KREO HMI TUTORIAL
Allarms - Messagges

Tutorial dedicated to the programming of alarms and messages

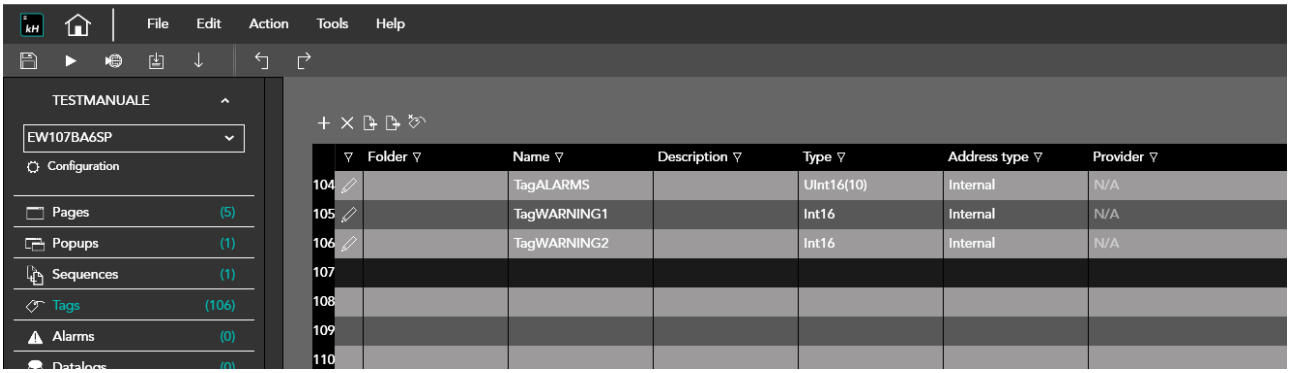
Connect
Ideas.
Shape
solutions.

Introduction

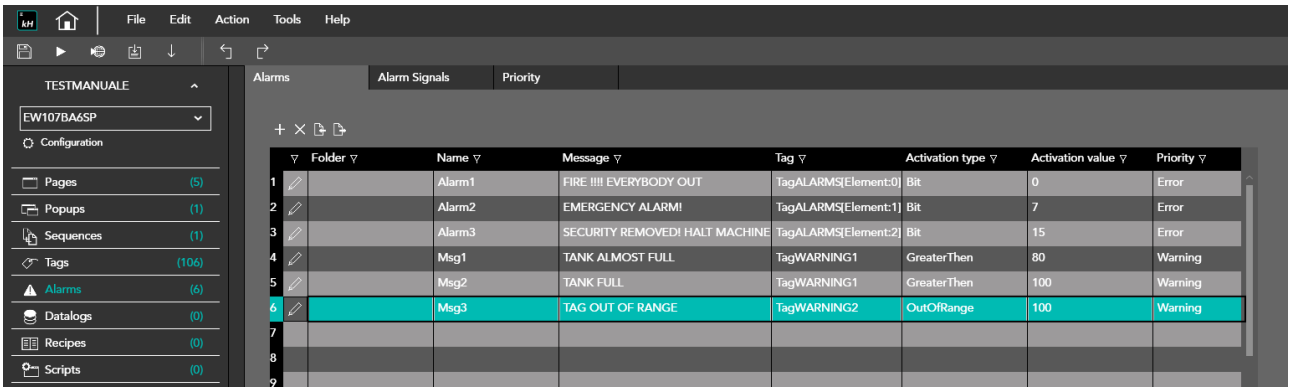
Let's see how the management of alarms and messages in KREO HMI works including the various tables of ACTIVE, HISTORICAL, STATISTICAL ALARMS as well as PRIORITIES and REPORTS.
Please note that, in ESA terminology, the difference between ALARM (ISA) and simple MESSAGE consists in the manual acquisition of the alarm by the operator.
The MESSAGE its displayed only if the alarm bit (or tag value) is active.

How to do it

1) Suppose you create a tag-array [0.. 9] of INTEGER to handle 160 alarms + 2 individual INTEGER TAGS to handle 3 messages

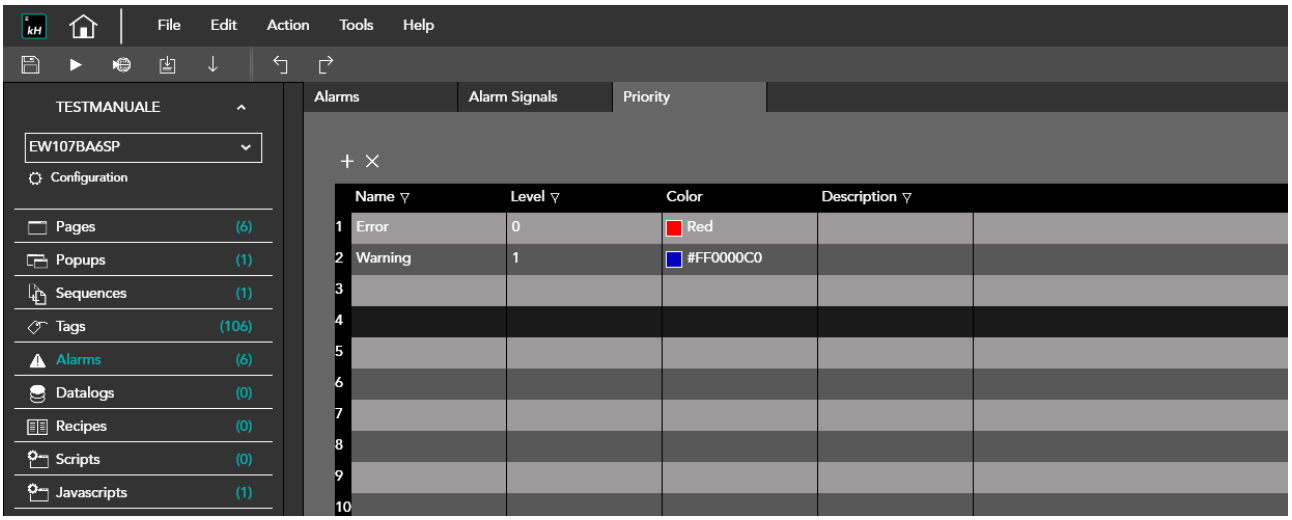


2) I now configure the ALARMS/MSG in different ways and associated with the created tags



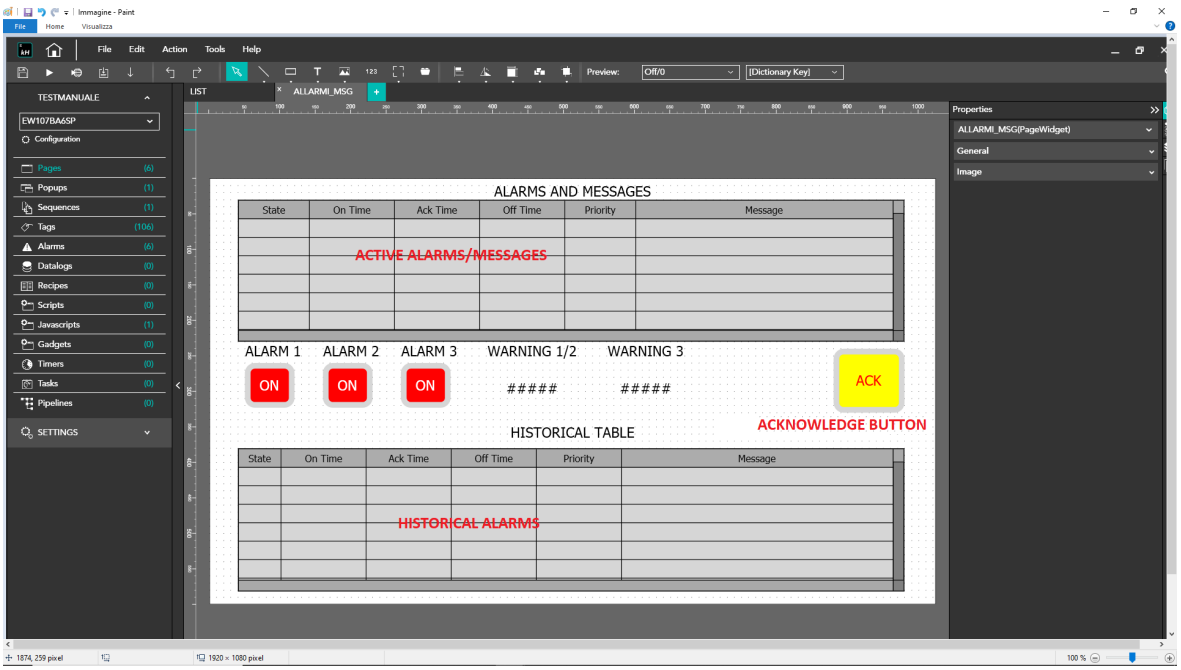
Note that alarms have been configured associated with various bits of the tag-array while MESSAGES are activated only when WARNING1>80, >100, WARNING2 if OUT OF RANGE 0..100.
This is just an example of configuration of course. The alarms/messages activation mode is interchangeable.

3) I now configure a display of colors ALARMS=RED and MESSAGES=BLUE

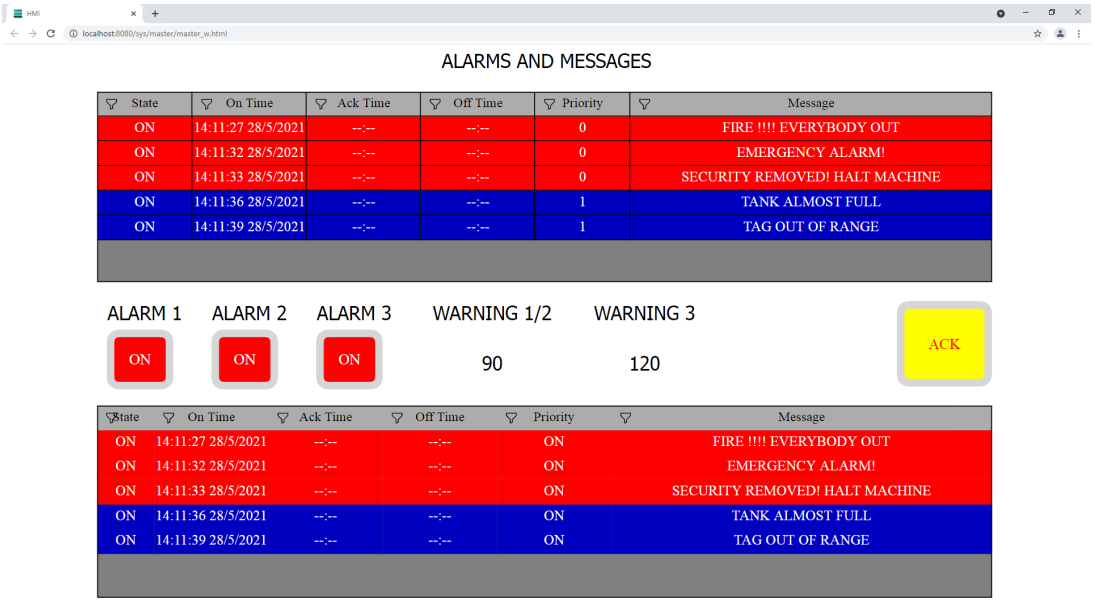


The PRIORITIES are configurable in NAME, LEVEL, COLOR.

4) On the project page I configure the alarms tables, HISTORICAL

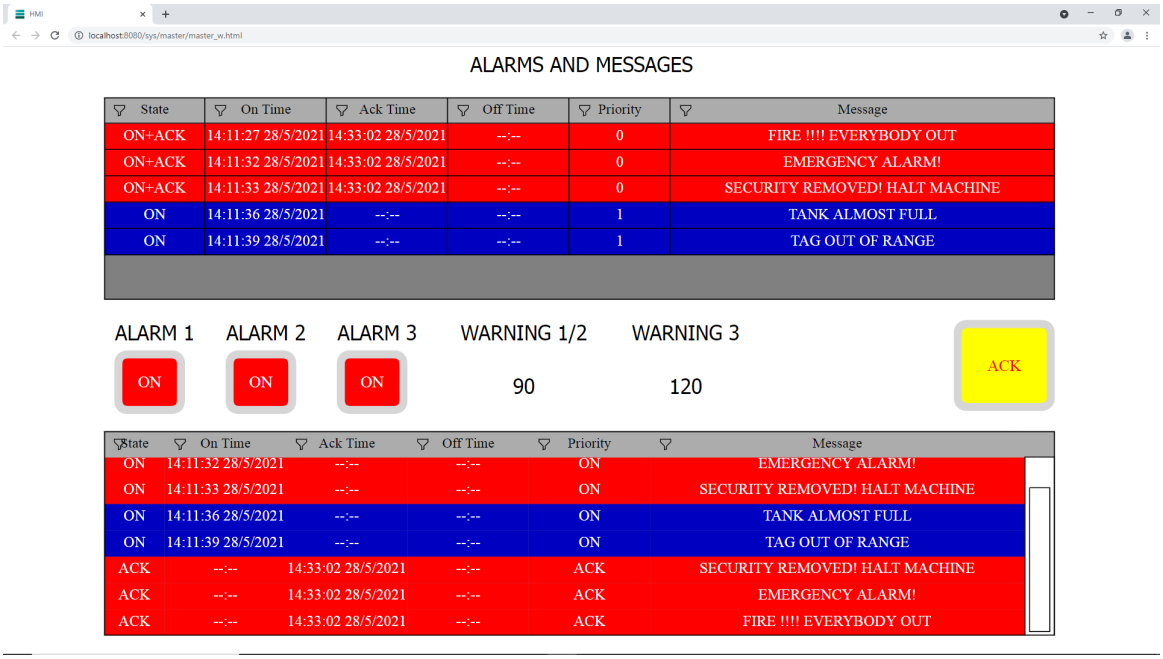


5) By launching the project at RUNTIME and activating ALARMS/MESSAGES I get the following view:



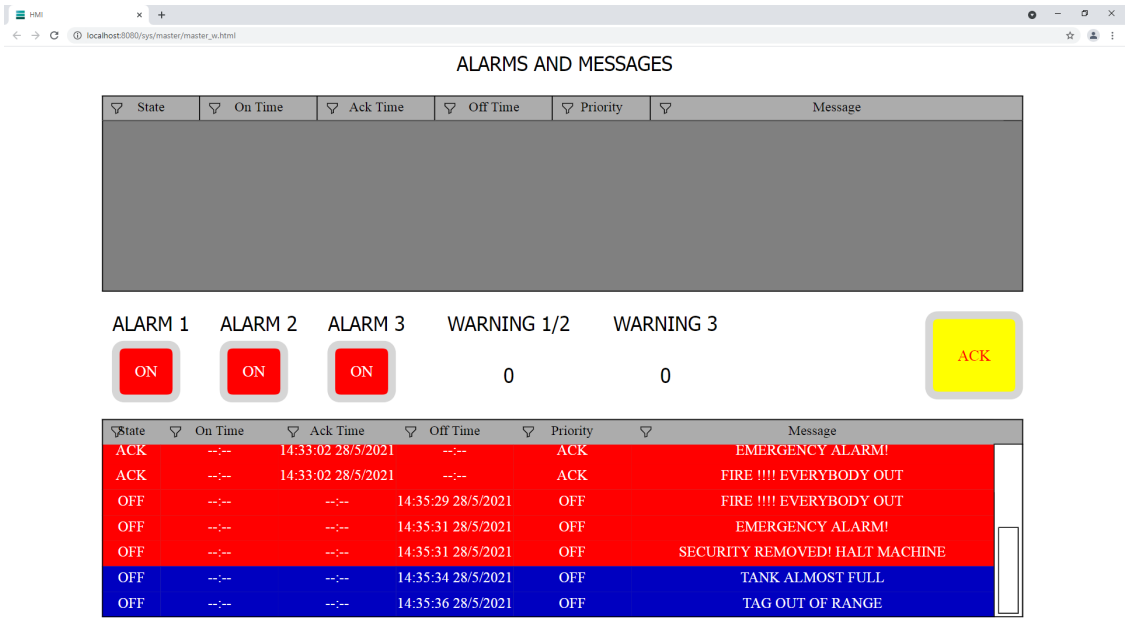
Note the activation-ALARM time recorded in the ONTIME column. In this case the ALARMS have not yet been acquired (the MESSAGES do not require acquisition) and there are still 5 active in the machine.

6) Now we acquire the ALARMS with the ACK button (*function*: **AlarmAckGlobal**)



The acquisition time was recorded in the appropriate column of the ACTIVES and HISTORICAL tables.
This procedure allows you to confirm to the system that the operator has become aware of the ALARMS in the machine.

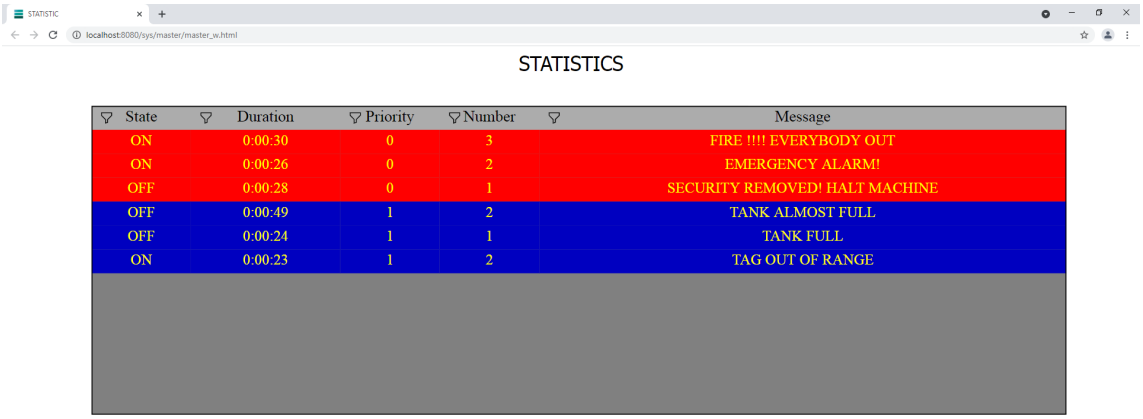
7) Finally we reset the ALARMS / MESSAGES in the machine



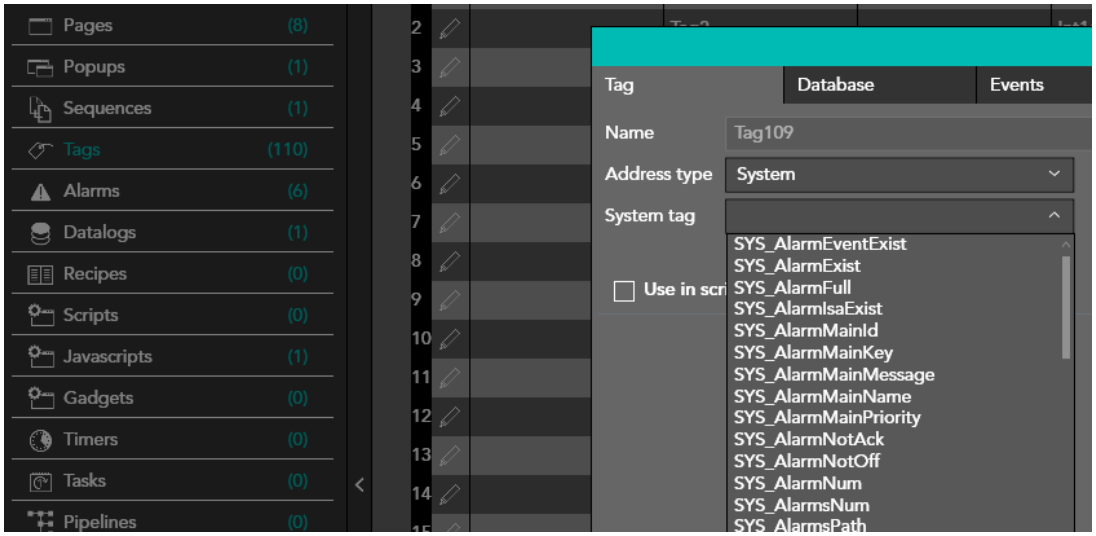
The ACTIVE table is empty and the HISTORY keeps the states recorded so far.

Information and additional alerts

Other tables give additional alarms/messages informations.
Specific system tags (SYSTEM-TAGS) provide information on the status of the alarms (full history, acquired alarm, active, export path,... ..
Below example of statistics table

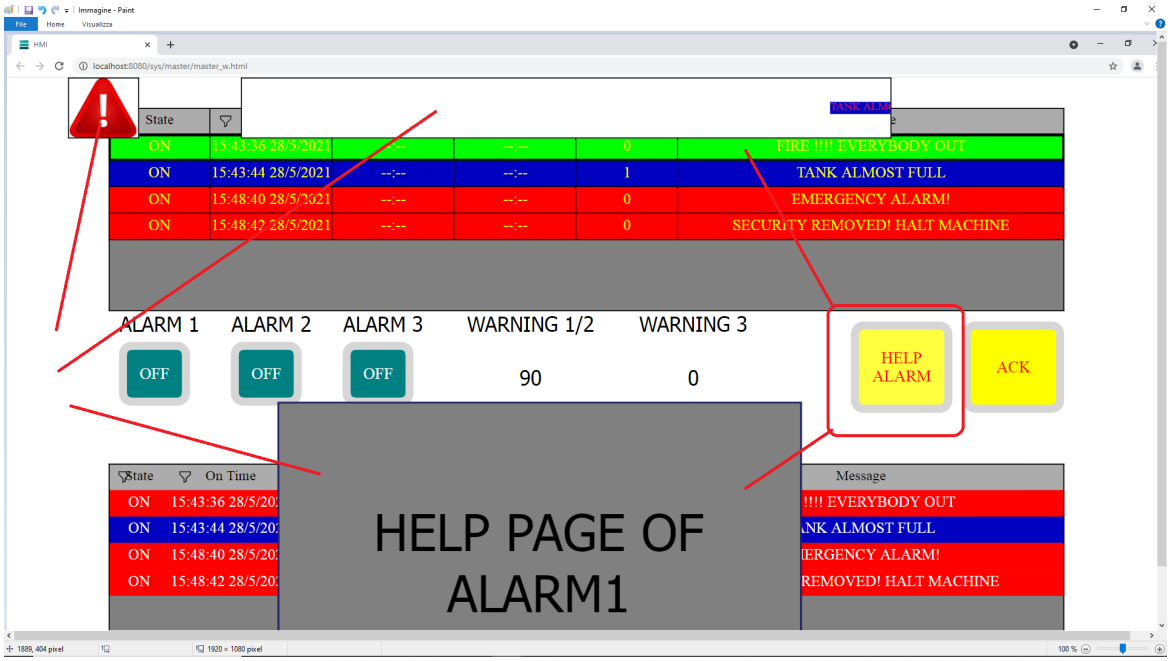


In the figure below the alarm SYSTEM-TAGS



Other widgets integrate the alarm signals, such as ICONS and BANNERS of

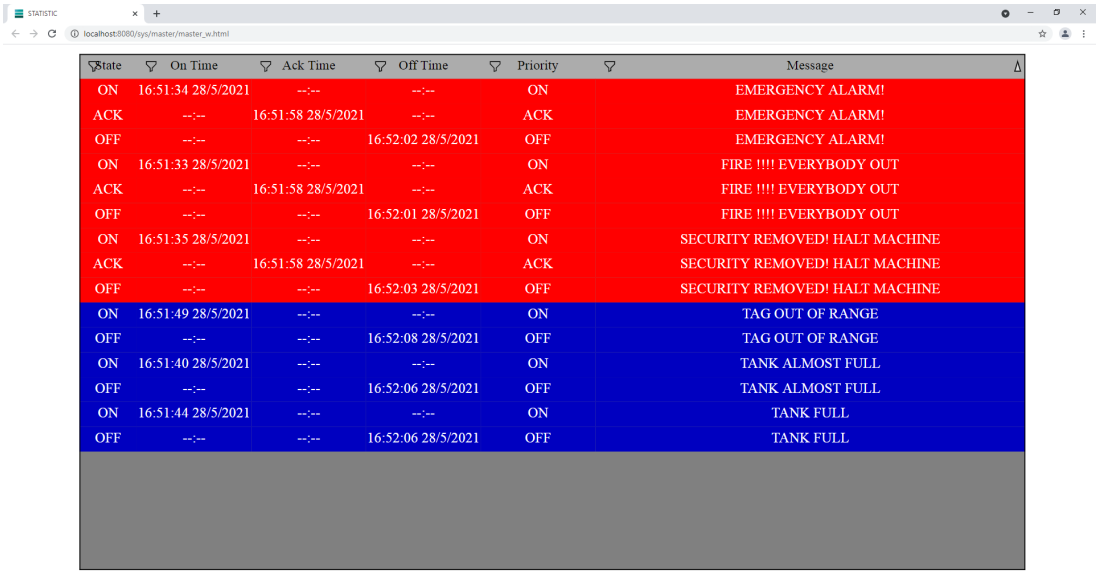
ALARMS / MESSAGES.
It is also possible to configure HELP PAGES for each alarm / message configured, thus integrating the information related to each specific ALARM / MSG.



Note that the HELP pages for each ALARM/MSG are simple project pages (FULL PAGE or POPUP) associated with the various alarms.
A RUNTIME will just need a single HELP button to call them according to the ALARM / MSG selected in the ACTIVE table*(function:* **GridAlarmShowPage).**
It is also possible to set a double-click on the ADVANCED >> TABLE GRAPHIC PROPERTIES to perform the same function

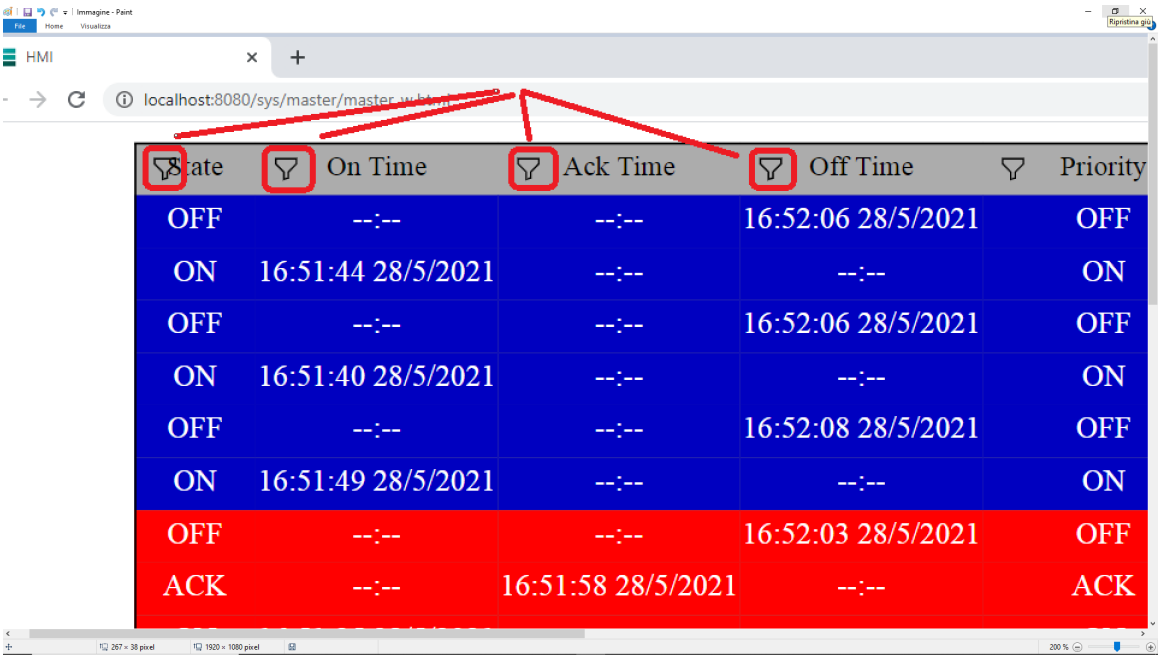
Column display and sort filters

For a better reading of a table with many ALARMS /MSG you can take advantage of column sorting and display filters.
Pressing on the column-header sorts the ALARMS/MSG according to the alphabetical/time content of the sorted column.
Below example of sorting by text-message:



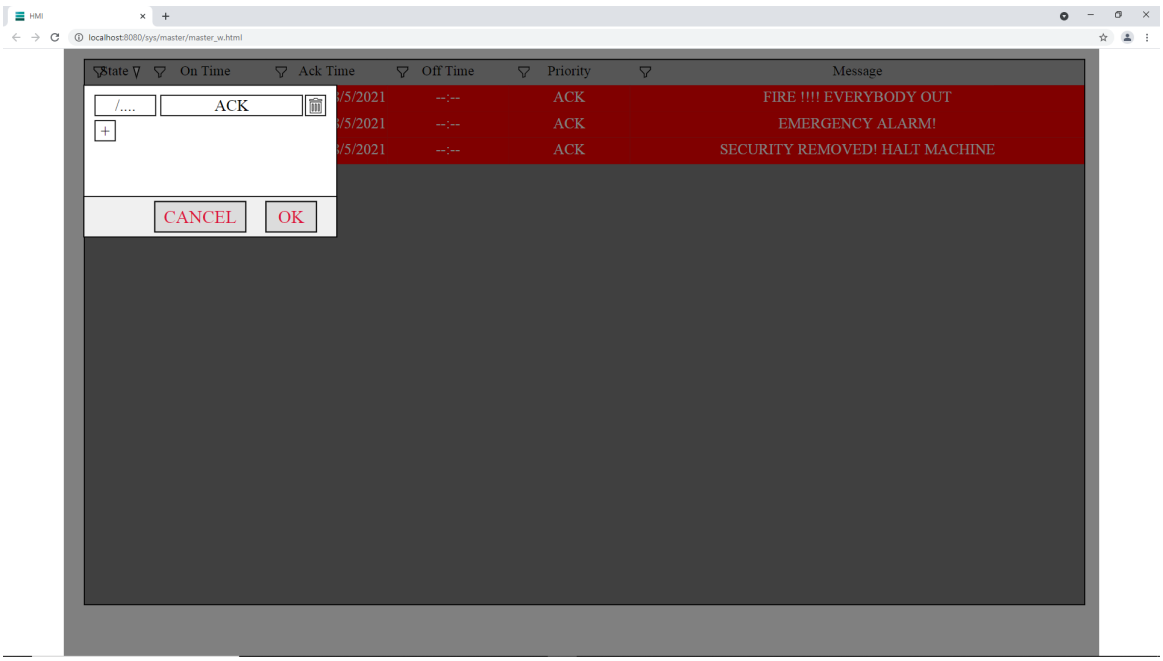
State	On Time	Ack Time	Off Time	Priority	Message
ON	16:51:34 28/5/2021	--:--	--:--	ON	EMERGENCY ALARM!
ACK	--:--	16:51:58 28/5/2021	--:--	ACK	EMERGENCY ALARM!
OFF	--:--	--:--	16:52:02 28/5/2021	OFF	EMERGENCY ALARM!
ON	16:51:33 28/5/2021	--:--	--:--	ON	FIRE !!!! EVERYBODY OUT
ACK	--:--	16:51:58 28/5/2021	--:--	ACK	FIRE !!!! EVERYBODY OUT
OFF	--:--	--:--	16:52:01 28/5/2021	OFF	FIRE !!!! EVERYBODY OUT
ON	16:51:35 28/5/2021	--:--	--:--	ON	SECURITY REMOVED! HALT MACHINE
ACK	--:--	16:51:58 28/5/2021	--:--	ACK	SECURITY REMOVED! HALT MACHINE
OFF	--:--	--:--	16:52:03 28/5/2021	OFF	SECURITY REMOVED! HALT MACHINE
ON	16:51:49 28/5/2021	--:--	--:--	ON	TAG OUT OF RANGE
OFF	--:--	--:--	16:52:08 28/5/2021	OFF	TAG OUT OF RANGE
ON	16:51:40 28/5/2021	--:--	--:--	ON	TANK ALMOST FULL
OFF	--:--	--:--	16:52:06 28/5/2021	OFF	TANK ALMOST FULL
ON	16:51:44 28/5/2021	--:--	--:--	ON	TANK FULL
OFF	--:--	--:--	16:52:06 28/5/2021	OFF	TANK FULL

To facilitate the reading of the table at RUNTIME you can apply filters to alarms / MSG that can be activated from the icons highlighted below:

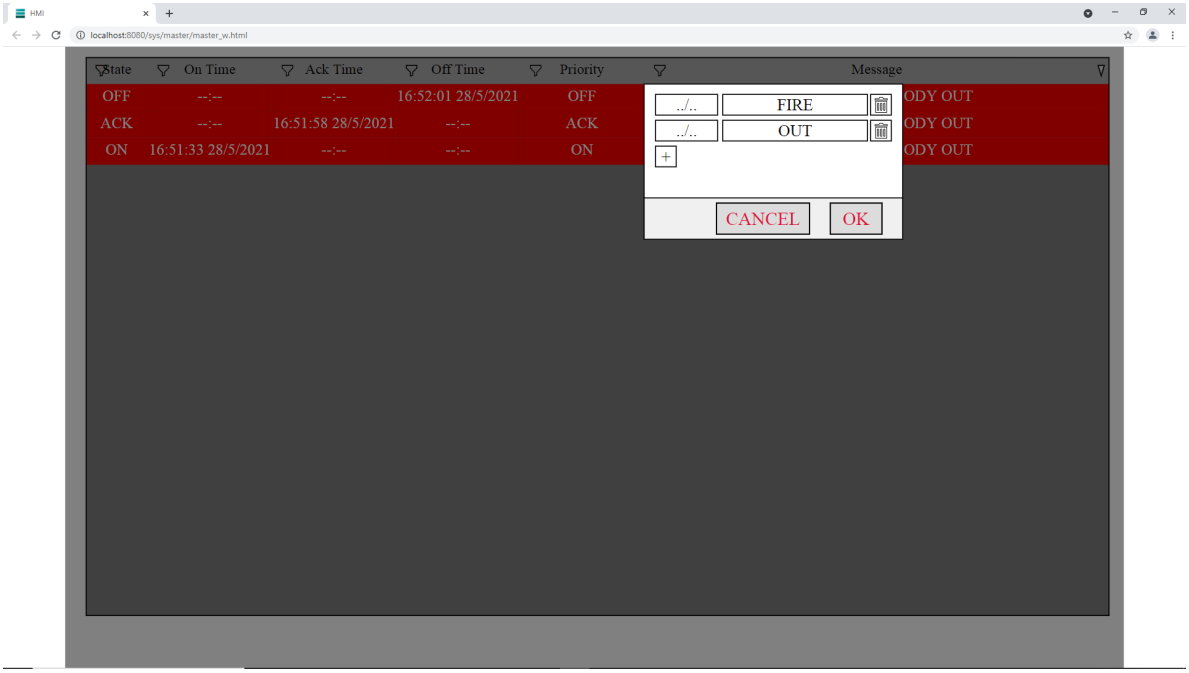


Depending on the selected column-filter, dedicated filters will be activated.

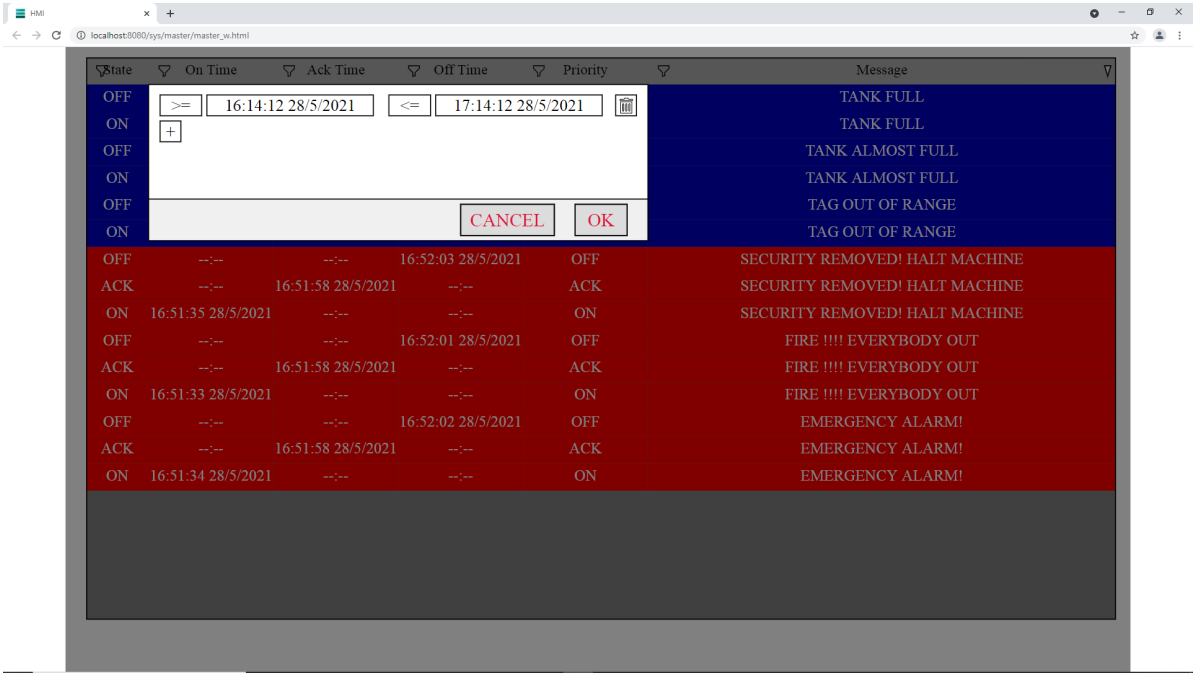
Status-column filter that contains text that begins with ACK



FILTER-COLUMN MESSAGE that contains the text FIRE + OUT (AND of 2 filters)



FILTER-ON-TIME column that contains ALARMS/MSG between 2 dates/time



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