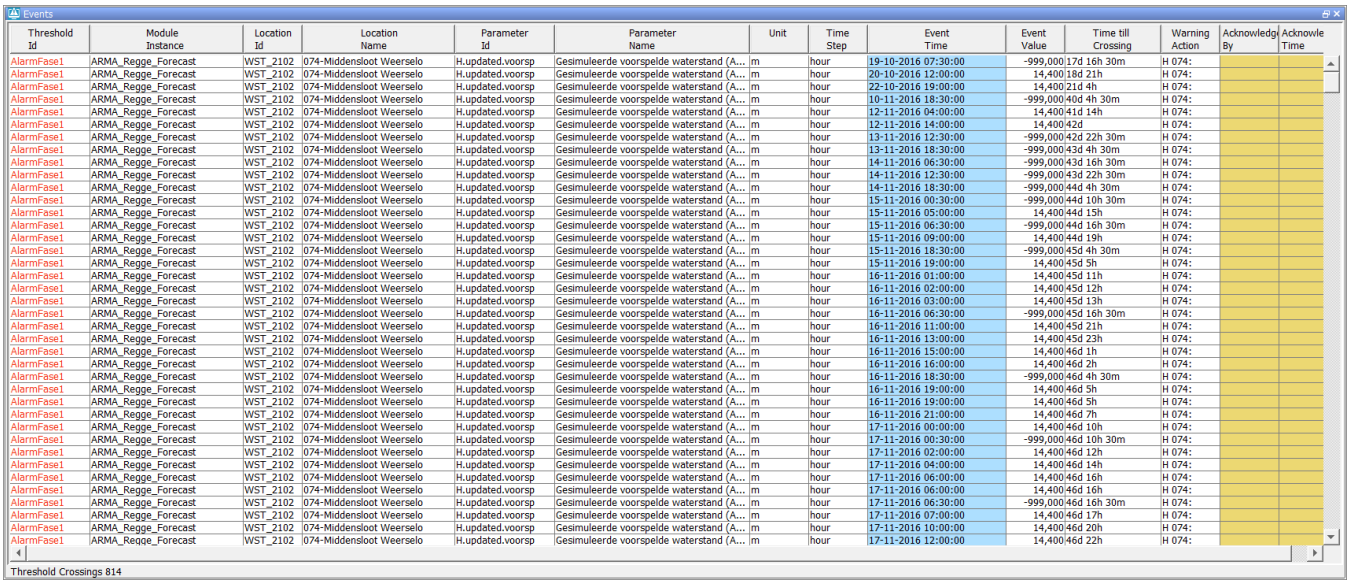
29 System Wide Threshold Events Display

System Wide Threshold Events Display

This display provides users with a system wide overview of all threshold crossing events (as generated when you run ThresholdEventCrossing module in workflows where timeseries are generated). This display makes use of the already existing threshold configuration in the 'thresholdValueSets.xsd' and the 'thresholdDisplayConfig' that is available in the 'timeSeriesDisplayConfig.xsd'.



Events

Threshold Id	Module Instance	Location Id	Location Name	Parameter Id	Parameter Name	Unit	Time Step	Event Time	Event Value	Time till Crossing	Warning Action	Acknowledge By	Acknowle Time
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	19-10-2016 07:30:00	-999,000	17d 16h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	20-10-2016 12:00:00	14,400	18d 21h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	22-10-2016 19:00:00	14,400	21d 4h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	10-11-2016 18:30:00	-999,000	40d 4h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	12-11-2016 04:00:00	14,400	41d 14h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	12-11-2016 14:00:00	14,400	42d	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	13-11-2016 12:30:00	-999,000	42d 22h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	13-11-2016 18:30:00	-999,000	43d 4h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	14-11-2016 06:30:00	-999,000	43d 16h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	14-11-2016 12:30:00	-999,000	43d 22h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	14-11-2016 18:30:00	-999,000	44d 4h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	15-11-2016 00:30:00	-999,000	44d 10h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	15-11-2016 05:00:00	14,400	44d 15h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	15-11-2016 06:30:00	-999,000	44d 16h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	15-11-2016 09:00:00	14,400	44d 19h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	15-11-2016 18:30:00	-999,000	45d 4h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	15-11-2016 19:00:00	14,400	45d 5h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 01:00:00	14,400	45d 11h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 02:00:00	14,400	45d 12h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 03:00:00	14,400	45d 13h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 06:30:00	-999,000	45d 16h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 11:00:00	14,400	45d 21h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 13:00:00	14,400	45d 23h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 15:00:00	14,400	46d 1h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 16:00:00	14,400	46d 2h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 18:30:00	-999,000	46d 4h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 19:00:00	14,400	46d 5h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 19:00:00	14,400	46d 5h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	16-11-2016 21:00:00	14,400	46d 7h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 00:00:00	14,400	46d 10h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 00:30:00	-999,000	46d 10h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 02:00:00	14,400	46d 12h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 04:00:00	14,400	46d 14h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 06:00:00	14,400	46d 16h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 06:00:00	14,400	46d 16h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 06:30:00	-999,000	46d 16h 30m	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 07:00:00	14,400	46d 17h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 10:00:00	14,400	46d 20h	H 074:		
AlarmFase1	ARMA_Regge_Forecast	WST_2102	074-Middensloot Weerselo	H.updated.voorsp	Gesimuleerde voorspelde waterstand (A...	m	hour	17-11-2016 12:00:00	14,400	46d 22h	H 074:		

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Activate Display

The thresholds display can be activated by adding the following explorer task in the Explorer.xml file:

```
<explorerTask name="Events">
    <iconFile>table.png</iconFile>
    <mnemonic>T</mnemonic>
    <taskClass>nl.wldelft.fews.gui.plugin.thresholdeventsviewer.ThresholdEventsTableViewer</taskClass>
    <toolbarTask>true</toolbarTask>
    <menubarTask>true</menubarTask>
    <allowMultipleInstances>false</allowMultipleInstances>
    <accelerator>ctrl T</accelerator>
    <loadAtStartup>false</loadAtStartup>
</explorerTask>
```

Since 2019.02 it got its own display config file: ThresholdEventsDisplay.xml

ThresholdEventsDisplay.xml

```
                <explorerTask name="Events">
                        <iconFile>Warnings.png</iconFile>
                        <mnemonic>E</mnemonic>
                        <displayConfigFileName>ThresholdEventsDisplay</displayConfigFileName>
                        <toolbarTask>true</toolbarTask>
                        <menubarTask>true</menubarTask>
                        <allowMultipleInstances>false</allowMultipleInstances>
                        <accelerator>ctrl E</accelerator>
                        <loadAtStartup>false</loadAtStartup>
                </explorerTask>
```

Configure Display

The thresholds display does not require a display configurations file, it is possible to use some advanced features when a thresholdEventDisplay configuration file is added. For normal applications the display obtains all information for thresholds configuration that is already available in the ThresholdsValueSets.xml file and also in the TimeSeriesDisplayConfig.xml file.

Since 2019.02 specific config options for this display are available used to specify time series sets to find time series for target location id's belonging to threshold events.

ThresholdEventsDisplay.xml

```
<thresholdEventsDisplay 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
/thresholdEventsDisplay.xsd">
    <timeSeriesSet>
        <moduleInstanceId>Import_FloodWarning</moduleInstanceId>
        <valueType>scalar</valueType>
        <parameterId>Threshold</parameterId>
        <locationSetId>UK_Flood_Warning_Alert</locationSetId>
        <timeSeriesType>external historical</timeSeriesType>
        <timeStep unit="nonequidistant"/>
        <relativeViewPeriod unit="hour" start="-24" end="0"/>
        <readWriteMode>read only</readWriteMode>
    </timeSeriesSet>
</thresholdEventsDisplay>
```

Firstly most information is retrieved from the ThresholdValueSets file. In this file all threshold levels are configured with relations to timeseries sets. For the purpose of the Thresholds Display some configuration options have been added to the ThresholdValueSets file to control the view period and visibility of the threshold events.

ThresholdValueSets - EventTimeViewPeriod

This configuration option consists of a relative view period that controls which threshold events are shown in the display by default. The relative period is converted to an absolute period based on the current system time. Only threshold events will be shown if their Event Time lies within the configured period. Changing the System Time is one way to change the view period the events. The other way to change the view period is described in the section on filtering.

Each thresholdValueSet file can contain a single EventTimeViewPeriod element. When multiple thresholdValueSet files are configured and they each have their own relative period then the overal view period is an extension of all the individual view periods.

```
<?xml version="1.0" encoding="UTF-8"?>
<thresholdValueSets 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/thresholdValueSets.xsd"
>
  <thresholdValueSet id="010H" name="H 010">
  ...
  </thresholdValueSet>
  <eventTimeViewPeriod start="0" end="7" unit="day"/>
</thresholdValueSets>
```

ThresholdValueSets - VisibleInEventsDisplay

This configuration options allows you to control the visibility of threshold values. The 'visibleInEventsDisplay' field can be set for each threshold value separately. By default all threshold values are visible. To hide none interesting threshold values from being shown in the display, they must have their visibleInEventsDisplay value set to 'false'.

```
<thresholdValueSet id="013H" name="H 013">
  <levelThresholdValue>
    <levelThresholdId>Alarm</levelThresholdId>
    <value>8.10</value>
    <visibleInEventsDisplay>false</visibleInEventsDisplay>
  </levelThresholdValue>
  ...
```

TimeSeriesDisplayConfig - ThresholdDisplayConfig

The second place where the thresholds display retrieves configuration information is from the TimSeriesDisplayConfig file. This file already contains an element that allows you to control the colors of the threshold values shown in the TimeSeries dialog. This section is also used by the threholds display to color the text in the Threshold Id column.

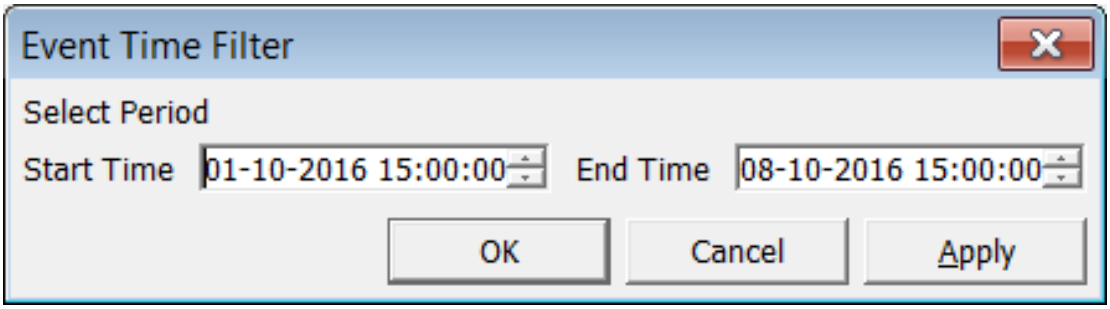
```
  <thresholdDisplayConfig>
      <thresholdDisplayOptions id="Alarm">
          <color>orange</color>
      </thresholdDisplayOptions>
      <thresholdDisplayOptions id="AlarmFase1">
          <color>orange red</color>
      </thresholdDisplayOptions>
      <thresholdDisplayOptions id="AlarmFase2">
          <color>red</color>
      </thresholdDisplayOptions>
      <thresholdDisplayOptions id="AlarmFase3">
          <color>indian red</color>
      </thresholdDisplayOptions>
  </thresholdDisplayConfig>
```

Filtering

The functionality of the Thresholds Display closely resembles that of the 'Database Viewer'. By clicking on a value in one of the columns the table will be filtered for that value. By clicking again on the same column the filter is removed. The Thresholds Display offers two special filter options; Event Time and Event Value

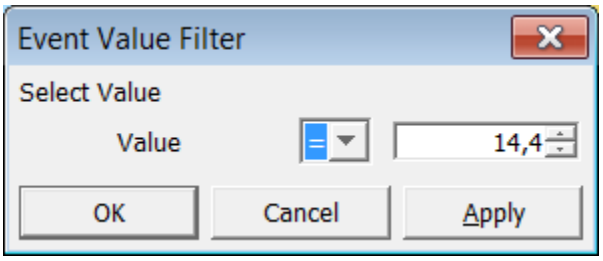
Event Time

When filtering the Event Time column a pop-up display appears allowing the user the overrule and extend the default view period that is controlled by the EventTimeViewPeriod. In the pop-up the user can explicitly select a start and end time for displaying event times.



Event Value

When filtering the Event Value column a pop-up display appears allowing the user to choose how to filter the value column. Options are equal to ('='), greater than ('>') or less than ('<') the entered value.



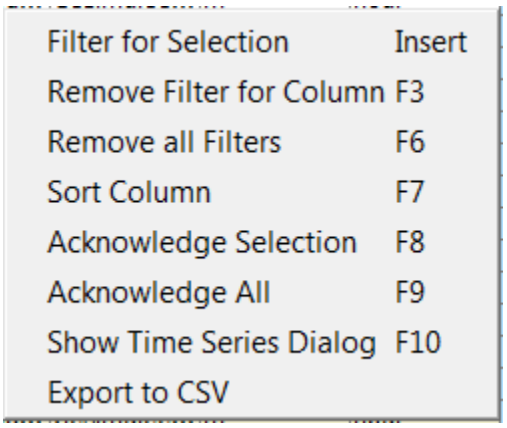
IFD

Since 2019.02, it will automatically filter on all locations from the selected IFD node. When there are no explicit locations linked to a node, there will be no filtering

Acknowledging Events

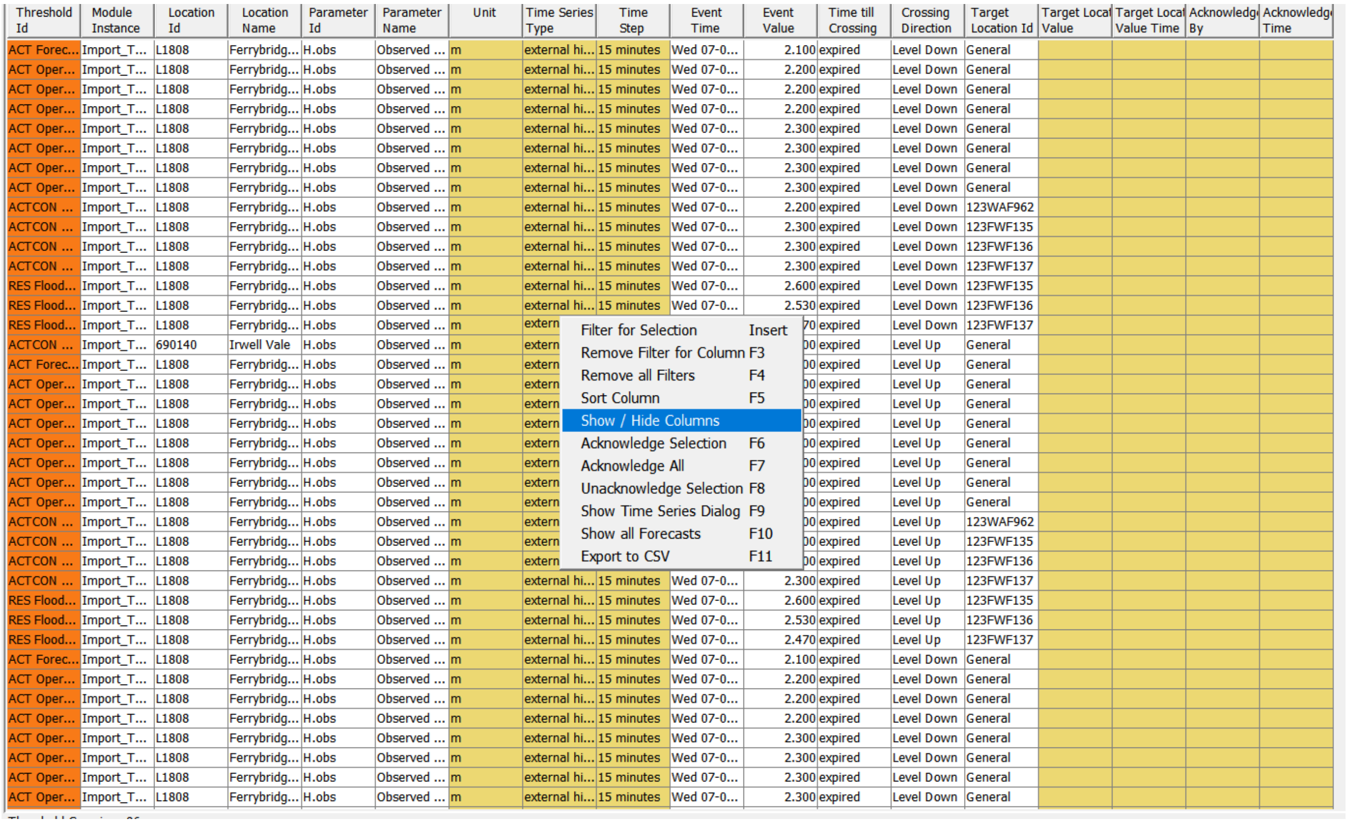
The Thresholds Display offers the user the ability to 'acknowledge' events. By acknowledging an event a user indicates that a Threshold Event has been seen and the required actions have been taken. On acknowledgement of events the time of acknowledgement and the user that acknowledged the event are registered. This information is stored together with the event data in the ThresholdEvents table.

Events can either be acknowledged by selection or all none-acknowledged events can be acknowledged in one single action. Acknowledging of events can be done by clicking the right-mouse button and selecting the Acknowledge options in the pop-up menu.



Showing and hiding columns

Since 2019.02 it is possible to choose which columns should be visible and which not, the choices will be stored in the user settings.



Threshold Id	Module Instance	Location Id	Location Name	Parameter Id	Parameter Name	Unit	Time Series Type	Time Step	Event Time	Event Value	Time till Crossing	Crossing Direction	Target Location Id	Target Local Value	Target Local Value Time	Acknowledg By	Acknowledg Time
ACT Forec...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.100	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	123WAF962				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	123FWF135				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	123FWF136				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	123FWF137				
RES Flood...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.600	expired	Level Down	123FWF135				
RES Flood...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.530	expired	Level Down	123FWF136				
RES Flood...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			70	expired	Level Down	123FWF137				
ACTCON ...	Import_T...	690140	Irwell Vale	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Forec...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	General				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	123WAF962				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	123FWF135				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	extern			00	expired	Level Up	123FWF136				
ACTCON ...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Up	123FWF137				
RES Flood...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.600	expired	Level Up	123FWF135				
RES Flood...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.530	expired	Level Up	123FWF136				
RES Flood...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.470	expired	Level Up	123FWF137				
ACT Forec...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.100	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.200	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				
ACT Oper...	Import_T...	L1808	Ferrybridg...	H.obs	Observed ...	m	external hi...	15 minutes	Wed 07-0...	2.300	expired	Level Down	General				

- [x] Task Run Id
- [x] Threshold Value_Set
- [x] Threshold Id
- [ ] Module Instance
- [x] Location Id
- [x] Location Name
- [ ] PARAMETER_GROUP
- [x] Parameter Id
- [x] Parameter Name
- [x] Unit
- [x] Qualifiers
- [x] Time_Series Type
- [ ] ENSEMBLE
- [x] Time Step
- [x] Event Time
- [x] Event Value
- [ ] Time_till Crossing
- [ ] Rate_of Change
- [x] Crossing Direction
- [x] Warning Action
- [x] Target Location_Id
- [x] Target_Location Value
- [x] Target_Location Value_Time
- [ ] Acknowledged By
- [ ] Acknowledged Time

Ok