

Delft-FEWS Stable Release 2021.01

Release Notes



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Summary

This document contains the release notes for Delft-FEWS Stable Release 2021.01

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1 Introduction

This document contains the Release Notes of the Delft-FEWS version 2021.01.

1.1 New features

Roughly around **100 new features** (paid by implementation projects, existing clients, etc) have been implemented in this version.

Besides the Delft-FEWS Client-Server system, this document will also highlight the new features in the Delft-FEWS web services and the (Deltares) Open Archive.

Like in previous documents describing a new Delft-FEWS version, references to (new) WIKI pages have been included, like the [installation](#) and [upgrade](#) page for this software version.

The complete overview of new, implemented features and fixed bugs can be found in the appendices and on the [release notes](#) page on the Delft-FEWS WIKI.

1.2 Delft-FEWS Vision 2025 - Roadmap 2021

This Delft-FEWS version contains several features that have been implemented as part of the Delft-FEWS Vision 2025. This new vision is working with yearly roadmaps in which Delft-FEWS product management would like to include general improvements to the software and to its software development process which are of benefit to all our users. More information on the [Delft-FEWS Vision 2025](#) and the yearly roadmaps can be found on the [Delft-FEWS Community Portal](#).

In the following chapter a dedicated section will highlight the aspects which have been implemented as part of the roadmap 2021.

2 Delft-FEWS 2021.01: Client-Server system

2.1 Server side

An installation of or an upgrade to 2021.01 follows – in general - the new and simplified [installation](#) and [upgrade](#) steps described on the Delft-FEWS WIKI. Both procedures have a large overlap in terms of number/types of steps. We strongly recommend following the special upgrade path pages (from a certain version to the next version). An overview can be found here: [Upgrade paths – overview](#). For the specific upgrade from 2020.02 to 2021.01 you can directly go [here](#).

On request, Linux RPMs or MS Windows MSIs can be provided. Some instructions may be required (by Deltares ICT). The following components are deployable via an RPM or MSI.

There are RPM and MSIs available for:

- Delft-FEWS Master Controller / FSS binaries (including launcher)

And RPMs available only for:

- Tomcat9
- Delft-FEWS Admin Interface
- Delft-FEWS HTTPS Proxy
- Delft-FEWS Web services
- Delft-FEWS Open Archive

If you are interested in using RPMs (or MSIs), please contact fews.support@deltares.nl or fews-pm@deltares.nl

Important aspects with respect to the backend of the client-servers system are:

2.1.1 Master Controller (and MC launcher)

The highlights of developments in the Master Controller are:

- Added schema validation of the Master Controller Configuration file
- Added statistics on Module Run Times (new database table)
- Launcher-free utilization of Master Controller component (Docker)

2.1.2 Admin Interface and Admin Interface API

The highlights of developments in the Admin Interface (AI) and Admin Interface API are:

- Upload (and download) of a Master Controller Configuration file
- Upload of zipped Delft-FEWS configuration
- Base build management
- Visualizing statistics on Module Run Times
- Logging in with Single Sign-On using Active Directory or Azure AD (OAuth2)

2.1.3 Forecasting Shell Server (and FSS launcher)

The highlights of developments in the Forecasting Shell Server are:

- Launcher-free utilization of FSS component (Docker)

2.1.4 Java version

The Java Runtime Edition included in this version of Delft-FEWS (MC) is 'Amazon Corretto' (11.0.10.9.1) distribution of OpenJDK.

2.1.5 Tomcat version

By default, Delft-FEWS uses the latest version of Tomcat 9. For this version, **Tomcat 9.0.46** is recommended.

2.1.6 Server-side documentation

On the [Admin Manuals](#) page you can find the [Admin Manual for Delft-FEWS 2021.01](#) and on the [Connectivity Guides](#) page you can find the [Connectivity Guide for Delft-FEWS 2021.01](#).

2.2 Client-side

A number of relevant new features and remarks about this release are highlighted below

2.2.1 New display: Annotation Display

The Annotation Display enables the user to specify remarks (add comments) that are valid for a specific location for a certain period. The annotations can be created, copied, edited or deleted from the main screen. For categorization of annotations, configuration options are available to allow the user to define enumerations to create categories and corresponding sub-categories. This will help you to organize the information that you have added to locations. There is also a 'free text' option available.

The table itself responds in a similar way as the [database viewer](#) with respect to filtering (double clicking) and sorting (selecting a column header).

[More information](#)

2.2.2 New display: Auto Calibration Display

The auto calibration display is an extended version of the existing 'Multiple Module Parameter Modifiers Panel' in which you can define a certain set of modifiers to include in your next (local) run. The auto calibration aspect contains the ability to select which parameters to 'auto-calibrate' using OpenDA. By setting the upper and lower bounds of these parameters and define the 'observed' timeseries to 'fit' your calibration to, you can set OpenDA to work. Every iteration, OpenDA suggest – within the specified boundaries – new settings for all selected parameters trying to optimize the parameter values to get as close to the observed series as possible within the number of specified iterations.

[More information](#)

2.2.3 Java version

The Java Runtime Edition included in this version of Delft-FEWS (OC/FSS) is 'Amazon Corretto' (11.0.10.9.1) distribution of OpenJDK.

2.2.4 Web Browser Display

The [web browser display](#) requires a new version of the JCEF package. This version (#88) of the Java Chromium Embedded Framework (JCEF) can be downloaded [here](#).

2.2.5 Flat look & feel

The default, flat (Windows 10) look and feel is new in 2021.01. It has been implemented via the [flatlaf](#) library. This new, modern look and feel has been integrated in such a way that your existing color schemes still work. You can modify the (color) settings of the Delft-FEWS Explorer via the Options Menu (Options > Explorer options > Colors and Font).

FlatLaf is a modern **open-source** cross-platform Look and Feel for Java Swing desktop applications. It looks almost flat (no shadows or gradients), clean, simple and elegant.

2.2.6 Performance Improvements

Compared to 2020.02, the Delft-FEWS 2021.01 version shows performance increases between 10% – 50% for different types of workflows (running in SA).

2.3 Roadmap 2021

The roadmap 2021 activities consist of a number of themes and parallel project

The themes are:

- Code clean up
- Security
- Release tests and test automation
- Code quality and review process

And relevant parallel projects are:

- Development of the Web Operator Client
- Developments related to the Computational Framework

Relevant for these release notes are: Code clean up and Computational Framework.

2.3.1 Code Clean-up

The Delft-FEWS (legacy) code needs to be continuously maintained and refactored to keep it up to date and comply with code quality standards.

As part of the code clean-up activities a [WIKI page](#) is maintained in order to share with the user community what modules, displays or other code will become 'end-of-life' and by when it will actually be removed from the code.

Additionally, a <F12> option has been added to the Operator Client to assess your configuration for these end-of-life modules, displays and configuration options. This option can be found under: <F12> + T (export) > Log obsolete modules and explorer plugins. The log panel will display INFO messages about obsolete configuration and where to find suggestions for improvements.

[More information](#)

2.3.2 Computational Framework

The Computational Framework is Delft-FEWS' ability to run in a 'non-operational' mode with scenario analysis as main objective. The new, "composed what-if" concept (what-if and modifiers combined) forms the basis enabling users to run many scenarios using Delft-FEWS modules and external models, compare, analyse and manage them. A full CF system does not have a complete backend but consists of one or more OC's and an Open Archive for long term storage of these scenario runs.

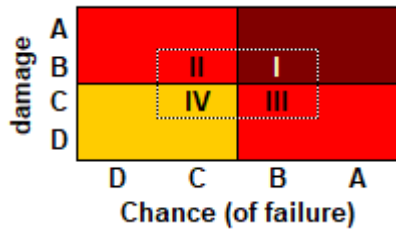
Examples of developments are:

- Composed what-if concept and display
- Case (scenario) management
- Scenario run comparison functionality in Spatial Display and Time Series Display
- Plugin-architecture for externally developed (java) GUIs

2.3.3 Product Risk Analysis (PRA)

Prior to testing the Delft-FEWS 2021.01 release, a PRA was conducted. This analysis resulted in a list of "areas of attention" during testing. Based on the estimates of 'chance (likelihood)' and "potential damage" on a scale of A-B-C-D a risk was estimated. Based on 4

risk categories (see image below) 20 areas of attention were identified. (counter) Measures were defined and taken into account during release testing.



The following “areas of attention” were identified, see table below

I	II	III	IV
Module Run Times table	Code Clean-up	Admin Interface API for module run times	Code Clean-up
Schematic Status Display (+API)	Authentication via AD	Calibration panel	Web browser display
Party approval of forecast runs	Multicore Transformation Run	Composed what-if with links to displays and modifiers	Contours on grid pixel level
Old what-if module still working		Export to MongoDB	NetCDF references storage (WMS)
Current displays without composed what-if configured		Starting components without launcher functionality	
Component deployment with launchers		FLATLAF effects (flat look & feel)	
Annotations Panel			

3 Delft-FEWS 2021.01: Web services

The following highlights can be mentioned for the Delft-FEWS Web services:

- Tracklayers from the Spatial Display (e.g. visualizing a moving cyclone or a moving/monitoring ship) can be visualized via the webservice;
- Get time series for point, layer or vertical profile for 3D data;
- Web mapping service: get latest forecast (from database & open archive);
- Web mapping service: GetCapabilities response extended with:
 - Keywords (meta-information of the timeseriesSet)
 - Styles (how to display the data)
 - Elevation (3D layer)
 - Default time

4 Delft-FEWS 2021.01: Open Archive

Most of the Open Archive and Seamless integration backend improvements were done in 2020.02 and some in 2021.01.

Together there's now a set of functionalities available which many clients use to store their own data and data produced by others. It is either stored for rapid access in the Delft-FEWS Datastore or for long term access in the Open Archive. Once this is in place, users can search and retrieve the data on request.

The following highlights can be mentioned for the Open Archive:

- Backend improvements: integrating the different timeseries types and different dimensions (scalar, 2d grids, 3d grids) in the various archive solutions.
- Making sure the seamless integration has the knowledge where to fetch the data from and how to serve it
- Configuration options added to define in which external data storage (Open Archive, NetCDF storage) certain timeseries are stored. This results in quicker searches in 2021.01
- First implementation of the "Open Database Archive (based on MongoDB) primarily meant for forecast scalar timeseries for accessing by BI (Business Intelligence) Tools like Power-BI.

[More information](#) (Functionality)

[More information](#) (Installation)

A List of New Features in Delft-FEWS 2021.01

Please find the list of new features implemented in Delft-FEWS 2021.01 via the link below (at release date: 30.06.2021)

[List of new features \(PDF via Public WIKI\)](#)

B List of solved bugs in Delft-FEWS 2021.01

Please find the list of solved bugs in Delft-FEWS 2021.01 in the link below (at release date: 30.06.2021)

[List of solved bugs \(PDF via Public WIKI\)](#)

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