



Raytheon

AWIPS Operational Build 16.2.1: Final Release Notes

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Change History

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Overview

The Release Notes have been prepared for AWIPS software release OB 16.2.1. 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 **229 DRs** including that were passed at the Raytheon Facility Test Labs and included in the current release, OB 16.2.1. 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 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: 78 Design Changes and 10 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 229 Discrepancy Reports (DRs) passed at the Raytheon Facility Test Labs and included in the current release (OB 16.2.1). 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 16.2.1

| No. | Redmine | Description |
|-----|---------|---|
| 1 | 18947 | Text Workstation: QC Error if enough UGCs are listed, sending one to 2nd line |
| 2 | 18931 | Problem with ECMWF dropping grids at 16.2.1 sites |
| 3 | 18926 | GFE: Map combination change not picked up until restart of formatter launcher |
| 4 | 18921 | Remove CAVE dependencies in awips2-common-base |
| 5 | 18915 | Lightning product lists are incorrect (DCS 17675) |
| 6 | 18910 | Change CAVE log purging to add check for find commands already running |
| 7 | 18909 | RadarServer does not retrieve all products for "all cuts" OTR/RMR requests from dial radars |
| 8 | 18905 | D2D: SPS plots in D2D are not updating for new products |
| 9 | 18903 | Data Delivery: Deleted subscriptions are not recorded in the Notification Center |
| 10 | 18891 | GFE: Running smart tool over time range with no grids cause parm to be immutable |
| 11 | 18888 | Add support for pre-TCV in TPCWatchSrv |
| 12 | 18884 | WarnGen Templates: Impact templates fail to run when source/basis bullet is not selected |
| 13 | 18882 | GFE: "Unable to load metadata" error in GFE smart tools after OB16.2.1 install |
| 14 | 18880 | WarnGen Templates: Fixes for a few case issues in Impact SVS |
| 15 | 18874 | D2D: Sampling issues with cross-section plots |
| 16 | 18870 | TextWS: Mixed case to upper case conversion can exceed 69 character maximum line length |
| 17 | 18865 | MPE: Hourly gages display off one pixel |
| 18 | 18864 | WarnGen Templates: Improve CTA parse strings to be case independent |
| 19 | 18849 | Total Lightning (ENTLN) Unknown flash type Error |

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|----|-------|---|
| 20 | 18809 | Radar Mosaic not updating properly on iMet |
| 21 | 18804 | ISC_Discrepancies Tool not working in 16.2.1 for MinT, MaxT, MinRH, MaxRH and PoP |
| 22 | 18775 | FFMP - ARI Guidance should plot for the 12 and 24 hr Basin Trend Graphs |
| 23 | 18773 | GFE BOIVerify - BOIVerify fails after 16.2.1 numpy upgrade |
| 24 | 18772 | FFMP - QPFSCAN image is offset from the SCAN QPF plot |
| 25 | 18763 | WMOHeader class regular expression causing problem for binary bulletin messages |
| 26 | 18751 | WarnGen: Switching between templates using specific set of steps can cause storm track to change to 180 or 0 degrees |
| 27 | 18748 | Updates to allow for proper storage and display of some PQPF/PPQPF data |
| 28 | 18747 | Unable to create property map error received in AlertViz with vaa forecast product |
| 29 | 18746 | HydroBase - basins.dat not imported correctly and process won't finish in Hydrobase |
| 30 | 18742 | FFMP: Refresh issues with Guidance and QPFSCAN selections in Basin Table and Trend Graph |
| 31 | 18737 | NIC local application - correct RipRisk Parm definition in serverConfig.py |
| 32 | 18731 | TDWR 8 bit spectrum width issues |
| 33 | 18727 | Products can transmit in Mixed Case while using Tools -> Text Window |
| 34 | 18725 | Add ncep uengine plugin to regions for 16.1.X thin client support |
| 35 | 18723 | MPE Gage Table: the Diff (Gage-Grid) column is incorrect when compared to a field that is not included in the mpe_generate_list token |
| 36 | 18720 | WarnGen: AV error when site with extensions backs up non-coastal site |
| 37 | 18716 | FFMP: Some RFCFFG and QPFSCAN data missing because the domain is limited to the HRAP grid domain |
| 38 | 18715 | FFMP: Correct FFMPSourceConfig.xml |
| 39 | 18708 | MPE Gage Table: four-column sorting is producing an incorrect sort order |
| 40 | 18695 | Add 72 hour Percentile PQPF data to the Volume Browser |
| 41 | 18692 | Subgridding along boundaries may fail |
| 42 | 18667 | D2D: Load modes "Prognosis Loop" and "dProg/dt" throwing AV error when selecting forecast time |

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|----|-------|---|
| 43 | 18664 | AvnFPS: When TAF product consists of -RA BR weather elements, it flags as an error found and displays the incorrect bubble text |
| 44 | 18661 | NullPointerExceptions when loading FFMP or swapping layers in FFMP table |
| 45 | 18658 | MRMS gridded coverage query failing in FFMP |
| 46 | 18657 | Derived paramters that import other models can fail if the base model grid is "larger" than the imported grid |
| 47 | 18640 | FFMP - Basin Trend Graph scale problems |
| 48 | 18638 | FFMP - Basin Trend Graph scale problems |
| 49 | 18623 | GFE NWPS - Banner messages include test phrases |
| 50 | 18621 | Jep change in OB 16.1.1 cause some uEngine to not work |
| 51 | 18620 | Isc database missing local parms: serverConfig.py |
| 52 | 18602 | RFCFFG data is unavailable in FFMP at times |
| 53 | 18600 | GFE - Remove unnecessary references in Run_NWPS.py procedure |
| 54 | 18591 | Thin Client - Changing servers at startup results in errors |
| 55 | 18588 | Paint Error when NUCAPS Sounding Product Updates in D2D |
| 56 | 18584 | NWRWAVES should be able to handle a product that doesn't have MND |
| 57 | 18569 | Add delta script to remove Site Level post processor GFSPProcessor |
| 58 | 18568 | Update gfesuite rpms to handle ENV steps in DCS 17495 |
| 59 | 18562 | GFE ISC - ISC_Discrepancies not working for time range between current time and zulu |
| 60 | 18533 | EDEX clustered context routes do not restart after being suspended |
| 61 | 18524 | Spot Request Errors when Running Archiver |
| 62 | 18500 | Blank panels when loading some plots into 4 panel displays |
| 63 | 18498 | D2D: Scales did not correctly update with DCS 18223 |
| 64 | 18496 | Write delta scripts to handle site level scalesInfo.xml and warnings index.xml |
| 65 | 18472 | Fix LDM GOES memory leak and installation issues |
| 66 | 18471 | Ensemble Tool: Error building CAVE RPM |
| 67 | 18459 | Add MHS message code for Hazard Services |
| 68 | 18447 | December 2015 security patches |
| 69 | 18439 | AvnFPS: Errors in CigVis Dist charts |

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|----|-------|---|
| 70 | 18432 | AvnFPS sound file directory changed |
| 71 | 18423 | Add L2 Land Surface Temp menu items |
| 72 | 18415 | Remove relative URL workaround for PDA |
| 73 | 18404 | FFMP: BASE level FFMPSourceConfig.xml file missing guidanceType tag for FFG0624hr |
| 74 | 18396 | AvnFPS: The Validate button remains active when selecting SITE ID with no climate .gz files |
| 75 | 18395 | AvnFPS: When append new data from NCDC for multiple sites it only processes a single site |
| 76 | 18393 | Copy/Paste error in ActiveTableUtil.convertToDict() |
| 77 | 18392 | Update userRoles.xml for Hazard Services |
| 78 | 18573 | Precip Accum Post Processor error when levelId = 0 on insertion of created grid |
| 79 | 18372 | Improve compatibility of triangulated image rendering |
| 80 | 18371 | AlertViz: fxaAnnounce and sendNotificationMsg not working for LOCAL messages |
| 81 | 18362 | serverConfig.py POWT group defined incorrectly |
| 82 | 18360 | PDA requests now require SOAPAction headers |
| 83 | 18359 | AvnFPS: AlertViz error message displays while loading the AvnFPS Monitor GUI |
| 84 | 18344 | GOES-R channel DVB pids not displayed/processed on downlink CP at sites |
| 85 | 18325 | Add support to site CP retransmit process for new channels |
| 86 | 18323 | GFE: Received NPE error when loading various model grids |
| 87 | 18322 | Relocate avnfps hdf5 to edex shared |
| 88 | 18321 | Re-write FFMPGeometryFactory to use FFMPMonitor loading |
| 89 | 18280 | InterrogationKeys don't implement hashCode correctly |
| 90 | 18279 | Master Rights File and license updates for 16.2.1 |
| 91 | 18278 | Registry auth exceptions buried when security properties alias is wrong |
| 92 | 18275 | Disable transmission of SHEF products from Hydro Time Series in DRT/Operational mode |
| 93 | 18274 | Pressing the Esc key on the connection dialog incorrectly triggers Ok instead of Cancel |
| 94 | 18273 | Error returned when selecting the Attributes... button after the MRMS-RadarOnlyQPF radio button is selected |
| 95 | 18270 | Ensemble Tool: Resource ingest mechanism must ensure correct tool layer to resource mapping |

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| 96 | 18252 | EnsembleTool needs to have no active object references once closed |
| 97 | 18247 | Ensemble Tool: Updates to feature.xml and MANIFEST.MF |
| 98 | 18246 | GFS20PostProcessor does not handle CP6hr/CP3hr grids |
| 99 | 18234 | Additional DRT mode fixes for GFE in order to support new SmartScript APIs |
| 100 | 18233 | UtilityNotify bean access not correct for registry JVM's |
| 101 | 18232 | PyPies silently stores incorrect values when replacing record with different data type |
| 102 | 18231 | Extend FFMP HFO emergency fix to all HUC levels |
| 103 | 18230 | AvnFPS ingesting some TAFs causes Null Pointer Exception in the TAF parser |
| 104 | 18229 | Key bindings keep users from typing in the Compose text box in shared display sessions after transfer leadership |
| 105 | 18228 | Errors storing to child taf tables |
| 106 | 18227 | Modified subscriptions are kept in memory when the Create Subscription dialog is not closed |
| 107 | 18226 | AvnFPS: Popup menu persists in the AvnFPS TAF Editor text field if pasted text exceeds the width of the text field |
| 108 | 18225 | Fix PurgeJob logging |
| 109 | 18186 | Fix West Texas LMA in menu |
| 110 | 18177 | Remove calls to telnet from sendToNWR and NWRBrowser |
| 111 | 18165 | Text Workstation warning product expiration notices have no sound |
| 112 | 18152 | Enable the GRE, GRW, EXP, and ENC channels in ldm |
| 113 | 18091 | Incorrect envelope intersection for some southern polar stereographic projections |
| 114 | 18089 | satellite_spatial table is never purged |
| 115 | 18088 | Use brute force intersection as fallback if normal envelope intersection fails |
| 116 | 18087 | Madis decoder processing can return an incomplete madis record |
| 117 | 18086 | PyPIES needs to handle fill values more consistently |
| 118 | 18085 | Rare metar decode/store error |
| 119 | 18084 | Removal of datauri constraint has allowed duplicates in database |
| 120 | 18082 | Removal of datauri constraint has allowed duplicates in database |

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| 121 | 18080 | GFE: Remove use of self._empty and self._minus from baseline SmartInits, SmartTools, and Procedures |
| 122 | 18078 | GFE leaks memory on perspective close |
| 123 | 18076 | Update NumpyJavaEnforcer to log when it alters the dtype of an array |
| 124 | 18067 | GFE leaks memory in DataManager.doIsRequestQuery() |
| 125 | 18066 | Issues with D2D's VarHeightGraph, TimeSeriesGraph, and possibly other graphs |
| 126 | 18065 | Error returned when loading Profiler data during data update |
| 127 | 18064 | Name Required popup window missing a Cancel button |
| 128 | 18062 | LocalizationFile methods are too tightly coupled to java.io.File |
| 129 | 18061 | AvnFPS: Problem with syntax checking (wrong error message) |
| 130 | 18060 | GFE edit area cache is never releasing any edit areas leading to eventual OutOfMemory exceptions |
| 131 | 18058 | GL string rendering doesn't render underlines, overlines, or strikethrough correctly |
| 132 | 18054 | NWPS: Derived parameters Wave1-10 and Period1-10 displayable at extraneous levels; should be Sfc only |
| 133 | 18021 | Derived parameter notification causes first inventory to initialize twice |
| 134 | 18018 | Full Disk Himawari Imagery does not display full resolution near WarnGen: Unable to COR CAN/CON products and subsequent products in a product lifecycle the edges |
| 135 | 18017 | WarnGen: Unable to COR CAN/CON products and subsequent products in a product lifecycle |
| 136 | 18011 | AvnFPS: Problem with Restore function |
| 137 | 17992 | Fix pqact LAMP pattern to ingest Wind and Sky elements |
| 138 | 17964 | Tracking Meteogram: Zooming into events does not result in plot being redrawn |
| 139 | 17963 | FFMP: DPR overestimating basin rain averages |
| 140 | 17960 | Hydro perspective leaves a blank space when trying to save image or print in reverse |
| 141 | 17937 | AvnFPS: Can't issue TAF with different forecaster ID |
| 142 | 17933 | WarnGen: Add capability to suppress "ern" in, for example, Southern Texas for state location |
| 143 | 17909 | NWRWAVES Test script (nwrwavestest.csh) needs to upgrade to the AWIPS 2 environment |

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| 144 | 17908 | WarnGen: End time changes randomly |
| 145 | 17860 | HPE: Need to change logic for dual-pol mean-field bias use |
| 146 | 17806 | MPE fieldgen: mpe_qpe fieldtype can not be set to a dual pol mosaic |
| 147 | 17778 | Lightning display sometimes skips a minute in one-minute display (NLDN, GLD360, ENTLN) |
| 148 | 17753 | Ensemble Tool must have hard-coded layouts removed, make them dynamic |
| 149 | 17732 | Unable to display wave height grids in GFE |
| 150 | 17731 | Radar Meso SAILS time matching issue |
| 151 | 17701 | GFE: Formatters not reporting hazards from ISC database |
| 152 | 17612 | Null pointer Exception in D2DTimeMatcher |
| 153 | 17568 | Radar: Incorrect 8-bit Spectrum Width display |
| 154 | 17558 | HPE/DHR processing error stacktrace OHD |
| 155 | 17519 | NullPointerException when gridded lightning data overlaid on satellite/radar/model images |
| 156 | 17501 | WarnGen: QC creates a false alert when a telephone number is included in a warning product |
| 157 | 17499 | AvnFPS: Problem with syntax checking when two errors exist |
| 158 | 17491 | NWRWAVES fails to process TCP products from WPC (formally known as HPC) |
| 159 | 17464 | WarnGen: determining hatchedArea should base on percentage/area of each marine product |
| 160 | 17445 | AvnFPS: Receiving lightning alerts every 30 seconds |
| 161 | 17437 | Comment out "affectedZones" in geospatialConfig_COUNTY.xml |
| 162 | 17431 | Problem with gridded marine data not populating entire marine CWA |
| 163 | 17429 | NCEP/Localization Perspectives: UELE occurs when accessing forecasters.xml |
| 164 | 17313 | AvnFPS: QC Syntax fails to flag incorrect entry |
| 165 | 17211 | Cross Section Parameter Problem from Volume Browser |
| 166 | 17121 | AvnFPS: Allowing more than one set of routine TAFs with the same header time to be transmitted can cause confusion |
| 167 | 17109 | Can't display PP 5 min duration in the graph using station selection mode |
| 168 | 17072 | D-2D: Vector display failure for some global grids on mercator scales when dateline present |

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| 169 | 17068 | Warning decoder fails if product contains a line resembling a UGC |
| 170 | 16996 | Dialogs for adding and editing new zones and stations in Fog, SNOW, and SAFESEAS configuration GUI not working properly |
| 171 | 16939 | AvnFPS: Improperly formatted TAF products going to TOC |
| 172 | 16908 | AvnFPS: Ceiling data does not decode in AvnFPS |
| 173 | 16875 | GFE: Problem with parm names with vertical levels |
| 174 | 16845 | AvnFPS: TAF editor Store to DB option does not work |
| 175 | 16843 | AvnFPS TAMPGenerator take time to spin up post-install |
| 176 | 16757 | handleOUP: Warnings Addressed Using Message Code 0 |
| 177 | 16754 | Active text window loses focus when executing script in another text window |
| 178 | 16744 | Hydroview doesn't auto refresh when going to different tabbed perspective and returning |
| 179 | 16735 | GFE: Improve VTEC decoding |
| 180 | 16731 | Cross section error while creating a new procedure with Interactive Baselines |
| 181 | 15688 | WarnGen: wrong portions of counties at PQR |
| 182 | 15464 | AvnFPS: error occurs in generating guidance in certain case |
| 183 | 15036 | Local point data maps not displaying all entities |
| 184 | 15034 | Product legend disappeared when procedure is loaded in D2D |
| 185 | 15013 | Saved Perspective Display: Can't use side-pane non-plan-view four-panel displays |
| 186 | 14995 | TextWS Alarm/Alert proximity alarm can error on certain product formats |
| 187 | 14947 | Boundary Layer Pressures being computed incorrectly |
| 188 | 14905 | Backup localization not being held as default if clear is selected in CAVE |
| 189 | 14870 | GFSEnsemble probabilities calculated incorrectly; problem with Gather function |
| 190 | 14858 | Update Obs and Accum reset when running script in TextWS |
| 191 | 14842 | SCAN: Site storm overlay not configurable |
| 192 | 14841 | In Time Options mode in D2D, radar mosaics do not load properly |
| 193 | 14838 | NWRWAVES fails in headline repeat option for the TCV products |

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| 194 | 14813 | GFE: VTEC coding missing if formatter name doesn't contain Hazard |
| 195 | 14811 | Saved perspective display doesn't retain all features of 4-panel & side panes |
| 196 | 14767 | Hydro: Incorrect SHEF data selected for a predefined group and site |
| 197 | 14754 | ndm processing does not properly update common_obs_spatial table |
| 198 | 14752 | Word wrap not working properly for WarnGen impact warnings |
| 199 | 14751 | Update Obs functionality in text workstation removing obs read out |
| 200 | 14741 | Ceil/Vis plot in D2D is unable to display a site with a RVR remark |
| 201 | 14734 | GFE: Certain site activation scenarios can lead to incorrect activeSites.txt |
| 202 | 14683 | Time Series Point Data procedure - location doesn't correctly change using Alter |
| 203 | 14643 | Triggers based on WarnGen work files do not work on initialization |
| 204 | 14599 | synopticToShef needs multiple configuration capabilities |
| 205 | 14562 | Some IntlSigmets are not being sent to EDEX for ingest |
| 206 | 14472 | SCAN Alarm not applied correctly |
| 207 | 14375 | HYDRO: Hydrobase Data Manager Rating Curve GUI problems |
| 208 | 14322 | D2D hurricane track summary can fail |
| 209 | 14308 | pqact.conf needs changes to correctly ingest - HOUSEKEEPING |
| 210 | 14093 | FFMP Blank Table |
| 211 | 14017 | GFE: Removing editArea files without removing them from editAreaGroups issue |
| 212 | 14016 | GFE procedures calling other procedures with parameters invoke errors |
| 213 | 13971 | GFE: Quick View mode only works partially |
| 214 | 13951 | GFE: Move function in move/copy tool in GFE not working post upgrade |
| 215 | 13772 | GFE: UKMET model creating hdf5 data at 6Z and 18Z but not postgres record |
| 216 | 13756 | GFE: Clicking AdjustValue_Up repeatedly results in grid corruption |
| 217 | 13736 | HydroTS - Missing data after zoom, edit, reset |

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| 218 | 13678 | Spotter Readout Sample Incorrect |
| 219 | 13652 | Cross section image color scheme changes between frames |
| 220 | 13614 | TextWS: Text wrapping problem in text editor |
| 221 | 13608 | For cross section display, plane cannot be changed without clearing screen |
| 222 | 13431 | Problems with the spell checker in GFE |
| 223 | 13137 | FFMP RFCFFG incorrect data values: independent displays |
| 224 | 12991 | Data Scale does not work |
| 225 | 12586 | LDAD data not available in VB for time series |
| 226 | 12583 | GFS Ensemble Precip display problem |
| 227 | 12044 | Units change when geostrophic winds loaded as image in D2D perspective |
| 228 | 8521 | D2D jumps to last frame with model updates |
| 229 | 111 | GFE: CAVE doesn't update cycle of ifp database created by iscMosaic |

1. Problem: Text Workstation: QC Error if enough UGCs are listed, sending one to 2nd line

In Text Workstation, there is an instance where one UGC can run onto the 2nd line, causing a QC error. Though everything is in order, the error is because the QC program is incorrectly matching the numbers as a phone number. Example below:

TEST...SEVERE THUNDERSTORM WARNING...TEST

NCC073-091-131-VAC025-036-053-081-093-149-175-181-183-550-670-730-

*800-2717*00-

/O.NEW.KAKQ.SV.W.0084.160427T1636Z-160427T1700Z/

BULLETIN - EAS ACTIVATION REQUESTED

Severe Thunderstorm Warning

National Weather Service WAKEFIELD VA

1236 PM EDT Wed Apr 27 2016

In 16.2.1, sampling for cross-section images including (but not limited to) Temperature, Vorticity and wind speed starting showing incorrect values. Some were improper conversions and some were just twice the original value. Need to get these back to matching the contours on the plot.

Operational Impact: QC error could slow down warning operations as user determines if there is really an issue.

Required Behavior: There should be no QC error for this occurrence. (DR 18947)

2. Problem: Problem with ECMWF dropping grids at 16.2.1 sites

The ECMWF are missing precip grids. It isn't the same grid every time. The grid decoder EDEX logs are showing it is matching up with the times they are missing.

Required Behavior: The ECMWF data should not get dropped. (DR 18931)

3. Problem: GFE: Map combination change not picked up until restart of formatter launcher

Site BIS reported that following their 16.2.1 install, the formatter launcher has to be restarted to pick up a change in the map combination.

Operational Impact: Formatter launcher restart necessary when changing zone combination for HWO or FWF products.

Required Behavior: Zone combination changes should take effect without restarting the formatter launcher and rerunning the formatter. (DR 18926)

4. Problem: Remove CAVE dependencies in awips2-common-base

awips2-common-base is no longer necessary for CAVE installs, because awips2-cave already includes the plugins provided by awips2-common-base. awips2-common-base no longer needs to be built when CAVE builds are done. Also the awips2-common-base rpm should no longer check for awips2-cave to be installed.

Operational Impact: Installation/CAVE issues if awips2-common-base is included with CAVE installs.

Required Behavior: CAVE installs correctly at NCEP sites. (DR 18921)

5. Problem: Lightning product lists are incorrect (DCS 17675)

A new Lightning menu structure and behavior was to be implemented in 16.2.1 DCS #17675. There are missing products on both the plot and grid menus.

Operational Impact: The expected lightning products and expected update behavior are incorrect. (DR 18915)

6. Problem: Change CAVE log purging to add check for find commands already running

BCQ and BOX have reported in OB16.2.1 that occasionally px2 can have problems purging CAVE log files and hang up. The problem is that many sites run BOIVerify BiasCorr hundreds of times per day which generates many thousands of log files. The find command in caveUtil.sh that purges log files can take a long time to run when there are hundreds of thousands of log files, and if multiple find commands are running and taking a long time to complete, it can bog down the machine. A check needs to be added before the find command is run to verify that there is not already a find command running.

A longer term change in the future is to change the purging to an EDEX process that runs only once daily, DCS 18911.

LIX, OKX, and AFG have also reported this issue.

Operational Impact: BOIVerify may not run in a timely manner at times if px2 is overloaded.

Required Behavior: Find command to purge logs should not run if one is already running.

(DR 18910)

7. Problem: RadarServer does not retrieve all products for "all cuts" OTR/RMR requests from dial radars

RadarServer does not retrieve all products for "all cuts" OTR/RMR requests from dial radars. Instead, it will disconnect after receiving the first response. This affects TDWRs in hazard mode and WSR-88Ds with MESO-SAILS.

There are two related problems that also need to be addressed:

- The RadarServer does not parse the extra elevation angles in the expanded GSM format.
- When MESO-SAILS is active, a request for "all elevations" to a dial radar will result in the RadarServer staying connected after it has received all possible responses. (The connection will eventually time out, however.)

Operational Impact: Forecast/warning quality could be affected due to not getting all available data,

Required Behavior: RadarServer should be able to retrieve all matching elevations when an "all cuts" request is sent. (DR 18909)

8. Problem: D2D: SPS plots in D2D are not updating for new products

In D2D, Warning displays for SPS products do not update as new products are issued. This is only an issue for SPS products and does not impact SVR/TOR/FFW products.

Operational Impact: User situational awareness will be impacted since they will not see a current SPS display.

Required Behavior: Display should update for each product. (DR 18905)

9. Problem: Data Delivery: Deleted subscriptions are not recorded in the Notification Center

The Notification Center is not displaying any record when a subscription is deleted. No problems with recording of creation and modification of subscriptions.

Operational Impact: User is not notified in the Notification Center when a subscription is deleted. The subscription is in fact deleted, and there is no operational impact besides not seeing the notification.

Required Behavior: A message should appear in the Notification Center Dialog stating a subscription has been deleted. (DR 18903)

10. Problem: GFE: Running smart tool over time range with no grids cause parm to be immutable

WFO Billings reported an issue with running their Initialize_Grids_BYZ procedure in OB16.2.1. It resulted in affected parms to end up below the blue line in the Grid Manager (became immutable). This occurred to different parms being edited.

Operational Impact: Grid editing cannot work properly until CAVE is restarted.

Required Behavior: Procedure and smart tools work properly. (DR 18891)

11. Problem: Add support for pre-TCV in TPCWatchSrv

TPCWatchSrv needs to display the PlotTPCEvents banner when the pre-TCV (PIL PTCATn) is received. (DR 18888)

12. Problem: WarnGen Templates: Impact templates fail to run when source/basis bullet is not selected

Creating an impact warning with no selected "Basis for Warning" bullet causes the template to not run and fail with following error.

```
WARN 2016-04-12 18:41:41,816 [main] CaveLogger: Error running warngen template: Error generating from template
```

```
com.raytheon.uf.viz.core.exception.VizException: Error generating from template

at
com.raytheon.viz.warngen.template.TemplateRunner.createScript(TemplateRunner.java:950)

at
com.raytheon.viz.warngen.template.TemplateRunner.runTemplate(TemplateRunner.java:898)

at com.raytheon.viz.warngen.gui.WarngenDialog$23.run(WarngenDialog.java:1237)

...

```

```
Caused by: org.apache.velocity.exception.MethodInvocationException: Invocation of method 'substring' in class java.lang.String threw exception
java.lang.StringIndexOutOfBoundsException: String index out of range: 1 at
VM_global_library.vm[line 1612, column 11]

...

```

```
Caused by: java.lang.StringIndexOutOfBoundsException: String index out of range: 1
at java.lang.String.substring(String.java:1907)

```

The error is caused by passing an empty string to the 'capitalize' macro in VM_global_library.vm with the "FIRST" flag.

Operational Impact: Warnings could be delayed if cause/workaround is not known.

Required Behavior: Templates should run without substring range errors. (DR 18884)

13. Problem: GFE: "Unable to load metadata" error in GFE smart tools after OB16.2.1 install

Sites VHW, OTX and BYZ all reported the error "Unable to load metadata" when running certain GFE smart tools after their OB16.2.1 install.

Operational Impact: The "Unable to load metadata" errors pop up whenever the GFE perspective loads in CAVE. The smart tools will not run.

Required Behavior: The GFE perspective should load without producing these errors. (DR 18882)

14. Problem: WarnGen Templates: Fixes for a few case issues in Impact SVS

As sites are integrating the newest template changes, a few capitalization issues have been discovered that need to be corrected. Instances of 'AND' and 'Therefore' need to be corrected.

Operational Impact: None except poor grammar in products if not corrected before sending.

Required Behavior: Products should conform to new case guidelines. (DR 18880)

15. Problem: D2D: Sampling issues with cross-section plots

In 16.2.1, sampling for cross-section images including (but not limited to) Temperature, Vorticity and wind speed starting showing incorrect values. Some were improper conversions and some were just twice the original value. Need to get these back to matching the contours on the plot.

Operational Impact: User will be given incorrect values when sampling cross-section plots.

Required Behavior: Sampling should indicate the proper values. (DR 18874)

16. Problem: TextWS: Mixed case to upper case conversion can exceed 69 character maximum line length

Scratch products are shown in the Text Workstation text editor in mixed case. Upon sending, if mixed case is not enabled for the product, it is converted to upper case format. Part of that process converts commas (1 character) to ellipses (3 characters). The problem is that the converted product is not word wrapped and the added characters can cause previously valid lines to exceed the maximum length.

Operational Impact: Most NWS products are limited to printed 69 characters in length per line. Certain customers, including the US Coast Guard, adhere strictly to this protocol, and will drop products exceeding this line-length limit.

Required Behavior: TextWS should maintain the correct line length when converting mixed case to upper case. (DR 18870)

17. Problem: MPE: Hourly gages display off one pixel

MPE hourly gages are plotting one cell away from the colored cell representing the value.

The gages have been verified to be at the correct lat/lon location on screen. The cell is shifted in the grid. This can be verified by opening Gage Only Analysis in MPE 1 hour and displaying Gage IDs and Values.

Operational Impact: Causes issues with QPE generation and Hourly Forecast due to gages not being able to be quality checked quickly.

Required Behavior: Gages should display in grid location that matches the value of the gage in Gage Only Analysis, this can be off when comparing to Radar data. (DR 18865)

18. Problem: WarnGen Templates: Improve CTA parse strings to be case independent

Currently, there are a few CTA parse strings that still rely on a product having commas (,). While this will not be an issue for mixed case, with sites still sending/storing products in upper case with (...), these CTAs are not being auto selected on follow-ups. There are only a few examples that remain in the entire template suite. The templates impacted are shown below.

```
arealFloodAdvisory.xml (3)
arealFloodAdvisoryFollowup.xml (2)
arealFloodWarning.xml (3)
arealFloodWarningFollowup.xml (2)
burnScarFlashFloodWarning.xml (3)
burnScarFlashFloodWarningFollowup.xml (2)
flashFloodWarning.xml (3)
flashFloodWarningFollowup.xml (3)
nonConvectiveFlashFloodWarning.xml (3)
nonConvectiveFlashFloodWarningFollowup.xml (2)
```

Operational Impact: For follow-up products, these CTAs will not be automatically pre-selected in the WarnGen GUI. This could cause users to send out products without specific information they assumed would still be there.

Required Behavior: WarnGen GUI should populate with fields carried over from earlier products. **(DR 18864)**

19. Problem: Total Lightning (ENTLN) Unknown flash type Error

The following error was reported for ENTLN from the edex-ingest.log.

```
ERROR 2016-03-23 21:09:34,450 [Ingest.binlightning-1] TotalLightningDecoder: EDEX - Unknown flash type: -49.
```

```
File: /data_store/entlightning/20160323/21/SFPA42_KWBC_232108_139602095.2016032321, WMO Header: SFPA42 KWBC 232108
```

```
com.raytheon.edex.exception.DecoderException: Unknown flash type: -49
```

```
at
```

```
com.raytheon.edex.plugin.binlightning.total.TotalLightningDecoder.getStrikeType(TotalLightningDecoder.java:433) ~[com.raytheon.edex.plugin.binlightning.jar:na].....more
```

Operational Impact: Missing lightning data can impact severe weather operations, especially during thunderstorm season.

Required Behavior: Flash types must be valid. (DR 18849)

20. Problem: Radar Mosaic not updating properly on iMet

On the iMet Thin Client, when a user sets data to update frequently, it works for most data sources. However, an issue with Radar mosaic was discovered. It looks like the changes will cause only the "Home" radar site to update. So when using timed updates with a Mosaic, it will create a new Mosaic whenever the "home" radar updates and then it will not add any new sites to the mosaic but it will create another new frame whenever your "Home" mosaic updates again.

Operational Impact: Will cause radars to drop, potentially impacting user situational awareness.

Required Behavior: Radar updates should reflect the most recent product available. (DR 18809)

21. Problem: ISC_Discrepancies Tool not working in 16.2.1 for MinT, MaxT, MinRH, MaxRH and PoP

The ISC_Discrepancies Tool does not work and is throwing the following error for MinT, MaxT, MinRH, MaxRH and PoP:

```
DEBUG 2016-03-24 19:34:43,131 [Worker-32] CaveLogger: Running smartTool: Show_ISC_Highlights

WARN 2016-03-24 19:34:43,143 [Worker-32] CaveLogger: Error executing Show_ISC_Highlights:
jep.JepException: <type
'exceptions.AttributeError'>: 'module' obj
ect has no attribute 'self'
jep.JepException: jep.JepException: <type 'exceptions.AttributeError'>: 'module' object has no
attribute 'self'
at jep.Jep.eval(Jep.java:471)
at com.raytheon.uf.common.python.PythonScript.internalExecute(PythonScript.java:230)
at
com.raytheon.viz.gfe.smarttool.script.SmartToolRunnerController.runToolMethod(SmartToolRunnerCont
roller.java:114)
at...more
```

Operational Impact: Sites cannot run the ISC_Discrepancies Tool for MinT, MaxT, MinRH, MaxRH and PoP. Therefore it may be more difficult to produce forecasts that blend well with their neighbors' forecasts.

Required Behavior: Sites should be able to run the ISC_Discrepancies Tool. (DR 18804)

22. Problem: FFMP - ARI Guidance should plot for the 12 and 24 hr Basin Trend Graphs

The new ARI guidance is available out to 24 hours but it only displays in the Basin Trend Graph for the All Hours, 1 hr, 3 hr and 6 hr graphs. It does not display for the 12 and 24 hour Basin Trend graphs.

Operational Impact: Sites will not be able to see 12 and 24 hr ARI guidance on the FFMP Basin Trend graphs.

Required Behavior: If guidance is valid for the FFMP Basin Trend Graph it should be displayed. (DR 18775)

23. Problem: GFE BOIVerify - BOIVerify fails after 16.2.1 numpy upgrade

BOIVerify fails after the 16.2.1 numpy upgrade. Operations run in the BOIVerify GUI fail with an error. BOIVerifyAutoCalc and BOIVerifyBiasCorr also fail. BOIVerifySave appears to run and save grids.

Operational Impact: BOIVerify operations fail.

Required Behavior: All BOIVerify operations should work correctly. (DR 18773)

24. Problem: FFMP - QPFSCAN image is offset from the SCAN QPF plot

The FFMP independent display of QPFSCAN is offset from the SCAN QPF plot. The SCAN QPF plot matches the location of the precip. The domain may also still be confined to the HRAP domain as with DR 18716.

Operational Impact: The FFMP independent display of QPFSCAN will not be accurate.

Required Behavior: The FFMP independent display of QPFSCAN should be in the correct location with the correct domain. (DR 18772)

25. Problem: WMOHeader class regular expression causing problem for binary bulletin messages

com.raytheon.uf.common.wmo.WMOHeader class regular expression is causing problem for binary bulletin messages.

Most decoders use WMOHeader class to parse out and strip WMO header from the bulletin, and then decode the data part after the WMO header stripped.

WMOHeader class uses the WMO_HEADER regular expression pattern (which defined as: "[A-Z]{3}[A-Z0-9](?:\d{0,2}[A-Z]{0,2}) [A-Z0-9]{4} \d{6}(?: [A-Z]{3})?[\r\n]*[\r\n]+") to parse out WMO header, which could cause issue for binary data that starts with \r (x0D) or \n (x0A), as it the case for bin-lightning data and total lightning data decryption.

WMO Message Structure (<http://www.nws.noaa.gov/tg/head.php>) states that "The text of a bulletin shall be in alphanumeric or binary representation. It shall start with the following sequence: [cr] [cr] [lf]". The above mentioned regular expression pattern could be by design to be very lenient for ASCII text data types, however, it will treat any \r (x0D) or \n (x0A) at the start of the binary data as part of the WMO header, thus causing missing bytes in data after WMO header stripped.

Suggested WMO_HEADER pattern would be conform to WMO Message Structure (<http://www.nws.noaa.gov/tg/head.php>) spec and limit to one sequence of [cr] [cr] [lf], such as: "[A-Z]{3}[A-Z0-9](?:\d{0,2}[A-Z]{0,2}) [A-Z0-9]{4} \d{6}(?: [A-Z]{3})?[\r\n]*[\r]{2}[\n]{1}". However, extensive testing especially for ASCII text data types may be needed, especially if the pattern was specified like that by design to be lenient for ASCII text data types.

Operational Impact: Loss of lightning data.

Required Behavior: Binary data beginning with \r (0x0D) or \n (0x0A) must not be treated as part of the WMO Heading by the WMOHeader class. **(DR 18763)**

26. Problem: WarnGen: Switching between templates using specific set of steps can cause storm track to change to 180 or 0 degrees

It was discovered that there is a specific set of steps that can lead the storm track in WarnGen to switch from the existing storm track to a 180 or 0 degree storm track.

Operational Impact: GFE sites won't activate which prevents GFE from running.

Required Behavior: There should be no errors when activating a GFE site. **(DR 18751)**

27. Problem: Updates to allow for proper storage and display of some PQPF/PPQPF data

It was determined in testing that while the following data was being sent to AWIPS, it was not being properly identified and stored so that it could be viewed in the Volume Browser:

6-hour PQPF at F06-F72 every 6 hours - Threshold values in inches: (4.00) inches

24-hour PQPF at F24-F72 every 6 hours - Threshold values in inches: (8.00), (16.00)

72-hour PQPF at F72 - Threshold values in inches: (1.00), (2.00), (4.00), (8.00), (16.00)

In addition to adding these values to let the data properly store, a change needs to be made to the volume browser files to add the "72-hour" sub menu to the PQPF products - allowing users to select these products.

Finally, the F72 PPQPF files need to be updated to allow this data to be loaded from the Weather Element Browser in GFE.

WPC produces high-resolution QPF differently than other guidance sources. The WPC QPF guidance arrives 4 times per day, but with different guidance periods. At 00Z and 12Z the guidance contains all 7 days, but at 06Z and 18Z the latest guidance contains only the first 3 days (72 hours). Forecasters populating their QPF grids using the WPC would get very different results depending on the time of day that they populate. If the 00Z or 12Z guidance was the latest, the GFE would populate all 7 days of QPF, and if the 06Z or 18Z was the latest guidance, only 3 days would be populated.

This new tool allows the forecasters to populate all 7 days (or period they choose) no matter what the time of day or what the latest guidance. It looks at the inventory for each forecast period and chooses the latest guidance available for each, so the forecaster need not worry what the latest WPC guidance contains.

Operational Impact: Users will not be able to access and display this data, since it is not storing properly.

Required Behavior: Data should store properly so that it can be accessed by the user. (DR 18748)

28. Problem: Unable to create property map error received in AlertViz with vaa forecast product

The following error was received in AlertViz for any user running 16.2.1.

```
Unable to create property map for /vaa/2016-03-08_15:18:00.0/USER
MESSAGE/null/null/com.raytheon.uf.viz.core.exception.VizException: Unable to create property map
for
/vaa/2016-03-08_15:18:00.0/USER MESSAGE/null/null/
at com.raytheon.uf.viz.core.RecordFactory.loadMapFromUri(RecordFactory.java:174)
at
com.raytheon.viz.alerts.observers.ProductAlertObserver.processDataURI(ProductAlertObserver.java:3
80)
at
com.raytheon.viz.alerts.observers.ProductAlertObserver.processDataURIs(ProductAlertObserver.java:
353)
```

at
com.raytheon.viz.alerts.observers.ProductAlertObserver.notificationArrived(ProductAlertObserver.j
ava:337...more

(DR 18747)

29. Problem: HydroBase - basins.dat not imported correctly and process won't finish in Hydrobase - OB16.2.1

In HydroBase when import basins.dat, some basins not imported and process does not finish. As the result, there are entries with: " Writing 0rows" in process_geoarea_BASIN.log file.

Operational Impact: User can not view basins and MAP's in MPE

Required Behavior: In HydroBase after import basins.dat, all basins will be imported As the result, there will be no entries with: " Writing 0rows" in process_geoarea_BASIN.log file. **(DR 18746)**

30. Problem: FFMP - Refresh issues with Guidance and QPFSCAN selections in Basin Table and Trend Graph

There are display refresh types of problems with the guidance and QPF sources in the Basin Table and in the Basin Trend Graph.

Here are some examples:

1. Launch CAVE, then FFMP. Note that RFCFFG is the guidance source displayed in the table. Open the Attributes dialog. Both ARIFFG1 and RFCFFG are selected by default but only RFCFFG displays. Toggle ARIFFG1 in the Attributes dialog it displays correctly in the table.
2. Compare the guidance values on the Basin Trend Graph with the table. If it is not correct the user must toggle the guidance source plot in the Basin Trend Graph to get the correct guidance values.
3. In another example there was missing guidance. The Basin Trend Graph plots something for guidance but there should be no plot. Toggle guidance in the Basin Trend Graph, then the RFCFFG guidance plot is not shown...as expected if it's missing.
4. Launch a Basin Trend Graph where there is QPFSCAN data, the QPFSCAN trace should match the QPE but be offset vertically by the value in the table. Toggle the qpf selections under qpf plots on the Basin Trend Graph to get the correct QPFSCAN.

Operational Impact: Data displayed in the FFMP table and Basin Trend Graph can be incorrect.

Required Behavior: The correct data should be shown without having to toggle the selections. (DR 18742)

31. Problem: NIC local application - correct RipRisk Parm definition in serverConfig.py

GFE failed to activate after NIC V3.0 installation with this error:

```
AKQ siteConfig and localConfig failed validation.
```

```
Exception occurred while processing serverConfig for site AKQ
```

```
<type 'exceptions.AssertionError': Format Error in Weather Element Definition: Wrong data type found, Expected <type 'float'>, got <type 'int'> for position #5 Input: ('RipRisk', 'Scalar', 'none', 'Rip Current Risk', 3, 0, 0, 0)
```

Operational Impact: GFE sites won't activate which prevents GFE from running.

Required Behavior: There should be no errors when activating a GFE site. (DR 18737)

32. Problem: TDWR 8 bit spectrum width issues

There are issues with the OB 16.2.1 implementation of DCS 17786. The intent is for there to be consistency between NEXRAD and TDWR for the 3 and 8 bit spectrum width products.

Operational Impact: D2D TDWR radar 8 bit Spectrum Width display incorrect info. TDWR radar 8 bit Spectrum Width display is useless. (DR 18731)

33. Problem: Products can transmit in Mixed Case while using Tools -> Text Window

When issuing products that are designed to be transmitted in Upper Case, there is a method that can allow a user to transmit a product in Mixed Case. It involves the user using the "Tools -> Text Window" option in D2D. If the user uses that Text Workstation functionality, this issue does not exist. Here are the steps to replicate:

1. Start CAVE/D-2D
2. Tools -> Text Window
3. Create SPS warning product
4. Load the scratch product (WRKWG#) and enter the editor.
5. Send it. ... Window exits from editor mode.
6. Create another SPS product in WarnGen
7. Load the same product again (using WRKWG# from step 4) and editor the editor again.
6. Send it ... Window exits from editor mode.

The text in the window is in upper case. The text that is actually send is in mixed case.

Operational Impact: There is no impact on operations. There may be an issue with a downstream customer that is not set up to parse a product in mixed case.

Required Behavior: Products should be sent out in the case that is intended. In this instance, products were supposed to only be transmitted in UPPER CASE. (DR 18727)

34. Problem: Add ncep uengine plugin to regions for 16.1.X thin client support

The ncep uengine plugin was removed in 16.2.1 since their code has moved to DAF access. However 16.1.X CAVE (iMet thin client) will still attempt to access the ncep uengine plugin, so with the removal of the plugin, those CAVEs cannot load nsharp soundings.

This DR tracks the addition of the 16.1.1 gov.noaa.nws.ncep.edex.uengine.jar plugin into /awips2/edex/lib/plugins on the EDEX servers for regional HQs. This will allow older CAVEs the ability to launch nsharp without error.

An additional DR will be created to remove the plugin in 16.2.2 since this jar will not be tracked via rpm, and 16.2.1 thin client should be distributed by then, which will not need uengine access anymore.

Operational Impact: Thin client users will not be able to load nsharp once the regional HQ platforms have updated to 16.2.1, which will impact their ability to do imet functions.

Required Behavior: NSHARP will load on a 16.1.X thin client when connected to a region running 16.2.1. (DR 18725)

35. Problem: MPE Gage Table: the Diff (Gage-Grid) column is incorrect when compared to a field that is not included in the mpe_generate_list token

In the MPE Gage Table if a field, which is not listed in the mpe_generate_list token, is selected for comparison with the Gage Column; then the Diff (Gage-Grid) values do not update. They remain at their previous settings.

Operational Impact: Diff data displayed is incorrect and should not be used for operations.

Required Behavior: When the Diff (Gage-Grid) column is set to be compared against a non-calculated field (all 'M'), the column displays 'M' -- indicating that a comparison is not possible. (DR 18723)

36. Problem: WarnGen: AV error when site with extensions backs up non-coastal site

With the introduction of the new WarnGen extension polygon code, coastal sites that implement the code are required to make edits to their geospatialConfig* files. This tells the code that extension geometries need to be created for the site. However, in the event that one of these sites

needs to do WarnGen backup of a site that does not need to have this code turned on (because they have no coastal areas), an AV message can be triggered that is more of an alert that no coastal areas exist for the code to run against. This would not occur if the Site being backed up has their own geospatialConfig* files that the backing up site has synced to their proper directory.

While this does not denote an "issue" it can be alarming and cause users to wonder if something is wrong.

Operational Impact: The alert is simply informational, but can be confusing and result in a user feeling uncomfortable about using WarnGen.

Required Behavior: Message should be more descriptive to simply state that the site being used does not have coastal boundaries on which geometries need to be created. **(DR 18720)**

37. Problem: FFMP: Some RFCFFG and QPFSCAN data missing because the domain is limited to the HRAP grid domain

FFMP RFCFFG and QPFSCAN data are limited to the primary site HRAP domain. This results in missing data.

Operational Impact: All sources should use the radar domain rather than the HRAP domain unless the source is HPE or BHPE.

Required Behavior: Overlay RFCFFG from the NCEP/Hydro menu and QPFSCAN from the SCAN part of the SCAN menu rather than loading through FFMP. **(DR 18716)**

38. Problem: FFMP - Correct FFMPSourceConfig.xml

The BASE level FFMPSourceConfig.xml file contains errors. These should be corrected. Several of the new ARIFFG source names and data path entries are incorrect. Also, the ARI30M1YR source should be spelled with a zero rather than a capital O (Oh).

Operational Impact: If a site used the ARIFFG sources in FFMP then some will not be available.

Required Behavior: The FFMPSourceConfig.xml file should have the correct source names and data paths. **(DR 18715)**

39. Problem: MPE Gage Table: four-column sorting is producing an incorrect sort order

In the MPE Gage Table, when multiple sort columns are selected, the sort order is incorrect.

Operational Impact: The user cannot view the gage table in the desired sort order; making some data difficult to locate.

Required Behavior: Multi-key column sort's display the data sorted correctly. **(DR 18708)**

40. Problem: Add 72 hour Percentile PQPF data to the Volume Browser

With the completion of SBN PQPF data testing, it was observed that while AWIPS was correctly processing and storing 72hr PPQPF data, it was not set up to be displayed in the Volume Browser. This DR is to check in the changes that are necessary to add it to the Volume Browser.

The files impacted are:

gridImageryStyleRules.xml

HPCqpfImageryStyleRules.xml

HPCqpfContourStyleRules.xml

Operational Impact: Site will have to go through the product browser to see this field - thus taking them longer to find and display the product.

Required Behavior: Product path should be available in the Volume Browser. (DR 18695)

41. Problem: Subgridding along boundaries may fail

The user broke subgridding along boundaries in 16.2.1. The integer division is wrong. Prior to 16.2.1 a subgrid took the requested number of nx/ny out of the grid regardless of intersection with CWA. With 16.2.1, the subgrid centered over the CWA and defined by nx/ny was intersected with the original grid. So due to the integer division, if the subgrid is ever trimmed due to an edge, the grid will be rejected instead of subgridded.

This will be more common with defining a larger subgrid as you will be more likely to encounter an edge.

Operational Impact: Subgridded data can be incorrectly discarded, resulting in no data (subgridded or otherwise) for that model.

Required Behavior: Should be able to create a subgrid of model data as long as it is larger than the minimum required percentage of original grid. (DR 18692)

42. Problem: D2D: Load modes "Prognosis Loop" and "dProg/dt" throwing AV error when selecting forecast time

When loading a model family from the volume menu in load mode "Prognosis Loop" or "dProg/dt" the following error is thrown by alertviz:

```
An internal error occurred during: "Product Loader".java.lang.IllegalStateException: Forecast match should only be used for overlay resources.
```

```
at
com.raytheon.uf.viz.d2d.ui.time.dialogs.D2DTimeMatchingConfigurationFactory.getConfiguration(D2DTimeMatchingConfigurationFactory.java:198)
```

```
at com.raytheon.uf.viz.d2d.core.time.D2DTimeMatcher.initialLoad(D2DTimeMatcher.java:785)
```

```
at
com.raytheon.uf.viz.core.rsc.AbstractRequestableResourceData.configure(AbstractRequestableResourceData...more
```

Operational Impact: Model data does not load and an alertviz error is thrown. User can close the AV window and continue using CAVE.

Required Behavior: The selected model data should load without throwing an alertviz error. (DR 18667)

43. Problem: AvnFPS: When TAF product consists of -RA BR weather elements, it flags as an error found and displays the incorrect bubble text

While adhoc testing 16.2.1 of AvnFPS, when the TAF product consists of either -RA BR, RA BR, -SN BR, SN BR weather elements, the system flags as Error Found (-RA is highlighted) during the syntax check. The system should allowed -RA BR in the TAF and not flags as an error. And when mouse over the highlighted text the popup message shows as '+SS' or '+DS', which is incorrect.

Operational Impact: Showing the incorrect bubble text can cause the confusion for the user.

Required Behavior: The system should not flag the -RA BR as an error found. (DR 18664)

44. Problem: FFMP NullPointerExceptions when loading FFMP or swapping layers in FFMP table

A couple of different NullPointerExceptions have been received while loading FFMP and swapping layers within the tables. This does not occur all of the time.

1st Error:

```
An internal error occurred during: "Table Data Generation".java.lang.NullPointerException
at com.raytheon.uf.viz.monitor.ffmp.ui.rsc.FFFGForceUtil.forceIt(FFFGForceUtil.java:179)
at
com.raytheon.uf.viz.monitor.ffmp.ui.rsc.FFFGForceUtil.calculateForcings(FFFGForceUtil.java:115)
at...more
```

2nd Error:

```
Unhandled event loop exceptionjava.lang.NullPointerException
at
com.raytheon.uf.viz.monitor.ffmp.ui.dialogs.FFMPTableComp.tableMouseMoveAction(FFMPTableComp.java:142)
at com.raytheon.uf.viz.monitor.ffmp.ui.dialogs.FFMPTable$5.mouseMove(FFMPTable.java:324)
at org.eclipse.swt.widgets.TypedListener.handleEvent(TypedListener.java:212)...more
```

Operational Impact: There does not seem to be an operational impact outside of the errors in AlertViz.

Required Behavior: FFMP should load without error. Swapping of layers within the FFMP table should not generate errors. (DR 18661)

45. Problem: MRMS gridded coverage query failing in FFMP

The coverage query for MRMS data that used to work for FFMP has started failing.

```
DbQueryRequest query = new DbQueryRequest();  
query.setDatabase(META_DB);  
query.setEntityClass(GridRecord.class.getName());  
query.setLimit(1); // only need one response  
query.addConstraint(GridConstants.DATASET_ID, new RequestConstraint(  
datasetID));  
query.setOrderByField("inserttime", OrderMode.DESC);
```

Operational Impact: Template and source bin generation fails.

Required Behavior: FFMP templates should rebuild without issue. (DR 18658)

46. Problem: Derived paramters that import other models can fail if the base model grid is "larger" than the imported grid

There is a problem with Derived Parameter Import operations under certain circumstances where the "base" model is larger than the dataset being imported

Operational Impact: Forecasting could be delayed due to confusion over error messages.

Required Behavior: AWIPS should be able to calculate derived parameters that import data from other models even if the model grids do not match exactly. (DR 18657)

47. Problem: FFMP - Basin Trend Graph scale problems

The FFMP Basin Trend Graph scales are not working properly. These issues were introduced with the 16.2.1 changes to add MRMS to FFMP.

When All hr. is selected the y-axis Inches/hr scale does not scale correctly to include the full data range. No labels are shown. Every major tick should be labeled.

When 1 hr, 3hr, 6hr or 12 hr the x-axis scale and labels don't paint correctly.

Operational Impact: FFMP Basin Trend Graph is difficult to interpret without the proper scales.

Required Behavior: The FFMP Basin Trend Graph scales should display correctly and be labeled correctly. (DR 18640)

48. Problem: new sendWfoMessage functionality in TropicalProcedures.py will be incompatible with OB 16.2.x

Calling LogStream from within a multiprocessing task is what was causing sendWfoMessage to hang.

This works when tested on python 2.7.10 but fails tested on 2.7.9. It was found that several multiprocessing bugs were fixed in 2.7.10.

Operational Impact: Sites running 16.1.2 will be unable to send tropical coordination messages to those running OB 16.2.x.

Required Behavior: Tropical coordination messages should be sent and received by all sites necessary. (DR 18638)

49. Problem: GFE NWPS - Banner messages include test phrases

When NWPS data are processed banner messages appear that let users know new grids are available. Banners from the nwpsTrkngCG0.py smartInit contains test phrases in the banner message. These test phrases should be removed.

Operational Impact: Extra diagnostic banner information is displayed.

Required Behavior: Banner messages should be clear and concise. (DR 18623)

50. Problem: Jep change in OB 16.1.1 cause some uEngine to not work

A change in Jep in OB16.1.1 can cause existing uEngine scripts to no longer work: The Python object attribute that indicates the class name of a wrapped Java object changed from 'jclassname' to 'java_name'.

Operational Impact: Forecasters may not have access to locally generated products or functionality.

Required Behavior: A future-proof method of determining the class name of a Java object in Python should be provided. (DR 18621)

51. Problem: Isc database missing local parms: serverConfig.py

A bug in NIC serverConfig prevents parms added in localConfig to Fcst database from being in the Isc Database. The impact is that sites will be unable to get and send local parms via ISC.

This bug is in the OB16.2.1 NIC version being baselined.

Operational Impact: Sites will be unable to get and send local parms via ISC.

Required Behavior: GFE SmartInit isc database should include all needed local parameters. (DR 18620)

52. Problem: RFCFFG data is unavailable in FFMP at times

On several testbeds, it's been noticed that FFMP FFG doesn't always appear. The problem lies with the FFMP source bins for FFG data...guidance data in particular. The source bin was written to localization before being populated with data. It essentially writes a BLANK 143 byte file. This error was introduced by RODO DR 4756 (DCS #16787). The issue shows up during a wipe clean install in which all templates, sources, and geometries for FFMP are wiped and allowed to be re-created.

Required Behavior: RFCFFG data should be available. (DR 18602)

53. Problem: GFE - Remove unnecessary references in Run_NWPS.py procedure

The version of the GFE baseline Run_NWPS.py procedure checked in for 16.2.1 included a name in the GUI window title definition and in comments in the procedure. The name should be removed. The issue occurs in the lines below. "Run_NWPS_Tom" should just be "Run_NWPS".

line 118 - processVarList = ProcessVariableList.ProcessVariableList("Run_NWPS_Tom", variableList, varDict, None)

line 147 - # /awips2/GFESuite/bin/runProcedure -n Run_NWPS_Tom -c gfeConfig

Operational Impact: The Run_NWPS GUI title bar includes an unnecessary name.

Required Behavior: The correct title should be displayed. (DR 18600)

54. Problem: Thin Client - Changing servers at startup results in errors

In Thin Client, the user has the option to "Prompt for changes on startup" when they first launch the client. If a user selects this option and tries to change to a different server on a subsequent launch, they will receive errors and CAVE will not function properly. To resolve this, they need to restart CAVE, at which time, CAVE functions properly.

Operational Impact: It will slow users down as they will have to take extra time to re-launch CAVE.

Required Behavior: CAVE should launch without errors when connecting to a new server. (DR 18591)

55. Problem: Paint Error when NUCAPS Sounding Product Updates in D2D

With the NUCAPS Sounding Availability product loaded in D2D, once CAVE is updated with new data the product may suddenly become disabled and an AlertViz error is given (see below). This error is likely caused by DCS 18191.

```
ERROR 2016-02-02 18:30:51,581 [main] CaveLogger: Paint error: null:: The resource [NUCAPS
Availability] has been disabled.

com.raytheon.uf.viz.core.exception.VizException: Paint error: null:: The resource [NUCAPS
Availability] has been disabled.

    at
com.raytheon.uf.viz.core.drawables.AbstractRenderableDisplay.paintResource(AbstractRenderableDisp
lay.java:627)

    at
com.raytheon.uf.viz.core.maps.display.MapRenderableDisplay.paint(MapRenderableDisplay.java:180)...m
ore
```

Operational Impact: The display becomes disabled. The user is required to clear the display and reload product.

Required Behavior: The product should update without error and without becoming disabled. (DR 18588)

56. Problem: NWRWAVES should be able to handle a product that doesn't have MND

TBW reported the product MIASYN (SYN=Regional Synopsis) stopped working after the 16.1.1 installation. This product doesn't have an MND section.

Only a few sites issue SYN products so this will likely not be a widespread issue.

The problem is that the SYN products never had nor used the MND time line as designed.

Operational Impact: nwrwaves is not able to send products without MND to the CRS.

Required Behavior: nwrwaves should be able to send products without MND to the CRS. (DR 18584)

57. Problem: Add delta script to remove Site Level post processor GFSPProcessor

A delta script is needed to remove the GFSPProcessor that was removed under #18200.

Operational Impact: Errors appear in the edex ingestGrib logs stating GFSPProcessor cannot be found.

Required Behavior: GFSPPostProcessor should be removed from postProcessedModels.xml. (DR 18569)

58. Problem: Update gfesuite rpms to handle ENV steps in DCS 17495

As part of DCS 17495 there are several items requested of ENV to fix (permissions and client side file removal). However all these things are controlled as part of the rpm build which is CM controlled. This DR is to perform those software updates to handle all requests in DCS 17495:

[1] The following directory/subdirectory continue to be on the px2:

/awips2/GFESuite/nwps

/awips2/GFESuite/nwps/etc - this one is new and introduced with 16.2.1

/awips2/GFESuite/nwps/domains

/awips2/GFESuite/nwps/bin

None of these directories/subdirectories or files should be installed in the clients/workstations.

Permissions for directories and subdirectories should be set to 775, and Ownership set to awips:fxalpha.

[2] Install the following files on px2f, not the client machines:

gfesuite/nwps/bin/runManualNWPS_OutsideAWIPS.sh

gfesuite/nwps/etc/sitevars.ccc

[3] Pre- and Post-install Notes are attached to DR.

Operational Impact: The nwps software will not work correct unless these actions are taken, and confusion about where software should be run will exist unless client install is cleaned up.

Required Behavior: The nwps software is installed as specified in DCS 17495. **(DR 18568)**

59. Problem: GFE ISC - ISC_Discrepancies not working for time range between current time and zulu

A change was added against DR 13961 that doesn't account for displaced real time (DRT) and offsets the current hour by the difference between local and Zulu time. This causes ISC_Discrepancies to ignore discrepancies for the time range for the offset. For example, at 2:03pm CST on Jan 25, 2016 the computed time range is (Jan 26 16 02:00:00 GMT, Feb 02 16 18:00:00 GMT) so any discrepancies between 20Z on the 25th and 02Z on the 26th are ignored.

Operational Impact: ISC_Discrepancies fails to identify discrepancies for the period of time between.

Required Behavior: All ISC discrepancies should be identified. **(DR 18562)**

60. Problem: EDEX clustered context routes do not restart after being suspended

Some components of EDEX are designed to run on only one cluster instance at a time. These components are supposed to be able to stop and start dynamically. It has been found that when one of these components is stopped, when it is later restarted, it does not receive JMS messages. This prevents, for example, the redbook decoder from working until either the affected EDEX is restarted or another EDEX instance that never had the redbook decoder running takes over.

Operational Impact: Forecasts may be delayed due to missing data.

Required Behavior: Clustered components should be able to start/stop dynamically. (DR 18533)

61. Problem: Spot Request Errors when Running Archiver

New errors were returned due to a new Spot Request data type and plugin gov.noaa.nws.ost.dataplugin.stq. The archiver (Wes2) is having trouble with it.

```
ERROR Required Setter on gov.noaa.nws.ost.dataplugin.stq.SpotRequestRecord:stqSymbol is missing

java.lang.RuntimeException: Required Setter on
gov.noaa.nws.ost.dataplugin.stq.SpotRequestRecord:stqSymbol is missing

at
com.raytheon.uf.common.serialization.DynamicSerializationManager.getSerializationMetadata(Dynamic
SerializationManager.java:488) ~[com.raytheon.uf.common.serialization.jar:na]...more
```

Operational Impact: User won't be able to display specific data type using archiver.

Required Behavior: Archiver should be able to handle this data type. (DR 18524)

62. Problem: Blank panels when loading some plots into 4 panel displays

Starting in 16.2.1, if a user creates a 4 panel layout on their main pane and tries to load products such as Time Height, Var Height, Cross Section, and Time series into each pane independently, once the first product is loaded, the other panes go blank until a product is loaded there. Previously, it would display an empty plot of whatever product was being loaded (i.e., empty cross section).

Operational Impact: User may be confused into thinking something is wrong and that a product did not properly load in these empty looking panes.

Required Behavior: Panes should display an empty version of whatever product is being loaded. (DR 18500)

63. Problem: D2D: Scales did not correctly update with DCS 18223

DCS #18223 did not successfully update the baseline Scales available to the user in D2D. The new scale .xml files were delivered only to OAX localization rpm. Presently, a user can only see

the changes made to scales in DCS #18223 if they are localized as OAX, if the OAX localization rpm is installed. The .xml files that were added to the OAX localization need to be moved to baseline so that all sites will have the updated list of scales. Also, the baseline scalesInfo.xml needs to be modified so sites will be able to access the new scales, again, only the version that gets packaged up in the OAX localization rpm was updated.

The following scales should be added to the baseline:

1. Alaska_Reg
2. AsiaPacific
3. Atlantic
4. EuroAfrica
5. GreatLakes_Reg
6. GulfCoast_Reg
7. Hawaii_regional
8. Hawaii_state
9. Mid-Atlantic_Reg
10. NorthEast_Reg
11. NorthWest_Reg
12. NrnPlains_Reg
13. OzarkTennV_Reg
14. Pacific
15. Puerto_Rico
16. SouthEast_Reg
17. SouthWest_Reg
18. SrnPlains_Reg
19. World

Operational Impact: Users will not be able to test out the new Scales that should be available in 16.2.1.

Required Behavior: The scales listed in the "Description" box should be available at all sites.
(DR 18498)

64. Problem: Write delta scripts to handle site level scalesInfo.xml and warnings index.xml

DCS #18223 implements new baseline scales and warning menu items. However, the scalesInfo.xml which controls which scales appear in CAVE is a site level override at all sites. Also, the warning menu's index.xml file is overridden and a site level to control which sites are loaded in the local warning displays. So a delta script needs to be written to:

- 1) Move aside the site level scalesInfo.xml file (to scalesInfo.xml.orig) so that the base level file is used. A release note will be added by the original developer to instruct sites to merge in any scales they had into the new base level file.
- 2) Update existing site level index.xml by merging in all new content from the base index.xml.

Operational Impact: The new scales do not appear in the scales menu and the new hazard warning menus will not be functional. As these are new, the operational impact is low, sites just won't be able to take advantage of these improvements.

Required Behavior: The new scales listed in DCS 18223 appear in the pull down menu, and the new hazard regional warning displays load successfully. **(DR 18496)**

65. Problem: Fix LDM GOES memory leak and installation issues

The 6.12.14 installation failed on TBDW, a few things need to be fixed in order for the package to work. Also a memory leak with the new GOES imagery code were found during ATAN testing, this DR will cover those software updates.

Operational Impact: LDM will not install which means no SBN data. Also the memory leak will cause issues with qpidd, and could bring the system down.

Required Behavior: LDM will install, and no memory leakage should occur while running. **(DR 18472)**

66. Problem: Ensemble Tool: Error building CAVE RPM

The following error was noticed when trying to do the build.

```
[javac] 26. ERROR in /home/dmsys/GIT-  
INTEGRATION/build_16.2.1/baseline/build/cave  
  
/p2/plugins/gov.noaa.gsd.viz.ensemble/src/gov/noaa/gsd/viz/ensemble/util/diag  
nostic  
  
/EnsembleToolDiagnosticStateDialog.java (at line 78)...more
```

Required Behavior: Successful CAVE RPM build after adding Ensemble feature. **(DR 18471)**

67. Problem: Add MHS message code for Hazard Services

Add a new MHS message code (137) to rcv_handler.tbl to provide routing for Hazard Services products. These messages will call the program 'hs_process_configuration'.

Operational Impact: If this is not done, Hazard Services will not work.

Required Behavior: Messages routed with code 138 will get processed. (DR 18459)

68. Problem: December 2015 security patches

busybox-1.15.1-20.el6.x86_64.rpm
dbus-glib-0.86-6.el6_4.x86_64.rpm
dbus-glib-devel-0.86-6.el6_4.i686.rpm
dbus-glib-devel-0.86-6.el6_4.x86_64.rpm
flash-plugin-11.2.202.559-1.el6_7.i686.rpm
freetype-2.3.11-14.el6_3.1.i686.rpm
freetype-2.3.11-14.el6_3.1.x86_64.rpm
freetype-devel-2.3.11-14.el6_3.1.i686.rpm
freetype-devel-2.3.11-14.el6_3.1.x86_64.rpm
gimp-2.6.9-6.el6_5.x86_64.rpm
gimp-help-browser-2.6.9-6.el6_5.x86_64.rpm
gimp-libs-2.6.9-6.el6_5.x86_64.rpm
glusterfs-api-3.6.0.54-1.el6.x86_64.rpm
glusterfs-libs-3.6.0.54-1.el6.x86_64.rpm
java-1.6.0-sun-1.6.0.105-1jpp.2.el6_7.i686.rpm
java-1.6.0-sun-plugin-1.6.0.105-1jpp.2.el6_7.i686.rpm
java-1.7.0-openjdk-1.7.0.91-2.6.2.2.el6_7.x86_64.rpm
libreport-2.0.9-25.el6_7.i686.rpm
libreport-2.0.9-25.el6_7.x86_64.rpm
libreport-cli-2.0.9-25.el6_7.x86_64.rpm
libreport-compat-2.0.9-25.el6_7.x86_64.rpm
libreport-gtk-2.0.9-25.el6_7.i686.rpm
libreport-gtk-2.0.9-25.el6_7.x86_64.rpm
libreport-newt-2.0.9-25.el6_7.x86_64.rpm
libreport-plugin-kerneloops-2.0.9-25.el6_7.x86_64.rpm
libreport-plugin-logger-2.0.9-25.el6_7.x86_64.rpm
libreport-plugin-mailx-2.0.9-25.el6_7.x86_64.rpm
libreport-plugin-reportuploader-2.0.9-25.el6_7.x86_64.rpm

libreport-plugin-rhtsupport-2.0.9-25.el6_7.x86_64.rpm
libreport-python-2.0.9-25.el6_7.x86_64.rpm
nss-softokn-3.14.3-23.el6_7.i686.rpm
nss-softokn-3.14.3-23.el6_7.x86_64.rpm
nss-softokn-devel-3.14.3-23.el6_7.i686.rpm
nss-softokn-devel-3.14.3-23.el6_7.x86_64.rpm
nss-softokn-freebl-3.14.3-23.el6_7.i686.rpm
nss-softokn-freebl-3.14.3-23.el6_7.x86_64.rpm
nss-softokn-freebl-devel-3.14.3-23.el6_7.i686.rpm
nss-softokn-freebl-devel-3.14.3-23.el6_7.x86_64.rpm
ntpdate-4.2.6p5-5.el6_7.2.x86_64.rpm
openldap-2.4.40-7.el6_7.i686.rpm
openldap-2.4.40-7.el6_7.x86_64.rpm
polkit-0.96-5.el6_4.i686.rpm
polkit-0.96-5.el6_4.x86_64.rpm
polkit-desktop-policy-0.96-5.el6_4.noarch.rpm
polkit-devel-0.96-5.el6_4.i686.rpm
polkit-devel-0.96-5.el6_4.x86_64.rpm
polkit-docs-0.96-5.el6_4.x86_64.rpm
polkit-gnome-0.96-3.el6.i686.rpm
polkit-gnome-0.96-3.el6.x86_64.rpm
postgresql-libs-8.4.20-4.el6_7.i686.rpm
postgresql-libs-8.4.20-4.el6_7.x86_64.rpm
python-sssdconfig-1.12.4-47.el6_7.4.noarch.rpm
qemu-kvm-0.12.1.2-2.479.el6_7.3.x86_64.rpm
qemu-kvm-tools-0.12.1.2-2.479.el6_7.3.x86_64.rpm
spice-server-0.12.4-12.el6_7.3.x86_64.rpm
sssd-1.12.4-47.el6_7.4.x86_64.rpm
sssd-ad-1.12.4-47.el6_7.4.x86_64.rpm
sssd-client-1.12.4-47.el6_7.4.i686.rpm
sssd-client-1.12.4-47.el6_7.4.x86_64.rpm
sssd-common-1.11.6-30.el6_6.4.i686.rpm

sssd-common-1.12.4-47.el6_7.4.x86_64.rpm
sssd-common-pac-1.12.4-47.el6_7.4.x86_64.rpm
sssd-ipa-1.12.4-47.el6_7.4.x86_64.rpm
sssd-krb5-1.12.4-47.el6_7.4.x86_64.rpm
sssd-krb5-common-1.12.4-47.el6_7.4.x86_64.rpm
sssd-ldap-1.12.4-47.el6_7.4.x86_64.rpm
sssd-proxy-1.12.4-47.el6_7.4.x86_64.rpm
vino-2.28.1-9.el6_4.x86_64.rpm
xinetd-2.3.14-39.el6_4.x86_64.rpm
java-1.7.0-openjdk-devel-1.7.0.91-2.6.2.2.el6_7.x86_64.rpm
json-c-0.11-12.el6.x86_64.rpm
libipa_hbac-1.12.4-47.el6_7.4.i686.rpm
libipa_hbac-1.12.4-47.el6_7.4.x86_64.rpm
libipa_hbac-python-1.12.4-47.el6_7.4.x86_64.rpm
libreport-filesystem-2.0.9-25.el6_7.x86_64.rpm
libsss_idmap-1.12.4-47.el6_7.4.x86_64.rpm
openldap-devel-2.4.40-7.el6_7.x86_64.rpm
satyr-0.16-2.el6.x86_64.rpm

(DR 18447)

69. Problem: AvnFPS: Errors in CigVis Dist charts

BUF reported several errors in CigVis Dist charts. One error is that "null" appears in display for a range of months. For example, for a range of "Oct - Dec" in A1, it is displayed as "Oct - null" in A2. Another error occurs in a display for a range of hours. For example, for a range of 24 hours of "01 - 00Z" in A1, it is displayed as "1 - 1Z" in A2.

Operational Impact: It may cause confusion and misunderstanding in climatology data.

Required Behavior: Those errors described in the description section should not occur. **(DR 18439)**

70. Problem: AvnFPS sound file directory changed

In testing 16.2.1 DR #17445, the AvnFPS sound file directory was found moved. The default alert file in AvnFPS user configuration points to a wrong directory and the user has to manually change the directory.

The directory has changed from /awips2/cave/etc/alertVizAudio in 16.1.1 to /usr/local/viz/cave/plugins/com.raytheon.uf.viz.alertviz.ui_1.15.0.2015112516/localization/alertVizAudio

Operational Impact: Default AvnFPS sound file directory is broken.

Required Behavior: Default AvnFPS sound file directory should be correct. (DR 18432)

71. Problem: Add L2 Land Surface Temp menu items

Add L2 Land Surface Temp menu items

Operational Impact: The SLT menu items are missing, but can still be loaded from the Product Browser.

Required Behavior: Add SLT menu items to the GOES-R menu. (DR 18423)

72. Problem: Remove relative URL workaround for PDA

In the first release of DD for the PDA provider, a workaround was necessary for creation of the FTP file URL. The reason for this was that PDA's relative URL path didn't match the actual URL path. PDA has fixed this. The relative URL path to retrieve the files can be used now.

Operational Impact: The current workaround is breaking FTP's for PDA getRecords() requests.

Required Behavior: FTP for PDA requests should be successful. (DR 18415)

73. Problem: FFMP: BASE level FFMPSourceConfig.xml file missing guidanceType tag for FFG0624hr

The guidanceType tag for FFG0624hr (<guidanceType>RFC</guidanceType>) was omitted from the BASE level FFMPSourceConfig.xml file when changes were made under RODO 4756 (DCS #16787).

The omission was made with this revision:

Tue, 6 Oct 2015 12:50:29 -0500 [65fc4c02] <(Dave Hladky)> - Omaha #4756 Multi-guidance style rules starter, sourceFamily tag, purger. Change-Id: I38ca90cf5ec960cdb0ad78c91d20d16dac028478

Operational Impact: With 16.2.1 sites will need to regenerate the SITE level FFMPSourceConfig.xml due to extensive changes in the BASE level FFMPSourceConfig.xml file to add new sources. If the BASE level file is copied, processing for the 24hr RFCFFG will stop and it's possible all FFMP processing will stop.

Required Behavior: The guidanceType tag should be present for all RFCFFG sources. (DR 18404)

74. Problem: AvnFPS: The Validate button remains active when selecting SITE ID with no climate .gz files

With the climate .gz data files for a particular site remains in /awips2/data/edex/share/aviation/tmp. Select that site id from the Idents and click "Assess Data" the data for that site are assessed, processed and the Validate button is active. However, when you click another site ID that does not have climate .gz data files, the Validate button remains active. When changing Site IDs only the Assess Data button should become active (Generate Scripts, Process Data, Validate, Commit, and Reject button should be greyed out).

Operational Impact: This can cause the confusion for the users because the Validate button should not be active unless it is ready to be used.

Required Behavior: The Validate button should be disabled when there were no climate .gz files at the /awips2/data/edex/share/aviation/tmp directory. (DR 18396)

75. Problem: AvnFPS: When append new data from NCDC for multiple sites it only processes a single site

In a normal scenario (data are missing), you click each site ID, and click Assess Data. It will say that certain files are missing, and "Generate Scripts" will light up. You generate the script, copy it off to LDAD and proceed with the next site. At the end, you run the script on LDAD and download all the data, you copy it back to /awips2/edex/data/share/aviation/tmp. Note that the "Process Data" button is active. When you click this button, regardless of the selected site Ident, it only processes a single site. The system seems to process the last site that the data was being downloaded. It should process whatever site is selected, not the last site downloaded.

Operational Impact: If the data volume from NCDC is higher, then it will take a longer time to download and update locally.

Required Behavior: Sites should be able to process whatever site is selected, not the last site downloaded. (DR 18395)

76. Problem: Copy/Paste error in ActiveTableUtil.convertToDict()

There is a copy/paste error in ActiveTableUtil.java on line 126 that is setting the floodBegin time as the floodEnd time and the floodEnd key never gets added to the ActiveTableRecord Map (see below):

Operational Impact: In Hazard Services, the flood end time is set as the flood begin time, and the flood end time is not set. This results in hazard products with a start time that is actually the end time. This also impacts other areas such as dumpAT.

Required Behavior: ActiveTableUtil.java must be updated to correctly set the flood begin time. (DR 18393)

77. Problem: Update userRoles.xml for Hazard Services

All of the localization files for Hazard Services were consolidated into a single directory to make service backup simpler. Now all the permissions in the userRoles.xml file point to the wrong directories and need updating.

Operational Impact: Users will not have permission to create SITE or USER level files for Hazard Services.

Required Behavior: userRoles.xml must be updated with the correct directories. (DR 18392)

78. Problem: Precip Accum Post Processor error when levelId = 0 on insertion of created grid

The following error occurs when levelId = 0 on insertion of created grid.

```
ERROR Not-null property references a transient value - transient instance
must be saved before current operation:
```

```
com.raytheon.uf.common.dataplugin.grid.GridInfoRecord.level ->
com.raytheon.uf.common.dataplugin.level.Level
```

Required Behavior: All created precipitation accumulation grid records will be stored properly. (DR 18373)

79. Problem: Improve compatibility of triangulated image rendering

Some flaws were found in the triangulated rendering capabilities that was added in RODO 4709 (in DCS #17689). These flaws should be fixed so that the API can be used reliably in the future.

1. The generic triangulation extension does not limit the image to the displayed area. Rendering a full orbit of polar orbiting data on a polar stereographic projection creates such a huge image that it fails. GL provides its own extension that can handle this data but other targets do not. There are some images that cannot be used in collaboration, KML, and future new graphics targets.
2. The GLTarget cannot copy 1 dimensional colormap data, if the buffer passed in is not GL compatible it fails horribly. This is because in GLColorMapData.getDimensionSize() it returns 0 for the second dimension which causes the copy back buffer to be empty. Currently this capability is only used by pointset data which uses compatible buffers so there is no visible effect, just a weak API.
3. The GLTriangulatedImage does not rewind the attrib buffer before use. Passing in an unwound buffer throws exception. Even worse, when GL makes compatible buffers it does not rewind them. Currently this capability is only used by pointset data which uses rewound buffers so there is no visible effect, just a weak API.

Operational Impact: A full orbit of polar satellite pointset data cannot be exported in KML or shared in Collaboration.

Required Behavior: User should have ability to export polar satellite pointset data and share the data in Collaboration. (DR 18372)

80. Problem: AlertViz: fxaAnnounce and sendNotificationMsg not working for LOCAL messages

Whenever the user attempted to send LOCAL fxaAnnounce and sendNotification messages, using the following command formats for all priority levels(fxa: URGENT, SIGNIFICANT, ROUTINE or SendNote: 0, 1, 2, 3, 4, 5)

```
/awips2/fxa/bin/fxaAnnounce "TEST OF fxaAnnounce LOCAL URGENT" LOCAL URGENT
```

or

```
/awips2/fxa/bin/sendNotificationMsg ANNOUNCER LOCAL 0 "TEST OF sendNotification ANNOUNCER LOCAL Pri 0 FOR ALERTVIZ"
```

The following screen response for both types of messages were received.

```
[jdiaz@lx3-oma ~]$ /awips2/fxa/bin/sendNotificationMsg ANNOUNCER LOCAL 0
"TEST OF sendNotification ANNOUNCER LOCAL
Pri 0 FOR ALERTVIZ"
Traceback (most recent call last):
File "/awips2/fxa/bin/src/msg/sendNotificationMsg.py", line 122, in <module>
main()
File "/awips2/fxa/bin/src/msg/sendNotificationMsg.py", line 119, in main
msg.send()
File "/awips2/python/lib/python2.7/site-
packages/ufpy/NotificationMessage.py", line 141, in send
msg = ET.tostring(sm, "UTF-8")
File "/awips2/python/lib/python2.7/xml/etree/ElementTree.py", line 1126, in
tostring
ElementTree(element).write(file, encoding, method=method)
File "/awips2/python/lib/python2.7/xml/etree/ElementTree.py", line 820, in
write
serialize(write, self._root, encoding, qnames, namespaces)...more
```

Operational Impact: AlertViz fails to receive LOCAL messages throwing error.

Required Behavior: LOCAL alertviz messages should be received without error. (DR 18371)

81. Problem: serverConfig.py POWT group defined incorrectly

The probability of weather group is defined in serverConfig.py, but defined incorrectly.

Operational Impact: Incorrect GFE SmartInits could be used, affecting forecast grids (until worked around).

Required Behavior: The POWT list should not be tied to Central region settings. (DR 18362)

82. Problem: PDA requests now require SOAPAction headers

Solers has updated their PDA ESB software. A consequence of this is that they have tightened the requirements for valid XML request submissions. All SOAP requests now require valid SOAPAction headers in the HTTPClient request. A custom header must now be supplied and sent for all requests to PDA.

Example

Name Value

SOAPAction: urn:getRecords

Operational Impact: Requests to PDA will not be successful.

Required Behavior: PDA requests must be successful. (DR 18360)

83. Problem: AvnFPS: AlertViz error message displays while loading the AvnFPS Monitor GUI

While loading the AvnFPS Monitor GUI, the following error message is displayed:

```
An internal error occurred during: "Checking all data".java.lang.IndexOutOfBoundsException:
toIndex = 3
```

```
at java.util.ArrayList.subListRangeCheck(ArrayList.java:962)
at java.util.ArrayList.subList(ArrayList.java:954)
at com.raytheon.viz.aviation.monitor.MonitorDataUtil.getCcfpData(MonitorDataUtil.java:142)
at com.raytheon.viz.aviation.monitor.CcfpData.checkData(CcfpData.java:96)
at com.raytheon.viz.aviation.monitor.CheckNowJob.run(CheckNowJob.java:80)
at org.eclipse.core.internal.jobs.Worker.run(Worker.java:54)
```

The whole AvnFPS Monitor GUI is grayed out with no current TAFs and METARs data. This issue was broken by the DCS18081 (RODO#4880).

Operational Impact: The user cannot use the AvnFPS system due to there was no current TAFs and METARs being displayed.

Required Behavior: Error message should not displays and user should be able to use the AvnFPS system to monitor the TAFs and METARs. (DR 18359)

84. Problem: GOES-R channel DVB pids not displayed/processed on downlink CP at sites

Currently DVB receivers at sites are monitored using S300_stats and mc_sbn_S300_dvb commands. mc_sbn_S300_dvb runs as a daemon and collects EbNo values once every 30 minutes. It also interfaces with ITO to report the EbNo when the value goes below the threshold.

When new channels were added to SBN for broadcast (GRE, GRW, EXP, ENC), site DVB receivers were also configured to receive the multicast traffic from these new channels. New PIDS were added to the DVB receivers to map the channels. Utilities used to collect the stats from DVB receivers were not modified to reflect the new channels. Hence the PID list was not processed correctly.

One of A1 process (mon_client) is not started on A2 sites. This process is required to read the entries from the named pipe (/dev/p_LOG) to which retransmission process writes. If the process is not started then at some point, pipe may become full and other processes would not be able to write to it.

Operational Impact: It does not impact SBN data availability. However when the signal strength gets too low, then it will not be reported to ITO.

Required Behavior: The script should output EbNo values constantly to ITO once every 30 minutes. Start mon_client process as part of LDM startup. (DR 18344)

85. Problem: Add support to site CP retransmit process for new channels

The site retransmit program (start_sbn_retransmit) and associated shared libraries do not currently support retransmission on the new SBN channels (ADD, EXP, ENC, GRE and GRW). As a result, the program crashes when a retransmission for a product on any of those channels is created, which affects retransmission requests on all channels. None of these five channels are operational yet. This problem was identified during field testing of GOES-R.

Operational Impact: A retransmission request from LDM for any of the new channels will crash the retransmit process on a site's CPSBN.

Required Behavior: Retransmission requests must be able to be submitted for every channel. (DR 18325)

86. Problem: GFE: Received NPE error when loading various model grids

When attempting to populate all the grids for the latest GFS40 model, although the grids did populate, the following error was noticed.

```
An internal error occurred during: "Populating ParmS".java.lang.NullPointerException
at com.raytheon.uf.common.dataplugin.gfe.slice.WeatherGridSlice.equals(WeatherGridSlice.java:236)
```

```
at com.raytheon.viz.gfe.core.griddata.AbstractGridData.equals(AbstractGridData.java:698)
at java.util.ArrayList.indexOf(ArrayList.java:298)
at com.raytheon.uf.common.util.RWLArrayList.indexOf(RWLArrayList.java:418)
at java.util.ArrayList.contains(ArrayList.java:281)
at com.raytheon.uf.common.util.RWLArrayList.contains(RWLArrayList.java:407)...more
```

Operational Impact: There appears to be no operational impact besides receiving the error in AlertViz.

Required Behavior: No error should be thrown when populating grids. (DR 18323)

87. Problem: Relocate avnfps hdf5 to edex shared

The hdf5 (climate) files used by AvnFPS are not in the directory where CAVE is looking. As a result, climate products in AvnFPS cannot load. The files are currently in the cave plugin: com.raytheon.viz.avnconfig. The climate/AvnFPS hdf5 files are to be moved to /awips2/edex/data/share/aviation and installed by the awips2-aviation-shared rpm.

Operational Impact: Climate products in AvnFPS cannot load.

Required Behavior: The hdf5 (climate) files used by AvnFPS need to be located in the /awips2/edex/data/share/aviation directory and to be installed by the awips2-aviation-shared rpm. (DR 18322)

88. Problem: Re-write FFMPGeometryFactory to use FFMPMonitor loading

It has been found in testing that the FFMPGeometryFactory used for Hazard Services with the DAF method of loading produces result that are slightly different on occasion than the results that come from the mainline FFMP. Main line FFMP load data using the FFMPMonitor framework. This discrepancy, although small and occasional, manifests itself by showing basins that meet criteria and are not warned by the FFMPRecommendar and vice versa. This discrepancy needs to be fixed.

Having the DAF FFMPGeometryFactory use the same loading mechanisms (framework) that main line FFMP uses should clear this up.

Operational Impact: The Flash Flood Recommender in Hazard Services does not recommend the correct data.

Required Behavior: Data Access Framework needs to retrieve the correct data for the Flash Flood Recommender to use. (DR 18321)

89. Problem: InterrogationKeys don't implement hashCode correctly

The interrogation API where ClassInterrogationKeys do not work correctly produces an error.

Operational Impact: No known operational impact. The impact is to development using or understanding the API. (DR 18280)

90. Problem: Master Rights File and license updates for 16.2.1

Update the Master Rights File and open source credits with software name, version and license information. Include text of all open source licenses in use.

Required Behavior: Master Rights file should be updated for 16.2.1. (DR 18279)

91. Problem: Registry auth exceptions buried when security properties alias is wrong

If by some chance someone accidentally sets the alias for a site's security.properties alias (cluster ID) to the wrong thing, the alias in the file doesn't match the alias used in the certificate presented to central. It is confusing and non-descript when too many re-direct messages come out of the stacktrace, and makes debugging the error extremely difficult. A better error should be injected somewhere in the chain saying to check the alias for the cluster ID.

Required Behavior: Handle error message better. (DR 18278)

92. Problem: Disable transmission of SHEF products from Hydro Time Series in DRT/Operational mode

Similar to RODO DRs 4858 and 4859. Hydro Time Series should not be allowed to send SHEF products with simulated time.

Operational Impact: SHEF products can be transmitted when CAVE time is in DRT.

Required Behavior: Transmission of SHEF products should be disabled when the CAVE time has been displaced from real time. (DR 18275)

93. Problem: Pressing the Esc key on the connection dialog incorrectly triggers Ok instead of Cancel

If you have the Connection Dialog up in front of you to enter a server address (thin client or normal cave), if you press Esc it counts as an Ok. If you press Esc it should trigger the Cancel, not the Ok.

Operational Impact: The Connection dialog fails to close or notify the user that information has not been entered when the ESC key is selected on the keyboard.

Required Behavior: The Connectivity dialog should quit when the ESC key is used. (DR 18274)

94. Problem: Error returned when selecting the Attributes... button after the MRMS-RadarOnlyQPF radio button is selected

Error returned when selecting the Attributes... button after the MRMS-RadarOnlyQPF radio button is selected/displayed in the FFMP

Basin Table mrms dialog. The Attributes dialog expands larger than normal with a large gray area...and no Close button.

```
Unhandled event loop exceptionjava.lang.StringIndexOutOfBoundsException: String index out of range: 20
at java.lang.String.substring(String.java:1907)
at
com.raytheon.uf.viz.monitor.ffmp.ui.dialogs.AttributesDlg.createAttributeControls(AttributesDlg.java:250)
at
com.raytheon.uf.viz.monitor.ffmp.ui.dialogs.AttributesDlg.initializeComponents(AttributesDlg.java:120)...more
```

Operational Impact: The Attributes dialog is too large, filled with unnecessary blank space and no close button.

Required Behavior: Have the dialog size correctly to the contents within the dialog, and make sure the Close button is always available. (DR 18273)

95. Problem: Ensemble Tool: Resource ingest mechanism must ensure correct tool layer to resource mapping

While resources are loading: switching from one editor to another, when both editors contain an active (i.e. "editable") ensemble tool layer, will associate the resources with the wrong navigator/viewer.

Operational Impact: Ensemble Tool can display incorrect information for plots.

Required Behavior: Should display correct information. (DR 18270)

96. Problem: EnsembleTool needs to have no active object references once closed

Currently, the EnsembleTool still has the reference to itself (because it was designed as a singleton, which means there is only one tool for the entire CAVE application). The most important reason this is needed is not to have ET object instances sticking around.

The other reason is that it helps the user to ignore multiple requests for turning the tool on; e.g. if the user clicks the "Ensemble Tool" menu item more than once then it will call an internal execute method which currently does not check to see that the tool is already running. (DR 18252)

97. Problem: Ensemble Tool: Updates to feature.xml and MANIFEST.MF

This DR is for the check-in of changes to feature.xml and MANIFEST.MF - related to the Ensemble Tool. (DR 18247)

98. Problem: GFS20PostProcessor does not handle CP6hr/CP3hr grids

The GFS20 (GFS215) is being delivered over the SBN with precipitation accumulations alternating between 3-hour and 6-hour through the first 84 hours. The GFS20PostProcessor, delivered in OB 15.1.1, adds the missing TP3hr grids at the 6-hour time steps by subtracting the preceding TP3hr grid from the current TP6hr grid.

The current code looks specifically for TP6hr grids. The model also includes CP6hr and CP3hr (convective precipitation) that follow the same alternating accumulation pattern as the TP grids do. The model also includes CP6hr and CP3hr (convective precipitation) that follow the same alternating accumulation pattern as the TP grids do. The code needs to be updated to handle either instance. (DR 18246)

99. Problem: Additional DRT mode fixes for GFE in order to support new SmartScript APIs

This is a follow on to DR #17872 (RODO 4858), which was moved to build 15.1.2, due to some refactoring that was done to support the new SmartScript APIs (DCS #18083, RODO 4804 and 4806) for text product generation/transmission and some additional checks will need to be added to those classes so that users cannot generate or transmit GFE text products.

Operational Impact: Users can change the D2D CAVE clock in DRT mode, launch GFE, and publish grids dated in the past.

Required Behavior: No GFE grids should be allowed to be published if system time != CAVE time. (DR 18234)

100. Problem: UtilityNotify bean access not correct for registry JVM's

IN the central and client registry's, the UtilityNotify bean is not accessible because it is not in the registry modes for either registry or the centralRegistry JVM startups.1

Operational Impact: Registry files will not get updated correctly causing Data Delivery to get out of sync.

Required Behavior: The central and client registry UtilityNotify bean needs to be accessible. (DR 18233)

101. Problem: PyPies silently stores incorrect values when replacing record with different data type

When an attempt is made to REPLACE a record with a different data type (i.e. replace a ByteDataRecord with a ShortDataRecord), PyPies does not throw any errors but the type of the record in hdf5 is not changed the data is potentially corrupted.

If PyPies cannot be fixed to actually replace the data correctly it should at least throw an exception and not corrupt the data in hdf5.

Operational Impact: The record that Pypies stores could be corrupt and it would go unnoticed. The severity depends on the file that is corrupt.

Required Behavior: PyPies should throw an error if the record cannot be updated. (DR 18232)

102. Problem: Extend FFMP HFO emergency fix to all HUC levels

Site HFON reported that after their AWIPS II upgrade they were no longer able to view FFFG data in FFMP. In their FFMPRunConfig.xml they are specifying ACR (Alaska RFC) as a data source, but they don't get data from them. Instead they use static forced FFG values exclusively. The ACR definition is a dummy source and it is the same that was used in AWIPS I. AWIPS II need to be changed so that the FFFG data can be utilized with the dummy definition like in A1.

The initial issue for All basin HUC's in #18034 (RODO ticket 4879) was fixed. Aggregates are not fixed however. This ticket will take the initial fix that worked for ALL HUC and make it for the other HUC levels. RODO 4879 is the original ticket.

Operational Impact: FFFG cannot be used at the HUC levels. Depending on the forecaster, this could limit their ability to use the data.

Required Behavior: FFFG should be used with the HUC levels. (DR 18231)

103. Problem: AvnFPS ingesting some TAFs causes Null Pointer Exception in the TAF parser

The problem is due to the TAFChangeGroupFactory.getTafRecord getting a TafPeriod that has a null start and/or null end time. Two possible solutions:

- 1) Have getTafRecord check for the null values and throw an exception. (See below for details.)
- 2) Better solution if it doesn't impact anything else is to have the TAFSubGroup.createPeriod return a null period when the start and/or end time is outside the range of the issueTime.

Operational Impact: None. This is giving a better error message so we can determine why the TAF was bad.

Required Behavior: Error should be thrown on the correct issue on either the start time or the end time. (DR 18230)

104. Problem: Key bindings keep users from typing in the Compose text box in shared display sessions after transfer leadership

In D2D, if a shared display session is created between 2 users and leadership is transferred to the second user, the second user is unable to type/operate certain keys (0-9, ., +, -, and Enter on the Num Pad...and the 4 arrow keys). Instead of text appearing in the textbox or the cursor moving as a result of pressing the arrow keys, the keys/controls are executed on the data displayed in the main pane. This issue is repeatable in GFE (for keys 0-9, Enter on the Num Pad...and the 4 arrow keys).

Required Behavior: The user should be able to type keys (0-9, ., +, -, and Enter on the Num Pad...and the 4 arrow keys) after the display is shared. **(DR 18229)**

105. Problem: Errors storing to child taf tables

Many TAFs are failing to store with constraint violations on child tables. No software in A2 utilizes any of the decoded TAF data. Recommend simplifying the decoder and record structure to only retain the necessary fields for AVNFPS, namely removing changeGroups and all sub tables.

Operational Impact: Non-critical. Code needs to be cleaned up to retain only the information that is needed.

Required Behavior: Provide the AvnFPS information than is needed. **(DR 18228)**

106. Problem: Modified subscriptions are kept in memory when the Create Subscription dialog is not closed

If a user went back to edit the subscription without closing the Create Subscription dialog, the original selections are maintained in memory in the Create Subscription dialog. Clicking OK in the Create Subscription dialog submits the original subscription selections rather than picking up the new modifications. The state needs to be reset each time after selecting the Subscribe button in the Subset Manager dialog.

Operational Impact: The wrong information could be used for the subscription which could cause incorrect data to be retrieved.

Required Behavior: The subscription state needs to be reset each time after selecting the Subscribe button in the Subset Manager dialog. **(DR 18227)**

107. Problem: AvnFPS: Popup menu persists in the AvnFPS TAF Editor text field if pasted text exceeds the width of the text field

While testing #17723 (RODO 4588), found that if the user pasted text into the text field using the popup menu option, when the inserted text exceeded the width of the text field (AvnFPS editor opens with a default text field width of 94 characters), the popup menu image persisted within the text field, such that each subsequent insertion resulted in multiple menu images.

Additionally, while testing this, the user attempted to see if the word wrap selection would mitigate the issue, but found that regardless of whether or not the Wrap checkbox was selected, the text would not wrap, but required a hard return to go to the next line.

Operational Impact: The menus could hinder the forecaster's ability to enter in text and review text in the text workstation.

Required Behavior: The popup menus should not continue to display over the text area or display multiple times over the text area. (DR 18226)

108. Problem: Fix PurgeJob logging

PurgeJob time out is logging multiple messages, but the stack trace is not being associated with the time out message causing it to not be properly identified by the LoggingServer. Clean up printTimedOutMessage to include the stack trace as part of the running time has exceeded message. The stack trace should be generated by mewing up an exception with a passed throw able so that the stack trace can be set for the actual worker thread. Also all purge log messages are being logged twice.

Required Behavior: The stack trace reported should be correctly associated with the time out message. (DR 18225)

109. Problem: Fix West Texas LMA in menu

The menu item for the West Texas LMA needs to be fixed. It is incorrectly listed as HGLMA, and should be WTLMA. This leads to loading of wrong LMA data.

Operational Impact: West Texas LMA is incorrectly listed as HGLMA, and should be WTLMA.

Required Behavior: West Texas LMA should load correct LMA data. (DR 18186)

110. Problem: Remove calls to telnet from sendToNWR and NWRBrowser

After installing as an OTE site, Western Region ran a scan (nessus) against the terminal server and found that telnet servers were available. It was determined that sendToNWR and NWRBrowser contain calls to telnet to CRS - 0MP or 5MP processors. Both do use ssh, but still have references to telnet which haven't been removed yet. The scripts will check for the existence of /data/fxa/workFiles/nwr/CRS_10.flag. If it exists, then ssh/sftp will be used to transfer the data, otherwise telnet will be used. CRS_10.flag should exist at all sites.

Operational Impact: With telnet being disabled, if CRS_10.flag does not exist, the software will attempt to use the telnet calls and will fail.

Required Behavior: Telnet calls should be removed and replaced with ssh calls to comply with security policy. (DR 18177)

111. Problem: Text Workstation warning product expiration notices have no sound

In A1, Text Workstation product warning expiration notices were accompanied by sound. In A2, there is no sound.

Operational Impact: Forecasters may miss product expirations.

Required Behavior: Text Workstation product expiration notices should have sound. (DR 18165)

112. Problem: Enable the GRE, GRW, EXP, and ENC channels in ldm

Per RC 14798, the GRE, GRW, EXP, and ENC channels need to be activated at all sites in preparation for GOES-R. This will only entail adding a noaaportIngester instance for each of the four new channels to ldmd.conf.

AWIPS does not want pqact.conf updated at this time since GOES-R testing is still taking place with simulated data and we do not want every AWIPS site to start ingesting it until after the first GOES-R satellite is launched and becomes operational.

In addition, the LDM product queue size needs to be increased because of the increased throughput rate of the SBN. At maximum transmission rate, the product queue can only contain the last 60 seconds of data, which is problematic many retransmissions will take longer than 60 seconds after the initial broadcast to be received meaning the retransmitted version will be ingested as a new product. Recommend increasing queue size to 2GB as part of this DR.

Operational Impact: The CPSBNs at every site will receive any data broadcast on the GRE, GRW, EXP, and ENC channels. However, nothing will be processed since pqact.conf will not be updated.

Required Behavior: Sites will receive any GOES-R, EXP, and ENC channel products but will not process them. (DR 18152)

113. Problem: Incorrect envelope intersection for some southern polar stereographic projections

NCEP is using a specific southern polar stereographic map projection which fails in the envelope intersection with a worldwide grid resulting in too much data being requested and an invalid mesh being generated because it contains the stereographic point (the north pole).

Need to either increase the numerical accuracy of the WorldWrapCorrector or take into account the inaccuracy in the EnvelopeIntersection.

Operational Impact: NCEP has a specific southern polar stereographic map projection which fails in the envelope intersection with a worldwide grid.

Required Behavior: Correctly display data on a polar stereographic projection of the southern hemisphere. (DR 18091)

114. Problem: satellite_spatial table is never purged

Over time satellite_spatial accumulates some rows that aren't referenced that don't need to be there.

Operational Impact: No impact to the user unless the satellite_spatial table becomes too full which could be an impact to the database.

Required Behavior: Force purge of satellite_spatial to always keep newest grids. (DR 18089)

115. Problem: Use brute force intersection as fallback if normal envelope intersection fails

Based on feedback from NCEP with odd datasets on worldwide projections, CAVE will throw errors when trying to determine envelope intersection. This is a pretty rare case though and takes the right set of conditions to trigger it. At present we can fix it by using try/catch and falling back to the brute force intersection algorithm if it fails. While this is not perfect, it should serve for the time being.

Operational Impact: With odd datasets on worldwide projections, CAVE will throw errors when trying to determine envelope intersection.

Required Behavior: Data and imagery should load without error. (DR 18088)

116. Problem: Madis decoder processing can return an incomplete madis record

In MadisDecoder the methods processTypeD and processTypeF catch an exception while decoding a line to create a Madis Record.

When this happens the problem is logged; however the partially filled in record is returned.

Since the decoding failed should these two methods return a null record when getting the exception? Adding the incomplete record into the madis table may cause problems.

Operational Impact: Madis data records will fail to decode properly.

Required Behavior: Return null record instead of adding incomplete record to the madis table. (DR 18087)

117. Problem: PyPIES needs to handle fill values more consistently

PyPIES currently has some weirdness with fill values. If an IDataRecord comes in with a null fill value, the dataset may be created with the default fill value, which is zero. Then when retrieving the data, the fill value is put back into the IDataRecord. In this case it should be null/None, but it might come back as zero. This leads to incorrect assumptions on what is filled/missing.

Operational Impact: Certain derived parameters (e.g., haines index) incorrectly fill areas where data is missing with 0.

Required Behavior: Derived Products that contain values indicating some state should plot as expected. (DR 18086)

118. Problem: Rare metar decode/store error

The following error was encountered.

```
ERROR Traceback (most recent call last): File "/awips2/python/lib/python2.7/site-packages/pycparser/impl/H5pyDataStore.py", line 95, in store ss = self.__writeHDF(f, r, op) File "/awips2/python/lib/python2.7/site-packages/pycparser/impl/H5pyDataStore.py", line 137, in writeHDF group, props, self.__getHdf5Datatype(record), storeOp, record) File
```

```
"/awips2/python/lib/python2.7/site-packages/pycparser/impl/H5pyDataStore.py", line 173, in __writeHDFDataset ds[startIndex:] = data File
```

```
"/awips2/python/lib/python2.7/site-packages/h5py/highlevel.py", line 1288, in __setitem self.id.write(mspace, fspace, val, mtype) File
```

```
"h5d.pyx", line 231, in h5py.h5d.DatasetID.write (h5py/h5d.c:2336) File "_proxy.pyx", line 152, in h5py._proxy.dset_rw...more
```

Operational Impact: Can lose some metar data that is mostly correct.

Required Behavior: Correct invalid (NUL) characters in message. (DR 18085)

119. Problem: Removal of datauri constraint has allowed duplicates in database

In 13.5.1 AWIPS started removing the datauri column from the database and replacing with unique constraints on the fields that make up the dataURI. This will only work if all fields in the datauri have the not null constraint in the database. Otherwise, duplicates will be allowed. The following plugins need to be updated to have their database constraints fixed to ensure duplicates are not allowed:

acars

bufrascap

bufrhdw

bufrmosavn

bufrmoshpc

bufrmthdw

bufrssmi

ccfp

goessounding

grid

ldadmsonet

lsr

madis

poessounding

qc

vaa

For fields that are allowed to have a null, a new get/set method will need to be added to the class, the hibernate annotations moved to the method instead of the fields, and a marker value used to represent the null field. For Strings this will be "NULL", integers will vary based on the field type to an invalid value of some kind (-999 for lat/lon for example). The other solution is to utilize partial unique indexes. These would need to be specified in a res/scripts file as JPA/hibernate do not support partial unique indexes.

Required Behavior: duplicate entries should not be stored to the database for tables where the datauri column has been removed. (DR 18084)

120. Problem: Looping of Automatic Transition data jumps to the first frame where visible data is first available

After loading 64 frames of the combined IR and Visible satellite data loaded, advancing forward through the frames does not display/return 64 frames of satellite data. After reaching the most recent frame (last frame) in the loop (visible image), pressing the forward key brings the user back to the first frame where there is available visible data instead of advancing to the first frame displaying IR data (where visible data is not available). Stepping back displays the older frames where the visible data is 'Not Loaded' (per the product ID in the product legend).

Operational Impact: Combined satellite imagery display does not update correctly when stepping through frames or when the display is looping using the automatic transition tool.

Required Behavior: The display should correctly update when stepping through frames. (DR 18082)

121. Problem: GFE: Remove use of self._empty and self._minus from baseline SmartInits, SmartTools, and Procedures

The self._empty (grid of all 0) and self._minus (grid of all -1) members in Init.py and SmartScript.py are a holdover from A1 that is dangerous as they can accidentally be modified if used improperly which could SmartInits, SmartTools, and/or Procedures to behave erroneously.

These members should be deprecated and should be replaced by self.empty(dtype=float32) and self.newGrid(initialValue, dtype=float32) that return new grids (not references to existing grids).

self.newGrid(-1) can replace use of self._minus and self.newGrid(value) can replace self._empty + value which are used in many places in the baseline.

Removing the use of `self._empty` and/or `self._minus` allows many other optimizations using the `[]` operators.

Operational Impact: No operational impact. This is a code cleanup ticket resulting from the numpy upgrade under 17762. (DR 18080)

122. Problem: GFE leaks memory on perspective close

If you close the GFE perspective by right clicking on the perspective icon and clicking close, a noticeable amount of memory is lost that will never be reclaimed. Note that this applies only to closing a perspective, NOT switching a perspective. This should be fixed for optimal performance.

An analysis shows that some GFE jobs are not shut down, some listeners are not removed, and other various things hold references that prevent many pieces of GFE from being garbage collected.

Operational Impact: If the GFE perspective is closed during a CAVE session without restarting CAVE, memory will not be released potentially causing CAVE hangs or crashes due to out of memory situations.

Required Behavior: Memory leak should not occur. (DR 18078)

123. Problem: Update NumpyJavaEnforcer to log when it alters the dtype of an array

GFE python scripts such as smart tools and procedures can do their own manipulations of GFE grids. When they do this, it's possible they might alter the underlying dtype of the grid, potentially using more memory. For example, scalars and vectors are float32 but certain calculations can alter them to float64. Similar things can happen with discrete and weather grids, which are by nature int8.

NumpyJavaEnforcer.py ensures that when GFE goes to retrieve the results, the results are forced to the correct type. The code should be updated to log when this occurs, as it probably indicates that someone's smart tool or procedure is less memory efficient than it should be.

Required Behavior: New logging statements should be seen in the edex-ingest-smartinit log if certain conditions arise. (DR 18076)

124. Problem: GFE leaks memory in DataManager.doIsRequestQuery()

A code warning indicated that GFE's `DataManager.doIsRequestQuery()` is not closing its python sub-interpreter (`PythonScript`), which lead to a memory leak.

Operational Impact: Minimal to none. Anything using the `PythonScript` object would have to be used a number of times before any impact would be noticed.

Required Behavior: Memory should not be leaking. (DR 18067)

125. Problem: Issues with D2D's VarHeightGraph, TimeSeriesGraph, and possibly other graphs

Several issues were found when fixing exceptions in the VarHeightGraph (RODO 4189). These issues do not cause exceptions, but are visual. Similar issues may exist with other graphs, such as time height and cross section, and should be investigated.

Time Series

1. If you unload a resource, the labels on the left remain, and reloading the same resource or loading another resource adds the text to the left of the text that's already there.

Var vs Height

1. If you load and then unload a resource, load a different resource, and then zoom and pan, the grid lines for the unloaded resource remain at whatever zoom level it was at when unloaded. Loading the unloaded resource appears to "reclaim" its gridlines.

2. If you load a resource, zoom and pan, and then load a new resource, the new resource is loaded fully zoomed out, while the first resource remains at its same zoom level.

- VarHeightZoomHandler maintains state of the current zoom level, and zooming again jumps the unzoomed resources to the new zoom level.

- Sometimes loading a new resource resets some of the other already loaded and zoomed resources. This may happen when loading data on the similar type (e.g. basic->height and basic->height AGL for the same source and plane).

- All resources should reset to being fully zoomed out when a new resource is loaded. This is consistent with other graphs (such as Time Series).

Operational Impact: The CAVE display does not fully unload a resources leaving time labels or grid lines behind on the display.

Required Behavior: The resource should be properly unloaded and disposed. (DR 18066)

126. Problem: Error returned when loading Profiler data during data update

When loading Profiler data on Thin Client Linux, the following error was returned. The data did display successfully. Note that this error is one that will only appear occasionally (e.g., when the data is requested as the data is updating). This error was found while testing RODO DR #679.

```
Internal exception occurred while drawing: nulljava.util.ConcurrentModificationException
at java.util.AbstractList$Itr.checkForComodification(AbstractList.java:372)
at java.util.AbstractList$Itr.next(AbstractList.java:343)
at com.raytheon.uf.viz.profiler.ProfilerResource$.resourceChanged(ProfilerResource.java:170)
at
com.raytheon.uf.viz.core.rsc.AbstractResourceData.fireChangeListeners(AbstractResourceData.java:133)
```

at...more

Operational Impact: No impact besides the user receiving an AlertViz error.

Required Behavior: Profiler data should display without error. (DR 18065)

127. Problem: Name Required popup window missing a Cancel button

The warning popup window that appears when clicking the SAVE button with an empty 'Saved Region Name' textbox in the spatial tab of the Subset Manager dialog is missing a Cancel button. Add a Cancel button.

Required Behavior: Cancel button should be on the popup dialog. (DR 18064)

128. Problem: LocalizationFile methods are too tightly coupled to java.io.File

The methods provided by LocalizationFile are too tightly coupled to java.io.File. This tight coupling makes it very difficult to optimize or fix problems found in the internals of localization. Changing/removing these methods would provide the first step in allowing a more flexible API that could be more easily adapted. Examples of possible improvements that are impossible with the current API are:

1. Freedom from file locks
2. In-memory caching of file contents
3. Direct data streaming from the server (or peers)
4. Alternative persistence layers (Possible examples include packed jar files, memcached, git object store or compressed files)
5. Enforcement of protected files.

This ticket does not aim to implement any of the above improvements, just to clean up the API so they can be transparently tested and implemented in future releases. (DR 18062)

129. Problem: AvnFPS: Problem with syntax checking (wrong error message)

When the user amended a TAF and went to click Syntax and then Send, the user noticed that it was giving an error at the bottom, the error said that there was an extra '=' sign or 'TAF' is missing at beginning of TAF.

Operational Impact: Syntax reporting a wrong error can cause confusion to user and waste user's time and effort.

Required Behavior: Syntax should not report a wrong error. (DR 18061)

130. Problem: GFE edit area cache is never releasing any edit areas leading to eventual OutOfMemory exceptions

The refDataCache in ReferenceSetManager is currently using a WeakHasmMap. Unfortunately the keys in this map are referenced by the values so no elements are ever released from the map. This can result in OutOfMemory exceptions if a large number of edit areas are loaded in a GFE session.

Operational Impact: Issue can eventually lead to out of memory exceptions in CAVE.

Required Behavior: Out of Memory scenarios should not occur due to edit area caching. (DR 18060)

131. Problem: GL string rendering doesn't render underlines, overlines, or strikethrough correctly

NCEP identified a problem with text attributes in PGEN when rendering on the OpenGL canvas.

Operational Impact: Underlines, overlines, and strikethrough are not rendered correctly for text attributes in PGEN.

Required Behavior: All underlines, overlines, and strikethroughs should render correctly on the display. (DR 18058)

132. Problem: NWPS: Derived parameters Wave1-10 and Period1-10 displayable at extraneous levels; should be Sfc only

HFO noticed that for nwpsTrkngCG0 the Wave1-10 and Period1-10 parameters were available at many atmospheric levels (Boundary Layer, etc).

Operational Impact: Having wave-related parameters available at atmospheric levels erodes product confidence.

Required Behavior: The Wave1-10 and Period1-10 parameters should have only Surface level available for loading from Volume Browser. (DR 18054)

133. Problem: Derived parameter notification causes first inventory to initialize twice

When derived parameters is first loaded, it notifies listeners that it has changed asynchronously. Unfortunately, by the time the notification happens it is usually after the first inventory has become a listener which causes a freshly created inventory to reinitialize itself. This is visible when you first load the grid inventory because you see the following output twice:

Time processing gather nodes = 128

Time to GetRadarDataTreeRequest for KOAX = 874ms

Required Behavior: To help improve performance, derived parameter inventory should not reinitialize upon initial loading of the volume browser. (DR 18021)

134. Problem: Full Disk Himawari Imagery does not display full resolution near the edges

When displaying a full disk himawari image on a geostationary projection some areas of the image will only display the lowest resolution tile level. The problem occurs because the center of the tile is off the edge of the disk and we calculate tile disclosure level based off the center of the tile. The TileLevel code in ufcore needs to be updated to choose another point for calculating pixel density when the provided point is NaN after reprojection.

Operational Impact: Some areas of the image will only display the lowest resolution tile when displaying full disk himawari imagery on a geostationary projection.

Required Behavior: Pixel density should be consistent across projected imagery. (DR 18018)

135. Problem: WarnGen: Unable to COR CAN/CON products and subsequent products in a product lifecycle

In WarnGen, if a user issues a CAN/CON for a product (SVR,FFW,TOR, etc) they are unable to issue a COR for that product once issued. Users were able to do this in AWIPS I.

Additionally, once a CAN/CON is issued, if a user wants to issue a CON for the same product, they are unable to issue a COR for that product.

Operational Impact: Unable to correct a mistake for a product sent out, potentially causing misinformation to remain in an active product.

Required Behavior: User should be able to issue COR for CAN/CON products. (DR 18017)

136. Problem: AvnFPS: Problem with Restore function

BYZ reported a problem with the Restore function of AvnFPS. The problem is with amending or correcting a TAF, saving it, then restoring it. If you "clear" the edit page first, then "restore" your saved amended TAF, when you "syntax" the TAF's, they will jump to the next issuance time. If you don't "clear" the page, but restore the saved amended TAF right away, the syntax works with the current hour.

The problem is reproduced on test bed. It turned out that the cause of the problem is the failure of the Restore function to populate the BBB field in the TAF editor GUI. A1 does not have this problem.

Operational Impact: User cannot use the Restore function sometimes (in case of restoring for an AMD or COR TAF)

Required Behavior: The Restore function should work without this problem. (DR 18011)

137. Problem: Fix pqact LAMP pattern to ingest Wind and Sky elements

GFE now displaying LAMP Wind and Sky elements.

Operational Impact: GLAMP's Wind and Sky elements are missing from GFSLAMPGrid.py smartinit.

Required Behavior: GFE should display GLAMP's Wind and Sky elements. (DR 17992)

138. Problem: Tracking Meteogram: Zooming into events does not result in plot being redrawn

In D2D, when a user is using the Tracking Meteogram tool, if they initiate it on an event and then zoom in, the meteogram display does not redraw for the now higher resolution image. This functionality needs to be implemented.

Operational Impact: Users will not be using the most up to date and accurate measurements in the meteogram.

Required Behavior: Meteogram should update when display is zoomed in to. (DR 17964)

139. Problem: FFMP: DPR overestimating basin rain averages

JKL reported that DPR data was overestimating the basin average rain compared to the radar.

Operational Impact: Could reduce situational awareness in a flooding situation.

Required Behavior: DPR basin estimates should match radar estimates reasonably well. (DR 17963)

140. Problem: Hydro perspective leaves a blank space when trying to save image or print in reverse

Saving the screenshot in hydroview leaves a dark rectangular silhouette the size of the opened window when saving an image or printing (only reverse image for printing) of the screenshot.

Operational Impact: Saved/printed file is essentially useless since there is a large, blank space in the middle.

Required Behavior: Should save or print the image in its entirety. (DR 17960)

141. Problem: AvnFPS: Can't issue TAF with different forecaster ID

In AWIPS I forecasters had the ability to select any other forecaster as the "issuer" of TAFs when they are transmitted. However, in AWIPS II, there is no way to do this and forecasters are only able to select themselves (person currently logged in). This is an issue for the 06Z TAF issuance, since the TAFs are written by the evening shift, but transmitted by the midnight shift. Although the evening shift could put them into the queue and the correct forecaster would be

assigned to them, this is not usually done since final QC and minor forecast adjustments are sometimes needed to be done before transmission.

Would like to see the functionality from AWIPS 1 restored so that forecasters can select any other forecaster as the issuer.

Operational Impact: For 06Z TAF issuance, the TAFs written in the evening shift will not be able to be sent out by the midnight shift.

Required Behavior: Any forecaster can send any TAF using any other forecaster ID in the list. (DR 17937)

142. Problem: WarnGen: Add capability to suppress "ern" in, for example, Southern Texas for state location

At CRP, the state location is being worded as 'Southern Texas'. The desired wording to be used is 'South Texas'. In addition, MEG needs WEST TENNESSEE and MRX needs EAST TENNESSEE.

In addition, HGX has requested that "Southeastern Texas" be worded "Southeast Texas".

The requirements are to suppress the "ern" for a specific direction state-wide at a specific CWA, for example, suppress all "ern" in all Southern Texas for CRP.

Operational Impact: This could cause public confusion as to the geographical location of the warning.

Required Behavior: Remove "ern" in Southern Texas for CRP, etc. (DR 17933)

143. Problem: NRRWAVES Test script (nrrwavestest.csh) needs to upgrade to the AWIPS 2 environment

WFO at Honolulu, HI (HFO) reported that the NRRWAVES test script (nrrwavestest.csh) is still referencing the AWIPS I's text trigger directory (e.g. /data/fxa/trigger) instead of the AWIPS II (e.g. /awips2/edex/data/fxa/trigger). The purpose of the test script is to allow the sites to test the NRRWAVES program with output redirect to the NRRWAVES's TEST folder for testing.

Operational Impact: The test script will fail in AWIPS II environment since it is still referencing the AWIPS I text trigger directory.

Required Behavior: Need to update the trigger directory to AWIPS 2 text trigger directory. (DR 17909)

144. Problem: WarnGen: End time changes randomly

At AJK, when extending an areal flood advisory (i.e., create an EXT), the end time changed with Valid Period GUI (launched by clicking Change... button inside Time Range) is set randomly after clicking on OK button

Operational Impact: Resulting in incorrect end time of the product if the issue is not found by forecasters.

Required Behavior: The end time should be as the time changed to with the GUI. (DR 17908)

145. Problem: HPE: Need to change logic for dual-pol mean-field bias use

The software does not exist yet for the RFCs to transmit the dual-pol mean-field bias values to the WFO. Therefore, the logic in HPE must be modified to use the locally generated dual-pol mean-field bias values where necessary.

Operational Impact: Poor HPE results due to incorrect application of the mean-field bias values.

Required Behavior: To use single-pol mean_field bias values for single-pol based fields and to use dual-pol based mean-field bias values for dual-pol fields. (DR 17860)

146. Problem: MPE fieldgen: mpe_qpe fieldtype cannot be set to a dual pol mosaic

The mpe_qpe_fieldtype token tells MPE fieldgen which mosaic to use as the best estimate QPE. This field is then viewable in D2D. Dual-pol mosaics are not recognized in the mpe_qpe_fieldtype token and cause mpe_fieldgen to shut down without completing.

Operational Impact: dual-pol products cannot be used for best estimate QPE.

Required Behavior: The A1 dual pol products could be saved by mpe_fieldgen as the best estimate QPE. (DR 17806)

147. Problem: Lightning display sometimes skips a minute in one-minute display (NLDN, GLD360, ENTLN)

LWX reported that sometimes the display of the National Lightning Data Network (NLDN) data display drops a step in the one-minute plot.

Reproduced on dev platform with NLDN, GLD360 and ENTLN data, and on NHDA with NLDN data. Usually at least one minute per hour is missing.

To reproduce:

Open CAVE, set frames to 64.

From top menu bar, select Obs -> Lightning -> NLDN -> 1min Lgtng Seq Plot

Cycle through time steps, noting the times that appear in the product legend. There will not be a blank screen, the minute will simply be skipped.

Operational Impact: Missing lightning data can impact severe weather operations, especially during thunderstorm season.

Required Behavior: All time steps of the 1-minute lightning display should be displayed. (DR 17778)

148. Problem: Ensemble Tool must have hard-coded layouts removed, make them dynamic

Remove hard-coded layout hints in the "view" component. The display engine should be allowed to resize dynamically.

The tester would need to see the ensemble tool viewer and ERF dialog on different screen resolutions to perhaps due the effects of hard-coded height and width hints for layouts.

Required Behavior: User interface components must not hard-code layout hints. (DR 17753)

149. Problem: Unable to display wave height grids in GFE

TAE reported that after their upgrade to 14.4.1 on 20150706, they were unable to display any wave height grids in GFE. This included the Official database, Fcst database, and NWPSCG1 to name a few. They was getting an error when calling them up. He was on lx6, but it was occurring for all workstations.

```
ERROR 2015-07-06 18:08:42,945 [main] CaveLogger: Unable to get grid for
WaveHeight_SFC:TAE_GRID__nwpsCG1_20150706_0600 tr=(Jul 07 15 00:00:00 GMT, Jul 07 15
03:00:00 GMT). Temporarily using default data
WARN 2015-07-06 18:08:58,045 [main] CaveLogger: Unable to retrieve gridded data [get
data]
for WaveHeight_SFC:TAE_GRID__nwpsCG1_20150706_0600
com.raytheon.viz.gfe.GFEServerException: Errors occurred on GFE server: Error
retrieving
SCALAR data from HDF5, Failure in retrieving grid data from GridData
base
```

Operational Impact: Lack of wave height grids impacts the ability to make a marine forecast.

Required Behavior: Wave height grids should display in GFE. (DR 17732)

150. Problem: Radar Meso SAILS time matching issue

The radar MESO SAILS data is similar to SAILS, but it adds up to two more scans at the lowest elevation angle in the volume scan. The time stamp of the 3rd lowest elevation scan can be more than 4 minutes later than the 1st. At that point, the higher elevation products go blank on the Four Panel display because the time interval is more than 4 minutes.

- 1) Select and load "0.5 0.9 1.5 1.8" from CAVE - koax - koax four panel
- 2) Wait for 2 to 6 minutes; you will see blank panes (at least 3 pane)

Operational Impact: When the radar is running MESO SAILS, forecasters using Four Panel display can't see the higher elevation products when the 3rd and 4th products at the lowest elevation angle are received.

Required Behavior: The D-2D Four Panel should display all MESO SAILS products along with products at other elevations of the volume scan. (DR 17731)

151. Problem: GFE: Formatters not reporting hazards from ISC database

In the formatter, there is a red flag warning, when the user runs the FWF formatter the areas affected should show up in the headlines section, there are no error just nothing picking up the current warnings.

Operational Impact: Cannot use ISC database to generate text products with hazard headlines. PDT needs to use the ISC database due to their fire weather zones bleeding into surrounding CWAs. Some other sites are impacted as well that have forecasting responsibilities for fire weather zones outside of their CWA.

Required Behavior: Formatters generate products with correct VTEC/headlines when running against the ISC database. (DR 17701)

152. Problem: Null pointer Exception in D2DTimeMatcher

A Null Pointer Exception sporadically occurs when attempting D2D time matched products.

Start D2D

Load up lots of resource that time match frequently (radar mosaics, obs, satellite).

Leave all displays up overnight.

Note: Having lightning data, or something that updates frequently loaded may help replicate. An extensive length of time may also be needed to replicate.

Operational Impact: This problem rarely occurs. When it does occur, the user is issued many AlertViz error messages regarding time matching. This is stopped when a user exits and restarts CAVE, and if that does not work, reboots the workstation.

Required Behavior: A user should not have AlertViz messages about NULL in time matching. (DR 17612)

153. Problem: Radar: Incorrect 8-bit Spectrum Width display

In CAVE, load the super res Spectrum Width (product 155) by clicking menu kxxx-->kxxx SW.

"0.25km, 0.5dAz" indicates the 8bit super res SW product (155).

The MX value is also displayed at the upper left corner.

Although the MX value is 37 kt, the values greater than 20kt are plotted in purple (same color as RF) and sampling shows "NaN".

Operational Impact: Super res SW product is displayed incorrectly leading forecaster to misinterpret range folding instead of actual echo.

Required Behavior: Super res SW product (155) should be decoded and displayed in the same way as A1. (DR 17568)

154. Problem: HPE/DHR processing error stacktrace OHD

Something that the OHD groups has added to our code base for HPE processing of DHR records throws massive amounts of stacktrace. OHD should be instructed to fix/handle errors better in their code so as not to SPAM the ingestDat log with this useless messages.

Required Behavior: Exceptions should be caught and handled appropriately. (DR 17558)

155. Problem: NullPointerException when gridded lightning data overlaid on satellite/radar/model images

A recurring internal error on "Requesting Gridded Data" (a null pointer exception) under certain circumstances when displaying gridded lightning density images (either from ENTLN or NLDN networks). It does not happen when the lightning gridded product is displayed by itself or with plotted data overlaid, but DOES happen when combined with another image (using the Toggle Image Combination button) OR when simply overlaid with another image

Operational Impact: The impact is frequent distractions having to clear the alarm message every few minutes, and while the data appears to load properly, the distraction can be a major problem if there is significant weather underway.

Required Behavior: Should be able to load gridded lightning display with other images using the other non-lightning source as the time-match basis and not have errors. (DR 17519)

156. Problem: WarnGen: QC creates a false alert when a telephone number is included in a warning product

At PBZ, when telephone number 412-262-1988 is included in

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&&

Section of a WarnGen product, a false alert pops up saying

"Primary VTEC not right after UGC

9 UGCs while 3 counties/zones listed.

Area descriptions count does not match UGC count"

Actually there are three counties in the warning product and UGC line is correct.

Investigation shows '-' in the telephone number causes the false alert.

Operational Impact: The false alert would confuse the forecasts and delay slightly the issuance of a warning.

Required Behavior: The false alert should not pop up. (DR 17501)

157. Problem: AvnFPS: Problem with syntax checking when two errors exist

AvnFPS Syntax checking fails in some specific conditions. As an example, for the following TAF in the TAF editor

TAF

KOMA 131720Z 1318/1418 15010KT P6SM BKN250

FM131900 15018G28KT P6SM SCT100 BKN250

FM140200 23009KT P6SM SCT080 BKN120 PROB30 1404/1405 VRB15G25KT-TSRA
BKN080CB

FM141900 13014G22KT 5SM -SHRA OVC025=

There are two errors: One error is missing a blank space between "VRB15G25KT" and "-TSRA"; the other error is that the last group FM141900 is not within TAF forecast period.

In this case, Syntax fails to detect the two errors and an unhandled event loop exception is generated. After this, even if "VRB15G25KT-TSRA" is changed to "VRB15G25KT -TSRA" (a blank space was added between the two elements), Syntax still fails and an unhandled event loop exception is generated.

If the group "FM141900" in the above TAF is changed to "FM140900" so that it is within the TAF forecast period, Syntax works fine. Syntax checking should be able to detect both the errors described above at the same time.

Operational Impact: The user may not understand what needs to be corrected in the TAF by the UELE. The TAF can't be transmitted until the error is corrected. However it may not be clear.

Required Behavior: AvnFPS should be able to detect the errors described in the description section at the same time. (DR 17499)

158. Problem: NWRWAVES fails to process TCP products from WPC (formally known as HPC)

NWRWAVES generated the entire TCP product from the NWS Weather Prediction Center (WPC). The TPC product is normally initiated by the National Hurricane Center (NHC) and followed up on by the WPC upon downgrade to tropical depression or weakening after land fall. The sites normally have the option from the NWRWAVES Set up GUI to turn OFF the WPC's TCP products. Or the sites can turn it ON with one of the following two options to choose from:

(1) Process Entire HPC Advisory

(2) Process Only Non-Tabular Portion (Before SELECTED RAINFALL AMOUNTS)

This problem results in the inability of sites to trim the message from WPC before it's played on the weather radio. The entire message will play.

Operational Impact: No impact to the forecaster. However, message played on NWR will not be trimmed as desired.

Required Behavior: All instances of HPC in the code and GUI should be changed to WPC. In addition, should be able to trim product from WPC. (DR 17491)

159. Problem: WarnGen: determining hatchedArea should base on percentage/area of each marine product

DR 17359 resolve the slowness to compute hatched area when switching from SMW to MWS by using existing hatched area. However, the hatched area would not be as expected in the situation when both the percentage/area is different between the two marine products and the included area is at the border of percentage/area of the two marine products. Note that the chance to have different percentage/area between two marine products for same site is very small.

Without the fix for DR 17359, computing hatched area for a polygon when switching between two marine products takes much longer than computing hatched area for same polygon when manipulating the polygon. Theoretically, the time spent on hatching for the two scenarios should be same. The intention of this DR is to improve the performance for computing the hatched area when switching.

Note that the issue only has slight chance to impact marine products, and it indirectly relates to ticket 679192.

Operational Impact: Have slight chance to have a hatched area not as expected.

Required Behavior: Hatched area is based on percentage/area. (DR 17464)

160. Problem: AvnFPS: Receiving lightning alerts every 30 seconds

User complains about receiving alerts too often, every 30 seconds, for example, and would like to be able to set a minimum time interval between the alerts.

Currently, AvnFPS performs data checking every time new data arrives and issues an alert if a discrepancy is found between observation and TAF. In some cases, lighting alert is issued every 30 seconds, which may be excessive to some users.

Operational Impact: Frequent alerts can be annoying to users.

Required Behavior: Only one alert should play even if there is a problem with multiple TAFs. In addition the alert should only play once and then only play again if there is a new lightning strike within ten minutes (configurable). (DR 17445)

161. Problem: Comment out "affectedZones" in geospatialConfig_COUNTY.xml

While investigating issues with slow Create Text times (specifically along coastal areas at LIX, MOB and CHS) it was discovered that an entry in the BASE "geospatialConfig_COUNTY.xml" file was unnecessarily causing this process to take much longer than needed. The variable in question is "affectedZones", which basically provides the functionality to have ZONE references in COUNTY based produces (if wanted). An analysis of the BASE warnGen templates showed that there are no WarnGen templates that even make reference to this variable, thus, a SITE would need to configure their templates to notice the functionality anyway. So, commenting it out, if you are not using it, will not impact anything.

Operational Behavior: Slowdowns in create text can cause warnings to be delayed in creation and dissemination.

Required Behavior: Create Text should always create text within a reasonable amount of time. (DR 17437)

162. Problem: Problem with gridded marine data not populating entire marine CWA

ESTOF data not populating entire marine CWA. AKQ issues a Total Water Level product based on Astronomical data coupled with Guidance ESTOFS/ETSS. They populate a set of edit areas along western Chesapeake Bay along with some estuaries. The screen.gif contains the ESTOF data in "image" view and shows that the southern/western Chesapeake Bay is missing data. The ESTOFS.gif shows the small edit areas that are required to be populated. Some areas get data but many are not populated.

Operational Impact: Missing data negatively impacts the water level forecast.

Required Behavior: The gridded marine data should populate the entire marine CWA. (DR 17431)

163. Problem: NCEP/Localization Perspectives: UELE occurs when accessing forecasters.xml

There is an issue in the Localization Perspective where a UELE message is generated:

```
Unhandled event loop exceptionjava.lang.RuntimeException: Internal Error: Attempted to register LocalizationFile which had already been registered
cave_static.user.bsmith/ncep/pgen/forecasters.xml
```

Operational Impact: This will affect the administration of the list of forecasters who are assigned the task of issuing severe weather watches. One would have to apply one of the two documented workarounds which would make this task more than routine.

Required Behavior: Accessing the forecasters.xml file should not cause a UELE. (DR 17429)

164. Problem: AvnFPS: QC Syntax fails to flag incorrect entry

QC syntax is not flagging for an incorrect entry. The syntax is allowing you to write moderate snow if you have P6SM as a visibility. This is not to be allowed. This may cause a TAF to go out in error. The same is also occurring for drizzle.

Operational Impact: This may cause a TAF to go out in error.

Required Behavior: AvnFPS should be able to detect the error. **(DR 17313)**

165. Problem: Cross Section Parameter Problem from Volume Browser

BYZ reported that under cave -> x sections -> procedure or vb -> add (any) parameter, the new parameter will not be placed in the existing window. A new window will open and the parameter will be placed there.

Operational Impact: New parameters will not be placed in the existing tab. A new window will open and the parameter will be placed there.

Required Behavior: Parameters loaded separately but intended for the same cross section display should not open a new tab but be loaded within the existing tab. **(17211)**

166. Problem: AvnFPS: Allowing more than one set of routine TAFs with the same header time to be transmitted can cause confusion

There is a loose end in A2 AvnFPS that more than one set of routine TAFs for the same time period can be transmitted; this can cause confusion. This happened at one site where one set of 12Z TAFs was placed in the transmission queue by one forecaster (may be this is done by mistake) and then another forecaster placed another set of 12Z TAFs in the queue without being informed that there is already one set of TAFs for the same time period in the queue. The two sets were later transmitted at the same time and this caused confusion at the site.

It is desirable that AvnFPS can make sure that only one set of routine TAFs for a schedule period of time is transmitted. That is, if there is already a routine TAF in the queue, it should be brought to the attention of a forecaster who is trying to issue a routine TAF for the same time period (i.e., with the same header time) as the TAF in the queue.

Operational Impact: Causes confusion if two TAFs for the same time period with different contents are issued from the same office

Required Behavior: If there is already a routine TAF in the queue, the next forecaster trying to issue a routine TAF for the same time period (same header time) should be informed. **(Redmine DR 17121)**

167. Problem: Can't display PP 5 min duration in the graph using station selection mode

The user cannot create the group PPRGZE in hydro time series. These rapid reporting rain gages were installed to provide real time data for our forecasters during intense rain in areas recently burned by wildfires and that are at great risk for catastrophic flash floods & debris flows. Having the data in Time Series graphs & groups provides the forecasters with quick access to the most up to date rainfall data - all in one place - so they can decide whether flash flood warnings need to be issued.

Operational Impact: Having the data in Time Series graphs & groups provides the forecasters with quick access to the most up to date rainfall data - all in one place - so they can decide whether flash flood warnings need to be issued.

Required Behavior: Display PP 5 minutes in station selection mode. (DR 17109)

168. Problem: D-2D: Vector display failure for some global grids on mercator scales when dateline present

GUM reported that for ECMWF-HiRes and GlobalWave vector displays, if 180 deg dateline is present when a user zooms in, the display disappears and an alertviz error pops up. These are fields like wind and wind wave direction.

Operational Impact: Major model vector displays unavailable.

Required Behavior: Vectors for global models need to be displayed and zoomable across the Int'l Dateline. (DR 17072)

169. Problem: Warning decoder fails if product contains a line resembling a UGC

The EDEX warning decoder will fail if a product contains a line resembling a UGC. Example:

THE AFFECTED AREAS WERE...

GMZ074-GMZ054-

STRAITS OF FLORIDA FROM WEST END OF SEVEN MILE BRIDGE TO HALFMOON

SHOAL OUT 60 NM...

Operational Impact: If such a product is sent, it will not be possible to follow it up in WarnGen.

Required Behavior: The warning decoder should be able to gracefully handle products with lines like this. It may be appropriate to log a warning or error message. (DR 17068)

170. Problem: Dialogs for adding and editing new zones and stations in Fog, SNOW, and SAFESEAS configuration GUI not working properly

User can not to delete the newly added zones and stations after updating configuration.

The added zones do not keep coordinates when transferred from monitoring to additional list of zones. (DR 16996)

171. Problem: AvnFPS: Improperly formatted TAF products going to TOC

The TOC recently reported that a large number of improperly formatted products were being transmitted. Investigation showed that these were TAF products generated by AvnFPS. The incorrect part of the header is three spaces that are contained in the "BBB" field. The "BBB" field indicates whether the product is amended, corrected, etc., but is blank for routine issuances. The correct behavior apparently would be for there to be a null value for the field rather than the spaces.

The TOC software initially flags the product as a RER (repair) and sends it off to another directory for the product to be corrected before getting added to the correct FTUS8* collective for uplinking over the AWIPS SBN. This could introduce a minimal latency in transmission of the product.

Operational Impact: There could be a very slight latency in the product transmission time due to the reasons described in the detailed description.

Required Behavior: All TAFs produced by AvnFPS should have valid headers. (DR 16939)

172. Problem: AvnFPS: Ceiling data does not decode in AvnFPS

When the user clicks on the plots tab in AVNFPS and select "MOS bulletins", the ceiling level remains at the highest possible level all the time. After the A2 upgrade, the other parameters such as visibility and wind appear to be okay. The AvnFPS is not decoding the MOS Cig parameter and therefore, is leaving the ceiling plot at 8000 ft.

Operational Impact: User cannot view ceiling plot.

Required Behavior: AvnFPS should be able to decode ceiling data and plot the data. (DR 16908)

173. Problem: GFE: Problem with parm names with vertical levels

Every time the CAVE is started, the alertviz errors are received.

Operational Impact: Site will not activate when config contains parm names with vertical levels. (DR 16875)

174. Problem: AvnFPS: TAF editor Store to DB option does not work

When a user clicks the "Store to DB" option to save a TAF, a message is displayed saying it is saved to DB; but it actually does not store anything.

Operational Impact: It does not allow a user to save content in the TAF editor so it is inconvenient for the user, to say the least.

Required Behavior: This "Store to DB" feature should work (it should allow a user to save content of the editor). (DR 16845)

175. Problem: AvnFPS TAMPGenerator take time to spin up post-install

Users cannot use the TAF/LAMP tab during the first several hours after a new installation. The problem occurs only after a new installation and is not reproducible several hours thereafter. This is because the system needs to populate some data in order for the application to work.

Operational Impact: The application is not usable until the data loads.

Required Behavior: The application should be usable faster. (DR 16843)

176. Problem: handleOUP: Warnings Addressed Using Message Code 0

Some WWAs are being sent to the NCF with message code 0. When the message gets to the ANCF and then disseminated back to the sites it's getting stored on dx1f:/data/mhs/inbox/routine. This is a problem because there are no processes polling the directory and it ends up sitting there until it's purged. The total volume of data with this issue is low, so there's not a risk of filling up the directory. The main issue would be the risk that if a site was having SBN reception issues, there would be the potential to miss a warning. Component has been changed to GFE as it was stated that this appears to only be happening for long-fuse products.

Operational Impact: Potential for missed warnings if sites do not receive them on the SBN due to reception issues.

Required Behavior: Warnings must not use message code 0. (DR 16757)

177. Problem: TextWS: Active text window loses focus when executing script in another text window

When a user has a text window opened and is typing a product and has a background script running in another text window or if an Alertviz message comes in, the focus of the active window changes to whatever updates.

Required Behavior: The focus should stay in the currently edited window. (DR 16754)

178. Problem: Hydroview doesn't auto refresh when going to different tabbed perspective and returning

A specific case was discovered in which Hydroview does not refresh automatically when new river data comes in. To reproduce the problem, open up Hydroview in CAVE, then in a new tab, open up a different perspective such as D2D. Then switch back to Hydroview. The river status data does not automatically refresh. The map button must be clicked to allow the data to begin auto-refreshing again. This problem will never occur if Hydroview is the only application open in a particular instance of CAVE.

Required Behavior: Hydroview perspective should automatically refresh when switching back and forth between perspectives. **(DR 16744)**

179. Problem. GFE: Improve VTEC decoding

PQR reported an issue where a product failed to be decoded by the VTECDecoder and did not store in the active table. The site had manually added the prefix 'ORZ' to the beginning of some of their zone numbers in the headline. AWIPS I also was not able to decode this product. This DR is to make improvements to the VTECDecoder so that it can handle additional unexpected cases. Specifically, the decoder needs to be improved so as not to mistake the user added lines containing UGC codes as the segment UGC lines. It's a change to the regex pattern.

In addition, while troubleshooting the ticket it was realized that the active table logging needs to be improved by moving it back to its own file from the edex-ingest logs.

Operational Impact: Failure to decode a product could result in the VTEC number not correctly incrementing or a product coming up as NEW when it should be a CON.

Required Behavior: VTECDecoder should be able to decode product in the situation of TT PQR 647685 where the forecaster manually added in the prefix ORZ in front of some of the zone numbers. **(DR 16735)**

180. Problem: Cross section error while creating a new procedure with Interactive Baselines

The user was in regional scale with Interactive Baselines. Line A was shortened and placed over Grangeville, ID with a south to north orientation. The user opened the Volume Browser: Source-NAM12; Fields- Temperature, Lapse Rate, Equiv Pot Temp, Rel Humidity, Wind and Omega; Planes- LineA. After clicking Load, the data will appear but there was no topography displayed and also receive the following error message DEFAULT: Error retrieving topo value for lat/lons.

Operational Impact: If Interactive baselines is selected and shortened, it will lose the hatched terrain at the bottom of the cross-section. It makes it hard for forecasters to determine which part of the cross-section to ignore i.e. the part that is under ground.

Required Behavior:

- 1) The data should load with topography.
- 2) No error messages should appear before, during, or after loading data. **(DR 16731)**

181. Problem: WarnGen: wrong portions of counties at PQR

At PQR, for the polygon described, SOUTH CENTRAL MULTNODAM instead of CENTRAL MULTNOMAH was created in the first bullet of a flash flood warning.

Operational Impact: Incorrect portions of counties in product.

Required Behavior: CENTRAL MULTNOMAH COUNTY, instead of SOUTH CENTRAL MULTNOMAH COUNTY, should be created in the first bullet. **(DR 15688)**

182. Problem: AvnFPS: error occurs in generating guidance in certain case

A user received an error when trying to view GFS Lamp guidance in AvnFPS. In AvnFPS there is an option to select table, long or short. When the user selects long or short he gets an error saying "error generating guidance".

Operational Impact: Users unable to use GFS LAMP guidance in AvnFPS in the above-described situation

Required Behavior: AvnFPS should work without problem even in the above-described situation. **(DR 15464)**

183. Problem: Local point data maps not displaying all entities

Site ARX created a shapefile of three fire towers in their CWA and imported them into A2. When displaying them, only two show in D-2D, even on maximum density. There were no errors on the import, and all three points are present in the mapdata.fire_tower table in the maps DB. The shapefiles were created using Quantum GIS.

Operational Impact: Sites often use point shapefiles to display critical infrastructure that might need to be notified of imminent weather (such as hospitals, large sporting venues, wildfire locations, etc.). With some points not displaying - it is easy to conceive of situations where notifications might not occur because forecasters failed to see that weather was approaching these areas.

Required Behavior: All objects in a locally-created point maps shape file should display in D-2D. **(DR 15036)**

184. Problem: Product legend disappeared when procedure is loaded in D2D

The legends problem with a few procedures, made in A2 with data from the volume browser. The procedures were using either the Marine or State map scales, and are all 4-panel procedures. Product legend in D2D disappeared while loading from procedure.

Operational Impact: Diminishes the usefulness of the procedures. Forecasters will not be aware of this limitation and can wind up with a corrupted pane that is not usable.

Required Behavior: Procedures, made in A2 with data should be loadable without error and should show all parts of the original display. (DR 15034)

185. Problem: Saved Perspective Display: Can't use side-pane non-plan-view four-panel displays

PQR reported that when loading a saved perspective display, they received 'Error Loading Bundle' and 'Unhandled Loop Exception' errors. Then the empty side pane, whose display had failed to load, would remain corrupt, even if swapped to the main pane. Once this issue starts, it cannot be fixed unless CAVE was restarted.

Operational Impact: Diminishes the usefulness of the saved display. Forecasters would not be aware of this limitation and can wind up with a corrupted pane that is not useable.

Required Behavior: Saved Perspective Displays should be loadable without error and should show all parts of the original display. (DR 15013)

186. Problem: TextWS Alarm/Alert proximity alarm can error on certain product formats

If a Text Workstation proximity alarm is set for a product and an instance of that product contains "LAT..LON", but the coordinates are not in the expected format (e.g., FFGMPD), Text Workstation will display an AlertViz error.

The product will not be alarmed/alerted if it was supposed to (i.e., based on UGC codes.)

Required Behavior: Text Workstation should not display an error if the coordinates are not in the expected format. (Or, at least it should not try to parse coordinates when UGC-based matching is specified.) (DR 14995)

187. Problem: Boundary Layer Pressures being computed incorrectly

BOU reported that the Boundary layer pressures are still being computed incorrectly. Boundary layer pressures should be the surface pressure minus the mid point of the boundary layer as follows:

| | | |
|-----------------|-----------------------------------|---|
| BLCorrect | Valuesurface pressure minus 15 mb | AWIPS-II current incorrect valuesurface pressure minus 0 mb |
| 30 aglCorrect: | surface pressure minus 45 mb | Incorrect: surface pressure minus 30 mb |
| 60 aglCorrect: | surface pressure minus 75 mb | Incorrect: surface pressure minus 60 mb |
| 90 aglCorrect: | surface pressure minus 105 mb | Incorrect: surface pressure minus 90 mb |
| 120 aglCorrect: | surface pressure minus 135 mb | Incorrect: surface pressure minus 120 mb |
| 150 aglCorrect: | surface pressure minus 165 mb | Incorrect: surface pressure minus 150 mb. |

The correct value to subtract is the average pressure of the top and bottom of the layer (e.g. 30 agl is 30-60 mb above ground and thus the middle pressure is 45 mb above ground).

Operational Impact: These incorrect pressure values will have significant impacts on any parameter that uses the pressure (e.g. potential temperature) in its calculation.

Required Behavior: Boundary layer pressures should be computed as described in the Detailed Description, in agreement with A1. (DR 14947)

188. Problem: Backup localization not being held as default if clear is selected in CAVE

In AWIPS I, when a backup localization was selected from the WarnGen GUI, the backup localization stayed as the default until that session of D2D was closed. In AWIPS II the backup localization is not held if clear is selected.

Operational Impact: Could cause user confusion because when the backup localization is not selected an error message will be shown at the bottom of the GUI that says "Area outside the area of responsibility"

Required Behavior: The backup localization should stay selected in CAVE until CAVE is closed. (DR 14905)

189. Problem: GFSEnsemble probabilities calculated incorrectly; problem with Gather function

PQR reported that the GFSensemble Surface Prob of .05in/6hr Precip Img.

Appears the data is bad. Shows very sharp gradient between 0% chance and 100% chance, even at hour 192. Also, the area of precipitation jumps around with each forecast hour in a way that is not meteorologically reasonable (over Arizona at hour 186 and the Pacific Northwest at hour 192). Additionally the default color table runs from "-25" to "125", when it should be from 0 to 100.

Operational Impact: The display of these products is no longer useful to forecasters.

Required Behavior: Display of .05/6hr precip should look like A1. (DR 14870)

190. Problem: Update Obs and Accum reset when running script in TextWS

When running a script in TextWS that either uses the "repeat" command or has a call to repeat the script, if the user clicks the "Update Obs" or "Accum" boxes, their status gets reset.

Operational Impact: If a forecaster enables these options and then they are disabled, they might not get the steady stream of updates that they are expecting.

Required Behavior: Should not reset functionality if selected by user. (DR 14858)

191. Problem: SCAN: Site storm overlay not configurable

Site BOU reported that the SCAN site storm threat overlay is not using the /data/fxa/radar/kftg/tstorm/sites.dat file to determine which locations to create and display data for. Instead it is using apparently random stations from the METAR/mesonet station data files.

This file is present but does not appear to have any effect. The problem is that in AWIPS II no file comparable to the AWIPS I file exists. Therefore it is not possible to configure the site storm threat overlay.

Operational Impact: Forecasters must use the default locations for creating and displaying data.

Required Behavior: There must be a way in AWIPS II to configure the site storm threat overlay. (DR 14842)

192. Problem: In Time Options mode in D2D, radar mosaics do not load properly

Time Options - Radar Mosaic loop only radars in the mosaic that matches the specific time; never see a full mosaic.

Two outcomes have been observed:

1. One radar ONLY loads from the mosaic of many radars, and the Product Loader hangs until cancelled manually by the user (lower right CAVE corner).
2. CAVE throws an error:

```
No data available for resource com.raytheon.viz.radar.rsc.RadarMosaicResourceData
```

Operational Impact: Site will never see a full mosaic. There needs to be some "time fuzz factor" added in so that a full mosaic can be generated at each time interval.

Required Behavior: Radar Mosaic loop all radars in the full mosaic should display like A1. (DR 14841)

193. Problem: NWRWAVES fails in headline repeat option for the TCV products

From 2015 hurricane season on, the HLS products will no longer carry the tropical and hurricane hazards VTEC codes such as TR.A/TR.W and HU.A/HU.W. These VTEC codes will be issued by the tropical marine WFOs' new TCV products. Therefore, the headline repeat option problem for the DR 14838 is showing up in the new TCV products instead of the HLS products. WFO TBW reported that the tropical products in NWRWaves, headline repeat option adds valid time when it shouldn't.

Operational Impact: Need to turn off the repeat headline for now in order to avoid the error of misinforming the public in NWR.

Required Behavior: Should report a correct ending date/time. (DR 14838)

194. Problem: GFE: VTEC coding missing if formatter name doesn't contain ?Hazard?

There is a problem with the eastern region Text Formatter Region_WSW. It produces text products that do not contain VTEC coding.

It appears that the display name has to contain "Hazard_WSW" for the regional formatter to produce VTEC coding.

Required Behavior: Formatter is to produce proper text with VTEC coding whether or not formatter display name begins with "Hazard". (DR 14813)

195. Problem: Saved perspective display doesn't retain all features of 4-panel & side panes

When loading a Perspective Display (which contains some procedures), it will load the display of the specific procedure differently from when the user saved it originally for the procedure. Not only is the backgrounds with the states missing in red but the font size is different as well.

Operational Impact: The real issue lies in the fact that it makes it difficult to orient yourself on the display when the set background changes are not retained. This requires the user to go in and manually change them every time they work to make them useful. This creates unnecessary workload.

Required Behavior: When saved perspective displays are loaded, they should show all features that were in the original display when it was saved. (DR 14811)

196. Problem: Hydro: Incorrect SHEF data selected for a predefined group and site

The selected obs for a predefined group and site in the Hydro Time Series are encoded for a SHEF product. When reviewed, the selected data are not displayed for the selected site. Instead, data are listed for the site that is listed first in the Tabular Time Series GUI. The operational impact is that a correct SHEF product cannot be encoded for transmission.

Required Behavior: The selected obs in the predefined group should be displayed in a separate window, and for the selected site, and not the first site in the list. (DR 14767)

197. Problem: ndm processing does not properly update common_obs_spatial table

When ndm files that cause an update the common_obs_spatial table (metarStationInfo.txt for example) are dropped into /awips2/edex/data/ndm, the common_obs_spatial table only appends, it does not remove entries that are no longer in the file.

Required Behavior: The database table should update as expected. (DR 14754)

198. Problem: Word wrap not working properly for WarnGen impact warnings

If a user wants to add more than one line of text in an impact warning (most likely in the impact and source sections of the warning), the auto wrap does not hold the correct format and the line

becomes un-indented. In some cases you can manually get the formatting necessary however there are other cases where the indentation cannot be recreated.

Required Behavior: The user should be able to type more than one line of text and not have the formatting changed. (DR 14752)

199. Problem: Update Obs functionality in text workstation removing obs read out

If you bring up MTR000 (which shows all obs within a localization node (ex. WBC for AKQ, LWX, and RNK) and select Update Obs in text workstation, over time, obs that were originally displayed will be removed entirely from the display. In AWIPS I obs update normally and none are removed. This is occurring as far back as 13.5.1.3-4. If the user re-selects MTR000 (by pushing the up key on the keyboard and hitting enter) all obs are shown as expected.

Required Behavior: All obs should remain displayed regardless of updates. (DR 14751)

200. Problem: Ceil/Vis plot in D2D is unable to display a site with a RVR remark

Cig/Vsby Plot on D2D. Whenever a SFC VIS or TWR VIS report shows up in the RMK section of a METAR, the visibility plot on D2D goes blank. This occurs regardless of the predominant visibility being reported in the METAR.

Required Behavior: Ceil/Vis plot should display like A1. (DR 14741)

201. Problem: GFE: Certain site activation scenarios can lead to incorrect activeSites.txt

Site PQR reported that site BYZ was activated when they activated PQR. They did not intend for BYZ to become active.

Required Behavior: activeSites.txt file must correctly reflect the sites that are active. (DR 14734)

202. Problem: Time Series Point Data procedure - location doesn't correctly change using Alter

When the user loads a time series in volume browser->saves as a procedure->alters the procedure (changes point)->GFS LAMP data stays with the original point.

Required Behavior: When Procedure is altered to a new point, all aspects of the display should change to the new point. (DR 14683)

203. Problem: Triggers based on WarnGen work files do not work on initialization

At ARX, they have a text trigger set up for when the forecaster clicks create text on WarnGen (this creates a textdb entry WBCWRKWG# where # is the workstation the user is using). Currently the trigger is not working. This did work in AWIPS I. The trigger will work if in the Text Workstation GUI, Save is selected.

Required Behavior: The trigger should work as expected. (DR 14643)

204. Problem: synopticToShef needs multiple configuration capabilities

The synopticToShef process only allows for a single configuration, consisting of switches defined by the A2 get_apps_defaults token metar2shef_options and the configuration file stored in /awips2/edex/data/utility/common_static/site/XXX/shef/metar.cfg.

The metarToShef process has been revised to allow multiple configurations to be applied as controlled via /awips2/edex/data/utility/edex_static/site/XXX/plugin-filters/metarToShefFilter.xml. These features are described in Appendix X of the SMM. The same capabilities need to be provided to synopticToShef.

DR #14316 (Dim 16408) fix allow MetarToShef to use multiple options and configuration files. SynopticToShef should able to do the same. DR #14316 (Dim 16408) implemented two XML elements to allow multiple configurations: metarToShefFilter and metarToShefRun. There should be two equivalent XML elements for synopticToShef: synopticToShefFilter and synopticToShefRun.

Required Behavior: The metarToShef process has been revised to allow multiple configurations to be applied as controlled via /awips2/edex/data/utility/edex_static/site/XXX/plugin-filters/metarToShefFilter.xml. These features are described in Appendix X of the SMM. The same capabilities need to be provided to synopticToShef. (DR 14599)

205. Problem: Some IntlSigmets are not being sent to EDEX for ingest

AWCN found that some of their IntlSigmets were not being ingested from the SBN. They found a problem with the pqact.conf patterns.

Required Behavior: intsigmets with the wmoids which match W[CSV][PA|NT]10 (PHFO|KKCI) should be ingested. Also intsigmets which match W[CSV](0[0-9]1[0-3]) (DR 14562)

206. Problem: SCAN Alarm not applied correctly

While testing SCAN alarms, the user turned alarms on for 'top" and set the absolute value to 45. The next data update occurred and many cells with a top less than 45 (kft) blinked.

Required Behavior: SCAN absolute alarms should only produce the alarm graphical emphasis for those storm cells that have an attribute value that surpasses the absolute alarm value. The "Alarm" and "AbsAlarm" config parameters should be managed independently of each other, and managed correctly. (DR 14472)

207. Problem: HYDRO: Hydrobase Data Manager Rating Curve GUI problems

Problem #1)

From the Hydro Database Manger, select River Gage->Rating Curve for a station to open the rating GUI. Select the "Clear All" button to clear it out in order to test reloading it.

- The screen clears and looks empty. Then select the "save & exit" button to close, and then re-open. The Rating curve still exists and has not been deleted from the database.

Problem #2)

Select "Import Curve" from the rating GUI to go ahead and re-import the curve as if it had changed, selecting the .rating file from/awips2/edex/data/share/hydroapps/whfs/local/data/import (does default to the correct location now), it then does clear the existing rating from the active window. If I (user) "close" and do not save, the rating will still exist, if I (user) "save" and "close" or "save & exit" it clears it out and is gone the next time I (user) open it.

Problem #3)

Now that it is gone, when the user re-opens the Rating Import GUI and select "Import Curve" it is possible to navigate to the rating file and select it, but it does not load into the GUI and "saving & exiting" then re-opening also confirms that it has not loaded. (DR 14375)

208. Problem: D2D hurricane track summary can fail

The hurricane track summary can fail with an AlertViz error under certain circumstances. One scenario is two reports with the same reference time.

Required Behavior: Hurricane track summary should load without and update without errors. (DR 14322)

209. Problem: pqact.conf needs changes to correctly ingest - HOUSEKEEPING

KMSR sends out a grib1 and a grib2 version of the files in YEQA88.KMSR. The sites are receiving the grib1 files, but not the grib 2 version. The river models take the grib2 version.

Operational Impact: Not receiving data.

Required Behavior: The site should be receiving the grib2 version of the data. (DR 14308)

210. Problem: FFMP Blank Table

For a data gap situation, the FFMP Basin Table had a blank listing for a section of time.

Required Behavior: The FFMP Basin Table should not be empty when data is present. (DR 14093)

211. Problem: GFE: Removing editArea files without removing them from editAreaGroups issue

The user attempted to remove these files. The user had all the other users log out of GFE. The user then removed the files and then had everyone log back in. Once they logged back in, the files were recreated with the old data showing up in the edit areas. This issue arises if any editAreaGroup files reference editAreas which are nonexistent. The ReferenceSetManager updates the groups to remove them and stores them to the user level. Once the site level edit area group files are corrected users are able to delete the user level ones and they shouldn't come back.

Required Behavior: If an edit area is deleted, the software should adjust editAreaGroup files accordingly. (DR 14017)

212. Problem: GFE procedures calling other procedures with parameters invoke errors

Site BOU reported the following issue in GFE. Calling a GFE procedure from within another procedure and passing parameters such as varDict from the calling procedure results in the cave stacktrace.

Operational Impact: Certain local procedures need can't be run before updating their code with the workaround.

Required Behavior: GFE procedures able to call other GFE procedures with parameters without evoking errors and stacktrace. (DR 14016)

213. Problem: GFE: Quick View mode only works partially

When the Quick View mode (eye icon in the tool bar) is activated, and the user mouses (hovers) over the grid blocks in the temporal editor, the map display does not update, even though sample points do. The image is supposed to change to display the correct grid data.

Operational Impact: Users unable to use quick-view mode - inconvenience.

Required Behavior: When hovering the mouse over the grid blocks in temporal editor, the grid data should update to reflect the grid currently being hovered over when in Quick View mode. (DR 13971)

214. Problem: GFE: Move function in move/copy tool in GFE not working post upgrade

The Move/Copy tool allows a forecaster to move or copy discrete areas around their GFE domain.

The issue is when the user tries to middle-click/MB2 drag this selected feature to a new location (i.e. move it), the feature gets moved to the location that the user selected, but the original is not destroyed/replaced by different values. In the resulting image, the hashed area of 100% PoPs should have significantly lower values. In other words, only the area of 100% PoPs toward the lower right of the image should remain.

Required Behavior: The move function should work. (DR 13951)

215. Problem: GFE: UKMET model creating hdf5 data at 6Z and 18Z but not postgres record

On the BCQ system the user noticed that the UKMET smartInit does not calculate anything for the 06Z and 18Z model runs. This is currently exposing a bug in GFE where we create hdf5 data for the new database but never create any PostGres records so the hdf5 never gets purged. (DR 13772)

216. Problem: GFE: Clicking AdjustValue_Up repeatedly results in grid corruption

If a user clicks on AdjustValue_Up many times very fast via the Edit Actions dialog, an error can result which leaves the WindGust grids in a bad state (WindGust was what the issue was reported for, but can happen for any grids). Once this happens you will need to restart the GFE session or you will not be able to save the WindGust grids.

Required Behavior: The user should be able to click as many times as they wish without this problem occurring. (DR 13756)

217. Problem: HydroTS - Missing data after zoom, edit, reset

After the fix for DR15493, HydroTS allows a user to edit (delete) data while zoomed in on a hydrograph. However, when zoomed back out ('reset'), all data points outside the zoom box no longer display.

Required Behavior: The reset function after a zoomed-in edit should display all the data, not just that within the zoom box. (DR 13736)

218. Problem: Spotter Readout Sample Incorrect

When you load Spotter Readout from the Map menu and turn sampling on you are able to get name/address/phone number etc. When you hover over a point that has multiple entries and the readout would extend below the editor it reverses the readout display to above the mouse instead

of below. The problem is that it also reverses the text so instead of reading from the top down you have to read from the bottom up. This can cause forecasters to call the wrong phone number when trying to contact a particular spotter.

Required Behavior: Load Spotter Readout from the Map menu and turn sampling on you are able to get name/address/phone number etc. **(DR 13678)**

219. Problem: Cross section image color scheme changes between frames

BOU reported that via the drop down menu in d2d or via procedure cross section image color tables change dynamically with each frame. For example, wind speed @ 50 knots displays red in one frame, but blue in the next, and then yellow in a following frame. Temp and dewpoints also have the same behavior.

Required Behavior: Cross section image should have a consistent color scheme when loaded. **(DR 13652)**

220. Problem: TextWS: Text wrapping problem in text editor

If a user attempts to edit the body of a text product like AFD following ".SYNOPSIS...", the text wraps up to the previous line.

Required Behavior: The text should not wrap to the component name. **(DR 13614)**

221. Problem: For cross section display, plane cannot be changed without clearing screen

When displaying cross sections from the Volume Browser, if the user has selected a certain Lat, Lon or Specified line and then wants to change that location, the display must be cleared before the new location can be displayed. In AWIPS I, the user could change selected location from the VB and click Load, and the display would be replaced to reflect the new location without needing to clear the screen. Tested on NHDA and TBW3 and compared to A1 on NMTW.

Required Behavior: User should be able to change and load a new cross section without clearing the old, as in A1. **(DR 13608)**

222. Problem: Problems with the spell checker in GFE

BYZ reported issues with the spell checker in the GFE product editor.

1. The spell checker does not match special words whose proper form is a mix of uppercase and lowercase letters. These include names of the days of the week, state names, etc. This is due to the platform dictionary containing the proper form of these words only, and the spell checker tries to match the checked uppercase words and their lowercase versions.

2. Not matching a special word, the spell checker suggest the same word as replacement (if it's present in the platform dictionary). When the same suggested word is added to the dictionary, the lowercase version of the word is added to the user dictionary. After adding the word the checker will validate it the next time its run.

3. Currently the user dictionary is set to a user-level file, so the added words are not shared among different users. Setting it to a site-level file would facilitate sharing.

The spell checker is shared with text workstation.

Required Behavior: Most correct words should be validated by the spell checker. (DR 13431)

223. Problem: FFMP RFCFFG incorrect data values: independent displays

The FFMP RFC FFG independent displays in A2 show data values that are very different from what is seen in A1.

Operational Impact: AWIPS II RFCFFG independent displays should be identical for the same time/date when compared to AWIPS I. (DR 13137)

224. Problem: Data Scale does not work

In AWIPS I, selecting Options - Data Scale results in the next load using the native scale of the selected dataset. This applies to individual radars, satellite, and grids. The implementation in A-II is incomplete. There are several issues:1) Data Scale does not work at all for grids and satellite images2) for radars, while Data Scale works, the image is too large - the data-limit circle seen in some products such as SRM should be inscribed in the window, but it extends past the edges (compare A-I and A-II)3) selection of Data Scale should be transitory, for the next load only, but in A-II it stays selected until turned off.

Operational Impact: Data scale does not work correctly with radar data. It does not work at all for grid and satellite imagery.

Required Behavior: Remove the Data Scale menu option. (DR 12991)

225. Problem: LDAD data not available in VB for time series

LDAD data is not available in the VB for time series. NCF exported an AWIPS1 D2D from LX1-NMTW and was able to see data inventory available for the time series in the VB.

Steps to recreate:

1. Open Volume Browser and select time series at the top2. For Source, choose Point -- LDAD. There are none available.

Required Behavior: LDAD data is should be available in the VB for time series. (DR 12586)

226. Problem: GFS Ensemble Precip display problem

In D2D when trying to display the GFS Ensemble precipitation fields, some of them come up with incorrect values. They are still labeled in inches but the values are way too high (20-50 inches). This is occurring on the following 2 fields... GFSEnsemble Surface 6hr Mean Precip
GFSEnsemble Surface 24hr Mean Precip Values displayed in inches are way too high, it is possible that the wrong conversion is being applied to the netCDF file???

Required Behavior: Cannot display some of the GFSEnsemble model. **(DR 12523)**

227. Problem: Units change when geostrophic winds loaded as image in D2D perspective

D2D perspective: In D2D (Volume browser), when loading the geostrophic winds as an image, the units change from kts to m/s. Expand perspective for OAX to determine which products they want in feet/Kts vs KM/meters/s. Then, change configuration files for both contours and images to match. **(DR 12044)**

228. Problem: D2D jumps to last frame with model updates

When the user has a model loaded in the main pane of D2D (e.g., GFS40) as a new model run is coming in...and has a frame displayed with the older model run...the data/display jumps to the last frame (e.g., 240HR) when the updated data arrives for the displayed frame. The same frame should remain displayed...but with the updated data. **(DR 8521)**

229. Problem: GFE: CAVE doesn't update cycle of ifp database created by iscMosaic

When creating a new grid using iscMosaic from the command line, the new grid does not update in the GFE pane until the GFE perspective is closed and re-opened. Instead, the older model run persists. For example, let's say the current version of our custom GFSOROG model is the 17th at 00 UTC. When the user runs iscMosaic to bring in the 12 UTC run, it successfully creates the new run in the database and the user can manually pull it in from the WeatherElement Browser. However, the new run does not automatically appear in the GFE like it does for the standard models.

Required Behavior: New model run should automatically replace older cycle in CAVE. **(DR 111)**

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 and DCSs for Release 16.2.2

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 18938 | DCS | MHS, to support PGEN XML file sharing between sites |
| 18854 | DCS | Add 20km Pacific GFS grids to AWIPS |
| 18810 | DCS | Add casa plugin to thin client |
| 18764 | DCS | SBN & NWWS Data Availability Metrics Collection |
| 18733 | DCS | Add 20km Pacific GFS grid and remove 381km GFS data |
| 18729 | DCS | CAVE: Increase java heap space from 4096M to 6144M in cave.ini and wfo.ini files |
| 18711 | DCS | NSHARP improvements for 16.2.2 |
| 18710 | DCS | NCEP CAVE Plugins for 16.2.2 |
| 18709 | DCS | NCEP EDEX Plugins for 16.2.2 |
| 18699 | DCS | Consolidate DD registry/centralRegistry modes with ebxmlRegistry mode |
| 18690 | DCS | Add support for short data to the PointSet plugin |
| 18689 | DCS | ByteArrayOutputStreamPool doesn't allow for safe data access after close |
| 18688 | DCS | EDEX should periodically monitor tables for need to reindex |
| 18687 | DCS | Isolate simple text product decoding |
| 18685 | DCS | Update JAXBManager for Java 7 (maintain backwards compatibility) |
| 18684 | DCS | Menu variable substitution cannot substitute variables |
| 18677 | DCS | Replace calls to deprecated LocalizationFile methods in Raytheon edex/common/viz plugins |
| 18671 | DCS | UtilityManager should optimize checksum loading of large directories |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 18670 | DCS | ebxml-thrift-client-route.xml duplicates much of request-service.xml |
| 18643 | DCS | Rework thin client connections (JMS) preferences to be more intuitive |
| 18628 | DCS | Remove dataURI from database where possible |
| 18615 | DCS | Format query results on the EBXML registry web interface query page into a more user friendly format |
| 18614 | DCS | PythonJobCoordinator API code enhancement |
| 18613 | DCS | EDEX GFE startup should initialize on its own thread |
| 18612 | DCS | Use netcdf data description in goesr decoder |
| 18611 | DCS | 16.2.2 NCEP Support |
| 18603 | DCS | Handle GOES-R products received in the Center/Test position |
| 18597 | DCS | VIIRS Imagery Updated NCC Color Table and VIIRS Purge Rules |
| 18582 | DCS | Remediation of high findings from source code scan |
| 18537 | DCS | Improve efficiency of rendering satellite winds |
| 18528 | DCS | 16.2.2 Build and Merge Support |
| 18521 | DCS | Switch LAPS/MSAS to use DAF scripts |
| 18497 | DCS | DSA Product Processing: Need to add new functionality due to ORPG Build 17 Changes |
| 18427 | DCS | Code Improvements for DR 18384 (Vlab 13938) |
| 18425 | DCS | National Radar Display |
| 18408 | DCS | Remove or separate legacy binlightning decoder |
| 18405 | DCS | Add an entry to userRoles.xml |
| 18403 | DCS | A user-defined boundary type for AWIPS2 Boundary Drawing Tool |
| 18402 | DCS | Storing boundaries data to site level |
| 18378 | DCS | CIS nodev/nosuid/noexec /tmp implementation |
| 18338 | DCS | Ensemble Tool: Distribution Viewer |
| 18337 | DCS | Ensemble Tool: Matrix Navigation feature |
| 18309 | DCS | Display MRMS v11 Products |
| 18308 | DCS | Expand SPC Watches to outer coastal marine zones. |
| 18251 | DCS | Add PVPF data to AWIPS2 |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|---|
| 18180 | DCS | Study and address RODO code improvement recommendations for DR 17935 |
| 18172 | DCS | Finalizing the Product Specifications for Mixed Case |
| 18161 | DCS | National Blend for Global models (Version 2) |
| 18145 | DCS | grib decoder is unable to differentiate between two different model sources that share the same grid definition and forecast_process id |
| 18139 | DCS | Make gfeParamInfo.xml overrides be accumulative, not a full override |
| 18133 | DCS | Radar: Implement two new Volume Coverage Patterns (VCPs) |
| 17997 | DCS | Gamma control for true color imagery |
| 17952 | DCS | Changes to Support LX Workstation Replacement |
| 17821 | DCS | Damage Path Tool Kit (Phase III) |
| 17815 | DCS | WAVEWATCH III - add Wave Steepness |
| 17685 | DCS | Damage Path Tool (Phase III) |
| 17637 | DCS | Remove NWSRFS Deliverables from the AWIPS Baseline Deployment |
| 17419 | DCS | Addition/reconfiguration of Satellite Imagery Menu selections for OCONUS sites. |
| 16853 | DCS | Nationalization of SmartInits |
| 15116 | DCS | Install LAPS at the RFCs and OCONUS sites in order to get radar data into GFE |
| 14845 | DCS | Ingest and Display NAM-DNG 2.5km CONUS |
| 14607 | DCS | Hydrobase: Add a WFO filter parameter to Ingest Filter GUI |
| 14576 | DCS | SE: Need to calculate Haines Index for models |
| 14471 | DCS | Latestobsvalue Table not updating in Hydro Time Series |
| 14232 | DCS | Expand locarea:area field in IHFS DB |
| 14228 | DCS | Expand text fields in the IHFS DB/Hydrobase |
| 14217 | DCS | Remove Hydro Time Series Limitations |
| 13910 | DCS | GFE: Wave model data should be available in 3-hrly timesteps |
| 13475 | DCS | Hydro TimeSeries do not update in time series while zoomed in |
| 11248 | DCS | Add NAVGEM(COAMPS) to list of known models - TTR6151 |
| 8593 | DCS | ApparentT Smart tool missing |
| 19003 | DR | LAPS: reformatTest hangs and uses 100% of CPU on px machine |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|---|
| 18997 | DR | D2D-Tools: LocalizationFileVersionConflictException while saving the boundary data |
| 18995 | DR | MSAS: MSL pressures not displaying properly in 16.2.2 |
| 18990 | DR | LX Upgrade: Print outs from CAVE are not centered and being cut off |
| 18984 | DR | DCS18139 fix didn't enable loading all levels of gfeParamInfo.xml files |
| 18983 | DR | Hydro Database Manager: UELE when saving updates of River Gage data |
| 18980 | DR | Collaboration login dialog needs very clear error messages |
| 18962 | DR | GFE silently fails when retrieving large numbers of grids |
| 18961 | DR | YAJSW jna_tmpdir defaults to /tmp |
| 18949 | DR | Hydro Time Series: error when editing records in tabular view |
| 18948 | DR | D2D: HiResW-NMM and HiResW-ARW model data are not loading from Volume menu |
| 18936 | DR | D2D-Tools: Boundary Tool menu item not showing up Tools menu |
| 18933 | DR | BMH edex and comms_manager will not start with /tmp nodev,nosuid,noexec options enabled |
| 18932 | DR | NSHARP will not launch with /tmp nodev,nosuid,noexec options enabled |
| 18913 | DR | Baseline All Radars for National Radar Display |
| 18896 | DR | National Blend for Global models (Version 2) |
| 18895 | DR | Performance Improvement in DisplayElementFactory.java |
| 18894 | DR | Remove IP addresses from BMH test AFC-daily.ASC config |
| 18893 | DR | Remove IP address from nrldb.conf |
| 18892 | DR | Tracking Meteogram: TM tab does not dispose on clear when loaded with a 4-panel plot |
| 18890 | DR | Java heap space parameter in cave.ini and wfo.ini files will not reflect changes made within memorySettings.xml |
| 18887 | DR | GFE - TestSendWFOMessage fails due to changes in ifpClient.java |
| 18886 | DR | The Radar Menu in D2D Bar is Missing & Dual Pol User Accum Mosaic Products Cannot be Displayed |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|---|
| 18872 | DR | Postprocessors are not working in 16.2.2 |
| 18862 | DR | GFE: Save File option on the Formatter Launcher GUI is not working correctly |
| 18861 | DR | Fix MRMS purge rule |
| 18851 | DR | LX Upgrade: CAVE preference Video Card Texture Cache Size needs updated |
| 18850 | DR | 16.2.2 thinclient cave cannot use derived parameters when connecting to 16.2.1 edex |
| 18847 | DR | LX Upgrade: Radar Algorithm Overlays - data in tables at top of display are not aligned |
| 18846 | DR | LX Upgrade: Volume Browser fails to open after switching perspectives |
| 18834 | DR | (Original DR 18629) Write python DAF regression test script |
| 18833 | DR | LX Upgrade: RPS List Editor dialog opens on a different monitor |
| 18832 | DR | LX Upgrade: Font size of station plots are small |
| 18831 | DR | LX Upgrade: GUI sizing issues in Image Export dialog |
| 18830 | DR | LX Upgrade: TextWS dialogs open on left monitor rather than the monitor hosting CAVE |
| 18829 | DR | LX Upgrade: ifpIMAGE fails in LX upgrade build |
| 18828 | DR | LX Upgrade: GUI sizing issues in the Statistics dialog |
| 18827 | DR | LX Upgrade: GUI sizing issues in MPE dialogs |
| 18826 | DR | LX Upgrade: GUI sizing issues in Hydro dialogs |
| 18825 | DR | LX Upgrade: GUI sizing issues in GFE dialogs |
| 18824 | DR | LX Upgrade: GUI sizing issues in Data Delivery dialogs |
| 18823 | DR | LX Upgrade: GUI sizing issues in BMH dialogs |
| 18822 | DR | LX Upgrade: GUI sizing issues in AlertViz dialogs |
| 18821 | DR | LX Upgrade: GUI sizing issues in AvnFPS dialogs |
| 18815 | DR | Update product legends and Volume Browser fields to denote times for PWPF |
| 18812 | DR | Thin Client connectivity dialog falsely shows failed validation |
| 18811 | DR | Unable to recall modified colormaps |
| 18805 | DR | GFE: Large number of weather types causes error in ISC mode |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 18801 | DR | Error returned when performing a search within the Data Delivery Notification Center dialog |
| 18777 | DR | Remove IP addresses from serverConfig.py |
| 18768 | DR | GFE: When second formatter is run, GUI does not pop up until first formatter has completed |
| 18765 | DR | Modify LDM software to support higher number of retransmitted products |
| 18757 | DR | Updating existing subscription shows false positive for complete match and halts update |
| 18741 | DR | Possible VTEC Handling error at year boundary |
| 18730 | DR | Data Delivery certificate setup changes for DoD certs |
| 18726 | DR | Remove patched gov.noaa.nws.ncep.edex.uengine.jar |
| 18718 | DR | Data Delivery: Validation error is returned in Area Filter Selection dialog when manually entering lat/lon entry data into any field |
| 18702 | DR | Unable to close the Area Filter Selection dialog when clicking Cancel |
| 18701 | DR | BandwidthMapManager appears to leak memory |
| 18700 | DR | Reselecting the Pre-defined Region radio button does not reset the lat/lon values |
| 18698 | DR | Add a Levels attribute to the Grid Subscription Rules |
| 18697 | DR | FFMP 24hr source fast load and FFTI file purging. |
| 18686 | DR | Issues opening the Alert Viz System Log |
| 18683 | DR | Error is returned using the Imaging... dialog after loading a combined image |
| 18682 | DR | SvrWx decoder skips data that does not have a 3 letter stationid |
| 18681 | DR | NGM MOS has been discontinued |
| 18680 | DR | PointDataAccessFactory is filling the level database table |
| 18679 | DR | Remove nonfunctional textdb -tA / -tR options |
| 18678 | DR | Certain SvrWx files sent incorrectly to WarningDecoder (aka VTECDecoder) |
| 18676 | DR | Class cast exceptions in registry replication web service. |
| 18675 | DR | Fix sizing issues with Make Hazards Dialog |
| 18674 | DR | Update text ScriptRunner to not depend on uEngine |
| 18673 | DR | First user-created smart tools and procedures fail to import |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|---|
| 18672 | DR | Registry Error with delete of orphaned slots |
| 18642 | DR | Run menu appears in the thin client CAVE |
| 18641 | DR | Develop windows capture script |
| 18634 | DR | start-edex-* log files not readable by awips user |
| 18633 | DR | AWIPS II capture script should also capture the current state of processes on px1 and px2 |
| 18632 | DR | DMW barbs are in m/s when legend is in kts |
| 18631 | DR | Thin Client Network Statistics are broken |
| 18630 | DR | GFE ISC: No Weather Elements display in ISC Request/Reply dialog |
| 18627 | DR | The class BufrMosDataLocation should not use the hash code to generate an id |
| 18616 | DR | PGEN dialog in D2D has two Start and two Help menus |
| 18608 | DR | Improve radar processing for LAPS |
| 18599 | DR | MPE: Daily QC for Temperature: grid disappears when closing single-station-edit dialog after having used group edit |
| 18595 | DR | NWRWAVES produces an incorrect timestamp for products issued on the 31st of the month. |
| 18586 | DR | ANCF - SVC rsync hangs when a site falls off WAN in the middle of a rsync |
| 18583 | DR | D2D - all panels not same zoom when opening 4-panel product on zoomed in display |
| 18575 | DR | Fix sizing issues with Loop Properties Dialog |
| 18574 | DR | NPE returned when double clicking on the 'Loading' entry in the Product Browser before products are listed |
| 18566 | DR | LSR decoder throws out whole file when a single ob has bad location |
| 18565 | DR | Changing map scales disables lat/lon readout, but lat/lon checkbox remains selected |
| 18564 | DR | openSAML upgrade broke registry XACML, registry broken in 16.2.2 |
| 18559 | DR | Replace outdated logging in edex plugins with SLF4J |
| 18558 | DR | NetworkTrafficSelect traffic logging broken by jetty 9.0.7 upgrade in 16.2.2 |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 18557 | DR | Better error handling required if no data available for NCEP Upper Air Plots |
| 18556 | DR | Remove duplicate pygtk in the system |
| 18555 | DR | Remove PIL from install |
| 18554 | DR | GFE: AV ULE-NPE error occurs if you attempt to create grid from scratch without having first selected a wx element |
| 18553 | DR | edex-environment FOSS incompatibility in 16.2.2 |
| 18552 | DR | Delete bufquikscat plugin |
| 18551 | DR | Strange metar can be decoded but throws errors storing to HMDB |
| 18550 | DR | Product Browser should not throw errors when data plugins are missing from edex |
| 18549 | DR | Renamed tab reverts to 'Map' when opening up a 4-panel display and returning to a single pane |
| 18538 | DR | Long item lists cause the OK/Cancel buttons to fall off the screen in the Delete Confirmation dialog in the Localization perspective |
| 18536 | DR | Volume Browser - clearPlanes allows you to re-add Sources and Fields |
| 18535 | DR | ILocalizationFile should provide API for detecting multiple concurrent edits |
| 18529 | DR | Error returned when zooming into a cross section such that the entire chart is no longer visible |
| 18481 | DR | MPE: persistent polygons remain on the display after being deleted |
| 18479 | DR | Move damage path menu into plugin |
| 18450 | DR | GFE: Canceling expired products should not be allowed |
| 18446 | DR | Dendritic Growth Temperatures (Tdend) and Preferred Ice Growth (SnowT) show incorrect units in D-2D image display |
| 18413 | DR | AvnFPS: Need to add feedback when TAF transmission fails |
| 18399 | DR | METAR decoder stores sea level pressure with incorrect units |
| 18387 | DR | Tracking Meteogram: When loading 4-panel radar product, TMT only shows plots from upper left and bottom right products |
| 18361 | DR | Some synoptic obs data not being decoded |
| 18350 | DR | MPE: Daily QC displays all temperature data as "missing" |
| 18336 | DR | Legend does not update when keep-alive records from lightning data sources are received |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 18241 | DR | Resource polling job not always properly stopped at application shutdown |
| 18168 | DR | Total Lightning: Raw total lightning (in-cloud) points should use a larger point symbol to display |
| 18157 | DR | Tracking Meteogram: Clearing does not get back to original perspective in 1 click |
| 18140 | DR | Time Series: errors when editing data from graphical view |
| 18134 | DR | AlertViz: Threat Monitor icons do not change color for new threats. |
| 18115 | DR | Some WRK products appear to not store to textdb |
| 18059 | DR | Time of Arrival Tool showing incorrect times |
| 18029 | DR | Hourly Hurricane track summary forecast plotting incorrectly for cyclones in D2D |
| 17989 | DR | East Pacific Hurricane track summary is not showing up in d2d |
| 17925 | DR | Point Data Control: No time window for precip |
| 17894 | DR | CAVE can lock up when Clear is clicked during a time matching operation |
| 17787 | DR | H-F Radar Surface Currents (HFR) Displays wrong Units |
| 17749 | DR | postgresql rpm missing dependency to netcdf |
| 17652 | DR | Hydrobase: no longer uses location lat/lon as a first guess for new River Gage entry |
| 17651 | DR | FFMP Basin Trend - 1st time step excluded from accumulation |
| 17614 | DR | TextWS does not display updated MND time in editor after sending |
| 17567 | DR | MDCRS sounding plots showing latitude/longitude instead of airport ID in NSHARP |
| 17531 | DR | Drag me to storm dot should be editable for EXP products |
| 17512 | DR | transferNWWS.pl does not write debug messages to transferNWWS.log |
| 17387 | DR | OCONUS: Satellite menu under Derived Products Imagery display incorrect sector |
| 17358 | DR | Using RPS List Editor to add DUA |
| 17336 | DR | Buoys not getting most recent data into RWR and HWR products |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 17311 | DR | Cannot create SPS if <warngenOfficeShort> variable contains a "-" |
| 17308 | DR | 14.3.1: Change in storage of LI products for some models results in inconsistent storage, problems in GFE display |
| 17245 | DR | Bug with RPG selection when doing RMRs |
| 17157 | DR | GFE: enabling the trace option can result in large log files |
| 17110 | DR | A2 doesn't display 5 min duration tabular data if it is part of a Time Series group |
| 17097 | DR | TextWS: Saving a product and re-editing it causes additional headers in the Text Editor window |
| 16970 | DR | LAPS 1500m Pressure D-2D display incorrect |
| 16950 | DR | TextDB incremental purge does not work |
| 16932 | DR | AWIPSII: Issue with Time Series Display |
| 16921 | DR | Active Text Workstation possible while in Practice Mode |
| 16910 | DR | Pressure plotted on PVU surfaces is substantially different on NWP models with fewer grid points (e.g. ECMWF, GFS90) |
| 16771 | DR | DAT dialogs failed to close after Clear; returned repeated error messages |
| 16737 | DR | Tab loses focus when swapping panes of certain radar products |
| 15685 | DR | Rehosted climate F6: Monthly mean temperature can be rounded incorrectly |
| 15489 | DR | HydroView - RiverMonitor/PrecipMonitor missing FFG and Precip Data |
| 14977 | DR | MKX: AWIPS II Hydro Database Manager: Missing Lat/Lon in text report B-44A |
| 14910 | DR | FFMP: process FFG data in netCDF format |
| 14827 | DR | GFE/GHG: GHG monitor is tied too closely to the GFE perspective |
| 14803 | DR | TextWS: WMO Header not being added to Record Event Report products |
| 14802 | DR | D2D: Unable to load Max/Min T for RTMA in Volume Browser |
| 14792 | DR | River Gauge Primary Elements Cannot Be Deleted from Hydrobase |
| 14775 | DR | GFE: Saving to file fails when correcting a product in product editor |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 14655 | DR | Time height,series - when swapped to side panel some of time period lost |
| 14647 | DR | Model names in NSHARP different from common name |
| 14539 | DR | Hydro--purge decodedpa log |
| 14453 | DR | GFE: color issue for TR Wx type |
| 14315 | DR | City of Bedford in Virginia, FIPS code VAC515 becomes obsolete |
| 14307 | DR | WarnGen Drop Down Menu Not Sorting Issued Products Correctly |
| 14176 | DR | d2dContourStyleRules.xml error |
| 14165 | DR | Hydro: Flash Flood Guidance Areal FFG Mode UELE error |
| 14014 | DR | GFS40 model run precip display incorrect |
| 13996 | DR | Order of sampling text reverses at bottom of D-2D display |
| 13853 | DR | D-2D: Entry for DSD in dual pol version of radar menu is incorrect |
| 13794 | DR | GFE: pencil tool in ISC mode works incorrectly when using grids |
| 13459 | DR | GFE: Smart tool hiding does not work in some cases |
| 13302 | DR | Green Times for upper air soundings do not show non-standard times (D 15312) |
| 13298 | DR | Bufrua purge rule not being used |
| 13261 | DR | GFE: alertviz messages from text formatter |
| 13214 | DR | Word Wrap does not work when text entered from Search/Replace |
| 13094 | DR | Svr Wx Plot product time (green time) does not match the time from legend |
| 13033 | DR | GFE: Improve error message for bad characters in text formatter definitions |
| 12435 | DR | hwrnwws fails to store product locally |
| 12419 | DR | Color Scale Truncation - take 2 - TTR6532 |
| 12085 | DR | SNOW: Wind Chill, Frostbite Time should not default to 0. - TTR6392 |
| 12021 | DR | DMD icon does not change when zooming - TTR6373 |
| 11919 | DR | NIMNAT message should be on as default |
| 11474 | DR | Put Home Cursor Tool Display rounding issue |
| 627 | DR | GFE: In product editor, `corrected? Mis-spelled `correctedd? |

| Redmine | DR, DCS or CFR | Description |
|---------|----------------|--|
| 621 | DR | AWIPS2 BCQ---Radar data from radar server and LDM are stored differently |
| 18319 | CFR | Upgrade PostgreSQL to 9.3.10 |
| 18318 | CFR | Upgrade org.apache.commons.codec to 1.10 |
| 18317 | CFR | Upgrade org.apache.commons.pool to 1.6 |
| 18316 | CFR | Upgrade org.apache.commons.lang to 2.6 |
| 18315 | CFR | Upgrade org.apache.commons.compress to 1.10 |
| 18314 | CFR | Upgrade slf4j to 1.7.12 |
| 18313 | CFR | Upgrade spring framework to 4.1.6 |
| 18312 | CFR | Upgrade camel to 2.16.0 |
| 18307 | CFR | Upgrade jasper-1.900.1 security patch |
| 18306 | CFR | Upgrade openSAML to 2.6.5 |
| 18305 | CFR | Upgrade wss4j from 1.6.14 to 1.6.19 |
| 18304 | CFR | Upgrade or consolidate Jetty to 8.1.15 or greater |
| 18303 | CFR | Upgrade ActiveMQ to 5.12.0 |
| 18302 | CFR | Upgrade Apache Httpd 2.2.3 & 2.2.15 to 2.2.15-47 |
| 18301 | CFR | Upgrade Apache Derby 10.10.1.1 to 10.12.1.1 |
| 18300 | CFR | Upgrade CXF from 2.7.11 to 2.7.14 or better |
| 18299 | CFR | Upgrade Apache Batik 1.6 to 1.8 |
| 18298 | CFR | Upgrade Apache Ant from 1.7.1 to version 1.9.6 |
| 18196 | CFR | Upgrade Jackson json to 1.9.x |
| 17274 | CFR | Upgrade Smack XMPP library to version 4.1.4 |

4. Design Changes and COTS/FOSS Requests

78 Design Changes and 10 CFRs for release 16.2.1 are summarized in this section.

1. Redmine DCS_18916

Add support for new STQ format to be activated 01-Jun-2016

Addresses a small enhancement to enable STQ (Spot Forecast Request) decoder to support a new STQ format along with old format.

Currently STQ data file format is based on existing Experimental STQ web site, when STQ web site goes to production, the STQ data file format had been updated with new bulletins and some of existing data format had been changed.

Most important one is OFILE:

Existing Value Format: YYYYMMDD.CCCCC.dd

YYYYMMDD: date string

CCCCC: 5 character key to identify the spot instance

Dd: 2 digit version number for the instance of CCCCC

New Value Format: YYdddd.d+

YY: 2 digit year, part of spot instance ID;

dddd: 5 digit sequence number for the spot instance ID follows YY, so the Sop Instance ID will always a 7 digit number identifier

d+: 1 – n digit version number for the same spot instance.

Note; There is no need to capture those new data elements added in the STQ file for AWIPS D2D capability.

2. Redmine DCS_18719

WarnGen Polygons: Look into ways to improve exclusions of zones close to coast (i.e. Charleston Harbor)

In the New WarnGen Polygon extension code, there are instances where despite a product correctly not including a zone, the resulting polygon might cause confusion. One example is Charleston Harbor, where in the example included is correctly excluded from the image (not hatched) and the resulting product - however, since the polygon still goes over it, customers who rely on this may have the false impression that the Harbor is impacted.

Need to discuss a methodology to deal with situations like this - to improve the accuracy of polygons in these situations, but still keep them "simple".

3. Redmine DCS_18509

Make WarnGen polygon extension area display a separate map background

In OB 16.1.2, WarnGen gained the capability to extend land based warnings into a site's marine zones (and vice versa) to avoid problems caused by complex coastlines. To assist the configuring of that extension area and the creation of warnings, the extension area can be displayed on screen. The display uses a hard-coded color/opacity and is always overlaid on top of WarnGen. It would be more convenient to make the display work like a map background so that it can be styled and layered independently of the main WarnGen display.

4. Redmine DCS_18271

Align grid image colors with grid contour lines

The grid image coloring for some fields (precip, for example) does not align itself with the grid contour lines. Farther away from the original grid point locations, between the points, the coloring strays. Colors must align with the contour lines.

5. Redmine DCS_18268

Space Weather Plugins: Loading SWPC time-series plots is slow; validate the Ks & Kp calculations

Bug fixes and migrated capabilities to support NCEP migration to AWIPS II.

NCEP_A2CP issue 6920 CAVE>NCP - Loading SWPC time-series plots is slow
◦Loading SWPC time-series plots is quite slow when displaying more than one line plots.
Zooming and panning on the line plots takes as much time as well.

NCEP_A2CP issue 8416 SWPC - Ks & Kp Validation ◦Validate the Ks & Kp calculations. Provide a written summary of the test cases and results.

6. Redmine DCS_18267

NSHARP: Clean up NcSoundingQuery, fix several OPC pane configuration and Model Selection bugs

NSHARP provides interactive sounding analysis in the AWIPS II National Centers Perspective. The National centers use the capabilities of NSHARP to augment their forecasts. NSHARP was originally written as part of N/AWIPS and remains an operational requirement for their use in AWIPS II. These bug fixes and enhancements provide functionality as close to what they now use in N/AWIPS.

1. NCEP_A2CP issue 9173, Clean up NcSoundingQuery and Obsolete NcSoundingQuery2 and MergeSounding2 -- Remove NcSoundingQuery2 and MergeSounding2, and let cloudHeight and plotModel use the same generic query functions from NcSoundingQuery and MergeSounding as Nsharp currently uses. Also clean up NcSoundingQuery and MergeSounding as well. There are some methods not used and

not up to date. Also, in order to resolve issues with the SS rpm build move NcSoundingQuery.java from the gov.noaa.nws.ncep.viz.common plugin to a new plugin called gov.noaa.nws.ncep.viz.soundingrequest. As a part of this update all calls, imports, and manifest files that import NcSoundingQuery so that no compile errors are seen. A new entry will need to be added to com.raytheon.uf.viz.ncep.displays.feature to add this new plugin.

2. NCEP_A2CP issue 9396, CAVE>NSHARP - OPC pane configuration
 1. The right column to be a little wider than the picture (to roughly 1/3 of the full tab width)
 2. The buttons view needs to remember where it was when you last exited NSHARP. _On OPCN, this does not seem to be happening, whereas in other environments it is. The window layout settings for NSHARP don't persist after NCP is closed. For example if you detach the Nsharp "tab" for a session, then close NCP and reopen NCP, the Nsharp tab again takes up half the screen - very annoying.
 3. The text readout (right column, center) to default to the "Mixing Height" page. The Configure allows you to change it, but again the new Config does not seem to be saved or remembered the next time you come into NSHARP.
 4. Add Lifted Index to the stability indices page (currently includes K-Index & Sweat Index). This is on the Thermodynamics Data page.
 5. All of the data frames should be in one tab. As it is currently set up, the frames go into separate tabs.
 6. Correct a rarely-encountered issue using this test procedure:
 - Make sure Nsharp display pane configuration is NOT configured as "D2D Lite".
 - Make sure Nsharp data page configuration is configured as "2 pages per display".
 - If Nsharp is already with those configuration then continue to step 4, otherwise, save configuration and restart nsharp.
 - Load a sounding data
 - Change data page configuration to "1 page per display", and apply and save.
 - Use "NxDt" button and find that only 5 pages are available for display.
 - Note that Nsharp should have 11 pages for display.
3. NCEP_A2CP issue 10188 ,CAVE>NCP>NSHARP - Model selection upgrades

- Model selection should display the aliased name, not the actual name found in the database. Currently, the list presented is managed under Configure>Grid Model Type Configuration. The models listed are the model names as found in the database. Forecasters will not know what these mean, they only know the alias names as Resource Definition names.
 - As an example, the RD "GSF0P5" references database model name "GFS230"... we should be presenting "GFS0P5" and not "GFS230".
- Eliminate the Configure dialog in favor of using Localization directly. The BASE version of this Localization file should contain the following RD names: ECMWF, GFS, NAM and UKMET.

7. Redmine DCS_18265

NCEP CAVE Plugins

1. **NCEP_A2CP issue 7190 EDEX - Rework mcidas data and viz plugins to better manage AREA header info**
 - The mcidas data and viz plugin combination does not provide enough flexibility. NOTE: This ticket may be broken into multiple child tasks, depending on proposal acceptance.
2. **NCEP_A2CP issue 11429 EDEX - Correct Missing Value Designation for Geomag Data Processing**
 - The issue was that a new value is being used to represent missing data. Specifically, for station NGK the value used previously to indicate missing data was 99999.00 and is now 99999 with no decimal precision.
3. **NCEP_A2CP issue 12016 CAVE>NCP - HILO parameter not showing enough relative minima and maxima**
 - This ticket refers to gridded data display of relative minima and maxima. Continuous scalar fields naturally have areas of relative minima and maxima (example. pressure fields have areas for high pressure and low pressure). Forecasters need to have these point locations identified and plotted, according to the HILO parameter value.
 - Legacy has an internal maximum number of relative min and max of 256 each, within the user-provided lower and upper bounds, prior to eliminating those outside the viewing area and clustering those that are close to one another.
 - Verify that the HILO processing properly parses the user input string. Ensure that "counth" and "countl" are being handled properly according to the rules, shown below.
4. **NCEP_A2CP issue 6916 CAVE>NCP - Grid contour color fill performance**
 - Display performance of high resolution grids is poor. The grids in question are the 1/4 degree GFS and EC, the HRRR and MRMS. Performance is beyond what might be expected (for instance, since the 1/4 degree grids contain approximately 16x the number of 1 degree grids, one might expect the performance to be 16x slower). A cursory investigation has shown that the color contour fill is the culprit.
5. **NCEP_A2CP issue 12042 CAVE>NCP - Attribute Set Groups and the Attributes are not loaded**
 - RM7755 broke how things work in the Resource Manager. In both the Create RBD tab and the Manage Resources tab when clicking on various resources, the Attribute Set Groups and the Attributes are not loaded even though there are valid localization files for them.
6. **NCEP_A2CP issue 11897 CAVE>NCP - TITLE string not parsed correctly**
7. **NCEP_A2CP issue 7757 CAVE>NCP - Directional arrow parameters DAWV and DASH needed in plot models and editor**

- Parameters that display as directional arrows (which show direction, but not a magnitude value such as speed) are not available in plot model editor. These parameters specifically include:

- DAWV - Swell wave direction arrows of uniform length

- DASH - Ship's true direction arrows of uniform length

These parameters should only be available as a center-only parameter for those data plugins where a directional arrow makes sense, for instance SYNOP SHIP data. Both DAWV and DASH should also be able to be colored conditionally.

- NCEP_A2CP issue 11676 CAVE>UAIR - wind speeds for interpolated levels are wrong
- NCEP_A2CP issue 8535 PGEN - Multi-select rubber band off map causes paint error
- NCEP_A2CP issue 8552 PGEN - Up arrow doesn't work to navigate multiline text
- NCEP_A2CP issue 7755 CAVE>NCP - ResourceFilters.xml Localization file not overriding BASE completely
- NCEP_A2CP issue 7798 Delta script to correct existing SPFs/RBDs after bug fix from 4983
- NCEP_A2CP issue 8993 CAVE>NCP - GRID Resources not pre-loading all frame data and paintables
- NCEP_A2CP issue 8198 CAVE>PGEN - Ability to add a label to symbols and markers
- NCEP_A2CP issue 8899 CAVE>NCP - Need to be able to define predefined map areas with default zoom capability option.
- NCEP_A2CP issue 8306 CAVE>NCP - Eliminate NCP dependence on uEngine
- NCEP_A2CP issue 9172 CAVE - Raytheon's change lat/lon data type from double to float in SurfaceObsLocation class
- NCEP_A2CP issue 9171 CAVE - PointDataView.getCalendar causes failure
- NCEP_A2CP issue 8903 PGEN - alertViz for empty text, or modify existing text to be blank
- NCEP_A2CP issue 7806 CAVE>PGEN - Open GUI improvements
- NCEP_A2CP issue 8352 CAVE>PGEN - Contour Element workflow improvements
- NCEP_A2CP issue 8189 CAVE>PGEN - Activity definition palette configuration by layer
- NCEP_A2CP issue 8354 CAVE>PGEN - hotkey binding improvements
- NCEP_A2CP issue 7656 CAVE>NCP - Local radar RD creation
- NCEP_A2CP issue 8199 CAVE>PGEN - Ability to remove a text label from symbols and markers
- NCEP_A2CP issue 8048 CAVE>NCP - "Select New Resource" dialog should remember last selection
- NCEP_A2CP issue 9733 Move NCEP Client scripts from the AWIPS2_Dev_Baseline repository and directory structure to AWIPS2_NCEP
- NCEP_A2CP issue 11495 CAVE>PGEN - PGEN palette configuration dialog does not function
- NCEP_A2CP issue 11365 CAVE>PGEN - Activity configuration UI broken
- NCEP_A2CP issue 8213 CAVE>PGEN - Refinements to contoursInfo.xml
- NCEP_A2CP issue 8902 PGEN - Mouse clicks interacting with Legend
- NCEP_A2CP issue 7785 CAVE>NCP - SURFACE data selection takes a long time
- NCEP_A2CP issue 8188 CAVE>PGEN - Hash mark rotation angle reference does not match legacy
- NCEP_A2CP issue 8015 CAVE>NCP - UELE occurs when accessing forecasters.xml
- NCEP_A2CP issue 8879 PGEN - Met>Contour Element "Connect" issues
- NCEP_A2CP issue 8051 CAVE>NCP - Plot model manager - no "Save" button on "Edit Plot Model" dialog
- NCEP_A2CP issue 12041 CAVE>NCP - Calm Winds no longer plotting

38. NCEP_A2CP issue 11428 CAVE>D2D - restore PGEN under the "Tools" menu for the "n" builds
39. NCEP_A2CP issue 8553 PGEN - Text dialog should remember last text used per box type
40. NCEP_A2CP issue 8163 CAVE>PGEN - Trying to change contour type results in unhandled loop event

8. Redmine DCS_18264

NCEP EDEX Plugins: remove SCD plugins; fix ncgribModelName.xml and AWW decoder bugs; enhance NCSCAT decoder

Bug fixes and minor enhancements to support NCEP migration to AWIPS II.

1. NCEP_A2CP issue 8585 EDEX / CAVE>NCP - Remove SCD plugins: This product was discontinued approximately 3 years ago; need to remove the supporting code.
2. NCEP_A2CP issue 8307 EDEX - ncgribModelName.xml file cannot be overridden
◦ncgribModelName.xml file cannot be overridden, only the BASE version is read and processed. The BASE level should be able to be overridden completely (no partial or aggregation).
3. NCEP_A2CP issue 7739 EDEX - Enhance error checking in NCSCAT decoder: The NCSCAT (ocean winds scatterometer/radiometer) decoder can enter an infinite loop in cases where it is fed invalid data. It should (obviously) never do this.
4. NCEP_A2CP issue 8881 EDEX - AWW decoder bug preventing WCN messages from being processed: It looks as though there is a bug in the AWW decoder which prevents the WCN message from being fully processed.

9. Redmine DCS_18249

Add Min/Max T to the URMA Model

An update to the URMA model to add the Min/Max T temperature fields has been requested. Initial testing shows that these products do not properly decode when dropped into the AWIPS system. Therefore, a change needs to be made so that these fields are stored and displayed properly.

This winter the URMA 2p5 files are getting an addition of T min and T max to them. Sample data is below

http://nomads.ncep.noaa.gov/pub/data1/awips_test/rtma_urma/

10. Redmine DCS_18240

GFE Formatter Launcher word wrapping code can create multiple PythonInterpreters on UI thread

The GFE formatter launcher's word wrapping code has the potential to create multiple PythonInterpreters on the UI thread. This is known to be a potential cause for deadlock or system stability issues with Jep.

In the formatter launcher code, each instance of StyledTextComp creates a PythonScript instance used to execute the A1 python-based word wrapping code. Because this code has to be triggered by every key event, the PythonScript instance is not disposed until the StyledTextComp is disposed. So, if the user has multiple product tabs open at once, they will have created multiple interpreters on the same thread.

11. Redmine DCS_18239

GFE Formatter Launcher should not use multiple PythonInterpreters on the UI thread

While testing changes to #18069 (RODO 4263), the user discovered that the GFE formatter launcher uses multiple PythonInterpreters on the UI thread. This is known to be a potential cause for deadlock or system stability issues with Jep.

12. Redmine DCS_18223

Improvements to maps

Changes:

1. Maps – Simple xml changes / additions

Additional map scales No tilting maps for Euro-Africa, Asia-Pacific, Pacific
Equidistant Cylindrical (spherical) - world view

2. Warnings – simple xml changes / additions

National Warnings Map

13. Redmine DCS_18208

NWS Standard Terrain for AWIPS, Continuation of Phase II and III

Design a process for sites to import new GMTED2010 based topo data into GFE. Then compare it to existing GTOPO30 based (possibly edited) data. Finally, edit new data and save it.

14. Redmine DCS_18207

SatRenderable and SatTileSetRenderable should be more accessible and extendable

For rendering satellite imagery we have code in the com.raytheon.viz.satellite plugin that is fairly reusable and can handle rendering data that exists in SatelliteRecords. However, much of this code is private and therefore not extendable, so it cannot be easily reused outside of D2D. Some of the code was copied to NCP for 15.1.1-n to get around this issue, but ideally SatRenderable

and `SatTileSetRenderable` would exist in exported packages as public classes, enabling reuse as is or extending and overriding them.

Ideally if reused there would not be any dependencies on D2D.

This will result in less code duplication and easier maintainability of satellite displays.

15. Redmine DCS_18206

Radar: TDWR custom frame change operations

This is an enhancement on top of DCS #17141 (RODO 4461).

- Currently when the display is cleared it still remembers which times you visited and will prefer those times when the next product is loaded. The user found that confusing and it needs to clear the previously visited times when the display is cleared.
- Currently when navigating between the higher elevation angles (≥ 3.3) for TDWR it will always go to the most recently visited frame. This needs to be changed so that whenever the frame times are the same when switching elevation angle, the time will not change.
- There is confusion caused by the 1.0 elevation TDWR because it interrupts the flow of traversing the second vertical scan in the volume scan. The user agreed that if it keeps things simple that it is acceptable to go to the previously visited time when leaving the 1.0 elevation, or if the elevation has not been visited then the most recent time available.

One other interesting point from the TIM, there are plans to roll out a new volume scan mode for TDWR radars, not sure on dates but possibly as early as this winter (2015) and continuing into next year. This new mode should get rid of all the problems with the 1.0 elevation which makes the existing capability much better.

16. Redmine DCS_18203

Thin client default data update interval should be 5 minutes

The current default data update interval for thin client is 30 minutes. This was due to the belief that BGANs would be used, when in reality 4G and 3G are regularly used. A request from the regions is that the default be changed to 5 minutes.

This code for the defaults resides in `PreferenceInitializer.java`. While in the area, check the defaults for other thin client preferences and verify those are still optimal. If not, make them optimal. Also add tooltips to the login dialog and the preference page to help users understand the various preferences.

17. Redmine DCS_18202

Allow grib post processor overrides to append to base

Currently the base file has to be copied for anything to be added. This makes it so sites don't get updates to the baseline file without checking every upgrade for changes.

18. Redmine DCS_18201

Improve Localization Perspective to allow displaying files for multiple localization types

The Cave menu plugin can load menu files from either `common_static` or `cave_static` localization types. The localization perspective displays menu files only for the `cave_static` files. This is confusing.

The `localizationpath` extension point should allow you to specify multiple localization types and the localization perspective should merge all the files together from all the types specified.

19. Redmine DCS_18200

Create a configurable grid precipitation accumulator

There are currently 5 separate `GribPostProcessors` for accumulating* the precipitation of various models.

Matt Foster at central region has just added his own post processor for the NAM Nest model. Since this is such a common pattern we should make it much easier to accommodate new models. We need to make single component that can accumulate the precip for any model and a simple configuration file for enabling new models to use it. This would reduce the amount of code needed for this simple operation and make it easier to maintain by consolidating the many forks of similar code.

- For the purpose of this DR accumulation is referring taking precipitation totals for the time periods provided by the model and adding or subtracting them to get totals for different time periods. For example the NAMNest model provides precipitation totals at

1hr for the first hour, 2hr for the second hour, 3hr for the third and then repeats that patterns so the fourth forecast hour has a 1hr accumulation. The desire is to always have precip at even intervals, so in this example they want 1hr for every single hour and this can be achieved by subtracting the previous 1hr from the 2hr and 2hr from the three hr.

20. Redmine DCS_18198

Add Edex High Memory Mode

Add a high memory mode to edex to take advantage of additional memory on new servers.

21. Redmine DCS_18197

Improve GribPostProcessor detection

The `GribPostProcessor` class looks in `postProcessedModels.xml` and tries to load the classes found there. It assumes a particular package name, then tries/catches if that doesn't work and

looks for a fully qualified name. That approach is iffy, it should be improved, potentially either registering the post processors through spring, being consistent with its approach to class names (e.g., always require fully qualified names) but that probably won't be backwards compatible, or some other approach.

22. Redmine DCS_18191

Redmine DCS_18191

NUCAPS Sounding Availability plot should indicate QC status

There is a very beneficial dataset in AWIPS2 called NUCAPS --it is essentially thousands of soundings (retrievals) measured by the NPP satellite. This data has gotten high visibility because 1) it is making use of the JPSS-NPP polar orbiting data, 2) it's operationally very useful, and 3) it's been thoroughly evaluated in the Norman HWT.

However, there is one major problem with how AWIPS displays the data. The data file contains a QC message...indicating one of the following conditions:

QC passed

Microwave failed

IR failed

Total failure

About 30% of the soundings fail the QC completely, and display very erroneous data.

The problem is that AWIPS2 does not display the QC condition. It just displays the swath of sounding points... and essentially shows that all have QC passed.

23. Redmine DCS_18187

Add missing sounds to AlertViz

There are a handful of sound files with an "au" extension that do not exist in the AlertViz sound file directory. It appears they were never ported from AWIPS 1 into AWIPS 2. It should be pretty straightforward to upload them. They would not be used initially, but would then be available for sites to use if they wished.

24. Redmine DCS_18178

PDA upgrades from testing/development on BNCF

This DCS covers a collection of code that was updated to get Data Delivery to connect with PDA at both the central registry and client registry levels. It was developed and refined over the past few months during testing sessions with Solers (PDA). Because the code can only be run on the

BNCF at this time, code has been developed then put out on BNCF for testing. These changes need to be baselined.

25. Redmine DCS_18158

Use tmp files to remove WMO headers from GOES-R netCDF files

#17689 introduces a mechanism to strip WMO headers off of files and use tmp files for accessing netCDF data. GOES-R needs to change to doing the same thing instead of opening the entire file in memory.

26. Redmine DCS_18083

Add SmartScript APIs

4804: Add a SmartScript API to allow a GFE procedure to run a text formatter

Add a SmartScript API to allow a GFE procedure to run a text formatter.

This eliminates the need for the CreateTCV procedure to exec out to the command line to run runIFPText to run the formatter in a separate GFEClient session

4805: Add a SmartScript API to allow a GFE procedure to store a combinations file

Add a SmartScript API to allow a GFE procedure to store a combinations file.

This eliminates the need for the procedure to generate the Python code for the combinations file and exec out to the command line to run runIFPServerText to create the combinations file.

4806: Add a SmartScript API to allow a GFE procedure to transmit a text product.

Add a SmartScript API to allow a GFE procedure to transmit a text product.

This will eliminate the need for the procedure to exec out to the command line to run handleOUP.

4809: Change SmartScript.editAreaList() to take an optional edit area group name

Change SmartScript.editAreaList() to take an edit area group name as an optional parameter.

This allows procedures/smartTools to more efficiently locate desired edit areas by narrowing the search to a specific group.

27. Redmine DCS_18081

Clean up AvnFPS code for efficiency and maintainability (D4486)

AvnFPS has some dead code in it that makes it harder to maintain. The dead code should be deleted. It also has some obvious inefficiencies which don't slow things down a lot, but they add up to make it slower for the user. For example, there is code that requests a Date, turns the date into a String, and then uses the String to make a DateTime. There is no reason to have an intermediate String in there. There are other sections of code that do not limit queries, where it really only wants one record but queries for all matching records, then sorts and uses the one it needs. All of that should be cleaned up as best as possible without introducing risk.

28. Redmine DCS_18079

Add support for GOES-R L2 Land Surface Temp product

Current testing of AWIPS2 GOES-R capability includes a product call Land Surface Temperature. The baseline GOES-R decoder is not configured to handle this product. The configuration XML on nhda has been updated to handle this product. This configuration needs to be baselined so that in future the product will work by default.

The following xml belongs in a new file in the goesr plugin called utility/common_static/base/satellite/goesr/descriptions/Level2/LST.xml

```
<goesrProductDescriptions>
  <description>
    <match attribute="dataset_name"
      pattern="OR_ABI-L2-LST(C|F|M1|M2)-M[34]_G\d\d_s\d{14}_e\d{14}_c\d{14}.nc" />
    <data variable="LST" maskVariable="DQF">
      <mask value="0" keep="true" />
    </data>
    <physicalElement value="LST" />
  </description>
</goesrProductDescriptions>
```

The following XML needs to be merged into the goesr L2 style rules.

```
<styleRule>
  <paramLevelMatches>
    <parameter>LST</parameter>
  </paramLevelMatches>
  <imageStyle>
```

```
<displayLegend>Land Surface (Skin) Temperature</displayLegend>

<displayUnits>C</displayUnits>

<range scale="LINEAR">

  <minValue>-25</minValue>

  <maxValue>45</maxValue>

</range>

<defaultColormap>Sat/GOESR-L2/VTRSB</defaultColormap>

<colorbarLabeling>

  <values>-25 -20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45</values>

</colorbarLabeling>

</imageStyle>

</styleRule>
```

There should also be entries in the menu files for this data.

29. Redmine DCS_18077

Product Browser should have collapse all button

Depending on how many nodes you open in the Product Browser tree, it can get rather long. Since there is already one toolbar button, it wouldn't take up any more screen space to add another toolbar button. It would be nice to have a collapse all button like in Eclipse.

30. Redmine DCS_18075

LocalizationFile.openInputStream could often skip File Locking

When reading localization files from an NFS filesystem a lot of time is spent manipulating the FileLocker. For files that rarely change it would be faster to assume the file is valid and read in the entire file, then only lock the file if the checksum is incorrect.

Here is some sample code that could be used within LocalizationFile.openInputStream.

```
File file = getFile(false);
long length = file.length();
if (length > 0 && length < 8 * 1024) {
  byte[] bytes = Files.readAllBytes(getFile(false).toPath());
  String checksum = Checksum
```

```
.getMD5Checksum(new ByteArrayInputStream(bytes));
if (checksum.equals(fileChecksum)) {
return new ByteArrayInputStream(bytes);
}
}
```

If the file is too big, does not exist, or fails the checksum then the existing FileLocking implementation can be used. I chose to fall back to the old method for files large than 8kB to avoid wasting memory and because for large files the "cost" of getting the checksum wrong would be more noticeable, the limit is arbitrary.

When this was tested using caveData on awipscm and loading 1000 derived parameter xml files then the new method was 4x faster than the existing method.

31. Redmine DCS_18074

SelfDescribingBinaryProtocol could chunk primitive arrays

SelfDescribingBinaryProtocol has optimizations for primitive arrays where it writes them as one giant block of memory instead of looping over each value in the array. These are the write*List() methods in there. This speeds things up but impacts performance because it requires the primitive array to be in memory twice and will potentially result in more intensive garbage collection. The code could be further optimized to do the writing in chunks of a certain size, trying to balance between speed vs memory.

32. Redmine DCS_18073

Create tool to merge edited Topo from GFE sites

Create tool to merge edited Topo from GFE sites.

Should take files created by ifpnetCDF -g as input and merge them into files created by TopoExporter.

33. Redmine DCS_18072

Investigate quality and configurability of openfire monitoring plugin

We have a custom Raytheon plugin installed on openfire for logging chats on the server. This is located at AWIPS2_baseline/javaUtilities/com.raytheon.openfire.plugin.detailedfeedlog. The name of the plugin implies its logging only the nws-collaborate room.

Openfire has a monitoring plugin that allegedly logs chats and is fairly configurable.
<http://www.igniterealtime.org/projects/openfire/plugins.jsp>

Openfire might also have some built-in logging capabilities that don't require a plugin.

Compare the strengths and weaknesses of these various logging solutions and determine if there's a best path forward for logging all room conversations on the server.

34. Redmine DCS_18071

Update hibernate to return java.util.Date instead of java.sql.Timestamp for Date objects.

Hibernate currently returns java.sql.Timestamp for any Date objects. This causes issues when comparing values sent in compared to what is returned. Update hibernate to return java.util.Date and then fix the various hacks in the baseline to no longer check/depend on Timestamp.

35. Redmine DCS_18070

Cannot use more than one ILocalizationAdapter to access the same LocalizationFile in a JVM

36. Redmine DCS_18069

CAVE GFE startup should initialize python on separate threads

When CAVE's GFE perspective starts up, numerous actions are taken to properly initialize everything. Many of these actions occur on the UI thread, leading to the appearance of a hang/freeze. Furthermore, the UI thread is used to initialize a few different python interpreters for initial startup. Reusing interpreters has been discovered to be a notable risk to system stability (i.e. deadlock or crashes).

Change the GFE perspective startup code to spawn a separate thread/job for each python startup action. This will remove the risk of using the same thread for multiple interpreters. Ideally we would take it a step further and hook in a progress bar because startup is so slow, and update the progress bar as startup actions are completed.

37. Redmine DCS_18068

Purge needs to remove orphaned hdf5 files

Due to bugs, crashes, human intervention etc. hdf5 files are sometimes left behind with no corresponding PostGres records (orphaned).

It would be nice if purge could detect these orphaned files and remove them so they don't accumulate.

38. Redmine DCS_18057

Common core changes to support 16.2.1 Hazard Services

This DCS covers a couple small changes to the common baseline in order to support the 16.2.1 delivery of Hazard Services.

39. Redmine DCS_18056

16.2.1 Build and Merge Support

The actions covered under this DCS are to simplify and streamline the process of building, merging, and installing new builds.

40. Redmine DCS_18048

Add AWIPS I missing frame and decompression processing to LDM for GOES imagery

In AWIPS I, missing or corrupted frames in GOES imagery that resulted from SBN transmission were mapped to lines of black pixels. In AWIPS II, LDM discards any product with missing or corrupt frames. Since the GOES channel does not support retransmission, this means entire GOES images are discarded for even a single bit error. With non-imagery, missing frames within a product generally result in unusable data, but an image can still be usable.

Also, LDM's handling of compressed products is slightly flawed: it assumes that if the first frame of a product is compressed, then they all are. In general this is true, but it is not how the SBN uplink software handles compression. Compression is done frame by frame, which is why each SBN frame has a header containing a field indicating whether or not that frame is compressed. When a product is marked for compression, the uplink software will compress each frame. If the resulting block of data is smaller than the original block, then the compressed frame will be used and the frame will be marked as compressed. If it is not smaller, then the original uncompressed frame will be used and the frame will not be marked as compressed. While this does not occur regularly today, it is possible that it will. This becomes a problem because LDM stores products exactly as they are received, but without the accompanying SBN headers, which makes it impossible for the AWIPS decoders to properly un-compress products with a mixture of compressed and uncompressed frames. There are two solutions to this: 1) Have LDM perform decompression natively and store each product as uncompressed in the product queue; or 2) include the SBN headers as received with each product so the decoder can perform proper decompression.

For this DCS, the AWIPS I imagery and compression processing will be implemented in LDM and the resulting code will be shared with Unidata for inclusion in the LDM baseline in future releases.

The consensus is for LDM to perform decompression natively and store uncompressed products in the product queue. This relieves the AWIPS decoders of this task and eliminates requirements

for propagation of SBN protocol details beyond LDM. Once implemented, AWIPS decoders will receive products in exactly the same state as when they arrived at the NCF.

41. Redmine DCS_18020

Add support for Topography data to the Data Access Framework

Add an IDataFactory implementation for retrieving topo data from the DAF. This should return IGridData and does not need to support the usual concepts of parameters, location names, and times. It could potentially support different identifiers for different sources of topo, if we still have multiple topo datasets in the system.

42. Redmine DCS_18019

Add export geotiff to CAVE

CAVE can currently export a variety of image formats including png, jpg, bmp, gif. It can also export KML. We should add the ability to export geotiff to have that format covered too. This could either be another option under the Export menu, or could be another option on the Export Image dialog (similar to how animation controls are only available for gifs).

43. Redmine DCS_17940

NIC local application: baselining of serverConfig

The NSI team is working on the NIC: a local app that manages SmartInits. The goal is to standardize nationally. One step along this path is to temporarily assume control of the serverConfig.py file (which affects more things in GFE than just SmartInits). This DCS will manage the baselining of the transient local override.

44. Redmine DCS_17879

Add Ensemble Button to baseline Volume Browser Sources list

Currently, if a site installs the Ensemble Tool, it includes a file that adds an "Ensemble Button" to the sources list in the Volume Browser. This DR is to remove the dependency of having this installed with the Ensemble Tool and have the Ensemble Button become part of the baseline VB Sources configuration.

Also, the items in the Ensemble Button currently show up in the Volume button as well. In order to avoid confusion about moving product location, these items will remain under both buttons until they are phased out into the Ensemble button at a later time.

45. Redmine DCS_17827

Meteorological Satellite Imagery and Products for the Forecast Field (GOES-R, Himawari) - GLM Lightning Detection

GLM Lightning Detection Plugin

46. Redmine DCS_17810

NCEP Install times for AWIPS II

It needs 30 minute install times.

47. Redmine DCS_17808

Collaboration (Phase III)

- Determine policy for cave's logging of conversations
 - Potential need to purge after a period of time (anywhere from a week to a few years) to prevent too much disk space being used
 - Write ticket to do this purging
- Install monitoring plugin to OpenFire at NCF
 - Write ticket to include monitoring plugin as part of the collaboration server RPM, test the plugin, and update the documentation for chat admins.
 - Establish it as one of the standard A2 OpenFire plugins
- Determine OpenFire settings
 - Archive peer-to-peer chats? (Aka one-to-one, private messages, and instant messages)
 - Archive all rooms or only permanent rooms?
 - Rollover to new log file after how many minutes? (No other way to configure it with current version of plugin) Default is 60 minutes.
 - Retain OpenFire's copy of chat archive for how long?
- Determine NCF chat admin retention policy, i.e. they should periodically copy the OpenFire chat archives to an external backup for longer retention.

48. Redmine DCS_17807

Changes to address Grid latency with 6 and 18Z

- Create separate pools for different gridded datasets - RTS
- Increase throughput to the backend storage and network - RTS
- System tuning and optimization - RTS

49. Redmine DCS_17789**Add TDWR radar TPSF to AWIPS configuration**

The FAA is planning to improve the quality of the TDWR base data and to modify the volume scanning strategies. The FAA has begun to test these changes on their testbed radar TPSF. The NEXRAD Radar Operations Center has a connection to the TPSF radar, but AWIPS does not support that radar. Implement AWIPS RC's 12979, 12980, and 12981 (submitted in 2011) so that the ROC AWIPS system can be used to support testing with TPSF.

50. Redmine DCS_17786**Add TDWR 8bit Spectrum Width Product**

In January 2016, the ROC is adding an 8-bit version of Spectrum Width to the TDWR SPG and plans to later remove the current 3-bit version. Update AWIPS to display this new 8bit product.

51. Redmine DCS_17781**SAILS All Tilts Interoperability - Add Keyboard Shortcut**

SAILS (Supplemental Adaptive Intra-Volume Low-Level Scan). Both increase the temporal resolution of scans by rescanning the lowest tilt halfway through a volume scan. Volume scans previously required over four minutes to complete and these techniques cut that time by approximately one half without the need for hardware upgrades. SAILS can provide nearly double the base radar scans when the radar is in severe weather mode. This change is an enhancement to the current SAILS capability in 16.1.1.

The requirements to be satisfied by this WA include:

1. Add a keyboard shortcut (e.g. Shift + Ctrl + up arrow or something else TBD) to go to the highest elevation of the most current completed volume scan (note that most of the time this is different from the most recent volume scan which isn't complete).

52. Redmine DCS_17689**Ingest and Display of Low-Earth-Orbit Satellite Data Products**

This task addresses a collection of related requirements for AWIPS-II ingest and display of the following low-earth-orbit satellite data products:

- GCOM AMSR-2 Microwave Imagery
- GCOM AMSR-2 derived Surface Wind Speed
- GPM GMI Microwave Imagery
- Sentinel and Radarsat-2 Synthetic Aperture Radar derived Surface Wind Speed
- SMAP (Still collecting information on this source)

The object is to provide this capability for the DOE – 4 in October 2015. These software changes (compatible with 15.1.1) will need to be deployed to 15 test sites using the ATAN process. This ATAN process will include testing at least on non-operational site prior to deployment to the 15 sites.

The software will be baseline with the 16.2.1 release.

The requirements to be satisfied by this WA include:

1. Ingest and display of the following low-earth-orbit satellite data products:

- a. GCOM AMSR-2 Microwave Imagery
- b. GCOM AMSR-2 derived Surface Wind Speed
- c. GPM GMI Microwave Imagery
- d. Sentinel and Radarsat-2 Synthetic Aperture Radar derived Surface Wind Speed
- e. SMAP (I am still collecting information on this source)

2. These data sets have the following characteristics in common:

- a. Relatively small product size - in the order of 250,000 points per product
- b. Data is packaged with a geographic coordinate for each data value.
- c. The refresh interval for the data is fairly long.
- d. The spatial sampling of the data is complex and changing as a function of time.
- e. The spatial resolution of the data is typically fairly coarse.
- f. Data are packaged as either netCDF-4 or HDF5.
- g. Data are viewed as false-color imagery.

3. It is intended that this task result in an abstracted capability to produce a false color raster from a list of arbitrarily sampled lat/lon/value "tuples" such that the raster can be spatially co-registered with other data in mission-appropriate projections. The capability, presumably in the form of an EDEX/CAVE Plugin pair, should have the following capabilities:

- a. Masking of data values using corresponding data quality flags per a semi-static configuration file.
- b. Handling of multiple data fields from a single product file.
- c. Progressive disclosure of image detail

4. The ideal approach would be to have EDEX generically extract and store the Lat/Lon/Value data arrays in the HDF data store, along with bounding information in the PostgreSQL database. A VIZ plugin would then populate a scenario-appropriate grid via nearest-neighbor sampling. If

this is not feasible due to performance concerns, then having EDEX populate a generic Latitude appropriate "intermediate" grid may be considered.

Sample files are posted to the VLab Data Format Registry:

- <https://vlab.ncep.noaa.gov/group/data-format-registry/home>
- https://vlab.ncep.noaa.gov/group/data-format-registry/gcom_amsr_11b
- https://vlab.ncep.noaa.gov/group/data-format-registry/gcom_ocean
- https://vlab.ncep.noaa.gov/group/data-format-registry/gcom_precip
- https://vlab.ncep.noaa.gov/group/data-format-registry/gpm_11c
- https://vlab.ncep.noaa.gov/group/data-format-registry/sar_winds

53. Redmine DCS_17683

Ingest and Display Gridded MOS - GFS based out to 10 days for CONUS 2.5km and AK 3km

Ingest and display Gridded MOS - GFS Based out to 10 days for CONUS 2.5km and AK 3km

GFS 0000/12000 UTC CONUS 2.5km, AK 3km - 8 to 10 days.

Data elements: Temperature, Dewpoint, Max T, Min T, RH, Wind Speed, Wind Dir., PoP (12-hr)

54. Redmine DCS_17675

The 5-min, 10-min, 60-min products update before the end of the period leading to false view of decreasing storm strength

"This may be a unique case of a resource not wanting real time updates."

Based upon feedback, here is what we are going to ask to be implemented on ALL Lightning data (plot & grid) products.

- **1hr plot / grid** – Option 2, updated hourly at the top of the hour.
- **15 min plot / grid** - Option 2, Updated at :00 :15 :30 :45 (includes Pos/Neg plot)
- **5 min plot / grid** – Option 2, Updated on the :05s (:00, :05, :10, etc)
- **New 5 min plot / grid (1-min update)** – Option 3,
- **1 min seq plot** – no change (includes Lgtng, Cloud Flash, and Pulse)
- **New 1 min plot** (DCS 17617) – Option 3

Option 1 is the current implementation and has been rejected.

Option 1. [REJECTED] (Current implementation in AWIPS-2) for the 5 minute products at the current time, the forecaster is usually not ever seeing the full 5 minute accumulation unless they are looking at it exactly on the 5/0's (ex. 9:40, 9:45). This product updates every minute and adds lightning to the current time so the forecaster is seeing a partial accumulation.

- System clock: 9:43 Legend Time: 9:45 Lightning from 9:41-9:43 updating every minute (partial accumulation)
- System clock: 9:45 Legend Time: 9:45 Lightning from 9:41-9:45 (full accumulation)
- Updates every minute

Option 2. The forecaster is always looking at a full accumulation of data for the time period being displayed. 15 minutes is a full 15 minutes of data (or 60 minutes, if looking at 1 hr products). Option 2 products don't update until the entire 5 min / 15 min / 1hr is complete.

An **Option 2** 3-frame loop of 15 min lightning data at a system time of 1947z -

| | Legend time | Data from |
|-----------------|-------------|-----------|
| Frame1 (newest) | 1945Z | - 1930z |
| Frame2 | 1930Z | - 1915z |
| Frame3 | 1915Z | - 1900z |

An **Option 2** 3-frame loop of 1hr lightning data at a system time of 1947z -

| | Legend time | Data from |
|-----------------|-------------|---------------|
| Frame1 (newest) | 18:00Z | 1759z - 1700z |
| Frame2 | 17:00Z | 1659z - 1600z |
| Frame3 | 16:00Z | 1559z - 1500z |

Option 3. The forecaster is always looking at a full accumulation, however the product is updated every minute and includes a running total of the past 5 minutes on a 5 min plot.

- System clock: 9:47 Legend Time: 9:47 Lightning from 9:47-9:42 (full accumulation)
- System clock: 9:45 Legend Time: 9:45 Lightning from 9:45-9:40 (full accumulation)
*Updates every minute

An **Option 3** 3-frame loop of 5 min lightning data at a system time of 1947z (assuming a perfect world – no delays in getting data)-

| | Legend time | Data from |
|-----------------|-------------|---------------|
| Frame1 (newest) | 1947Z | - 1942z |
| Frame2 | 1946Z | 1946z - 1941z |
| Frame3 | 1945Z | 1945z - 1940z |

An **Option 3** 3-frame loop of 1 min lightning plot data (not to be confused with 1 min seq) at a system time of 1947z (assuming a perfect world – no delays in getting data)-

| | Legend time | Data from |
|-----------------|-------------|-----------|
| Frame1 (newest) | 1946Z | 1946z |
| Frame2 | 1945Z | 1945z |
| Frame3 | 1944Z | 1944z |

55. Redmine DCS_17566

GFE: iscMosaic needs to remove and replace surge elements

During testing of the storm surge watch/warning collaboration, we found out the following.

The collaboration works by NHC exchanging grids via ISC with the WFO. The grids are received at the WFO through their ISC databases as:

InundationMaxnc

InundationTimingnc

ProposedSSnc

SurgeHtPlusTideNAVDnc

SurgeHtPlusTideMSLnc

SurgeHtPlusTideMLLWnc

SurgeHtPlusTideMHHWnc

The WFO has the option to run from ISC the TCStormSurgeThreat tool to create StormSurgeThreat grid from those. The problem is the TCStormSurgeThreat has built in checks to make sure the ISC database is updated with the proper model cycle data based on adv cycle. But that assumes the ISC database of these grids is a mirror of these grids in the NHA Fcst database. In other words, every time NHC updates them on the Fcst database and pushes them to ISC the assumption is it replaces what is in the ISC, not append.

56. Redmine DCS_17495

Configure LDMSERVER values for Run NWPS script in an environment file

Deferred code improvement from DR #17489: config variable inside edexOsgi/com.raytheon.uf.tools.gfesuite/nwps/bin/runManualNWPS_OutsideAWIPS.sh script should be set in an environment config file.

57. Redmine DCS_17366

Display Fire Weather Spot locations

Spot request locations are transmitted to AWIPS to spot forecast production. This task is to mine the spot requests for their lat/lon, title, and valid time. With this information, a dynamic map background could be created that displays the current spot locations.

58. Redmine DCS_17364**Add ECMWF station-based MOS text bulletins**

Add 00z and 12z ECMWF station-based MOS text bulletins (similar to other MOS text bulletins). These are scheduled to be implemented operationally on WCOSS on May 26, 2015.

59. Redmine DCS_17294**Modification to the Limit Values Smart Tool (for Ice Accumulation)**

A modification is needed to the LimitValues smart tool so that the Ice accumulation can be displayed with a resolution of 0.01 inches.

60. Redmine DCS_17203**Daylight transition capability for satellite resources**

This is a new feature, but small enhancement, that switches between multiple satellite resources based on a user-defined threshold for image brightness of the primary resource.

Required Behavior: The meteorologist loads an AWIPS tool, activates the feature, and then loads two satellite resources. One of the two satellite resources are displayed based on the mean value of select data points that are within the user's movable geographic area within the pane. The user controls the threshold for which resource is displayed. The pane resource is refreshed as the user pans and interacts with the image.

61. Redmine DCS_17131**NWS Impact Catalog available to AWIPS**

Iris will be hosted on the Integrated Dissemination Program servers, and will provide a comprehensive API for accessing a centralized database of impacts, impact alerts, contacts, and events for use by AWIPS applications. This national Impacts Catalog is critical to agency success in providing effective Impact-Based Decision Support Services (Roadmap, Pilot Projects).

The capability is to make impact catalog data available to a wide variety of applications including D2D, Hazard Services and FDSE.

62. Redmine DCS_17013**When desired, customize the reception and viewing of AlertViz messages.**

Site OPCN would like to be able to filter all alerts sent from AlertViz so that they can be directed to:

1) Every LX workstation (the entire OPCN system) like the current functionality

Or

2) Just the LX running a specific DESK localization.

For example, they'd like to just send some alerts to just those LXs who's DESK localization is "MARINE".

63. Redmine DCS_16984**NOS netCDF grid ingest**

64. Redmine DCS_16966**Modify the D2D time series and AvnFPS to ingest new Gridded LAMP BUFR data**

Modify the D2D time series and AvnFPS to ingest new LAMP BUFR data which will include new convection guidance, and replace 2 category thunderstorm guidance with 4 category lightning guidance

65. Redmine DCS_16965**Ingest and display new STATION products for convection and thunderstorm datasets (Gridded LAMP)**

Ingest and display new STATION products for convection dataset and thunderstorm dataset.

66. Redmine DCS_16787**FFMP use of MRMS data**

The requirements to be satisfied by this WA include:

1. Ingest by FFMP of user defined grids for QPE, QPF, or guidance grids required for core FFMP functions. These grids would be as defined in the appropriate configuration file(s), and have grid attributes as supported in AWIPS-1.
2. Ability to specify and manage local definitions of grids for use in FFMP.
3. Ability to handle MRMS QPE grids, QPF MRMS grids, or other guidance products such ARI guidance grids.

67. Redmine DCS_16579**Add ability to toggle hydro AlertAlarm ops by HSA**

Add ability to toggle hydro AlertAlarm ops by HAS

68. Redmine DCS_16359**D2D/GFE: HWRF Gridded Forecast Fields**

The data from the HWRF needs to be made available on the SBN and needs to be ingested and displayable in D2D and an associated smartInit created for GFE. The desired levels are: SFC to 100 mb at 25 mb intervals and the parameters are: wind vorticity shear QPF temperature potential temperature equivalent potential temperature mixing ratio MSLP geopotential heights relative humidity.

Baseline DD job/GFE setup: 3km; hourly from 0-126; FHAG2: T, Td; FHAG10 U/V Wind, Wind gust (algorithm), Max wind gust (direct model output): SFC: MSLP, precipitation?; 30m, 60m, 90m, 120m, 150m, 180m AGL U/V Wind.

HWRF is a triple-nested model (27/9/3km). We would want the 3km for GFE.

There would be utility in having the full vertical extent of data available (25mb levels, boundary layers) via DD in the 3 and perhaps 9km domains.

HWRF runs out to 126 hours, I imagine we want hourly output on the 3km, perhaps 3-hourly in the 9km. If not the 9km, then definitely the 27km

Update: The 2015 implementation is 18/6/2km domains, 18 and 6 are expanded compared to the previous 27 and 9km domains.

Idea was to make as much of the 3 domains available via Data Delivery (DD) as possible. For AWIPS, there would be shared DD subscriptions to deliver the "Baseline DD/GFE setup" list of data on the 3km and 6km domains via SBN if a site activates the subscription(s). A smart init is not really necessary since the hdf5 data can be used directly in a GFE Procedure. Propose instead of a new init, a new GFE Procedure is delivered that assists in populating grids with HWRF data.

69. Redmine DCS_16287**SE: Add additional error checking for ISC localConfig in GFE**

Original:

Recently RFC TIR made a typo in their localConfig where they requested 'MinTwfo,' instead of 'MinTwfo'. GFE interpreted the errant comma as 'none' and it caused the ISC processing for all sites TIR was requesting ISC grids from to hang. The sites could work around the problem by using ISC request/reply to receive ISC grids. The problem went away immediately when TIR fixed their localConfig.py. This enhancement DR is intended to add additional error checking so that unexpected garbage characters in the parm names generates an error. Here are Mark Mathewson's comments: I'm not sure how that comma translated into a "None", but that is the

cause. Some additional error checking in this case would be good. We already have error checking on the validity of the configuration file (localConfig.py), but apparently it made it through that. We simply looked for a comma-delaminated list and then ensured that each entry in the list was a string. Unfortunately, the string wasn't expected with a comma within it. Mark

Milestone 1:

Issue is not reproducible. Will move on to adding in error-checking for the localConfig file.

Updates:

(From AWIPS help)

ISC- Intersite and Intrasite Coordination of Grids

The Intersite Coordination Grids configuration can be overridden in the localConfig.py file.

localConfig.py location (optional file)-

/awips2/edex/data/utility/edex_static/site/SITE_ID/config/gfe

localConfig.py help location- <local AWIPS Dev Baseline repo

location>cave/com.raytheon.viz.gfe/help/localConfig.html#ISC

For this particular issue it seems we are concerned with this section-

Request ISC

Setting the value to 0 disables the request of ISC data and EDEX will not register with the ISC Routing Table Web Server. To enable the reception of ISC data, you use this syntax in the localConfig.py file:

```
serverConfig.REQUEST_ISC = 1
```

Original config value attempted-

```
serverConfig.REQUESTED_ISC_PARMS =
```

```
['T','Twfo','MaxT','MaxTwfo','MinT','MinTwfo','QPF','CQPF','QPFrfc','QPFwfo','QPF6hr','QPF6hrwfo','QPFTotal','QPFTotalwfo','MaxRH','M
```

```
inRH','MaxTd','MinTd','RH','RHwfo','Td','Tdwfo','Wind','Windwfo','Wx']
```

Python:

By placing a comma with the string name rather than in between elements, the element with a comma would get joined with the next element. By placing a comma within the string name but still having one between elements, the mistyped name would have a comma at the end.

File of interest:

/com.raytheon.edex.plugin.gfe/utility/edex_static/base/config/gfe/doConfig.py

```
#otherParse
```

Parses the localConfig.py file, and returns the list to serverConfig.py (after being called by wrapper.py). serverConfig constructs an /com.raytheon.edex.plugin.gfe/src/com/raytheon/edex/plugin/gfe/config/SimpleServerConfig.java object, but the list is neither null nor empty with the bad input (though the input does remain bad).

/com.raytheon.edex.plugin.gfe/src/com/raytheon/edex/plugin/gfe/config/IFPServerConfigManager.java is the one that calls wrapper.py, and handles the SimpleServerConfig object, using it to construct

/com.raytheon.edex.plugin.gfe/src/com/raytheon/edex/plugin/gfe/config/IFPServerConfig.java. Here, the list is still neither null nor empty with the bad input.

IFPServerConfig#requestedISCParms() can be used to retrieve the Parms list. This called by-

1. /com.raytheon.edex.plugin.gfe/src/com/raytheon/edex/plugin/gfe/isc/GfeIRT.java#GfeIRT, which evaluates if the list is empty, and if it is then default values for the site are added in if possible. The Parms list (parmsWanted) is then used to execute IrtAccess.py#register method, which seems to be internally safe for the bad values.
2. /com.raytheon.edex.plugin.gfe/src/com/raytheon/edex/plugin/gfe/server/handler/IsrRequestQueryHandler.java#handleRequest, which forms a response containing config data, including the Parms list. Eclipse could not find where this method is called from, though this sounds like the workaround component that was used by the end user while they had a bad localConfig.

70. Redmine DCS_16119

Small enhancement to NWRWAVES localSWAPS capability

In testing the localSWAPS capability it was noticed that there cannot be more than one active swap wording in a message. For instance in the localSWAPS.txt file on TBW3 there are two lines: MAZ005 MAZ006 || North Suburban Boston MAZ007 MAZ013 MAZ014 MAZ015 MAZ106 || Metropolitan Boston If a short term forecast is written for all of those zones at once, only the Metropolitan Boston is picked up not both.

71. Redmine DCS_15600

Thin Client - Signed Authentication Handling

This DCS covers the enabling of certificate validation for https thin client.

72. Redmine DCS_15105

Additional Time Zones Request for SHEF Decoder

Additional Timezones for WHFS's SHEF Decoder are necessary to complete a requirement for all WFOs to have the capability of issuing a RTP product via Riverpro. The RTP product will

require SHEF .B formatting next fiscal year. Although neither Guam nor Pago Pago currently issue a RTP, they should have the capability once they are required. The current SHEF code (version 2.2), Table 8 does not contain a time code designator (tz) for either. Please amend the SHEF code to allow use by Guam and Pago Pago, particularly as it applies to the time zone designator.

Guam - Chamorro Time Zone (CHST) - UTC plus 10 hours - no daylight saving time.

Pago Pago (American Samoa) - UTC minus 11 hours - no daylight saving time.

73. Redmine DCS_15102

Add ability to use preferred predefined order for PE-D-TS-EXT list

In WHFS TimeSeries main window, add the ability to use a preferred, predefined order for the PE-D-TS-EXT list displayed for a given station. This saved, ordered list should apply for all stations for the given WFO and can be managed via the TimeSeries or simply through a text editor, if a file is used for the predefined list. The predefined list should allow order control over the PE (physical element) and TS (TypeSource) components - the D (Duration) and EXT (extremum) can default to a fixed order and does not require local control. This list order issue was partly addressed with AWIPS_DR_19013 (an AWIPS1 DR), but the solution needs to include the above functions.

74. Redmine DCS_15095

Add edit/insert feature to HydroBase Flood Timeseries

75. Redmine DCS_14070

GFE: FWS formatter crashes with 4-digit year; should allow 2 or 4 digit year

Site HGX reported the following issue: Both the baseline and site level FWS (Fire Weather Spot) formatters in GFE are crashing. After troubleshooting it was determined that the problem is resulting from the forecaster entering the current date into the formatter as 4/24/2013 instead of 4/24/13. This behavior is the same as in AWIPS I. The site requested that despite this not being a new issue that it be documented, as this is something that could cause problems potentially to users unaware of the requirement for the date format.

76. Redmine DCS_10635

Incorrect aviation description

Through the upper air drop down menu there is a section for Aviation. You can pull up current AIRMETs which are labeled wrong.

77. Redmine DCS_10257**list SEVERE PIREPs should be highlighted (RED)**

Upper Air - Aviation - PIREPPIREPs are like LSRs (Local Storm Reports). Severe PIREPs often trigger an Aviation Hazard product like Center Weather Advisory or SIGMET. SEVERE PIREPs should be highlighted in RED as with other current monitoring systems such as AWC ADDS Java PIREPs. This would greatly enhance situational Awareness.

78. Redmine DCS_10051**GFE FWS Formatter - One Hour of missing grids, causes 12 hours of missing forecast**

This has been always a nagging issue with the FWS formatter in how it samples grids for narrative phrases. For example, consider Hazards grids for the first 36 hours of the grids (Today through tomorrow). Frequently, offices would create a Hazards grid that starts at Noon Today and ends at midnight tonight. They would put FW.W in the grid for a Red Flag Warning. So for the Today period, the first 6 hours would have no Hazard Grid, whereas, the second 6 hours would have a Hazard Grids with FW.W in it. When the FWS Formatter is run in Tabular/Narrative mode and because there was no grid for the first 6 hours, the formatter forecast will be "MISSING" for both the narrative and tabular sections of the forecast. Now if I create a Hazard Grid in the first 6 hours, leave "<None>" in this grid, and re-run the FWS formatter, the forecast is no longer missing for the Today period, but remains missing for the Tonight Period. This is an issue with most all weather elements from Wind to Mixing Height. Also this was an issue in AWIPS I. This was done this way in AWIPS I, to make sure that grids have been created over the entire extent of the forecast duration. There must be some way to put whatever information there is in the grids into the forecast, even though there are missing grids.

Redmine CFR_17922**Upgrade scipy from version 0.15.0 to 0.15.1**

Redmine CFR_17921**pytz-2015.4+**

Redmine CFR_17780**Upgrade Basemap to version 1.0.7**

Redmine CFR_17762**Upgrade numpy to version 1.9.2**

Redmine CFR_17760**Update dateutil to version 2.4.2+**

Redmine CFR_17759

Update matplotlib to 1.4.3+

Redmine CFR_17758

Update PostgreSQL to 9.3.9

Redmine CFS_17757

Upgrade Jep to 3.4

Redmine CFR_17756

Upgrade python to version 2.7.10

Redmine CFR_17755

Update camel to 2.14.3

XML/base, WarnGen Template, and RPM Changes

The changes to XML/base, WarnGen Template and RPM made in OB 16.2.1 are shown in Appendix A.

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 16.2.1 release.

<https://docs.google.com/spreadsheets/d/1wv3ygGxfI9g9LTsxyNtwipkGhoCDqxuPor3dwbL-IW8/edit#gid=63122912>

Release Note: RODO 4360

Changes were made to tables' datauri columns to make them not null. The deltaScripts/16.2.1/DR4360/updateTables.sh script will perform this task on an existing database. In addition the table's UNIQUE CONSTRAINT are assigned a name in the pattern uk_{table_name}_datauri_fields.

Enforced dataURI fields to be not null for the following plugins: acars, acarssounding, airep, bufrascats, bufrhdw, bufrmos_location, bufrmosavn, bufrmoseta, bufrmosgfs, bufrmoshpc, bufrmoslamp, bufrmosmrf, bufrmosngm, bufrmthdw, bufrnewf, bufrquikscats, bufrssmi, bufrua, ccfp, crimss, fssobs, goessounding, grid, grid_info, ldad_manual, ldadmsonet, ldadprofiler, lsr, madis, modelsounding, ncpafm, ncsd, nctaf, ncuair, nucaps, obs, pirep, poessounding, practicewarning, profiler, qc, sfcobs, svrwx, teg, tes, vaa and warning.

Release Note: RODO 4533

Postgresl upgraded from 9.3.5 to 9.3.9.

Release Note: RODO 4587

Camel upgraded from 2.14.2 to 2.14.3.

Release Note: RODO 4574

Python upgraded from 2.7.9 to 2.7.10.

Release Note: RODO 4575

Jep upgraded from 3.3.6 to 3.4.1.

Release Note: RODO 4668

scipy upgraded from 0.15.0 to 0.15.1.

Release Note: RODO 4264

numpy upgrade from 1.7.2 to 1.9.2.

Please note that the `numpy.where` function was rewritten for improved speed but a side effect was it may upcast the dtype. For example, an array of `float32` may be turned into an array of `float64` if using `where` when dtypes don't match or may not match. This could decrease performance as the array would then use twice as much memory. To ensure this doesn't happen, any local smart tools, procedures, smart inits, etc should ensure the dtype of the arguments, such as `where(cond, A, B)` where A and B are the same dtype. A simple example:

Potentially inefficient:

```
temp = numpy.where(cond, 1, temp)
```

Guarantee dtypes:

```
temp = numpy.where(cond, numpy.float32(1), temp)
```

Even more efficient (but not always applicable):

```
temp[cond] = numpy.float32(1)
```

For more information, see the next release note and the numpy bug @
<https://github.com/numpy/numpy/issues/6155>

Release Note: RODO 4704

GFE will log an informational message similar to the following if it detects that the data in a GFE grid's numpy array is upcast by a smart tool, procedure, or smart init:

Java expected grid of type (...) but Python returned (...)

If this message is seen, the Python tool that triggered the message should be optimized for improved performance.

Two new methods were added to `SmartScript.py` and `Init.py`:

```
empty(self, dtype=float32)
```

```
"""Return a grid filled with 0"""
```

```
newGrid(self, initialValue, dtype=float32)
```

```
"""Return a grid filled with initialValue"""
```

self._empty and self._minus are deprecated all use to them should be replaced with self.empty() and self.newGrid(-1) respectively.

Also constructs like self._empty + k can be replaced by self.newGrid(k)"

Release Note: RODO 4521

matplotlib upgraded from 1.2.0 to 1.4.3.

Release Note: RODO 4520

dateutil upgraded from 1.5 to 2.4.2.

Release Note: RODO 4519

pytz upgraded from 2012d to 2015.4.

Release Note: RODO 4608

The Data Access Framework now supports retrieving topo data.

Release Note: RODO 4826

New RPM: awips2-cave-wrapper

This RPM includes all of the non-rcp managed scripts and configuration files that are normally installed with CAVE. This RPM will need to be installed on all machines that CAVE is installed on. Recommend adding the RPM to the Visualize and Rehost AWIPS II yum groups.

Release Note: DCS 17940

Sites that use GFE must have NIC 3.0.1 or greater install prior to installing OB16.2.1. The GFE "serverConfig.py" file will be returning to the official AWIPS baseline, after having been managed by the NIC local app in order to ease the standardization process. NIC serverConfig overrides have been added to the baseline serverConfig. However, for service backup of a 16.2.1 by a 16.1.x site, the 16.2.1 site must still have a serverConfig.py override in their configuration. Once all sites are on OB16.2.1, then the site override version of serverConfig will be removed. The baselining of NIC serverConfig affects the syntax using in the site's localConfig.py file. All sites that use GFE must have installed and configured NIC prior to installing OB16.2.1. GFE will not activate unless localConfig.py has been converted to use the NIC syntax. See

<https://collaborate.nws.noaa.gov/trac/nwsscp/wiki/Gfe/Smartinits/NwsInitsConfig>

Release Note: RODO 4633

D2D blended resources now have the ability to automatically transition between 2 satellite resources. This can be useful for displaying Visible satellite during the day but switching to IR at night. To access this capability load two satellite resources with the image combination tool active, right click on the legend and select "Automatic Transition" or "Daylight Transition". These two items are completely independent implementations of the same type of capability, Automatic Transition will toggle between the two resources depending on the amount of visible data available and Daylight Transition will display both at the same time with a transition depending on the time of sunset/sunrise on the display. We request feedback on the pros, cons, and usefulness of both transition capabilities with the goal of consolidating to a single implementation for reduced code maintenance.

Release Note: RODO 4897

The deltaScripts/16.2.1/DR4897/removeDatIndex.sh delta script will need to be executed on the EDEX server. The script will cleanup old index.xml files generated for the fog, safeseas, and snow menu items.

Release Note: DCS 18187

Add a few sound (wav) files that existed in AWIPS 1 but did not yet make it to AWIPS 2. Placed for usage in AlertViz. These new sound files will not be used by any part of the baseline upon release, but will be available to all AWIPS sites to use as they see fit.

Release Note: DCS 10527

PIREPs and AIREPs will be categorized into urgent and non-urgent legend items, based on report urgency and severity.

Release Note: DCS 15105

SHEF decoder will now handle Guam and Samoa timezones.

Release Note: DCS 16287

Various ISC parameters from localConfig.py will be validated.

Release Note: DCS 17786

Radar SW Product 184 can now be ingested

Release Note: DCS 10635

Added new capability to display AIRMET labels or symbols according to the types of AIRMET

Release Note: DCS 17366

Added new EDEX plugins, D2D rendering capability to ingest and display the location information (labels and samples) of Spot Forecast Requests (transmitted to AWIPS SBN from Spot Web sites) on D2D maps

Release Note: DCS 16579

Added new capability to filter the data by select a HSA from the HSA list in the Alert and Alarm Data Values window. Also added new capability to filter stations in the alarm products by setting the token alarm_hsa_filter.

Release Note: DCS 17789

Expanded TDWR RPG_ID range from 3045 to 3099

Release Note: DCS 15102

Added new capability to read hydro/preferred_order.txt to sort the PE-D-TS-EXT list in Time Series Control window

Release Note: DCS 15095

Added edit/insert feature to Hydrobase Flood Time Series

Release Note: DCS_10051

Fixed issue in GFE: FWS Formatter - one hour of missing grids cause 12 hours of missing forecast

Release Note: DCS 14070

Enhanced GFE FWS formatter to work with both 4-digit year and 2-digit year

Release Note: DCS 17568

Fixed the 8-bit Spectrum Width display and sampling

Release Note: DCS 18823

Added additional map scales to the D2D perspective and regional / national warnings to the Obs menu under the Hazards section.

Offices with a site level ../bundles/scales/scalesInfo.xml file will find it has been moved to scalesInfo.xml.orig and will need to merge any previous changes/additions they have made with the new base file.

Site level files ""..menus/warnings/index.xml"" will be updated to include the new base level keys.

Release Note: DCS 17495

There are significant changes to NWPS in 16.2.1. Please see the NWPS website at <https://sites.google.com/a/noaa.gov/nws-sr-srh/nwps/?pli=1> or specifically the 16.2.1 pre/post installation document at https://docs.google.com/document/d/1ZEOV2dN_gjUR0Irxenn3Wly7LJuNtQkiGEGe5dXK1cs/edit#

Release Note: DCS 17789

For the 16.2.1 Regional Beta Test for DCS 17789, 2 NDM files have been updated on NOAA1 in the /pub/ndm directory:

tdwrFsiScanOrder.txt

tdwrElevations.txt

Only be the ROC's OSFW AWIPS will be using this functionality, since TPSF is the FAA's testbed TDWR radar in Oklahoma City until TDWR Build 2 software is deployed. NDM files will need to be updated after the FAA installs Build 2 at TDWR sites.

Release Note: Workaround for DR 18440 and 18255

Workaround for the following 2 DRs.

Making small changes to grids and subgrids requires clearing out data for affected models.

(DR 18440)

Clipped (subgridded) grid data shifted to south and east when displayed in D-2D, GFE.

(DR 18255)

If a grid definition's geospatial information is changed (edex_static/.../grib/grids/*) or if sub-grid definitions are changed (especially <centerLatitude> and <centerLongitude> in edex_static/.../grib/subgrids/* or edex_static/.../grib/defaultSubGridCenterPoint.xml) such that the all of the lat/lon coordinates are less than or equal to 0.1 degrees different, it may be necessary to clear out existing data or repair the grid definition in the metadata database.

Correcting sub-grid definitions

If a sub-grid's definition is changed, it is possible to use the sub-grid checking tool that was provided with OB15.1.1. Refer to the instructions in /data/local/subgrid-offset-check/README for guidance on running this tool.

Clearing out grid data

If a primary grid's definition is changed as described above, it may be necessary to clear out all existing model data that reference the grid. The steps below describe how to clear out specific gridded data from the metadata database and HDF5 stores.

1. First, obtain the list of grid coverage IDs for grids known to have changed based on the model dataset IDs. Substitute ""Model1', 'Model2', ..., 'ModelN'"" below with those dataset IDs.

```
select distinct gridcoverage.id from grid,grid_info,gridcoverage where
grid.info_id=grid_info.id and grid_info.location_id=gridcoverage.id and
grid_info.datasetid in ('Model1', 'Model2', ..., 'ModelN');
```

2. Next, obtain the list of all models that use those grid coverage IDs. (There may be more than the list of known model names.) Substitute ""ID1, ID2, ... IDn"" with the list of numbers obtained above.

```
select distinct grid_info.datasetid from grid,grid_info,gridcoverage where
grid.info_id=grid_info.id and grid_info.location_id=gridcoverage.id and
gridcoverage.id in (ID1, ID2, ..., IDn);
```

3. Delete grid records from the database that reference the grid coverage IDs.

```
delete from grid using grid_info,gridcoverage where grid.info_id=grid_info.id
and grid_info.location_id=gridcoverage.id and gridcoverage.id in (ID1, ID2, ...,
IDn);
```

```
delete from grid_info using gridcoverage where
```

```
grid_info.location_id=gridcoverage.id and gridcoverage.id in (ID1, ID2, ..., IDn);
```

```
delete from gridcoverage where gridcoverage.id in (ID1, ID2, ..., IDn);
```

4. Delete each of the directories under /awips2/edex/data/hdf5/grid corresponding from the names obtained in step #2.

Python/JEP/Python Runtime Changes

GFE procedure execution processing changed so that this bit of code no longer works.

```
model = varDict[""Model""]
```

```
if model is 'NAM12':
```

```
    timeRange=...
```

The ""model is 'NAM12'"" test now evaluates to false even though variable model's value is equal to 'NAM12'. The type of model is string, and ""equals"" instead of ""is"" should have been used. This is something changed in the python runtime.

DR 13459

DR 13459 (GFE: Smart tool hiding does not work in some cases) is NOT in the official DR List for the 16.2.1 release and it is still in REVIEW status. However it has been fixed in the 16.2.1 release. It was an undocumented fix.

ARI/FFMP and MRMS

This function allows MRMS grids and ARI (average recurrence interval) grids to be used in FFMP. The MRMS grids are an alternate source of dynamic QPE input. The ARI are a GIS-derived static dataset showing precipitation probability for certain accumulation periods. The ARI can be used to compare QPE against historic precipitation patterns, instead of comparing QPE against RFCFFG.

NWS offices can download the raw ARI grids, which total around 700 MB, from the following link:

```
http://flash.ou.edu/files/ari/
```

This provides 6 zip files, one for each of the following durations: 30 minutes, and 1, 3, 6, 12, 24 hours. Each zip files has GRIB2 files for the following recurrence intervals: 1, 2, 5, 25, 50, 100, 200, 500, 1000 years.

You'll need to add "YEZZ88_KWBZ" to the names of ALL of the files before you drop into EDEX manual ingest. This adds a valid WMO header which is necessary to ingest properly. Once that is done, with the 16.2.1 changes to FFMP, you'll be able to use this data as many, many FFG sources.

Follow these instructions to ingest ARI for your site:

1. Download the ARI files: link:

<http://flash.ou.edu/files/ari/>

2. Explode the zip files that contain the individual grids.

3. Append the valid WMO header "YEZZ88_KWBZ" to the filename:

ex. 6h_10yr.grib2 becomes YEZZ88_KWBZ6h_10yr.grib2

4. Update the SITE level FFMPSourceConfig.xml file. The BASE delivered FFMPSourceConfig.xml has the proper configuration necessary to ingest the data into FFMP. If you have customized a SITE level file already, merge the entries into your file. See SMM Appendix AA (16.2.1 Release) for details.

5. Copy the ARI files from Step 2 and 3 into the /awips2/edex/data/manual directory on the dx3 or dx4 boxes.

Monitor the ingestGrib logs for any errors in creation of grib records.

This process may take approx 30 minutes to complete.

6. On dx3 and dx4, monitor ingestDat until FFMP has finished processing. This process can take up to 30 minutes to complete.

Model subgrid changes

Subgrid files were added to the baseline that cover ALL sources on a particular grid. These include grid197, grid184 and grid1023. Grid sources that may be impacted include EKDMOS, GLAMP25, and MOSGuide. Other sources may be affected. Sites will want to verify that the new/altered subgrids still suit their needs (e.g. does it cover their GFE domain) and adjust via a site-level override, if needed.

Delta Scripts

The following localization files are touched as part of various delta scripts run during the 16.2.1 install:

/awips2/edex/data/utility/cave_static/site/LLL/spellchecker/spelldict.xml

/awips2/edex/data/utility/common_static/site/LLL/roles/userRoles.xml

/awips2/edex/data/utility/edex_static/*/*/postProcessedModels.xml

/awips2/edex/data/utility/cave_static/configured/*/menus/[fog|safeseas|snow]/index.xml

/awips2/edex/data/utility/cave_static/*/*/ncep/SPFs/*/*/*.xml

/awips2/edex/data/utility/cave_static/site/*/bundles/scales/scalesInfo.xml

/awips2/edex/data/utility/cave_static/site/*/menus/warnings/index.xml

Issue when running ViewWCL in GFE

The parm that was being edited before ViewWCL is run is plotted as contours.

Users can simply click on that edited parm's legend to remove the contours.

DR 18773: GFE - BOIVerify fails after 16.2.1 numpy upgrade

Some changes were made to the BOIVerify code due to the numpy upgrade, and so if you have a site level override these changes from the new baseline file need to be merged in. Automated verification report Procedures are one example.

OB16.2.1 Beta issues that will be resolved in subsequent 16.2.1p1 patch as of the publication date

DR 19004: D2D: Updates for changes in GFS20 AK and PAC models (replaces DR17963: FFMP: DPR overestimating basin rain averages)

DR 18969: D2D: CAVE freezes during the export of animated GIF with lightning resource loaded

DR 18955: CWASP cannot update automatically (Moved to Release 16.2.2)

DR 18989: ingestGrib resource starvation / deadlock causes whole system to exponentially slow down

DR 18987: WarnGen Templates: Updates to Extreme Wind Warning Followup Template

DR 18968: WarnGen Template: "OF" needs to be "of" in VM_global_library.vm

DR 18958: WarnGen Templates: Misc template fixes post 16.1.2 implementation

DR 18950: WarnGen Templates: Special marine warning followup has formatting problem with "front" event type and line of storms

DR 18988: Missing emergency phone number in DCS 18916 for STQ new format fix

DR 18967: GFE: Parameter edited before ViewWCL is run is plotted as contours

Note: The OB16.2.1p1 patch can be delivered approximately by mid-June 2016.

Appendix A. XML/base, WarnGen Template and RPM Changes in OB 16.2.1

XML/base and WarnGen Template changes

The following link lists the XML/base and WarnGen Template changes.

<https://docs.google.com/document/d/1rKwPPNvr-Ms5f18V1IR9ADQK0vgu0eKHT-tmzyxlSnQ/edit#heading=h.gjdgxs>

RPM Changes

awips2-alertviz-16.2.1-29.x86_64.rpm
awips2-cave-16.2.1-29.x86_64.rpm
awips2-cave-ncep-16.2.1-29.x86_64.rpm
awips2-cave-wrapper-16.2.1-29.x86_64.rpm
awips2-common-base-16.2.1-28.x86_64.rpm
awips2-edex-16.2.1-1.x86_64.rpm
awips2-edex-archive-16.2.1-1.x86_64.rpm
awips2-edex-base-16.2.1-28.x86_64.rpm
awips2-edex-binlightning-16.2.1-27.x86_64.rpm
awips2-edex-bufr-16.2.1-20.x86_64.rpm
awips2-edex-common-core-16.2.1-23.x86_64.rpm
awips2-edex-configuration-16.2.1-1.x86_64.rpm
awips2-edex-core-16.2.1-28.x86_64.rpm
awips2-edex-cots-16.2.1-3.x86_64.rpm
awips2-edex-dat-16.2.1-23.x86_64.rpm
awips2-edex-datadelivery-16.2.1-28.x86_64.rpm
awips2-edex-datadelivery-client-16.2.1-28.x86_64.rpm
awips2-edex-datadelivery-core-16.2.1-28.x86_64.rpm
awips2-edex-dataplugins-16.2.1-20.x86_64.rpm
awips2-edex-dataprovideragent-16.2.1-5.x86_64.rpm

awips2-edex-gfe-16.2.1-28.x86_64.rpm
awips2-edex-glmdecoder-16.2.1-5.x86_64.rpm
awips2-edex-goesr-16.2.1-20.x86_64.rpm
awips2-edex-grib-decoderpostprocessor-16.2.1-3.x86_64.rpm
awips2-edex-grid-16.2.1-20.x86_64.rpm
awips2-edex-hazards-16.2.1-20.x86_64.rpm
awips2-edex-hydro-16.2.1-26.x86_64.rpm
awips2-edex-nccep-16.2.1-4.x86_64.rpm
awips2-edex-nccep-nco-16.2.1-4.x86_64.rpm
awips2-edex-npp-16.2.1-28.x86_64.rpm
awips2-edex-nswrc-radar-16.2.1-20.x86_64.rpm
awips2-edex-ogc-core-16.2.1-28.x86_64.rpm
awips2-edex-ogc-wfs-16.2.1-28.x86_64.rpm
awips2-edex-ohd-16.2.1-6.x86_64.rpm
awips2-edex-ost-16.2.1-27.x86_64.rpm
awips2-edex-radar-16.2.1-27.x86_64.rpm
awips2-edex-registry-16.2.1-25.x86_64.rpm
awips2-edex-registry-client-16.2.1-25.x86_64.rpm
awips2-edex-registry-request-16.2.1-25.x86_64.rpm
awips2-edex-satellite-16.2.1-20.x86_64.rpm
awips2-edex-sportlma-16.2.1-5.x86_64.rpm
awips2-edex-text-16.2.1-25.x86_64.rpm
awips2-hydroapps-shared-16.2.1-24.x86_64.rpm
awips2-java-1.7.0_80-16.2.1.2.x86_64.rpm
awips2-pgadmin3-1.18.1-16.2.1.13.el6.x86_64.rpm
awips2-postgresql-9.3.9-16.2.1.13.el6.x86_64.rpm
awips2-psql-9.3.9-16.2.1.3.el6.x86_64.rpm
awips2-pypies-16.2.1-6.x86_64.rpm

awips2-python-2.7.10-16.2.1.1.el6.x86_64.rpm
awips2-python-dateutil-2.4.2-16.2.1.1.el6.x86_64.rpm
awips2-python-matplotlib-1.4.3-16.2.1.1.el6.x86_64.rpm
awips2-python-numpy-1.9.2-16.2.1.1.el6.x86_64.rpm
awips2-python-pyparsing-2.0.3-16.2.1.1.el6.x86_64.rpm
awips2-python-pytz-2015.4-16.2.1.1.el6.x86_64.rpm
awips2-python-scipy-0.15.1-16.2.1.1.el6.x86_64.rpm
awips2-python-setuptools-18.0.1-16.2.1.1.el6.x86_64.rpm
awips2-python-six-1.9.0-16.2.1.1.el6.x86_64.rpm
awips2-rcm-16.2.1-27.x86_64.rpm
awips2-tools-1.8.5-16.2.1.13.el6.x86_64.rpm
awips2-16.2.1-29.noarch.rpm
awips2-adapt-native-16.2.1-24.noarch.rpm
awips2-aviation-shared-16.2.1-6.noarch.rpm
awips2-cli-16.2.1-13.noarch.rpm
awips2-data.hdf5-topo-16.2.1-13.noarch.rpm
awips2-edex-environment-16.2.1-5.noarch.rpm
awips2-gfesuite-client-16.2.1-9.noarch.rpm
awips2-gfesuite-server-16.2.1-9.noarch.rpm
awips2-ldm-6.12.14-16.2.1.13.noarch.rpm
awips2-localization-OAX-16.2.1-3.noarch.rpm
awips2-ncep-cli-16.2.1-24.noarch.rpm
awips2-python-dynamicserialize-16.2.1-3.noarch.rpm
awips2-python-pupynere-1.0.13-16.2.1.3.noarch.rpm
awips2-python-ufpy-16.2.1-5.noarch.rpm