

Delft-FEWS Stable 2022.01 New features

Delft-FEWS Anwendertreffen 2022

Delft-FEWS Product Management
Marcel Ververs and Gerben Boot

June 2022

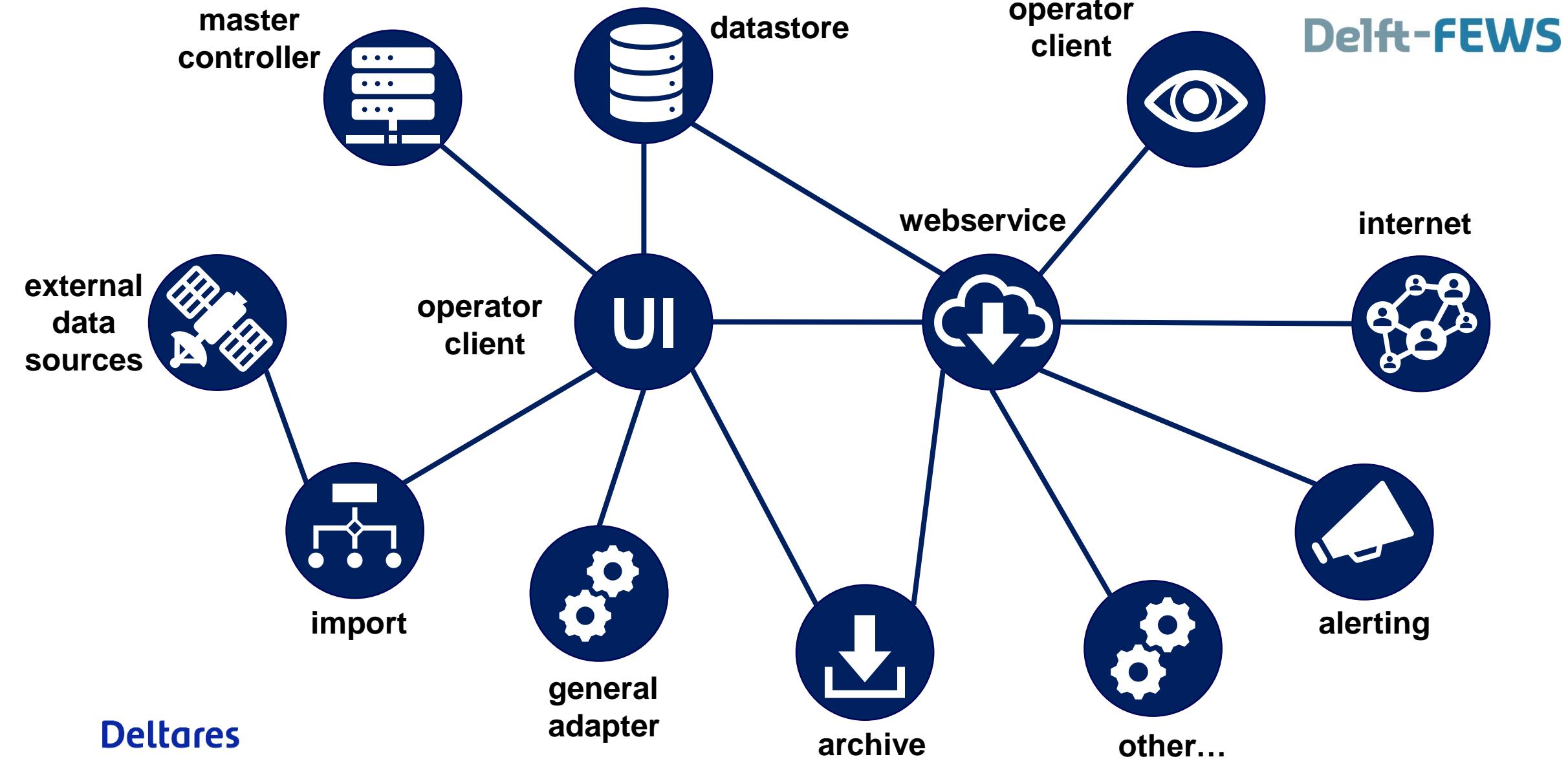
Introduction...

- Welcome
- What's new in 2022.01?
 - Operator Client – different displays
 - Configuration
 - Transformation and other modules
 - Webservices
 - Archive
- Documentation and software maintenance
- Outlook to 2022.02

As usual: [Links for more info](#)



Delft-FEWS Ecosystem



Delft-FEWS 2022.01 Benchmarks



104 new features (implemented)



220 bugs reported (**166** fixed)



6 new import modules



10 new features in FEWS-webservices



1 webservice: National Register (NL)



6 new features in timeseries display



4 new data transformations



9 new features in the FEWS explorer



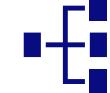
8 new export modules



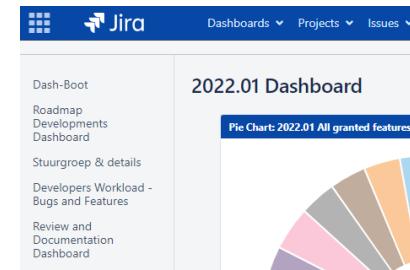
14 improvements to the open archive



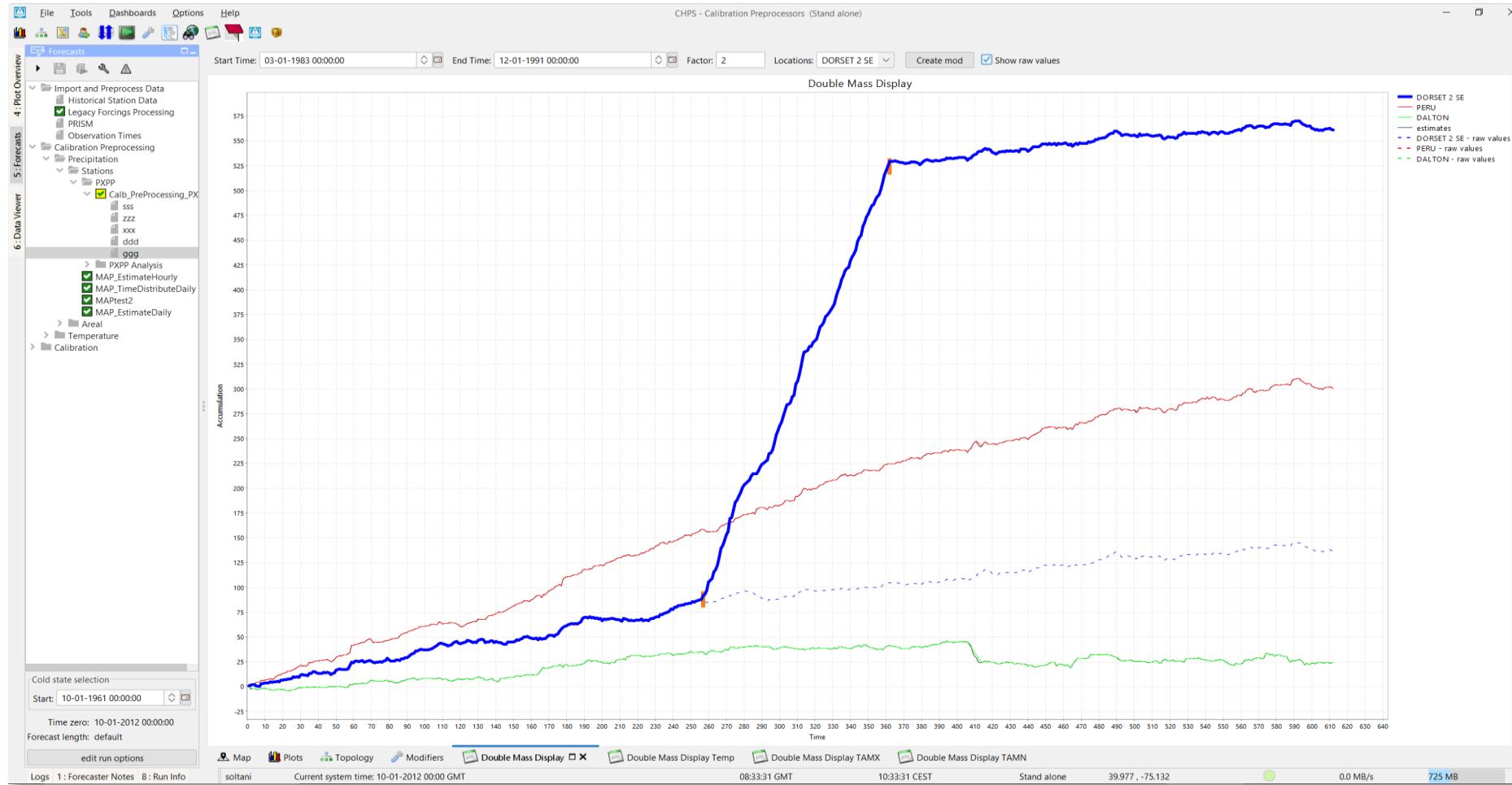
1 new display



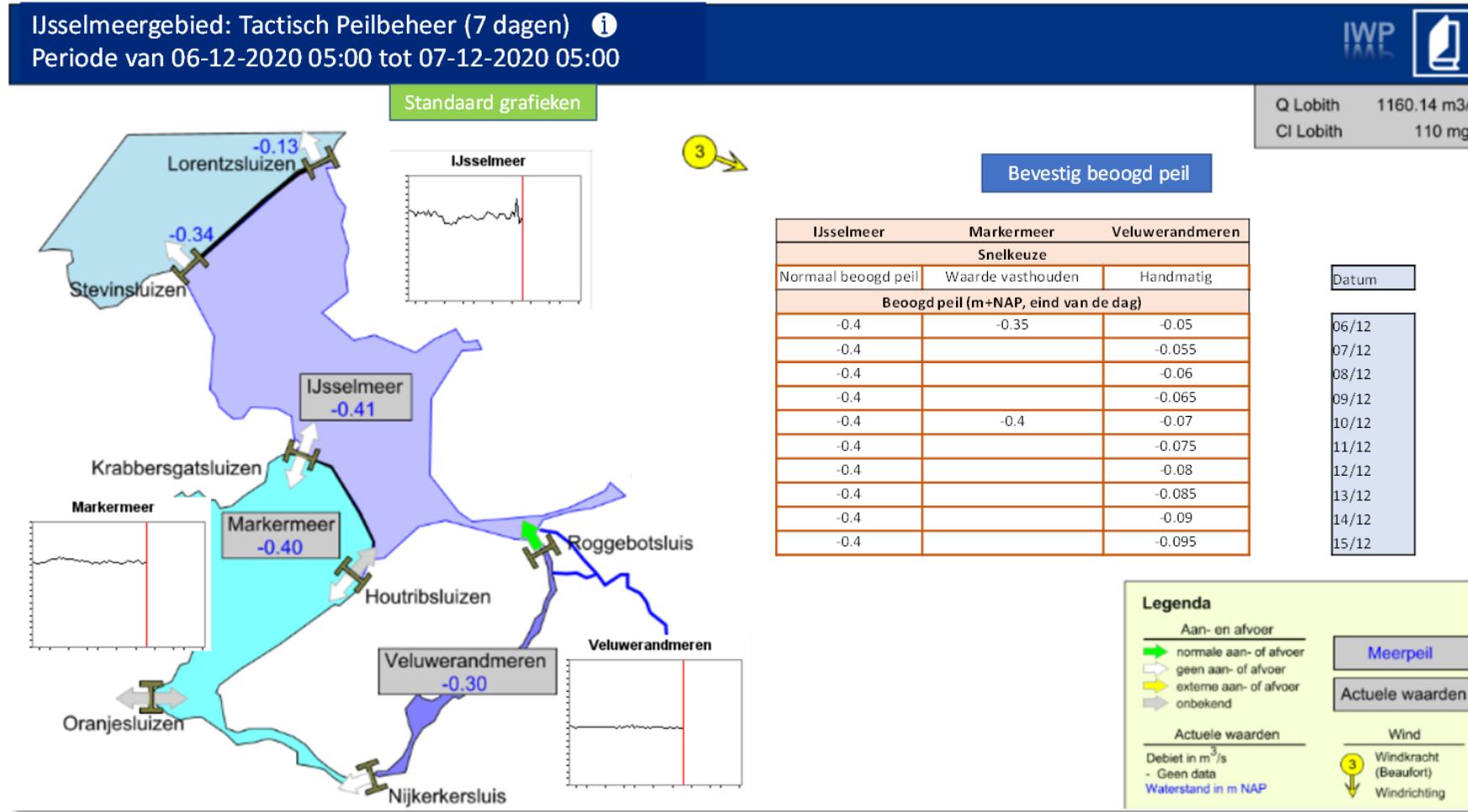
4 improvements to WhatifEditor



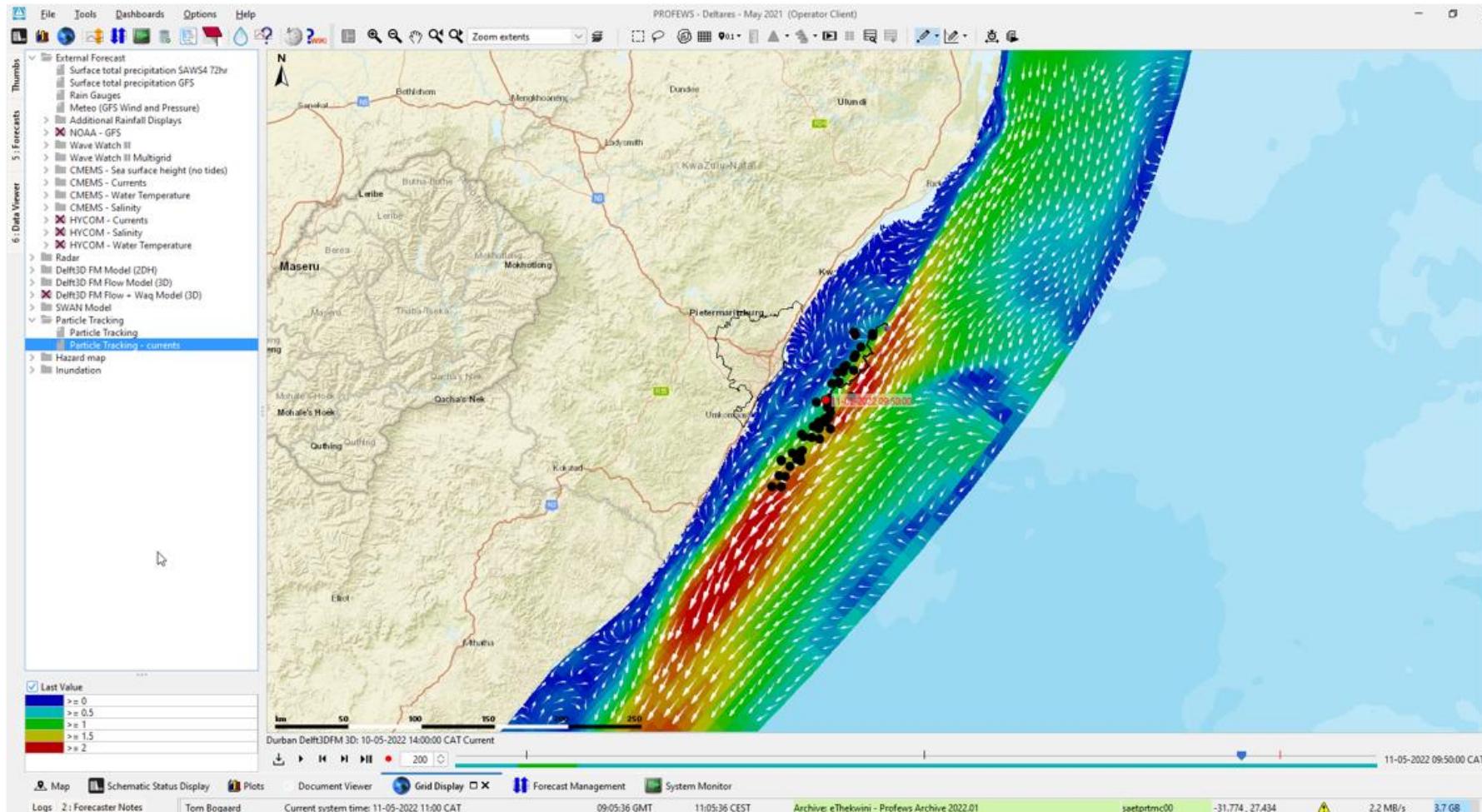
Client – Interactive Double Mass Display



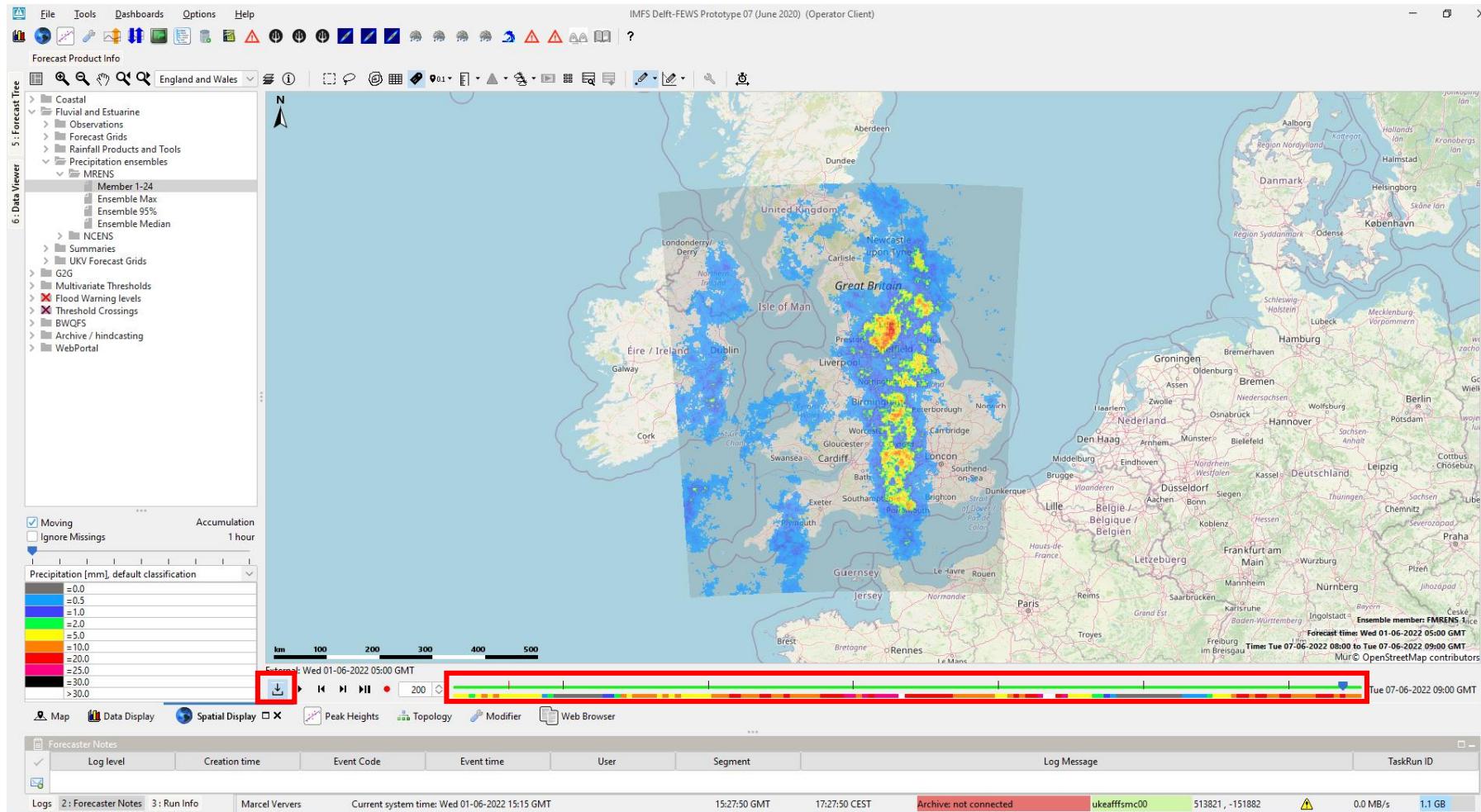
Client – Thumbnails in Schematic Status Display



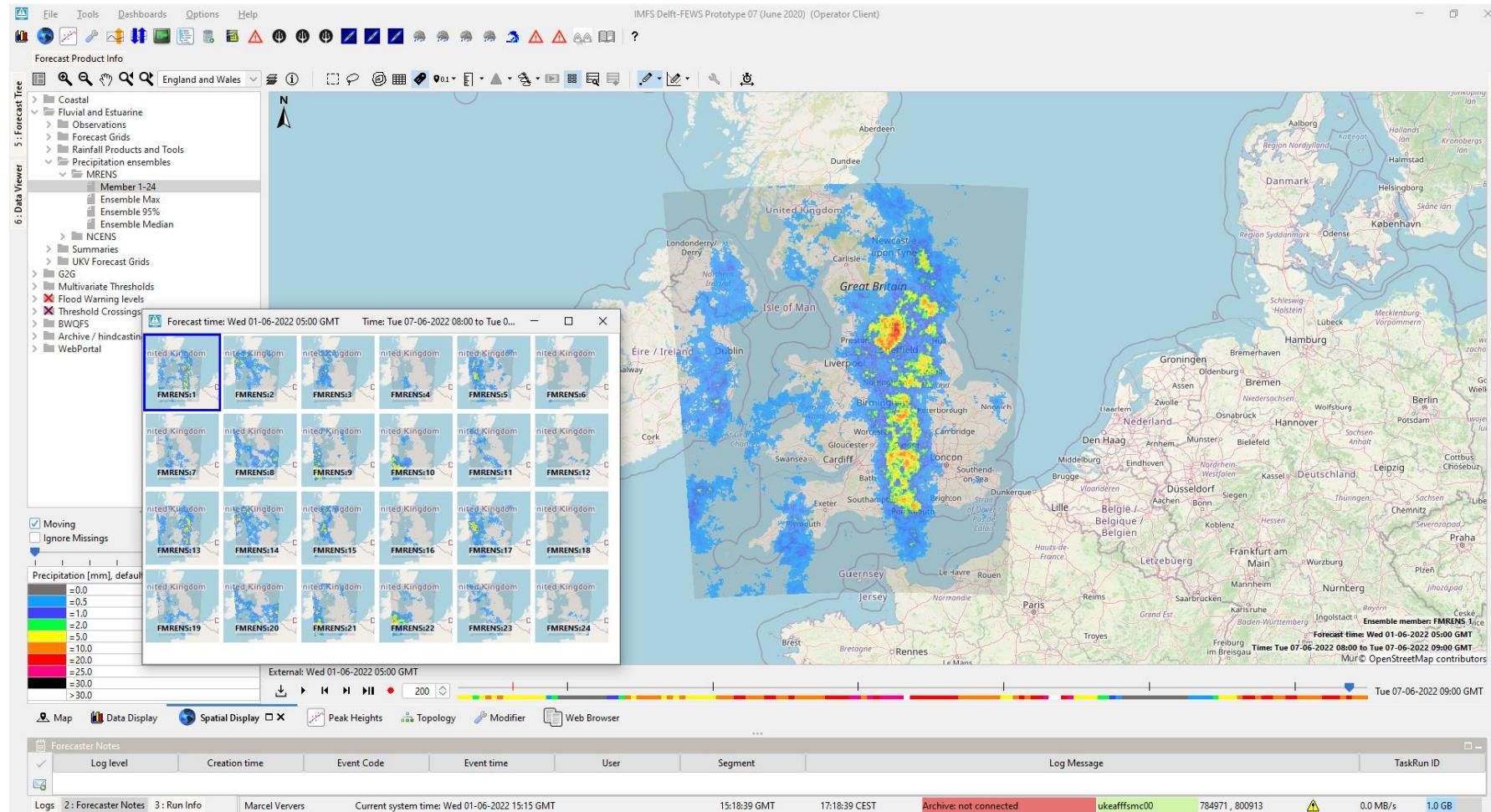
Client – Spatial Display



Client – Spatial Display



Client – Spatial Display



Client – Spatial/Map Display

- Use a geoJSON files instead of shape files for your maps
- Support geoJSON for defining LocationSets

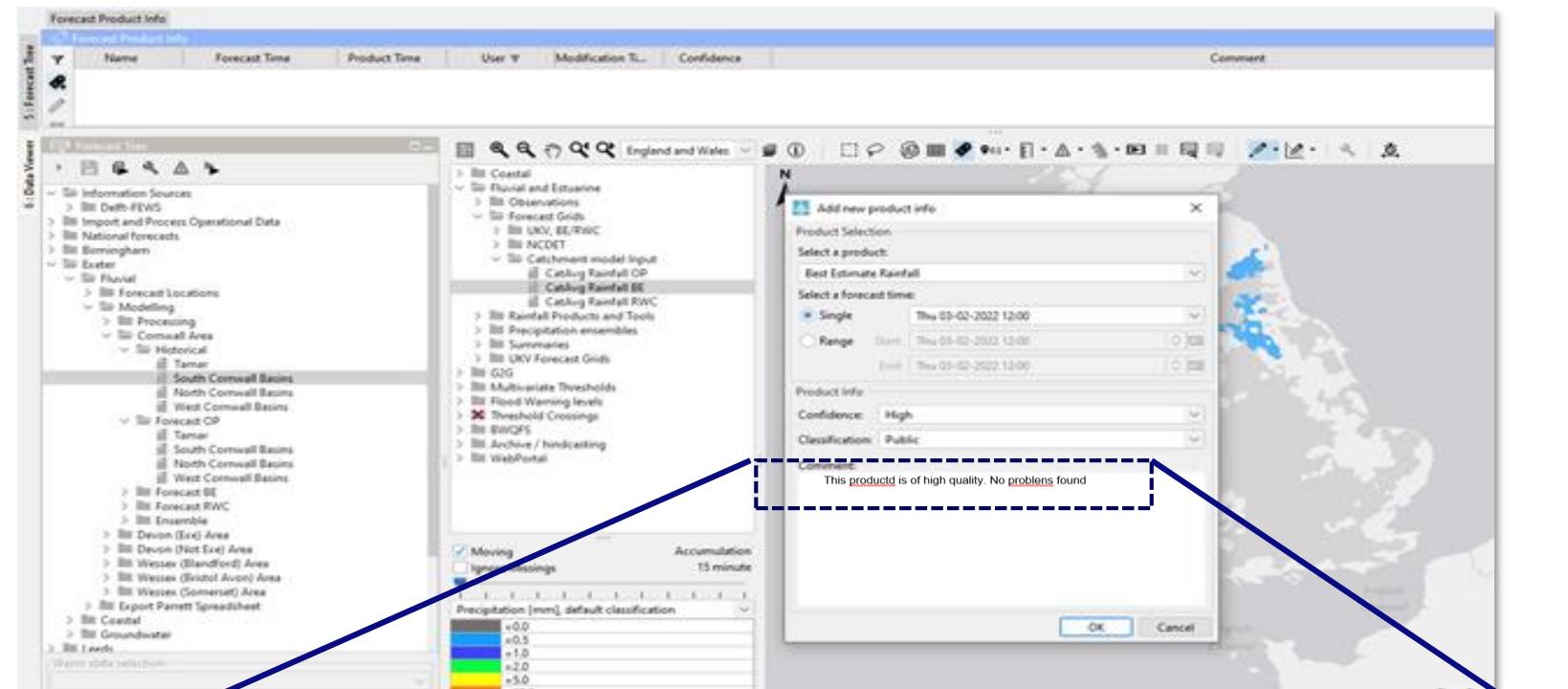
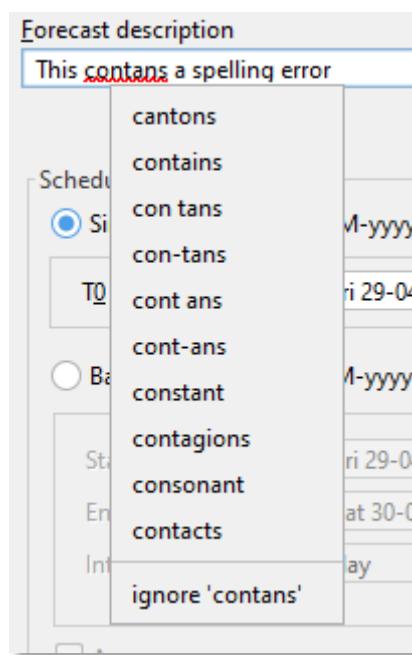
Demo geoJSON file

```
<geoJsonLayer id="geojson">
  <file>provinces.geojson</file>
  <shapeType>polygon</shapeType>
  <visible>false</visible>
  <lineColor>black</lineColor>
  <fillColor>light yellow</fillColor>
</geoJsonLayer>
```

```
<locationSet id="Provinces">
  <geoJsonFile>
    <file>provinces.geojson</file>
    <shapeType>polygon</shapeType>
    <id>%name%</id>
    <name>%name%</name>
    <attribute id="level">
      <number>%level%</number>
    </attribute>
  </geoJsonFile>
</locationSet>
```

Client – Spell checker added to various panels

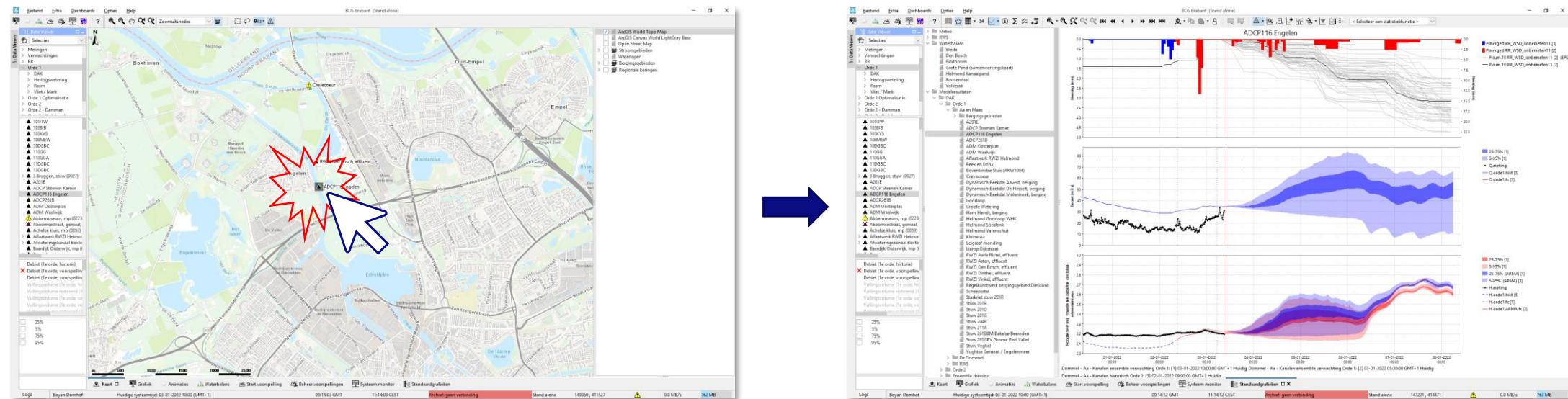
- Spelling checker functionality has been added to: Annotation panel, Forecast Product Info panel, Data search panel, Manual Forecast dialog and Timeseries Dialog (comment editor) and is available for Dutch, English (UK, US, AUS), Spanish and French.



This productd is of high quality. No problemens found

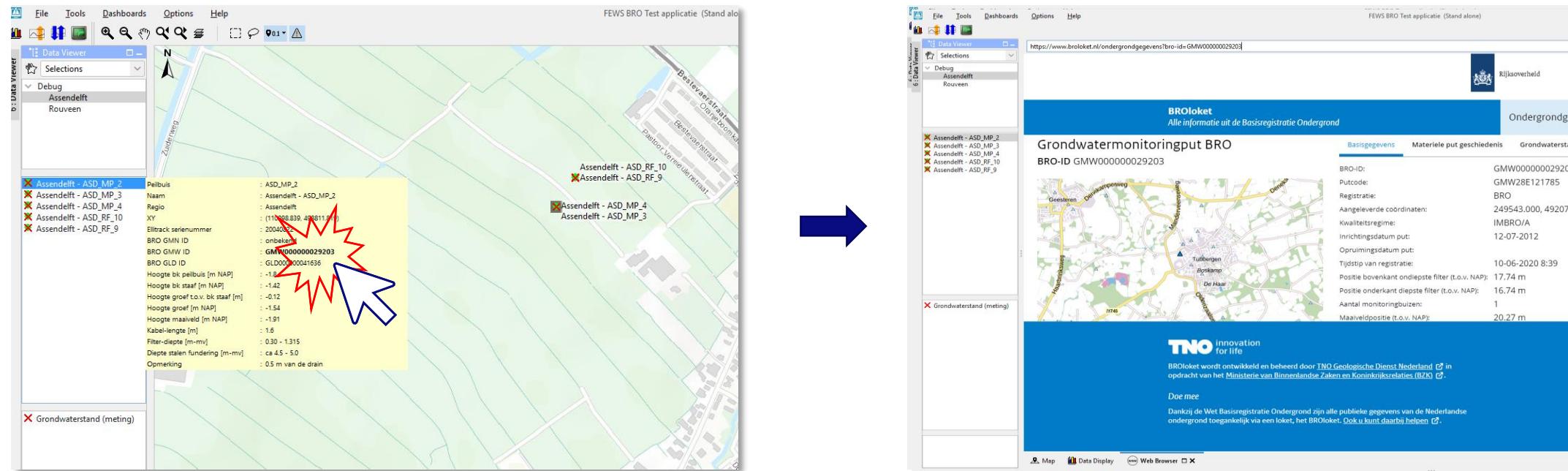
Double-click on location in map or list opens chart

- New option “doubleClickLocationEnabled” in displayGroups.xml



Client – Display hyperlinks in tooltips in embedded Web browser

- Hyperlink can be included in a location tooltip. The href (url) configured there can be opened in the default/internal Web Browser Display. Web Browser Display must be configured for this, including some settings must be specified.



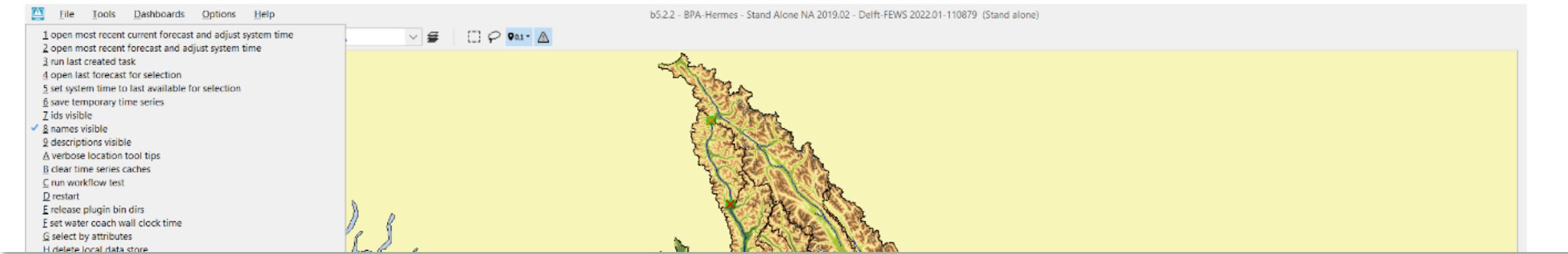
Client - <F12> menu now permission-aware

- Enable <F12> menu if the user has debugMenuPermission. If this is not configured, then the F12 menu is accessible by everyone.

DebugMenuPermission

If the user has the debug menu permission, by pressing F12, the debug menu appears. Please note, if this permission is not configured, then the debug menu can be accessed by all users. An example of how to configure the debug menu permission and an screenshot of the debug menu follow:

```
<debugMenuPermission>admin</debugMenuPermission>
```





Configuration – Load moduleInstances from CSV (with possibility to add extra attributes)

```
<?xml version="1.0" encoding="UTF-8"?>
<moduleInstanceDescriptors xmlns="http://www.wldelft.nl/fews" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
                           xsi:schemaLocation="http://www.wldelft.nl/fews
http://fews.wldelft.nl/schemas/version1.0/moduleInstanceDescriptors.xsd" version="1.0">
    <moduleInstanceDescriptorsCsvFile>
        <file>moduleInstanceDescriptors.csv</file>
        <id>%ID%</id>
        <name>%NAME%</name>
        <attribute id="test">
            <text>%test%</text>
        </attribute>
        <attributeFile>
            <csvFile>moduleInstanceDescriptors_attributes.csv</csvFile>
            <id>%ID%</id>
            <attribute id="EXTERNAL_ID">
                <text>%EXTERNAL_ID%</text>
            </attribute>
        </attributeFile>
    </moduleInstanceDescriptorsCsvFile>
</moduleInstanceDescriptors>
```

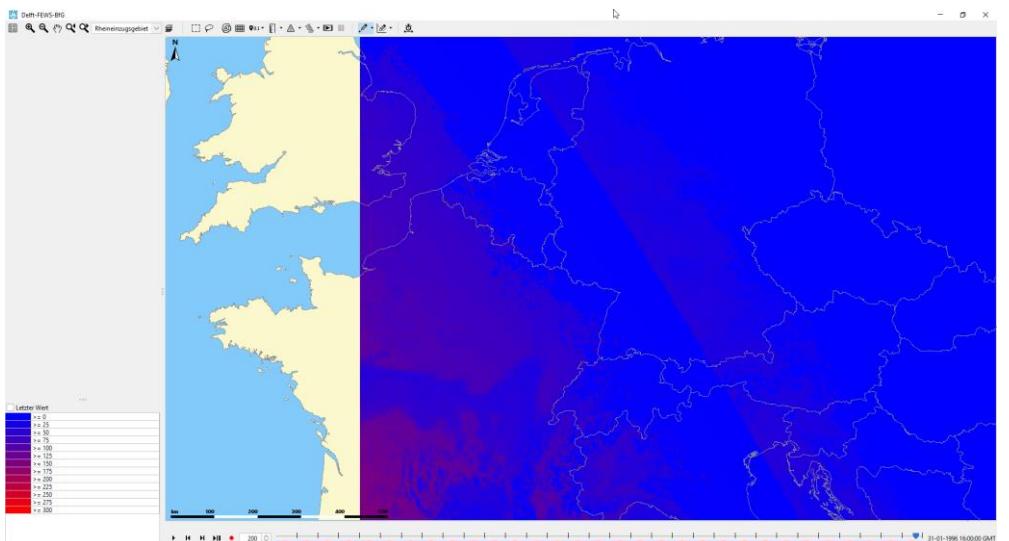
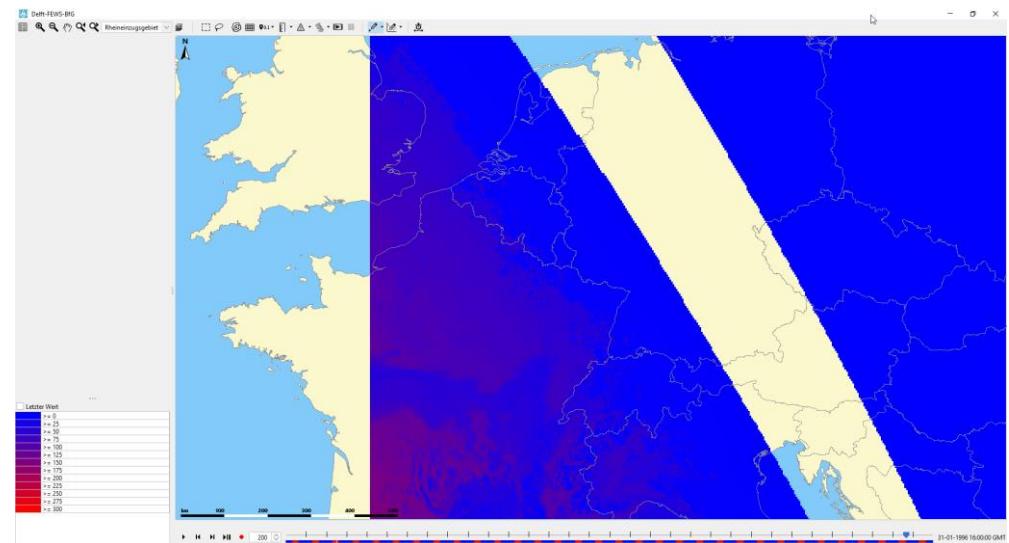
Attributes can be used as metadata in netCDF exports (see Exports slide)



Transformation: InterpolationSerial Linear for grids

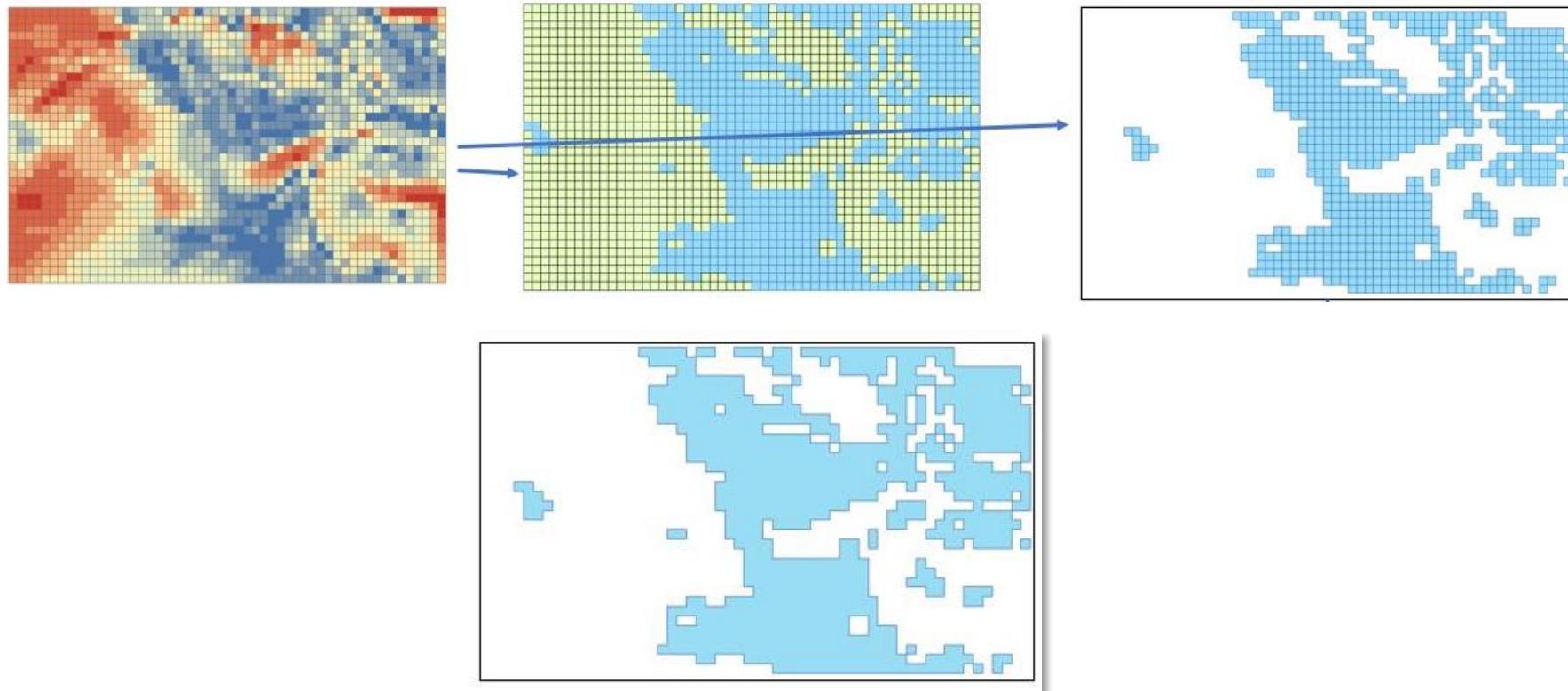
- Besides filling full grid 'gaps' in time, you can now also interpolate missing single pixel by linear interpolation between values before and after the time of the missing data.

```
<transformation id="fill_gap">
  <interpolationSerial>
    <linear>
      <inputVariable>
        <variableId>Click to edit variableId</variableId>
      </inputVariable>
      <maxGapLength>6</maxGapLength>
      <interpolateMissingGridCells>true</interpolateMissingGridCells>
      <outputVariable>
        <variableId>TMP_GLOB_FILLED</variableId>
      </outputVariable>
    </linear>
  </interpolationSerial>
</transformation>
```



Transformation: Convert (regular) grid cells to polygons based on certain class breaks

- Create (and export) nice **polygon shape files** (incl. prj) based on gridded data, e.g. flood extent. The polygons are created on the basis of **class breaks** which can be configured



Time dependent locations (datum)

- Long term (observed) timeseries may change in datum (z).
- To assess the timeseries as one, the settings ‘before’ and ‘after’ this change (date) can be configured.

```
<locationSet id="LocationSetWithTimeDependentAttributes">
  <csvFile>
    <file>TimeDependentLocationSet.csv</file>
    <id>%id%</id>
    <x>0</x>
    <y>0</y>
    <attributeFile>
      <csvFile>TimeDependentLocationSetAttributes.csv</csvFile>
      <id>%id%</id>
      <startDateTime>%START%</startDateTime>
      <endDateTime>%END%</endDateTime>
      <z>%z%</z>
      <attribute id="timeDependentAttribute">
        <text>%timeDependentAttribute%</text>
      </attribute>
    </attributeFile>
  </csvFile>
</locationSet>
```

ID	START	END	timeDependentAttribute	z
TD_Loc1	19000101	21000101	A	1
TD_Loc2	19000101	19850103	A	2
TD_Loc2	19850103	21000101	B	3
TD_Loc3	19000101	19850103	B	4
TD_Loc3	19850103	21000101	A	5
TD_Loc4	19000101	19850103	A	6
TD_Loc4	19850103	21000101	B	7
TD_Loc5	19000101	19850103	A	8
TD_Loc5	19850103	21000101	B	9



Export module: configuration option to export changes

- A new option has been added to the export timeseries module to only export changes in a configured period.
- Use the configuration option **<exportChanges>**

```
<general>
    <exportType>PI</exportType>
    <folder>$EXPORT_FOLDER$</folder>
    <exportFileName>
        <name>exportedTimeSeries.xml</name>
    </exportFileName>
    <exportChanges>
        <dbChangeViewPeriod unit="day" multiplier="2"/>
    </exportChanges>
</general>
```



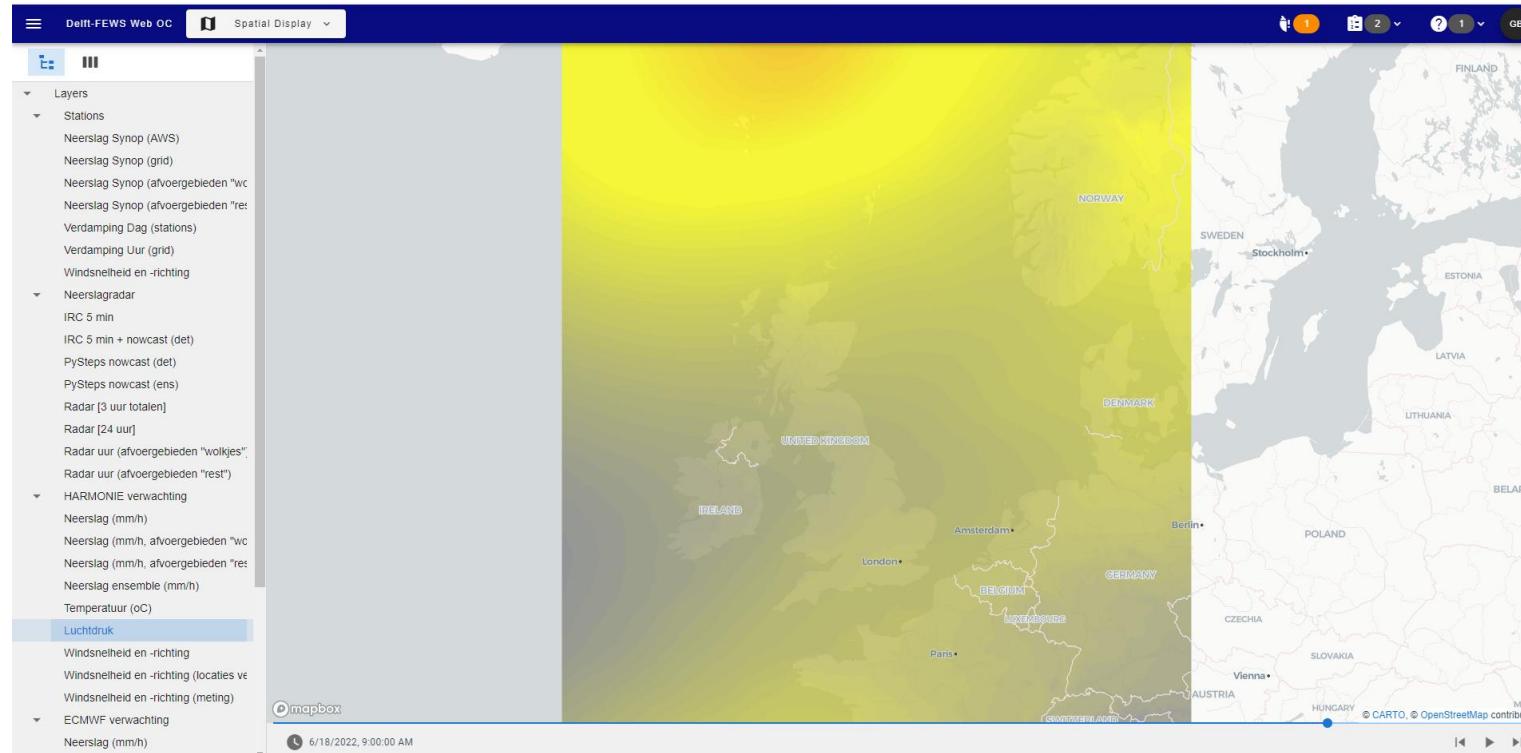
Export module: other features

- Improvements to [CAP exports](#) (**CAP= Common Alerting Protocol**)
- Shape file exports
 - [PRJ file added](#)
 - Add [configurable attribute table](#)
- NetCDF file export
 - Delft-FEWS [attributes can be exported](#) as metadata of a NetCDF file



Delft-FEWS Webservices

- Calling “getMap” is now much easier since a default time is returned for external historical and external forecasting timeseries. By default the **last timestep** is returned.
- Security improvements by enabling support for Open ID Connect to authorize API requests. It's also possible to integrate Delft-FEWS User Groups & Permissions configurations with Open ID Connect.



Source: web oc test client (Deltares)



Open Archive

- MongoDB + Seamless integration (improved [Open Archive database API](#))
- Search options improved with custom-IDs (provided at export) to be used as filters
- Import datasets from Archive into client-server system is possible (but default off)
- Direct download (via Archive display, Archive catalogue) without OpenDAP
- Look & feel ([Archive admin console](#))

The screenshots illustrate the 'Archive admin console' interface:

- Archive status:** Shows basic status information like 'catalogue is running with process id 1080'. A large green rectangular overlay covers most of the page content.
- System metrics:** Displays catalogue files with 'message', 'download', and 'upload' buttons. Files listed include: `Archs.xml`, `EventTypes.xml`, `ArchiveTasksSchedule.xml`, `Sources.xml`, `DataManagementToolList`, `ArchiveManagementToolList`, `ExternalStorage.xml`, and `managementReport.csv`.
- Task history:** Shows a table of scheduled tasks with columns: archive task, start time, end time, run interval (seconds), status, and last run time. Tasks listed include: `internal.benvenuto@feews.set`, `incremental`, `merge data`, `events`, `ddbd`, `clear internal catalogue`, `data management`, `remove data from archive`, and `remove cache files`. Buttons for 'Run now', 'Stop', 'LogFile', and 'Activated' are also present.



Workflow Test Runner

- Internal module (originally meant for testing purposes) to run workflows automatically (and logs about it)...

Purpose

To automatically assess the effect of changed configuration...
(results should be the same)

- New feature: output of this Workflow Test Runner can be written in Junit XML → allows for integration with common tooling for CI/CD and automated testing ([Azure DevOps](#))



Third Party Library upgrades

- NetCDF libraries have been upgraded to version 5.5.2 (and supporting NetCDF-C library to 4.8)
- Chromium browser (JCEF package) for **Web Browser Display**: one version supports all Delft-FEWS versions. One download required for Windows or LINUX

Downloads

The JCEF package, which is a Java wrapper for CEF is provided for both Windows and Linux and as of April 2022
For FEWS branches older than 2020.01 you need the most recent FEWS patch to be able to use this package. The

CEF / Chromium version	Windows	Linux
100.0.14+g4e5ba66 / 100.0.4896.75	jcef.zip	jcef.zip

Upgrade and update strategy

Introduction

This (internal) page is meant for discussing, defining and detailing the Delft-FEWS upgrade/update strategy -

- Supported versions of (central) databases: Oracle, PostgreSQL and SQLServer
- Supported versions of operating systems (linux, Windows)
- Java JDK
- Important middleware: Tomcat, ElasticSearch, Thredds, JCEF
- Important third party libraries (e.g. log4j)

Central database

*) expiry date is regular expiry date, infinite extended support possible

database	expiry date	release version
Oracle 21c	Apr 2024*	tested on XE only
Oracle 19c LTS	Apr 2024*	2018.02 and later
Oracle 18c	Jun 2021*	
Oracle 12c	Nov 2020*	
PostgreSQL 14	Nov 2026	untested
PostgreSQL 13	Nov 2025	2021.02-2025.01
PostgreSQL 12	Nov 2024	2018.02-2024.01

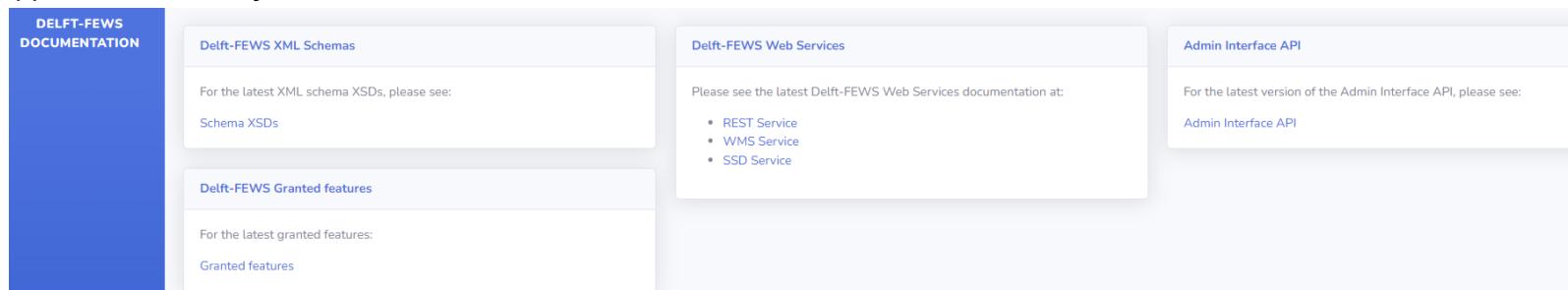


Documentation

- Improvements
 - [Stable version based pages](#) for **installing and upgrading Delft-FEWS**
 - [Stable version based pages](#) for **installing and upgrading the Open Archive**
 - [Stable version based pages](#) for **hardware and software requirements**
 - Easier to update, maintain and understand
- Extended – dynamic and generated content: <https://fewsdocs.deltares.nl/>
 - Delft-FEWS schemas (XSD)
 - Granted features for future versions
 - Delft-FEWS webservices (Open API style)
 - Admin Interface API (Open API style)
 - To be added: Release Notes (!) → currently in test, aimed for 2022.02

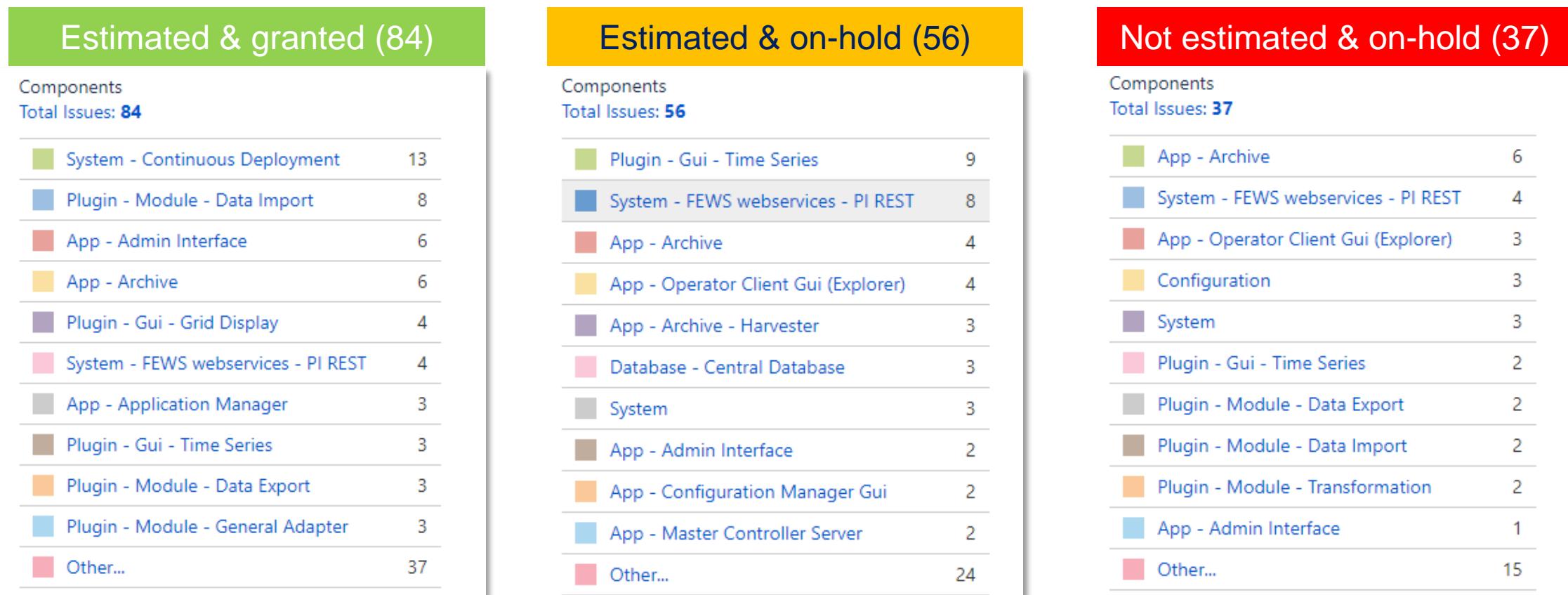
Contents

- [Delft-FEWS Admin Manuals](#)
- [Delft-FEWS Connectivity guides](#)
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 - [What's new in the installation process - 2022.01](#)
 - [What's new in the installation process - 2021.02](#)
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 - [What's new in the installation process - 2020.02](#)
 - [What's new in the installation process - 2020.01](#)
 - [What's new in the installation process - 2019.02](#)
 - [What's new in the installation process - 2018.02](#)
 - [What's new in the installation process - 2017.02](#)



Outlook 2022.02 Features

- Granted features (daily updates) via <https://fewsdocs.deltares.nl/jira/fews-jira/>



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Deltares