Deltares
Enabling Delta Life

Forecast Broker

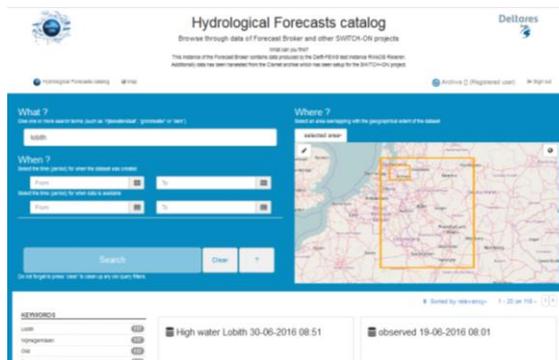*Open archive for hydrological forecast data*

Manage your operational forecast data

The Forecast Broker (FB) enables long term storage of observation and forecast data without overloading your daily operational system. Any data no longer required for operational tasks but too good to be thrown away, can be saved to the FB. Data in the FB can easily be queried and retrieved by hand or via computer interfaces, for later analysis.

By making use of Open Standards the FB complies with the Open Data philosophy and allows you to easily and efficiently share your data.

What Forecast Broker offers

1. The FB allows you to store all your operational data in a structured way on disk. Metadata describing your data is catalogued and made available via open interfaces such as CSW (Catalogue Service for the Web).

2. The FB offers a web portal that enables users to manually search for data.

3. The FB provides tools to manage you data. The concept of 'Events' (hydrological interesting occurrences), allows you to differentiate between interesting- and non-interesting data. Non-interesting data can be cleaned up while interesting data is stored indefinitely.

Who uses the Forecast Broker?

The FB has been developed as an add-on to Delft-FEWS, an operational forecasting system. Delft-FEWS exports operational data and metadata to the FB. Making use of programming interfaces the data can seamlessly be retrieved into Delft-FEWS for historic analysis. Using the FB allows Delft-FEWS clients to offer their data online for repurposing. The FB is already being used operationally by a number of National and Regional water authorities around the world.

More information please contact
mailto:erik.derooij@deltares.nl?subject=SWITCH-ON: Forecast Broker

Check out our demo:
https://youtube/XrNeqpZVxu8

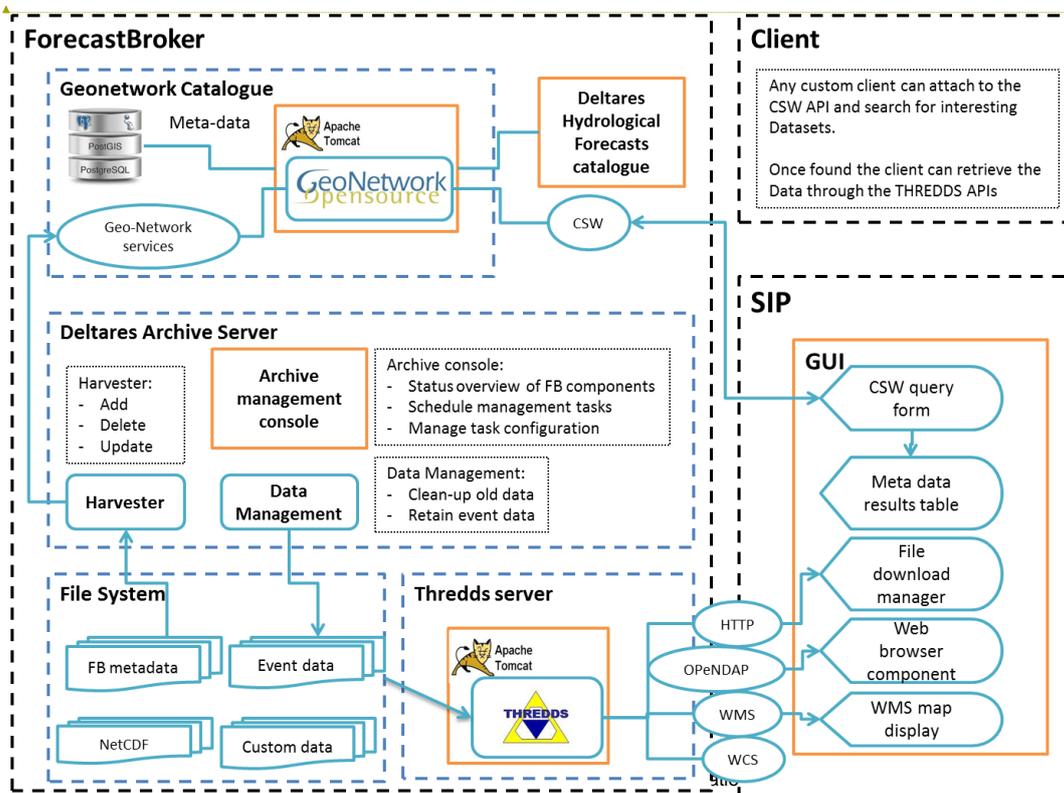*Keywords:*

Overview of Forecast Broker components

The FB is a framework that combines software developed by Deltares with other Open Source software products. The main components constituting to the framework are; Deltares Archive Server, Geonetwork and THREDDS.

Geonetwork is an Open Source catalogue service that allows users to search data using keywords, time period or spatial extent. Data can be queried in an automated fashion via the CSW protocol or manually via a web console customized by Deltares.

THREDDS is an Open Source data server that offers multiple interfaces for retrieving online data. For the FB we make use of the HTTP and OPeNDAP protocols to retrieve data. Links to the data products are obtained from the metadata available in Geonetwork.

Deltares Archive Server is the central control component.

- It manages the catalogue, updating it whenever; new data becomes available, existing data is updated or old data is removed.
- It goes through the file store looking for expired data. Data is evaluated in relation to hydrological events and is then removed or retained.
- It offers a web console that offers a status overview of the FB system and allows the user to control the different management tasks.

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ForecastBroker

Geonetwork Catalogue

PostGIS
PostgreSQL

Meta-data

Apache Tomcat

GeoNetwork
Opensource

Deltares Hydrological Forecasts catalogue

Geo-Network services

CSW

Client

Any custom client can attach to the CSW API and search for interesting Datasets.

Once found the client can retrieve the Data through the THREDDS APIs

Deltares Archive Server

Harvester:
- Add
- Delete
- Update

Archive management console

Archive console:
- Status overview of FB components
- Schedule management tasks
- Manage task configuration

Harvester

Data Management

Data Management:
- Clean-up old data
- Retain event data

File System

FB metadata

Event data

NetCDF

Custom data

Thredds server

Apache Tomcat

THREDDS

HTTP

OPeNDAP

WMS

WCS

SIP

GUI

CSW query form

Meta data results table

File download manager

Web browser component

WMS map display

Deltares is an independent institute for applied research in the field of water, subsurface and infrastructure. Throughout the world, we work on smart solutions,innovations and applications for people, environment and society. Deltares is based in Delft and Utrecht.