

10 Interactive forecast display

This display allows forecast tasks or workflows to be run locally on the operator client. These forecast tasks may be sub-tasks to a full basin forecast. The concept is that this display is used in conjunction with the Time Series Modifier Display. In the latter, modifiers are defined, and then run through this display. As the modifiers will typically pertain only to changes in time series in a part of the sub-basin, only the tasks relevant to that sub-basin need to be re-run.

Once the set of modifiers have been defined, and the results from that sub-basin are deemed acceptable, the forecaster can then move on to the next task downstream.

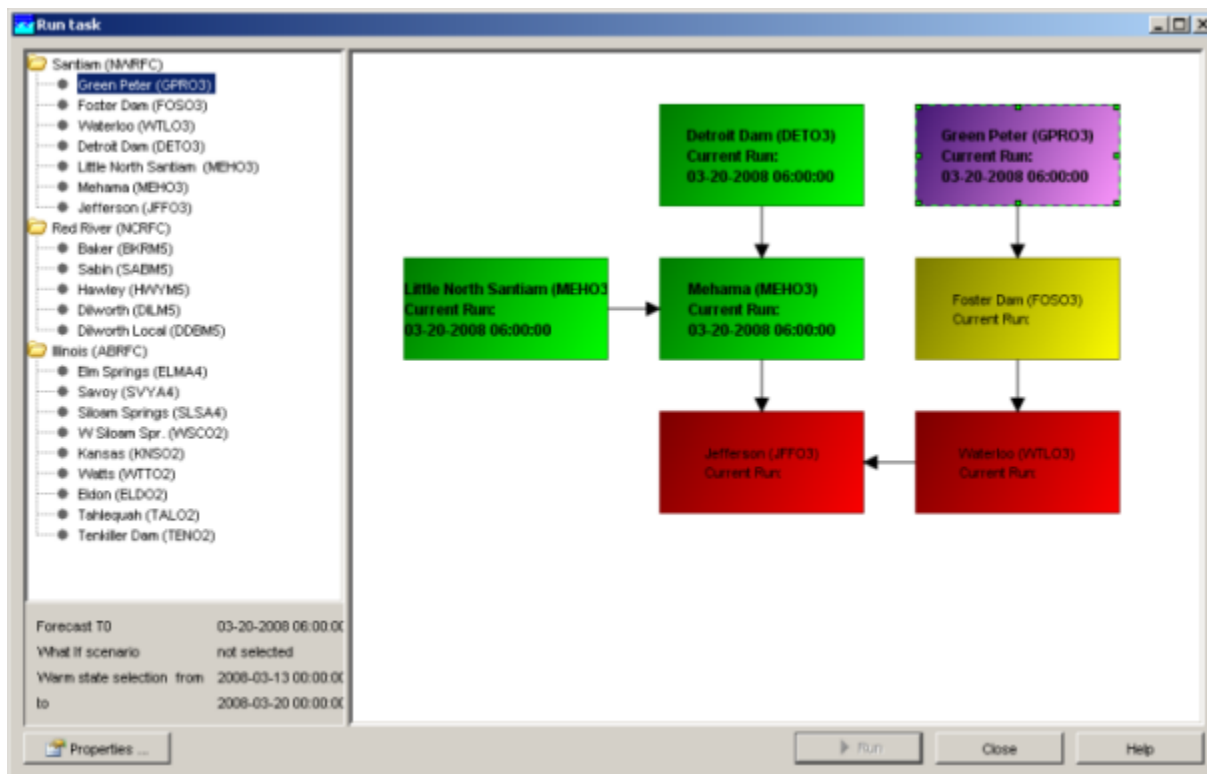
The display shows a logical layout of the sub-tasks. This is defined in configuration. A downstream sub-task may be dependent on an upstream workflow, and this can be indicated graphically. When such a dependency is defined, will only allow the running of that sub-task if the task on which it is dependent is run and completed first.

A simple colour scheme is used to show the status of each of the sub-tasks;

- Green - indicates the sub-task is up to date.
- Yellow - indicates this sub-task is not up-to-date. However, there are no dependencies on other tasks or all tasks are up to date. The task is therefore available to be run.
- Red - indicates this sub-task is not up to date. There are dependent tasks which are not yet up to date. The task cannot yet be run.
- Purple - indicates the task is running.

The display shows the layout of the sub-tasks in the main panel, as well as a tree view on the left. Multiple groups may be defined. When selected in the tree view on the left, the group of sub-tasks displayed associated to that group will be displayed in the main panel.

The properties of the tasks run interactively through the display can be changed from the default properties using the Properties button. An information panel below the tree view indicates the properties that have been set.



Selecting a group of tasks

A group of sub-tasks, usually associated to a basin can be selected from the tree view on the left. The sub-tasks displayed in the main panel will be updated according to the group selected.

Running sub-tasks

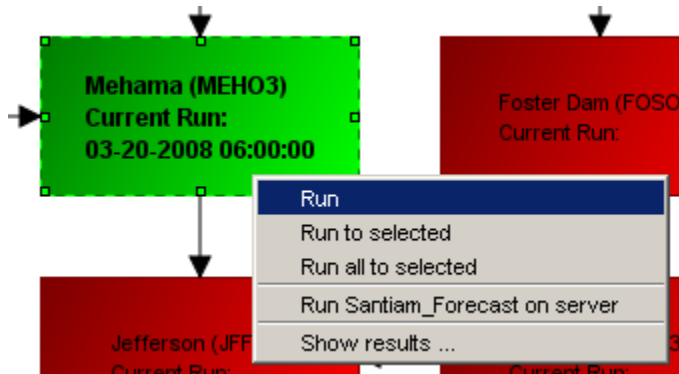
To run a sub-task, select the task block it is associated to in the main panel. A dotted outline of the task block highlights that it has been selected.

A menu can be activated with options to run the task

To run the task selected, select the Run option. This is only possible if the task block is green or yellow.

To run all preceding tasks, select the Run to Selected option. This will run all tasks that have not yet been run in the defined sequence.

To run all preceding tasks, including re-running those tasks already up to date, select the Run all to Selected option. This will run all tasks that have not yet been run in the defined sequence.



Running the group workflow on the server

Once the iteration of tasks has been completed, the workflow associated with the group selected can be submitted for running on the server. In effect this is the same as submitting that task through the Manual Forecast Dialogue. This workflow will, however, use the properties as defined for the sub-tasks when running these locally.

Showing results of a sub-task

To view the results of a sub task, the option Show Results... can be selected. This opens the time series display, and opens the pre-configured display that has been configured to be associated with that sub-task.

Setting the properties of task runs

The properties of the task runs can be amended from the default settings by selecting the Properties option.

Through this display the properties of the run can be specified. This display is similar to the options available in the Manual Forecast Dialogue

A what-if scenario can be selected to be used in the task runs

The run can be set to use to cold state start by selecting the Cold State option and setting number of days prior to the Forecast T0 that the run should start.

The run can be set to use a warm state by selecting the state search period. This can be set relative to the Forecast T0 by using the Warm State option. Alternatively the historical run to start from can be selected in the list of dates available in the Warm State Selection option.

The forecast length can be specified to deviate from the default by selecting the option Forecast Length and entering the appropriate number of days.

One the options have been defined, these will be used for all tasks run within the active session of the interactive forecast display.

Green Peter (GPR03)

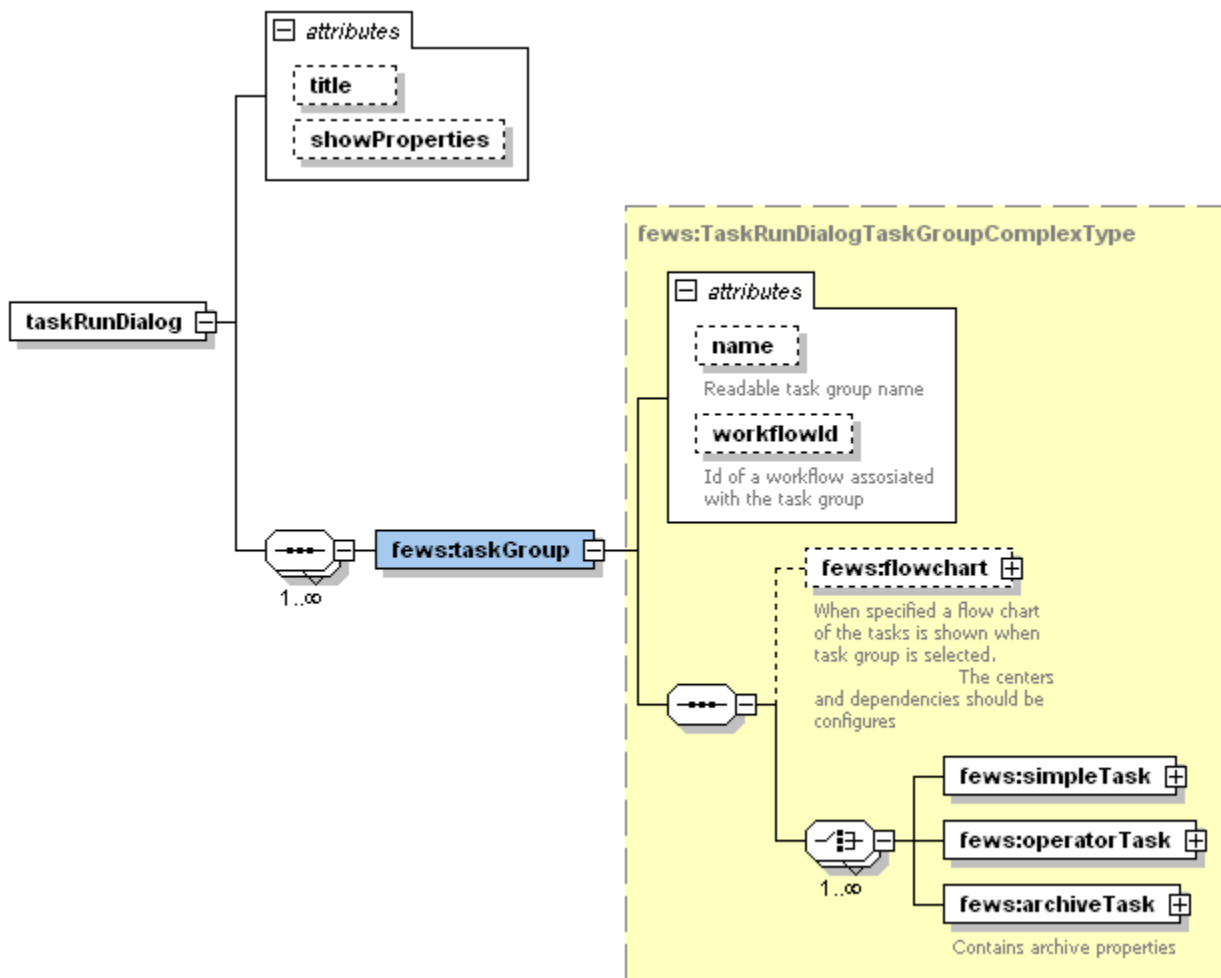
Workflow
Green Peter (GPR03)
 What-if scenario: None Info
 Description:
 State selection
☒ Select initial state
☐ Cold state
☐ Warm state
 Cold state
 Type: Cold States(Default)
 Relative start time: day 1
 Warm state
 Search interval
 Time unit: hour
 Start-end time: 8:00 17:00
 Warm state selection
 Warm state selection: 2008-03-20 00:00:00
 Forecast length
☒ Default
☐ User defined: day 1
 OK Cancel Help

Configuration of the Interactive Forecast Display

The interactive forecast display is an implementation of the TaskRun dialogue.

This is the configuration of a display and can be found in the displayConfigFiles section of the configuration.

The configuration of the display requires a layout of the flow chart to be defined, as well as the workflows associated to each group of tasks, and sub-tasks.



taskRunDialog

Main element of the configuration. This may include the attributes;

Title The title of the window

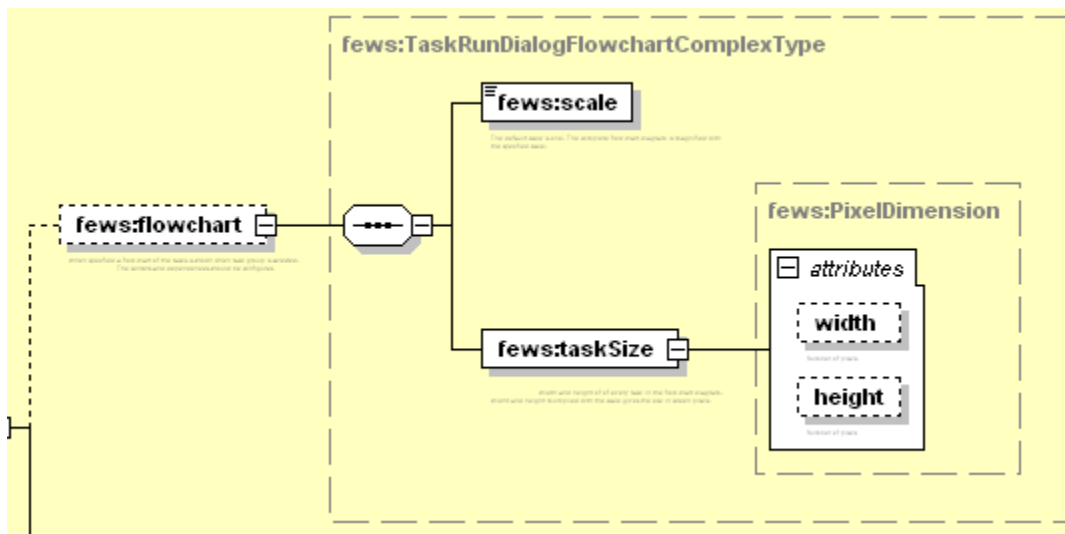
showProperties An option to enable or disable the Properties dialogue on the display.

taskGroup

For each group of tasks this element is defined. This has two attributes;

Name the name of the group as displayed in the tree view on the left of the display.

workflowId the Id of the workflow which can be submitted to the central server. This workflow should run all the tasks in the group. Note that there is no check if this is indeed the case.



flowChart

This element is used to define the overall layout of the flow chart shown on the main panel. The element has no attributes

scale

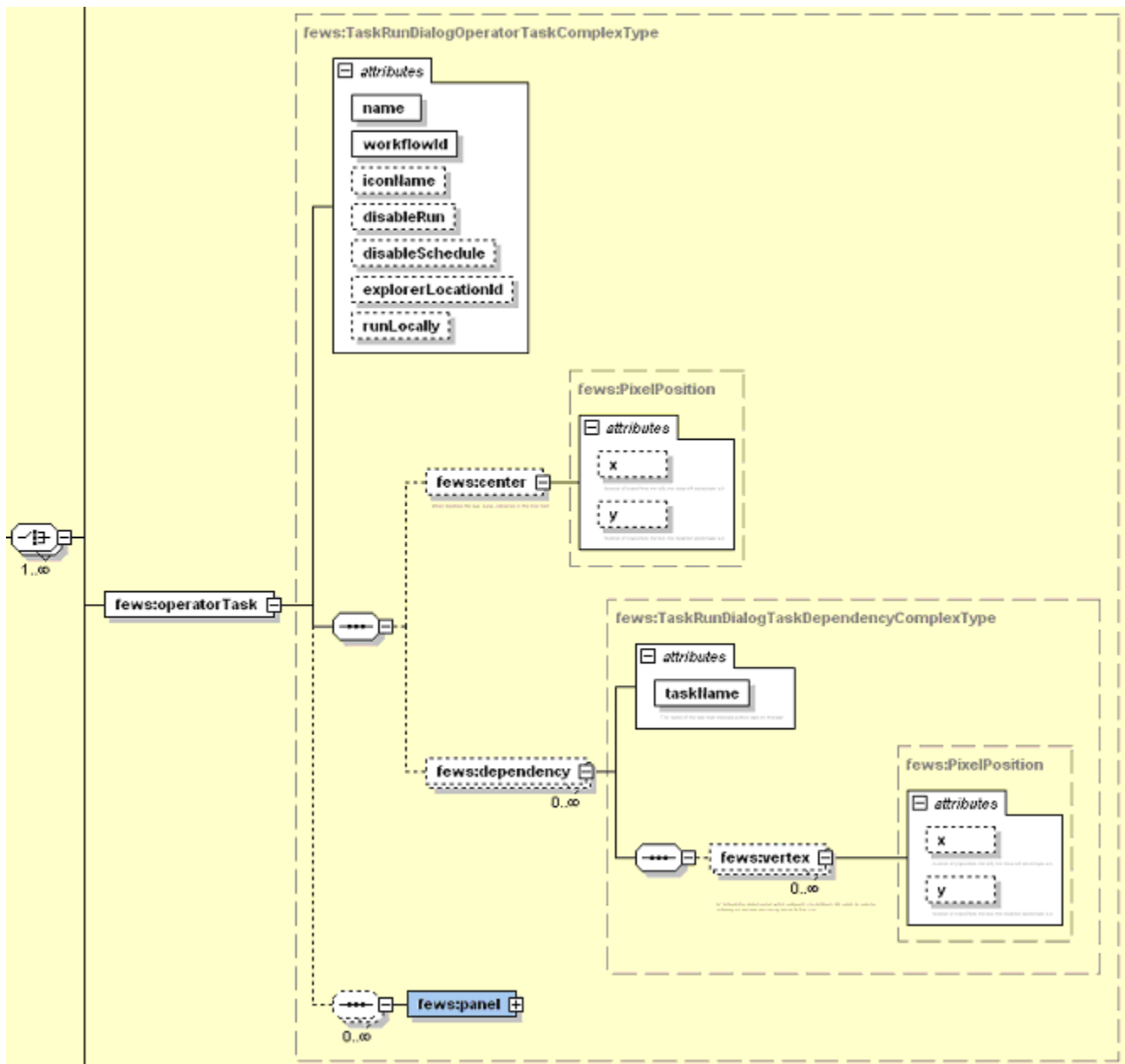
Scale can be used to increase and decrease the size of the flow chart, without the need to change each individual item.

taskSize

This defines the size of each task block. The values entered here are multiplied by the scale to find the actual size in pixels. There are two attributes;
width width of each task block - the full width is found by multiplying the width defined with the scale.
height height of each task block - the full width is found by multiplying the height defined with the scale.

simpleTask

Not used in the configuration of the Interactive Forecast display. This element should not be included.



operatorTask

Definition of each of the sub-tasks that can be run from the display. The attributes that are relevant to the configuration of this display are;

name Name of the task as it should appear on the display

workflowId Id of the workflow to run under this task

explorerLocationId Id of the main location associated with the sub-task. This is used to open the associated display to view results.

runLocally Option whether this task is to run locally or centrally (default: true)

center

Defines the centre of the associated task block. This coordinates are in the same scale as the taskSize. The actual pixels from the top left of the display can be calculated by multiplying with the scale value. The attributes are;

x location of the centre of the task block from the top of the panel

y location of the centre of the task block from the left of the panel

dependency

Defines the tasks on which this task depends (i.e. its predecessors). Zero or more dependencies can be defined. The attributes are;

taskName name of the task that should be run before this one

vertex

If the task being defined and a dependent task cannot be connected by a straight line, a vertex point can be defined. The connecting line will pass through that point. . The actual pixel location from the top left of the display can be calculated by multiplying with the scale value. The attributes are;
x x-coordinate of the vertex from the left of the panel.
y y-coordinate of the vertex from the top of the panel

fewsPanel

Not used in the configuration of the Interactive forecast display. This element should not be included.

archiveTask

Not used in the configuration of the Interactive forecast display. This element should not be included.

Adding Interactive Forecast Dialogue to the configuration.

To use the interactive forecast dialogue, it must be added to the following general configuration files in the SystemConfig section;

Explorer.xml

```
<explorerTask name="Interactive Forecast">
  <iconFile></iconFile>
  <mnemonic>I</mnemonic>
  <taskClass>nl.wldelft.fews.gui.plugin.taskRunDialog.TaskRunDialogFewsExplorerPlugin</taskClass>
  <toolbarTask>true</toolbarTask>
  <menubarTask>true</menubarTask>
  <accelerator>ctrl I</accelerator>
</explorerTask>
```

[Example of a configuration](#)