
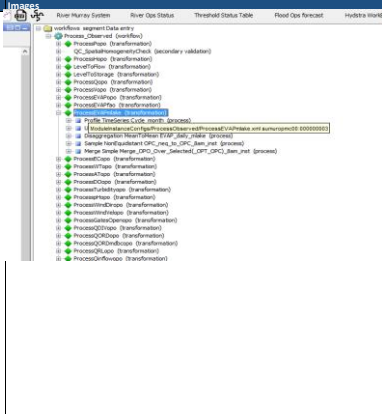
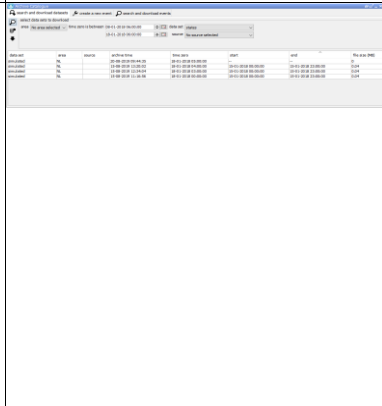
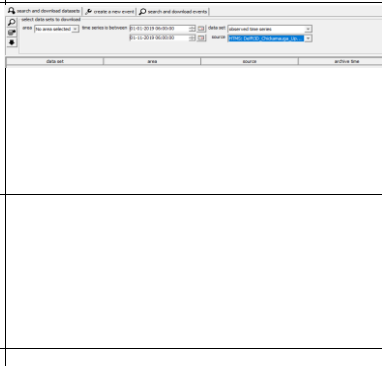


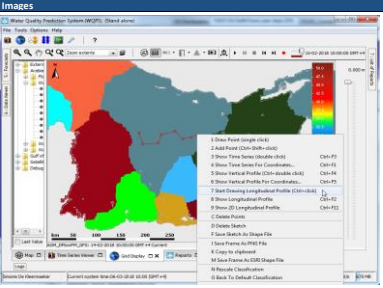
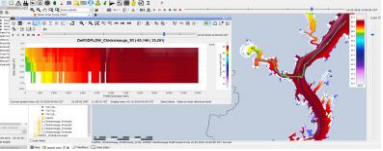
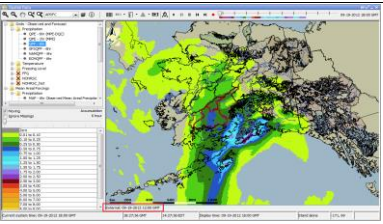


Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
App - Admin Web User Interface	FEWS-15360	RWS (NL)	Admin Interface: Upload Multiple New Action Configuration	Admin Interface: It is now possible to upload multiple new action configuration at the same time	You can upload any number of action configurations in one file if you click on "Upload multiple configurations" button. This feature is available since 2019.02. If you click the checkbox "Default", all uploaded configurations will be set as default. If there are no configurations in the database that share an action ID with the new uploaded configuration, it will be set to default automatically. If the set default checkbox is not checked, the new configurations will appear in the lists of versions under the same action id. The upload has a strict XML schema.	https://publicwiki.deltares.nl/display/FEWSDOC/04+Setting+Up+Event+Action+Configuration#04SettingUpEventActionConfiguration-04UploadingMultipleActionConfigurations	<pre><?xml version="1.0" encoding="UTF-8"?> <eventActions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="file:///C:/Development/trunk/master-controller/src/main/resources/schema/eventactions.xsd"> <eventAction actionConfigurationId="New Zealand" description="Description"> <enhance> <tag name="AIRE_FORECAST"/> </resume/> </enhance> </eventAction> <eventAction actionConfigurationId="newid" description="Description2"> <enhance> <tag name="Denver"/> <suspend/> </enhance> </eventAction> <eventAction actionConfigurationId="EDEN_ID" description="Description3"> <enhance> <tag name="EDEN_FORECAST"/> <repeatinterval interval="3600"/> </enhance> </eventAction> <eventAction actionConfigurationId="EXPORT_ID" description="Description4"> <oneoff> <cardinaltime interval="900" reference="2004-01-01T00:00:00.000+00:00"/> <tag name="EXPORT_CURRENT"/> </oneoff> </eventAction> </eventActions></pre>	
App - Admin Web User Interface	FEWS-20513	EA	FEWS-18050 FFFS-AI: Add audit functionality in the Admin Interface	audit trail event logs	Both the Admin Interface and the OC now generate audit trail event logs	https://publicwiki.deltares.nl/display/FEWSDOC/31+Audit+Trail+Event+Log		
App - Admin Web User Interface	FEWS-20507	EA	FEWS-18050 FFFS-AI: Show additional information in Task Details page	The task runs page allows showing all log files of one taskrun or of (max 50) recent task runs.	The task runs page allows showing all log files of one taskrun or of (max 50) recent task runs.	https://publicwiki.deltares.nl/display/FEWSDOC/Scheduled+Tasks+-+Task+Runs		
App - Admin Web User Interface	FEWS-20506	EA	FEWS-18050 FFFS-AI: Show runtime of last task in Scheduled Forecast page	Latest Run Time visible in scheduled tasks list	Latest Run Time visible in scheduled tasks list	https://publicwiki.deltares.nl/display/FEWSDOC/Scheduled+Tasks		
App - Admin Web User Interface	FEWS-20485	EA	FEWS-18050 FFFS-AI: Option to delete Importstatus records from database and use correct colours	import status colors visible in admin interface	Configured Import Status Colors in the SystemMonitor configuration file are now also used by the Admin Interface	https://publicwiki.deltares.nl/display/FEWSDOC/Admin+Interface+Files+-+Import+Status		
App - Admin Web User Interface	FEWS-14310	EA	FEWS-18050 Add more info to database and Admin Interface	Improvements on running tasks page of Admin Interface	Improvements on running tasks page of Admin Interface	https://publicwiki.deltares.nl/display/FEWSDOC/Running+Tasks		
App - Admin Web User Interface	FEWS-21384	Deltares	Add filter option to workflow mapping matrix to show unmapped workflows	Unmapped workflows are marked with red background color	Unmapped workflows are marked with red background color	https://publicwiki.deltares.nl/display/FEWSDOC/Workflow+FSS+Groups+Mapping		
App - Admin Web User Interface	FEWS-21369	Deltares	AI FSS Groups werkt niet lekker, erg foutgevoelig	FSS Groups and workflow mapping improvements	Fss Groups page show per FSS group if allow unmapped is enabled. When mapping all workflows to a group, a confirmation is required now.	https://publicwiki.deltares.nl/display/FEWSDOC/Workflow+FSS+Groups+Mapping		
App - Admin Web User Interface	FEWS-20486	Deltares	AI: Improve wording/explanation for Scheduled Task - Run Options	Improved tooltip text of runOptions	Improved tooltip text of runOptions	https://publicwiki.deltares.nl/display/FEWSDOC/Scheduled+Tasks+-+New+Task		
App - Admin Web User Interface	FEWS-20818	Deltares	Case insensitive login AI	Username is now case insensitive when logging in with the admin interface	Username is now case insensitive when logging in with the admin interface	https://publicwiki.deltares.nl/display/FEWSDOC/Delft-FEWS+Admin+Interface+-+Introduction#Delft-FEWSAdminInterface-Introduction-Introduction-Parameters		
App - Admin Web User Interface	FEWS-20683	Deltares	Admin Interface Editing FailOver tasks will change the ownerMcid of the Task	edit button is disabled for remote mc tasks	edit button is disabled for remote mc tasks	https://publicwiki.deltares.nl/display/FEWSDOC/Scheduled+Tasks		

Delft-FEWS 2019.02 Solved Features

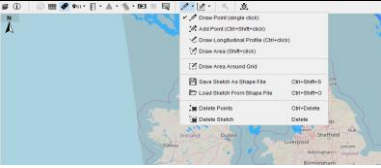
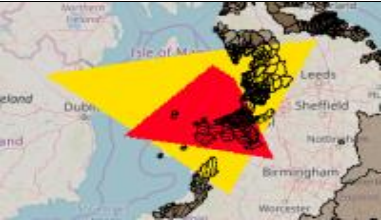
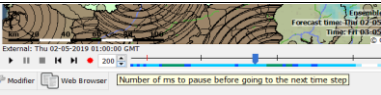
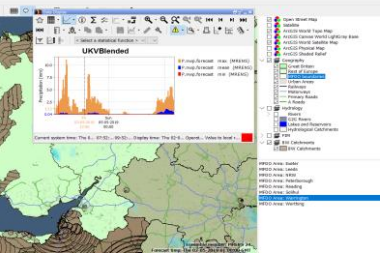
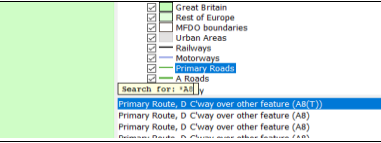
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
App - Admin Web User Interface	FEWS-20679	Deltares	FEWS-19650 NGINX proxy and 413 Request Entity Too Large for uploading basebuild to admin interface	OIDC authentication requires large http headers	OIDC authentication requires large http headers. (code) AD authentication can use large http headers that sometimes are larger than the maximum allowed 8K that is set by default for Apache 2. The /etc/apache2/apache2.conf configurations should be updated with the following settings: LimitRequestFieldSize 80000 LimitRequestBody 0	https://publicwiki.deltares.nl/display/FEWSDOC/AUTHENTICATION+AND+AUTHORIZATION+USING+THE+APACHE2+OPENID+CONNECT+MODULE+mod_auth_openid		
App - Archive	FEWS-21765		FEWS-21449 Not possible to use 2 archive servers on the same machine					
App - Archive	FEWS-21204	TVA / BPA / NWS / BC Hydro	Retrieve states (Datastore related work)					
App - Archive	FEWS-20979	Deltares	FEWS-18050 FFFS-Archive: get rid of config.zip file and use original files					
App - Archive	FEWS-17999	Deltares	FEWS-18468 Open Archive Integration: Seamless Integration for erids					
App - Configuration Manager Gui	FEWS-21366	EA	FEWS-18050 Config manager. Checksum instead of download for config file equals check.	A calculated hash is used to determine if imported config files are different from the current active one.	A database column "hash" has been added for each config file type. This stores a calculated string for each inserted config file based on its contents. Whenever new config files are imported the hash of new file is compared with that of the current active file. Only if the hash is different the current active version is read from the database in order to show the differences. This saves a lot of data that has to be transferred over the network. If the hash is not filled yet (file is imported in older version), it will be done after the file is read once.	https://publicwiki.deltares.nl/display/FEWSDOC/202+Configuration+Manager+-+from+2017.02		
App - Configuration Manager Gui, App - Operator Client Gui (Explorer)	FEWS-20336	Deltares	FEWS-18245 Opening an OC when you have the CM open (or vice versa) gives an unnecessary warning/popup.	Difference between OC and CM session is taken into account for duplicate session warning	Difference between OC and CM session is taken into account for duplicate session warning	https://publicwiki.deltares.nl/display/FEWSDOC/01+FEWS+Explorer#id-01FEWSexplorer		
App - Configuration Manager Gui	FEWS-21584	Deltares	Allow Configuration manager over Database proxy					
App - Configuration Manager Gui, App - Master Controller Server	FEWS-20347	Deltares	Add partition sequence mapping in config revisionset: parallel runs can not run as one-off					
App - Delft-FEWS	FEWS-20951	Deltares	VERSION file in bin directory	_build_manifest.txt in bin dir	The Delft FEWS version and build number of a bin dir is now readable as plain text in bin/_build_manifest.txt			
App - Forecasting Shell Server	FEWS-19956	EA	FEWS-18050 FFFS: Improve deployment of FEWS in Azure	Admin interface improvements for cloud integration	Admin interface improvements for cloud integration	https://publicwiki.deltares.nl/display/FEWSDOC/Dashboard		
App - Forecasting Shell Server	FEWS-20345	Deltares	FEWS-19650 Number of FSSs in ready state don't match the number in the FSS error	Fix readyState for FSS Group	Fix readyState for FSS Group	https://publicwiki.deltares.nl/display/FEWSDOC/FSS+Groups		
App - Master Controller Server, System - Synchronisation	FEWS-20559	TVA	FEWS-17996 Allow status MC-MC synchronization while in false failover	Config option for Mc-Mc synchronization status only	New config option for Mc-Mc synchronization only on status tables, e.g. SystemActivities, ComponentLogFileSnapshots, MasterControllers, FSSGroups, ForecastingShells, FssStatus, LiveMcAvailabilities	https://publicwiki.deltares.nl/display/FEWSDOC/Delft-FEWS+Installation+-+Configure+Master+Controller+application+-+2017.02+and+later	<pre>(code) <remotemc mcid="..."> <database driverClass="oracle.jdbc.OracleDriver"> <connection string="..." password="..."> </database> <mcSynchronisation statusOnly="true"/> </remotemc> (code)</pre>	
App - Master Controller Server	FEWS-17386	TVA	FEWS-17996 TVA: Request to not automatically run tasks on primary system when a failover is triggered	New task option to not run failover tasks on ownerMc when the ownerMc is in failover	Where before a task was either a failover task or not, a task now has three different options 1. Run Duty - Run this Task only on the Master Controller that owns it (default). 2. Run Duty and Failover - When the Duty Master Controller is in Failover mode, run this task on the top priority Failover Master Controller, but also run this task on the Duty Master Controller that owns it. 3. Suspend Duty in Failover - When the Duty Master Controller is in Failover mode, run this task on the top priority Failover Master Controller and do not run this task on the Duty Master Controller that owns it.	https://publicwiki.deltares.nl/display/FEWSDOC/Scheduled+Tasks+-+New+Task		
App - Master Controller Server	FEWS-20834	EA	FEWS-18050 FFFS: Add function to send event codes to Azure Service Bus	Azure Service Bus Alerter	The Azure Service Bus Alerter can be used to configure MC_SystemAlert tasks that can send messages to the Azure Service Bus.	https://publicwiki.deltares.nl/display/FEWSDOC/Azure+Service+Bus+Alerts		
App - Master Controller Server	FEWS-20976	Deltares	Improve Caching of ActionConfiguration. Now it takes up to 5 minutes					
App - Operator Client Gui (Explorer)	FEWS-19950	EA	FEWS-18050 FFFS: Improve KFlows functionality	FFFS KFlows improvements	FFFS KFlows improvements	https://publicwiki.deltares.nl/display/FEWSDOC/04+KFlows+Display		
App - Operator Client Gui (Explorer)	FEWS-20849	EA	FEWS-18050 FFFS: Implement UK BST - British Summer Time Timezone	UK British time zone GMT/BST	Shows GMT in the winter and BST in the summer	https://publicwiki.deltares.nl/display/FEWSDOC/08+Enumerations	<pre>explorer.xml (code:xml) <dateTimes> <timeZoneName>GMT</timeZoneName> <timeZoneName>GMT/BST</timeZoneName> <dateTimeFormat>E d4-MM-yyyy HH:mm:ss</dateTimeFormat> <cardinalTimeStep unit="minute" multiplier="15"/> </dateTimes> (code)</pre>	
App - Operator Client Gui (Explorer), Configuration	FEWS-21101	EA	FEWS-18050 Recognize "none" as qualifier id in time series filter (modifiers, products, etc)					
App - Operator Client Gui (Explorer)	FEWS-19961	EA	FEWS-18050 FFFS: Improvements to Permissions	In the log browser users will no longer see log messages from workflows they have no permission to see	In the log browser users will no longer see log messages from workflows they have no permission to see.	https://publicwiki.deltares.nl/display/FEWSDOC/07+Permissions		
App - Operator Client Gui (Explorer)	FEWS-20515	EA	FEWS-18050 FFFS-OC: Add audit functionality to the OC	Audit trail for Operator Client. Generate event codes that are stored as log messages	Audit trail for Operator Client. Generate event codes that are stored as log messages	https://publicwiki.deltares.nl/display/FEWSDOC/31+Audit+Trail+Event+Log#id-31_AuditTrailEventLog	<pre>Audit trail for Operator Client. Generate event codes that are stored as log messages</pre>	

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
App - Operator Client Gui (Explorer), System	FEWS-21017	Deltares	FEWS-18245 Use the same look and feel across all platforms and settings	Use the same GUI look and feel across all platforms and color schemes	FEWS now uses the exact same GUI look and feel across all platforms and regardless of whether a color scheme is active or not (although color schemes of course do still change the colors of the GUI elements).	https://publicwiki.deltares.nl/display/FEWSDOC/D8+Color+schemes+and+custom+colors#id-D8Color+schemes+and+custom+colors-Changes+since+2019.02		
App - Operator Client Gui (Explorer)	FEWS-20124	Deltares	FEWS-19650 FFFS: When uploading a new Patch jar the OC has an incomplete message	Clearly show who updated the root config and with which comment	Clearly show who updated the root config and with which comment	https://publicwiki.deltares.nl/display/FEWSDOC/D1+FEWS+Explorer#id-D1FEWSExplorer		
Configuration	FEWS-20440	Waternet	Remove ConfigUpdateScript	Config Editor has been removed	Config Editor has been removed	https://publicwiki.deltares.nl/display/FEWSDOC/J30+Config+Update+Module		
Configuration	FEWS-20901	EA	FEWS-18050 FFFS: Add one to many relations in locationSet	One to many location relations for building location sets	building dynamic locations sets. E.g. all locations in a catchment		<pre>[code:xml] <locationSet id="Stations"> <esriShapeFile> <file>Stations</file> <geoDatum>WGS 1984</geoDatum> <id>%ID%</id> <name>%ID%</name> <>%</> <py%</py> <?</?> <attributeFile> <csvFile>upstream</csvFile> <id>%ID%</id> <oneToManyRelation id="UPSTREAM"> <relatedLocationId>%RELATION%</relatedLocationId> </oneToManyRelation> </attributeFile> </esriShapeFile></pre>	
Configuration	FEWS-21120	EA	FEWS-18050 Allow shapeIdFunction besides shapeId in the polygons.xml				<pre>[code:xml] <?xml version="1.0" encoding="UTF-8"?> <polygons xmlns="http://www.widelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelft.nl/fews http://dtps1/schema/polygons.xsd"> <esriShapeFile> <file>MARFC_SubBasins_WGS84</file> <geoDatum>WGS 1984</geoDatum> <shapeIdAttribute>name=basin_id</shapeIdAttributeName> <shapeIdFunction>@SHAPE_ID@</shapeIdFunction> </esriShapeFile> </polygons></pre>	
Configuration	FEWS-20637	EA	FEWS-18050 Attribute exists constraint. Recognize multi value attributes with only null values as unavailable.					
Database	FEWS-20978	EA	FEWS-18050 make create scripts available to the EA branch.	Added table UserSettings and ProductInfo				
Database	FEWS-19974	EA	FEWS-18050 FFFS: Automatically generate locationSets with template and attributes	Automatically group a location set into sub location sets that share the same attribute	subLocationSetIdFunction is used to generate the location set id	https://publicwiki.deltares.nl/display/FEWSDOC/D2+Location+Sets	<pre>[code:xml] <locationSet id="Meteo Stations"> <subLocationSetIdFunction>Meteo Stations @region@</subLocationSetIdFunction> <esriShapeFile> <file>Meteo_Stations</file> <geoDatum>WGS 1984</geoDatum> <id>%ID%</id> <name>%ID%</name> <>%</> <py%</py> <?</?> <relation id="UPSTREAM"> <relatedLocationId>%RELATION%</relatedLocationId> </relation> <attribute id="a"> <description>constant a</description> <text>a</text> </attribute> <attribute id="region"> <description>Catchment</description> <text>%REGION%</text> </attribute> </code></pre>	
Database	FEWS-20655	EA	FEWS-18050 changes in latest database update script need to be applied to FFFS Azure Database	database changes for FFFS applied to 201902	database changes for FFFS applied to 201902	https://publicwiki.deltares.nl/display/FEWSDOC/D6+FEWS+Installation+Central+Database		
Database	FEWS-21562	Deltares	FEWS-21449 Create 2019.02 database scripts					

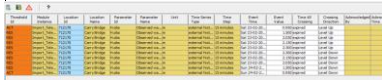
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Debug Tool - Workflow Navigator	FEWS-20621	MDBA	FEWS-14730 Show description of transformation modules and transformation elements in OC GUI (R_323)	Show description of transformation modules and transformation elements in OC GUI as mouse label text	Added <description> to individual transformations, they will appear as labels. However, the name of the transformation module is built not from the configuration file of the module, but from the workflow file. Therefore I added a new field workflow activity to add a <description> This description should work as a label also for import, export, sub-workflow, performance too.	https://publicwiki.deltares.nl/display/FEWSDOC/20+Transformation+Module+-+improved+schematic-+20TransformationModule+improved+schema+description	<pre> <code><?xml version="1.0" encoding="UTF-8" ?> <workflow xmlns="http://www.widelf.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelf.nl/fews http://www.widelf.nl/schemas/version1.0/workflow.xsd" version="1.1"> <activity> <runindependent>true</runindependent> <moduleinstanceid>CanadaMeteo</moduleinstanceid> <description>Description</description> </activity> </workflow> </code> </pre>	
Plugin - Gui - Archive Display	FEWS-21206	TVA / BPA / NWS / BC Hydro	Retrieve + import States in database - GUI Work	ArchiveDisplay - importing states	States are archived in the forecast archiving process, together with time series, reports and modifiers. Up to now the states were only ingested while importing a simulated data set From now on, it is also possible to ingest the states only. For this purpose an (optional) element "statesWorkflow" has been added to the ArchiveModuleDisplay config file. An example from _ArchiveModuleDisplay.xml_ : <code><xml> <archiveimportWorkflowId>ImportArchivedData</archiveimportWorkflowId> </code> <dataTypeInfoImportWorkflows> <statesWorkflowId>ImportArchivedStates</statesWorkflowId> </dataTypeInfoImportWorkflows> </code> The import states workflow (ImportArchivedStates in this example) should have "moduleStatesImportActivity", to ensure that only states are ingested from simulated folder, and not the whole forecast. An example from _importArchiveModule.xml_ : <code><xml> <importSimulated> <activities> <moduleStatesImportActivity> </activities> <importFolder>\$ARCHIVE_DOWNLOAD_FOLDERS/simulated</importFolder> </code>	https://publicwiki.deltares.nl/display/FEWSDOC/21+Archive+display		
Plugin - Gui - Archive Display	FEWS-20746	TVA	FEWS-20739 TVA: Auto filter sources in the archive catalogue tool based on data set type	Archive Catalog Display shows per data set type only the relevant sources	Every time the harvester is scanning and updating the archive database, it creates also DataTypeInfo.xml. DataTypeInfo.xml contains per data type the source Id's that are available in the archive database for that data type. Information from DataTypeInfo.xml is used by Archive Catalog Display to show the relevant source per data type. If the DataTypeInfo.xml is not available, or not created for some reason, the Archive Catalog Display shows all known sources , for each data type.	https://publicwiki.deltares.nl/display/FEWSDOC/21+Archive+display		
Plugin - Gui - Dashboard	FEWS-21311	EA	FEWS-18050 Add options to automatically arrange dashboard frames	Add options to new dashboard panel to neatly arrange frames	The dashboard panel has three menu options to arrange the frames currently in the panel: arrange horizontally, arrange vertically and arrange automatically. The arrange horizontally and vertically options perform as would be expected. The arrange automatically options attempts to determine the desired arrangement based on the current positions, removing as much overlap in frames and empty space as possible, preferring to assign extra space to the top frame if possible.	https://publicwiki.deltares.nl/display/FEWSDOC/23+Dashboard+Display		
Plugin - Gui - Dashboard	FEWS-14870	EA	FEWS-18050 New Dashboard display for Hyrad functionality			https://publicwiki.deltares.nl/display/FEWSDOC/23+Dashboard+Display		

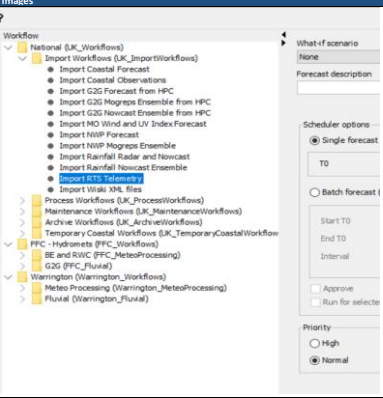

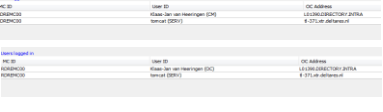
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Grid Display	FEWS-17182	UAE Navy	FEWS-17145 Spatial Display - show plot (cross section-z) based on user defined cross section (x,y)		Create a 2D longitudinal profile on the fly for 3D data in the spatial display. Start drawing a longitudinal profile with a CTRL-click in the spatial display and click to add points as required. Finish the profile with a double-click for the last point. Open up the longitudinal profile in the timeseriesdisplay with CTRL-F11, or via the context menu. Note, this feature only works for * data within 1 grid partition. In some cases 3D data model runs are run on multiple domain partitions. This data can be shown as a 2D longitudinal profile, but only if the profile remains within a single domain. * scalar data (e.g. Water temperature or salinity), and not yet for vector data like currents. (2 screenshots are attached to the issue)			
Plugin - Gui - Grid Display	FEWS-17736	TVA	FEWS-17689 TVA Hydrothermal: Extend vertical slider bar for Delft3D-FLOW or D-Flow FM grids from Sigma layers to Z layers	Vertical slider in spatial display for Z layers	Besides sigma layers it is now also possible to configure a vertical slider for z layers			
Plugin - Gui - Grid Display	FEWS-19339	TVA	FEWS-20739 TVA: Increase number of grid cells allowed for Spatial Display to avoid illegal argument for 1st check passed					
Plugin - Gui - Grid Display	FEWS-20908	NWS	FEWS-20886 NWS: #62738 Show updated (latest import) time in Spatial Display for external historical gridded/scalar time series	Show last import time for external historical data in grid display	This feature allows to show last import time for external historical data in grid display. This option is supported with online version only. The option dataFeedId needs to be configured per gridPlot. The value of the dataFeedId must be the same value that can be seen in System Monitor table, tab Import Status. The id should be the one that corresponds with the module instance id of the time series.	https://publicwiki.deltares.nl/display/FEWSDOC/D3+Grid+Display#id-01GridDisplay.ShowLastImportTimeForExternalHistoricalData	<pre>(code.xml) <gridPlot id="Radar KNMI"> <gridPlot id="TFR005_R" name="Uncorrected 5 min"> <dataFeedId>AT6/</dataFeedId> <timeSeriesSet> <moduleInstanceId>importWIWB/</moduleInstanceId> <valueType>grid/</valueType> <parameters>P_radar/</parameters> <qualifierId>realtime/</qualifierId> <locationId>KNMI-RADAR1km/</locationId> <timeSeriesType>external historical/</timeSeriesType> <timeStep units="minute" multiplier="5"/> <relativeViewPeriod units="day" start="10" end="5"/> <readWriteMode>read only/</readWriteMode> </timeSeriesSet> <accumulationTimeSpan multiplier="1" unit="hour"/> <accumulationTimeSpan multiplier="0" unit="hour"/> <accumulationTimeSpan multiplier="12" unit="hour"/> <classBreaks> <break lowerValue="0" color="white" label="0 mm/hr" opaquesnessPercentage="25"/> <break lowerValue="0.008" color="light blue" label="0.1" opaquesnessPercentage="75"/> <break lowerValue="0.083" color="CAAF" label="1" opaquesnessPercentage="80"/> <break lowerValue="0.167" color="636DF" label="2" opaquesnessPercentage="85"/> </classBreaks> <contourLinesColor>gray/</contourLinesColor> </gridPlot> </gridPlotGroup> (code)</pre>	
Plugin - Gui - Grid Display	FEWS-20868	FOEN	FEWS-9563 FOEN: Option in Spatial display to show less decimals in values on map	Add option in spatial display to decrease number of decimals in labels	Adds two menu items to the label drop down menu in the spatial display. One to increase and one to decrease the number of decimals shown in the labels and tooltips. If a user has used these buttons to decrease the number of decimals, this will be stored in the user settings. This setting is stored separately for each parameter group. The number of decimals can never be increased to more than the resolution with which the values are stored (the configured value resolution of the parameter group).	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay.ControlToolbar		
Plugin - Gui - Grid Display	FEWS-20859	FOEN	FEWS-9563 FOEN: Add aggregation timestep in time label of spatial display	From now on grid display aggregation slider shows start and end of aggregation period instead of one timestamp.	When you use the aggregation slider in the grid display the time label used to only show a timestep. From now on it will show the aggregation period. For example if the aggregation period is 6 hours and the time is 15-05-2019 00:00, then the label should say "Time 14-05-2019 18:00:00 to 15-05-2019 00:00".	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display		
Plugin - Gui - Grid Display	FEWS-21210	EA	FEWS-18050 Store selected aggregation in user settings	Store selected aggregation in user settings	The aggregation selected in the grid display is now stored in the user settings. When starting FEWS the same aggregation will be selected as was selected when closing.	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay.MovingAverageorAccumulationSlider		
Plugin - Gui - Grid Display	FEWS-20709	EA	FEWS-18050 Add forecast selection button to Grid Display	Add a forecast selection button to the Grid Display	A forecast selection button was added to the grid display to allow the user to select a different (previous) forecast without opening the spatial thumbnails. The button can be pressed to cycle through the available forecasts or a specific forecast time can be selected from its drop-down menu. This also allows selecting a previous forecast when viewing an ensemble time series (where the regular spatial thumbnails are disabled and only the newly developed ensemble thumbnails are available).	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay.SelectingDifferentForecastTimes		

Delft-FEWS 2019.02 Solved Features

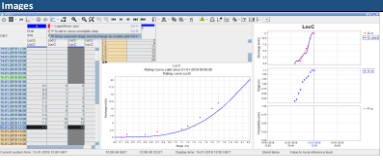
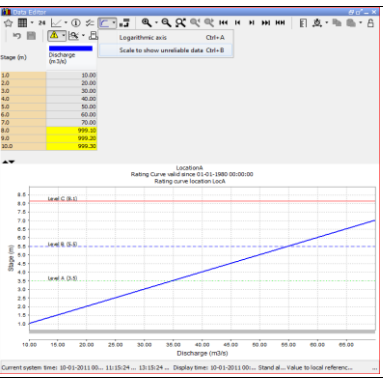
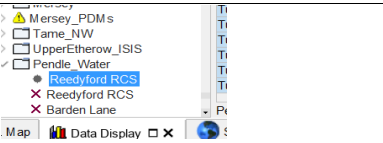
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Grid Display, Plugin - Module - Spatial Modifiers	FEWS-20546	EA	FEWS-18050 FFFS: compose best estimate NWP	Add spatial modifiers to modify grid time series	Two new modifiers have been added which allow modifying grid time series. These modifiers need to be created through the spatial display (instead of the modifiers panel). The spatial copy modifier allows copying values from a different grid time series for a certain area and time period. The spatial profile modifier allows replacing all grid values within a certain area with the values of a scalar time series entered by the user.	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay-CreatingSpatialModifiers		
Plugin - Gui - Grid Display	FEWS-20893	EA	FEWS-18050 Add sketch buttons section to GridDisplay toolbar	Move sketch functionality in spatial display to new sketch button section	There was already a lot of functionality present in the spatial display to draw points, profiles and areas and use these to extract time series data and show it in a graph (time series dialog). This functionality was all "hidden" in the right-click menu. The functionality has been moved to two new buttons (with drop-down menus) in the spatial display toolbar to make it more accessible: one button for all "drawing" options and one for all options to then extract chart data.	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display		
Plugin - Gui - Grid Display, Plugin - Module - Spatial Modifiers	FEWS-21131	EA	FEWS-18050 Add a tooltip to the time slider and map where a spatial modifier has been applied	Add a tooltip to the time slider and map where a spatial modifier has been applied	A tooltip with information about the applied spatial modifiers was added to the time slider and the applied modifier polygons (dashed polygons). The tooltip shows the name of the modifier as well as any user defined descriptions added to it.	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay-ViewingExistingSpatialModifiers		
Plugin - Gui - Grid Display, Plugin - Module - Spatial Modifiers	FEWS-21129	EA	FEWS-18050 Add option to set the application order of time series modifiers	Add option to set the application order of spatial modifiers	For the new spatial modifiers, the application order is important if the areas to which two modifiers apply overlap. To allow the user to control the application order, a priority was added. The priority of spatial modifiers can be edited (and viewed) in the modifiers panel. Modifiers are applied from the one with the highest value for priority to the one with the lowest value (so a modifier with priority 1 will be applied after a modifier with priority 2). This causes the modifier with the lowest value to be "on top".	https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay-Priority		
Plugin - Gui - Grid Display	FEWS-19690	EA	FEWS-18050 FFFS: Simplify configuration of ensemble member filter	Now whole ensembles can be used in a gridplot and shown/picke by SpatialEnsembleThumbnailsPanel	Now whole ensembles can be used in a gridplot and shown/picke by SpatialEnsembleThumbnailsPanel	https://publicwiki.deltares.nl/display/FEWSDOC/D1+Grid+Display#id-01GridDisplay		
Plugin - Gui - Grid Display	FEWS-21376	EA	FEWS-18050 Improve coloring grid display time slider					
Plugin - Gui - Grid Display	FEWS-21352	EA	FEWS-18050 FFFS: Spatial Display link to displaygroups through PlotId				<pre> <code>xml <gridPlotGroup id="Stations" name="Station Observations"> <viewPermission>All_Users/</viewPermission> <gridPlot id="Stations_P_processed15m" name="Rain Gauges (15 min)"> <displayGroupPlotId>AUS_QC</displayGroupPlotId> </code> </pre>	
Plugin - Gui - Grid Display	FEWS-21466	EA	FEWS-18050 FFFS: Not load all forecasts when number of forecast parameters is used					
Plugin - Gui - Grid Display	FEWS-20687	EA	FEWS-18050 spatial display. Allow setting the speed of the animation when pressing the play button	Speed of animation can be set in grid display	An configuration option in the grid display has been added to set the speed of the animation	https://publicwiki.deltares.nl/display/FEWSDOC/D1+Grid+Display#id-01GridDisplay-movieFrameDurationMillis	<pre> <code>xml <movieFrameDurationMillis>100</movieFrameDurationMillis> </code> </pre>	
Plugin - Gui - Grid Display	FEWS-20108	EA	FEWS-18050 FFFS: Import Shape file on the fly and compute catchment average			https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-05SpatialDisplay-Extractingminmaxandmeanintimeseriesforanarea		
Plugin - Gui - Grid Display	FEWS-20106	EA	FEWS-18050 FFFS: Search functionality in Spatial Display					
Plugin - Gui - Grid Display	FEWS-21075	EA	FEWS-18050 FFFS-OC: Button in the Spatial Display time slider to move to last available time					

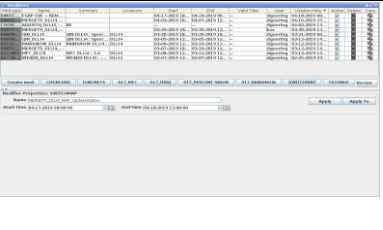
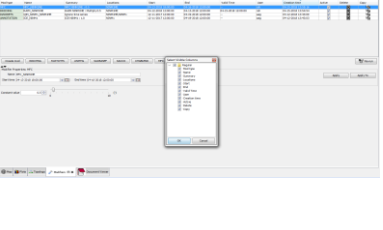
Delft-FEWS 2019.02 Solved Features

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Grid Display	FEWS-17861	EA	FEWS-18050 FFFS: Extend the Spatial Display thumbnails with sub-plots per ensemble member	Spatial display of an ensemble with multiple members contains a button to open the spatial ensemble thumbnails, to show all members at once. A selection for the grid display can be made by selecting the desired thumbnail.	When an ensemble with multiple members is configured in a grid plot a button for opening the spatial ensemble thumbnails becomes enabled so all members can be shown at once and a selection for the grid display can be made by selecting the desired thumbnail.	Selectingdifferentensemblemembers">https://publicwiki.deltares.nl/display/FEWSDOC/D5+Spatial+Display#id-D5SpatialDisplay>Selectingdifferentensemblemembers		
Plugin - Gui - Grid Display	FEWS-17962	Deltares	FEWS-19648 Streaming grid data and gzip blob compression	Streaming Grid data Separation of the actual grid data and the time series meta data. Grid data is now stored in multiple separate columns at the same database row as the metadata. Reduction of 90% of the number of database rows required for storing grids. One TB of grid data now only requires 300.000 rows. Grid data is now read from the database on demand in chunks of 128 kB. One chunk holds at least the data for one grid but is filled up to 128KB with grids for other time steps and time series. The chunk required for the next grid time step is preloaded in the background. Improved concurrency. Reading grid data is no longer blocking other threads. Grid data that becomes invisible due an overwrite is no longer read. Data hierarchy transformation only reads the selected grids.	Streaming Grid data (continued) Amalgamate is much faster in case of overlapping grid data. Instant database lister. Only the metadata is read from the database. Instant grid display. Grid appears instantly including the colored slider when switching nodes. Less database peak loads. The load on the database is spread over the duration of the grid processing workflow Better use of memory and disk caches for both scalar and grid data. Invisible and pre-loaded grid data is no longer exhausting the caches. GZIP compression. Up to 50% smaller time series rows for both scalars and grids. This GZIP compression is applied on top of the existing FEWS compression methods. Conversion Conversion of existing rows is optional and is done in the background. OC/FS/SA are working normally while conversion is in process. Conversion can be stopped and continued at any moment.			
Plugin - GUI - IFD - Dataviewer	FEWS-21035	EA	FEWS-18050 FFFS: Threshold Icons on Forecast Tree					
Plugin - GUI - IFD - Forecasts	FEWS-20890	NWS	FEWS-20886 NWS: #45894 Color coding segments on the Forecasts (Navigation) Panel	Customising the text- and background colours of topology tree nodes	Custom colors You can configure the text and background color(selected and non-selected). These are optional fields, you can configure all, none, or some. These properties can be configured on individual nodes and group nodes.	https://publicwiki.deltares.nl/display/FEWSDOC/24+Topology#id-24Topology-Customcolors	<pre>(code:xml) <?xml version="1.0" encoding="UTF-8"> <!-- edited with XMLSpy v2009 sp1 (http://www.altova.com) by ICT (Stichting Deltares) --> <?xml xmlns="http://www.widelft.nl/FEWS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelft.nl/FEWS http://FEWS.widelft.nl/schemas/version1.0/topology.xsd"> <enableAutoRun/true></enableAutoRun> <nodes id="Tasks"> <node id="Import" name="Import"> <workflowid=Import/> <workflowid=Import/> <backgroundSelectionColor>forest</backgroundSelectionColor> <backgroundNonSelectionColor>pale</backgroundNonSelectionColor> </node> <node id="Transformation" name="Transformation"> <workflowid=Transformation/> <workflowid=Transformation/> <textSelectionColor>gray18</textSelectionColor> <textNonSelectionColor>dark salmon</textNonSelectionColor> </node> <node id="CanadaMeteo" name="CanadaMeteo"> <workflowid=CanadaMeteo/> <workflowid=CanadaMeteo/> <backgroundSelectionColor>light yellow3</backgroundSelectionColor> <backgroundNonSelectionColor>turquoise3</backgroundNonSelectionColor> <textSelectionColor>yellow</textSelectionColor> <textNonSelectionColor>red</textNonSelectionColor> </node> <node id="NoosImport" name="NoosImport"> <workflowid=NoosImport/> <workflowid=NoosImport/> <textSelectionColor>yellow</textSelectionColor> <backgroundNonSelectionColor>light pink2</backgroundNonSelectionColor> </node> <node id="RotterdamPort" name="RotterdamPort"></pre>	
Plugin - GUI - IFD - Forecasts, Plugin - Gui - Tabular Config Files Display	FEWS-20891	NWS	FEWS-20886 NWS: #27156 Extend the Tabular Config Files Display to update depending on selected node in Topology	Tabular Config File Display connected to Forecast Tree	The Tabular Config File Display is now connected to Forecast Tree. Using locationId's in the topology.xml will show the related tabular config files.	https://publicwiki.deltares.nl/display/FEWSDOC/20+Tabular+Config+Files+Display		
Plugin - GUI - IFD - Forecasts	FEWS-21373	Ea	FEWS-18050 FFFS-OC: Filter log messages for taskrunID in forecast tree node	Forecast Tree (topology tree) - ability to show the log messages for a segment selected in the forecast tree	To show the log-messages, check first if the System Monitor is open. Then select a segment and enter "ctrl L", or choose "Show in Log Browser" from popup menu (right mouse click) Log Brouwer becomes visible and shows log-messages associated with the task run of the selected segment. The menu item "Show in Log Browser" is disabled if the segment is not run yet.	https://publicwiki.deltares.nl/display/FEWSDOC/23+Interactive+Forecasting+Display		
Plugin - GUI - IFD - Forecasts	FEWS-19958	EA	FEWS-18050 FFFS: Link Display ID to Topology Node					
Plugin - GUI - IFD - Forecasts	FEWS-21144	EA	FEWS-18050 FFFS: Run forecasts non-approved from the Forecast Tree		It now possible to select in the IFD if a forecast should be approved automatically or not. The details are described at the wiki https://publicwiki.deltares.nl/display/FEWSDOC/24+Topology#id-24Topology-Approveforecastautomatically			
Plugin - GUI - IFD - Forecasts	FEWS-20267	EA	FEWS-18050 FFFS: Add topology panel to mainPanel					
Plugin - GUI - IFD - Forecasts, Plugin - Module - Thresholds	FEWS-20361	EA	FEWS-18050 FFFS: Link threshold display to Explorer/IFD selection	System wide Threshold Events display will automatically filter on all locations from the selected IFD node. When there are no explicit locations linked to a node, there will be no filtering.	System wide Threshold Events display will automatically filter on all locations from the selected IFD node. When there are no explicit locations linked to a node, there will be no filtering.	https://publicwiki.deltares.nl/display/FEWSDOC/29+System+Wide+Threshold+Events+Display#id-29SystemWideThresholdEventsDisplayIFD		
Plugin - GUI - IFD - Forecasts	FEWS-20201	Deltares	FEWS-18050 FFFS: Forecast Tree Status is not correct when task is killed	Whenever a task is killed it will show as failed in the IFD	Whenever a task is killed it will show as failed in the IFD	https://publicwiki.deltares.nl/display/FEWSDOC/10+Interactive+forecast+display		

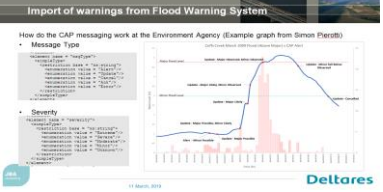
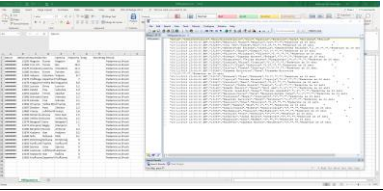
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Manual Forecast	FEWS-20202	EA	FEWS-18050 FFFS: Manual Forecast workflow list as Tree	Manual Forecast - workflows are displayed in a tree instead of in a combo box	The workflow descriptors can be optionally grouped in WorkflowDescriptors.xml, using the optional configuration element 'workflowNode'. See an example in WorkflowDescriptors1.xml and WorkflowDescriptors2.xml (both files belong to single FEWS config) Manual Forecast dialog shows then the workflows in a tree on the left side of Manual Forecast window If the workflow nodes are not configured, the tree displays the workflows in a simple list. Once configured in one or more WorkflowDescriptors.xml files, only the workflows referenced in workflowNode's are displayed in ManualForecast dialog. To show all workflows, use F12-> Show all workflows The workflow info can be viewed in the workflow tool tip (previously it was a info button)	https://publicwiki.deltares.nl/display/FEWSDOC/D6+Manual+Forecast+Display		
Plugin - Gui - Map	FEWS-20540	EA	FEWS-18050 Disable map zoom and pan animation when using remote desktop or citrix	Quicker response when zooming or panning maps when using remote desktop.		https://publicwiki.deltares.nl/display/FEWSDOC/D2+FEWS+Explorer+id-02FEWSExplorer+MapDisplay		
Plugin - Gui - Map	FEWS-20807	EA	FEWS-18050 FFFS. Show threshold icon based on last instead of max value for filter in data viewer				<pre><code>xml <filter id="Worthing_Fluvia_FMP" name="FMP Forecasts"> <thresholdIconsBasedOnLastNonMissingValue=true/> </thresholdIconsBasedOnLastNonMissingValue> </code></pre>	
Plugin - Gui - Product Information	FEWS-19951	EA	FEWS-18050 FFFS: New Forecast Information Display			https://publicwiki.deltares.nl/display/FEWSDOC/D2+Forecast+Product+Information+Panel		
Plugin - Gui - System Monitor	FEWS-20123	Deltares	FEWS-19650 FFFS: User ID should have Operator Client or Configuration Manager info attached	Live system status monitor table shows the user id of logged in users + session type (OC, CM, FS etc.)	Live system status monitor table shows the user id of logged in users + session type (OC, CM, FS etc.)	https://publicwiki.deltares.nl/display/FEWSDOC/D8+System+Monitor		
Plugin - Gui - Tabular Config Files Display	FEWS-21117	NWS	FEWS-20886 Add lock button to Tabular Config File Display	Allow locking the Tabular Config File Display	A lock button has been added to the tabular config file display the will allow locking the selection.	https://publicwiki.deltares.nl/display/FEWSDOC/D20+Tabular+Config+Files+Display		
Plugin - Gui - Threshold Display	FEWS-20358	EA	FEWS-18050 FFFS: Link Threshold crossings to Target Area Codes	Thresholds levels from thresholdValueSets can be linked to warning areas by <targetLocationIdFunction>	Thresholds levels from thresholdValueSets can be linked to warning areas by <targetLocationIdFunction>	https://publicwiki.deltares.nl/display/FEWSDOC/D10+Threshold+Value+Set+id-10Threshold+Value+Sets+target+Location+Id+Function	<pre><code>xml <thresholdValueSet id="QT Thresholds" name="QT Thresholds"> <levelThresholdValue> <levelThresholdId=G2G_QMED/> <levelThresholdId=> <valueFunction=@G2G_QMED/> <targetLocationFunction=@TARGET_LOCATION_ID/> </levelThresholdValue> </code></pre>	
Plugin - Gui - Time Series	FEWS-18543	SEQWater	FEWS-10487 Seqwater: Scatter Plot with two different parameters for 2 locations in Display Group	Possibility to plot 2 time series with different location and parameter against eachother, and only show a marker for the last time step	Possibility to plot 2 time series with different location and parameter against eachother, and only show a marker for the last time step	https://publicwiki.deltares.nl/display/FEWSDOC/D3+Display+Groups+id-03Display+Groups+Shows+Scatter+Plot		

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Time Series	FEWS-21045	RWS	DisplayGroups: add visibleLegend, visibleTable to all subplot elements	Options visibleLegend, visibleTable, visiblePlot are now available in clustered bar display groups too	Options visibleLegend, visibleTable, visiblePlot are now available in clustered bar display groups too.	https://publicwiki.deltares.nl/display/FEWSDOC/D3+Display+Groups#id-03DisplayGroups-line	<pre>(code.xml) <displayGroup names="bars"> <display name="clusteredBars"> <subplot> <clusteredBars axis="left"> <bar> <color>blue</color> <visibleLegend=false/> <visiblePlot=false/> <timeSeriesSet> <moduleInstanceId=import/> <valueType=scalar/> <parameterId=H.m/> <locationId=LocA/> <timeSeriesType=external historical/> <timeStep unit="hour"/> <relativeViewPeriod unit="hour" start="-12" end="12"/> <readWriteMode>editing visible to all future task runs</readWriteMode> </timeSeriesSet> </bar> <bar> <color>red</color> <visibleTable=false/> <label=Rated Discharge/> <timeSeriesSet> <moduleInstanceId=import/> <valueType=scalar/> <parameterId=Q.m/> <locationId=LocA/> <timeSeriesType=external historical/> <timeStep unit="hour"/> <relativeViewPeriod unit="hour" start="-12" end="12"/> <readWriteMode>editing visible to all future task runs</readWriteMode> </timeSeriesSet> </bar> </subplot> </displayGroup></pre>	
Plugin - Gui - Time Series	FEWS-20749	RWS	Extra option for displaying label in graph legend	Extra option for customising the label in graph legend	<p>legendTextFunction</p> <p>With the use of legendTextFunction you can customise what information you wish to see on the legend of a graph plot.</p> <p>Use the following tags in the legendformat, they will be automatically replaced with the correct values:</p> <p>%LOCATION_ID% - %LOCATION_NAME% - %LOCATION_SHORTNAME% - %PARAMETER_ID% - %PARAMETER_NAME% - %FORECAST_INDEX% - %MODULE_INSTANCE% - %ENSEMBLE_ID% - %ENSEMBLE_MEMBER_ID% - %QUALIFIER_NAME% - %ADDITIONAL_PREFIX% - %HISTORICAL_EVENT_NAME% - %MODIFIED% - %CUSTOM_LABEL_EXTENSION% - %FUNCTION_LABEL% - %POSTPROCESSING%</p> <p>Tags are case sensitive. If a tag configured that does not exist in the given time series, it will be replaced by an empty string. Example:</p> <p><legendTextFunction>%PARAMETER_NAME% %ENSEMBLEMEMBERID% measured at %LOCATION_NAME%/</legendTextFunction> → Water level measured at Lobith H105</p> <p>Legendformat does not work with timeseries header label function.</p> <p>showValueInLegend works the same with or without legendFormat.</p>	https://publicwiki.deltares.nl/display/FEWSDOC/D2+Time+Series+Display+Configuration#id-02TimeSeriesDisplayConfiguration-legendTextFunction	<pre>(code.xml) <legendTextFunction>%PARAMETER_NAME% measured at %LOCATION_NAME%/</legendTextFunction> <legendTextFunction>%LOCATION_SHORTNAME% ; %PARAMETER_ID%</legendTextFunction> <legendTextFunction>%LOCATION_SHORTNAME% %PARAMETER_NAME%/</legendTextFunction> <code></pre>	
Plugin - Gui - Time Series	FEWS-19649	Quebec	FEWS-16663 Québec: ability to have thresholds displayed on both left/right axes	TimeSeriesDisplay – ability to have thresholds displayed on both left and right axes	<p>Thresholds can be displayed on the left axis, or on the right axis, or on both. By default the thresholds are displayed on the left axis.</p> <p>To change it, an option 'thresholdAxis' can be used in DisplayGroups.xml</p> <p>Configure <thresholdAxis>right</thresholdAxis> if only the right axis should have thresholds, and <thresholdAxis>both</thresholdAxis> if both left and right axes should have thresholds</p> <p>Picture plot1.png shows a plot created with the config example below. Option <thresholdAxis>both</thresholdAxis> creates plot as shown in picture plot2.png</p>	https://publicwiki.deltares.nl/display/FEWSDOC/D3+Display+Groups#id-03DisplayGroups-thresholdAxis	<pre>(code.xml) <plot id="StageOnLeftAxis_DischargeOnRightAxis"> <subplot> <thresholdAxis=right/> <timeSeriesSet> <moduleInstanceId=import/> <valueType=scalar/> <parameterId=H.m/> <locationSetId=AllLocations/> <timeSeriesType=external historical/> <timeStep unit="hour"/> <relativeViewPeriod unit="hour" start="-12" end="0"/> <readWriteMode>read only</readWriteMode> </timeSeriesSet> </line> <line> <axis=right/> <timeSeriesSet> <moduleInstanceId=import/> <valueType=scalar/> <parameterId=Q.m/> <locationSetId=AllLocations/> <timeSeriesType=external historical/> <timeStep unit="hour"/> <relativeViewPeriod unit="hour" start="-12" end="0"/> <readWriteMode>read only</readWriteMode> </timeSeriesSet> </line> </subplot> </plot></pre>	
Plugin - Gui - Time Series	FEWS-20889	NWS	FEWS-20886 NWS: #60808 Config option to size (enlarge) Plot Thumbnail displays	Thumbnail graph are now cached and only recreated when visible and size or contents changed	Thumbnail graph are now cached and only recreated when visible and size or contents changed	https://publicwiki.deltares.nl/display/FEWSDOC/D1+FEWS+Explorer		

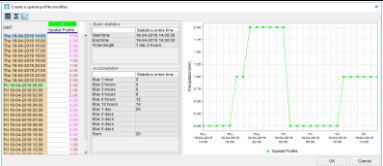
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Time Series	FEWS-20678	MD&A	showing rating curves together with observations of Q-H relation (R_302)	Rating Curve Display – displaying observations along with the rating curve	To show the observations in rating curve display, follow these steps: - open TimeSeriesDialog with the time series you want to see along with the rating curve - open rating curve display for required location - select option "Show selected stage and discharge as scatter plot" from the drop down menu of the button " Rating Curves" (on the TSD toolbar) - select one stage series and one discharge series from the time series table or from the chart legend. The selected series will be shown as scatter plot along the rating curve. All values in the zoom period will be displayed. The number of values shown can be changed by changing of the zoom period. - Note: the selected series must be stage and discharge, it means the series parameter must be from the same parameter group as the rating curve parameters configured in Parameters.xml. Other series selection will be ignored.	https://publicwiki.deltares.nl/display/FEWSDOC/D4+Data+Display+and+Data+Editor+id:04DataDisplayandDataEditor-Ratingcurve		
Plugin - Gui - Time Series	FEWS-17892	GO-FEWS	FEWS-17812 Create on-the-fly expression series based on other on-the-fly expression series	Expression series can now be created based on other expression series as source	Expression series can now be created based on other expression series as source	https://publicwiki.deltares.nl/display/FEWSDOC/3D+Visibility+Dialog+and+On+The+Fly+Expression+Series+id:3DVisibilityDialogandOnTheFlyExpressionSeries-Creatingexpressionseriesbasedonotherepressionseries(since2019.02)		
Plugin - Gui - Time Series	FEWS-19656	EA (UK)	FEWS-18050 FFFS: Make plots in displaygroups depend on permissions					
Plugin - Gui - Time Series	FEWS-20373	EA	FEWS-18050 FFFS: Rating curve table and graph must show multiple ratings when these exist	Rating curve display and multiple rating curves for one location	Location might have multiple rating curves with different qualifiers. In this case the rating display shows a list where the specific rating curve can be selected	https://publicwiki.deltares.nl/display/FEWSDOC/D4+Data+Display+and+Data+Editor+id:04DataDisplayandDataEditor-Ratingcurve		
Plugin - Gui - Time Series	FEWS-20593	EA	FEWS-18050 FFFS-SA: Scaling of rating must only include reliable values.	Rating curve display – option to show all rating curve values or only reliable and doubtful values	Use menu item "Scale to show unreliable data" to switch between showing all rating curve values or reliable and doubtful values only. This menu item can be found under the rating curve button, see the attached picture. By default all rating curve values are shown. If the rating curve has only unreliable values, then all values are shown as well.	https://publicwiki.deltares.nl/display/FEWSDOC/D4+Data+Display+and+Data+Editor+id:04DataDisplayandDataEditor-ScaletoShowunreliableData		
Plugin - Gui - Time Series	FEWS-21445	EA	FEWS-18050 FFFS: Time series display default datum (mAOD) configurable by location				<code><code>xml</code> <?xml version="1.0" encoding="UTF-8"?> <TimeSeriesDisplay xmlns="http://www.wildelf.nl/FEWS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.0" xsi:schemaLocation="http://www.wildelf.nl/FEWS http://FEWS.wildelf.nl/schemas/version1.0/TimeSeriesDisplay.xsd"> <defaultViewPeriod unit="day" start="-2" end="2"/> <globalDatumLocationSetId>Rivermouth_stations</globalDatumLocationSetId> </code></code>	
Plugin - Gui - Time Series	FEWS-21341	EA	FEWS-18050 FFFS: ModuleinstanceID Mapping with a pattern				<code><code>xml</code> <moduleInstanceIDPatternMapping idPattern="Forecast_*"> <description>Forecast</description> </moduleInstanceIDPatternMapping> </moduleInstanceIDMappings></code>	
Plugin - Gui - Time Series	FEWS-20480	EA	FEWS-18050 FFFS: Add visibilityGroups to plot in displayGroups					

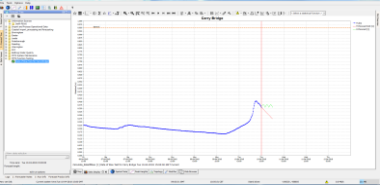
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Gui - Time Series	FEWS-19431	BC Hydro	FEWS-11235 Making a plot with two Y axes does not work with time series that are similar	TSD plot allows the same parameters on the left and right axis	Attached picture SameParameterOnLeftAndRightAxis.png shows the plot created with the config example	https://publicwiki.deltares.nl/display/FEWSDOC/03+Display+Groups#id-03DisplayGroups:subplot	<pre> <code> <plot id="SameParameterOnLeftAndRightAxis"> <subplot> </subplot> </code> </pre>	
Plugin - Gui - Time Series Modifier	FEWS-20907	NWS	FEWS-20886 NWS: #62737 Provide plot and table for reverseOrderModifiers	MergeSimpleModifiers-reverseOrderModifiers show the time series to switch	MergeSimpleModifiers-reverseOrderModifiers show the time series to switch These time series match the input variables configured in the transformation <merge>simple</merge>. First time series in the table matches the first input variable, second time series matches the second input variable. When the modifier applies only to one location, the display shows two time series, see an example picture SwitchTs_singleLocation.png When the modifier applies to multiple locations, the display shows the time series for multiple locations, see an example picture SwitchTs_multipleLocation.png	https://publicwiki.deltares.nl/display/FEWSDOC/25+Modifier+Types#id-25ModifierTypes:Reverseordermodifiers		
Plugin - Gui - Time Series Modifier, Plugin - Module - Modifiers (ModuleParameters), Plugin - Module - Modifiers (TimeSeries)	FEWS-20887	NWS	FEWS-20886 NWS: #62489 Request to have extra column for modifier creator (original user name)	ModifiersDisplay – new column 'Creator' in the modifiers table	Column 'Creator' shows the name of the user that has created the modifier. When an another user copies or edits this modifier, the original creator will be retained and the user will be updated. Attached ModifiersDisplay.png shows some examples When you open an existing Fewes application in 2019.01, new columns added in 2019.01 (Creator, Priority) are not visible: Use modifiers table popup menus "Restore default layout" or "Select columns" to show the new columns.	https://publicwiki.deltares.nl/display/FEWSDOC/08+Time+Series+Modifiers		
Plugin - Gui - Time Series Modifier	FEWS-21138	EA	FEWS-18050 Add option to show modifiers of current grid plot in modifier panel	Add option to show modifiers of current grid plot in the modifier panel	In previous versions, the modifiers shown in the modifiers panel were always based on the selected node in the forecast tree. Since there are now spatial modifiers which can be created through the spatial display (instead of the modifiers panel), the modifiers panel is able to display all modifiers for the current grid plot. When spatial modifier mode is active, the panel will show all modifiers of the grid plot on which the modifier mode was activated. When spatial modifier mode is not active the modifier panel behaves the same as before, showing all modifiers for the currently selected node in the forecast tree. A title was added to the modifiers table on the modifiers panel, to indicate for which plot / node the modifiers are shown.			
Plugin - Gui - Time Series Modifier	FEWS-20977	Deltares	FEWS-18050 FFFS-SA: Comboboxen in modifiers moeten geen drop-down label hebben.	The original values in the attribute modifiers panel dont have a combobox anymore. Because it cannot be edited.	The original value of an attribute should never have a combobox in the display because it cannot be edited.			
Plugin - Gui - Time Series Visibility	FEWS-21177	Deltares	Investigate what would be necessary to make expressions work with comma decimal separator.	Use ; in if statements of expression series when ; is decimal separator	Use ; in if statements of expression series when , is decimal separator	https://publicwiki.deltares.nl/display/FEWSDOC/30+Visibility+Dialog+and+On+The+Fly+Expressions+Series		
Plugin - Gui - Web Browser Display	FEWS-20362	Deltares	FEWS-19373 Chromium embedded framework (CEF) update warning	The Chromium embedded web browser package has been updated to Chromium version 73.0.3683	The Chromium embedded web browser display uses the JCEF package (Java Chromium Embedded Framework) which allows Java developers to embed the Chromium web browser in their applications. The JCEF package is not automatically updated so a new build of this package has been made for both Windows and Linux platforms. The current JCEF package (dated 21-3-2019) uses Chromium version Chromium version 73.0.3683. (see also: https://bitbucket.org/chromiumembedded/java-cef)	https://publicwiki.deltares.nl/xv/QH4w		

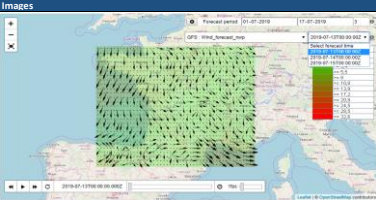
Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Module - Data Import	FEWS-20352	eThekweni Municipality (SA)	Improve CMEMS import with properties	Improve CMEMS import with properties	<p>CMEMS import was made easier by adding more property fields.</p> <p>The type of import should be configured using the DATA_TYPE property. DATA_TYPE should be set to "HOURLY" for hourly data. DATA_TYPE should be set to "DAILY" for daily data. DATA_TYPE should be set to "MONTHLY" for monthly data. Properties "product" and "service" are compulsory fields. Please fill them in exactly the same as it should be in the request url. (See the examples below) The product (i.e. "Product Identifier" and service (found in "Services tab") on CMEMS website) can be found in the product explorer on the Copernicus website: http://marine.copernicus.eu/services-portfolio/access-to-products/.</p>	https://publicwiki.deltares.nl/display/FEWSDOC/CMEMS	<pre>(code:xml) <?xml version="1.0" encoding="UTF-8"> <timeSeriesImportRun xmlns="http://www.widelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelft.nl/fews http://fevs.widelft.nl/schemas/version1.0/TimeSeriesImportRun.xsd"> <import> <general> <importType>Cmems</importType> <serverUri>http://nt.cmems-du.eu/motu-web/Motu?action=productdownload/<serverUri> <user>USERNAMES</user> <password>PASSWORD</password> <relativeViewPeriod unit="hour" starts="-24" end="0" startOverrulable="true"/> <idMapId>idImportCmems</idMapId> <unitConversionId>importUnitConversion</unitConversionId> <expiryTime unit="week" multiplier="500"/> </general> <properties> <string key="DATA_TYPE" value="HOURLY"></string> <string key="TICKET_URL" value="https://cmems-cs.cis.fr/csa/v1/tickets"/> <string key="product" value="global-analysis-forecast-phy-01-024-hourly-t-u-w-ssh"/> <string key="service" value="GLOBAL_ANALYSIS_FORECAST_PHY_001_024-TDS"/> </properties> <timeSeriesSet> <moduleInstanceId>import_E3D_Server</moduleInstanceId> <valueType>grid</valueType> <parameterId>Wind.u</parameterId> <locationId>CMEMS.L1</locationId> <timeSeriesType>external_historical</timeSeriesType> <timeStep unit="nonequidistant"/> <readWriteMode>add originals</readWriteMode> </timeSeriesSet> </import> </timeSeriesImportRun> </pre>	
Plugin - Module - Data Import	FEWS-21479	WRA	CapAlertTimeSeriesParser should not fail on files valid to CAP-v1.2.xsd					
Plugin - Module - Data Import	FEWS-20266	RWS05 Waterbeheer	Waterbeheer: import munisense grondwaterdata	New import: munisense grondwaterdata	<p>Data is imported from https://opendata.munisense.net. Example query:</p> <p>https://opendata.munisense.net/api/v2/wareco-water2/groundwaterwells/1082172/water_level_filters/d/query/presets/last_month</p> <p>Example data set:</p> <pre>(code) {"results":[{"timestamp":"2019-03-21T10:15:23.000+00:00","first_timestamp":1553164216716,"last_timestamp":1553164995278,"avg_manual_validation_state":1,"min_manual_validation_state":1,"max_manual_validation_state":1,"count":16,"avg_value":8.677,"min_value":8.389,"max_value":8.698},{"timestamp":"2019-03-21T11:15:23.000+00:00","first_timestamp":1553168033620,"last_timestamp":1553168033620,"avg_manual_validation_state":1,"min_manual_validation_state":1,"max_manual_validation_state":1,"count":1,"avg_value":8.7,"min_value":8.7,"max_value":8.7},{"timestamp":"2019-03-21T12:15:23.000+00:00","first_timestamp":1553176333620,"last_timestamp":1553176333620,"avg_manual_validation_state":1,"min_manual_validation_state":1,"max_manual_validation_state":1,"count":1,"avg_value":8.698,"min_value":8.698,"max_value":8.698},{"timestamp":"2019-03-21T13:15:23.000+00:00","first_timestamp":1553175233620,"last_timestamp":1553175233620,"avg_manual_val</pre>	https://publicwiki.deltares.nl/display/FEWSDOC/Munisense+import	<pre>(code:xml) <?xml version="1.0" encoding="UTF-8"> <timeSeriesImportRun xmlns="http://www.widelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelft.nl/fevs http://fevs.widelft.nl/schemas/version1.0/TimeSeriesImportRun.xsd"> <import> <general> <importType>MunisenseImport</importType> <serverUri>https://opendata.munisense.net/api/v2/wareco-water2/groundwaterwells/<serverUri> <user>XXX</user> <password>YYYY</password> <relativeViewPeriod unit="day" starts="-10" end="8" startOverrulable="true" endOverrulable="true"/> <idMapId>MunisenseImportIdMapper</idMapId> <importTimeZone> <timeZoneOffset>00:00</timeZoneOffset> </importTimeZone> </general> <instance parameterId="Tide" timeUnit="minute" unitCount="29"/> <timeSeriesSet> <moduleInstanceId>MunisenseImport</moduleInstanceId> <valueType>scalar</valueType> <parameterId>Tide</parameterId> <!-- Do not configure a qualifier here if you are using id-mapping --> <locationId>loc</locationId> <timeSeriesType>external_historical</timeSeriesType> <timeStep unit="hour" multiplier="1"/> <readWriteMode>add originals</readWriteMode> </timeSeriesSet> </import> </timeSeriesImportRun> </pre>	
Plugin - Module - Data Import	FEWS-20339	RWS	Matroos import: add an import type for get_netcdf.php	New import type MATROOS_NETCDF-CF_GRID and MATROOS_NETCDF-CF_TIMESERIES	<p>MATROOS_NETCDF-CF_GRID and MATROOS_NETCDF-CF_TIMESERIES first download the nc file from Matroos and then read the downloaded files.</p> <p>To read the downloaded file, MATROOS_NETCDF-CF_GRID uses imported type NETCDF-CF_GRID and MATROOS_NETCDF-CF_TIMESERIES uses import type NETCDF-CF_TIMESERIES</p> <p>Both import types support the following Matroos query: http://matroos.rws.nl/direct/get_netcdf.php?database=&source=&analysis=&timezone=&hindcast=</p> <p>The query fields 'database' and 'source' are mandatory, 'analysis', 'timezone' and 'hindcast' are optional. The values for the query fields should be configured in the <properties> section of the import module.</p> <p>The downloaded nc file is automatically deleted after import. If you want to keep it, add key 'keep_downloaded_file' to the <properties> section</p>	https://publicwiki.deltares.nl/pages/resumcdirectaction?articleId=141673416&articleId=67184&op=44?_afw=4&id=80&afw=1175097	<pre>(code:xml) <general> <importType>MATROOS_NETCDF-CF_GRID</importType> <serverUri>http://matroos.deltares.nl</serverUri> <idMapId>idMapGrid</idMapId> </general> <properties> <string key="database" value="maps2d"/> <string key="source" value="nh30_maps_ecmwf_det"/> </properties> (code) This example uses mandatory and optional fields: (code:xml) <general> <importType>MATROOS_NETCDF-CF_TIMESERIES</importType> <serverUri>http://matroos.deltares.nl</serverUri> <idMapId>idMapScalarNc</idMapId> </general> <properties> <string key="database" value="maps1d"/> <string key="source" value="fews_meren_eps_ijsselmeer"/> <bool key="add_current_time" value="true"/> <string key="timezone" value="GMT+1"/> <string key="hindcast" value="1"/> <bool key="keep_downloaded_file" value="true"/> </properties> </pre>	
Plugin - Module - Data Import	FEWS-21621	Morava	Extend the HDF importer for Serbian radar dataset	KNMI-Hdfs import type reads also Serbian HDFS file	<p>The reading applies to the Hdfs file h pacproba.h5 To read the grid from this file, the external parameter id "dataset1/data1/data" should be configured. The event date/time is read from attributes 'enddate' and 'endtime' of the variable "/dataset1/what/"</p>			

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Module - Data Import	FEWS-21429	Entidad Binacional Yacreta	New import for webservice data from CIH - Centro Internacional de Hidroinformática	New parser to import data from https://hidroinformatica.itaipu.gov.py/services/hidrometricaestacion/2019-07-01/2019-09-01/5?format=json .	The parser imports data from https://hidroinformatica.itaipu.gov.py/services/hidrometricaestacion/2019-07-01/2019-09-01/5?format=json . The two dates in the url come from the view period. The external location ID should be the same as in the url (5 in the case). Response example: (code) { "fecha": "2019-09-01 10:00:00 PYST", "nivel": 9.6, "conductividad": null, "ph": null, "turbidez": null, "od": null, "tempagua": null } (code) Time is parsed from the field "fecha", data is parsed from the field "nivel". All other fields are ignored.	https://publicwiki.deltares.nl/display/FEWSDOC/Hidroinformatica+import	(code:xml) <?xml version="1.0" encoding="UTF-8"?> <timeSeriesImportRun xmlns="http://www.wideft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wideft.nl/fews http://fews.wideft.nl/schemas/version1.0/TimeSeriesImportRun.xsd"> <import> <general> <importType>Hidroinformatica-ImportType</importType> <serverUri>https://hidroinformatica.itaipu.gov.py/services/hidrometricaestacion/</serverUri> <user>user</user> <password>password</password> <startDateTime date="2019-07-01"/> <endDateTime date="2019-09-01"/> <idMapId-Hidroinformatica-IdMapId> <importTimeZone> <timeZoneOffset>+02:00</timeZoneOffset> </importTimeZone> </general> <timeSeriesSet> <moduleInstanceid-Hidroinformatica-ModuleInstanceid> <valueType>float</valueType> <parameterId-parameter-ParameterId> <locationId-Loc/LocationId> <timeSeriesType>external historical</timeSeriesType> <timeStep unit="nonequidistant" /> <readWriteMode>add originals</readWriteMode> </timeSeriesSet> </import> </timeSeriesImportRun> (code)	
Plugin - Module - Data Import	FEWS-19823	EA	FEWS-18050 FFFS: Import comments from EA XML files	The importer for EA XML has been extended to import comments.	The UK Environmental Agency (EA) uses a custom XML format for transfer of data. This format can include comments that apply to a specific period. The functionality of the EA XML parser has been extended to import these comments to Delft FEWS.	https://publicwiki.deltares.nl/x/YTY4BQ		
Plugin - Module - Data Import	FEWS-14312	EA	FEWS-18050 Develop Import from CAP Webservice for communication with WARNING system	Import types CapAlerts and CapAlert	These import types import alerts from CAP Webservice of EA Warning system and store the alerts in the time series. *CapAlerts* reads first all links to real CAP files, and then imports the alerts from these CAP files. (code:xml) <general> <importType>CapAlerts</importType> <serverUri>https://environment.data.gov.uk/flood-alerts.atom</serverUri> <idMapId-IdMapAlert-IdMapId> </general> (code) Configured serverUri should be a link to the list of url's *CapAlert* reads the alerts from the single CAP file. (code) <general> <importType>CapAlert</importType> <serverUri>https://cap.xml.prd.defra.cloud/message/0768e13b0ab7aa4526c35a06b653b37e</serverUri> <idMapId-IdMapAlert-IdMapId> </general> (code) Configured serverUri should be a link to the CAP file. CapAlert is useful when there are no alerts (anymore) on the site with links, and we need to import some old alerts, for example as a test.	https://publicwiki.deltares.nl/display/FEWSDOC/CAP+Alerts		
Plugin - Module - Data Import	FEWS-21165	EA	FEWS-18050 FFFS: Skip Missing values on importing				(code:xml) <import> <general> <importType>Pi</importType> <folders>./</folders> <flagConversionsId>PiImportFlagConversions</flagConversionsId> <importTimeZone> <timeZoneOffset>+01:00</timeZoneOffset> </importTimeZone> <skipMissingValues>true</skipMissingValues> <expiryTime multiplier="1" unit="hour"/> </general>	
Plugin - Module - Data Import	FEWS-20169	Deltares	FEWS-18050 FFFS: Improve performance Import (compressed) NetCDF grids	Performance of netcdf cf grid import improved for large datasets by reading more data at once	Performance of netcdf cf grid import improved for large datasets by reading more data at once	https://publicwiki.deltares.nl/display/FEWSDOC/NETCDF-CF-GRID		
Plugin - Module - Data Import	FEWS-21640	Deltares	FEWS-21449 CSV reader does not correctly handle linebreak within a field					
Plugin - Module - Data Import	FEWS-19420	Aa en Maas	Temporary import without Confile					

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Module - General Adapter	FEWS-21893		FEWS-18050 FFFS-SA: Filter ID mapping with additional location attribute				<pre>(code:xml) <?xml version="1.0" encoding="UTF-8"?> <idMap xmlns="http://www.widelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelft.nl/fews http://www.widelft.nl/schemas/version1.0/IdMap.xsd" version="1.1"> <locationIdFunction internalLocationSet="Meteo Stations" externalLocationFunction="@region@" externalLocationFunctionLookupAttributeId="lookup" externalLocationFunctionLookupText="model-a"/> </idMap> (code) (code:xml) <?xml version="1.0" encoding="UTF-8"?> <idMap xmlns="http://www.widelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.widelft.nl/fews http://www.widelft.nl/schemas/version1.0/IdMap.xsd" version="1.1"> <function internalLocationSet="Meteo Stations" internalParameter="Q,m" externalLocationFunction="@region@" externalLocationFunctionLookupAttributeId="lookup" externalLocationFunctionLookupText="model-a" externalParameterFunction="PAR@region@"/> </idMap></pre>	
Plugin - Module - General Adapter	FEWS-20149	RWS	Possibility to store intermediate restarts from a single run with various TO and distinguish between forecast states and hindcast states	Added <backupWarmStateModuleInstanceId> Different module instance id used for finding warm state, when original warm state can't be found	Added <backupWarmStateModuleInstanceId> Different module instance id used for finding warm state, when original warm state can't be found	https://public.wiki.deltares.nl/display/FEWSDOC/D5+General+Adapter+ModuleId-D5GeneralAdapterModule-backupWarmStateModuleInstanceId	<pre>(code:xml) <stateSelection> <warmState> <stateStartPeriod unit="hour" start="96" end="6"/> <insertColdState=true/> </warmState> <backupWarmStateModuleInstanceId=backupWarmStateModuleInstanceId> </stateSelection></pre>	
Plugin - Module - General Adapter	FEWS-20517	EA	FEWS-18050 FFFS: Ignore missing locationSets in General Adapter burninprofile				<pre>(code:xml) <burnInProfile> <length multiplier="4" unit="hour"/> <ignoreNonExistingLocationSets=true/> </burnInProfile></pre>	
Plugin - Module - General Adapter	FEWS-20848	EA	FFFS: Ignore missing locationSets in General Adapter when importing series				<pre>(code:xml) <importTimeSeriesActivity> <importFile=E:\VAP.xml/> </importTimeSeriesActivity> <timeSeriesSet> <timeSeriesSet> <moduleInstanceid=ExportActivityTimeSeries/moduleInstanceid> <valueType=scalar/> <parameterId=E_metroffice/> <locationId=0X.E7842/> <timeSeriesType=external historical/> <timeStep unit="second" multiplier="900"/> <relativeViewPeriod unit="hour" start="0" end="2"/> <readWriteMode=readOnly/> </timeSeriesSet> </timeSeriesSet> <ignoreNonExistingLocationSets=true/></pre>	
Plugin - Module - General Adapter	FEWS-20444	EA	FEWS-18050 Allow GeneralAdapter to constrain array-type burn-in initial values		Lookup initial value for specific model in case the initial value attribute contains a different value for each model		<pre>(code:xml) <timeSeries> <parameterId=H_obs/> <locationSetId=locationInitialValueAttSet/> <initialValueAttributeId=initialValues/> <lookupAttributeId=modelName/> </timeSeries></pre>	
Plugin - Module - Modifiers (ModuleParameters)	FEWS-17004	NWS	FEWS-20886 NWS: #34173 Multiple catchment modifiers with templates	A single module parameter template can now be used for multiple catchment modifiers	The usage templates for multiple catchment modifiers is improved. A single template can now be used if a modifier can be applied to multiple catchment in a catchment.		<pre>(code:xml) <timeSeries></pre>	
Plugin - Module - Modifiers (TimeSeries)	FEWS-20888	NWS	FEWS-20886 NWS: #53507 SACCO initial slider position should match the value	The initial slider position now matches the the numerical value after initial startup of the display	The initial slider position now matches the the numerical value after initial startup of the display.			

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Module - Reports	FEWS-19817	SEQWater	FEWS-10487 Add <timeseries> in ReportModule	GeneralCsv export: ability to export ensemble and ensemble member	By default the ensemble member index is exported. To export member id's, use an option <ensembleMemberFormat>name</ensembleMemberFormat> in the general section of the time series export module. An example : (code:xml) <general> <exportType>generalCsv</exportType> <folder>EXPORT_FOLDERS</folder> <exportFileName> <name>ExportGeneralCsv.csv</name> </exportFileName> <table> <dateTimeColumn name="DateTime" pattern="yyyy-MM-dd HH:mm"/> <locationColumn name="Location"/> <parameterColumn name="Parameter"/> <ensembleMember name="Ensemble"/> <ensembleMemberColumn name="Ensemble Member"/> <valueColumn name="Value"/> </table> <ensembleMemberFormat>name</ensembleMemberFormat> </general> (code)	https://publicwiki.deltares.nl/display/FEWSDOC/General+CSV+Export		
Plugin - Module - Spatial Modifiers	FEWS-21541	EA	FEWS-18050 Add statistics to spatial profile modifier panel	Add time length and moving accumulation max statistics, add statistics to spatial profile editor	Two new descriptive statistical functions have been added: "timeLength" and "movingAccumulationMax". The "timeLength" statistic states the length of the time series, for example "1 day 3 hours". The "movingAccumulationMax" statistic can be given several time spans for which the maximum of the moving accumulation is reported. A statistics panel has been added to the spatial profile modifier editor. The descriptive statistics included in this statistics panel can be configured through the ModifierTypes.xml (and differ from the descriptive functions configured in the TimeSeriesDisplayConfig.xml).	https://publicwiki.deltares.nl/display/FEWSDOC/25+ModifierTypesId-25ModifierTypes-SpatialProfileModifier	(code:xml) <spatialProfileModifier id="SpatialProfileIE" name="Spatial Profile"> <exportTime unit="day" multiplier="2"/> <userDefinedDescriptionField id="Comment" descriptionField="Comment"/> <timeSeries> <moduleInstanceId>import_NWP_Mediumrange</moduleInstanceId> <qualifier>BE</qualifier> </timeSeries> <descriptiveFunctionGroup> <descriptiveFunctionGroup name="Basic statistics"> <descriptiveFunction function="startTime" ignoreMissings="true"/> <descriptiveFunction function="endTime" ignoreMissings="true"/> <descriptiveFunction function="timeLength" ignoreMissings="true"/> </descriptiveFunctionGroup> <descriptiveFunctionGroup name="Accumulation"> <descriptiveFunction function="movingAccumulationMax" ignoreMissings="true"> <timeSpan unit="hour" multiplier="1"/> <timeSpan unit="hour" multiplier="2"/> <timeSpan unit="hour" multiplier="3"/> <timeSpan unit="hour" multiplier="4"/> <timeSpan unit="hour" multiplier="6"/> <timeSpan unit="hour" multiplier="12"/> <timeSpan unit="hour" multiplier="24"/> <timeSpan unit="hour" multiplier="48"/> <timeSpan unit="hour" multiplier="72"/> <timeSpan unit="hour" multiplier="96"/> <timeSpan unit="hour" multiplier="120"/> </descriptiveFunction> <descriptiveFunction function="sum" ignoreMissings="true"/> </descriptiveFunctionGroup> </descriptiveFunctionGroup> </spatialProfileModifier>	
Plugin - Module - Spatial Modifiers	FEWS-21286	EA	FEWS-18050 Allow setting all modifier properties in spatial modifier creation dialog	Use modifier properties panel in spatial modifier creation dialog	The spatial modifier creation dialog contains the same modifier properties panel as is shown when a new modifier is created or a modifier is edited in the modifiers panel. This allows setting all modifier properties (like user defined description fields) for spatial modifiers through the spatial display when creating them, instead of having to navigate to the modifiers panel and edit them in later.	https://publicwiki.deltares.nl/display/FEWSDOC/DS+Spatial+DisplayId-DS+Spatial+Display-ModifierProperties		
Plugin - Module - Thresholds	FEWS-20356	EA	FEWS-18050 FFFS: Allow usage of multivalued attributes for Thresholds	Multivariate threshold transformation added that can group inputs by locationSet	Multivariate threshold transformation added that can group inputs by locationSet. For each locationSet can be specified which location attribute should be used to determine the threshold value and how many time series should cross their threshold	https://publicwiki.deltares.nl/display/FEWSDOC/Multivariate+Alerting+HyFS		
Plugin - Module - Transformation	FEWS-19890	EA	FEWS-18050 FFFS: New transformation for Multiple Linear Regression		A new transformation Multiple linear regression is available. This transformation can be used to calculate a value by using a linear regression equation. The input values (time series, factor and constant value) will be defined by using location attributes. More details can be found here: https://publicwiki.deltares.nl/display/FEWSDOC/Multiple+Linear+Regression			
Plugin - Module - Transformation	FEWS-20833	EA	FEWS-18050 FFFS: multipleVariateThresholds: additional requirements / some modifications					
Plugin - Module - Transformation	FEWS-18490	EA	FEWS-18050 FFFS: Use qualifiers in rating curve and seasonal rating curves					

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Plugin - Module - Transformation	FEWS-21277	EA	FEWS-18050 Allow specifying property for default value in serial interpolation	Allow use of property-tags (\$) in default/Value element in default interpolationSerial	The <defaultValue> element in the <default> element of <interpolationSerial> now allows the use of property-tags (\$).	https://publicwiki.deltares.nl/display/FEWSDOC/06+Configuring+Workflows+id:06ConfiguringWorkflows-properties	<pre>(code:java) <transformation id="FILL"> <interpolationSerial> <default> <inputVariable> <variable>Merged</variable> </inputVariable> <defaultValue>\$MINIMUMS</defaultValue> <outputVariable> <variable>Merged</variable> </outputVariable> </default> </interpolationSerial></pre>	
Plugin - Module - Transformation	FEWS-20324	EA	FEWS-18050 FFFS: new transformation for time to (or after) peak	A new transformation for time to (or after) selection has been implemented	In the category Selection transformations, a new "time to selection" transformation has been implemented. This transformation can be used in combination with any of the existing Selection type transformation. For example, the output of the "Selection of peaks" can be used to calculate the nearest high tide.	https://publicwiki.deltares.nl/display/FEWSDOC/Time+to+selection+transformation		
Plugin - Module - Transformation	FEWS-21339	EA	FEWS-18050 FFFS: Transformation to select correct ensemble member data	Added selection ensemble member by index transformation which takes the value of the ensemble member that matches its index with the value of a provided time series	Added selection ensemble member by index transformation which takes the value of the ensemble member that matches its index with the value of a provided time series	https://publicwiki.deltares.nl/display/FEWSDOC/Selection+Ensemble+Member+by+Index		
Plugin - Module - Transformation	FEWS-20311	EA	FEWS-18050 FFFS: Add persistence trend function to new transformation module	Migrating persistence trend function to new transformation module	<p>This transformation "predicts" how the timeseries would continue based on the trend of the existing data. It can be configured how long of a window should be taken into consideration for the trend.</p> <p>Input/Output time series This function takes one input time series and produces one or two output time series.</p> <p><inputTimeSeries>: An equidistant scalar time series <outputTimeSeries>: An equidistant scalar time series (longer than the original series) Has to have at least one overlapping existing time step with inputTimeSeries. This will contain the forecast values only, observation values are not copied. <outputHistoricTimeSeries>: An equidistant scalar time series. Optional. It has to have the same time steps as the input time series. It uses the same window to create the trend as outputTimeSeries, and creates one forecast point (same time window into the future. Then it shifts the time window for the data trend one time step back in time, and creates another forecast (which it exactly one time step sooner than the previous one.) It loops through all the input values like this, creating a series of forecasts.</p> <p>h4. Configuration Define 2 time series as variables to be used as input and output.</p>	https://publicwiki.deltares.nl/display/FEWSDOC/PersistenceTrend	<pre>(code:xml) <?xml version="1.0" encoding="UTF-8"?> <transformationModule version="1.0"> <xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.wildelft.nl/feWS" xsi:schemaLocation="http://www.wildelft.nl/feWS http://feWS.wildelft.nl/schemas/version1.0/transformationModule.xsd"> <!-- 2 variables (with any name) need to be configured to be used as inputs and output --> <variable> <variable>input</variable> <timeSeriesSet> <moduleInstanceId>import_Telemetry</moduleInstanceId> <valueType>scalar</valueType> <parameterId>H.obs</parameterId> <locationId>712170</locationId> <timeSeriesType>external historical</timeSeriesType> <timeStep unit="minute" multiplier="15"/> <relativeViewPeriod unit="hour" start="2" end="6" startOverrutable="false" endOverrutable="true"/> <readWriteMode>read only</readWriteMode> </timeSeriesSet> </variable> <variable> <variable>output</variable> <timeSeriesSet> <moduleInstanceId>NewRateOfRise</moduleInstanceId> <valueType>scalar</valueType> <parameterId>H.forecast</parameterId> <qualifiedId>RoR</qualifiedId> <locationId>712170</locationId> <timeSeriesType>simulated forecasting</timeSeriesType></pre>	
Plugin - Module - Transformation	FEWS-20760	Deltares	TS. accumulation-max transformation	New transformation: accumulation max	<p>This transformation takes a time series, and replaces the values to the highest value, that has been observed up to that point. It ignores unreliable values.</p> <p>Example: input: 0 1 5 2 3 7 3 3 output: 0 1 5 5 7 7 7</p> <p>The transformation supports scalar and grid time series. The input and the output types have to be the same. In case of an grid type time series set, the grid geometry must be the same for each time step.</p>	https://publicwiki.deltares.nl/display/FEWSDOC/Accumulation+max	<pre>(code:xml) <!-- scalar --> <?xml version="1.0" encoding="UTF-8"?> <transformationModule version="1.0"> <xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.wildelft.nl/feWS" xsi:schemaLocation="http://www.wildelft.nl/feWS http://feWS.wildelft.nl/schemas/version1.0/transformationModule.xsd"> <!-- input variables --> <variable> <variable>input</variable> <timeSeriesSet> <moduleInstanceId>AccumulationMaxTest</moduleInstanceId> <valueType>scalar</valueType> <parameterId>H.mc</parameterId> <locationId>= 2003</locationId> <timeSeriesType>external historical</timeSeriesType> <timeStep unit="hour" multiplier="1"/> <relativeViewPeriod unit="day" start="0" end="3"/> <readWriteMode>editing visible to all future task runs</readWriteMode> </timeSeriesSet> </variable> <!-- output variables --> <variable> <variable>output</variable> <timeSeriesSet> <moduleInstanceId>AccumulationMaxTest</moduleInstanceId> <valueType>scalar</valueType> <parameterId>Q.mc</parameterId> <locationId>= 2003</locationId> <timeSeriesType>external historical</timeSeriesType> <timeStep unit="hour" multiplier="1"/> <relativeViewPeriod unit="day" start="0" end="3"/> <readWriteMode>add originals</readWriteMode></pre>	
System - Logging	FEWS-18005	RWS	RWSOS: Request to include taskRundId in each line of log.txt				<pre>(code:xml) <?xml version="1.0" encoding="UTF-8"?> <clientConfiguration xmlns="http://www.wildelft.nl/feWS" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.wildelft.nl/feWS http://feWS.wildelft.nl/schemas/version1.0/clientConfig.xsd"> <clientType>stand alone</clientType> <logging> <logFileEntryIncludesTaskRundId=true/> </logging> </clientConfiguration> (code)</pre>	
System - PI Service	FEWS-21454	Waternet	FEWS-19536 Get Qualifiers support in PI Service	get qualifiers endpoint added to FewsWebServices REST service	The get qualifiers endpoint has been added to FewsWebServices REST service. This will get a list of all configured qualifiers.	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+PI+REST+Web+Service@FEWSPIRESTWeb+Service+GET+qualifiers(2019.02)		

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
System - PI Service	FEWS-19945	UAE Navy	FEWS-19924 WMS Service: Support vendor parameter to get specific forecast	WMS service supports requesting older forecasts	WMS service supports requesting older forecasts. With the GetCapabilities method the available external forecast times and times available can be requested. The GetMap method supports passing a forecast time as request parameter for a layer.	https://publicwiki.deltares.nl/pages/viewpage.action?pageid=134482048		
System - PI Service	FEWS-20766	HDSR	Add locationRelations to getLocations call of PIWebService	New optional parameter added to getLocations call of PIWebService: includeLocationRelations	New optional parameter added to getLocations call of PIWebService: includeLocationRelations Default value is false. If it is set to true, location relations will be included in the response. For XML format response this option is available from v.1.26 or greater. Uri example: "http://localhost:8080/FEWSWebServices/rest/fewspiservice/v1/locations?showAttributes=true&includeLocationRelations=true&documentVersion=1.26"	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+PI+REST+Web+Service#FEWSPIRESTWebService-GETLocations		
System - PI Service	FEWS-20765	HDSR	Add info on time dependency to getLocations call of PIwebService	Added new optimal request parameter to PI web service getLocations call: includeTimeDependency	Added new optimal request parameter to PI web service getLocations call: includeTimeDependency. Default value is true. For XML format response this option is available from version 1.26 or greater. If the option is set to true, the response will include: - start end time of the location, if location is time dependent. - if showAttributes is true, and if an attribute is time dependent, for each value it can take it will be listed along with the start and end time and value. - if include RelationLocations is true, and the location relation is time dependent, the end and start time of the relation will be listed. Example response: (code) { "locationId": "loc8", "shortName": "B", "lat": "7.0", "lon": "7.0", "x": "7.0", "y": "7.0", "z": "7.0", "attributes": [{ "name": "TEST_ATTRIBUTE", "type": "text", "Id": "TEST_ATTRIBUTE", "startDateTime": "1930-01-01T00:00:00+0000", "endDateTime": "2000-01-01T00:00:00+0000", }] }	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+PI+REST+Web+Service#FEWSPIRESTWebService-GETLocations		
System - PI Service	FEWS-20498	EA	FEWS-18050 FFFS: Make Archived products available through the FEWS-PI WebService	archived products can now be downloaded from the archive	The products can now be downloaded from the archive. Documentation can be found here https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+PI+REST+Web+Service#FEWSPIRESTWebService-GETProducts(2019.02)			
System - PI Service	FEWS-20835	EA	FFFS-PI: New Request to retrieve all time series of selected plotid of displaygroups	get timeseries using displayGroups plotid	The get timeseries/displaygroups endpoint can retrieve all timeSeries configured using a displayGroups plotid	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+PI+REST+Web+Service#FEWSPIRESTWebService-GETtimeseries/displaygroups(2019.02)		
System - PI Service	FEWS-19855	Deltares	Read-only support for FEWS webservices	READONLY_MODE for FEWS Web Services	Since 2017.02 it is possible to run the FEWS Web Services in readOnly mode. The FewsPiService.properties can be configured with the property READONLY_MODE=true to only allow read access. In 2017.02 this property has to be configured. Since 2018.02 read only mode is enabled by default.	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+Web+Services		
System - PI Service	FEWS-21074	Deltares	FEWS-19650 FFFS-PI: WMS kijkt maar 2 folders diep in de spatial display config	GetCapabilites was only using 2 levels of layers	The GetCapabilities was only using 2 levels of layers from the GridDisplay.xml. Now all levels are retrieved.	https://publicwiki.deltares.nl/pages/viewpage.action?pageid=134482048		
System - PI Service	FEWS-20470	Deltares	FEWS-19650 FEWS Web Services should be readonly by default	READONLY_MODE for FEWS Web Services enabled by default	READONLY_MODE for FEWS Web Services enabled by default since 2018.02.	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+Web+Services		
System - PI Service	FEWS-18927	Deltares	FEWS-19646 Thinning support in REST service	Thinning support for timeseries in pi service	Thinning is used to retrieve the visually interesting time steps of timeSeries. It tries to keep the peaks and gaps and minimizes the number of time steps that have to be retrieved. It is typically used for visualizations. The value to be specified should be equal to the view period in milliseconds of the timeSeries that is visualized divided by the number of pixels that are available for display. For example: visualizing a view period of 5 years (157784760000 milliseconds) on a display of 1024 pixels, the thinning parameter should be set to 157784760000/1024 = 15408668. (Since 2019.02)	https://publicwiki.deltares.nl/display/FEWSDOC/FEWS+PI+REST+Web+Service#FEWSPIRESTWebService-GETtimeseries		
System - Synchronisation	FEWS-18585	Deltares	FEWS-17521 Database download is onduidelijk	Dialog for replicating database improved	Dialog for replicating database improved	https://publicwiki.deltares.nl/display/FEWSDOC/The#F14menu		
System - Workflow	FEWS-18625	eThekwini Municipality	Template functionality for Workflows				<pre>(code=xml) <workflowDescriptor id="Import_A"> <workflowFileName>Import_Template</workflowFileName> <properties> <string key="dir" value="%REGION_HOME%/A"/> </properties> </workflowDescriptor> (code)</pre>	

Component/s	Key	Customer name	Summary	Release Note Text	Release Note Text Description	Link to Documentation	Config Example	Images
Water Coach	FEWS-21055	RWS	FEWS-21093 WaterCoach: Export (and import?) results with the right timesteps	WaterCoach – exporting and importing time series with the times that correspond with the time delay configured in the WaterCoach script	<p>Presently the time series with delayed times are exported resp. imported in :</p> <ul style="list-style-type: none"> - Reports, - TimeSeriesDialog using table popup menu "Save As..." - Interactive exporter using menu File -> Export timeseries. Only available if <interactiveExportFormats> are configured in Explorer.xml. - Time series export module - Time series Import module <p>Time delay can be positive or negative</p> <p>[color:#000000]Please note:[color]</p> <p>[color:#000000]GeneralAdapter does not support timeDelay.[color]</p>			