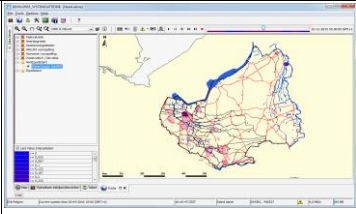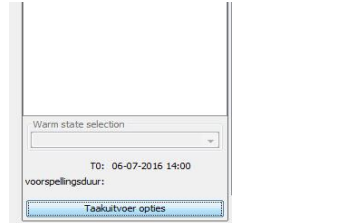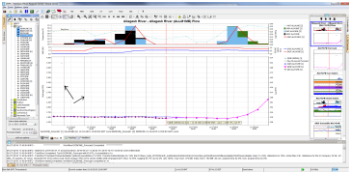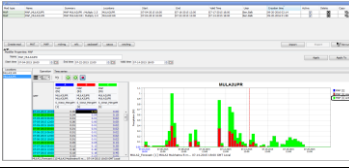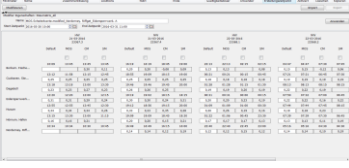| Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
App - Archive	Deltares	FEWS-15285	New Feature	Add datamanagementtool to archive server	Archive: Data management tool can be run from command line	The data management tool can now only be run from the command line. This is the last tool which is only available from the command line. Therefore for every archive installation there needs to be an installation of the tools. If this tool is available from the archive web server, this installation step can be skipped.			https://publicwiki.deltares.nl/display/FEWSDOC/Archive+installation
App - Archive	NWS	FEWS-14998	New Feature as subtask	FEWS-14997 NWS: FB185 Ability to export and archive mods	Modifiers can be exported and archived	With the FEWS Archive you can set up export workflows for the simulations and modifiers. You can export these simulations and mods to a defined directory structure. This can be done without worrying about the details on the backend processes of the Archive, e.g. bringing data back in from the Archive to an operator client.			https://publicwiki.deltares.nl/display/FEWSDOC/22-2+Export+to+Deltares+Open+Archive
App - Configuration Manager Gui	RWS (NL)	FEWS-13719	Improvement as subtask	FEWS-13718 BIR: Authentication in Operator Client based on AD account	Authentication in OC/CM based on Active Directory	Authentication in OC/CM based on Active Directory Settings. Groups and Permissions will be shared with Delft-FEWS	#Delft-FEWS ini file main.class=nl.wldelft.fews.configmanagement.ConfigManagementApplication classpath.1=*.jar #Java Runtime jvm.dll location vm.location=c:\Progra~1\Java\jdk1.8.0_91\jre\bin\server\jvm.dll vmarg.1=-Xms512m vmarg.2=-Xmx1024m vmarg.3=-DautoRollingBarrel=false vmarg.4=-DadminUserGroup=BUILTIN\Administrators #location of the bin dir working.directory=. #region_home directory - Hermes_Region_OC to be replaced with actual region home directory arg.1=Regge		https://publicwiki.deltares.nl/display/FEWSDOC/Active+Directory+Configuration+Steps
App - Data Conversion Module	Nelen & Schuurmans	FEWS-14923	Improvement as subtask	FEWS-9766 Improvements to Data Import Module (DIM)	Improvements to Data Import Module (DIM)	Deletion of localdata store is now configurable. Added optional configuration element: clearOnStartup. Defaults to true.	{code} <?xml version="1.0" encoding="UTF-8"?> <dataConversion xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews file:/dataconversion.xsd"> <clearOnStartup>false</clearOnStartup> <activities> <!-- End test config --> <workflowActivity > <workflowId>ImportExportPi</workflowId> </workflowActivity> </activities> </dataConversion>		https://publicwiki.deltares.nl/display/FEWSDOC/Data+Interface+Module+-+DIM
App - Data Conversion Module	RWsOS	FEWS-15723	New Feature	New data export for LHP app (RWsOS)					
App - Master Controller Server, System	Deltares	FEWS-12957	Improvement	Improvement to MC restarter script for Windows: does not use JAVA_HOME from registry	Improvement to MC restarter script for Windows: does not use JAVA_HOME from registry	JRE home directory is now passed as an argument in the restarter scripts			
App - Master Controller Server	Deltares	FEWS-14520	New Feature as subtask	FEWS-14498 Windows 64 bits support - Master Controller	Master Controller support on 64 bits Windows	All Delft-FEWS components can run 64 bits Operating Systems from 2016.02			https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+64+bit+migration
App - Operator Client Gui (Explorer)	fews sava	FEWS-16289	New Feature	Support Azimuthal_Equidistant projection					

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
App - Operator Client Gui (Explorer)	RWS (NL)	FEWS-15435	New Feature	Tabular overview with color intensity depending on value	TimeSerisDisplay : table type 'colorMapTable'	'colorMapTable' is intended to show multiple forecasts in a table, where the table cells get a color depending on the value in the cell. Per time series one table is created and this table contains multiple forecasts . To create this table type, configure classBreaksId and <tableViewerId>colorMapTable</tableViewerId> in the 'plot' section of DisplayGroups. classBreaksId refers to the classBreaks configured in TimeSeriesDisplay.xml If classBreaksId is omitted then the cells are not colored.	Example from DisplayGroups.xml: {code:xml} <plot id="ColorMapTableForecasts"> <subplot> <classBreaksId>classBreaks1</classBreaksId> <timeSeriesSet> <moduleInstanceId>ImportExternalForecast</moduleInstanceId> <valueType>scalar</valueType> <parameterId>Q.meting</parameterId> <locationSetId>AllLocations</locationSetId> <timeSeriesType>external forecasting</timeSeriesType> <timeStep unit="hour"/> <readWriteMode>read complete forecast</readWriteMode> </timeSeriesSet> <timeSeriesSet> <moduleInstanceId>ImportSimulated</moduleInstanceId> <valueType>scalar</valueType> <parameterId>Q.sim</parameterId> <locationSetId>AllLocations</locationSetId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="hour"/> <readWriteMode>read complete		https://publicwiki.deltares.nl/display/FEWSDOC/03+Display+Groups
App - Operator Client Gui (Explorer), Plugin - Gui - Time Series	HDSR	FEWS-15045	New Feature as subtask	FEWS-14620 Add option to choose between normalisation for peaks/lows over duration or height	option to choose between normalisation for peaks/lows over duration or height	For peaksAbove and lowsBelow statistical function there will be a choice to normalize over the height of the peak (and keep the absolute duration) or normalise over the duration of the peak (and keep the maximum value of the peak). The normalization will be specified in the x or y axis.			https://publicwiki.deltares.nl/display/FEWSDOC/Statistical+functions#Statisticalfunctions-Normalizeduration
App - Operator Client Gui (Explorer), Plugin - Gui - Time Series	HDSR	FEWS-15042	New Feature as subtask	FEWS-14620 Create (in csv configurable) longitudinal profiles based on normal locations.	Create (read-only) longitudinal profile based on available scalar timeseries	Possibility to view scalar time series for multiple locations as longitudinal profile. This is read only, and so far just for viewing. There needs to be a separate locationset which refers to a location attribute which determine whether the location is part of the profiel and at which chainage.	locationSets.xml {code} <locationSets xsi:schemaLocation="http://www.wldelft.nl/fews ../../Schemas/locationSets.xsd" version="1.1" xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"> <locationSet id="HDSR_CHAINAGE"> <csvFile> <file>HDSR_HCAINAGE_LOCATIONS</file> <geoDatum>Rijks Driehoekstelsel</geoDatum> <id>%LOCID%</id> <name>%OMSCHRIJVI%</name> <description>HDSR_CHAINAGE</description> <x>%X%</x> <y>%Y%</y> <attributeFile> <csvFile>CHAINAGE_A.csv</csvFile> <id>%ID%</id> <timeZoneOffset>+00:00</timeZoneOffset> <attribute id="CHAINAGE_A"> <text>%CHAINAGE%</text> </attribute> </attributeFile> <attributeFile> <csvFile>CHAINAGE_B.csv</csvFile> <id>%ID%</id>		https://publicwiki.deltares.nl/display/FEWSDOC/02+LocationSets#id-02LocationSets-chainageLocationAttributeId
App - Operator Client Gui (Explorer)	BoM (Aus)	FEWS-15690	Improvement as subtask	FEWS-14821 HYFS-2859: User group should not be visible in Explorer toolbar	Added option to hide userGroup in FEWS explorer status bar				
App - Operator Client Gui (Explorer)	HDSR	FEWS-15719	Improvement	Extend geographic version management slider	Extended geographic version management slider	Extended geographic version management slider for filtering on locations, location-relations, location-attributes and polygons			https://publicwiki.deltares.nl/display/FEWSDOC/21+Time+Dependent+Locations

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Configuration	Noorderzijlvest WAM	FEWS-15452	Improvement	Make it possible to define a groupName (next to groupId) for parameters which are defined in parameters csv file	Option to define a groupName (next to groupId) in parameter csv file	Option to define a groupName (next to groupId) in parameter csv file	{code:xml} <parametersCsvFile> <file>parameters.csv</file> <id>%ID%</id> <name>%NAME%</name> <group>%GROUP_ID%</group> <groupName>%GROUP_NAME%</groupName> <enumerationId>%ENUMERATION_ID%</enumerationId> <unit>%UNIT%</unit> </parametersCsvFile> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/03+Parameters
Configuration	Noorderzijlvest WAM	FEWS-15451	Improvement	Make it possible to use enumerationId for parameters which are defined in parameters csv file	Option to use enumerationId for parameters (from parameters csv file)	Option to use enumerationId for parameters (from parameters csv file)	{code:xml} <parametersCsvFile> <file>parameters.csv</file> <id>%ID%</id> <name>%NAME%</name> <group>%GROUP_ID%</group> <groupName>%GROUP_NAME%</groupName> <enumerationId>%ENUMERATION_ID%</enumerationId> <unit>%UNIT%</unit> </parametersCsvFile> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/03+Parameters
Configuration	Deltares	FEWS-11322	Improvement	Configuration inconsistency error after changing moduleInstanceSets	Configuration inconsistency prevented	A configuration mistake can now be fixed without getting warnings and will work correctly after rerunning the workflow and without removing rows from the database. The module instance instance set should still be narrow enough to resolve a single module instance id. Practical this means that a parameter / location / qualifier should be written by one			
Database	Deltares	FEWS-14582	New Feature	When using direct database access the FSS cannot load *.nc mapLayerFiles from the dataStore	DDA Operator Clients now supports *.nc files as mapLayerFiles	DDA Operator Clients now supports *.nc files as mapLayerFiles			
Database	NWM (NL)	FEWS-15694	Improvement	Reduce memory usage for NWM	Performance and memory usage improvement for large systems	A performance and memory usage improvement has been implemented. This effects systems with large amounts of locations, parameters, qualiifers, ensembles etc. By an indexation for the same location and parameter this is optimized. This all happens 'under the hood'. No configuration change or rerun of workflows is needed. The newly generated index files in the localDataStore directory contain this feature automatically.	{code:xml} <timeSeriesSet> <moduleInstanceId>Sobek</moduleInstanceId> <valueType>scalar</valueType> <scalarSetId>Sobek</scalarSetId> <parameterId>H.forecast</parameterId> <locationSetId>Sobek</locationSetId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="minute" multiplier="5"/> <readWriteMode>add originals</readWriteMode> </timeSeriesSet> {code}		
Module Adapter - All	RWS (NL)	FEWS-14916	New Feature	RWsOS-Meren: update PcOverslag adapter (alleen voorland module)	Refactoring of Model Adapter code: PCOverslag moved to model adapter package	Adapter is moved next to the other adapters, outside the main FEWS code. Bug has been fixed where adapter caused FEWS to crash and shutdown randomly. An extra output parameter is read			https://publicwiki.deltares.nl/display/FEWSDOC/PCOverslag
Debug Tool - Database Viewer, Plugin - Gui - Forecast Manager	Deltares	FEWS-15469	New Feature	Filter By Branch button in forecast manager / database viewer	A "filter by branch" button added to Forecast Manager Dialog and Database Viewer	A "filter by branch" button added to Forecast Manager Dialog and Database Viewer. This button shows a list of all module instances for the selected run. After selecting the module instance all task runs linked to the selected task run are displayed			https://publicwiki.deltares.nl/display/FEWSDOC/07+Forecast+Manager
Plugin - Gui - Forecast Manager	TVA	FEWS-15733	Improvement as subtask	FEWS-10616 Deletion from branches in the Forecast Expiry time should get a popup warning	A warning pops up when a user deletes a taskrun / changes expiry time for a taskrun that is part of a branch.	The user will get the warning "One or more selected TaskRuns belong to a branch. Adjusting the expiry time of a TaskRun belonging to a branch can cause inconsistencies in the database. Proceed anyway?"			
Plugin - Gui - Grid Display	Pudong (China)	FEWS-16021	Improvement	Allow projection file (prj) for regular grids in grids.xml and ascii grids layers	Extended regular grid definition to assign a *prj file (from mapLayers) to derive the grid definition	Grid definition (in xml) has been extended for regular grids. It is now possible to assign a *prj file (from mapLayers) to derive the grid definition	{code:xml} <regular locationId="MRMS"> <description>MRMS grid desciption</description> <rows>377</rows> <columns>850</columns> <projectionFile>Cumberland_Basins.prj</projectionFile> <firstCellCenter> <x>-89.5</x> <y>37.665</y> <z>0.0</z> </firstCellCenter> <xCellSize>0.01</xCellSize> <yCellSize>0.01</yCellSize> </regular>		https://publicwiki.deltares.nl/display/FEWSDOC/06+Grids
Plugin - Gui - Grid Display	Idaho Power	FEWS-15853	Improvement as subtask	FEWS-14466 Link to a related location in the Spatial Display	Possible to use related locations in Spatial Display	Link to a related location in the timeseriesSet configuration in the Spatial Display now displays the correct data			https://publicwiki.deltares.nl/display/FEWSDOC/01+Related+Locations

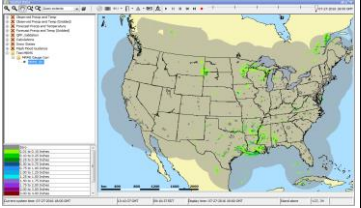| Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Gui - Grid Display	Waterboard Vallei & Veluwe	FEWS-14439	Improvement	WS Vallei en Veluwe: Spatial Display should support nonequidistant scalar values (Show last non-equi value before or at slider time)	Option added to Grid Display to extend the last value of a non-equidistant timeseries				
Plugin - Gui - Grid Display	Deltares	FEWS-14385	Improvement	griddisplay - defaults should also be linked to plotId not only groupplotId	Configuration defaults like Classbreaks and Geomap settings can be assigned to plotId	In the Spatial Display, you can define defaults for plots such as Classbreaks and Geomap settings. This saves space so that these settings do not have to defined in every individual plot. In the past these settings could only be assigned to the default plotgroupid. Now they can also be assigned to a plotId.			https://publicwiki.deltares.nl/display/FEWSDOC/05+Spatial+Display
Plugin - Gui - Grid Display	RWS (NL)	FEWS-16514	Improvement	Enable the use of flow-convention for calculating direction in degrees in grid-display			{code:xml} <dataLayer> <arrowColor>black</arrowColor> <arrowSymbol>flow</arrowSymbol> <arrowDirection>from</arrowDirection> <uTimeSeriesSet> <moduleInstanceId>Waqua_IJmond_forecast_import</moduleInstanceId> <valueType>grid</valueType> <parameterId>V.voorspeld.x</parameterId> <locationId>Grid_Waqua_IJmond</locationId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="minute" multiplier="30"/> <relativeViewPeriod unit="day" start="-1" end="2"/> <readWriteMode>read only</readWriteMode> </uTimeSeriesSet> <vTimeSeriesSet> <moduleInstanceId>Waqua_IJmond_forecast_import</moduleInstanceId> <valueType>grid</valueType> <parameterId>V.voorspeld.y</parameterId> <locationId>Grid_Waqua_IJmond</locationId> <timeSeriesType>simulated forecasting</timeSeriesType> <timeStep unit="minute" multiplier="30"/> <relativeViewPeriod unit="day" start="-1" end="2"/> <readWriteMode>read only</readWriteMode>		
Plugin - Gui - Grid Display	Deltares (research)	FEWS-14600	New Feature as subtask	FEWS-14599 Using curved vectors in spatial display	Spatial Display now shows curved vectors by default	No configuration needed. The tail of flow arrows is now always curved			https://publicwiki.deltares.nl/display/FEWSDOC/05+Spatial+Display

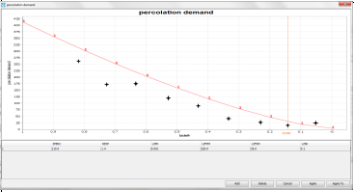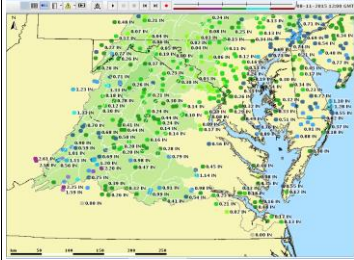| Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - GUI - IFD - Dataviewer	Noorderzijlvest WAM	FEWS-13021	New Feature as subtask	FEWS-13016 Automatic Filter tree build up (Dataviewer) on the basis of attribute(group)s	Configuration option for a 'group by' function for attributes to build up the Filter tree automatically.	The use of attibuteFiles for parameters is introduced. This was already available for locations but now also for parameters, this enable the use of multivalued parameter attributes.	Implementation example: {code} <filter id="groupByParameterAttribute"> <relativeViewPeriod start="-100000" end="0" unit="day"/> <parameterConstraints> <idStartsWith prefix=""/> </parameterConstraints> <groupBy> <parameterAttributeId>ATTRIBUTE_1</parameterAttributeId> </groupBy> </filter> {code} With the use of multivalued attributes, parameters can appear in multiple filters. For this the <parametersCsvFile> element has been extended with an <attributeFile> which can contain multiple different attribute values per parameter {code:xml} <attributeFile> <csvFile>parameterAttributes.csv</csvFile> <parameterId>%ID%</parameterId> <attribute id="ATTRIBUTE_1"> <text>%ATTRIBUTE_1%</text> </attribute> <attribute id="ATTRIBUTE_2"> <text>%ATTRIBUTE_2%</text>		https://publicwiki.deltares.nl/display/FEWSDOC/23+Attribute+filter
Plugin - GUI - IFD - Dataviewer	NWS	FEWS-13006	Improvement as subtask	FEWS-9861 NWS: FB1772: IFD status icons incorrect due to modifier synch timing for OC clients	IFD status icons indicates correct situation				https://publicwiki.deltares.nl/display/FEWSDOC/23+Interactive+Forecasting+Displays
Plugin - GUI - IFD - Dataviewer	RWS (NL)	FEWS-15522	Improvement	Add description box on bottom of topology panel	Description box added at bottom of Topology panel	Description box added at the bottom of Topology panel			https://publicwiki.deltares.nl/display/FEWSDOC/23+Interactive+Forecasting+Displays
Plugin - GUI - IFD - Forecaster Help	NWS	FEWS-15085	New Feature as subtask	FEWS-14997 NWS: FB142 Allow user to select editor for Document Viewer	Allow user to edit text files in document viewer	When selecting a text file in the forecast helper panel, the document viewer will display an edit and save button enabling the user to edit the file.			https://publicwiki.deltares.nl/display/FEWSDOC/23+Interactive+Forecasting+Displays#id-23InteractiveForecastingDisplays-Forecasterhelp
Plugin - GUI - IFD - Forecasts	BC Hydro	FEWS-14160	Improvement as subtask	FEWS-11235 IFD thumbnails: open the specific thumbnail plot that was selected at the previous node, when available.	Selected location/parameter is preserved (when possible) while switching segments	In IFD, when selecting a different segment, the parameter / location selection in the thumbnails is preserved when possible.This is consistent with the behavior when selecting a different filter. There is no lock button added			https://publicwiki.deltares.nl/display/FEWSDOC/23+Interactive+Forecasting+Displays
Plugin - Gui - System Monitor	RWS (NL)	FEWS-16143	Improvement	Add column containing tag to the system monitor "scheduled task" in OC	EventActionTag column added to ScheduledTasks Overview in SystemMonitor of client				

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Gui - System Monitor	RWS (NL)	FEWS-15063	New Feature	RWsOS NZ: aanmaken melding SVSD tekstberichten	MultipleForecasterNotesMaker	In both ForecasterNotesDisplay and in SystemMonitorDisplay we can configure optional popup - so-called MultipleForecasterNotesMaker - to create several forecaster notes after pressing the button 'Add'. How many notes are created depends on the configuration of this popup. When configured, MultipleForecasterNotesMaker replaces the standard popup for creating of forecaster notes. The process of making multiple forecaster notes: We open MultipleForecasterNotesMaker with button 'Add message'. By default the first event type (noteGroup) is selected. We can enter text and/or select option buttons, or select an another event type. After pressing 'Add' all notes configured inside 'noteGroup' are logged. If the last entered message should be shown again while creating a new message, set option 'keepText' to true in the configuration file. If we have configured 'noteChoice', then only one note from 'noteChoice' is logged, according to the selected option button. It is also possible to configure maximum number	Configuration example and the accompanying screen dumps are available in MultipleForecasterNotesMaker.zip		
Plugin - Gui - Tabular Config Files Display	Deltares	FEWS-15538	Improvement	Tabular Config Display row filters with 0 results	Tabular Config Files Display behaviour improved	In the Tabular Config Files Display, the footer now displays a warning if there are no visible rows due to active filters.			https://publicwiki.deltares.nl/display/FEWSDOC/20+Tabular+Config+Files+Display
Plugin - Gui - Time Series	Deltares-USA	FEWS-15904	Improvement as subtask	FEWS-10616 show Interval Statistics Display in displayUnits	Interval Statistics Display now shows values in DisplayUnits	Interval Statistics Display now shows values in the configured DisplayUnits			https://publicwiki.deltares.nl/display/FEWSDOC/28+Interval+Statistics+Dialog
Plugin - Gui - Time Series	HDSR	FEWS-15043	New Feature as subtask	FEWS-14620 Add possibility to show multiple seasons and years in scatter plot, peaksAbove and lowsBelow statistical function plots	Options added to distinguish between years and/or seasons using coloring	Added historical scatter plot and historical peaks above and historical lows below statistical functions. With these function the user can separate different years and different parts of years (seasons) by selecting/deselecting and choosing unique colors per season and or year.	{code:xml} <statisticalFunction function="historicalScatterPlot"/> <statisticalFunction function="historicalShowLowsBelow"/> <statisticalFunction function="historicalShowPeaksAbove"/> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/Statistical+functions
Plugin - Gui - Time Series	HDSR	FEWS-15044	New Feature as subtask	FEWS-14620 Possibility to split double peaks/lows in peaksAbove/lowsBelow statistiscal plots	Option added to search for double peaks/lows	Possibility to split double peaks/lows in peaksAbove/lowsBelow statistiscal plots, by giving in a minimal value difference between the local minimum that separates the peaks.		 Figure 1. Vertical arrows show the topographic prominence of three peaks on an island. The dashed horizontal lines show the lowest contours that do not encircle higher peaks. Curved arrows point from a peak to its parent.	https://publicwiki.deltares.nl/display/FEWSDOC/Statistical+functions#Statisticalfunctions-Splitpeaks
Plugin - Gui - Time Series	HDSR	FEWS-15040	New Feature as subtask	FEWS-14620 Add table in hideable panel that shows (time depended) validation criteria for selected timeserie table	Validation Rules available in (hideable) panel in TimeSeriesDisplay	A hideable panel is added that shows the validation criteria for the selected time series on the selected time.			https://publicwiki.deltares.nl/display/FEWSDOC/04+Data+Display+and+Data+Editor#id-04DataDisplayandDataEditor-ValidationRules(hidablepanel)
Plugin - Gui - Time Series	FOEN	FEWS-14817	New Feature as subtask	FEWS-9563 Display of Accumulated Precipitation in FEWS graphs			{code} <statisticalFunction function="cumulative"> <lineStyle>dashdot;thick</lineStyle> </statisticalFunction> {code}		
Plugin - Gui - Time Series	HDSR	FEWS-14563	Improvement as subtask	FEWS-14620 TSD: Option to Hide/switch-off original Timeseries when looking at Statistical series	Checkbox added to hide original timeseries	Check box is added for statistical functions to hide the original time series. This will be stored in the user settings so the choice will be shared between different functions.			https://publicwiki.deltares.nl/display/FEWSDOC/Statistical+functions#Statisticalfunctions-Hideoriginaltimeseries

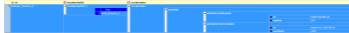| Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Gui - Time Series	NWS	FEWS-15196	New Feature as subtask	FEWS-14997 NWS: FB113 Ability to configure temporal scaling of plots	TSD plots : aligning date/time ticks with the valid times of the (cardinal) time step	To tie the date/time ticks to the valid times of the (cardinal) time step, configure 'tickTimeStep' in DisplayGroups.xml. For example, if the 'tickTimeStep' is 6 hours then the ticks are always aligned with the synoptic times 00Z, 06Z, 12Z, 18Z. When we are zooming out and there is no space to display all date/times along the x-axis, then one or more synoptic times ticks are omitted. For example we see ticks at 00Z and 18Z.	Example from DisplayGroups.xml: {code:xml} <plot id="Plot1"> <tickTimeStep unit="hour" multiplier="6"/> <subplot> <timeSeriesSet> <moduleInstanceId>ImportExternalForecast</moduleInstanceId> <valueType>scalar</valueType> <parameterId>P.fg</parameterId> <locationSetId>AllLocations</locationSetId> <timeSeriesType>external forecasting</timeSeriesType> <timeStep unit="hour"/> <readWriteMode>read only</readWriteMode> </timeSeriesSet> </subplot> </plot> {code} or {code:xml} <displayGroup name="CardinalTimestepTicks"> <display name="plotId used"> <tickTimeStep unit="hour" multiplier="6"/> <plotId>Plot1</plotId> </display> </displayGroup> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/03+Display+Groups#id-03DisplayGroups-tickTimeStep
Plugin - Gui - Time Series Modifier	NWS	FEWS-12312	Improvement as subtask	FEWS-14997 NWS: FB1561. add filtering option in ModifierTypes to specify mods for deterministic or ensemble runs	Option to filter in ModifierTypes to specify mods for either deterministic or ensemble runs	Added filtering option in ModifierTypes to specify mods for deterministic or ensemble runs			https://publicwiki.deltares.nl/display/FEWSDOC/25+ModifierTypes
Plugin - Gui - Time Series Modifier	NWS	FEWS-15197	New Feature as subtask	FEWS-14997 NWS: FB1227 Time Series Modifier display option to view original or "active" modified timeseries	Option added to view original or active modified timeseries	Time Series Modifier display option to view original or "active" modified timeseries			https://publicwiki.deltares.nl/display/FEWSDOC/23+Interactive+Forecasting+Displays#id-23InteractiveForecastingDisplays-Modifierspanel
Plugin - Gui - Time Series Modifier	MDBA	FEWS-15001	Improvement as subtask	FEWS-14730 MDBA: Development: Search functionality for location list on modifiers tab	(incremental) search added to location list on Modifiers Tab	Search functionality for location list on modifiers tab added			https://publicwiki.deltares.nl/display/FEWSDOC/16+Modifier+display
Plugin - Gui - Time Series Modifier	BSH	FEWS-14443	New Feature as subtask	FEWS-14471 Add modifier for "Staumatrix fullen" (p2)	New Modifier added using referenceColumns		Example from ModifierTypes.xml {code:xml} <highLowSurgeSelectionModifier id="staumatrix1" name="StauMatrix1"> <modifierColumn name="Modifier"> <timeSeries> <moduleInstanceId>ImportStauMatrix</moduleInstanceId> <parameterId>Surge</parameterId> <qualifierId>Default</qualifierId> </timeSeries> </modifierColumn> <referenceColumn name="ModelA"> <timeSeries> <moduleInstanceId>ImportStauMatrix</moduleInstanceId> <parameterId>Surge</parameterId> <qualifierId>ModelA</qualifierId> </timeSeries> </referenceColumn> <referenceColumn name="ModelB"> <timeSeries> <moduleInstanceId>ImportStauMatrix</moduleInstanceId> <parameterId>Surge</parameterId> <qualifierId>ModelB</qualifierId> </timeSeries>		https://publicwiki.deltares.nl/display/FEWSBSH/06+-+Staumatrix+fullen
Plugin - Module - (Primary) Validation	TVA	FEWS-16068	Improvement as subtask	FEWS-10616 TVA. ability to set the "sameReadingFunctions" in ValidationRuleSets to flag as doubtful instead of unreliable					
Plugin - Module - (Primary) Validation	FOEN (CH)	FEWS-15875	Improvement	Configuration of Validation with Year and Month limits is confusing	Improved configuration for Year/Month limits validationRules	Configuration of Validation with Year and Month limits have been improved			https://publicwiki.deltares.nl/display/FEWSDOC/08+ValidationRulesets
Plugin - Module - Archive	SWITCH-ON / EU Project	FEWS-15315	New Feature	SWITCH-ON: Add harvesting of events files to Geonetwork Harvester	Harvesting of events files added to Geonetwork Harvester	Add harvesting of events files to Geonetwork Harvester			https://publicwiki.deltares.nl/display/FEWSDOC/Archive+installation

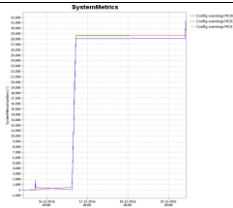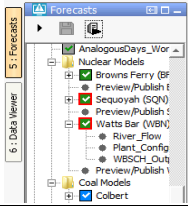| Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Module - Data Export, System - PI Service	NRW (Wales)	FEWS-15556	Improvement	PiTimeSeriesSerializer: Add threshold label from thresholdValuesSets	Threshold label from thresholdValueSets added to PI-Timeseries export	Add threshold label from thresholdValuesSets to the PI-Timeseries export routine	{code} <?xml version="1.0" encoding="UTF-8"?> <TimeSeries xmlns="http://www.wldelft.nl/fews/PI" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews/PI http://fews.wldelft.nl/schemas/version1.0/pi-schemas/pi_timeseries.xsd" version="1.22" xmlns:fs="http://www.wldelft.nl/fews/fs"> <timeZone>1.0</timeZone> <series> <header> <type>instantaneous</type> <moduleInstanceId>Alyn_Data_PostProcessing</moduleInstanceId> <locationId>A22d_int</locationId> <parameterId>H.simulated</parameterId> <qualifierId>rs0</qualifierId> <timeStep unit="second" multiplier="900"/> <startDate date="2016-08-01" time="09:00:00"/> <endDate date="2016-08-02" time="10:00:00"/> <forecastDate date="2016-07-19" time="08:00:00"/> <missVal>-999.0</missVal> <stationName>Rhyd-y-goleu</stationName> <lat>53.17723352481261</lat> <lon>-3.1517708159157634</lon> <x>323030.0</x>		https://publicwiki.deltares.nl/display/FEWSDOC/PI+Export
Plugin - Module - Data Export	RWS (NL)	FEWS-15431	Improvement	Add threshold information to NetCDF files	Threshold information added to NetCDF files	Possibility to export thresholds to scalar netcdf files with the use of id mapping. This way different thresholds for different locations can be exported to the same id in netcdf. This is primarily meant for reading by external tools.	Export thresholds by adding includeThresholds to the properties {code:xml} <general> <exportType>NETCDF-CF_TIMESERIES</exportType> <folder>../junit_test_output/nl/wldelft/fews/system/plugin/dataExport/TimeSeriesExportTest/exportNetcdfThresholdsEmpty/export</folder> <exportFileName> <name>netcdf_timeseries.nc</name> </exportFileName> <idMapId>Netcdf</idMapId> <exportMissingValueString>-9999.0</exportMissingValueString> <exportThresholds>true</exportThresholds> </general> <timeSeriesSet> <moduleInstanceId>ExportRunMultipleTimeSeries</moduleInstanceId> <valueType>scalar</valueType> <parameterId>H.m.</parameterId> <locationId>H-2029</locationId> <timeSeriesType>external historical</timeSeriesType> <timeStep unit="minute" divider="1" multiplier="15"/> <relativeViewPeriod unit="minute" start="0" end="30"/>		https://publicwiki.deltares.nl/display/FEWSDOC/NETCDF-CF_TIMESERIES
Module Adapter - DFlow-FM, Plugin - Module - Data Export	Deltares (research)	FEWS-15292	New Feature as subtask	FEWS-15231 Export 3D boundary data from FEWS to be used in a D-Flow FM model	Created new InterpolationSpatialVerticalProfileClosestDistance transformation and netcdf export for vertical profiles	Created new InterpolationSpatialVerticalProfileClosestDistance transformation: Converts 2d grids to vertical profiles. Input: one or more horizontal 2D grid time series (layers), that together form one 3D grid time series. Output: one or more vertical profile time series. For each output vertical profile time series the x,y coordinates of its configured location are used to slice the input 3D grid time series to create a vertical profile. For each output x,y coordinate the corresponding values in the input grids are found using closestDistance interpolation within the specified searchRadius (optional). The z-coordinates of the values in the output vertical profiles are the same as the z-coordinates of the input grid layers. Added new netcdf exportType "NETCDF-CF_DOMAIN" to export time series with domain parameters to a netcdf file. Vertical profile time series can be exported with this new exportType "NETCDF-CF_DOMAIN". A vertical profile time series must have a single domain parameter that indicates the height along the vertical profile. The height domain parameter must have the verticalPositiveDirection defined in the parameters.xml config file, otherwise the export will not add the proper metadata to the	Config example for transformation to slice vertical profiles out of a layered grid: {code:xml} <!-- input variable with a locationSet that contains one grid location for each horizontal layer --> <variable> <variableId>input</variableId> <timeSeriesSet> <moduleInstanceId>InterpolationSpatialVerticalProfileClosestDistanceTest</moduleInstanceId> <valueType>grid</valueType> <parameterId>H.m.</parameterId> <locationSetId>gridLayersLocationSet</locationSetId> <timeSeriesType>external historical</timeSeriesType> <timeStep unit="day"/> <relativeViewPeriod unit="day" start="0" end="6"/> <readWriteMode>add originals</readWriteMode> </timeSeriesSet> </variable> <!-- output variable with a locationSet that contains one location for each vertical profile --> <variable> <variableId>output</variableId> <timeSeriesSet> <moduleInstanceId>InterpolationSpatialVerticalP		https://publicwiki.deltares.nl/display/FEWSDOC/InterpolationSpatialVerticalProfileClosestDistance

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Module - Data Export	TVA	FEWS-15216	New Feature as subtask	FEWS-10616 export option for value resolution	Export option for value resolution added	Export option for value resolution. An extra element was added to the parameterGroup called: "valueResolutionUnit". When configured this is used for exporting.	{code:xml} <parameterGroup id="Discharge"> <parameterType>instantaneous</parameterType> <unit>CMS</unit> <displayUnit>CFS</displayUnit> <valueResolution>0.01</valueResolution> <valueResolutionUnit>CFS</valueResolutionUnit> ... {code}		https://publicwiki.deltares.nl/display/FEWSDOC/03+Parameters
Plugin - Module - Data Export	NWS	FEWS-15087	Improvement as subtask	FEWS-14997 NWS: FB1869 Include comment element in rating curve exports	Included a comment element in rating curve exports	Included a comment element in rating curve exports			https://publicwiki.deltares.nl/display/FEWSDOC/25+PI-rating+curve
Plugin - Module - Data Export	TVA	FEWS-15069	Improvement as subtask	FEWS-10616 Enhance generalCSV export	Mulitple value columns are allowed in generalCSV export	Mulitple value columns are allowed per row when specifying paramaters or locations with it. For restrictions, see link to Documentation	{code} <table> <dateTimeColumn name="DATE_SMP" pattern="yyyyMMddHHmm"/> <locationColumn name="LOC"/> <valueColumn name="PAR_A" parameterId="A"/> <valueColumn name="PAR_B" parameterId="B"/> </table>		https://publicwiki.deltares.nl/display/FEWSDOC/General+CSV+Export
Plugin - Module - Data Export	NWS	FEWS-14999	New Feature as subtask	FEWS-14997 NWS: FB187 Ability to dump out a complete set of Warm States which can be used as Cold States	Complete set of Warm States can be exported to be used as Cold States	A complete set of Warm States which can be used as Cold States can be exported. In the Explorer using F12+T, current warm states are exported for the current module runs. T0/system time is ignored. It exports for current module runs and for the current branches. This can give problems when the historical module instance id of the state is also used in another workflow that does not produce states. Code has been changed so it will search in the whole branch till the system time. A folder structure to the exported warm states for both export 'current' warm states and export 'all' warm states. The most recent state in the current branch per module instance is exported. This is the same method as used in the export state activity			https://publicwiki.deltares.nl/display/FEWSDOC/The+F12+menu#TheF12menu-Exportsub-menuoptions
Plugin - Module - Data Export	NWS	FEWS-15000	New Feature as subtask	FEWS-14997 NWS: FB155 Add ability to export changed (qc'd) data for import into another (WHFS) database	Exporting manual changes for a timeSeriesSet now makes use of a relativeViewPeriod	When using a general timeSeries export, the exportManualChanges can be used to only export manual changes. When configured, the relativeViewPeriod in the accompanying timeSeriesSet is used to determine the scope of the timeSeries exported.	<export> <general> <exportType>PI</exportType> <folder>../junit_test_output/nl/wldelft/fews/system/plugin/dataExport/TimeSeriesExportTest/exportManualValuesAndFlags/export</folder> <exportFileName> <name>manualValuesAndFlags_RelativeViewPeriod</name> </exportFileName> <idMapId>Telemetry</idMapId> <unitConversionsId>UnitConversions</unitConversionsId> <flagConversionsId>FlagConversions</flagConversionsId> <exportMissingValueString>-999.0</exportMissingValueString> <exportManualChanges> <exportNewManualEntries>true</exportNewManualEntries> <exportManualFlagChanges>true</exportManualFlagChanges> <exportManualValueChanges>true</exportManualValueChanges> </exportManualChanges> </general> <timeSeriesSet> <moduleInstanceId>ExportRunMultipleTimeSeries</moduleInstanceId> <valueType>scalar</valueType>		https://publicwiki.deltares.nl/display/FEWSDOC/Export+module#Exportmodule-exportManualChanges
Plugin - Module - Data Import		FEWS-12000	New Feature as subtask	FEWS-10616 TVA: new webservice import parser for DataWare data	DataWare REST service parser	DataWare REST service parser. For documentation see: https://publicwiki.deltares.nl/display/FEWSDOC/DataWare	{code:xml} <import> <general> <importType>DataWare</importType> <serverUrl>http://server:port/rest/read/data/</serverUrl> <relativeViewPeriod unit="day" start="-1" end="0" startOverrulable="true" endOverrulable="true"/> <idMapId>IdImportDataWare</idMapId> <flagConversionsId>ImportFlagConversions</flagConversionsId> <importTimeZone> <timeZoneName>GMT-5</timeZoneName> </importTimeZone> </general>		
Plugin - Module - Data Import		FEWS-16333	Improvement	BUFR import 64 bits support	BUFR import is supported on x64 bit Windows	BUFR import is supported on x64 bit Windows			
Plugin - Module - Data Import	fews sava	FEWS-16220	New Feature	CroatianHFSResults data import			<importType>CroatianHFSResults</importType>		

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Module - Data Import	RWS (NL)	FEWS-16028	Improvement	Netcdf longitudinal profile import should accept files where "nodenames" variable is called differently	Netcdf longitudinal profile import now uses the cf_role attribute to find the nodenames variable in the netcdf file.	Netcdf longitudinal profile import now uses the cf_role attribute to find the nodenames variable in the netcdf file. If not found, then it uses the variable called "nodenames" for backwards compatibility.			https://publicwiki.deltares.nl/display/FEWSDOC/NETCDF-CF_PROFILE
Plugin - Module - Data Import	EU	FEWS-15946	Improvement	Add parameter to Landsat-HDF5	DSSF parameter added to Landsat-HDF5 import	DSSF parameter added to import Landsat-HDF5 to be able to read parameters from LSA SAF data			https://publicwiki.deltares.nl/display/FEWSDOC/Landsat-HDF5
Plugin - Module - Data Import	NWS	FEWS-13415	Improvement as subtask	FEWS-14997 NWS FB1846 Upgrade NetCdf to version 4.6 to read NSSL-Like grib2 files	Upgrade NetCDF Java library to version 4.6.3 to read NSSL-Like grib2 files and to write compressed Netcdf 4 files	The new NetCDF Java library version 4.6.3 is more strict than the old version. If the global attribute "Conventions" is not specified in the netcdf file (e.g. Conventions="CF-1.6"), then the library uses a default convention (different from CF), which can cause unexpected behaviour in the Netcdf import in FEWS.			https://publicwiki.deltares.nl/display/FEWSDOC/NetCDF+formats+that+can+be+imported+in+Delft-FEWS
Plugin - Module - Data Import	BPA Hermes	FEWS-15543	New Feature	BPA-HERMES: Allow configuring date formatted debug folders for server parsers and server serializers	Key-Value pair properties can be used to redirect logging	Requested new feature to allow configuring a formatted date string in the debug path of the HermesTimeSeriesServerParser. Currently it is possible to configure a directory where all service requests and responses are written. If however many of these files are written it becomes hard to find the debug messages you are looking for. Allow user to configure sub directories using a additional date format property that defines how to format the a timestamp as sub directories of the root folder.	{code}<properties> <string key="RequestType" value="THOR"/> <string key="RequestsOutputDirectory" value="c:/temp/testHermes"/> <string key="DebugFolderDatePattern" value="yyyy-MM-dd/HHmm" /> </properties>{code}		
Plugin - Module - Data Import	RWS (NL)	FEWS-15718	New Feature	Import (HVZ-)LILA: read Vorhersagezeitpunkt from metainfo to determine external forecast time	external forecast time is read for LILA import	External forecast time is read for LILA import			https://publicwiki.deltares.nl/display/FEWSDOC/HVZ-LILA.
Plugin - Module - Data Import	Deltares	FEWS-15688	Improvement	Grib files with multiple forecast reference times fail	NetCDF 4.6 libaries incorporated	NetCDF 4.6 libaries incorporated in Delft-FEWS. A number of issues are related to this upgrade to more recent version of this important library.			https://publicwiki.deltares.nl/display/FEWSDOC/NetCDF+formats+that+can+be+imported+in+Delft-FEWS
Plugin - Module - Data Import	Deltares	FEWS-15687	Improvement	Grib2 parameter names has been changed and the existing IdMap files are no more backward compatible	NetCDF 4.6 libaries incorporated	NetCDF 4.6 libaries incorporated in Delft-FEWS. A number of issues are related to this upgrade to more recent version of this important library.			https://publicwiki.deltares.nl/display/FEWSDOC/NetCDF+formats+that+can+be+imported+in+Delft-FEWS
Plugin - Module - Data Import	Deltares	FEWS-15686	Improvement	Extract value resolution from GRIB file	NetCDF 4.6 libaries incorporated	NetCDF 4.6 libaries incorporated in Delft-FEWS. A number of issues are related to this upgrade to more recent version of this important library.			https://publicwiki.deltares.nl/display/FEWSDOC/NetCDF+formats+that+can+be+imported+in+Delft-FEWS
Plugin - Module - Data Import	NWS	FEWS-15840	Task	Upgrade NetCdf to version 4.6 - fixing junit tests from NetcdfGridDatatsetTimeSeriesParserTest class	NetCDF 4.6 libaries incorporated	NetCDF 4.6 libaries incorporated in Delft-FEWS. A number of issues are related to this upgrade to more recent version of this important library.			https://publicwiki.deltares.nl/display/FEWSDOC/NetCDF+formats+that+can+be+imported+in+Delft-FEWS
Plugin - Module - Data Import		FEWS-15787	New Feature as subtask	FEWS-15696 New import to read track data from a netcdf file	New import type "NETCDF-CF_TRAJECTORY" for importing track data from netcdf files.	Created new import type "NETCDF-CF_TRAJECTORY" for importing track data from a netcdf file. This can be used for importing data that is valid according to the CF-1.6 conventions for featureType "trajectory" (FEWS supports only a single track per file) or featureType "point" (all points in the file are imported together to form a single track). See config example and screenshots.	Example import id map config file: {code:xml} <idMap xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/idMap.xsd" version="1.1"> <!-- dummy locationId (not used by track import) --> <location internal="H-2001" external="dummy"/> </idMap> {code} Example time series import run config file: {code:xml} <timeSeriesImportRun xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wldelft.nl/fews http://fews.wldelft.nl/schemas/version1.0/timeSeriesImportRun.xsd"> <import> <general>		https://publicwiki.deltares.nl/display/FEWSDOC/NETCDF-CF_TRAJECTORY

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Module - Error Correction	Sava	FEWS-16305	New Feature	ARMA does not support use of locationSets	ARMA ErrorModel: Added config option "loopOverMultipleTimeSeries" to errorModel.	ARMA ErrorModel: Added config option "loopOverMultipleTimeSeries" to errorModel. This makes it is possible to configure locationSets in the input and output variables of an errorModel. The errorModel will then loop over the locations in the locationSet and run for each location separately.	{code:xml} <errorModelSet> ... <loopOverMultipleTimeSeries>true</loopOverMultipleTimeSeries> ... </errorModelSet> {code}		https://publicwiki.deltares.nl/pages/viewpage.action?pageId=8683839#id-08ErrorCorrectionModule(ARMA)-loopOverMultipleTimeSeries
Plugin - Module - General Adapter	Deltares	FEWS-16372	Improvement	WHAT_IF_ID variable in general adapter					
Plugin - Module - General Adapter	Deltares	FEWS-14903	Improvement as subtask	FEWS-14498 General Adapter allow forking java proces			{code:xml} <command> <className>nl.wldelft.fews.adapter.pcoverslag.PcOverslagAdapter</className> <binDir>bin</binDir> <customJreDir>%REGION_HOME%/jre1.8.0_101</customJreDir> </command>		https://publicwiki.deltares.nl/display/FEWSDOC/05+General+Adapter+Module#id-05GeneralAdapterModule-command
Plugin - Module - Modifiers (ModuleParameters)	NWS	FEWS-11276	New Feature as subtask	FEWS-14997 NWS: FB1466. Use of Percolation Analysis Function in Calibration Modifier Display	Use of Percolation Analysis Function in Calibration Modifier Display				
Plugin - Module - Modifiers (TimeSeries)	NWS		New Feature as subtask	FEWS-14997 NWS: FB509. ROCHNG/TSCHNG mods window plot & table do not reflect the proper valid period	ROCHNG/TSCHNG mods window plot & table do not reflect the proper valid period				
Plugin - Module - Reports	RWS (NL)	FEWS-15950	New Feature	Extension of function $LOGENTRY in Report Template	Report function LogEntry : usage of LINE_PREFIX keyword	It is possible to insert a specific text at the beginning of each new line in the text returned by the function LogEntry. To insert the text, use keyword LINE_PREFIX and specify the text that should be inserted . If LINE_PREFIX is used, all three preceding arguments should be specified. Use empty string if argument 2 and 3 are not relevant. Some examples: LOGENTRY(Dam.info;;;LINE_PREFIX=%AC) returns message from logging entry with event code Dam.info and inserts %AC at the beginning of each new line in the message LOGENTRY(Dam.info;userId;;LINE_PREFIX=%AC) returns userId from logging entry with event code Dam.info and inserts %AC at the beginning of the			
Plugin - Module - Reports	Wupperverband (D)	FEWS-15249	New Feature	Spatial display export: configure time stamp size	Reports – spatialPlotSnapshots: font of dateTimeLabel is configurable		Relevant configuration fragment from Reports.xml: {code:xml} <spatialPlotSnapshots id="spatialPlotSnapshot"> .... <snapshot id="Snapshot"> <relativeTime value="0" unit="hour"/> <fileName>SnapshotFile</fileName> <dateTimeLabel visible="true"> <font name="SansSerif" size="12" style="bold"/> </dateTimeLabel> </snapshot> </spatialPlotSnapshots> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/09+Report+Module#id-09ReportModule-Spatialplotsnapshots
Plugin - Module - Reports	NWS	FEWS-15037	Improvement as subtask	FEWS-14997 NWS: FB1845 Ability to include data labels on an external report image	In the reports added a new option to show value labels in generated spatialPlotSnapshots, animatedGif or avi files.	In the reports added a new option to show value labels in generated spatialPlotSnapshots, animatedGif or avi files. This is very similar to the value labels button in the Spatial Display. Please note that labels will not be drawn if they would overlap other labels (decluttering), therefore some locations may not have a label on the map.	{code:xml} <spatialPlotSnapshots id="test"> ... <width>500</width> <height>450</height> <valueLabels> <showUnits>true</showUnits> </valueLabels> <snapshot id="precipitation"> <relativeTime value="0" unit="hour"/> <fileName>precipitation</fileName> </snapshot> </spatialPlotSnapshots> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/09+Report+Module#id-09ReportModule-Spatialplotsnapshots

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Module - Reports		FEWS-15835	New Feature	Export chart with two y-axis, where one axis shows the local datum and the other axis shows the global datum for the same parameter	Datum axis in Reports and DisplayGroups	Datum axis is an axis on the right side of the chart, and it shows left axis ticks in global datum . *Datum axis configuration in Reports* Use element "datumAxis" . Datum axis uses altitude (z) of the first location in the chart to determine global datum. If no "caption" is configured, then datum axis shows left axis title with suffix "global datum" Datum axis is displayed with the same axis settings as configured for the left axis. See configuration examples (xml's and associated pictures) in ReportsDatumAxis.ZIP *Datum axis configuration in DisplayGroups* Configure element "datumAxis" in the subplot. Datum axis uses altitude (z) of the first location shown in the subplot to determine the global datum. Datum axis shows left axis title with global datum suffix, see TSD_localDatumSelected.png . If global datum is elected in TSD toolbar, then datum axis shows ticks in local datum, see TSD_globalDatumSelected.png. (both png's are in TSDDatumAxis.zip)			
Plugin - Module - Transformation	NWS	FEWS-15550	New Feature as subtask	FEWS-14997 NWS: FB1629. Ability to configure units for coefficientSets in lookupTable	Ability to configure units for coefficientSets in lookupTable	Ability to configure units for coefficientSets in lookupTable	{code:xml} <transformation id="simpleTableLookup"> <lookup> <simple> <input> <variableId>H1</variableId> </input> <coefficientSet> <interpolationType>linear</interpolationType> <extrapolationType>extrapolate</extrapolationType> <inputUnit>m</inputUnit> <outputUnit>mm</outputUnit> <lookupTable> <lookupTableRow input="1.8" output="4000"/> <lookupTableRow input="2.0" output="6000"/> <lookupTableRow input="2.2" output="8000"/> <lookupTableRow input="2.4" output="10000"/> <lookupTableRow input="2.6" output="12000"/> <lookupTableRow input="2.8" output="14000"/> <lookupTableRow input="3.0" output="16000"/> <lookupTableRow input="3.2" output="18000"/> <lookupTableRow input="3.4" output="20000"/> <lookupTableRow input="3.6" output="22000"/> </lookupTable> </coefficientSet> <output> <variableId>H2</variableId> </output> </simple>		https://publicwiki.deltares.nl/display/FEWSDOC/Simple
Plugin - Module - Transformation	Deltares	FEWS-15501	Improvement	MaxGapLength in InterpolationSerial transformation from locationattribute	Reading max gap length from location attribute	Reading max gap length from location attribute is introduced for interpolation serial functions.			https://publicwiki.deltares.nl/display/FEWSDOC/Transformation+-+Serial+Interpolation
Plugin - Module - Transformation	Deltares	FEWS-14847	New Feature	Fix starttime in order to use a fixed period back in time as reference	Added new transformation TimeShiftReferenceDateTime	Added new transformation TimeShiftReferenceDateTime. Function to shift time series data by a fixed number of time steps, using a fixed absolute reference date time. The number of time steps to shift, is determined as follows: periodToShift = T0 - referenceDateTime. Where T0 is the timeZero of the workflow in which this transformation runs. If T0 and/or referenceDateTime are not valid times according to the output timeStep, then they are rounded to the nearest valid times. Note: the input period is extended automatically, but the output period has to be large enough to contain the shifted values (i.e. when shifting from T0 to referenceTime, output relativeViewPeriod has to be large enough so that it always contains the period where output should be shifted to, even if the relativeViewPeriod changes due to a change in T0 of the workflow).	{code:xml} <transformation id="TimeShiftReferenceDateTimeTest"> <timeShift> <referenceDateTime> <inputVariable> <variableId>H1</variableId> </inputVariable> <referenceDateTime date="2001-01-01" time="00:00:00"/> <direction>toward_time_zero</direction> <outputVariable> <variableId>H2</variableId> </outputVariable> </referenceDateTime> </timeShift> </transformation> {code}		https://publicwiki.deltares.nl/display/FEWSDOC/TimeShift
Plugin - Module - Transformation	Deltares	FEWS-15707	Improvement	Enable StatisticsPeriodic transformation for equidistant time step day with time zone	Extended StatisticsPeriodic transformations	StatisticsPeriodic transformations are now supported for equidistant time step day with time zone	<timeStep unit="day" timeZone="GMT+1"/>		https://publicwiki.deltares.nl/display/FEWSDOC/Statistics+Periodic+Transformations

Component/s	Customer name	Key	Issue Type	Summary	Release Note Text	Release Note Text Description	Config Example	Images	Link to Documentation
Plugin - Module - Transformation	Deltares (research)	FEWS-15654	Improvement	aggregation meanToMean: add option to ignore missings	Option added to aggregation mean to mean function to ignore missings	Option to ignore missings is added to aggregation mean to mean function.	{code} <transformation id="aggregationMeanToMeanTest"> <aggregation> <meanToMean> <inputVariable> <variableId>H1</variableId> </inputVariable> <ignoreMissings>true</ignoreMissings> <outputVariable> <variableId>H2</variableId> </outputVariable> </meanToMean> </aggregation> </transformation>		https://publicwiki.deltares.nl/display/FEWSDOC/Aggregation+transformations
Plugin - Module - Transformation	Deltares	FEWS-15773	Improvement	Inverse distance slow when irregular source grid crosses date line.	Improved inverse distance interpolation	Only happens when having a very large input and output grid. And the input grid only covers a small part of the output grid			https://publicwiki.deltares.nl/display/FEWSDOC/InterpolationSpatialInverseDistance
Plugin - Module - Transformation	RWS (NL)	FEWS-13904	Improvement	Extend TransformationModule functionality with a loop over the forecasts (implement PeakPerformanceIndicators in TransformationModule)	TransformationModule extended with functionality to loop over the forecasts	When a forecastLoopSearchPeriod is configured the transformation will be repeated for each (external and simulated) forecast found in the defined period. This will only work when the <outputVariable> is an external forecasts, the output variable for each execution will get the same external forecast time. When more than one input variable is used (as for sample equidistant): When other input variables are also forecasts, the same amount of forecasts should be present as in the first input variable because these will also be looped over. When other input variables are not forecasts there will only be 1 time series available, this one be be reused for each step of the loop. This has been implemented for https://publicwiki.deltares.nl/display/FEWSDOC/Selection+of+independent+peaks https://publicwiki.deltares.nl/display/FEWSDOC/Selection+of+independent+lows https://publicwiki.deltares.nl/display/FEWSDOC/Transformation+-+Sample+Equidistant	{code:xml} <transformation id="SelectionIndependentPeaksMultipleForecastsTest"> <selection> <independentPeaks> <inputVariable> <variableId>forecast</variableId> </inputVariable> <forecastLoopSearchPeriod unit="week" start="-4" end="0"/> <gapLengthInSec>2700</gapLengthInSec> <totalNumberBeforeT0>0</totalNumberBeforeT0> <totalNumberAfterT0>0</totalNumberAfterT0> <skipJustBeforeT0>0</skipJustBeforeT0> <skipJustAfterT0>0</skipJustAfterT0> <outputVariable> <variableId>outputForecast</variableId> </outputVariable> </independentPeaks> </selection> </transformation> {code} {code:xml} <transformation id="SelectionIndependentLowsMultipleForecastsTest"> <selection>		https://publicwiki.deltares.nl/display/FEWSDOC/Selection+Transformations
Plugin - Module - Transformation	Deltares (research)	FEWS-14224	New Feature	New transformation: statisticsCommonAttributes function; of uitbreiden statisticsRelatedLocations	New transformation: statisticsCommonAttributes function	New transformation: statisticsCommonAttributes function which loops over input/outputlocations in which the common attributes will be 'selected' to generate statistics. Type of statistic (mean, min, max etc) is configurable. Multiple attributes are possibe and can be managed through CSV files			https://publicwiki.deltares.nl/display/FEWSDOC/20+Transformation+Module+-+Improved+schema
System	Deltares	FEWS-15886	Improvement	Show in about box if a 64 bit or 32 bit version is being run	At startup it is logged what OS version Delft-FEWS is running on	At startup it is logged what OS version Delft-FEWS is running on			
System	Deltares	FEWS-14904	Improvement as subtask	FEWS-14498 Cleanup script	Cleanup script cleanup_bin scripts (bat/sh) have additional 32 / 64 bits clean up options under windows.				https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+64+bit+migration
System	Deltares	FEWS-14693	Improvement	Add current default of max database size (now 2GB) as variable in the install scripts	In Oracle and SQLServer database creation scripts the default maximum tablespace size are increased from 2Gb to 10Gb. For Postgres this is not relevant/applicable				https://publicwiki.deltares.nl/display/FEWSDOC/Delft+FEWS+Installation+-+Central+Database#DelftFEWSInstallation-CentralDatabase-MC_Database
System	Deltares	FEWS-14518	New Feature as subtask	FEWS-14498 Windows 64 bits support - DLL's	32 bit dll's have been recompiled to 64 bit versions	Most 32 bit dll's have been recompiled to 64 bit versions. In some cases it was decided to port a native dll to Java (for example the contour library) or the source are not available. For those cases a specific subtasks was added in JIRA.			https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+64+bit+migration
System	Deltares	FEWS-14502	New Feature as subtask	FEWS-14498 Windows 64 bits support - Derby database	Support for Derby 64 bits				https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+64+bit+migration
System	Deltares	FEWS-14569	New Feature as subtask	FEWS-14498 Windows 64 bits support - Firebird database	Support for Firebird 64 bit and 32 bit on windows	Support for both Firebird 64 bit and 32 on windows is available. Depending on the JRE that is used the correct firebird dll's will be used.			https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+64+bit+migration

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System - Logging	BoM	FEWS-15553	Improvement as subtask	FEWS-15665 HyFS-WC: Add watercoach category log4j at run time	Default WaterCoach logging appenders	By default WaterCoach logs INFO messages to appenders "dataStoreLogEntriesTable", "defaultLogFile" and "explorerLogPanel" If we want to add additional appenders, to remove appenders or to change the priority , we should add "nl.wldelft.fews.gui.plugin.watercoach" category to the Log4jConfig.xml. The default WaterCoach category setting also appears in Log4jConfig.xml if we remove our existing Log4jConfig.xml : {code:xml} <category name="nl.wldelft.fews.gui.plugin.watercoach" additivity="false"> <priority value="INFO"/> <appender-ref ref="dataStoreLogEntriesTable"/> <appender-ref ref="defaultLogFile"/> <appender-ref ref="explorerLogPanel"/> </category> {code}			https://publicwiki.deltares.nl/display/FEWSDOC/09+Logging
System - Logging	RWS (NL)	FEWS-15312	Improvement	Store system timeseries	Added new SystemMetrics module for storing live system status as timeseries.	The new SystemMetrics module can store live system information. 1 the amount of records / rows and Mb in the database, 2. the amount of records / rows and Mb in individual tables. 3. Errors, warnings (all or matching a specific eventCode such as Config.Error), 4. MC status, such as the number of running tasks, amount of live components 5. individual MC components 6. FSS build number, down status and queue length.			https://publicwiki.deltares.nl/display/FEWSDOC/27+SystemMetrics
System - Logging	RWS (NL)	FEWS-8794	New Feature	Extend logging of LogCollectorService	LogCollectorService extended with additional logging information				https://publicwiki.deltares.nl/display/FEWSDOC/Admin+Interface+-+System+Status+-+Collect+System+LogFiles
System - PI Service	Wales	FEWS-15457	New Feature	FewsPiService: Forecast Task Run information via the FewsPiService	PI service extended with Forecast Task Run Information	PI service extended with Forecast Task Run Information			https://publicwiki.deltares.nl/display/FEWSDOC/Tomcat+-+Fews+PI+service
System - Synchronisation	NWS	FEWS-13677	Improvement as subtask	FEWS-9861 NWS: FB1267 IFD green checkmarks appears when all data is synched	IFD green checkmarks appears when all data is synched				
Database, System - Synchronisation	NWS	FEWS-15837	Improvement	Additional columns in Modifiers table and synchronisation accordingly for properly updating icons and displaying the original creator userId.	A series of new columns has been added in the Modifiers table	The new columns are: userCreationTime, userModificationTime, creatorUserId, previousTaskRunId, previousModifierId, Attachments			
Utility - Configurator	Deltares	FEWS-15061	Improvement	wis installations are often installed with default synchProfiles.xml	The configurator now produces a WIS-synchProfiles.xml_wis for WIS clients.	The configurator now produces a WIS-synchProfiles.xml_wis for WIS clients. WIS stands for Water Information System which is a implementation variant of Delft-FEWS. This variant focusses on long term storage of observed data, data statistics and analysis rather than forecasting and forecasting models.			
		FEWS-16575	Task	MissingFormatArgumentException when attribute id not found					

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	Northsea	FEWS-16429	Improvement	Delete empty lines in report	RowPerLocation Html and Csv tables: option omitRowsWithOnlyMissingValues	If data of a location is missing, and 'omitRowsWithOnlyMissingValues' is set to true, then the table does not include the line for that location.	Example from Reports.xml: {code:xml} \<rowPerLocationHtmlTableFormat id="rowPerLocationHtml" tableStyle="tableStyle3"> \<omitRowsWithOnlyMissingValues>true\</omitRowsWithOnlyMissingValues> \<column> \<header>Location\</header> \<function>LOCATIONATTRIBUTE(shortname)\</function> \</column> \<column> \<header>Q Index value 0\</header> \<format>_data\</format> \<function>INDEXVALUE(0;Qmeasured;numberFormat1)\</function> \</column> \<column> \<header>Q mean\</header> \<format>_data\</format> \<function>STATISTICS(MEAN;Qmeasured;numberFormat1)\</function> \</column>		
		FEWS-15245	New Feature	RWsOS NZ: Add HW and LW on the top row of WaterWijzer	Reports: hwLwHtmlTable	hwLwHtmlTable is a html table with HW (high water) and LW (low water) indicators in the time series event columns. HW is used when the event value is positive, LW is used when the event value is negative. The filter 'hwLwTimeSeries' specifies which time series should be used to determine HW or LW . The filter should refer to exactly one time series and this time series should be one of the series used in hwLwHtmlTable . To format hwLwHtmlTable , use a htmlTableFormat with event times in the columns (\<column>time\</column>).	Example from Reports.xml : {code:xml} \<hwLwHtmlTable id="table1" formatId="htmlTableFormat1"> \<timeSeries>Hrated\</timeSeries> \<timeSeries>Hcorr\</timeSeries> \<timeSeries>Hm\</timeSeries> \<hwLwTimeSeries> \<parameterId>H.rated\</parameterId> \</hwLwTimeSeries> \</hwLwHtmlTable> {code} The complete example can be found in attached		