



Setting the Standard for Automation™

Alarm Management Implementation on a Plant

Standards
Certification
Education & Training
Publishing
Conferences & Exhibits

Agenda

- Introduction
- Problems faced with Alarm Management
- Alarm Management Rationalization
- Benefits
- Questions

TQS Integration – What we do



● OSIsoft PI

- Founded 1998, Corporate HQ - Lismore, Co. Waterford
- Gold Partner OSIsoft 2011
- Global EA Partner with OSIsoft
- Global Partner OSIsoft
- Current Offices Ireland, UK, Boston, Singapore, Switzerland

● Livepoint.

- Global Authorized Distributor
- Global Implementation Partner

● Others

- MII Consulting and engineering
- MES Consulting & engineering
- Software Development

● Established Multi-National client base



Alarm Growth and Systems over time



Alarm growth is a natural outcome of the increased information load and abstraction of the modern control system. However, if alarms are not dealt with in a disciplined manner, uncontrolled alarm growth can result, which can lead to out-of-control alarm systems. If your alarm system has one or more of these characteristics, it may be out of control:

1. Many alarms during abnormal situations
2. Many alarms on during normal operation
3. High alarm loading rates (alarms per unit time, alarms per operator, alarms per event, etc.)
4. Incidents or near-incidents where operators missed key data provided (or not) by the alarm system
5. A large number of high-priority alarms
6. Alarms that are on for long periods of time
7. Alarms going off and on regularly or intermittently (chattering or transient)
8. Lost count of the number of alarms
9. Lost track of alarm set points or why they were set there in the first place
10. Don't know which alarms are safety, operational, environmental, informational, etc.



Multitude of Alarm Systems



ABB

SIEMENS



Honeywell



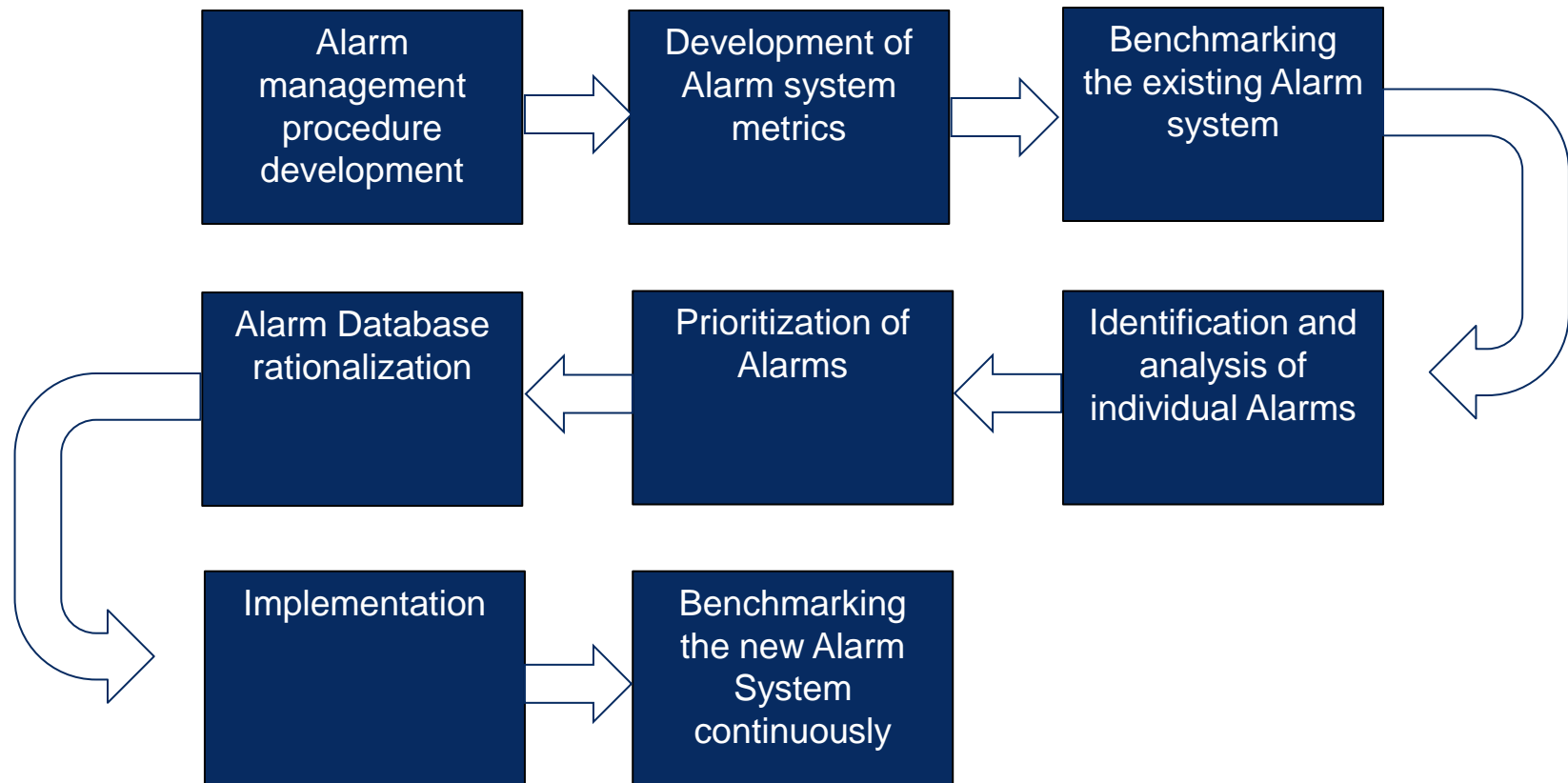
Schneider
 **Electric**

YOKOGAWA 

Rockwell
Automation


EMERSON

Alarm Rationalization



Developed by the business and process specialists in line with standards



Automatically Generated and monitored via software

Combine all Alarm Sources



ABB

SIEMENS



Honeywell



Schneider
 **Electric**

YOKOGAWA 

Rockwell
Automation


EMERSON

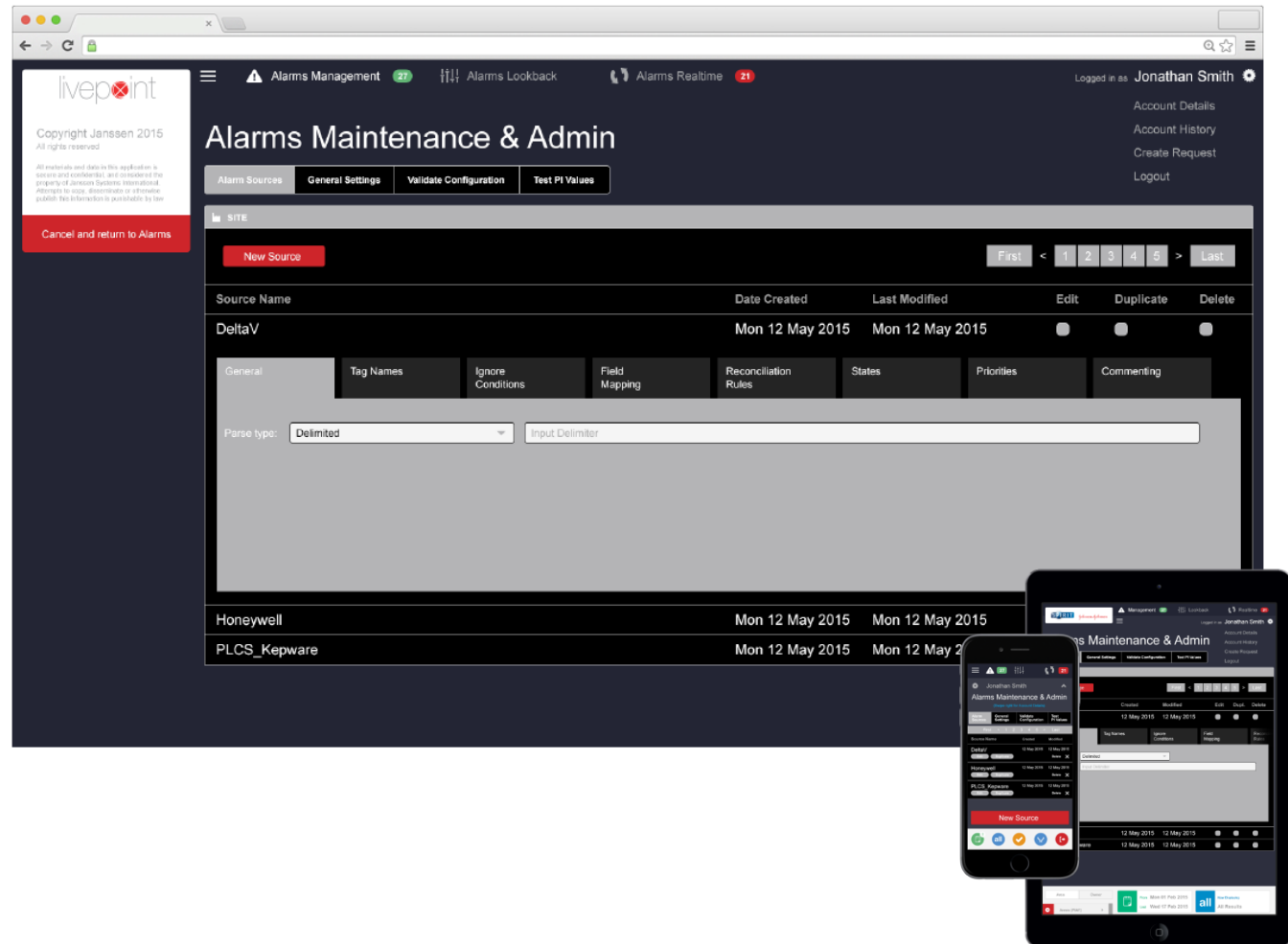


Alarm Administration



Alarm Configuration and addition via GUI

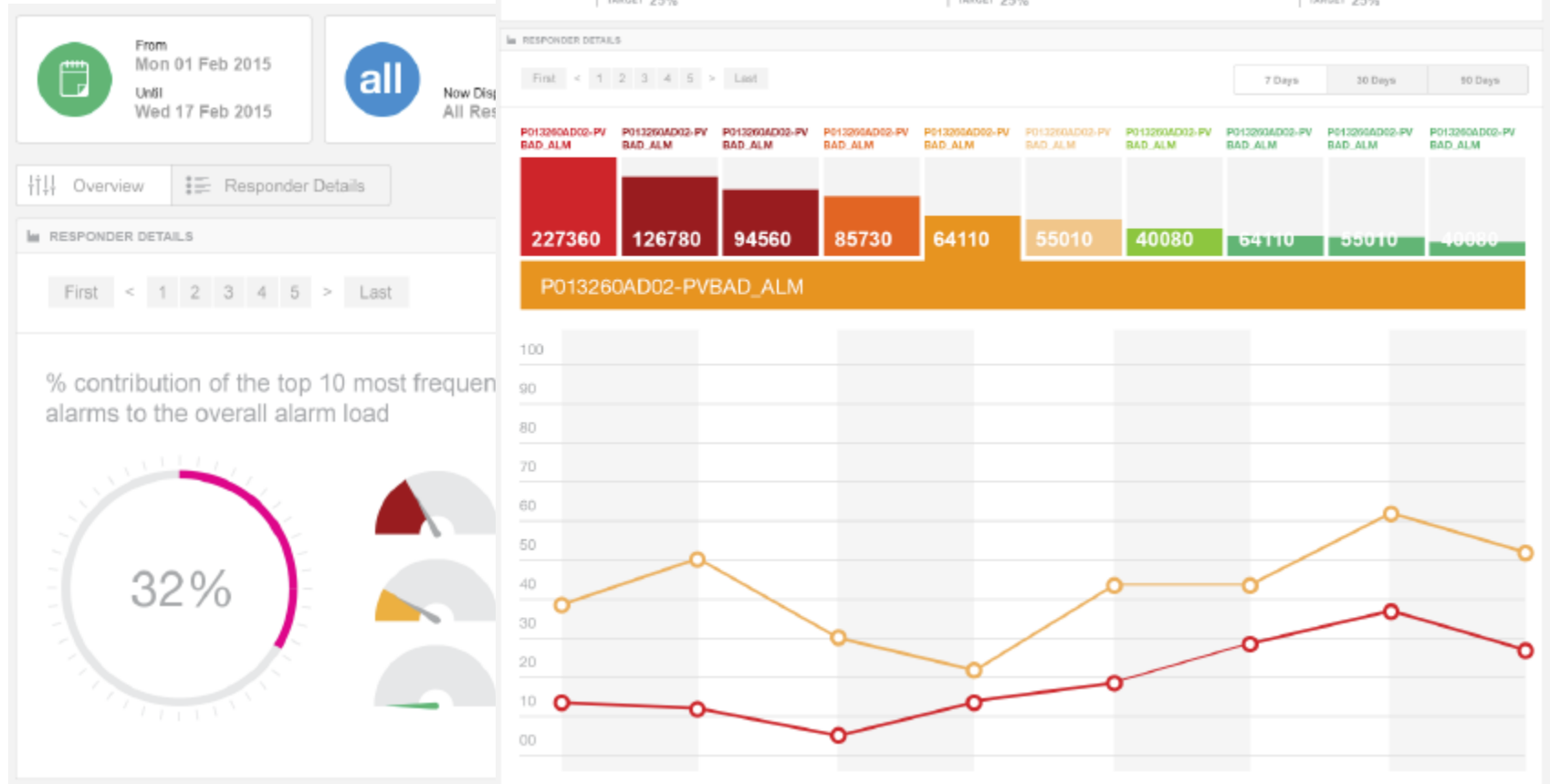
- Add new site sources easily
- Filter and align data sources
- Relate Alarms to Batch Process



Alarm Metrics and KPI's



Historical alarm
trending and analysis,
including ISA 18.2
Standard KPIs



Drill Down to Raw Data



Alarm details
filterable/exportable
by area, owner,
state, priority,
source system,
date, alarms ids,
alarm exclusions

The screenshot shows the 'livepoint' Alarms Management interface. The top navigation bar includes 'Alarms Management' (active), 'Alarms Lookback', and 'Alarms Realtime'. The user is logged in as 'Jonathan Smith'. The interface features several summary cards: a date range from 'Mon 01 Feb 2015' to 'Wed 17 Feb 2015', a status 'Now Displaying All Results', an 'Overall Status Good' indicator, a 'Filters No Filters' button, and an 'Export Data' button with options for '.xls', '.txt', and '.docx'. Below these are view toggles for 'Summary View' and 'Detailed View'. The main content area displays a table of 'HIGH PRIORITY' alarms. The table has columns for 'Date', 'Category', 'Alarm Tag', and 'Section'. A summary bar above the table shows 'Emergency Priority' with counts: 33 (red), 106 (orange), 221 days (blue), and 03 (grey). The table lists six alarms, all with the same date and time (12 Sep 2015 00:35:28), category ('Category Name Here'), alarm tag ('SK436: Alarm 8'), and section ('Section Name can be placed here'). The first five alarms are marked with a red '#01' through '#05' in the first column, and the sixth is marked with an orange '#06'. Below the table, there are filters for 'Area' and 'Owner', and a list of 'Source' options: 'Source 01', 'Source 02', and 'Source 03'.

	Date	Category	Alarm Tag	Section
#01	12 Sep 2015 00:35:28	Category Name Here	SK436: Alarm 8	Section Name can be placed here
#02	12 Sep 2015 00:35:28	Category Name Here	SK436: Alarm 8	Section Name can be placed here
#03	12 Sep 2015 00:35:28	Category Name Here	SK436: Alarm 8	Section Name can be placed here
#04	12 Sep 2015 00:35:28	Category Name Here	SK436: Alarm 8	Section Name can be placed here
#05	12 Sep 2015 00:35:28	Category Name Here	SK436: Alarm 8	Section Name can be placed here
#06	12 Sep 2015 00:35:28	Category Name Here	SK436: Alarm 8	Section Name can be placed here



Real Time Notification



Real-time dashboard on current active alarms as they occur on-site including commenting feature

The screenshot displays the 'livepoint' Alarms Management dashboard. The interface includes a sidebar with a tree view of areas (Area 01 to Area 07) and sources (Source 01 to Source 03). The main content area shows a 'REALTIME' section with a table of active alarms. The table has columns for Timestamp, Area, Module Ref, Attribute, State, Description, Level, and Source. The first three rows of the table are identical, showing an alarm from 'Purification' at 'SK436: Alarm 8' with a 'Lo Alarm' attribute and 'ACT' state. Below the table, there is a 'Comments go here' section. A mobile phone is shown in the bottom right corner, displaying the same dashboard interface on its screen.

Timestamp	Area	Module Ref	Attribute	State	Description	Level	Source
06 Sep 2015 17:29:39	Purification	SK436: Alarm 8	Lo Alarm	ACT	SK436 PC - PLC Communications	Low	PLC_Keypware
06 Sep 2015 17:29:39	Purification	SK436: Alarm 8	Lo Alarm	ACT	SK436 PC - PLC Communications	Low	PLC_Keypware
06 Sep 2015 17:29:39	Purification	SK436: Alarm 8	Lo Alarm	ACT	SK436 PC - PLC Communications	Low	PLC_Keypware

Real time Notification



- Identify and aid the removal of unnecessary alarms
- Define and apply a consistent rule base for alarm prioritization
- Collate and document alarm responses and other operator support information

The screenshot displays the 'Alarms Management' interface. At the top, there are tabs for 'Alarms Management' (27), 'Alarms Lookback', and 'Alarms Realtime' (21). The user is logged in as 'Jonathan Smith'. Below the tabs, there are four summary cards: 'From Mon 01 Feb 2015 Until Wed 17 Feb 2015', 'Now Displaying All Results', 'Overall Status Good', and 'Filters No Filters'. A 'Click to Export Data' button is also present.

The main section is titled 'REALTIME' and contains a table of alarms. The table has columns for Timestamp, Area, Module Ref, Attribute, State, Description, Level, and Source. The data shows multiple 'Lo Alarm' entries for 'Purification' in the 'SK436: Alarm 8' module, all with a state of 'ACT' and a description of 'SK436 PC - PLC Communications'. The level is 'Low' and the source is 'PLC_Kepware'.

On the left side, there is a sidebar with a tree view showing 'Areas (PIAF)' and 'Cork Bio' with sub-items like 'Lab Admin', 'M & F', 'Operations', and 'Cell Culture'. Below this is a 'Source' filter section with options like 'DeltaV', 'Honeywell - NQBAS', and 'Honeywell - QBAS'.

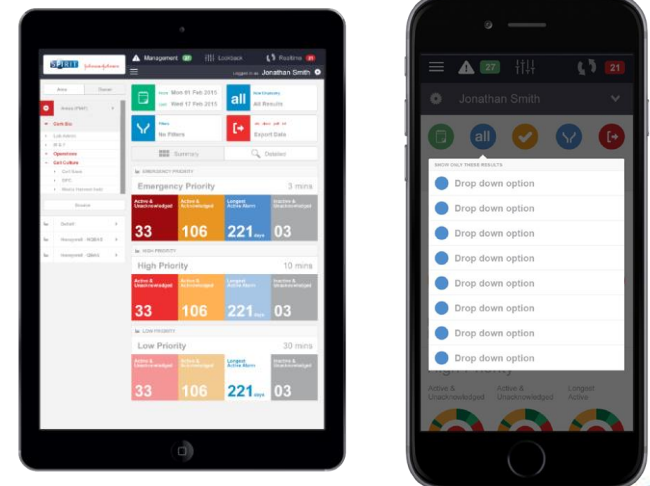
In the bottom right corner, there is a smartphone displaying the same interface, showing a dropdown menu with 'Drop down option' repeated multiple times.

Engineering Benefits

- ✗ Enables analysis of plant processes, identify problems and optimize alarm performance
- ✗ Reduce Alarm quantity presented to operators
- ✗ Helps discover correlation between alarms
- ✗ Benchmark and analyze alarms against ISA 18.2 guidelines & recommended standards

Operational Benefits

- ✗ Improve Alarm Quality
- ✗ Reduce Site Downtime
- ✗ Save time and effort diagnosing plant upsets or incidents
- ✗ Help Improve operator awareness and response time



Thank You – Questions ?



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