



Adroit Report Suite

Alarm Management Report Pack



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1. Introduction

Adroit Alarm Management Agent allows the routing of any alarms in Adroit through to the structured alarm management database and allows user functionality such as adding and logging incident context, performance targets, notes and database housekeeping.

The Adroit Alarm Management Reports utility provide tools necessary to a system's logged alarming data with reports such as the Alarm System Performance reports helping to measure the performance of an alarm system and the Alarm Analysis reports, which allows analysis of historical alarms in the system: supporting continuous improvement initiatives. The Alarm Management Agent in Adroit and its associated Reports in Adroit Report Suite draw on the ISA 18.2 Standard, EEMUA 191 Guidelines, research performed by DC Campbell Brown and Adroit Technologies' experience around alarming and alarming systems.

This document introduces Adroit Technologies and the Adroit Alarm Management Agent and Reports with a brief overview of the Adroit SCADA software package for the purpose of convenience and reference.

For assistance with the installation and use of Adroit Report Suite value-add system; please consult the Report Suite user manual. For assistance with the installation of the Adroit Alarm Management report pack, please consult the Adroit Report Deployment Utility user manual.

1.1. Adroit Technologies

Since 1992 Adroit Technologies, a company based in South Africa, have been developing SCADA/HMI software solutions for the industrial automation and process control industries. With over 20,000 successful installations, in over 16 countries in the world, Adroit is one of the world's top-selling SCADA/HMI products.

Adroit Technologies are a Microsoft Certified Gold Partner Company. This allows Adroit Technologies to stay in regular contact with Microsoft and remain up to date with the latest advancements in software development. All this ensures that Adroit remains one of the leading SCADA packages, both now and in the future.

1.2. Adroit SCADA

ADROIT is an acronym for "Advanced Distributed Real-time Object-oriented Intelligent Toolkit".

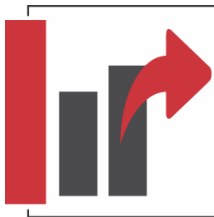
Adroit is a Windows-based SCADA/HMI software product that has been developed over a period of more than ten years by dedicated professionals. Robust and flexible enough for the toughest industrial application, Adroit is the ideal platform from which to meet the information needs of a modern control solution. Adroit is a technologically advanced SCADA (Supervisory Control & Data Acquisition) system designed for process control, manufacturing systems and open automation applications.

Developed specifically for Windows operating systems, Adroit has a flexible object-oriented client-server architecture that supports from a standalone implementation to an installation spanning multiple sites.

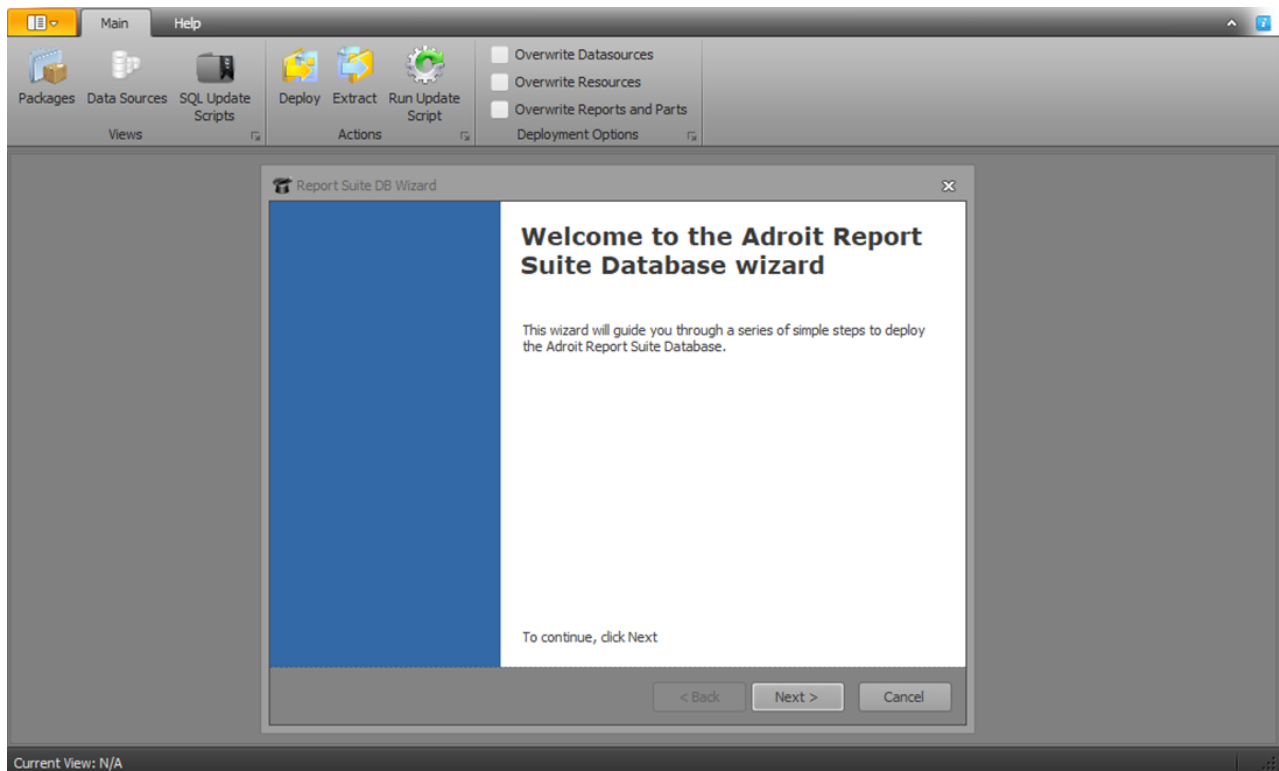
2. Adroit Report Deployment Utility

The Adroit Report Deployment Utility function is to help you create and deploy Report Packs. These report packs consist of Reporting Services' reports, data sources and components. The utility interfaces with SQL Reporting Services' web service.

The Adroit Report Deployment Utility will help you with the more complex tasks of managing your SQL Server Reporting Services.

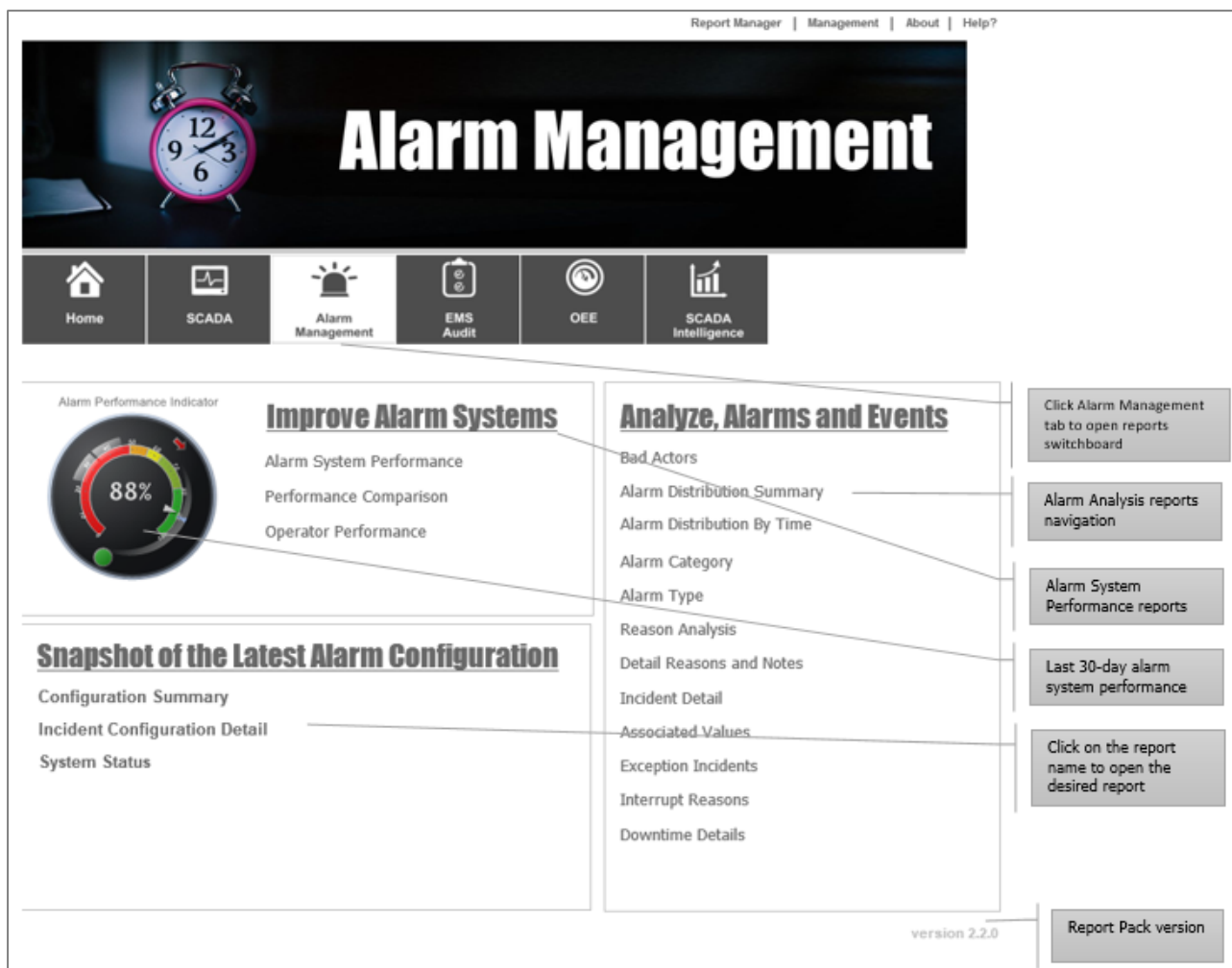


For more detailed information, please consult the user Manual document for this utility available to download from our website. (www.adroit.co.za).



3. Alarm Management Reports Switchboard

The Alarm Management switchboard is the navigation menu system for AMA reports, which includes System, Analysis and latest Alarm configuration reports on the Alarm Management agent data.



3.1. Alarm System Performance Dashboard

The Alarm System Performance dashboard measures the performance of an alarm system in terms of operator manageability of the system based on guidelines defined in the EEMUA 191 Guidelines document.

3.1.1. Report Component and Measures

Average Alarm Rate	Burst Rate (maximum alarm rate)
Represents the average number of alarms per hour for the selected reporting period	Represents the largest number of alarms that operators need to deal with over a 10 minute period, expressed in alarms per hour

Alarm Performance Indicator
Indication on how your alarm system is performing relative to the universal alarm system performance levels identified by DC Campbell Brown. This metric is a combination of the Average Alarm Rate and the Burst Rate KPI's.

Percent Upset	Operator Performance
This indicates how often an alarm system is in a state of distress and indicates the percentage of hours in the reported period in which more than 30 alarms occur.	This indicates how well your operators are able to individually attend to each incident.

Total Incidents
This shows how many incidents the operators have had to deal with for the specified filters.

Average Standing Alarm
This provides a simple indication of how well your operators are dealing with the incoming incidents at a specific point every hour, by providing a snapshot of how many alarms are active at any given time.

Stale Alarms
This shows the number of incidents that have been active for more than 24 hours, which typically are caused by an incorrect alarm configuration.

Alarm Performance Trend Chart
Illustrates how performance level has changed during the specified time period.

3.1.2. Status Indicators

A status indicator will indicate whether a KPI is:

-  Better than a defined set point or
  worse than the defined set point

3.1.3. Trend Indicators

A trend indicator compares a KPI's value for the selected period against the previous period of the same duration, for example if the last 7 days is selected the previous period will be the 7 days prior to the 7 days being reported on. The trend indicator shows that:

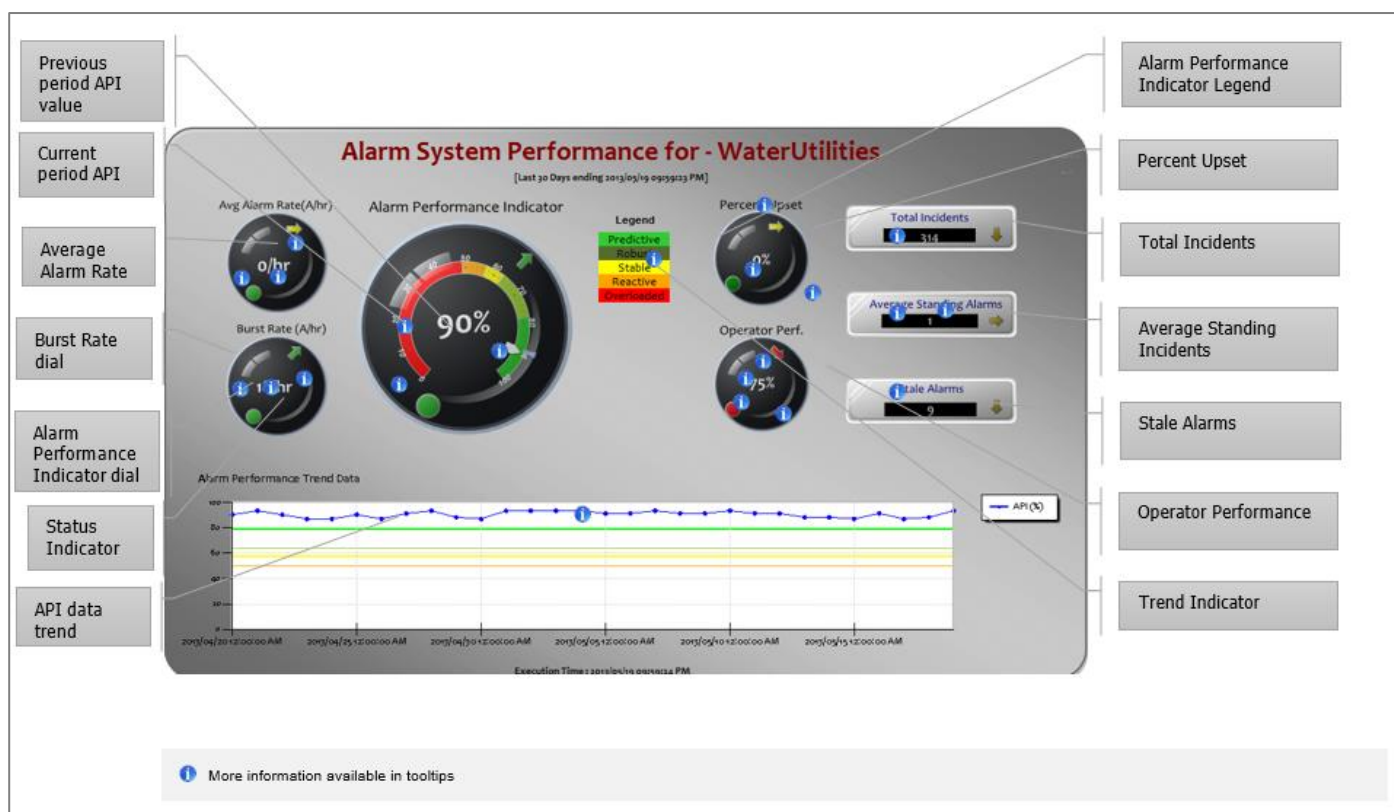
-  The current period KPI value is better than the previous period
 The current period KPI value is the same as the previous period
 The current period KPI value is worse than the previous period

3.1.4. Report Parameters

When the report is ran directly from the switchboard, it is up to the user to select the desired parameters, although all parameters do have default values.

Period	Filter Category
Select a period to run the dashboard against: 24 hours, 7 days, 30 days or 90 days.	This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.

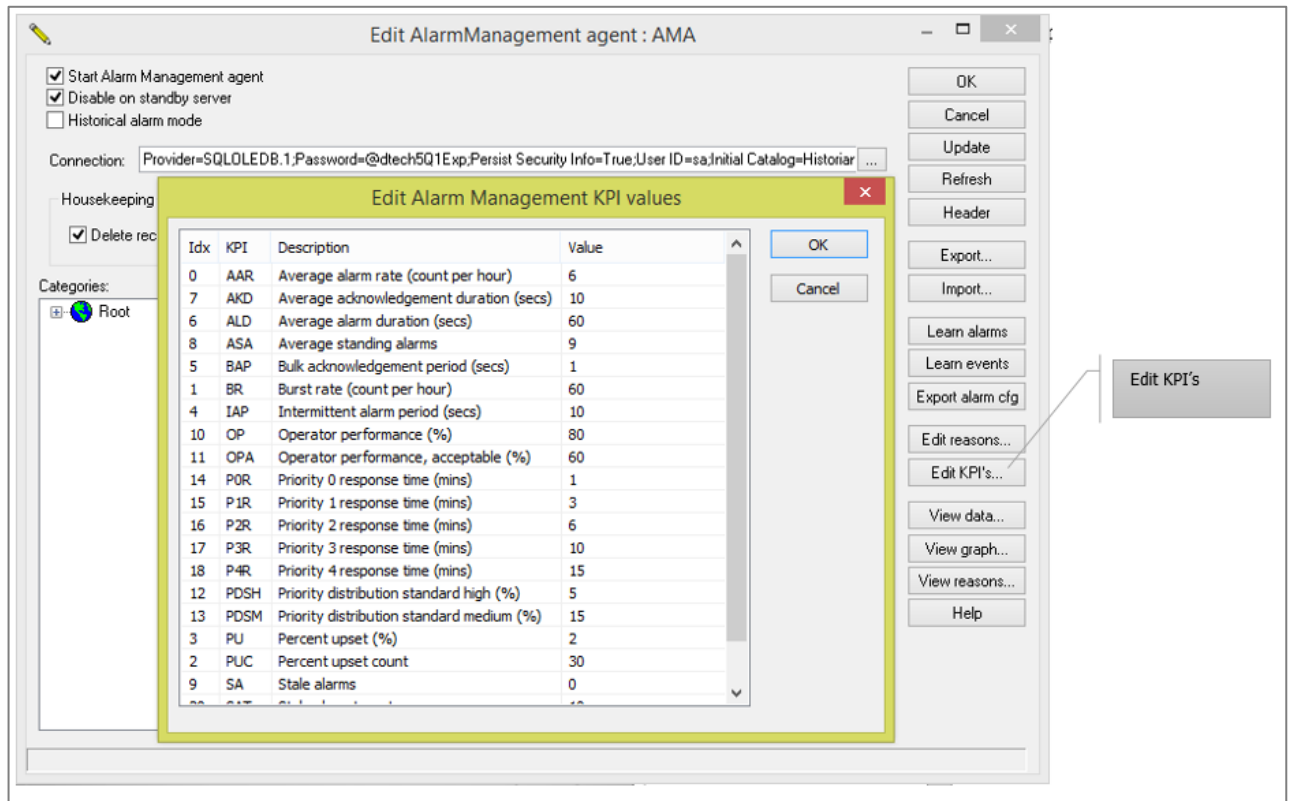
3.1.5. Report Layout



3.1.6. Adroit Configuration Considerations

Although all KPI's are measured against the guidelines laid out by the EEMUA 191 Guidelines document, these are purely guidelines and can be changed through the Alarm Management agent in Adroit.

Simply click on the "Edit KPI's" button and modify any KPI.



3.2. Performance Comparison Report

The Performance Comparison Report enables the user to compare alarm system KPI's for two user-defined periods, the overall system performance improvement as well as the relevant supporting information. The KPI value and status indicator is shown for each KPI for each period. An indicator shows whether a positive or negative change has occurred.

3.2.1. Report Component and Measures

Performance Indicators Grid

The KPI value and status indicator is shown for each KPI for each period. An indicator shows whether a positive or negative change has occurred. The report also shows the overall system performance improvement as well as the relevant supporting information.

3.2.2. Report Parameters

Date From and Date To (Period 1 & 2)	Filter Category
Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".	This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.

Comparison Period headers		Selected Category - WaterUtilities		Period 1		Period 2		Improvement
Performance Indicators	Unit	Target	Actual	Status	Actual	Status	Comparison	
Alarm Performance Level		PREDICTIVE	PREDICTIVE		PREDICTIVE			1.2%
Alarm Performance Indicator (API)	%	78.1	82.7		83.9		1.3	
Average Alarm Rate	Alarms / hour	6	2		1		-1	
Burst Rate	Alarms / hour	60	42		48		6	
Percent Upset	%	2	0		0		0	
Total Incidents		-	403		219		-184	
Average Standing Alarms	Alarms / hour	9	1		1			
Average Alarm Duration	HH:mm:ss	00:01:00	02:27:48		01:22:42		-01:05:06	
Stale Alarms		0	9		0		-9	
Operator Performance	%	80	55.1		70.8		15.7	
Average Acknowledge Time	HH:mm:ss	00:00:10	02:39:44		01:09:26		-01:30:18	

More information available in tooltips

3.3. Bad Actors Report

Bad actors are alarms that, if not dealt with, cause system degradation. These alarms appear often or continuously and by eliminating the underlying issues, can improve system performance. System incidents or “bad actors” are summarised by type, by category and by incident, whereby each graph allows drill through to a detailed report for the series.

3.3.1. Report Component and Measures

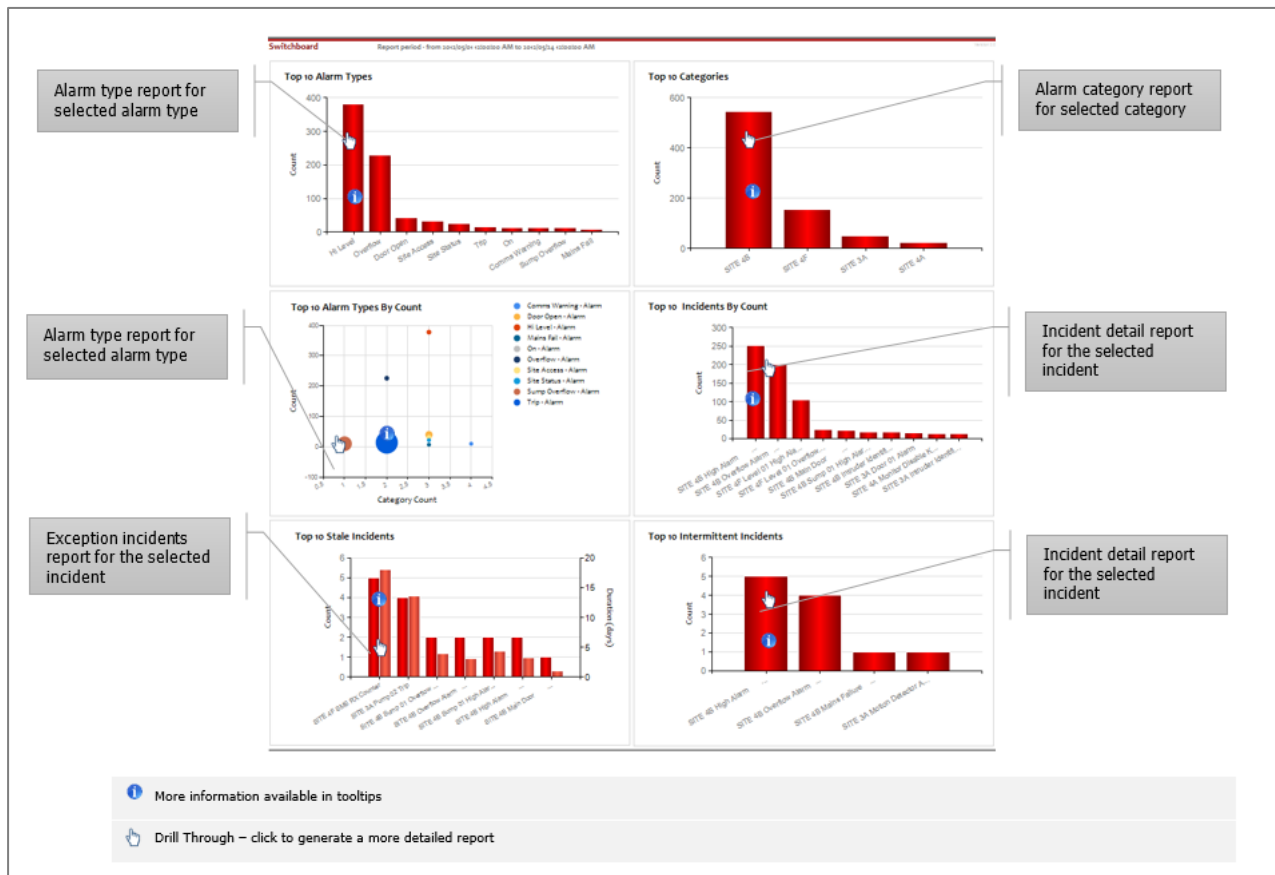
Top 10 Alarm Types <i>Column Chart</i> – A summary of the top 10 alarm types in descending order.	Top 10 Categories <i>Column Chart</i> – A summary of the top 10 alarm types in descending order.
Top 10 Alarm Types by Category <i>Bubble Chart</i> – A top 10 summary by alarm type showing the count of incidents of the alarm type and the number of categories the alarm type is found in. The size of the bubble indicates the total duration for the incident type.	Top 10 Incidents <i>Column Chart</i> – A summary of the top 10 incidents in descending order.
Top 10 Stale Incidents <i>Column Chart</i> – A summary of the top 10 stale incidents shown both by count and duration for each incident. A stale incident is an incident in the active state for more than 24 hours.	Top 10 Intermittent Incidents <i>Column Chart</i> – A summary of the top 10 intermittent incidents. An intermittent incident is an incident in the active state for less than 10 seconds.

3.3.2. Report Parameters

Date From and Date To Specify a date range by picking “Date From” and “Date To”. Incidents are included in the report provided they are dated on or after “Date From” and before “Date To”. ¹	Alarm or Event Report on alarms, events or both by selecting the appropriate option from the dropdown.
Priority Select all or a particular alarm priority to run the report against.	Compute Summary By Display graphs by number of incidents (count) or total active time (duration) per grouping.
Filter Category This is a list of categories. If a parent category is selected all incidents in the parents and child categories will be included in the report.	

¹ However stale Incidents that were active after “Date From” and are dated before “Date To” shall be included.

3.3.3. Report Layout



3.3.4. Adroit Configuration Considerations

In order to get maximum benefit out of the Alarm Management reports it is important to make use of alarm categories and custom alarm types in Adroit.

More information on alarm categories is available in the Alarm Categories report.

More information on alarm types is available in the Alarm Types report.

3.4. Alarm Category Report

This report summarises incidents for the user selected Category (or Categories) in top 10 graphs, by type and by incident. Incident details are shown in a data grid grouped by category.

3.4.1. Report Component and Measures

Top 10 Alarm Types	Top 10 Incidents
<i>Column Chart</i> – A summary of the top 10 alarm types in descending order.	<i>Column Chart</i> – A summary of the top 10 incidents in descending order.

Alarm Detail

Data Grid – A separate data grid is created for each category returned in the data set. Within each category the alarm detail is grouped and summarised by alarm type. The alarm type summary can be expanded to show incident detail, which in turn is grouped by incident.

3.4.2. Report Parameters

Date From and Date To	Alarm or Event
Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".	Report on alarms, events or both by selecting the appropriate option from the dropdown.
Priority	Filter Category
Select all or a particular alarm priority to run the report against.	This is a list of categories. If a parent category is selected all incidents in the parents and child categories will be included in the report.

Compute Summary By

Display graphs by number of incidents (count) or total active tie (duration) per grouping.

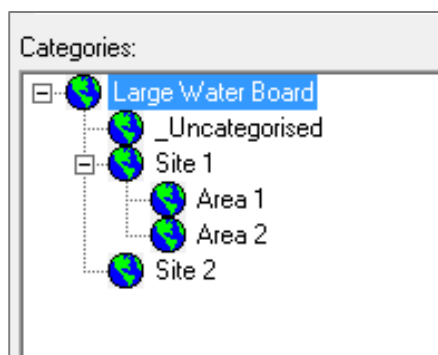
3.4.3. Report Layout

The screenshot displays the Adroit Report Suite interface for the Alarm Category Report. The main content area features two bar charts: 'Top 10 Alarm Types' and 'Top 10 Incidents By Count'. Below these charts is a data grid showing alarm details for 'SITE 4A' and 'SITE 4B'. The grid includes columns for Alarm Type, Date Time, Date, Cleared, Active (hh:mm:ss), Priority, Acknowledged, Acknowledged by, and Shift. The sidebar on the left contains callouts for various report components, including 'Alarm type report for selected alarm type', 'Incident detail report in category', 'Incident detail report for alarm type', 'Detail reason & notes', 'Incident detail report for incident', 'Associated values report for incident', and 'Expand grouping for details'. The right side of the interface has callouts for 'Incident detail report for selected incident', 'Category Grouping', 'Incident detail header', 'Alarm type grouping', 'Incident detail', and 'Incident grouping'. A bottom bar contains a 'More information available in tooltips' icon and a 'Drill Through – click to generate a more detailed report' button.

3.4.4. Adroit Configuration Considerations

The categories used in the Alarm Management reports are configured in in the Adroit Alarm Management agent as show in the examples below. Configuration is explained in the *Configuration Alarm Management Agents* section of the Adroit help files.

If categories are not created and/or incidents are not assigned to any categories, they will be presented in the reports in the *_Uncategorised* category.



3.5. Alarm Type Report

This report summarises incidents for the user selected Type (or Types) in top 10 graphs, by category and by incident. Incident details are then shown in a data grid grouped by alarm type.

3.5.1. Report Component and Measures

Top 10 Categories	Top 10 Incidents
<i>Column Chart</i> – A summary of the top 10 categories in descending order.	<i>Column Chart</i> – A summary of the top 10 incidents in descending order.

Alarm Detail

Data Grid – A separate data grid is created for each category returned in the data set. Within each category the alarm detail is grouped and summarised by alarm type. The alarm type summary can be expanded to show incident detail, which in turn is grouped by incident.

3.5.2. Report Parameters

Date From and Date To	Alarm or Event
Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".	Report on alarms, events or both by selecting the appropriate option from the dropdown.

Priority	Filter Alarm Type
Select all or a particular alarm priority to run the report against.	This is a list of alarm types. Select at least one or more alarm type/s.

Compute Summary By
Display graphs by number of incidents (count) or total active tie (duration) per grouping.

3.5.3. Report Layout

Alarm category report for alarm type

Incident detail report for alarm

Incident detail report in category

Incident detail report for incident

Associated values report for incident

Expand grouping for details

Detail reason & notes

Incident detail report for selected incident

Alarm type grouping

Incident detail header

Category grouping

Incident detail

Incident grouping

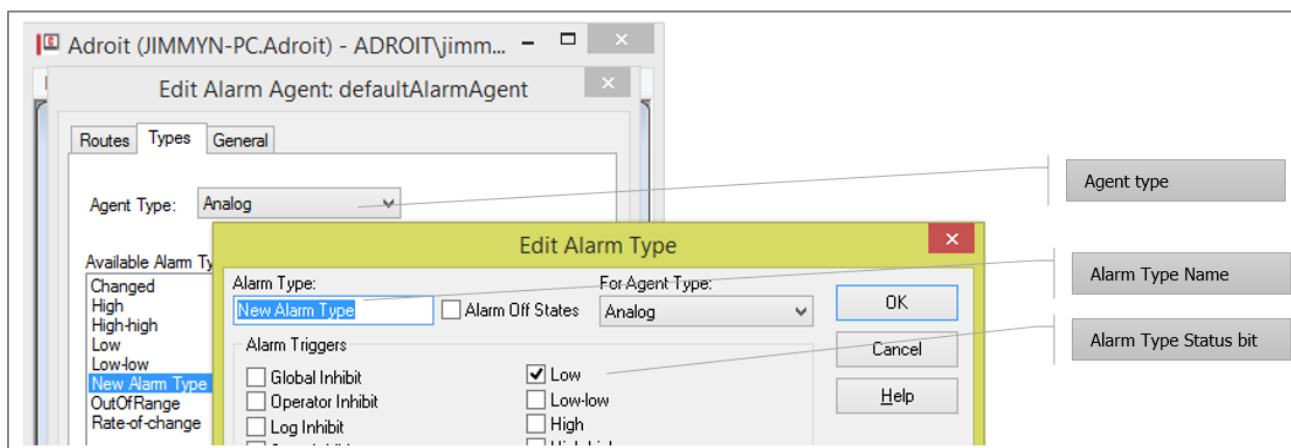
Drill Through – click to generate a more detailed report

3.5.4. Adroit Configuration Considerations

For each Alarm Agent in Adroit, it is possible to create custom alarm types. The Alarm Type selected when alarming an agent is the information which will be reflected in the Alarm Management reports.

For more information, go to the Creating Alarm Types section of the Adroit help files.

When alarming an agent, the custom Alarm Type can then be applied to the alarm. For more information go to the Alarming Agents section of the Adroit help files.



3.6. Reasons & Notes Analysis

This report highlights the prevalent reasons, sub-reasons and notes assigned to incidents.

3.6.1. Report Component and Measures

Reasons & Sub-Reason Analysis

Data Grid – The summary of incident reasons is summarised by count in descending order with average and total durations for each reason. When the reason is expanded, a summary of incident sub-reasons is summarised by count in descending order with average and total durations for each sub-reason. When the sub-reason is then expanded, a breakdown of the contributing incidents is displayed with count, average duration and total duration per incident.

Reason Distribution

Bubble Chart – A summary of reason count on the x-axis and the number of distinct incidents responsible for each reason on the y-axis. The size of the bubble is the duration of the reason.

Sub-Reason Distribution

Bubble Chart – A summary of sub-reason count on the x-axis and the number of distinct incidents responsible for each sub-reason on the y-axis. The size of the bubble is the duration of the sub-reason.

Top 10 Incidents by Frequency

Column Chart – A summary of the top 10 incidents in descending order.

3.6.2. Report Parameters

Date From and Date To

Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Alarm or Event

Report on alarms, events or both by selecting the appropriate option from the dropdown.

Filter Category

This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.

Filter Alarm Type

This is a list of alarm types. Select at least one or more alarm type/s.

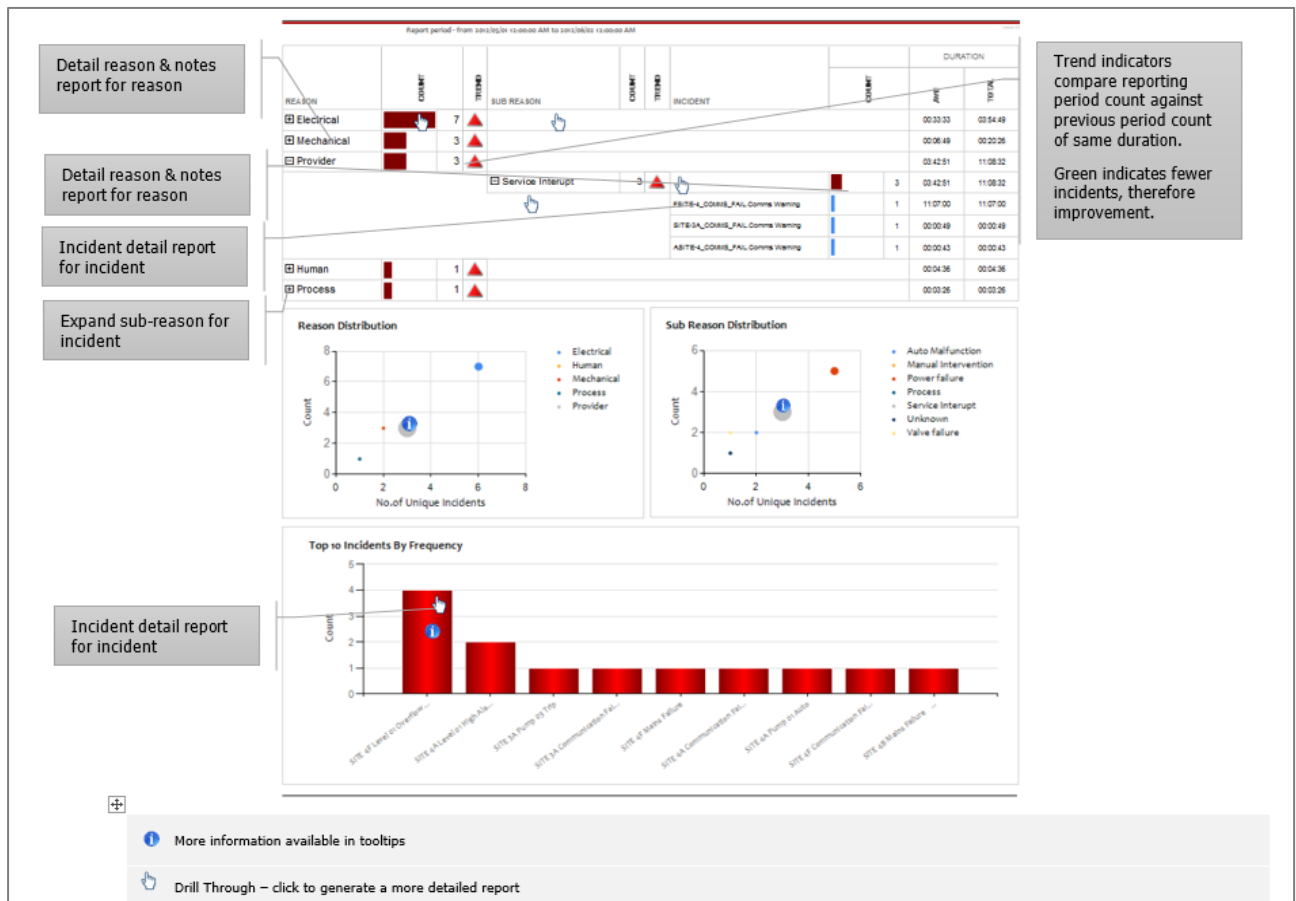
Filter Incident

This is a list of incidents with reasons and notes.

Priority

Select all or a particular alarm priority to run the report against.

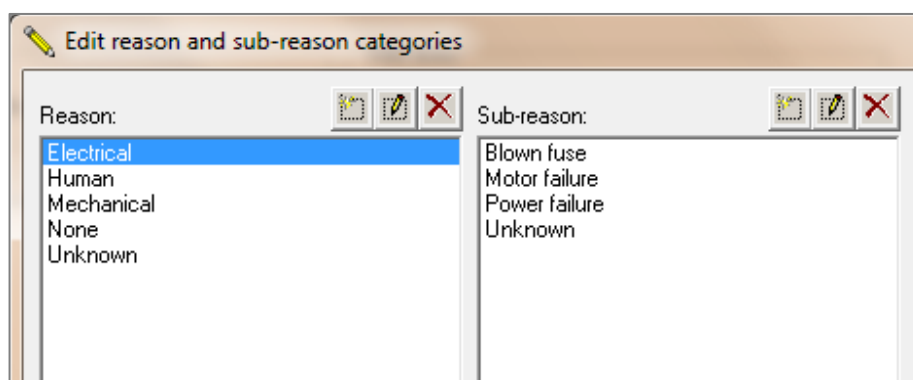
3.6.3. Report Layout



3.6.4. Adroit Configuration Considerations

In order to capture reasons and notes incidents in Adroit, the following configuration is required:

1. Reasons and sub-reasons should be configured in the Adroit Alarm Management agent. For more information, refer to the Adroit help files – Editing Reasons and Sub-reasons.
2. Reasons required should be enabled for the incident in the Alarm Management agent – Optional Incident Configuration Settings in the Adroit help file.
3. The operator should have access to the Outstanding Reasons and Notes Dialog box in order to assign reasons and notes to these incidents – Launching the View Reasons Dialog in the Adroit help file.



3.7. Associated Values Report

Provides a detailed list of configured associated values per incident whereby column headers are the associated tags and the rows display the associated values per incident occurrence.

3.7.1. Report Component and Measures

Associated Values

Data Grid – System incidents along with associated values are grouped by incident and each associated value/tag is displayed as a column. The grid is ordered by incident occurrence times.

3.7.2. Report Parameters

Date From and Date To

Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Alarm or Event

Report on alarms, events or both by selecting the appropriate option from the dropdown.

Reason

This is a list of reasons. Select at least one or more reason/s.

Filter Category

This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.

Filter Alarm Type

This is a list of alarm types. Select at least one or more alarm type/s.

Filter Incident

This is a list of incidents with reasons and notes.

Priority

Select all or a particular alarm priority to run the report against.

BSITE-4_INTR_IDENT.Site Access					
Date Time	Cleared Date Time	Data	BSITE-4_DOOR_01.value	BSITE-4_DOOR_02.value	BSITE-4_INTR_IDENT_STR.value
2012/08/08 02:42:58	2012/08/08 03:14:58	11044.00	1	1	B.McAllister
2012/08/08 08:08:58	2012/08/08 11:10:34	7442.00	0	1	G.Gizara
2012/08/08 11:29:31	2012/08/08 11:38:11	12079.00	0	0	T.Mpofu

Incident Header

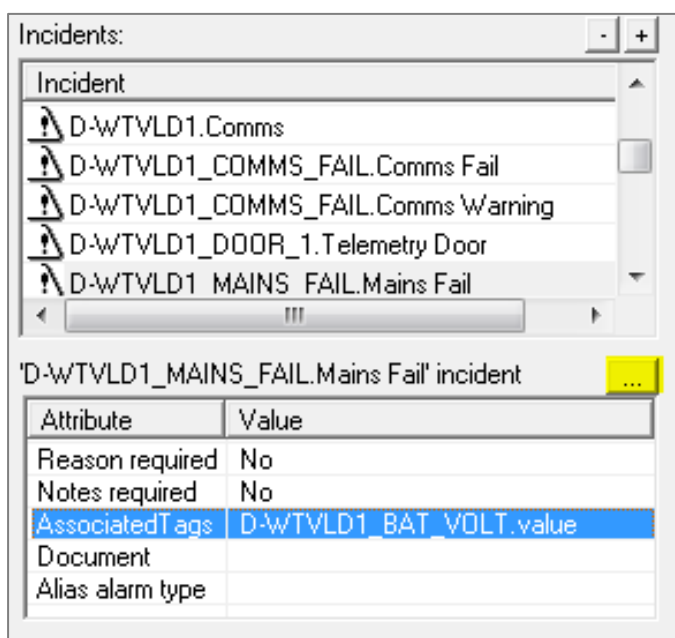
Associated tags header

3.7.3. Adroit Configuration Considerations

For any incident in the Alarm Management, it is possible to define one or more *associated values*. An associated value is any tag in Adroit for which a snapshot value is recorded in the Alarm Management database for each occurrence of the incident.

1. The associated values are configured in the Alarm Management agent by:
2. Selecting the incident to be configured
3. Click on the Associated Tags Value field.
4. Click on the Browse button to select the desired associated tag.

For more information, refer to the *Optional Incident Configurable Settings* of the Adroit help files.



The screenshot shows a window titled 'Incidents:' with a list of incidents. The selected incident is 'D-WTVLD1_MAINS_FAIL.Mains Fail'. Below the list, there is a table for configuring the incident's attributes.

Attribute	Value
Reason required	No
Notes required	No
AssociatedTags	D-WTVLD1_BAT_VOLT.value
Document	
Alias alarm type	

3.8. Detail Reasons & Notes Report

This report highlights the prevalent reasons, sub-reasons and notes assigned to incidents.

3.8.1. Report Component and Measures

Detail Reasons & Notes

Data Grid – This report is summarised for the selected criteria into a grid. Data on the grid is grouped by incident and ordered by occurrence. The grid shows assigned reasons and notes per incident.

3.8.2. Report Parameters

Date From and Date To	Alarm or Event
Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".	Report on alarms, events or both by selecting the appropriate option from the dropdown.
Reason	
This is a list of reasons. Select at least one or more reason/s.	
Filter Category	Filter Alarm Type
This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.	This is a list of alarm types. Select at least one or more alarm type/s.
Filter Incident	Priority
This is a list of incidents with reasons and notes.	Select all or a particular alarm priority to run the report against.

3.8.3. Report Layout

Date Time	Cleared Date Time	Active Time (hh:mm:ss)	Data	Reason	Sub Reason	Notes	
ASITE-4_AUTO_01.Manual							Incident
2012/05/16 11:02:16	2012/05/16 11:09:16	00:06:40	Switch to Manual	Mechanical	Auto Malfunction	Override auto switch due to cable damage	
ASITE-4_COMMS_FAIL.Comms Warning							Reasons, Sub-reasons & Notes
2012/06/06 05:32:37	2012/06/06 05:33:20	00:00:43		Provider	Service Interrupt		
ASITE-4_LEVEL_HIGH.Hi Level							
2012/05/18 11:57:32	2012/05/18 12:04:05	00:06:33		Mechanical	Valve failure	Valve did not open completely	
2012/05/21 11:07:36	2012/05/21 11:14:49	00:07:13		Mechanical	Valve failure	Valve stuck	
ASITE-4_MAINS_FAIL.Mains Fail							
2012/06/06 05:03:25	2012/06/06 05:43:00	00:39:35		Electrical	Power failure		
BSITE-4_AC_MAINS-FAIL.On							
2012/06/06 10:21:32	2012/06/06 10:26:57	00:05:25	ON	Electrical	Power failure	scheduled load shedding	
BSITE-4_MAINS_FAIL.Mains Fail							
2012/06/06 10:21:32	2012/06/06 10:21:51	00:00:19		Electrical	Power failure	Power failure	
FSITE-4_COMMS_FAIL.Comms Warning							
2012/06/02 02:02:00	2012/06/03 01:09:00	11:07:00		Provider	Service Interrupt	Network down	
FSITE-4_LEVEL_OVER.Overflow							
2012/06/01 03:35:28	2012/06/01 03:40:04	00:04:36		Human	Manual Intervention	Pump 1 was switch off by accident	
2012/06/01 06:13:14	2012/06/01 06:16:40	00:03:26		Process	Process	Pump process catching up	

3.9. Detail Report

This report highlights incidents distribution (per hour) over the selected period for the selected incidents.

3.9.1. Report Component and Measures

Incidents Distribution Per Hour

Data Grid – Summarises the incidents distribution per hour, incident count on the y-axis and time on the x-axis.

Time Series

Displays the incident state over time for the selected time period.

Incident Detail

Data Grid – This report is summarised for the selected criteria into a grid. Data on the grid is grouped by incident and ordered by occurrence. The grid shows assigned reasons and notes per incident.

3.9.2. Report Parameters

Date From and Date To

Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Alarm or Event

Report on alarms, events or both by selecting the appropriate option from the dropdown.

Show Associated Agents

Click to include or exclude associated agents in the grid.

Filter Category

This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.

Filter Alarm Type

This is a list of alarm types. Select at least one or more alarm type/s.

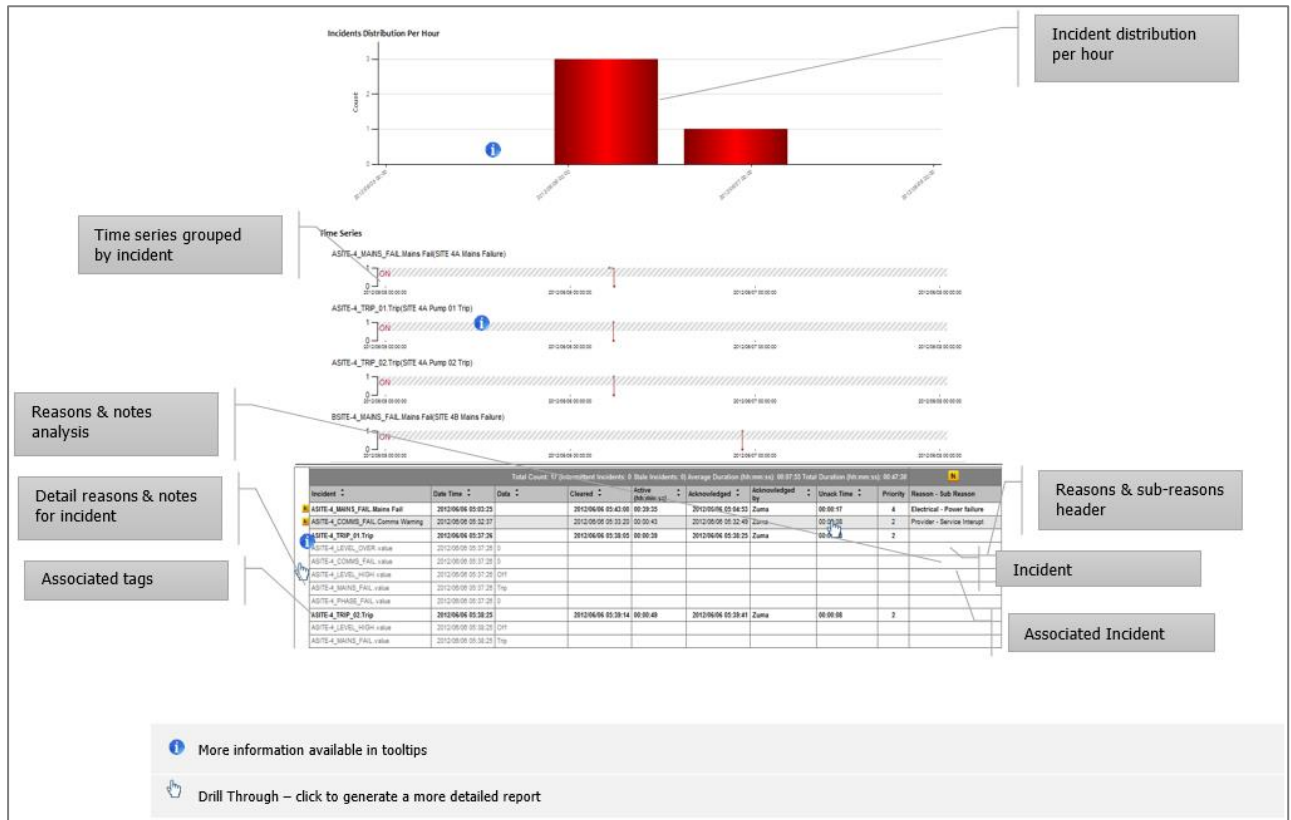
Filter Incident

This is a list of incidents with reasons and notes.

Priority

Select all or a particular alarm priority to run the report against.

3.9.3. Report Layout



3.10. Exception Incidents Report

This report displays detailed alarm information for state incidents, unacknowledged incidents or incidents with outstanding reason and notes.

- Stale Incidents – incidents that have been active for more than 24 hours
- Unacknowledged Incidents – incidents that have not been acknowledged
- Outstanding Reasons & Notes – incidents which required reasons and notes that have not been assigned

3.10.1. Report Component and Measures

Exception Incidents

Data Grid – The grid groups and summarises the selected exception incidents first by category and then by alarm type. When both category and alarm type have been expanded, the full incident details are shown for each occurrence of the exception.

3.10.2. Report Parameters

Date From and Date To Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To". ²	Alarm or Event Report on alarms, events or both by selecting the appropriate option from the dropdown.
Filter Category This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.	Filter Alarm Type This is a list of alarm types. Select one or more alarm type/s.
Filter Incident This is a list of incidents with reasons and notes.	Priority Select all or a particular alarm priority to run the report against.
Filter Exception Select the exception type to run the report against.	Reason This is a list of reasons. Select at least one or more reason/s.

² However stale Incidents that were active after "Date From" and are dated before "Date To" shall be included.

3.10.3. Report Layout

Exception header

Grid grouped by category

Expand category to view alarm

Expand alarm type to view incidents

State Incidents										
Incident	Date Time	Cleared dt	Active Time	Unack Time	Acknowledged dt	Acknowledged by	Shift	Reason	Sub Reason	Notes
SITE 4B										Total Count: 10
☐ Hi Level										Count: 4
☐ Door Open										Count: 2
☐ Sump Overflow										Count: 2
☐ Overflow										Count: 2
88ITE_4_LEVEL_OVER Overflow	2012/05/22 11:00:15	2012/05/24 09:13:38	45:13:21	11:28:19	2012/05/22 10:28:34	Smith	3	None	None	
88ITE_4_LEVEL_OVER Overflow	2012/05/25 09:49:49	2012/05/29 11:10:43	29:25:59	00:00:00	2012/05/29 09:49:55	Smith	2	None	None	
SITE 3A										Total Count: 5
SITE 4F										Total Count: 5
☐ RX Count										Count: 5
FSITE_4_SHSRX_COUNT RX Count	2012/05/21 03:00:38	2012/05/28 11:38:19	140:37:43	00:00:00	2012/05/21 03:00:44	Zuma	2	None	None	
FSITE_4_SHSRX_COUNT RX Count	2012/05/22 09:03:22	2012/05/29 11:38:19	110:34:57	00:00:15	2012/05/22 09:03:37	Zuma	2	None	None	
FSITE_4_SHSRX_COUNT RX Count	2012/05/26 11:38:21	2012/05/29 12:00:00	80:21:39	00:00:00	2012/05/26 11:38:29	Supervisor	1	None	None	
FSITE_4_SHSRX_COUNT RX Count	2012/05/26 11:38:16	2012/05/29 12:00:00	80:20:44	00:00:00	2012/05/26 11:39:24	Supervisor	1	None	None	
FSITE_4_SHSRX_COUNT RX Count	2012/05/26 11:58:59	2012/05/29 12:00:00	80:01:01	00:00:21	2012/05/26 11:59:20	Supervisor	1	None	None	

Category grouped by alarm type

Incident detail

3.11. Operator Performance Report

The Operator Performance report measures operator acknowledgement durations per incident against user-defined set points for each priority alarm. The performance measurement displays the percentage of alarms acknowledged in the prescribed duration.

3.11.1. Report Component and Measures

Operator Performance

Column Chart – Summarises the number of incidents acknowledged by the operator in less than 10 minutes as a percentage of the total acknowledged incidents on the y-axis and Operator name on the x-axis.

Operator Alarms Not Acknowledged Within 10 Minutes

Data Grid – Summarises all alarms that were not acknowledged within 10 minutes.

Acknowledged Incidents Per Hour

Column Chart – Summarises incidents acknowledged within 10 minutes in a distribution chart per hour by operator and shift.

3.11.2. Report Parameters

Date From and Date To

Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Filter Operator

Select the operator to run the report against.

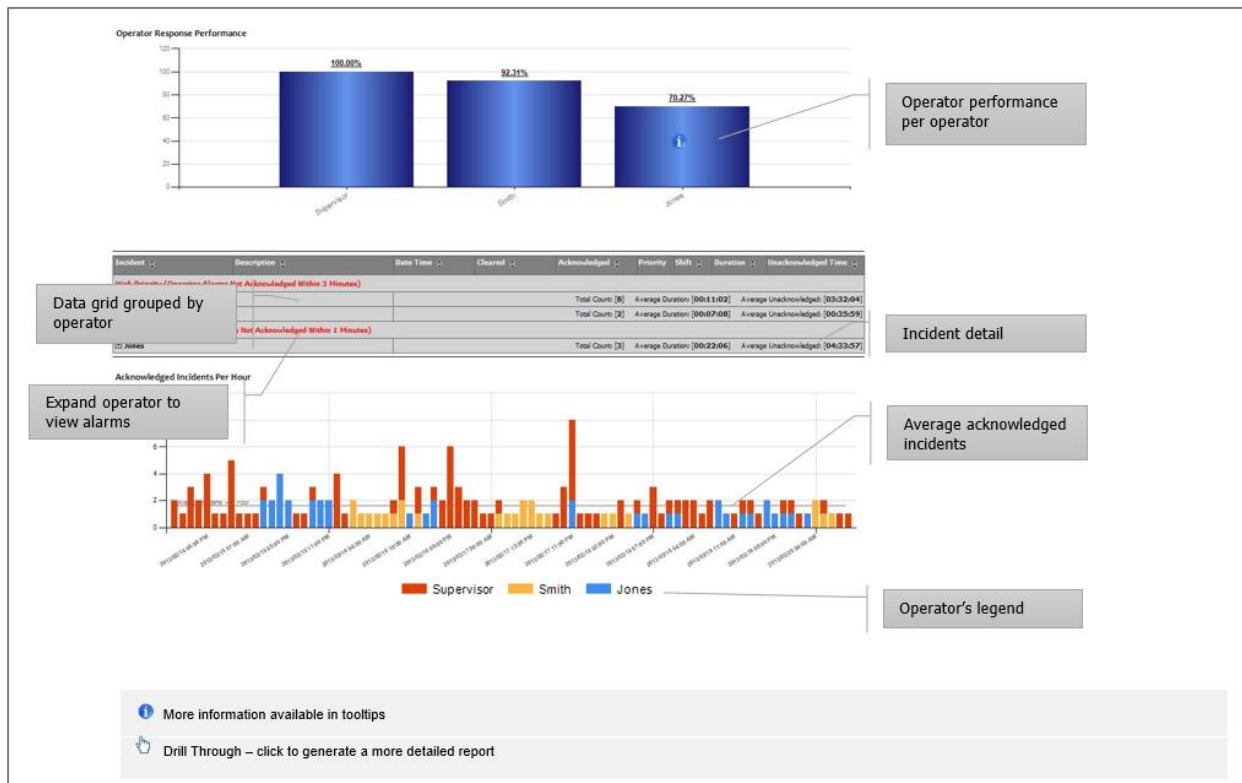
Priority

Select all or a particular alarm priority to run the report against.

Filter Alarm Type

This is a list of alarm types. Select at least one or more alarm type/s.

3.11.3. Report Layout



3.11.4. Adroit Configuration Considerations

It is important to take note of how unacknowledged alarms are handled, in terms of the acknowledged by operator logged to the database, if Adroit is restarted.

The following scenarios and the restart data logging are explained below:

- Incident active and unacknowledged** - The record will be moved to the Historical Incidents table with the shutdown time written to the *cleared_dt* for the incident and will be *acknowledged_by* 'RESTART'. A new unacknowledged record will be created in the Current Incidents table with the start-up date time as the *incident_dt*.
- Incident active and acknowledged** - The record will be moved to the Historical Incidents table with the shutdown time written to the *cleared_dt* for the incident. A new acknowledged record will be created in the Current Incidents table with the start-up date time as the *incident_dt*.
- Incident cleared and unacknowledged** - The record will be moved to the Historical Incidents table with the shutdown time written to the *cleared_dt* for the incident and will be *acknowledged_by* 'RESTART'.

3.12. Interrupt Reasons Report

The interrupt reasons report measures the interruption reasons per category or incident, interrupt reasons are summarised by type, by category and by incident, whereby shows top 10 actors and drill through to details from the stats table. We can also view the Downtime Details Report from the report.

3.12.1. Report Component and Measures

Interrupt Reasons

Column Chart – Summarises the number of incidents with specific reasons supplied by the operator in each acknowledged incident, reasons on the x-axis and occurrence on the y-axis.

Reasons Duration and occurrence

Data Grid – Summarises all the reasons, Duration and occurrence that were acknowledged.

3.12.2. Report Parameters

Date From and Date To

Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Filter Category

Select the category to run the report against.

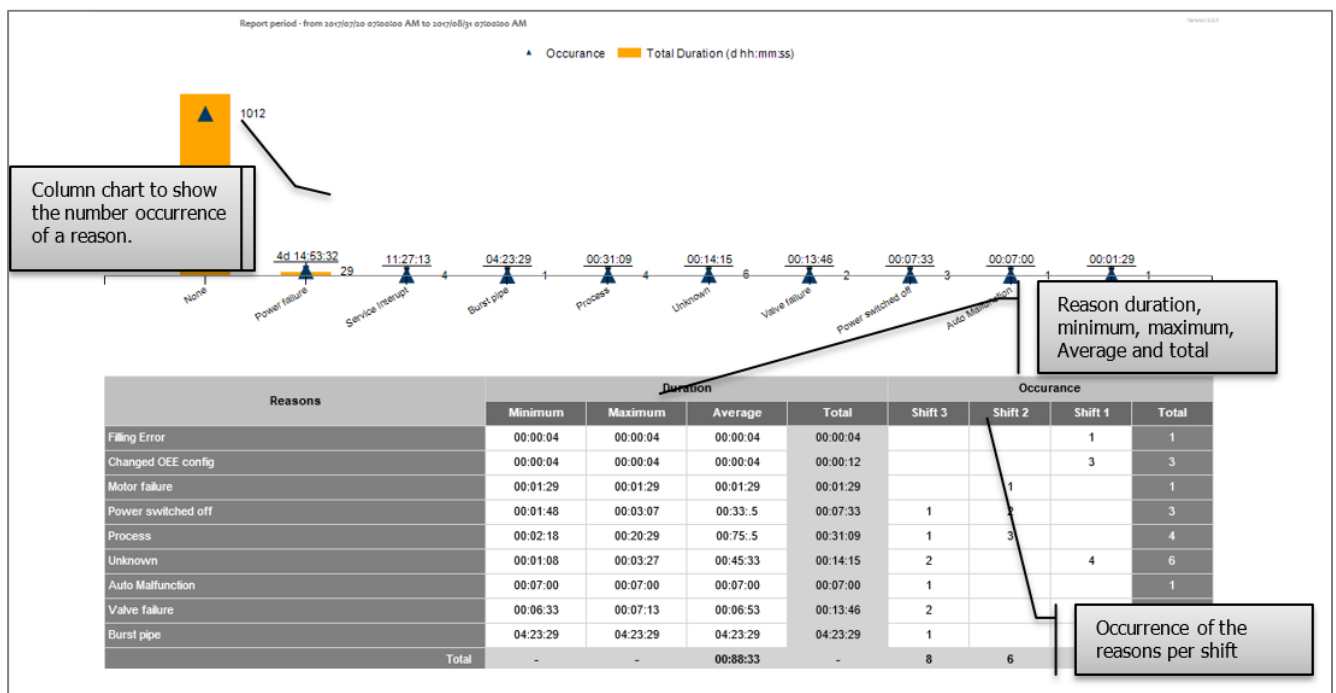
Reason

Select all or a particular reason to run the report against.

Filter Alarm Type

This is a list of alarm types. Select at least one or more alarm type/s.

3.12.3. Report Layout



3.13. Interrupt Details Report

The downtime details report measures the amount of downtime and the reason. It also shows the alarm cleared date, active time, shift and reasons for the downtime.

3.13.1. Report Component and Measures

Downtime Details
Data Grid – Summarises all incidents, categories, datetime, cleared Date time, active Time, shift and downtime reason and Notes.

3.13.2. Report Parameters

Date From and Date To
Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Filter Category	Sub Reasons
Select the category to run the report against.	Select all or a particular sub reason to run the report against.

Filter Alarm Type
This is a list of alarm types. Select at least one or more alarm type/s.

3.13.3. Report Layout

Category ↕	Incident ↕	Date Time ↕	Cleared Date Time ↕	Active Time(hh:mm:ss) ↕	Shift	Downtime Reason ↕
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 02:33:11 PM	2017/08/31 02:35:08 PM	00:01:57	2	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 01:42:53 PM	2017/08/31 01:44:02 PM	00:01:09	2	None
Water Tower North	WATER_TW_N_POLL_ALL.Site Poll	2017/08/31 01:24:49 PM	2017/08/31 01:24:52 PM	00:00:03	2	None
Main Reservoir	MAIN_RESV_LEVEL_OVER.Overflow	2017/08/31 01:09:52 PM	2017/08/31 03:30:33 PM	02:20:41	3	None
Water Tower North	WATER_TW_N_RUN_02.Stop	2017/08/31 11:26:17 AM	2017/08/31 03:30:33 PM	04:04:16	2	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 10:53:10 AM	2017/08/31 11:08:24 AM	00:15:14	2	None
Main Reservoir	MAIN_RESV_SUMP1_HIGH.Hi Level	2017/08/31 10:52:11 AM	2017/08/31 11:07:54 AM	00:15:43	2	None
Water Tower North	WATER_TW_N_MONIT_DISABLE.Site Status	2017/08/31 05:31:13 AM	2017/08/31 05:36:38 AM	00:05:25	1	None
Main Reservoir	MAIN_RESV_POLL_ALL.Site Poll	2017/08/31 04:41:31 AM	2017/08/31 04:41:34 AM	00:00:03	1	None
Pump Station	PMP_ST_TRIP_02.Trip	2017/08/31 04:38:43 AM	2017/08/31 04:39:05 AM	00:00:22	1	None
Main Reservoir	MAIN_RESV_MONIT_DISABLE.Site Status	2017/08/31 02:58:54 AM	2017/08/31 03:06:36 AM	00:07:42	1	None
Water Tower North	WATER_TW_N_POLL_ALL.Site Poll	2017/08/31 02:49:31 AM	2017/08/31 02:49:34 AM	00:00:03	1	None
Pump Station	PMP_ST_POLL_ALL.Site Poll	2017/08/31 02:07:09 AM	2017/08/31 02:07:12 AM	00:00:03	1	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 01:34:21 AM	2017/08/31 01:36:00 AM	00:01:39	1	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 12:46:31 AM	2017/08/31 12:47:59 AM	00:01:28	1	None
Water Tower North	WATER_TW_N_RUN_01.Stop	2017/08/31 12:09:52 AM	2017/08/31 03:30:33 PM	15:20:41	2	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/30 11:31:59 PM	2017/08/30 11:34:26 PM	00:02:27	3	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/30 11:31:11 PM	2017/08/31 03:30:33 PM	15:59:22	3	None
Main Reservoir	MAIN_RESV_COMMS_FAIL.Comms Warning	2017/08/30 10:59:52 PM	2017/08/31 03:30:33 PM	16:30:41	3	None
Main Reservoir	MAIN_RESV_POLL_ALL.Site Poll	2017/08/30 10:18:32 PM	2017/08/30 10:18:35 PM	00:00:03	3	None
Pump Station	PMP_ST_POLL_ALL.Site Poll	2017/08/30 08:44:40 PM	2017/08/30 08:44:43 PM	00:00:03	3	None
Water Tower North	WATER_TW_N_POLL_ALL.Site Poll	2017/08/30 07:04:26 PM	2017/08/30 07:04:29 PM	00:00:03	3	None

3.14. Alarm Distribution Summary

The Alarm Distribution Summary Report summarises the distribution of alarms that have occurred by incident type (alarm or event), priority, process, shift, who acknowledged and reasons selected. A summary for each is shown in a pie chart.

3.14.1. Report Components and Measures

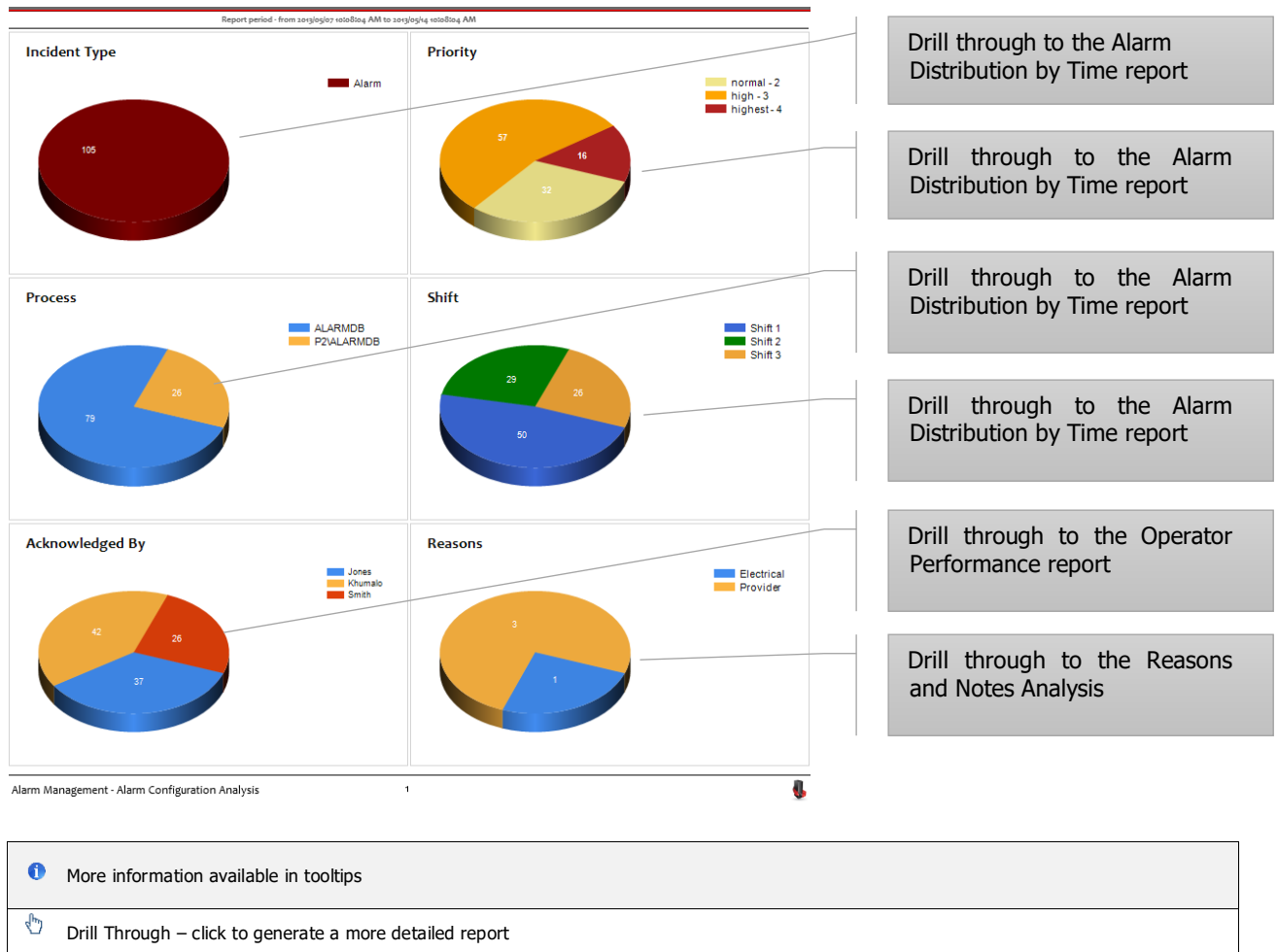
Incident Type	Priority
Pie Chart – A summary of alarm and events for the selected period	Pie Chart – A summary of the priorities for the selected period.
Process	Shift
Pie Chart – A summary of the processes for the selected period	Pie Chart – A summary of the three shifts for the selected period.
Acknowledge	Reason
Pie Chart – A summary of the top 10 acknowledged for the selected period	Pie Chart – A summary of the reasons for the selected period.

3.14.2. Report Parameters

Date From and Date To	Incident Type
Pie Chart – A summary of alarm and events for the selected period	Report on alarms, events or both by selecting the appropriate option from the dropdown
Priority	Filter Category
Select all or a particular alarm priority to run the report against.	Pie Chart – A summary of the three shifts for the selected period.
Acknowledge	
This is a list of alarm types. Select at least one or more alarm type/s.	

¹ However stale Incidents that were active after "Date From" and are dated before "Date To" shall be included.

3.14.3. Report Layout



Note

Drilling through from a pie chart will pass the parameter for the selected pie segment, whereas drilling through from the chart title will pass all pie segments as the parameters.

3.15. Alarm Distribution by Time

The Alarm Distribution by Time report summarises incidents that have occurred per hour over the time selected and stacks the incidents by either by incident type, priority, process or shift. The report also includes a distribution of incidents by hour of the day and includes bad actors for the selected period by incident, alarm type and category.

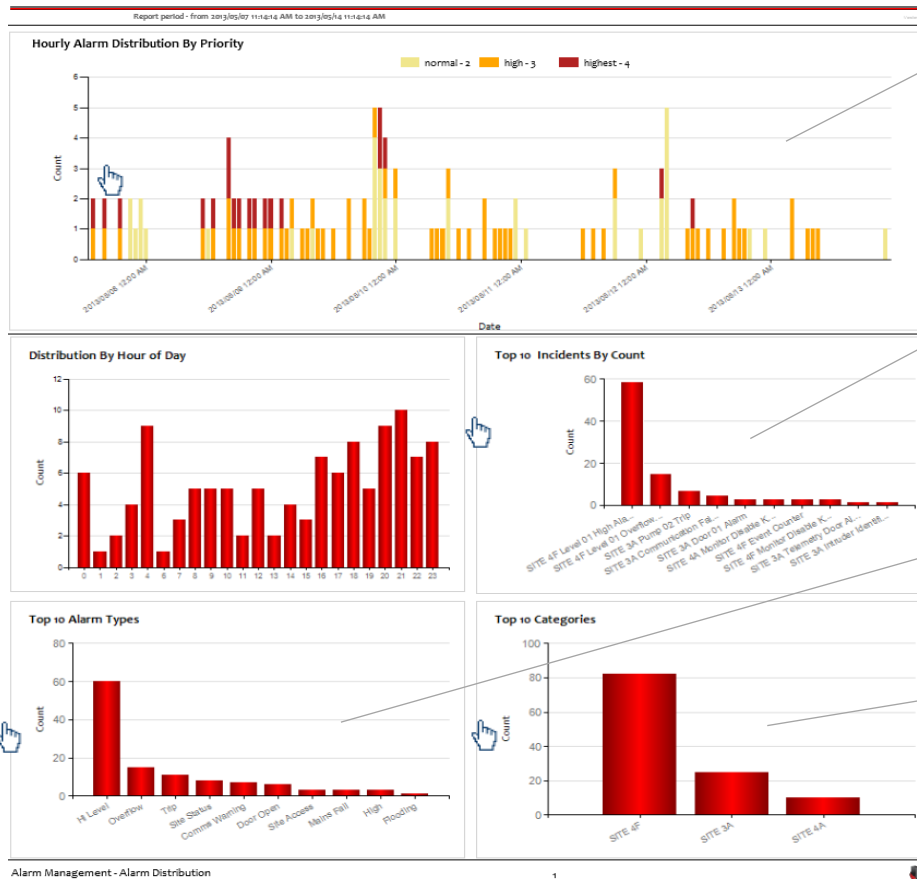
3.15.1. Report Components and Measures

Hourly Alarm Distribution By (Priority/ Incident Type/Shift/Process)	
Column Chart- Shows the distribution of incidents over time (incidents per hour) for the selected period.	
Distribution By Hour of Day	Top 10 Incidents By Count
Pie Chart – A summary of the processes for the selected period	Column Chart- A summary of the top 10 incidents in descending order.
Top 10 Alarm Types	Top 10 Categories
Column Chart- A summary of the top 10 alarm types in descending order	Column Chart- A summary of the top 10 alarm types in descending order

3.15.2. Report Parameters

Date From and Date To	Alarm or Event
Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".	Report on alarms, events or both by selecting the appropriate option from the dropdown.
Filter Category	Filter Alarm Type
This is a list of categories. If a parent category is selected all incidents in the parent and child categories will be included in the report.	This is a list of alarm types. Select at least one or more alarm type/s.
View By	Priority
This is a list where you view by incident type, priority, process and shift.	Select all or a particular alarm priority to run the report against.

3.15.3. Report Layout



Drill through to the
Incident Detail Report

Drill through to the
Incident Detail Report

Drill Through to the Alarm
Type report

Drill through to the Alarm
Category report

i More information available in tooltips

h Drill Through – click to generate a more detailed report

3.16. Incident Configuration Summary

The Incident Configuration Report shows the current configuration which has been configured in the Adroit alarming system as well as in the Alarm Management Agent. Each pie chart indicates the summary of the incident configuration for each configuration element.

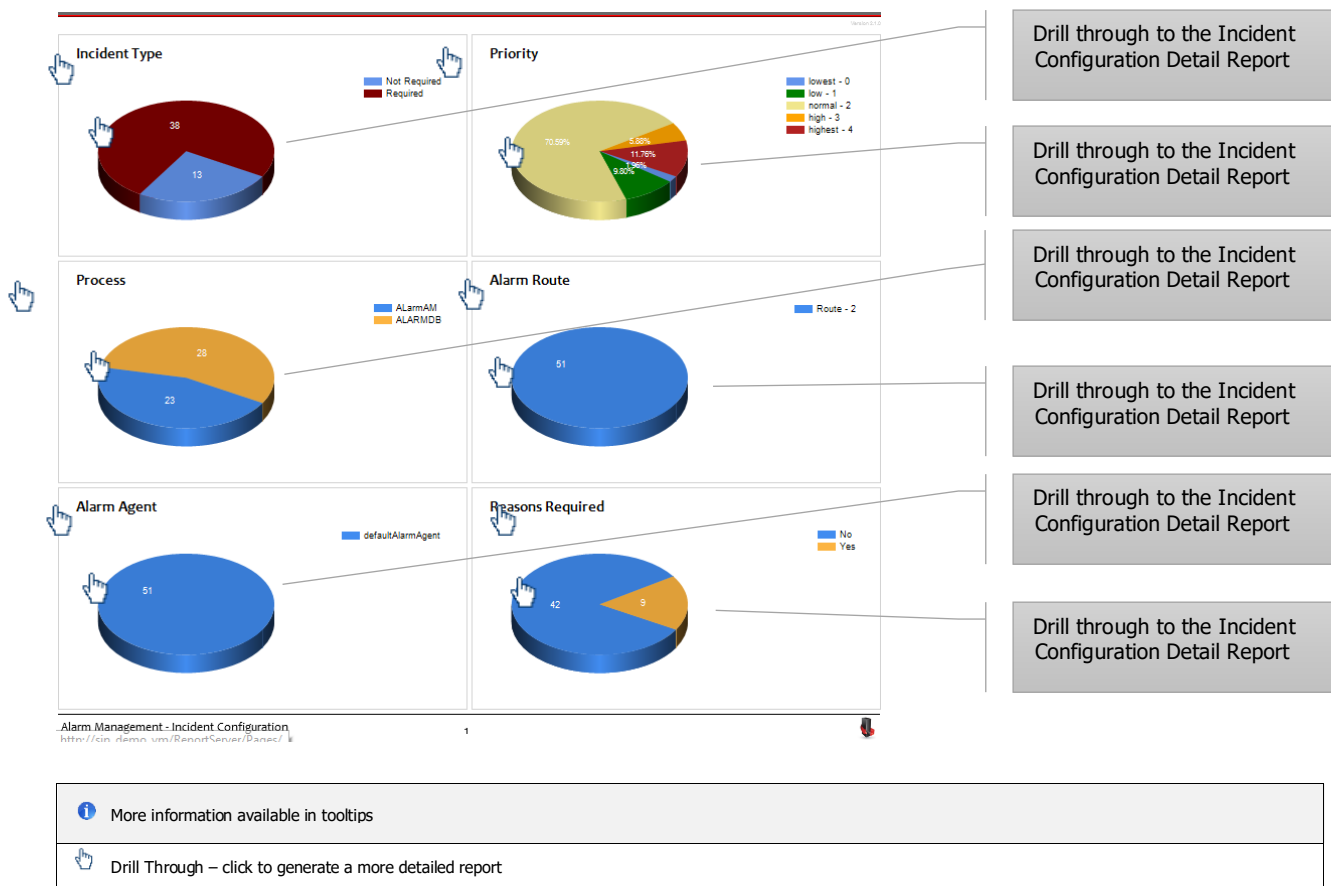
3.16.1. Report Components and Measures

Incident Type	Priority
Pie Chart – A summary of the number of alarms (acknowledgement required) and events (acknowledgement not required) currently configured.	Pie Chart – A summary of the number of incidents by priority currently configured.
Process	Alarm Route
Pie Chart – A summary of the number of incidents by processes (Alarm Management agents) currently writing to the alarm management database.	Pie Chart – A summary of the number of incidents by alarm routes currently configured.
Alarm Agent	Reason
Pie Chart – A summary of the number of incidents by alarm agent currently configured.	Pie Chart – A summary of the number of incidents which do and do not require reasons currently configured.

3.16.2. Report Parameters

Alarm Agent	Process
Select all or a specific alarm agent/s.	Select all or specified process.
Route	Priority
Select all or a specified alarm route	Select all or a specified priority.
Alarm or Event	Reasons Required
Select alarms only, events only or all.	Select incidents with reasons required, reasons not required or all.

3.16.3. Report Layout



Note

Drilling through from a pie chart will pass the parameter for the selected pie segment, whereas drilling through from the chart title will pass all pie segments as the parameters.

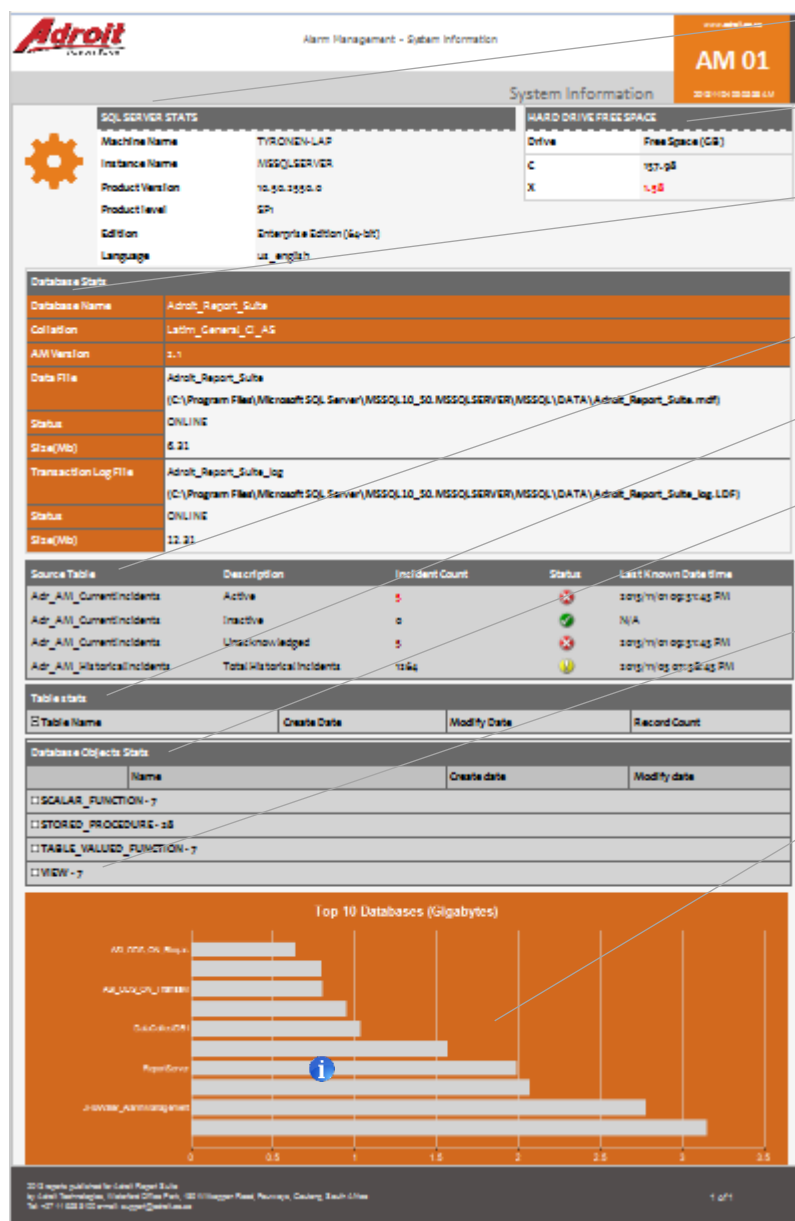
3.18. Alarm Management System Information

Report is designed to highlight critical information associated with the alarm management database such as the SQL Server environment. The Adroit Alarm Management Agent manages this database.

3.18.1. Report Components and Measures

SQL SERVER STATS Properties of the SQL SERVER instance including server name, instance name, Product version, product level, edition and the server language. Note – information may be used to verify that the database is on the intended SQL server instance.	HARD DRIVE FREE SPACE Data grid – Summarizes amount free space per hard drive. Note – pay attention to the free space to avoid performance issues that may result from insufficient hard drive space. Low disk space may have negative impact on database growth hence incident logging will be affected.
Database Stats Data Grid – Summarizes main properties of your database such as the file location, size and collation. Note – Use this in monitor the size of database.	Alarms Data Grid - Highlights alarms from the database view. Indication number of alarm in a table and the state of the alarm. Note – This info may indicate alarms that may need attention for instance active, inactive and unacknowledged alarms. For more details visit the alarm system performance reports and (or) bad actors reports and relevant detail reports.
Table stats Data Grid – Summary of tables in the database, including row count in each table. Note – Review this data grid to identify missing data in the tables or inconsistent data in tables.	Database Objects Stats Data Grid – Summary of database objects including views, functions and stored procedures. Note – for the normal running of reports a set of database objects are created, in case a report throws an error about a missing object confirm this by viewing this data grid.
Top 10 Databases (Gigabytes) Bar Chart - Summarises top 10 databases by size in gigabytes. Note – In case of performance issues arising from low hard disk space get a glimpse of the largest contributing databases.	

3.18.2. Report Layout



Free hard disk space.

SQL SERVER

Database information

Alarm stats

Table stats

Database objects (Views, Function, stored procedures)

Expand the group to view objects

To 10 Databases by size in Gigabytes

More information available in tooltips

3.19. Downtime Details Report

The downtime details report measures the amount of downtime and the reason. It also shows the alarm cleared date, active time, shift and reasons for the downtime.

3.19.1. Report Component and Measures

Downtime Details

Data Grid – Summarises all incidents, categories, datetime, cleared Date time, active Time, shift and downtime reason and Notes.

3.19.2. Report Parameters

Date From and Date To

Specify a date range by picking "Date From" and "Date To". Incidents are included in the report provided they are dated on or after "Date From" and before "Date To".

Filter Category

Select the category to run the report against.

Sub Reasons

Select all or a particular sub reason to run the report against.

Filter Alarm Type

This is a list of alarm types. Select at least one or more alarm type/s.

3.19.3. Report Layout

Category ▾	Incident ▾	Date Time ▾	Cleared Date Time ▾	Active Time(hh:mm:ss) ▾	Shift	Downtime Reason ▾
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 02:33:11 PM	2017/08/31 02:35:08 PM	00:01:57	2	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 01:42:53 PM	2017/08/31 01:44:02 PM	00:01:09	2	None
Water Tower North	WATER_TW_N_POLL_ALL.Site Poll	2017/08/31 01:24:49 PM	2017/08/31 01:24:52 PM	00:00:03	2	None
Main Reservoir	MAIN_RESV_LEVEL_OVER.Overflow	2017/08/31 01:09:52 PM	2017/08/31 03:30:33 PM	02:20:41	3	None
Water Tower North	WATER_TW_N_RUN_02.Stop	2017/08/31 11:26:17 AM	2017/08/31 03:30:33 PM	04:04:16	2	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 10:53:10 AM	2017/08/31 11:08:24 AM	00:15:14	2	None
Main Reservoir	MAIN_RESV_SUMP1_HIGH.Hi Level	2017/08/31 10:52:11 AM	2017/08/31 11:07:54 AM	00:15:43	2	None
Water Tower North	WATER_TW_N_MONIT_DISABLE.Site Status	2017/08/31 05:31:13 AM	2017/08/31 05:36:38 AM	00:05:25	1	None
Main Reservoir	MAIN_RESV_POLL_ALL.Site Poll	2017/08/31 04:41:31 AM	2017/08/31 04:41:34 AM	00:00:03	1	None
Pump Station	PMP_ST_TRIP_02.Trip	2017/08/31 04:38:43 AM	2017/08/31 04:39:05 AM	00:00:22	1	None
Main Reservoir	MAIN_RESV_MONIT_DISABLE.Site Status	2017/08/31 02:58:54 AM	2017/08/31 03:06:36 AM	00:07:42	1	None
Water Tower North	WATER_TW_N_POLL_ALL.Site Poll	2017/08/31 02:49:31 AM	2017/08/31 02:49:34 AM	00:00:03	1	None
Pump Station	PMP_ST_POLL_ALL.Site Poll	2017/08/31 02:07:09 AM	2017/08/31 02:07:12 AM	00:00:03	1	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 01:34:21 AM	2017/08/31 01:36:00 AM	00:01:39	1	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/31 12:46:31 AM	2017/08/31 12:47:59 AM	00:01:28	1	None
Water Tower North	WATER_TW_N_RUN_01.Stop	2017/08/31 12:09:52 AM	2017/08/31 03:30:33 PM	15:20:41	2	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/30 11:31:59 PM	2017/08/30 11:34:26 PM	00:02:27	3	None
Main Reservoir	MAIN_RESV_LEVEL_HIGH.Hi Level	2017/08/30 11:31:11 PM	2017/08/31 03:30:33 PM	15:59:22	3	None
Main Reservoir	MAIN_RESV_COMMS_FAIL.Comms Warning	2017/08/30 10:59:52 PM	2017/08/31 03:30:33 PM	16:30:41	3	None
Main Reservoir	MAIN_RESV_POLL_ALL.Site Poll	2017/08/30 10:18:32 PM	2017/08/30 10:18:35 PM	00:00:03	3	None
Pump Station	PMP_ST_POLL_ALL.Site Poll	2017/08/30 08:44:40 PM	2017/08/30 08:44:43 PM	00:00:03	3	None
Water Tower North	WATER_TW_N_POLL_ALL.Site Poll	2017/08/30 07:04:26 PM	2017/08/30 07:04:29 PM	00:00:03	3	None

4. Support Detail

For further support, contact our Technical Support Desk on 011-658-8100 or email support@adroit.co.za.

You can also visit our website, follow us on Twitter, find us on Facebook or connect with us on LinkedIn.

