if a NWRWAVES product goes to the TROUBLE directory, and thus will not be played by BMH.

NOTE: This will need to be worked with DR 22103

49. Redmine DCS 2001487

GOES Multi-sat composite configuration updates

NESDIS generates (and sends to AWIPS) three, 3-hourly multi-satellite GOES composite imagery products that are in the process of being upgraded/replaced: Visible Water Vapor Longwave IR. These products are derived from GOES-16, GOES-17, Himawari-8, Meteosat-8, and Meteosat-11. The versions of these products currently sent to AWIPS from the NOAAPort-OPT channel have a horizontal resolution of approximately 24 km, and in a legacy format that NOAA plans to eventually retire (?GINI? format). NESDIS has recently produced newer versions that are intended to supersede and replace the current legacy (GINI-format) versions. The improvements include increased latitudinal coverage (70N-70S), a horizontal resolution of 8km, and a new data format (netCDF4, instead of GINI). This DCS provides updated configurations for the products in this new format, compatible with the netcdfGrid plugin. Those configurations include an edex description file, menus, bundles, colormaps, style rules, purge rules, and an update to the LDM pqact entries with the appropriate WMO headers.

50. Redmine DCS 2001497

Unified Graphics Application (Phase I - non-remote access)

An engineering analysis was completed in FY19 based on extensive requirements gathered for a unified graphics generation application (UGA.) The analysis recommended that GraphiDSS be considered for the AWIPS, non-remote solution and enhanced to fulfill necessary requirements. This milestone will involve a collaborative effort between the developer of GraphiDSS, the AWIPS Program, and other graphics

generation software developers to enhance GraphiDSS to meet all non-remote application requirements. The milestone will be achieved by the integration of GraphiDSS into a baseline build of AWIPS.

Deliverable:

Enhanced version of GraphiDSS delivered to the AWIPS baseline.

51.Redmine DCS 2001498

Standardized Local WFO Tsunami Warning Broadcast and EAS Activation GUI (CARDS 17-014)

In the Fall of 2016, Western Region implemented a semi-automated process and set of procedures to activate EAS for Tsunami Warnings (and Tsunami Watches, if required by state/local EAS plans). Upon receipt of a Tsunami alert message from NTWC, the forecaster immediately initiates an AWIPS-based program which reads the NTWC alert product and formats a segmented product containing Tsunami Warnings, Watches, and Advisories (as needed), and quickly composes an associated text message for broadcast on NWR. Segments for Warning, Watch, and/or Advisory areas are extracted from the official NTWC message, using the VTEC and UGC codes in the NTWC message. The forecaster has the opportunity to review the message and proposed alert areas prior to sending, and can edit text if necessary. The forecaster then sends it to NWR, resulting in EAS activation (if required, per state/local EAS plans). This process requires approximately 1-2 minutes, compared to 5-10 minutes, or more, for manual methods. This capability could be implemented nationally, where needed, with relatively slight modifications.

The requirement is for a fast, efficient, semi-automated and standardized means for NWS WFOs to disseminate Tsunami Warnings (and Tsunami Watches, if necessary) and activate the Emergency Alert System (EAS). The MDC has validated this as a National Requirement.

52.Redmine DCS 2001499

D2D Radar: remove Product List Message from TDWR products

The ROC is removing Product List Message from the SPG in Build 11. The product should also be removed from AWIPS as obsolete.

53.Redmine DCS 2001505

Add Edit Plot Attributes to Metar Precip Plots

TAFB Users reported missing functionality with METAR Precip Plots when attempting to select Edit Plot Attributes in the resource menu.

Item Information

MetarPrecipPlot.xml does not have an associated .svg value assigned in baseMetar.xml

Requirements

[REQ] Add Edit Plot Attributes to METAR Precip Plots.

24hr Precip

6hr Precip

3hr Precip

1hr Precip

?<https://docs.google.com/document/d/1iNTKgNjqYwxKQIIgckAltHMSd3Eer62vI60M3N5T9U>

54. Redmine DCS 2001508

Add Model Source Time To GFE Grids Loaded In D2D

Users request the addition of model source time to GFE grids loaded in D2D. Request that model source time-stamps be added in the resource legend for GFE grid resources that are loaded in D2D.

User Requirements

[REQ] Add grid source time to resource legends on GFE Grids loaded in D2D.

For example, Weather Element Model: GlobalWave 0512 (NH1) as the resource name where the ?model source time? is 0512. Refer to Figure 1.

Legends should be updated to include model reference time in the form like,

?GFE WaveHeight (ft) 1hrs Begn DDD HH:MMZ DD-Mmm-YY?

Applies to smartInit generated grids.

See ?<https://docs.google.com/document/d/18o-fMKG50NLZfapEfCinAibwep0HFtwBSV-OxQzH5jM>

55. Redmine DCS 2001509

Port NSHARP Into D2D

Currently, NSHARP used at NCEP Centers provides a map with Point and Click Capability for Soundings. Map Selection Capability for Observed, Model and Point Forecast Soundings. The functionality was installed with the NCP Perspective. ?There needs to be a GUI interface for selecting Upper-Air observations in NSharp.?

User Requirements

[REQ] CAVE shall support NSHARP NSharpEditor as a CAVE/D2D Tools feature. NSHARP shall be accessible in CAVE/D2D Tools.

Currently, NSharp can be accessed in CAVE via the ?Upper Air? menu, VB, and maps/Sounding Locs. Users require dedicated menu access to launch the NSharp display in CAVE/D2D.

[REQ] NSHARP shall support map selection capabilities for Observed, Model, and Point Forecast Soundings.

NSHARP shall support the functionality to select sounding by model source, obs, point data selections a map editor display.

?<https://docs.google.com/document/d/1P3yh8t7oDudbP17TaN1Y1p129cmrWmxFQJAoaRca6Fs/edit>

56.Redmine DCS 2001514

GFE needs access to the Hazard Services' Headline information

Hazard Simplification has adjusted and consolidated VTEC phenomenon and significance code. These Hazard Simplification changes are included in Hazard Services, but not in the legacy hazard aspects of GFE. GFE needs to use Hazard Services' Headline Information for GFE non-hazard products such as the Zones (ZFP), Area Forecast Discussion, etc.,

57.Redmine DCS 2001515

EDEX restarts: Add more positive notification of Qpid communication being restored and EDEX and/or GFE services being restarted

DR 19463 (MRMS and HRRR model AlertViz errors after bouncing EDEX) was written previously and a fix checked in against 18.1.1 under RODO #7200. However, this fix was inadequate to address the entire issue, and it was determined that larger design changes would be necessary to address it fully. To prevent the stream of MRMS and HRRR model AlertViz errors that some GFE users see after EDEX bounces, more positive notifications of Qpid communication being restored and EDEX and/or GFE services being restarted will need to be added, so we know when CAVE may be out of sync with the server and we need to refresh any cached state on the client side. The purpose of this DCS is to add those notifications. Sites related problems recently under TT EWX 206474.

58.Redmine DCS 2001518

Add Selected Time Mode to Settings

From Focal Point call 5/7/19: Add Selected Time Mode (Console Single/ Range/ Show All Time) to Settings for example, so that "Show All Time" could be set up as the default.

59.Redmine DCS 2001520

Hazard Services: Registry Outage Logging

Currently the only time AlertViz will notify the user the Registry is down is when the user tries to send a product. However the user should know the registry is having issues long before they try to send a product. There should be multiple ways a user is notified and they are:

If the registry goes down log it in:

An AlertViz error

The System Monitor - Either that it is experiencing problems and/or that it is down

log it in Edex logs

Optional: Email the ITO.

60. Redmine DCS 2001521

Partial replacement of flood watch has incorrect wording

At times, a Flood Watch that is in effect will be segmented such that a portion of the Watch area will continue to remain in effect as is (CON/EXT VTEC) while the other portion might be replaced/updated to an Advisory or Warning (produces a CAN VTEC for the replaced Watch segment, and a CON/EXT for the portion of the Watch that remains in effect). Currently in Hazard Services, the wording produced by the Product Editor for the Summary Headlines and Attribution Statement in the CAN segment solely mentions that the Watch is being Cancelled with no mention of the Replacement. This behavior is undesired.

The Summary Headlines and Attribution Statement of the CAN segment of that partial replacement (upgrade) of a Flood Watch to a Flood Warning should mention that the Watch is being "...replaced by/with..." an Advisory/Warning. The wording would be similar to the text that is produced for the Ending Synopsis, or the wording produced when the entire Watch is replaced by an Advisory/Warning.

61. Redmine DCS 2001528

D2D Radar: add new GSM data fields for VCP Supplemental Data

The ROC has added two new fields to the GSM VCP Supplemental Data in RPG Build 19. The new bit settings are part of the halfword 58 (VCP Supplemental Data). Bit 7 being set will indicate that a Base Tilt Enabled VCP is in use; bit 6 being set will indicate that MPDA VCP is in use. Currently VCP 112 is the only MPDA VCP.

62. Redmine DCS 2001536

Automated Tropical Cyclone Forecast System (ATCF)

The Automated Tropical Cyclone Forecast System (ATCF ?) is a software application developed by Naval Research Laboratory, Marine Meteorology Division that provides a toolkit to assist the tropical cyclone (TC) forecaster and to automate and streamline the TC forecast process. The ATCF system is an interactive forecast application that directly addresses the specialized functionality needed to allow forecasters to efficiently prepare the necessary products for the Joint Typhoon Warning Center (JTWC). A modified version is also used by the National Hurricane Center (NHC), the TC forecasting arm of the National Oceanographic and Atmospheric Administration (NOAA). ATCF is provided in two forms: a dedicated application installed on the user's computer, and a web-based version with essentially the same functionality but an insignificant local footprint. The ATCF system represents an on-going DoD/NOAA effort. The system is interconnected between DoD and NOAA sites (e.g. JTWC and NHC) and allows agencies to share TC data in a real-time mode on a common framework. The ATCF system is a uniquely specialized system and is used by the U.S. Navy and NOAA to safeguard civilian and military assets with timely TC warnings and advisories.

The DCS covers the migration of the ATCF software to the AWIPS architecture.

63.Redmine DCS 2001537

Hydro Perspective displays M (missing) for min/max in Point Data Control even when values exist in DB

When using the point data control menu in the hydro perspective, the Value/Time menu does not work properly for river height (HG) data. Regardless of options chosen in the Value/Time menu (Min Value in Window, Max Value in Window), the values displayed on the map do not change. The Value/Time options seem to work fine for temperature (TA) data. This behavior was not implemented in A1 and was requested via DR 20555.

64.Redmine DCS 2001549

Route TDWR data to additional interface (RPCADS) from MHS NCF Servers

Currently NCF routes SDUS5i TZ0 products over SBN and to TOC (Telecommunication Gateway) on Line 51. TOC expects the same product to be routed to RPCADS (IDP servers in College Park & Boulder, CO) in addition to Line 51 to TG.

The above requirement requires changes to MHS configuration. It involves modifying /awips/ops/data/mhs/default_addr.data to include

```
SDUS5? ???? ?????? TZ0*|INET,!NWSTG
```

65.Redmine DCS 2001559

Updates required to support NBM 4.0

NBM 4.0 will provide additional elements to AWIPS. Those elements need to be displayable in D2D and usable in GFE. The complete list of changes in NBM 4.0 is TBD, and this description can be updated once those changes are finalized.

Of special note, the 30m FHAG wind and 80m FHAG wind (from NBM 3.2) will require baseline code changes to allow for the surface wind direction to be used with the 30m/80m wind speed since those parameters do not include a wind direction.

66.Redmine DCS 2001560

Enhance Center Weather Advisory (CWA) software to support CWSU operations

The Center Weather Advisory (CWA) software is in need of several enhancements in order for CWSUs to use the software operationally. These enhancements are described in the attachment.

67.Redmine DCS 2001569

Enhance hydro capability of the DAF

While the DAF excels at retrieving dynamic data from the hydro database such as stage height, discharge, temperature, etc, it cannot retrieve any of the static data such as location name, stream name or flood stage/flow. Field developers would like to have this capability so that they can replace riverpro functionality. The DAF should be able to access information from every table in the hydro database.

68.Redmine DCS 2001578

Increase CAVE memory from 6GB to 8GB

Central Region is interested in exploring whether we can increase CAVE memory in wfo.ini from 6GB to 8GB due to performance problems at various sites in Central Region. We need to investigate whether doing this would have any unexpected impacts in CAVE or other areas, and if feasible, implement the change. Determine maximum number of CAVEs that can run concurrently without performance impacts. The thought is that this is probably somewhere in the range of 2 to 3 concurrent CAVEs.

69.Redmine DCS 2001585

D2D Radar: remove from AWIPS those products that are obsolete in TDWR Build 10

The following products will be coming out of SPG Build 10 and should be removed from AWIPS menus:

- 187 Reflectivity 16 level 0.30 res (Z)
- 183 Base Velocity 16 level 0.15 res (V)
- 137 User Selectable Layer Composite Reflectivity 16 level 1.0 res (ULR)

- 181 Base Reflectivity 16 level 0.15 res (Z) - should be removed from the product request menus, but not from other menus

The AWIPS target release should be after SPG Build 10 deployment, which is tentatively April 2020.

70.Redmine DCS 2001587

Encrypt JMS password

As part of the Qpid upgrade to Qpid Proton, the new version of Qpid JMS requires that a username and password be passed into the tool. These credentials are stored in a plain text file that are read in by QPid JMS.

This task would be to find a solution to encrypt the credentials so that they are no longer stored in plain text.

In our current Qpid setup, connections are created and defined using the url format:

```
amqp(s)://guest:guest@localhost...
```

When support for amqps (SSL) connections was added, the class JmsSslConfiguration was written to handle adding on extra required details for the broker to verify the requested connections security. Part of these requirements were a Java key store for both the truststore and keystore parameters of the url used to connect to Qpid. Each of these key store files also required a password. Previously, these were set to use whatever value was exported to the environment variable "QPID_SSL_CERT_PASSWORD". However,

as the product was not shipped with a QPID_SSL_CERT_PASSWORD value explicitly defined anywhere, the password would default to simply "password".

These passwords for the truststore and keystore need to be encrypted so that we can avoid storing plain-text credentials in the code, scripts, environment, etc. It should be noted that supplying only the JMS username while connecting is sufficient enough, even on SSL connections, so encrypting the password is not exactly necessary (e.g. the previous `amqps://guest:guest@localhost...` can simply be reduced to `amqps://guest:@localhost...` and everything will work the same as before).

Rodo 8447:

After going through the release 21.3.1 upgrade process for the SS testbed, I think it would be a smart idea to create a delta script, `updateJmsPasswords.py`, for

the changes made under #7899. This delta script will update the `passwords.properties` file with a new password and delete the `*.jks`

files so the keystores are generated with the new password on the next start of CAVE or EDEX.

Sean Webb also pointed out that the `a2pgca` script used to manage certificates should be updated too.

71. Redmine DCS 2001593

hazard Services: Non-Precipitation Weather HazSimp Consolidation and Reformatting and Common Alerting Protocol (CAP) in Hazard Services

This purpose of this milestone is to prototype, develop, and obtain interactive feedback on an enhancement to Hazard Services framework for Non-Precipitation Weather Hazard Simplification formatted products and modern communications protocols like Common Alerting Protocol (CAP). This will include the VTEC Consolidation of several VTEC Event codes and reformatting all hydrological hazards. This work will reduce the cost of O&M for the watch, warning and advisory applications.

The hazards include: DU.W - Blowing Dust Warning, DU.Y - Blowing Dust Advisory, EC.W - Extreme Cold Warning, EC.A - Extreme Cold Watch, EC.Y - Cold Advisory, EH.W - Extreme Warning, EH.A - Extreme Watch, HT.Y - Heat Advisor, FG.Y - Dense Fog Advisory, HZ.W - Hard Freeze Warning, FZ.W - Freeze Warning, FR.Y - Frost Advisory, HZ.A - Hard Freeze Watch, FZ.A - Freeze Watch, HW.W - High Wind Warning, WI.Y - Wind Advisory, LW.Y - Lake Wind Advisory, HW.A - High Wind Watch, SM.Y - Smoke Advisory, ZF.Y - Freezing Fog Advisory, AF.Y - Ashfall Advisory, AF.W - Ashfall Warning, AS.Y - Air Stagnation Advisory, AS.O - Air Stagnation Outlook

The development includes identifying the full set of operational requirements, designing and developing following the ARB design and code review process. Iterative feedback is obtained from a series of NWS-sponsored testing activities (Functional FATs, System FATs, OPG) where the software is exercised and tested by NWS forecasters through a formal process of gathering feedback. The feedback is evaluated and responded to with bug fixes or design and code enhancements.

72.Redmine DCS 2001596

Localization Perspective (LP) editor needs to be able to read properly formatted XML and force documents to be properly formed in order to save.

Localization Perspective(LP) editor needs to be able to read properly formatted XML and force documents to be properly formed in order to save. If XML doc is malformed, it should be unable to be saved and provide a reference to the malformed part of the document.

This capability should be an add-on to the LP document editor that forces documents to be properly formed XML in order to save while also providing visual cues to the user on what part of the document is having problems. Until a document contains well-formed XML, the editor should not allow any document to be saved.

Originator Priority: 2

73.Redmine DCS 2001606

GFE: SPCGuide ? Add all available model elements to GFE SPC database

The GFE SPC database was added to the baseline under 19.3.1 DCS 20864. At that time only the SPCGuide fire wx elements were added to this database in serverConfig. A number of other SPCGuide elements are currently configured in the NIC version of serverConfig:

sigtrndprob, hailprob, sighailprob, windprob, sigwindprob, prsvr, prsigsv, srcono, ptor

Smartinits for these elements are also available in the NIC code.

The purpose of this DCS is to merge into the AWIPS baseline the NIC configurations for SPCGuide.

This should be done in coordination with the NIC Team (?gfe.nwsinitsconfig-support@noaa.gov).

74.Redmine DCS 2001627

Follow-up actions necessary to finish implementing CFR 19895 for deprecated Postgis function calls.

CFR 19895 was implemented to upgrade postgres to 9.5.7+. Legacy postgis function calls AsBinary, GeomFromText, and SnapToGrid need to have the prefix ST_ added to these function calls. A delta script to remove the legacy calls was implemented in 18.2.1, but had to be added back until these final fixes can be implemented. That delta script will have to be provided and applied again, once this is implemented. That delta script is deltaScripts/18.2.1/DR6508/6508_uninstall_legacy.sh. Also, the /awips2/postgresql/share/contrib/postgis-2.2/legacy.sql script, which restores and sets up the postgis legacy function calls, is automatically run as part of a database install from scratch, and this will need to be removed when this DCS is implemented. Lastly, there are database recreation documents that the NCF runs in the event of a database recovery that specify that after metadata is rebuilt, the same legacy.sql script should be run. These documents will also need to be updated to take out the running of the legacy.sql script.

NOTE: This DCS needs to be worked in conjunction with 21167

75.Redmine DCS 2001679

Add optional force recalculation flag in smartInits

After a TIM with Andy Just and Jerry Wiedenfeld it was decided the existing smartInit capability to write to a singleton database

would suffice if we add an option to force recalculation of existing data when new data is received. This would be the equivalent of

running the smartInit via ifpInit with the -a flag.

The new flag will be in the smartInit module as an optional flag to the Forecaster.__init__ method.

Original Description:

Add a function, likely to Init.py, that would allow smartInit output to be copied to a defined singleton database. This function could then be called inside a method like calcPoP. Example:

self.copyTo(singletonDatabaseName,element) We may need to pass an argument of grid time too

76.Redmine DCS 2001680

Gridded LAMP domain expansion and going out to 38 h for Ceiling & Visibility

Gridded LAMP (GLMP) guidance for ceiling and visibility will now cover a larger domain (the same CONUS domain as the National Blend of Models (NBM)) and will go out hourly to 38 hours instead of to the current 25 hours.

77.Redmine DCS 2001692

D2D Radar: Remove obsolete CFC from radar software

Clutter Filter Control product is superseded by the Power Removed Control product starting with RPG Build 19. Once no RPG Build 18 or earlier installs remain in the field, CFC can be removed from AWIPS, since it will no longer be generated by the RPG.

78.Redmine DCS 2001704

Contour labeling should be sped up

Performance logs during a test at VRH (localized as AFC) showed that contour labeling in D2D was taking an inordinate amount of time. At times it took 1-2 seconds and the user reported that the contours were very slow to come up. The test was most likely using the Nam Nest model. The contouring code, specifically the determination of labels, should be optimized so contouring can be completed faster.

A quick solution may be to add more threads for contouring. At present it appears that all contouring is single threaded. Adding more threads may be enough to complete this ticket. Another solution would be

to analyze the labeling algorithm and optimize it where possible for faster performance. The current labeling algorithm was most likely ported from AWIPS 1 so the actual placement of labels should not be changed.

79.Redmine DCS 2001781

Digital Cursor Readout tool will allow forecasters to display severe weather parameters values along with radar data.

The Digital Cursor Readout tool within the AWIPS CAVE D2D perspective provides the users with the ability to digitally sample loaded parameter fields without having to first load a field via an image.

80.Redmine DCS 2001800

Implement central wavelength functionality and add column to satellite table

[1] An additional column is needed in the satellite table of the meta database that would allow for the future implementation of CAVE features. Currently, the satellite table uses a creating entity and physical element, which is a string and varies between satellites, to populate the resource. With new imagery, there are now multiple bands on multiple satellites, but many similar bands. There is no way to query only a subset of bands without defining the physical element of each band.

[2] Implement CAVE feature that uses central wavelength data.

81.Redmine DCS 2002002

BMH no 1650 Hz tone to send for testing via BMH

From BMH Menu, select Transmitters, select Transmitter Alignment..., select Group, select Maintenance, the 1650Hz option should be added.

82.Redmine DCS 2002129

GFE: Add virtual ISC (VModule) capability IceAccum

Site requested that virtual ISC capability be added for the IceAccum parameter in GFE. IceAccum has not had virtual ISC capability dating back to AWIPS I, only QPF, PoP, and SnowAmt. Without virtual ISC, accumulative amounts for various time periods can be incorrect when viewed as ISC grids by surrounding sites.

83.Redmine DCS 2029546

Add CAVE preference to enable/disable well-formed XML validation when user saves an XML file in the Localization Perspective

On DCS 21385, the localization perspective's XML editor was changed to require well-formed XML to save. If the XML is not well-formed, it refuses to allow the user to save. This is great for most XML files in awips, however, there are some that are not well-formed, and those are now no longer editable. Making them well-formed would have other consequences and break things or require further code changes. Add a CAVE preference that allows a user to enable or disable the well-formed XML validation that occurs at save time. Sample screenshot attached.

84.Redmine DCS 2029646

Eastern Pacific National TCV Update

Site discovered a potential issue if the Eastern Pacific sites start issuing TCVs since TPCWatchSrv only processes them for the Atlantic basin.

Add the appropriate handling for TCVEP1-5 so that the same things are done as for AT1-5 with combo files and json clearing post event..

85.Redmine DCS 2029654

WA 60 ? Backup Services Enhancements

Every Weather Forecast Office (WFO) is required to be a ready backup to at least one neighboring WFO (sometimes two or three). In order to be a ready backup, the WFO must be able to access current configuration files from the WFO being backed up at the time of an outage. Backup services was created to fill this gap, but there are some drawbacks that keep it from fully meeting that goal. There are issues using backup services for sites with multiple localization domains and transferring files between sites on different builds.

This AOP milestone is to improve AWIPS service backup handling of configuration files.

This is the parent ticket for all tickets that will be worked under WA 60.

WA Requirements:

https://docs.google.com/document/d/1MQXkFx_RKtQ7Hi2YpoGe_K1Yf1YxzAaEYQkKayEqAEw/edit?pli=1

86.Redmine DCS 2029697

Address Hibernate upgrade workaround

Hibernate 5.2 and later no longer allows flush outside of a transaction. It appears that this is happening somewhere in the code. So a system property needs to be set in order to allow it again.

The following property needs to be set in the hibernate configuration xml files in order for EDEX to run in Registry mode.

<property name="hibernate.allow_update_outside_transaction">true</property>

This is a band-aid solution and we need to find out where the flush is happening and why it's necessary.

87.Redmine CFR 2000828**Update PostGIS to 2.5.9**

Postgres 11.17 will not install correctly unless PostGIS is at 2.5.9. This is a problem at 21.4.1 sites. Upgrading PostGIS will allow us to install Postgres 11.17 correctly.

88.Redmine CFR 2000869**Upgrade PyTables to 3.7.0**

For compatibility with hdf5 1.12.1.

89.Redmine CFR 2000870**Switch to Red Hat provided Python 3.8**

Python 3.6 reached End of life (No security patches after Dec. 21). Upgrade Python 3.6.13 to RedHat provide Python 3.8 This change will require updating

Python packages to use the RedHat ones when they are available

90.Redmine CFR 2000873**Upgrade Apache Logging to 1.2**

As part of the Camel Upgrade in CFR 22990, Apache logging needs to be upgraded. Desired version is 1.2.

This only impacts YAJSW.

91.Redmine CFR 2000874**Upgrade Spring Framework to 5.3.13**

As part of the Apache Camel upgrade in CFR 22990, we are required to update Spring Framework.

Desired version is 5.3.13.

92.Redmine CFR 2000875**Upgrade Apache Camel to 3.14**

We are using camel 3.7. Upgrade to a 3.14 version.

93.Redmine CFR 2000877**Upgrade to matplotlib 3.4.3**

Upgrade to matplotlib 3.4.3 (Raytheon python module)

94. Redmine CFR 2000884**Update python library h5py to at least version 3.3.0**

As part of the upgrade to libhdf5 being performed #22883, we will need to upgrade h5py to at least version 3.3.0 for compatibility with

libhdf5 version 1.12.1.

95. Redmine CFR 2000888**Add Gson to AWIPS**

Gson is needed to parse ATCF and SWPC product formatter templates, perform data validation based on the schema, and convert arbitrarily complex JSON schema and data into Java objects.

96. Redmine CFR 2000889**Update javax.activation to jakarta.activation version 1.2.2**

Javax.activation renamed to jakarta.activation; needed to support Eclipse 4.21 upgrade (CFR 22891)

97. Redmine CFR 2000890**Upgrade com.sun.jna.platform to 5.8.0**

Update com.sun.jna.platform to support Eclipse 4.21 upgrade (CFR 22891)

98. Redmine CFR 2000891**Upgrade com.sun.jna to 5.8.0**

Update com.sun.jna to support Eclipse 4.21 upgrade (CFR 22891)

99. Redmine CFR 2000892**Upgrade org.apache.xerces to 2.12.1**

Upgrade org.apache.xerces to support Eclipse 4.21 upgrade (CFR 22891).

100. Redmine CFR 2000893**Update javax.annotation to jakarta.annotation-api version 1.3.5**

Javax.annotation renamed to jakarta.annotation-api to support Eclipse 4.21 upgrade (CFR 22891)

101. Redmine CFR 2000894**Upgrade Eclipse to 4.21 (2021-09)**

Upgrade Eclipse to 4.21 (2021-09)

102. Redmine CFR 2000895**Update Jackson to 2.12.5**

This ticket is to upgrade the plugin `com.fasterxml.jackson`, AKA Jackson, to 2.12.5 to meet the dependency requirements to add Handlebars (SS# 22720 / RODO 8655). Specifically, the `Handlebars-jackson2` library version 4.2.1 requires `com.fasterxml.jackson` to be upgraded.

Plugin description:

Jackson is a suite of data-processing tools primarily used to parse JSON formatted text.

103. Redmine CFR 2000899**Upgrade Security package - hdf5 to 1.12.1**

Upgrade HDF5 from 1.12 to 1.12.1 on 21.3.1.

104. Redmine CFR 2000903**Remove obsolete python FOSS module `backports.functools-lru-cache`**

Remove the python module `backports.functools-lru-cache` from our system. It is only required for the `jaraco.functools`

package and only for python 2.x.

105. Redmine CFR 2000906**Remove obsolete packages `contextlib2`, `pbr`, `zipp`**

Remove obsolete packages `contextlib2`, `pbr`, `zipp`

106. Redmine CFR 2000907**Upgrade to `pygobject 3.40.1`**

Upgrade to `pygobject 3.40.1`

(Raytheon python module)

107. Redmine CFR 2000908**Upgrade to `pycairo 1.20.1`**

Upgrade to `pycairo 1.20.1`

(Raytheon python module).

108. Redmine CFR 2000909**Upgrade to `appdirs 1.4.4`**

Upgrade to `appdirs 1.4.4`

(Raytheon python module)

109. Redmine CFR 2000910

Upgrade to zc.lockfile 2.0

Upgrade to zc.lockfile 2.0

(Raytheon python module)

110. Redmine CFR 2000911

Upgrade to werkzeug 1.0.1

Upgrade to werkzeug 1.0.1

(Raytheon python module)

111. Redmine CFR 2000912

Upgrade to shapely 1.7.1

Upgrade to shapely 1.7.1

(Raytheon Python module).

112. Redmine CFR 2000913

Upgrade to setuptools-scm 5.0.2

Upgrade to setuptools-scm 5.0.2

(Raytheon Python module)

113. Redmine CFR 2000914

Upgrade to python-netcdf4 1.5.6

Upgrade to python-netcdf4 1.5.6

(Raytheon Python module)

114. Redmine CFR 2000916

Upgrade to pkgconfig 1.5.2

Upgrade to pkgconfig 1.5.2

(Raytheon python module)

115. Redmine CFR 2000917

Upgrade numexpr to 2.7.3

Upgrade numexpr to 2.7.3

(Raytheon python module)

116. Redmine CFR 2000918

Upgrade to more-itertools to 8.8.0

Upgrade to more-itertools to 8.7.0 (Raytheon python module)

117. Redmine CFR 2000919

Remove mock from the install packages

remove mock from install packages

118. Redmine CFR 2000920

Upgrade to matplotlib 3.4.3

Upgrade to matplotlib 3.3.4 (Raytheon python module)

119. Redmine CFR 2000921

Upgrade to jep 3.9.1

Upgrade to jep 3.9.1 (Raytheon python module).

120. Redmine CFR 2000922

Add packages jaraco.collections version 3.2.0, jaraco.text version 3.5.0, jaraco.classes version 3.2.1

Add packages jaraco.collections version 3.2.0, jaraco.text version 3.5.0, jaraco.classes version 3.2.1

(Raytheon python modules)

121. Redmine CFR 2000923

Upgrade to cheroot 8.5.2

Upgrade to cheroot 8.5.2

(Raytheon python module)

122. Redmine CFR 2000924

Upgrade to cftime 1.4.1

Upgrade to cftime 1.4.1

(Raytheon Python module)

123. Redmine CFR 2000926**Upgrade to pytz 2019.3**

Upgrade to pytz 2019.3

(RH8 Python module).

124. Redmine CFR 2000927**Upgrade to numpy 1.17.3**

Use numpy 1.17.3 (RH8 Python module)

125. Redmine CFR 2000944**Add handlebars to AWIPS**

Handlebars provides a formatter template structure that is useful for the ATCF and SWPC AWIPS migration projects. Although it's intended for use with this projects at National Center sites, it should be considered for all sites as it may be useful to other projects.

126. Redmine CFR 2000952**Upgrade MetPy to 0.12.2**

In testing CFR 21348 in 21.3.1, a problem with MetPy (version 0.12.1) was discovered that is fixed in 0.12.2, so this CFR is to upgrade MetPy to 0.12.2.

127. Redmine CFR 2000961**Add pytest framework with pytest-qt plugin**

pytest: test framework for writing unit test or functional tests for python applications

pytest-qt: a pytest plugin (details below)

Request pytest and pytest-qt be added to the baseline ADE. This request is initially made for the Unified Graphics Application (UGA) but will serve as very useful tools for all to develop tests for their GUI applications with PySide2 coming into the baseline. pytest-qt is a pytest plugin which allows developers to write automated tests for PySide2 GUI applications. pytest-qt provides the ability to simulate user interactions including mouse clicks and keystrokes to simulate user interaction in testing. pytest-qt also provides important functionality to interact with the GUI application and wait for signals to be emitted before continuing test execution. pytest-qt combined with pytest provides for an advanced testing capability for not only PySide2 applications but for python applications as a whole.

COTS/FOSS Requested Version:

pytest: 6.2.x (latest)

pytest-qt: 4.0.2

COTS/FOSS Download URL:

pytest: <http://pytest.org/> (redirects to current version)

pytest-qt: <https://pypi.org/project/pytest-qt/>.

128. Redmine CFR 2000976**Add python module zipp**

In order to add the python module importlib-resources we will need to add the module zipp to our AWIPS2 distribution.

Desired version is 3.4.1.

Project homepage is <https://github.com/jaraco/zipp/>

129. Redmine CFR 2000983**Add Whoosh (version 2.7.4)**

The python library whoosh is a fast, pure-Python full text indexing, search, and spell checking library. It is used in GraphiDSS (UGA) to satisfy the requirement for template indexing and searching.

130. Redmine CFR 2000984**Add Qtawesome (version 1.0.2)**

The python library qtawesome enables iconic fonts such as Font Awesome and Elusive Icons in PyQt and PySide applications. It is used heavily in GraphiDSS (UGA) to utilize icons for use in several areas including the toolbar, menus, as well as in styling points in the GIS layer.

131. Redmine CFR 2000985**Add PySide2 (version 5.15.2)**

GraphiDSS, part of the Unified Graphics Application (UGA), as well as other local applications utilize PySide2 to create rich user interfaces for their python applications. PySide2 is the official python bindings to the Qt application framework. Qt is widely used and supported and is one of the standard user interface frameworks around today..

132. Redmine CFR 2000986**Add Pyresample (version 1.19.0)**

The python module pyresample provides for geospatial image resample in python. It is used in GraphiDSS (UGA) for resampling/reprojection of data for plotting.

133. Redmine CFR 2000987**Add Pyenchant (version 3.2.0)**

Pyenchant provides python bindings to the enchant spell check library. This allows for spell checking in python applications.

134. Redmine CFR 2000988**Add Pint (version 0.16.1)**

Pint is a Python package to define, operate and manipulate physical quantities: the product of a numerical value and a unit of measurement. It allows arithmetic operations between them and conversions from and to different units. This is heavily used in GraphiDSS (UGA) to provide for required unit conversion of data.

135. Redmine CFR 2000989**Add Natsort (version 7.1.1)**

The natsort module in python provides enhanced sorting capabilities (natural sorting). GraphiDSS (UGA) utilizes this module to provide better sorting for things such as string that include numbers. If you have a list of filenames such as MaxTDay1.png through MaxTDay20.png normal sorting would not give you the results you want. Using natural sorting allows us to account for these things.

136. Redmine CFR 2000990**Add Mercantile (version 1.0.0)**

The mercantile module provides methods to bbox and XYZ tile information for a given geographic area. This module is used in GraphiDSS (UGA) to help facilitate the basemaps needed for use for a particular area.

137. Redmine CFR 2000991**Add Marshmallow (version 3.12.1)**

Marshmallow is a serialization/deserialization library in python. This is widely used throughout GraphiDSS to serialize complex objects to json for storage. This is how things such as templates and styles are saved and retrieved within the program.

138. Redmine CFR 2000992**Add Imageio-ffmpeg (version 0.4.3)**

An FFMPEG wrapper for python. This is used to create mp4 video files of graphic output from GraphiDSS.

139. Redmine CFR 2000993**Add Imageio (version 2.9.0)**

Imageio is a Python library that provides an easy interface to read and write a wide range of image data, including animated images, video, volumetric data, and scientific formats. It is built on top of numpy and pillow.

140. Redmine CFR 2000994**Add Geojson (version 2.5.0)**

The geojson python module provides the ability to read/write geojson formatted data.

141. Redmine CFR 2000995**Upgrade PostGIS to 2.5.5**

Upgrade PostGIS to 2.5.5. PostGIS 2.4 is soon to be end-of-life and is not compatible with PostgreSQL versions beyond 11.

142. Redmine CFR 2000996**Install new Python Modules for CHPS**

New FEWS feature (part of CHPS) for reservoir modeling (RTC-Tool) will need the following Python Module to run on CHPS FSS servers. Adding this to the RFCs AWIPS baseline will ensure that future installs will not remove them and proper upgrades are done. These are the modules:

numpy, scipy and pandas : Already exists on LX workstation. Will need to installed on CHPS FSS servers.

pymoca and casadi : These are new to AWIPS2. CFR #22512 and CFR #22524 are created for them respectively. Will need to be installed on the LX and CHPS FSS servers/VM.

Following are the CHPS FSS servers/VM:

RFCs : chps3, chps6 and chps9

NWCT/NWCO: chpsv3, chpsv6, chpsv9, chpsv12, chpsv15, chpsv18, chpsv21

143. Redmine CFR 2000997**Install "casadi" Python Module for CHPS on LX workstation**

New FEWS feature (part of CHPS) for reservoir modeling (RTC-Tool) will need the casadi Python Module to run. Adding this to the RFCs AWIPS baseline will ensure that future installs will not remove them and proper upgrades are done. It doesn't exist currently on AWIPS2. It would need to become part of the managed FOSS for the AWIPS2 software python.

144. Redmine CFR 2001002**Install "pymoca" Python Module for CHPS on LX workstation**

New FEWS feature (part of CHPS) for reservoir modeling (RTC-Tool) will need the pymoca Python Module to run. Adding this to the RFCs AWIPS baseline will ensure that future installs will not remove them and proper upgrades are done.

145. Redmine CFR 2001003**Add python module cached-property**

In order to build the latest version of h5py we will need to add the module cached-property to our AWIPS2 distribution.

Desired version is 1.5.2

Project homepage is <https://github.com/pydanny/cached-property/>.

146. Redmine CFR 2001004**Update python library h5py to version 3.1.0**

As part of the upgrade to libhdf5 being performed #8321, we will need to upgrade h5py to at least version 3.0 for compatibility with

libhdf5 version 1.12.

Desired version is 3.1.0.

147. Redmine CFR 2001012**Replace AWIPS Java Distribution With RHEL Java**

RHEL provides a Java 11 package so there is no reason for AWIPS to build and maintain this package anymore. Remove the AWIPS Java distribution and make AWIPS use RHEL's Java 11 instead.

148. Redmine CFR 2001013**Replace AWIPS Python Distribution With RHEL Python**

RHEL provides a Python 3 package so there is no reason for us to build and maintain our own Python version anymore. Remove the AWIPS Python distribution and make AWIPS use RHEL's Python 3 instead.

149. Redmine CFR 2001014**Title Remove LZF Filter From Baseline**

The LZF filter we are currently using is pulled from H5PY and then is loaded in the HDF5 package. Some HDF5 commands do not load the external filter correctly and since support was removed in HD5F 1.8.3 RODO #8321 migrated to GZIP Deflate compression. Once all new files are GZIP compression the LZF filter can be removed from baseline.

150. Redmine CFR 2001052**Add importlib_resources module to baseline Python**

This is in the Python baseline starting with v3.7. It would be very useful in AWIPS, which will have v3.6.

151. Redmine CFR 2001075**Additional Python Modules**

The NWS/NCRFC would like to request the following python modules be added to AWIPS: seaborn, bokeh, xarray, netcdf4-python, osgeo, gdal, pyproj, pygrib.

152. Redmine CFR 2001076**Replace basemap with cartopy**

As NCEP migrates from NAWIPS to AWIPS, many scripts are being converted to python. Some of these scripts generate graphics and images for end users and customers. The python package "cartopy" is needed for these migration activities, so we are requesting it be added.

153. Redmine CFR 2001107**Add python "MetPy" to facilitate NAWIPS-to-AWIPS migration activities**

The open source python libraries called "MetPy" distributed by Unidata are needed to help migrate NAWIPS products to the AWIPS platform. WFOs have also requested MetPy for various projects and local apps. It does not require many extra dependencies.

Originator Priority: 2.

154. Redmine CFR 2001136**Upgrade Security package - hdf5 >=1.12.0**

Many vulnerabilities in HDF5 libraries. (AWIPS baseline has hdf5 1.8.4.)

See https://www.cvedetails.com/vulnerability-list/vendor_id-15991/product_id-35054/year-2018/Hdfgroup-Hdf5.html.

155. Redmine CFR 2030142**Upgrade to cherrypy 18.6.1**

Upgrade to cherrypy 18.6.0

(Raytheon python module)

5. Known Problems, Workarounds, and Additional Release Notes

This section lists any workarounds or additional release notes that have been issued for the current release. They are identified by their Release Note title. It also lists any known problems (Priority: 1-Critical), either in the current release or in previous releases, which have been deferred to an unnamed future release. These are identified by the Problem title. RODO corresponds to Omaha Database.

Note: The content listed under the Release Note title can be found at the following link. These are updated periodically, so please check for the latest updates to the [OB21.4.1/21.3.1 Release Notes](#).


| DCS/DR Number: Topic/Summary | Notes/Comments |
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| DCS 22483 | This DCS added logging of all CAVE and PyPies requests for performance monitoring. This additional logging was excessive for developers running CAVE from eclipse using developer.product where all log messages are sent to the Console view. To alleviate this, logback-viz-core-developer.xml was modified to send the output of CaveRequestLogger, PyPiesRequestLogger, and the existing PerformanceLogger (from PerformanceStatus) to log files under ~/caveData/logs/consoleLogs/\${HOSTNAME}/ the same as when running CAVE from an RPM installation. |
| DCS 22483 | <p>If any action stalls the CAVE UI thread resulting in a temporary "freeze", the cave_yyyymmdd_hhmmss_pid_nnnn_logs.log will contain an entry should contain an entry of the form "UI Thread stalled for mer than 500 ms:" followed by a stack trace of the UI thread which should help identify what was taking place on the UI thread during the stall.</p> <p>Two new CAVE log files are now created when running CAVE: cave_yyyymmdd_hhmmss_pid_nnnn_request.log will contain logs for each Thrift request sent from the CAVE session. cave_yyyymmdd_hhmmss_pid_nnnn_request.log will contain logs for each PyPies request sent from the CAVE session. These logs should prove helpful when investigating CAVE performance issues.</p> <p>When a CAVE session ends, the logs for that session will be zipped up into a single file named cave_yyyymmdd_pid_nnnn.zip. The zipped logs will be purged after 30 days.</p> <p>Since the PyPies request logging was added in a common module there will also be edex-jvm-pypies.log log files on EDEX for any PyPies requests issued by the EDEX JVMs.</p> |
| DCS 22417 (2001432) | <p>The ROC SW CCR, NA20-00395 (ADD CAPABILITY TO CHANGE VMI TO AWIPS COMMAND/CONTROL) has been approved for implementation for RPG Build 21 necessitating a corresponding change in AWIPS. The ability to change the Velocity Measure Increment (0.5 m/s or 1.0 m/s) has been added to the AWIPS Command/Control on the RPG. This gives the user the ability to change the VMI when the weather situation warrants from AWIPS where the change was implemented as part of the the VCP Change Request GUI. This will be especially useful during hurricane situations when winds can exceed 63.5 m/s.</p> <p>The functionality implemented by this DCS will not be usable until RPG Build 22 is installed. Rollout is scheduled to begin in late summer 2023.</p> |
| DCS 22497 | Products 19 (R), 20 (R) and 27 (V) are the legacy 16 data level Base Reflectivity and Base Velocity products. The requirement for Level III archiving of these products is being removed from the RPG in Build 21. Products 19 and 20 will be removed from the AWIPS National RPS list, but will continue to be used as background images for |

| DCS/DR Number: Topic/Summary | Notes/Comments |
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| | Clutter Filter Editor and PRF Control in the RPG. The removed products have been moved to the Obsolete radar data menus in AWIPS, which can be activated via a site override if desired for use with archived data. |
| CFR 22529 (Omaha #8378) | PostGIS was upgraded to 2.5.5. A delta script must be ran as part of this. Read deltaScripts/21.4.1/8378/postgis-2.5.5-upgrade/README for instructions. |
| DCS 20958 (Omaha #8463) | <p>A new forceRecalc boolean flag was added as an optional parameter to the Forecaster.__init__() method in Init.py.</p> <p>If this flag is present and set to True, pre-existing data in the target database will be recalculated similarly to running the smartInit via ifpInit with the -a flag.</p> <p>This allows a singleton database to be used with multi-forecast hour models so that as each model run is received, the data will be re-calculated based on the new model run where it overlaps with data in the singleton database.</p> |
| DCS 22086 | <p>The Tsunami EAS GUI was developed by forecasters in Western Region to parse Tsunami Warning, Watch, and Advisory bulletins, format them into localized messages specific to a WFO's area of responsibility, and send the message to BMH for transmission over NWR, and activation of EAS/SAME alarms.</p> <p>Previously it has been a local application, mainly used by Western and Alaska coastal WFOs. It is now generalized to work for any coastal WFO (with proper configuration), and is part of the AWIPS baseline.</p> <p>ACTION: IF YOUR WFO ALREADY HAS TSUNAMI EAS GUI INSTALLED AS A LOCAL APPLICATION, run /awips2/apps/TsunamiEasGui/bin/copyTsunamiGui.sh to copy your configuration files from the LocalApps directory to /awips/apps/TsunamiEasGui.</p> |
| DCS 21882 | <p>The DCS migrates of the ATCF software to the AWIPS2 architecture to utilize the some powerful existing capabilities in AWIPS2. This software is NOT for WFOs, it is mainly intended for NHC, CPHC, WPC (when backup for NHC), and potentially JTWC. ATCF is implemented as a separate tool in AWIPS2 and will not affect other parts in AWIPS2.</p> <p>"The Automated Tropical Cyclone Forecast System (ATCF TM) is a software application developed by Naval Research Laboratory, Marine Meteorology Division that provides a toolkit to assist the tropical cyclone (TC) forecaster and to automate and streamline the TC forecast process. The ATCF system is an interactive forecast application that directly addresses the specialized functionality needed to allow forecasters to efficiently prepare the necessary products for the Joint Typhoon Warning Center (JTWC). A modified version is also used by the National Hurricane Center (NHC), the TC forecasting arm of the National Oceanographic and Atmospheric Administration (NOAA). ATCF is provided in two forms: a dedicated application installed on the user's computer, and a web-based version with essentially the same functionality but an insignificant local footprint. The ATCF system represents an on-going DoD/NOAA effort. The system is interconnected between DoD and NOAA sites (e.g. JTWC and NHC) and allows agencies to share TC data in a real-time mode on a common framework. The ATCF system is a uniquely specialized system and is used by the U.S. Navy and NOAA to safeguard civilian and military assets with timely TC warnings and advisories."</p> <p>This first release of AWIPS2 ATCF covers most common operational functionalities, including deck data ingestion and retrieval into/from ATCF database, similar application menu system/sidebar/dialogs, site and application configuration via AWIPS2 localization, displaying of A/B/F deck data and forecast track, editing and manually input of A/B/F deck data, storm and genesis life-cycle management, interactive forecast tools (track, intensity, wind radii, seas, and rebest), advisory</p> |

| DCS/DR Number: Topic/Summary | Notes/Comments |
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| | generation with user-configurable templates, and advisory editing in AWIPS2 text product editor with enhanced features. Other features and functionalities are under development and will be released in the future, including but not limited to, interaction with WCOSS2 for model calculation, view-only and simulation mode, data exchange between centers, data archiving, and end-of-year review. |
| DCS 22802 | The formatter GUI has added a reference point radius (0-400.0), which a value higher than 0 will draw all stations with 16 dashed lines each. When the user draw a point/line/polygon, it also draw a accuray point/line/polygon. The accuray point/line/polygon is what the fromline use. |
| DCS 21663 | The DAF now supports querying tables in the hydro database that do not have a time column. Example: <pre>req = DAL.newDataRequest('hydro') req.addIdentifier('table', 'location') req.setParameters('county', 'state')</pre> |
| DCS 20545 | This DCS baselines NSEA cursor readout functionality. ACTION: If the local app version has been installed as site or user localization files, it can be removed. PBZ COMMENT: Ticket opened with local app dev to create an uninstaller. Impossible to know all the files this local app created |
| DCS 22300 | This DCS added back in support for decoding and display of BUFR wind profiler data. NOAA/PSL will distribute data via LDM to NWS sites via region HQ. Added new profiler stations also. |
| DCS 22531 | Numerous GFE Procedures associated with the TC Wind Hazard Recommender will be installed at all sites. Most of these are only for use at NHC/CPHC/GUAM and can be confusing to forecasters since they will appear in GFE menus regardless. ACTION: It is recommended to hide these GFE Procedures from the menus by creating SITE-level overrides and setting MenuItems = [None] All WFOs: SendProposedToWFO Non-tropical WFOs: RemoveZoneMap, DefineBreakPoints All other added procedures are set to None for menu in BASE, so no override is necessary |
| DCS 22600 | Backup services enhancements 🌟 IMPORTANT READING Backup Service Process User Manual (VLab PDF) |
| DR 20201 | files under /awips2/edex/data/share/hydroapps/precip_proc/bin/* and /awips2/edex/data/share/hydroapps/precip_proc/local/bin/* will be preserved and not overridden. Remove the file if you want a new copy to appear. transmit_rfc_qpe for /bin/ and /local/bin -Set PRODUCT_ID using 'fxa_local_site' from Apps_defaults - e.g: export FXA_LOCAL_SITE=\$(get_apps_defaults fxa_local_site), export PRODUCT_ID="K"\$FXA_LOCAL_SITE"QPEBIN" transmit_rfc_bias - Set PRODUCT_ID using 'fxa_local_site' from Apps_defaults - get recipients from 'mpe_recipients' from Apps_defaults run_mpe_fieldgen |

| DCS/DR Number: Topic/Summary | Notes/Comments |
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| | -If hours is set to the default of 3 (usually run by quartz timer), get custom hour from Apps_default. If hours is 1 (called from mpe gui during regeneration), don't call run_build_hourly, and disable sshp scripts. |
| DR23265 | Added Tsunami EAS and UGA/GraphiDSS to startup menu |
| DCS 22976 | WarnGen Snow Squall Warning site level templates must be updated - see Part 3 of the 21.4.1 WarnGen instructions. 21.4.1 Installation Mod Note already covers these actions. This item is left for informational/documentation purposes. |
| DR 22724 | WarnGen geospatial fixes are added for large cities in the pathcast - see Part 4 of the 21.4.1 WarnGen instructions. 21.4.1 Installation Mod Note already covers these actions. This item is left for informational/documentation purposes. |
| DCS 22296 | WarnGen can no longer be used to issue flood products - see Part 2 of the 21.4.1 WarnGen instructions. 21.4.1 Installation Mod Note already covers these actions. This item is left for informational/documentation purposes. |
| DCS 22089 | ACTION: GraphiDSS/UGA is now baselined and part of the AWIPS installation. Here is a google doc link with important information and required migration steps from the old localapps version. https://docs.google.com/document/d/1V9hTqK5fqB40EnnnMxGfxBJ-CI-zL8W1A-fABoZAoxM/edit?usp=sharing There are a number of local scripts and local applications that use GraphiDSS. Beta sites at least will need to make local modifications. Many of the localapps have install scripts that can configure the new path /awips2/edex/data/share/graphidss But it may not be practical to run a full install script to fix a path and the path may be in an etc/ file that the script won't touch. There may have to be other solutions. As a start, <pre>cd /localapps/install svn export https://vlab.noaa.gov/svn/vuy/trunk/a2/localapps/21.4.1 cd 21.4.1 ./checkGDSSpath.sh</pre> Default is to start with /localapps/runtime. Provide another path as an argument. IMPACT: Localapps which use GDSS may fail until the paths are updated. |
| DCS 23014 and DR 23379 | AbsTime has been wrapped in Java code due to python 3.8 upgrade. This has resulted in variables that reference time (for example timeRange.startTime()) to convert from datetime type objects to AbsTime objects. Compare AbsTime from 20.3.2 (https://drive.google.com/file/d/1bs82TDdKr5k6MdlykdEywdmygfUrEnov/view?usp=sharing) to 21.4.1 (https://drive.google.com/file/d/1VMFaBzC2kWKyxcxXGWawydWS3wrpnB0Z/view?usp=sharing) |
| Python 3.7 Changes - Some internal imports (os.errno) have been removed | From https://docs.python.org/3/whatsnew/3.7.html#changes-in-the-python-api : "Several undocumented internal imports were removed. One example is that os.errno is no longer available; use import errno directly instead. Note that such undocumented internal imports may be removed any time without notice, even in micro version releases." |

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| | <p>Action Replace <code>`import os.errno`</code> with <code>`import errno`</code> if you use it.</p> <p>Impacts Localapps may fail if they use these removed functions.</p> |
| <p>Numpy 1.16 -> 1.22 Changes np.rank replaced by np.ndim (CFR 23052)</p> <p>Impacts: Localapps may fail if they use these removed functions.</p> | <p>np.rank has been removed. This was deprecated in NumPy 1.10 and has been replaced by np.ndim. (gh-14039) https://numpy.org/devdocs/release/1.18.0-notes.html#expired-deprecations</p> <p>Impacts Localapps may fail if they use these removed functions.</p> <p>Additional Details Additional Numpy Removals/Changes should be reviewed in the following deprecation sections... https://numpy.org/devdocs/release/1.19.0-notes.html#expired-deprecations https://numpy.org/devdocs/release/1.20.0-notes.html#expired-deprecations https://numpy.org/devdocs/release/1.21.0-notes.html#expired-deprecations https://numpy.org/devdocs/release/1.22.0-notes.html#expired-deprecations</p> |
| <p>Matplotlib 2.2.4 -> 3.4.3 Changes (CFRs 22778 and 22975)</p> | <p>matplotlib cbook.null has been removed. This was deprecated by Matplotlib 3.0 along with many other cbook and other functions: https://matplotlib.org/stable/api/prev_api_changes/api_changes_3.0.0.html#deprecated-apis</p> <p>Impacts Localapps may fail if they use these removed functions.</p> <p>Additional Details Additional Matplotlib Removals/Changes: https://matplotlib.org/stable/api/prev_api_changes/api_changes_3.1.0.html#removals https://matplotlib.org/stable/api/prev_api_changes/api_changes_3.2.0.html#deprecations https://matplotlib.org/stable/api/prev_api_changes/api_changes_3.3.0.html#deprecations https://matplotlib.org/stable/api/prev_api_changes/api_changes_3.3.1.html#deprecations https://matplotlib.org/stable/api/prev_api_changes/api_changes_3.4.0.html#deprecations</p> |
| <p>DCS 22626 (RODO 8590)</p> | <p>New levels are added to the BASE LevelMappingFile.xml, so site-level changes will need to be merged into the new base file (NOTE: offices must run through NH23-001 to grab these updated changes with 21.4.1 and when doing so, no additional action will be needed for the LevelMappingFile changes)</p> |
| <p>DCS 22053</p> | <p>CAVE->Menus->obs->baseMetar.xml has an additional <substitute> line added for the precipitation plot svg (plot design) filename. SITE versions will have to be compared to BASE and adjusted as needed. If you have colorized ASOS plots local app installed, this is a required post-install followup.</p> |
| <p>DR 22428</p> | <p>The ROC testing of RPG Build 19.1 with AWIPS found that the date legend at the top left of the screen for the Power Removed Control product was showing an incorrect date. This DR fixes the date display. The workaround is listed in the DR.</p> |
| <p>DR 22414</p> | <p>The ROC started Confidence Testing for RPG Build 19.1 and while testing out the PRM product with No Filter and All Bins settings noticed an issue. While having a</p> |

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| | clutter censor zone defined between 2 and 32 nmi between 155 and 300 deg azimuth, the PRM product in AWIPS showed No Filter bins for 2 to 64 nmi between 155 and 300 deg azimuth. This was determined to be caused by the incorrect resolution settings in the radar configuration in EDEX and Radar Server. The image ranges will display 2X too far until a fix is deployed. |
| DCS 22209 | The default color curve applied from radarImageryStyleRules.xml is currently tied to the source velocity's product code (i.e. 154 or 99). This DCS allows the super-res and 8Bit SRM products to have their own color curve independent of the source velocity's product code. |
| DCS 22082 | The ROC is removing Product List Message from the SPG in Build 11. The product has also been now removed from AWIPS as obsolete. If a site has a local override for the common_static file textCategoryClass.txt file, the line containing PTL will need to be removed from it. |
| DCS 21909 | The ROC has added two new fields to the GSM VCP Supplemental Data in RPG Build 19. The new bit settings are part of the halfword 58 (VCP Supplemental Data). Bit 7 being set will indicate that a Base Tilt Enabled VCP is in use; bit 6 being set will indicate that MPDA VCP is in use. Currently VCP 112 is the only MPDA VCP. This DCS adds the new fields in AWIPS. The values are displayed in the radar server log and the NEXRAD Unit Status display. |
| DCS 21505 | The following products will be coming out of SPG Build 10 and were removed from AWIPS menus: 187 Reflectivity 16 level 0.30 res (Z), 183 Base Velocity 16 level 0.15 res (V), 137 User Selectable Layer Composite Reflectivity 16 level 1.0 res (ULR), 181 Base Reflectivity 16 level 0.15 res (Z). Product 181 was removed from the product request menus, but not from other menus as per requirements specification. |
| DCS 20903 | Clutter Filter Control product is superseded by the Power Removed Control product starting with RPG Build 19. Once no RPG Build 18 or earlier installs remain in the field, CFC can be removed from AWIPS, since it will no longer be generated by the RPG. This DCS removes the obsolete CFC. |
| DCS22305 | Summary of Hazard Services changes with DCS22305 in OB21.3.1 |
| DCS 21721 | <p>REMOVED PositiveEnergyAloft and NegativeEnergyLowLevel Renamed IceAccum##PrcntIF##hr to IceAccum##PrcntIF##. Renamed SnowAmt##PrcntIF##hr to SnowAmt##PrcntIF##. Added QPF05PrcntIF24, QPF25PrcntIF24, QPF75PrcntIF24, QPF95PrcntIF24, MxMnTprobBelowNeg40, MxMnTprobBelowNeg20, MxMnTprobBelow0, MxMnTprobBelow28, MxMnTprobBelow32, MxMnTprobAbove80, MxMnTprobAbove90, MxMnTprobAbove100, MxMnTprobAbove110, MxMnTprobAbove120, MxMnTSprd, ProbSnowGE01F24, ProbSnowGE02F24, ProbSnowGE04F24, ProbSnowGE06F24, ProbSnowGE08F24, ProbSnowGE12F24, ProbSnowGE18F24</p> <p>ACTIONS: </p> <p>* If your site does not use PositiveEnergyAloft or NegativeEnergyLowLevel for precipitation type forecasting, you should remove any references in your localConfig.py; otherwise, IFP will fail to start.</p> <p>* If your site will continue to use PositiveEnergyAloft or NegativeEnergyLowLevel, you need to add the definitions to your localConfig.py.</p> <pre> ... PositiveEnergyAloft = ("PositiveEnergyAloft" , SCALAR, "j/kg", "Positive energy aloft" , 500.0, 0.0, 1, NO) NegativeEnergyLowLevel = ("NegativeEnergyLowLevel" , SCALAR, "j/kg", "Negative energy in the low levels" , 0.0, -500.0, 1, NO) </pre> |

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| | <code>parms.append([PositiveEnergyAloft, NegativeEnergyLowLevel], TC1))</code> ... |
| DCS 21720 | Moved CWA from PGEN to D2D/Tool/CWA. Improved functionalities: reset issuance #, add state IDs. |
| DCS 21493 | <p>A new command-line tool has been created: <code>/awips2/fxa/bin/updateJMSPassword</code>. This tool is designed to update the encrypted passwords file used to decrypt the java key stores used to connect to QPID.</p> <p>After performing the EDEX upgrade, the system admin should run the command on all systems that run EDEX: <code>/awips2/fxa/bin/updateJMSPassword</code> <code>/awips2/edex/conf/jms/auth/passwords.properties</code></p> <p>For the individual end users, a <code>passwords.properties</code> needs to be created at the path <code>~/.qpuid/passwords.properties</code>. Copying the file from the EDEX server is okay. Then run the command: <code>/awips2/fxa/bin/updateJMSPassword</code> <code>~/.qpuid/passwords.properties</code></p> |
| DCS 22547 | For the MultiSensor Pass1 and Pass2 parameters of MRMS_HI_0500, until early 2022, the data provided by NSSL uses an ever so slightly different gridcoverage pattern. The data will store and would be available via the product browser, but in order to get it to populate in the MRMS menus, a site-level gridcoverage xml would be needed with the correct nx,ny,la1,lo1 info that the parameters are using to map it correctly to MRMS_HI_0500. If HFO gets 21.3.1 before the updated MRMS is provided by NSSL with the correct gridcoverage (in early 2022), and isn't sure how to create the site-level gridcoverage xml, reach out to Kristen Delack for more info. |
| Python 3.8 Changes - "is" and "is not" SyntaxWarnings | <p>From https://docs.python.org/3/whatsnew/3.8.html#porting-to-python-3-8: "The compiler now produces a SyntaxWarning when identity checks ("is" and "is not") are used with certain types of literals (e.g. strings, numbers). These can often work by accident in CPython, but are not guaranteed by the language spec. The warning advises users to use equality tests (== and !=) instead. (Contributed by Serhiy Storchaka in bpo-34850.)"</p> <p>These are just warnings; however, it would behoove you to address this change ahead of time (replace "is"/"is not" with "==" cant=" when comparing literals) to avoid receiving a deluge of messages once 21.4.1 is installed.</p> <p>See DR 23092 below for a script which can help identify these potential code issues after 21.4.1 is installed.</p> |
| DR 23092 | A delta script was provided with this check in for sites to use to identify possible "literal is" in non-baseline code. After the 21.4.1 repository has been synced, the script can be found in <code>/data/fxa/INSTALL/awips2/scripts/deltaScripts/21.4.1</code> and is called stringLiteralCompCheck.sh -- if you would like a copy of it before then, call the NCF and ask that it be copied from another site and/or email Kristen Delack and she can send it to you. Instructions on how to run are included at the top of the script. |
| TT 364540 | Note that the GFE validation button can take longer than it used to in 20.3.2. It's variable, sometimes it seems normal, other times it seems longer depending on the system. |
| GFE Smooth | <p>If any GFE tools or procedures call "parm.smooth" such as a Smooth5X or Smooth10X smart tool, the required number of arguments has changed when invoking <code>parm.smooth</code></p> <p>Prior to 21.4.1, a typical call would look like parm.smooth(time, editArea).</p> |

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| | In 21.4.1, a third <i>smoothCount</i> argument is required or the tool will crash. Thus, to replicate the effects of running <i>parm.smooth</i> 5 times, it would be called as parm.smooth(time, editArea, 5) |
| SacGridImageMaker | The ../SacGridImageMaker/py/ pyproj directory needs to be deleted after installing 21.4.1 for the application to work correctly. Impact SGIM will not run until this is done. |
| Numpy 1.16 -> 1.17 Changes np.load now requires `allow_pickle=True` if loading pickled data (CVE-2019-6446) (CFR23052) | Procedures using np.load on pickled data will need to add `allow_pickle=True` Before np.load(loc, encoding='latin1') After np.load(loc, encoding='latin1', allow_pickle='True') https://numpy.org/devdocs/release/1.17.0-notes.html#unpickling-while-loading-requires-explicit-opt-in Impact Procedures using np.load on pickled data will fail with "Cannot load file containing pickled data when allow_pickle=False" |
| Python Environment: Scripts sometimes fail to import DataAccessLayer | The Python interpreter in 21.4.1 has moved to the native Red Hat provided version in /opt/rh/... (/awips2/python/bin/python is just a symlink). This can cause some Python scripts to fail to "see" shared libraries in /awips2/python/lib if a script or cronjob doesn't properly set the AWIPS Python environment. Example, `import ufp.dataaccess import DataAccessLayer` may fail to import `shapely.geos` because it isn't searching `/awips2/python/lib` for the available shared library. ACTION: If you run a Python script directly on a cron or via sudo, you will need to source the AWIPS Python environment prior to running the script. Before * * * * * awips /localapps/runtime/MyApp/bin/myapp.py After (one-line) * * * * * awips csh -c ". /etc/profile.d/awips2Python.csh; /localapps/runtime/MyApp/bin/myapp.py" Alternatively, use a wrapper script to source the environment and run the python script \$ grep myapp.sh /etc/cron.d/a2SITEpvlcron * * * * * awips /localapps/runtime/MyApp/bin/myapp.sh \$ cat myapp.sh #!/bin/bash . /etc/profile.d/awips2Python.sh /localapps/runtime/MyApp/bin/myapp.py |
| DCS 22505 | The following SITE-level GFE Text Products should be deleted: - Hazard_TCV_NTFTF - Hazard_TCV_XXX_NTFTF (XXX is SITE ID) - HLSTCV_Common_NTFTF Also, edit your SITE-level Hazard_TCV_XXX_Definition Text Utility to ensure the |

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| | 'displayName' matches the following: <i>Definition["displayName"] = "Hazard_TCV"</i> |
| DCS 2001514 (Legacy 22007) | <p>Due to changes in 2001514, Text Formatters running from text database Triggers may fail to retrieve complete headline information because the EDEX servers do not have the required Hazard Services plugin installed to perform that Registry lookup.</p> <p>Impact: Trigger initiated Formatters may return inconsistent/incomplete headlines compared to when they are run within GFE or PV cron.</p> <p>ACTION: Text formatters executed from text database Triggers need to be modified to SSH to the PV servers in order to run correctly. This can be done at any time prior to 21.4.1.</p> <p>Add a check like the following into your Formatter run script:</p> <pre>if [[\$(hostname) =~ ^dv[3-8]]]; then ssh -q pv1 "/localapps/runtime/MyFormatter.sh \$@" > /localapps/logs/MyFormatter.log" exit fi</pre> <p>This checks to see if your script is running on an EDEX server. If it is, it reruns itself on the PV1. A more comprehensive guide can be found at Guide: Running Formatters and Localapps Via AWIPS Triggers</p> |

Appendix A. XML/base, WarnGen Template and RPM Changes in OB 20.3.2

XML/base and WarnGen Template changes

cave/com.raytheon.uf.viz.profiler/localization/bundles/maps/profilers.xml
 cave/com.raytheon.uf.viz.profiler/localization/bundles/ProfilerPlot.xml
 cave/com.raytheon.uf.viz.profiler/localization/bundles/UpperAirProfiler.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/baseAlaskaProfiler.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/baseEastProfiler.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/baseNPNPlot.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/baseProfilerPlot.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/baseProfiler.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/baseWestProfiler.xml
 cave/com.raytheon.uf.viz.profiler/localization/menus/profiler/index.xml
 cave/com.raytheon.viz.radar/localization/menus/radar/baseTerminalRadarObsolete.xml
 cave/com.raytheon.viz.radar/localization/menus/radar/dualPol/terminal/baseRadarTerminalObsolete.xml
 cave/com.raytheon.viz.radar/localization/menus/radar/withOp2/baseRadarFourPanelBestRes.xml
 cave/com.raytheon.viz.radar/localization/menus/radar/withOp2/baseRadarFourPanelBestRes.xml
 cave/com.raytheon.viz.radar/localization/menus/radar/withOp3/baseRadarFourPanelBestRes.xml
 cave/com.raytheon.viz.satellite/localization/bundles/glomosaic_bundle.xml
 cave/com.raytheon.viz.volumebrowser/localization/menus/volumebrowser/fields/planview-timeseries/ensemble/href/snow.xml
 common/com.raytheon.uf.common.derivparam/utility/common_static/base/derivedParameters/definitions/uvQC.xml
 common/gov.noaa.nws.ocp.common.atcf.configuration/utility/common_static/base/atcf/config/atcfsites.xml
 common/gov.noaa.nws.ocp.common.atcf.configuration/utility/common_static/base/atcf/config/sidebar_selections.xml
 common/gov.noaa.nws.ocp.common.atcf.configuration/utility/common_static/base/atcf/config/stormstates.xml
 common/gov.noaa.nws.ocp.common.dataplugin.atcf/utility/common_static/base/atcf/interpolator/interpolator.xml
 common/gov.noaa.nws.ocp.common.drawing/utility/common_static/base/drawing/CoastBreakpoints.xml
 common/gov.noaa.nws.ocp.common.drawing/utility/common_static/base/drawing/IslandBreakpoints.xml
 common/gov.noaa.nws.ocp.common.drawing/utility/common_static/base/drawing/LinePatterns.xml
 common/gov.noaa.nws.ocp.common.drawing/utility/common_static/base/drawing/SymbolPatterns.xml
 common/gov.noaa.nws.ocp.common.drawing/utility/common_static/base/drawing/WaterBreakpoints.xml
 common/gov.noaa.nws.ocp.common.localization.cwagenerator/utility/common_static/base/cwsu/cwaGeneratorConfig.xml
 edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-10km_BlKShrMag_StdEnv.xml
 edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-10km_BlKShrVect_StdEnv.xml
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 edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-1km_MCon_StdEnv.xml
 edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-1km_MinTw_StdEnv.xml

edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-1km_MixRat_StdEnv.xml
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edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-2km_EHI_StdEnv.xml
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edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_0-3km_BlKShrVect_StdEnv.xml
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edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_700mb_WindStreamlines_StdEnv.xml
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edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_MCon_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_MoistureFlux_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_MoistureTransMag_StdEnv.xml
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edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_Td_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_TEAdv_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_TE_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_T_StdEnv.xml

edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_Wind_StdEnv.xml
|
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_850mb_WindStreamlines_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_925mb_Hgt_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_925mb_MCon_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_925mb_MoistureFlux_StdEnv.xml
edex/gov.noaa.nws.edex.nsea.cursor/utility/common_static/base/bundles/volume/NSEA/NSEA_925mb_MoistureTransMag_StdEnv.xml
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RPM Changes

awips2
awips2-adapt-native
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awips2-boost
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awips2-cave-gfeclient
awips2-cave-ncep
awips2-cave-wrapper
awips2-cli
awips2-collab-dataserver
awips2-common-base
awips2-common-foss
awips2-common-java-extensions
awips2-database
awips2-database-server-configuration
awips2-database-standalone-configuration
awips2-data.hdf5-topo
awips2-devel
awips2-edex
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awips2-edex-archive
awips2-edex-aviation
awips2-edex-backupsvc
awips2-edex-base
awips2-edex-binlightning
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awips2-python-tables
awips2-python-tempora
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