



## Alarm System

### References

- Kongsberg K-Chief 700 Integrated Control System Product Description, 304844/B
- Kongsberg K-Chief 700 Operator Manual, 332618/B
- Online User Guide
- Vessel specific KFDD Common/General system



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## Content

- Correlation between events, alarms and messages
- OS event collection
- Identify an alarm in the OS
- Event list pages and columns
- Alarm colours
- Alarm acknowledgement
- Digital alarms dialog box
- Alarm shelving
- Alarm filters
- Events from the history station
- Configuration Event

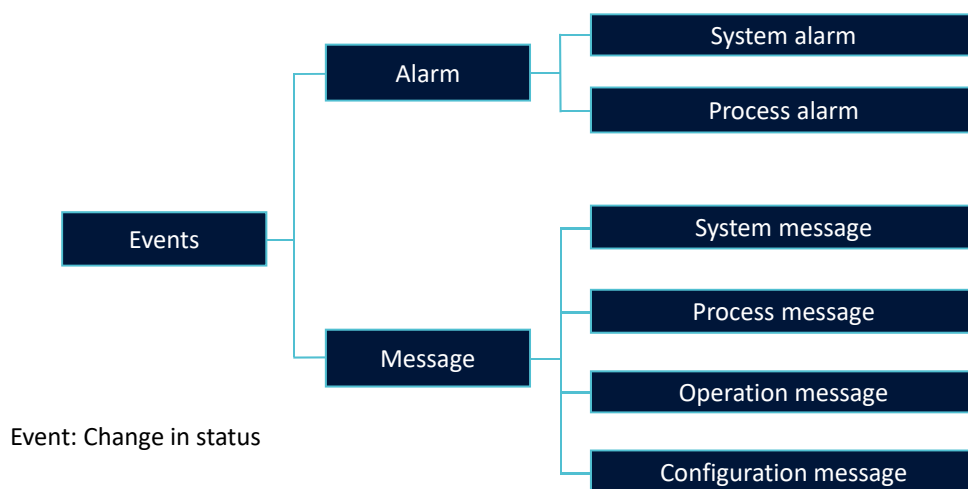
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## The Event System correlation



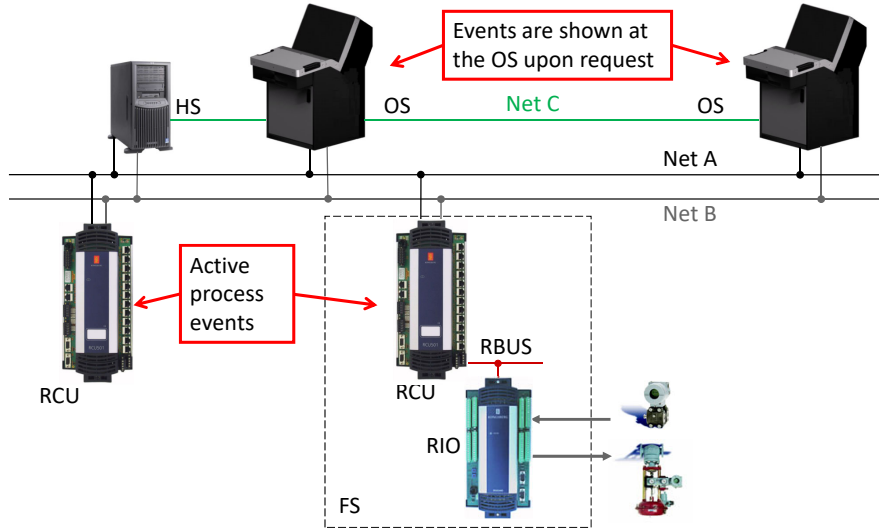
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## Event collection



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## Alarm Identification



Horn - Audible signal



OS panel – LED indication



Alarm printer - Text print out

	Time	Tag	Terminal	Description	Failure
*	03:27:28 28/01/14	SI-013110	Meas1	651M3 Speed Turbocharger B	Alarm State
*	11:48:35 27/01/14	XC-024119	Error	404M PORT STERN THRUSTER - STEERING AN	Error State
*	11:48:35 27/01/14	PIAHL-024189	Meas1	404M4 P S/TH CONVERTER COOLING WATER IN	Alarm State
*	11:48:35 27/01/14	PIAHL-024190	Meas1	404M4 P S/TH CONVERTER COOLING WATER O	Alarm State

Last Alarm Line - Alarm information; shows the most recent unacknowledged alarm that the OS is responsible for

**Status Of Start Block (To Start From IAS)**

- Ready To Start Not Active
- Main Generator In Local Mode

F.W.Tk 1S  
(Ptable)  
450.9 m<sup>2</sup>

7.12 m  
385 m<sup>2</sup>

32000 rpm

Drill Floor

Process images - Alarm indications

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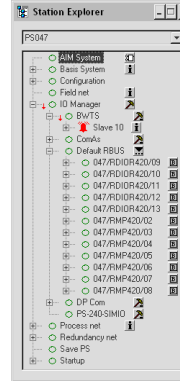


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# Alarm Identification continues

## System Status image – Alarm colour

Station	Status	Error	Exceptional Modes	Spare Time	Free Memory	Net State	IO Errors	Serial Errors	Other Errors	Resulting System Alarm
PS046	Operational		NONE	0	0	OK				AckNormal
PS048	Operational		NONE	0	0	OK				AckNormal
PS048	Operational		NONE	0	0	OK				AckNormal



Station Explorer - Alarm icons

## List image – Alarm indication

IdNo	Tag	Description	Module Type	Command Group	Id Status	Alarm
10073724A			mess_ar	Dilling	ERROR	NotAck Low
10073922		IAS - Versel Heading	mess_ar	Dilling	ERROR	OK
10073922		IAS - SPEED	mess_ar	Dilling	ERROR	NotAck Low
10073721A			mess_ar	Dilling	ERROR	NotAck Low

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# The Event List

Open the Event list:



OS panel

Open the Event list pop-up:



Toolbar button



Toolbar button

Time	Tag	Terminal	Description	Error State	Originator	Type	CmdGrp	State	Limit	Member
10:11:38 18/02/14	THR2_REDAC_NO	Error	Digital ID	Error State	FS057	ProcessAlarm	Power	DigitalActive		A
10:11:38 18/02/14	THR2_REDAC_NO	Error	Analogue Measurement	Error State	FS057	ProcessAlarm	Power	DigitalActive		A
10:11:37 18/02/14	THR5_PWRCON_NO	Error	Swld H/F Bus Tie F Logic Input 1	Error State	FS058	ProcessAlarm	Power	Normal		-

Best image navigator

Alarm state

- Time: When the alarm occurred
- Tag/Terminal/Description: For the function module giving the alarm
- Limit: Limit crossed for analog alarms
- Member: PS giving the alarm. Empty for single PS





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## Event Colours

	Pale yellow	0- Unpriority
	Yellow	1- Low priority
	Red	2- High priority
	Magenta	3- Emergency priority

- These are the standard event colours
  - See KFDD for your systems' event/alarm colours

### Alarm state; First column in the alarm list:

	Acknowledged active alarms
	Unacknowledged alarms
	Disabled, suppressed or shelved alarm
	Unacknowledged alarms, not permitted to acknowledge

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## The Alarm Pages


Page selection at the bottom of the event image



### Dynamic Alarm page

- One page showing active alarms
- The page is updated when new alarms occur
- Quick filter not available

### Static Alarm page

- Several pages showing active alarms, scroll between the pages with the toolbar arrow buttons 
- The pages are not updated when opened
- Quick filter not available

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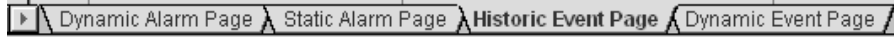
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## The Event Pages

Page selection at the bottom of the event image.



### Historic Event Page

- List of events for a specified time span, collected from historical storage
- Scroll bar available
- Quick filter available

### Dynamic Event

- One page, is being updated when activated events occur
- Quick filter not available

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## The Historic Event Page



Retrieves data from the Event database



Specifies the time span for the displayed historical event

**Date And Time** [x]

Most recent time

January 2014

S	M	T	W	T	F	S
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

Hour: 13  
Min: 52  
Sec: 40

Now

And time span backwards

Days: 1 Hours: 0 Min: 15 Sec: 0

OK  
Cancel



Terminates the reading of the database

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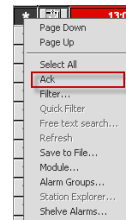
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## How to acknowledge alarms from the Event list

Mark the alarm to be acknowledged

- Panel acknowledge button
- or
- Toolbar acknowledge button
- or
- Trackball/mouse context menu → Ack

If no alarm is marked, an acknowledge operation will acknowledge all visible alarms



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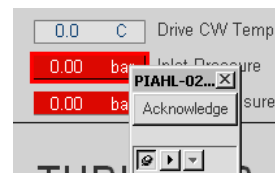
## How to acknowledge alarms from a process image

### Panel acknowledge button

- Will acknowledge the alarm in the last alarm line

### Function module operator menu

- The Acknowledge button will only be available when the module has an unacknowledged alarm





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## Operation from the alarm page

	Time	Tag	Terminal	Description
*	11:48:16 27/01/14	XC-082206	Meas1	803H2 BILGE SEPAR PUMP AUTO STOP
*	11:48:14 27/01/14	NetDi-71-54_2	NetFault	

- Right click on a tag name
- Select Module...
- Context menu with Operate... appears
- Select Operate... to open operation menu

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## Alarm settings

All alarm settings are done from the Alarm Limits view

- **Terminal:** Terminals with configured alarms
- **Alarm on:** The alarm will be active when the module terminal value correspond with the selection
- **Priority:** Selection of the alarm priority
- **Alarm text:** Text shown in the Event list
- **On/Off delay:** Delay of Alarm status change after terminal value change
- **Watch Call group:** Selection of Watch Call panel indication
- **Reannouncement:** Activation On/Off

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# Alarm Shelving identification

## In the toolbar



## Olive indication on the module



## Alarm Shelving list



Alarm Source	Expiration Time	Shelving Time	Inhibiting User	Originator
MOD-NSV-097131/OutOpened	23/01/2014 10:42:10	23/01/2014 08:42:47	Kongsberg	F5091

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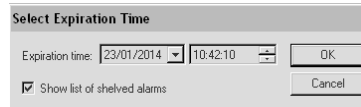
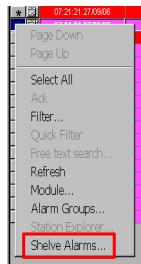


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# Alarm Shelving

## How to shelve an alarm:

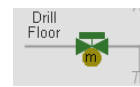
- Acknowledge the alarm
- Right click on the alarm in alarm list
- Select Shelve alarms
- Set Expiration time



## Result:

- No alarm in the alarm list
- Olive module indication

8:37:33	23/01/14	205/US_CMD			
8:37:30	23/01/14	204/US_CMD			
8:37:27	23/01/14	NSV-097126	OutOpened		81
8:37:27	23/01/14	NSV-097121	OutOpened		81



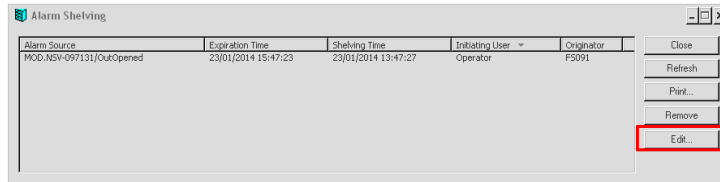
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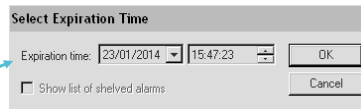
## Edit Alarm shelving



Remove button will remove the alarm from the shelf.

From the Alarm shelving dialog box:

- Select the alarm
- Choose the Edit button
- Change Expiration time



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## Alarm filters

- Alarms will be visible according to the selected alarm filter

Description	Failure	Originator	Type	CmdGrp	Status
T3	Alarm limit exceeded	FS204-PS204	SystemAlarm		No
3H2 BILOE SEPAR PUMP AUTO STOP	Alarm State	FS048	ProcessAlarm, Su	Bilge	Dig

- The default filter will be the active filter when opening the alarm list
- It will always correspond to the command control groups you are in command of

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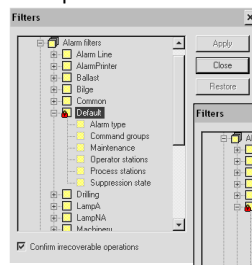
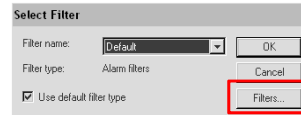
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## Alarm filter attributes

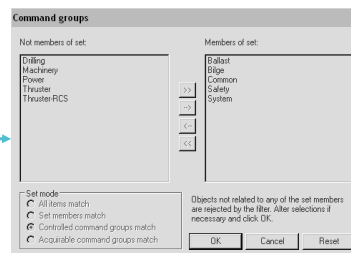
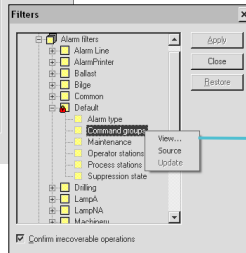
### Filter attributes and current settings



- Open the Filter function
- Click the Filters ... button to see the settings
- Expand the selected filter



- Select an attribute, double click or right click, select View



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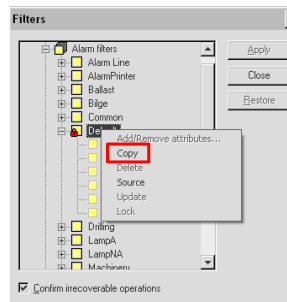
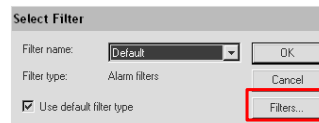
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## Making an alarm filter

- Open the Filter function
- Click the Filters... Button
- The filter which is active comes up – normally Default filter
- Right click on the filter to be copied
- Select Copy
- Type in the name of the new filter
- Press Enter
- A filter with the same properties is made, indicated by a yellow star



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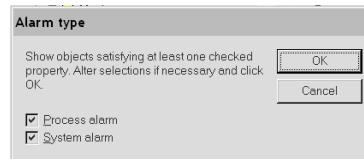
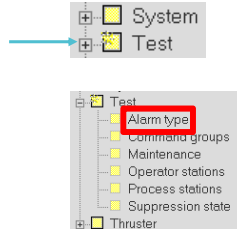
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## Changing filter attributes

- Expand the filter
- Right click on the attributes
- Select View or double click to see the setting
- Carry out your changes
- Click the Apply button to save



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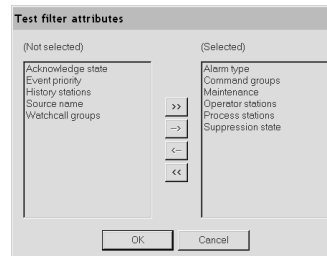
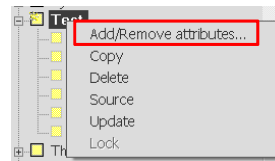


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## Attribute menu

To open the Attribute menu, right click on the filter name.

- Add/Remove attributes
- The filter can be Copied or Deleted from this menu
- The filter attributes can be Updated from another Source (copy attributes from another filter)
- It is possible to lock the filter








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## Filter icons

-  Locked system standard filter, cannot be modified
-  Locked filter, must be unlocked to be modified
-  Changes made, but not applied
-  Deleted, but not applied
-  Copy of another filter, not applied

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## Quick filter

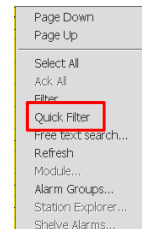
OS031				PS 48 ready	F5045	SystemMessa		Normal		
OS031	Source name			Read stored configuration OK I	F5045	SystemMessa		Normal		
CB-033922	Pattern:			Local control	F5045	ProcessMessa	Power	Normal		
CB-033921				Local control	F5045	ProcessMessa	Power	Normal		
LIAHL-072113.A	<input type="checkbox"/> Match whole string				F5045	ProcessAlarm	Machinery	Low	50.000000	A
LIAHL-081157.A	<input type="checkbox"/> Match case				F5045	ProcessAlarm	Ballast	Low	30.000000	A
LIAH-081126.A					F5045	ProcessAlarm	Ballast	Low	15.000000	A
LIAH-072204.A					F5045	ProcessAlarm	Machinery	Low	15.000000	A

Quick filter is available on four columns in the Historic event page:

- Tag
- Originator
- Type
- Command Group

Open the quick filter:

1. Right click in the column
2. Select Quick Filter
3. The dialog box according to the selection opens
4. Set the filter attributes



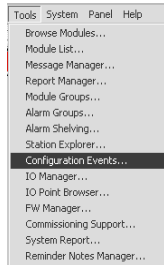
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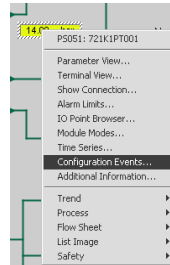
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## Configuration Events



From the toolbar:

- Show all configuration events



From the module context menu:

- Show events from the selected module

Station	Status	Error	Exceptional Modes
PS042	Operation		NONE
PS046	Operation	Configuration Events...	
PS048	Operation	Print Image...	
PS048	Operation	Station Explorer...	
PS050	Operation	PS Info...	
PS050	Operation	PS Operation...	

From the System Status image:

- Show events from the selected PS

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## Configuration Event dialog box

Shows PS configuration changes

Originator	Time	User	Initiator	Command Group	Description
PS051	16. Dec. 13 13:48:18	Kongsberg	OS031	Machinery	721K1PT001: Parameter changed #OF48: 1 -> 2
PS051	16. Dec. 13 13:47:23	PS051			PS051: Storing succeeded Version 1.105
PS051	16. Dec. 13 13:45:55	Kongsberg	OS031	Machinery	721K1PT001: Parameter changed #OF48: 2 -> 1
PS051	16. Dec. 13 13:43:15	Kongsberg	OS031	Machinery	721K1PT001: Parameter changed #OF48: 1 -> 2

Timespan and Filter... to specify the search

- Black Configuration events, not module Configuration changes
- Green Saved configuration changes
- Blue Configuration changes performed after last PS backup
- Red Configuration changes that are lost

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## Exercises:

- The Alarm System
- Alarm Settings
- Alarm Shelving
- Using Alarm Filters
- Making Alarm Filters

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## Learning Objectives

- Explain the correlation between events, alarms and messages
- Explain how an Operator Station collects events
- Use the Operator Station to identify an alarm
- Explain the different columns and pages in the Event list
- Account for the different alarm colours
- Give examples of different ways to acknowledge an alarm
- Carry out acknowledgements of alarms
- Identify and explain the Alarm Limits dialog box
- Identify and explain the alarm shelving tool
- Use the Alarm Shelving functions
- Identify and explain the functionality and attributes of an alarm filter
- Use an existing filter
- Make and test a new alarm filter
- Explain how to retrieve data from the Event Database
- Identify the Configuration Event dialog box
- Recognize configuration events

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presentation**

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