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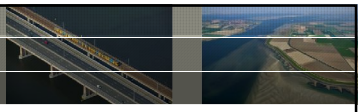
Enabling Delta Life

Risc-kit Configuration Training Course

9 July, 2014

Naming structure in Risc-kit



In order to allow for easy modification, the Risc-kit basic configuration was created to be as generic as possible, with no or little model specific information.

This means we use generic names where possible (e.g. moduleConfigFiles, locations and locationSets). Also, the displays (e.g. Filter, DisplayGroups, GridDisplay) are relatively straightforward and not specific.

This approach works best if the naming convention throughout the configuration is consistent.

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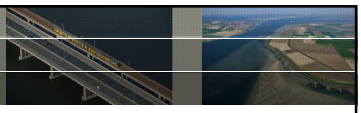
Module config template files



For the ModuleConfigFiles we have made use of the so called Template files, in order to save you work. The template files make use of keywords or $PROPERTIES$. These "variables" are filled in by FEWS on the fly based on the information in the corresponding workflowFile.

This means the moduleInstance file is generated automatically each time the workflow is run. This file therefore does not exist as a separate file in the configuration, but still has to be declared in the ModuleInstanceDescriptors.xml. See below for some examples. This approach is only worth your while if the moduleInstance will be multiple times. Therefore, many of the import moduleInstances do not make use of this approach.

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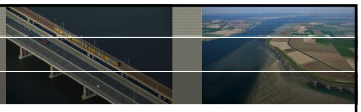
Locations as *.csv



The locations and locationSets are generated as much as possble based on csv files (see MapLayerFiles). This method is explained on the wiki: http://publicwiki.deltares.nl/display/FEWSDOC/22+Locations+and+attributes+defined+in+CSV+files%2C+Shape-DBF+files+or+external+tables

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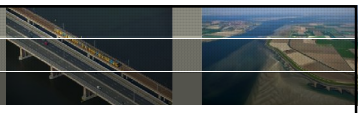
Module/Model adapters



The model adapters are part of the configuration (Modules/bin/*_adapter/). The adapters are described on several wiki pages.

Model adapters: https://publicwiki.deltares.nl/display/FEWSDOC/Module+adapters

- http://publicwiki.deltares.nl/display/FEWSDOC/Delft3d+adapter
- http://publicwiki.deltares.nl/display/MD/MD+-+DFLOWFM+model+adapter (module:2D hydrodynamica ondersteund, D-Flow FM Version 1.1.90.31714 (jan 2014), including restart from netcdf restart files)
- http://publicwiki.deltares.nl/display/FEWSDOC/WW3+model+adapter
- http://publicwiki.deltares.nl/display/FEWSDOC/SWAN+model+adapter
- http://publicwiki.deltares.nl/display/FEWSDOC/XBeach+Adapter

Configuration guide on model adapters

- https://publicwiki.deltares.nl/display/FEWSDOC/Quick-start+Guide+for+Adding+an+External+Module+in+FEWS
- (http://wiki.wldelft.nl/display/FEWS/Delft3D-FEWS+adapter+configuration+manual, referring to the "old" model adapter)

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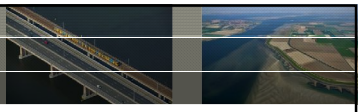
ModuleDataSetFilesUnzip



We keep a copy of the ModuleDataSetFiles in the folder ModuleDataSetFilesUnzip, in order to be able to do file version management. When you need to change (or add) a ModuleDataSetFile, first make a / go to the folder in ModuleDataSetFilesUnzip/ModelX, make your changes and zip this folder to Config/ModuleDataSetFiles, which will be used by FEWS.

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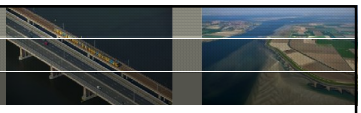
Exercise



Now it's your turn to get your hands on the Risc-kit example configuration

Task:

- Add a new module to the example configuration using:
  - Xbeach model files
  - Your knowledge from the previous exercises
- We will be on hand to answer any questions along the way
- Good Luck!

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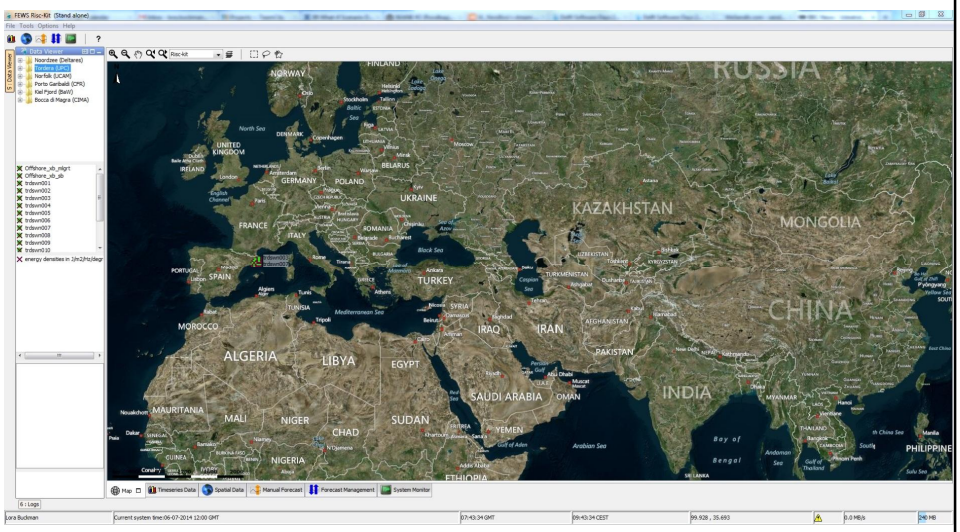
Risc-kit Configuration Training Course

Part 2

29 September – 3 October

New (and improved) Risc-kit FEWS



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New (and improved) Risc-kit FEWS

- Subdirectory structure by system name
  - IdMapFiles
  - MapLayerFiles
  - ModuleConfigFiles
  - WorkflowFiles
- Systems integrated into single files
  - DisplayConfigFiles (GridDisplay)
  - RegionConfigFiles (Filters, Grids, Locations, LocationSets, ModuleInstanceDescriptors, Parameters, WorkflowDescriptors)
  - SystemConfigFiles (Explorer)
- Added Module files
  - ColdStateFiles
  - ModuleDataSetFiles
  - ModuleDataSetFilesUnzip

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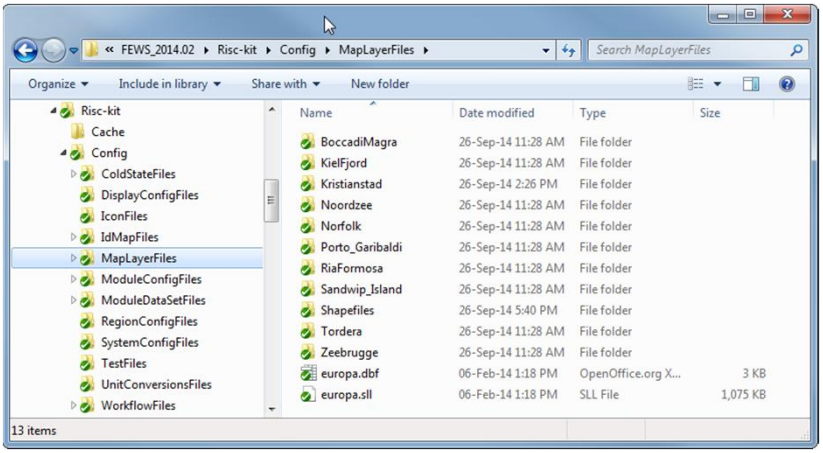
Example: MapLayerFiles



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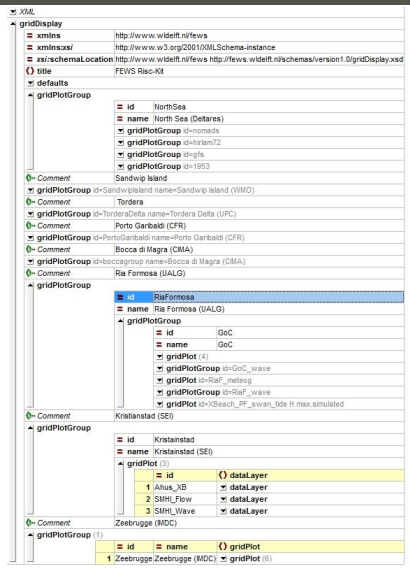
Example: GridDisplay.xml



Systems separated by comment lines for visual clarity

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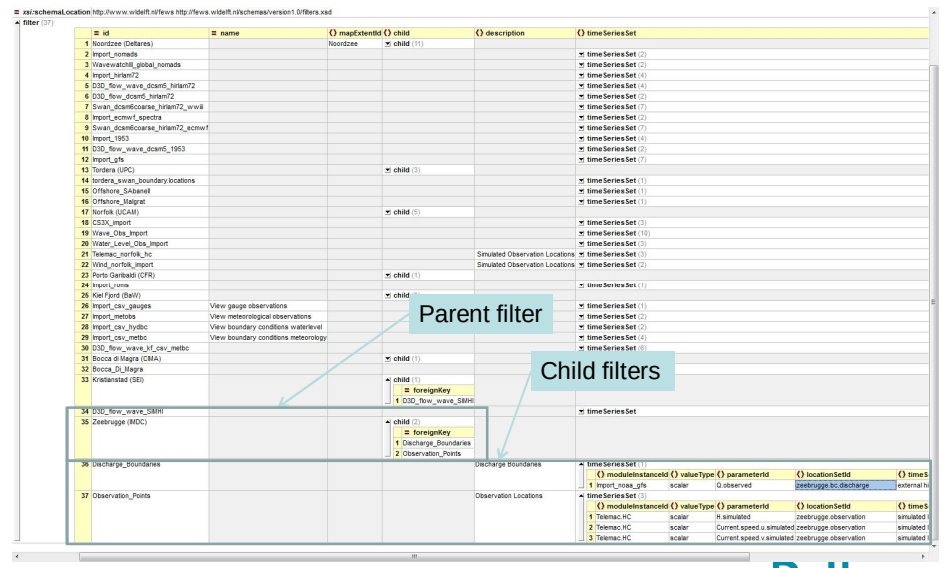
Example: Filters.xml



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Where are we now?

Partners	FEWS system	Known issues
CIMA – Mirko	Bocca di Magra	• Import of Miloch data • Output from Continuum to FEWS
SEI – Ali	Kristianstad	• D3D data imports to FEWS • Set up Xbeach GA
LIENSs – Gael	La Faute sur Mer	
UCAM – Elizabeth	North Norfolk	• Make exe from Python script • Set up model configurations
CFR – Mitchell	Porto Garibaldi	• ??
UALG – Haris	Ria Formosa	• Debug SWAN exe • Configure custom data import
WMO – Willem	Sandwip Island	• Set up model configs
UPC – Marc	Tordera Delta	• Configure custom data import
IO-BAS – Nikolay & Petya	Varna	• D3D run and export
IMDC -	Zeebrugge	• ??

Custom Data Imports

- Many, many data import types already available in FEWS
- NOT EVERY text format is supported
  - 2 options for custom text formats (time series):
    - HARDER BUT BETTER WAY: Custom time series import formats using java https://publicwiki.deltares.nl/display/FEWSDOC/Custom+time+series+import+formats+using+java
    - EASIER WAY: Write a script using and external program (Matlab?, Python, etc) to convert the data to a FEWS-compatible format.
      - For automated import: create an executable from that script to run using the General Adapter from FEWS

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Creating executables from Python/Matlab

It is possible to create an executable from Python and Matlab scripts to be executed from within FEWS, however:

- For Matblab:
  - You need a special license to run the compiler
  - This license also needs to be present on the computer where you call the executable
- For Python:
  - No special license is required
  - Kees den Heijer could explain how it's done later this week

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Troubleshooting / tools

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FAQ / General Comments

- Be careful with **time zones** between FEWS and external modules
  - Time zone used in preadapter is specified in GA – general
  - Model time zone is specified within the model (i.e. mdf for D3D)
    - Make sure these are the same!!!!
  - System time in FEWS can always be customized and FEWS will take care of the necessary conversions for model runs
- Be careful with **location** and **location set** names, **time steps**, and **data types** (i.e. external forecasting vs. simulated historical)
  - If all aspects of the time series are not correct the data will not be displayed and/or transferred. Especially important for:
    - GridDisplay
    - Filters
    - Import / Export to external modules

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Troubleshooting adding modules

Check out the improved Quick-start Guide and Troublshooting page of the Deltares FEWS wiki:

https://publicwiki.deltares.nl/display/FEWSDOC/Quick-start+Guide+for+Adding+an+External+Module+in+FEWS

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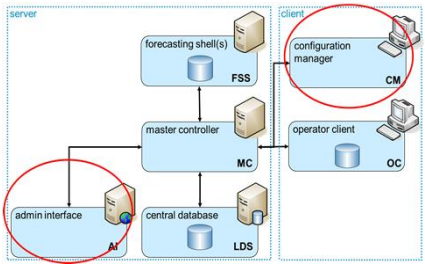
Tools (recap from the first week)

. Workflow Navigator
. Database Viewer
. Diplays
. WIKI
. XML Spy, oXygen
  - creating, editing, validating (schema)

. FEWS Configuration manager (special class in OC)
  - Managing the (operational) configuration
  - Distribute through the database(s)

. Admin interface (Web application)
  - System Management
  - Scheduling tasks/workflows
  - Health checking



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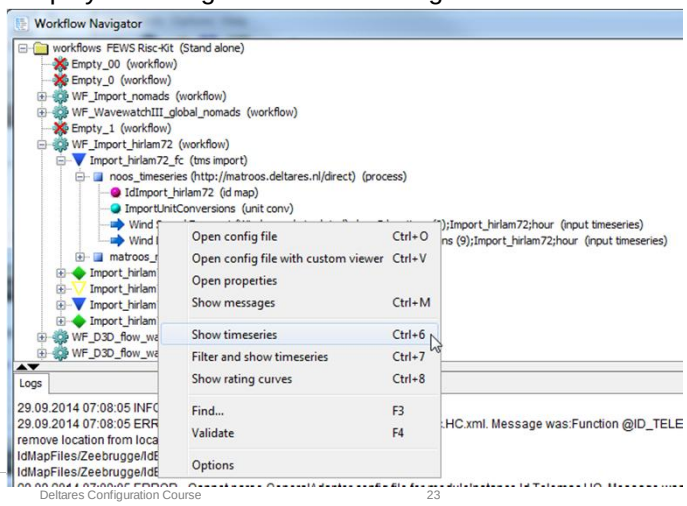
Tools – Workflow Navigator (F12 – K)

- Check configuration step by step
- helps you finding errors in the configuration

Demonstration



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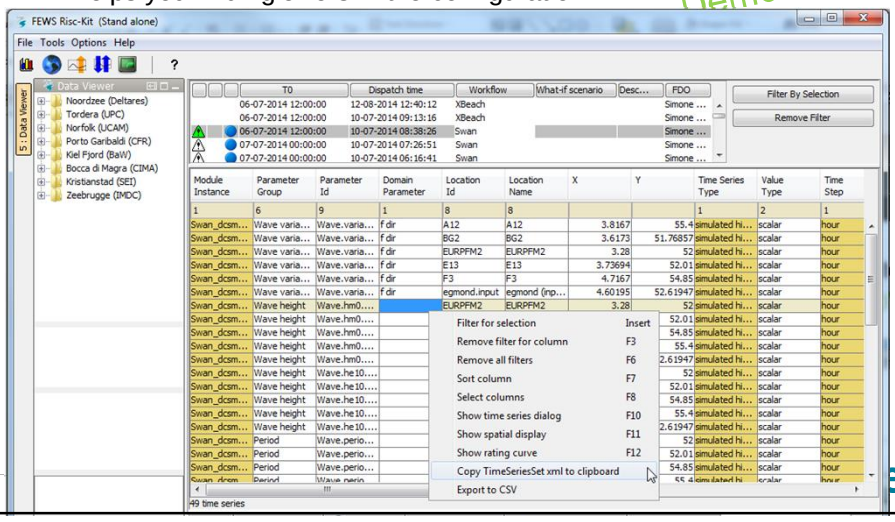
Tools – Database Viewer (F12 – J)

- Check what has actually been imported to your local data store
- helps you finding errors in the configuration

Demonstration

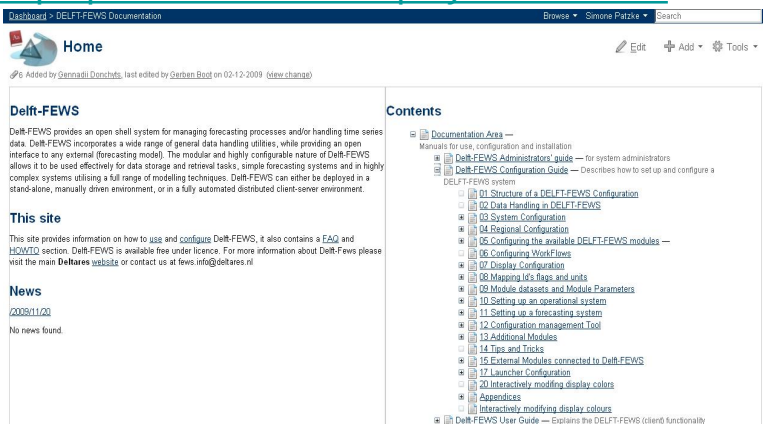


Tools - WIKI

Documentation on Public Wiki

Demonstration

http://public.wldelft.nl/display/FEWSDOC



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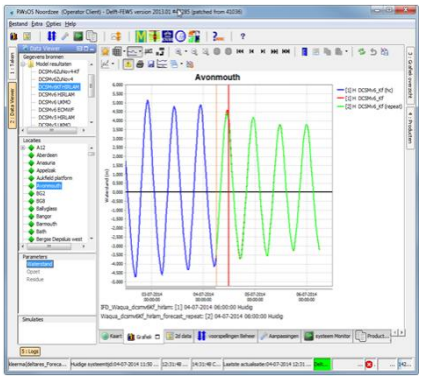
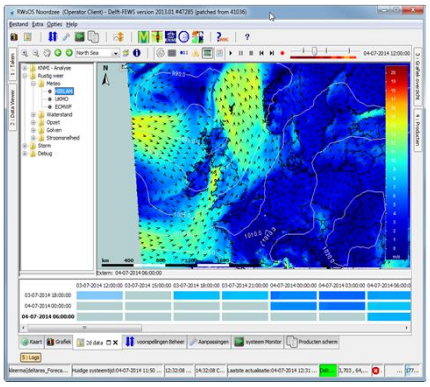
Tools - Displays

Exercises tomorrow





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End of the Week Goal

- All imports automated
- At least one instance from each module in your model train running with correct, or a complete example of correct, data input and importing of all, or at least some, output
- Display of all relevant data in FEWS explorer

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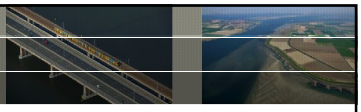
Let's start unzipping…



The new configuration will be distributed via USB sticks.

Please take note:

- Unzip the zip files into folders with the same name
  - e.g. Extract to "Risc-kit\"
- LocalDataStore: put in the folder Risc-kit
- bin folder includes FEWS 2014.02 (was 2014.01)
- jre folder is unchanged

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