

Delft-FEWS AnwenderTreffen Workshop


Delft-FEWS Product Management

June 2023



Workshop contribution

Tipps & Tricks für das Anwenden...

- Hands-on new features (2022.02 and 2023.01)
- Delft-FEWS web services...  try it out...
- Web Operator Client
- Repeat: Documentation, Config Tips for beginners and Videos

What do you need to get started...

- The **latest** binaries
 - Delft-FEWS Base build 2023.01
 - Delft-FEWS Patch 2023.01
 - Delft-FEWS Web OC package
- YOUR complete configuration
- YOUR localdatastore
- Next step: **CREATE A STAND-ALONE FEWS BASED ON THE ABOVE...**

New Features in 2022.02/2023.01

1. Look at the new GUI / Icons (2022.02)
2. Visualize the Spatial Display labels (2022.02)
3. Explorer: show (personal) tab at startup (2023.01)
4. Create and align Dashboards plots more nicely (2023.01)
5. Open a spatial plot from your Topology (2023.01)
6. Data Imports (EFAS SOS Server, Radolan) (2023.01)

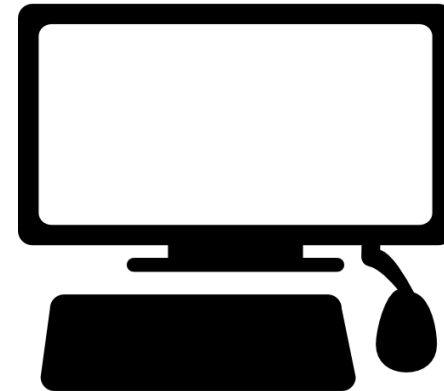
please use the pdf of yesterday's presentation and locate the



try it out...

Web service: what is it anyway...?

- A web service *facilitates* communication between two machines in a network.
- Computer-to-computer communication vs computer-to-human communication (GUI, keyboard).
- Delft-FEWS example: e.g. data in the central database is retrieved by an external web site.



How does a web service (API) work?

- In principle it is a 'question' & 'reply' game...
- In technical terms:
 - You submit a **request** to the API through a URL (will also work in your internet browser)
 - You receive a **response** from the API as **data** in a specific file format (i.e. pi-xml or pi-json)
- Example:
 - Request: <http://localhost:8080/FewsWebServices/rest/fewspiservice/v1/parameters>
 - Response:

```
<?xml version="1.0" encoding="UTF-8"?>
<timeseriesparameters xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  <parameter id="T.obs.mean" parameterGroup="Temperature">
    <name>Observed Monthly Average Temperature</name>
    <parameterType>instantaneous</parameterType>
    <unit>oC</unit>
    <displayUnit>oC</displayUnit>
    <usesDatum>>false</usesDatum>
  </parameter>
</timeseriesparameters>
```

PI-XML

```
{
  "version" : "1.25",
  "timeSeriesParameters" : [ {
    "id" : "T.obs.mean",
    "name" : "Observed Monthly Average Temperature",
    "parameterType" : "instantaneous",
    "unit" : "oC",
    "displayUnit" : "oC",
    "usesDatum" : "false",
    "parameterGroup" : "Temperature"
  } ]
}
```

PI-JSON

Relevant configuration...

Different **files** in your Delft-FEWS configuration folder are used to configure **what data is accessible** through (one of) the FEWS Webservices:

- PiServiceConfigFiles/WebServices.xml → for use in the pi web service
- RegionConfigFiles/Filters.xml → **scalar** series accessible to PI Web service
- DisplayConfigFiles/GridDisplay.xml → **gridded** series accessible to WMS service
- DisplayConfigFiles/ScadaDisplay_XXX.xml → **schematic status** displays accessible to SSD service
- IdMapFiles/IdMapping Files → map Delft-FEWS ids to something pretty

```
WebServices.xml
<?xml version="1.0" encoding="utf-8"?>
<webServices 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/webServices.xsd">
  <general>
    <filters>
      <filterId>myFilterId</filterId>
    </filters>
    <testPageEnabled>true</testPageEnabled>
  </general>
</webServices>
```

← **Filter**

← **Test Page**

Relevant configuration...

Webservices.xml

The screenshot shows the configuration for webServices. The **filters** section includes a **filterId** set to **webservice**. The **wmsService** section includes **wmsAllowedGridPlotGroupIds** with a value of **ECMWF**.

timeseries

Filters.xml

The screenshot shows the configuration for filters. A table lists filters with columns for **id**, **name**, **viewPermission**, and **child**. The filter with **id=4** and **name=webservice** is highlighted in blue. A red arrow points from this filter to the **webservice** filterId in the Webservices.xml configuration.

id	name	viewPermission	child
1	Overzichten		child (2)
2	Metingen		child (5)
3	Deelgebieden		child (1)
4	webservice	administration	child (4)

spatial data

The screenshot shows the configuration for gridDisplay. A table lists gridPlotGroup elements with columns for **id**, **name**, **gridPlot**, and **gridPlotGroup**. The group with **id=4** and **name=ECMWF** is highlighted in yellow. A red arrow points from this group to the **ECMWF** value in the wmsAllowedGridPlotGroupIds field of the Webservices.xml configuration.

id	name	gridPlot	gridPlotGroup
1	IRC	gridPlot (14)	
2	Gemeenten	gridPlot (19)	
3	Harmonie-Arome	gridPlot (4)	
4	ECMWF		gridPlotGroup (2)
5	Deelgebieden		gridPlotGroup (2)
6	Overige kaarten	gridPlot (8)	

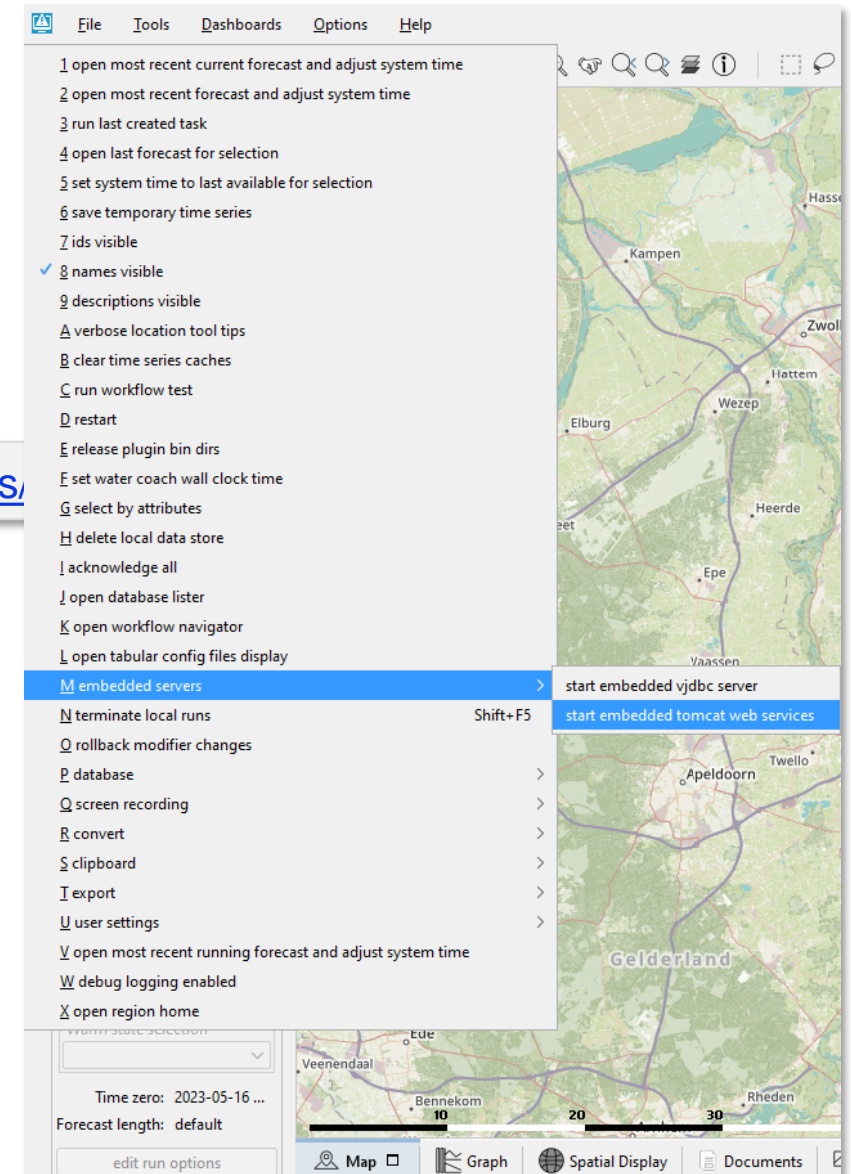
GridDisplay.xml

FEWS PI Web service in action...

- New Feature in 2022.02 and later – Starting the (embedded) web service on your Stand Alone
 - <F12> + M → **start embedded tomcat web service**
- From the log panel

INFO - Started FewsWebServices: <http://localhost:8080/FewsWebServices>

- Opening the Test page in your browser
- Submit requests AND get responses
- Web service functionality in SA is identical as the web service installed in a client-server environment.



FEWS PI Web service test page

- Web page for testing **requests** and preview & understand the **responses**.

Delft-FEWS Web Services

PI REST WMS-T SSD WaterML Digital Delta Operating Request

Delft-FEWS Web Services

PI REST Web Service

The Delft-FEWS REST Web Service provides a REST based interface to Delft-FEWS and can be accessed by the REST protocol.

[Test page »](#) [Documentation »](#) Developers Documentation: [Open API documentation page »](#) [Open API 3 model »](#)

Web Mapping Service with time support (WMS-T)

The Delft-FEWS Web Mapping Service with time support is the FEWS implementation of the WMS-T OGC standard. It allows requesting images for plots that have been configured in the FEWS grid display.

[Test page »](#) [Documentation »](#) Developers Documentation: [Open API documentation page »](#) [Open API 3 model »](#)

Schematic Status Display Service

The Schematic Status Display Service.

[Test page »](#) [Documentation »](#) Developers Documentation: [Open API documentation page »](#) [Open API 3 model »](#)

WaterML Web Service

The WaterML2 Web Service provides a HTTP based interface to Delft-FEWS and can be accessed by the WaterML protocol over HTTP(S).

[Test page »](#) [Documentation »](#)

FEWS PI Web service test page: REST Web Service

Delft-FEWS Web Services

Delft-FEWS PI REST Web Service

Get filters that are a subfilter of the default filter. An existing subfilter of the default filter id can be specified as well.

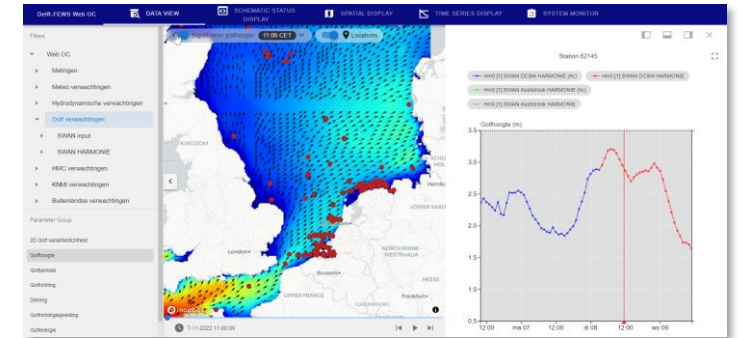
[GET http://localhost:8080/FewsWebServices/rest/fewspiservice/v1/filters](http://localhost:8080/FewsWebServices/rest/fewspiservice/v1/filters)

Method parameters	Description
filterId	An existing subfilter of the default filter id
documentFormat	Document format of the response
documentVersion	Document version

- GET filters
- GET locations
- GET parameters
- GET parameters/nodes
- GET timeseries
- GET timeseries/displaygroups
- POST timeseries
- GET import/status
- GET taskruns
- GET moduleruntimes
- GET timeseries/grid
- GET qualifiers
- GET taskrunstatus
- POST runtask
- GET timeseriesmodifiers
- GET modifiers
- POST modifiers
- GET workflows
- GET samples
- GET processdata

Web Operator Client (Web OC)

- Ongoing development: MVP launch: **end of 2023!**
- Intermediate versions are testable with a stand alone!!
- Minimal **configuration** is required...
 - [WebServices.xml](#) in Config/ServiceConfigFiles
 - [WebOperatorClient.xml](#) in Config/SystemConfigFiles

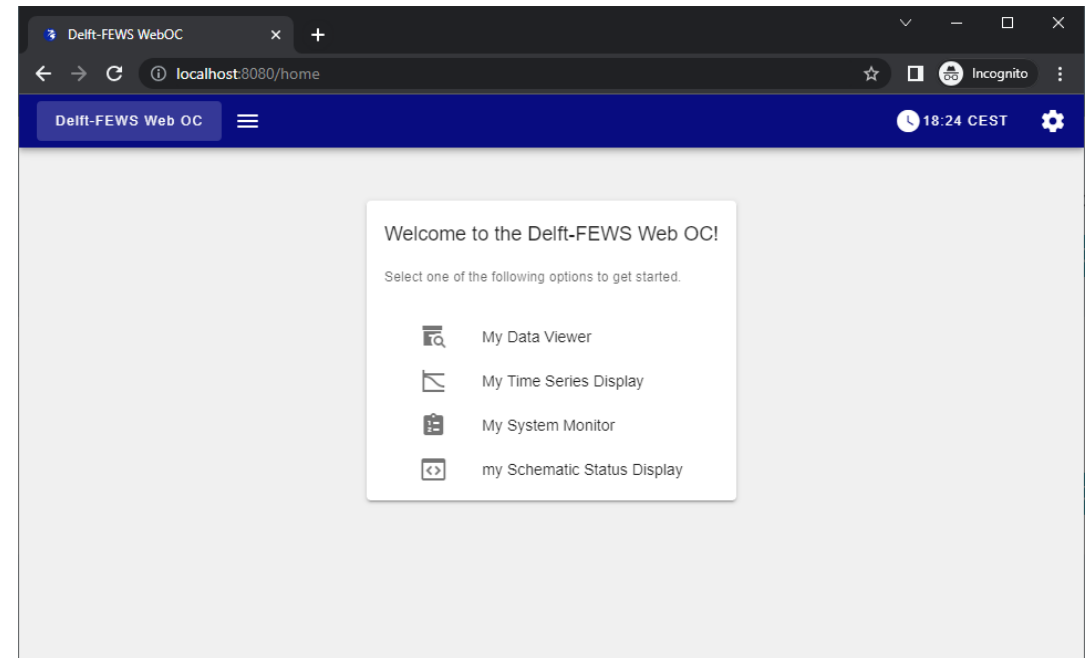


Web OC component	Link to OC functionality
Data view	Showing all data from default filter id, and spatial display, grouped by parameter group
Spatial display	Showing all spatial data in tree based on spatial display config
Schematic Status Display	Showing all schematic status displays based on config
Time Series Display	Showing predefined plots (display groups) linked to Topology configuration
Archive Display	Optional
System Monitor	Optional

Web OC Launch

Steps to take:

1. Assumption:
 - Recently created SA (data should not be older than 10 days)
 - [WebServices.xml](#) AND [WebOperatorClient.xml](#) configuration files available.
2. Install the Web OC package.
 - How? Simply extract the weboc.zip in your SA structure in /Modules/weboc
3. Start web service locally (<F12 + O + Start Embedded Tomcat Web Service)
4. Open (incognito) browser tab and navigate to: <http://localhost:8080>



Documentation, Tips & Tricks and Videos

- [Delft-FEWS WIKI](#) configuration, user guide (& client-server installation guide → login required)
- [FEWS Docs](#): automatically generated documentation ([schemas](#), [release notes](#), [APIs](#) etc)
- **NEW**: [Tips & Tricks](#) for ‘beginners’ (new configurators)
- Video/recordings overview

Webinar	Date	Topics+video link
Delft-FEWS in the cloud	07.02.2022	Delft-FEWS in the cloud
2021.01 Features	25.04.2022	How to apply auto-calibration (with OpenDA) . (click breakpoint at 5:53) How to improve and polish your output in spatial/timeseries plots / how to make attractive GUI icons . (click breakpoint at 16:16) Spotlight: the Import module . (click breakpoint at 30:19)
2022.01 Features	13.10.2022	Spatial Display and Spatial Transformations (click breakpoint at 6:45) Map and Explorer improvements (click breakpoint at 19:15) Spotlight on the Schematic Status Display (click breakpoint at 40:08)
2022.02 Features	23.03.2023	Running Workflows from Spatial Display (click breakpoint at 5:12) Running the FEWS web services locally (click breakpoint at 16:10) Delft-FEWS and the links to GIS systems (click breakpoint at 30: 48)

Contact

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