



Adroit Report Suite

SCADA Intelligence Report Pack

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1. Introduction

SCADA Intelligence Standard Report Pack provides a set of tools and reports necessary to trend, analyse, view data or create ad hoc reports based on Adroit SCADA Intelligence data.

The reports have been specifically designed to represent standard views based on common or pre-defined system configuration. These reports cover a wide variety of industries, however, can easily be tailored to industry custom reports.

Each individual report was built through using standard report parts included in the report pack. Report parts are self-contained report items that are stored on the report server and can be included in other reports as means of rapid report development.

As part of the pack a set of various report templates are included, that can be modified or used in conjunction with pre-defined report parts to create adhoc reports.

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

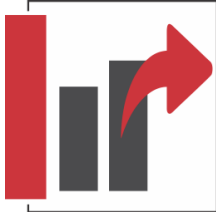
A·D·R·O·I·T is an acronym for "Advanced Distributed Real-time Object-oriented Intelligent Toolkit".

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.

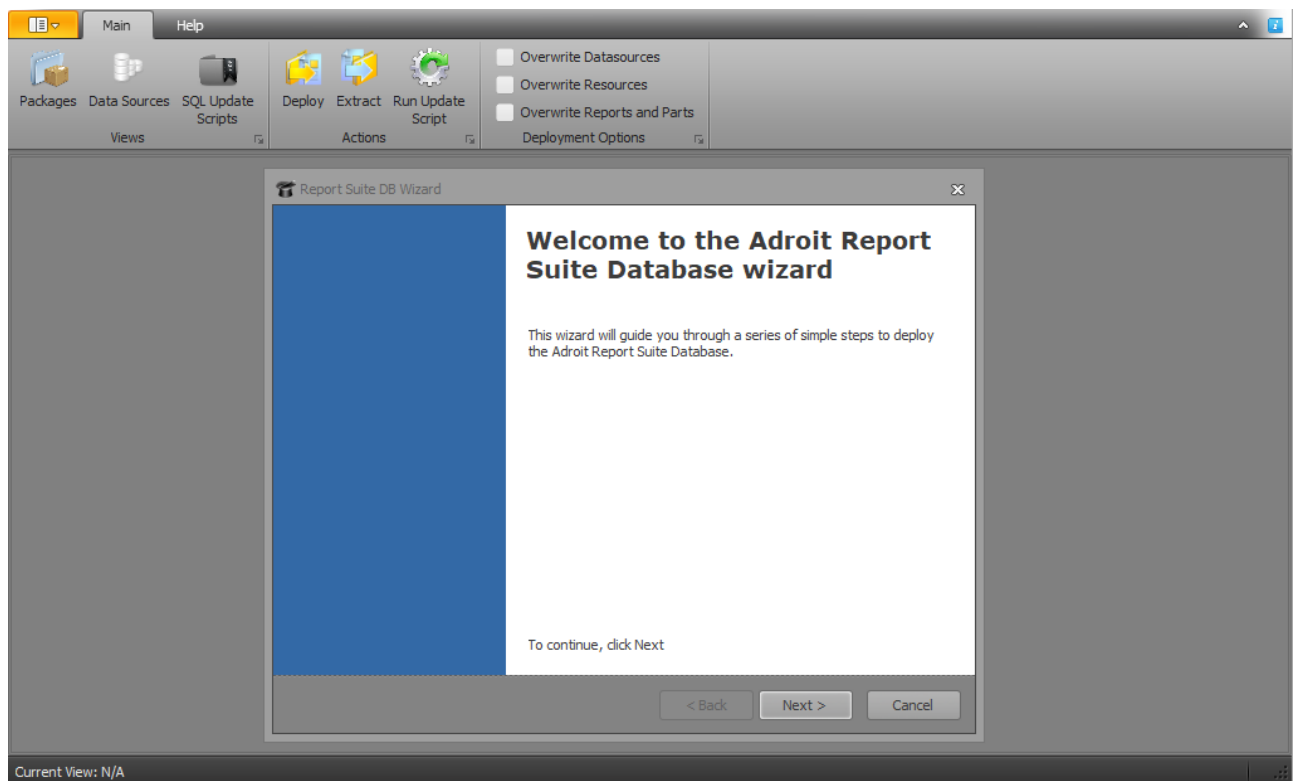
2. Adroit Report Deployment Utility

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.

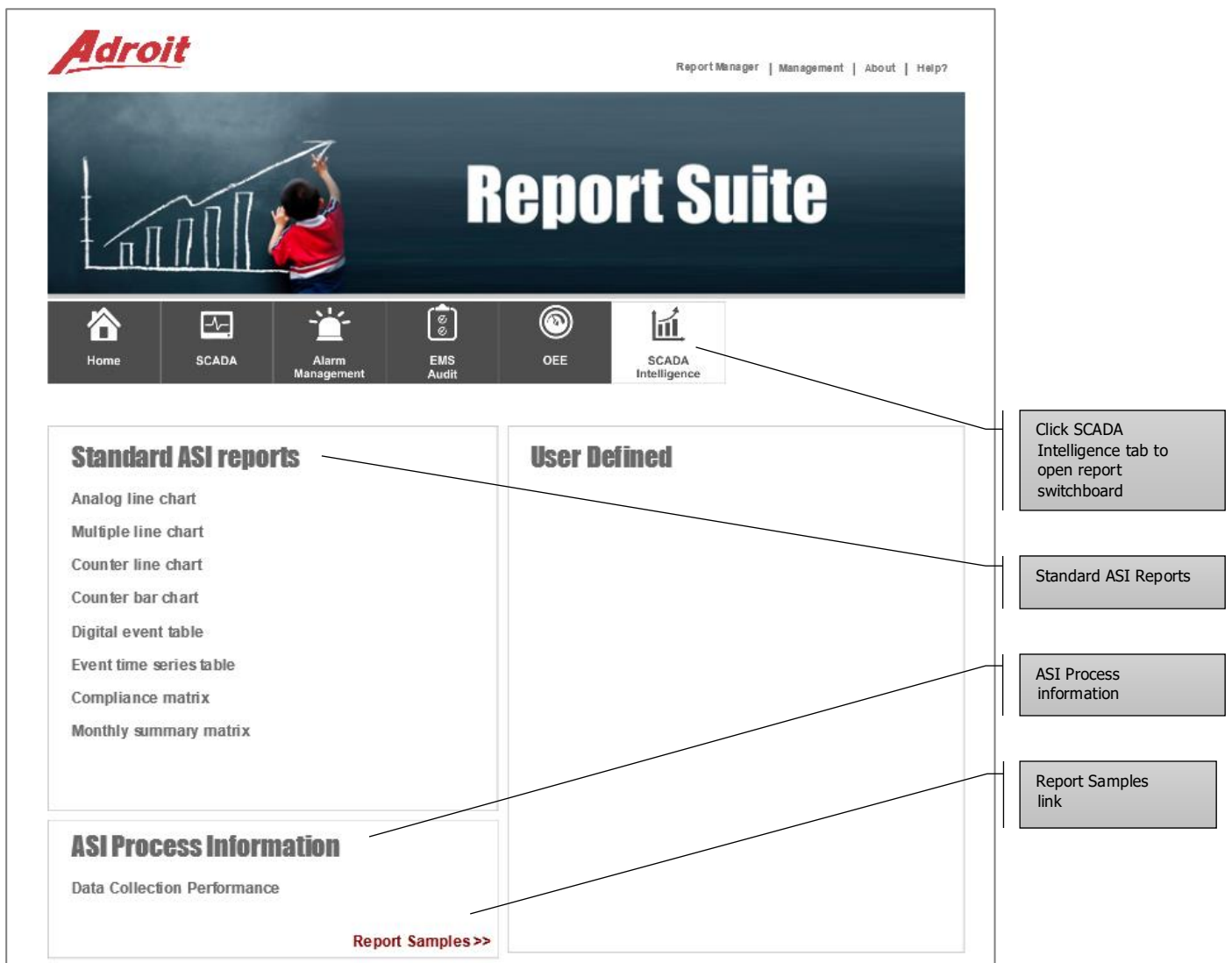
For more detailed information, please consult the user Manual document for this utility available to download from our website. (www.adroittech.co.za).



3. SCADA Intelligence Switchboard.

The Adroit Report Suite switchboard act as a navigation system to navigate between reports. When a report pack is deployed through the Adroit Report Deployment Utility, a selection tab is added to the switchboard for the specific report pack. When you navigate to the desired tab, different views or reports are listed based on the individual reports that has been deployed.

Note: The SCADA intelligence tab has a specific **Custom** section that will list all reports contained in the custom report folder on the report server. Publish or move any ad hoc reports into this folder to be listed in this section under the SCADA Intelligence tab. (the folder can be found under /Adroit Report Suite/SCADA Intelligence/Custom on the report server)



The screenshot shows the Adroit Report Suite web application. At the top, the Adroit logo is on the left, and navigation links (Report Manager, Management, About, Help?) are on the right. Below this is a large banner with a child drawing a bar chart and the text "Report Suite". A horizontal menu contains icons for Home, SCADA, Alarm Management, EMS Audit, OEE, and SCADA Intelligence. The SCADA Intelligence tab is highlighted. Below the menu, the interface is divided into two main sections: "Standard ASI reports" and "User Defined". The "Standard ASI reports" section lists various report types: Analog line chart, Multiple line chart, Counter line chart, Counter bar chart, Digital event table, Event time series table, Compliance matrix, and Monthly summary matrix. The "User Defined" section is currently empty. Below these sections is a box for "ASI Process Information" containing "Data Collection Performance" and a "Report Samples >>" link. On the right side of the screenshot, four callout boxes with arrows point to specific elements: "Click SCADA Intelligence tab to open report switchboard" points to the SCADA Intelligence tab; "Standard ASI Reports" points to the list of report types; "ASI Process information" points to the ASI Process Information section; and "Report Samples link" points to the "Report Samples >>" link.

3.1. Analog Line Chart

Analog line chart shows a line plotted per analog item over the selected period. The analog item description and hierarchy levels group the individual line charts.

3.1.1. Report Component and Measure

Trend by Analog Line Chart	Summary Data grid
Summary of analog tag behaviour is plotted on the chart with values on the y-axis and day and time on the x-axis.	A summary data grid is created for each tag, which can be drilled into for detail analysis.

Popup Link
Links - created to enable launching of popup chart plotted from raw data, interval sampled data and aggregate data. Aggregate data section - pop up shows several aggregated measurements of data for the selected period of time e.g. total, maximum and minimum. Sampling interval data - pop up shows a pre-set number of sample data points evenly distributed over time. Raw data pop up - shows real-time logged data.

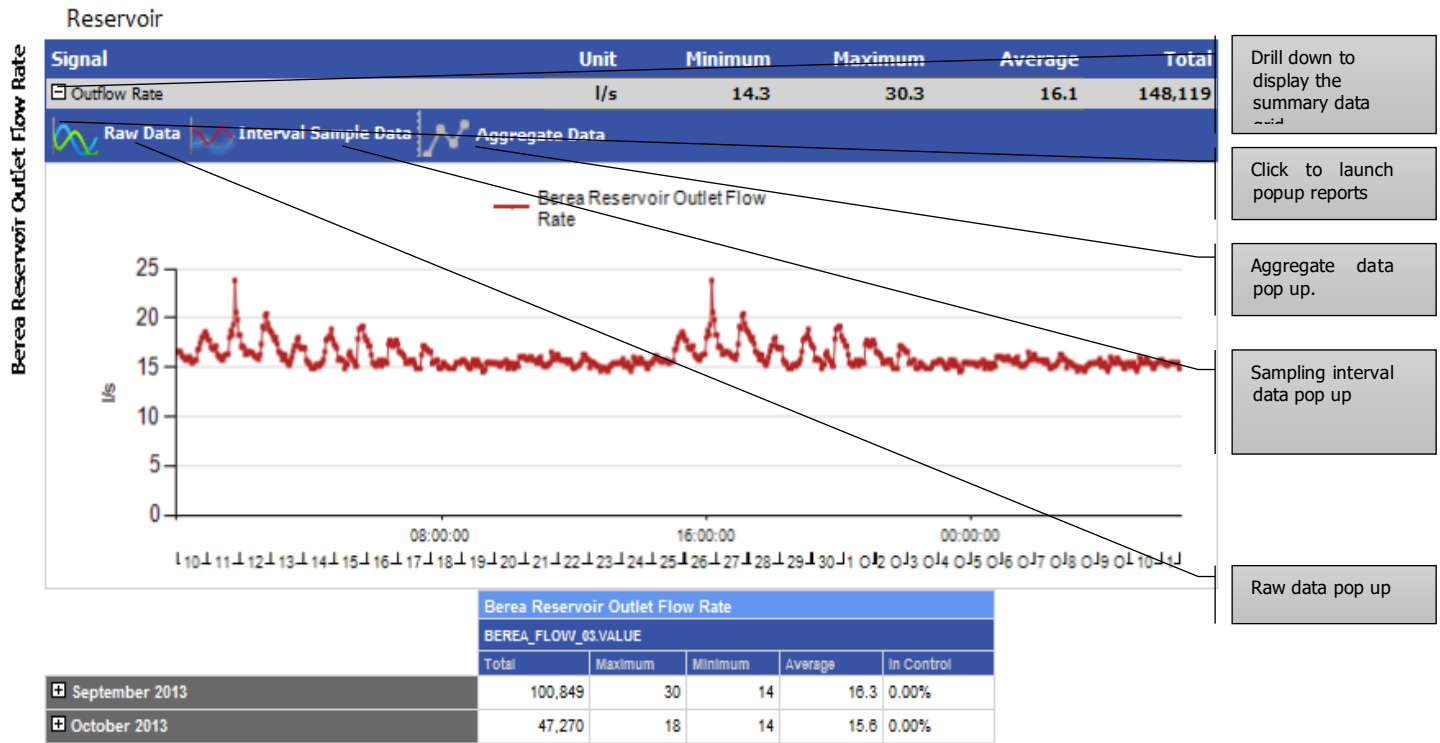
3.1.2. Report Parameters

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

Site	Work Unit
This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)	This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)

Signal	Signal
This is a list of signals, select to narrow down the report to specific signals.	This is a list of signals, select to narrow down the report to specific signals.

3.1.3. Report Layout



3.2. Multiple Line Chart

Shows multiple line series per analog item for the period selected. The individual line charts are grouped by the signal type and hierarchy levels.

3.2.1. Report Components and Measures

Trend by Analog	Summary
Line Chart - Summarizes analog item behaviour plotted on the chart with values on the y-axis and date time on the x-axis. Each pin represents an analog item configured under the current signal.	Data Grid - Summarizes tags that share the current signal. Summary includes Min, Max, Count, Average, Sum and In Control percentage. Each column set represent data per item.

Popup Link
Links - created to enable launching of popup chart plotted from raw data, interval sampled data and aggregate data. Aggregate data section - pop up shows several aggregated measurements of data for the selected period of time e.g. total, maximum and minimum. Sampling interval data - pop up shows a pre-set number of sample data points evenly distributed over time. Raw data pop up - shows real-time logged data.

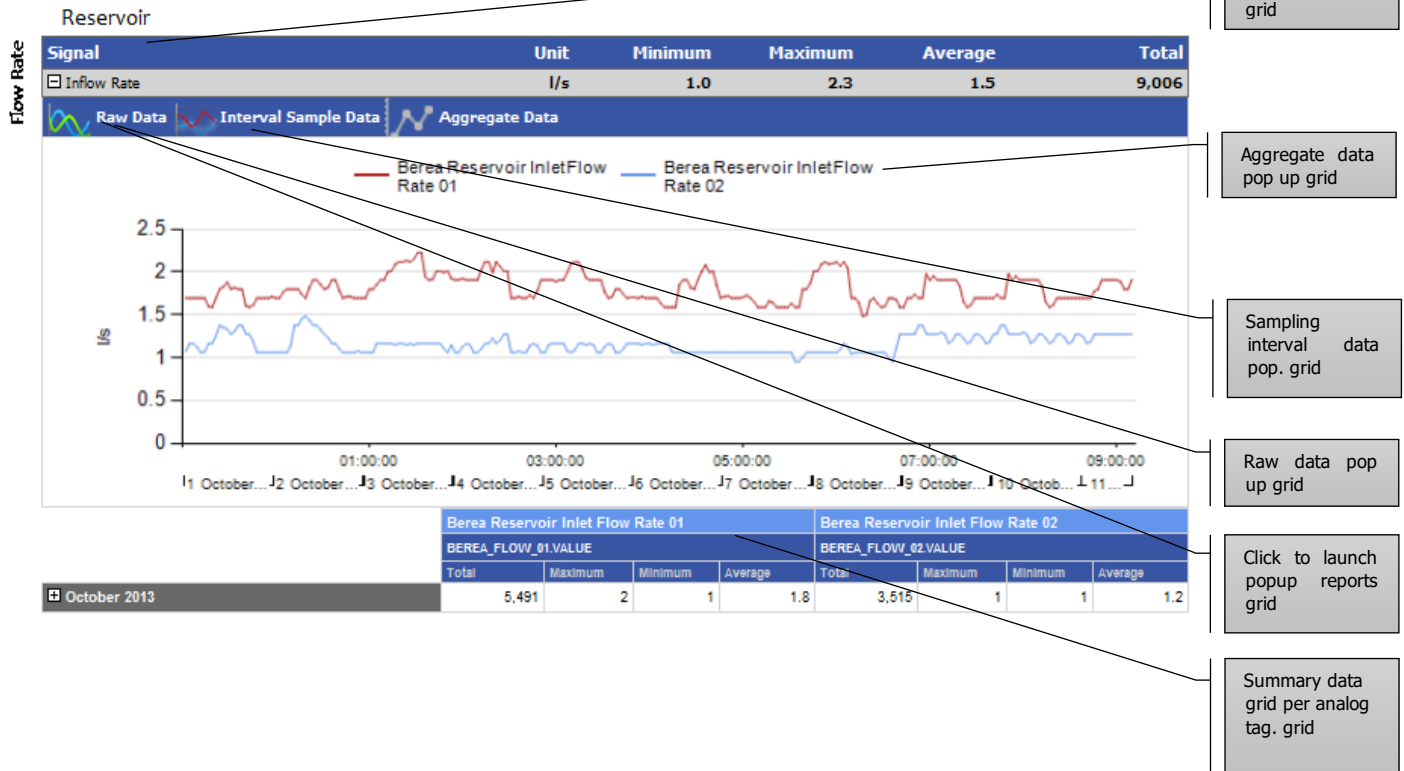
3.2.2. Report Parameters

Popup Link
Links - created to enable launching of popup chart plotted from raw data, interval sampled data and aggregate data. Aggregate data section - pop up shows several aggregated measurements of data for the selected period of time e.g. total, maximum and minimum. Sampling interval data - pop up shows a pre-set number of sample data points evenly distributed over time. Raw data pop up - shows real-time logged data.

Trend by Analog	Summary
This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)	This is a list of work units, which may be controlled by the selected site(s).

Signal
This is a list of signals, select to narrow down the report to specific signals.

3.2.3. Report layout



3.3. Counter Line Chart

The chart has two-value axis, the first axis represents the actual counter value while the second axis indicates the total incremental value per data point as calculated by SCADA Intelligence. When the two data points are transposed, a pattern will indicate consistent or varied behaviour of the item and would indicate any erratic movements in data.

3.3.1. Report Components and Measures

Trend by Counter	Summary
Line Chart – Actual counter values are plotted on the y – axis, with total increment on the secondary y-axis and date time on the x – axis.	Data grid - A summary data grid is created for each counter item, rows group by day and columns grouped by item description.

Popup Link
Links - created to enable launching of popup chart plotted from raw data, interval sampled data and aggregate data. Aggregate data section - pop up shows several aggregated measurements of data for the selected period of time e.g. total, maximum and minimum. Sampling interval data - pop up shows a pre-set number of sample data points evenly distributed over time. Raw data pop up - shows real-time logged data.

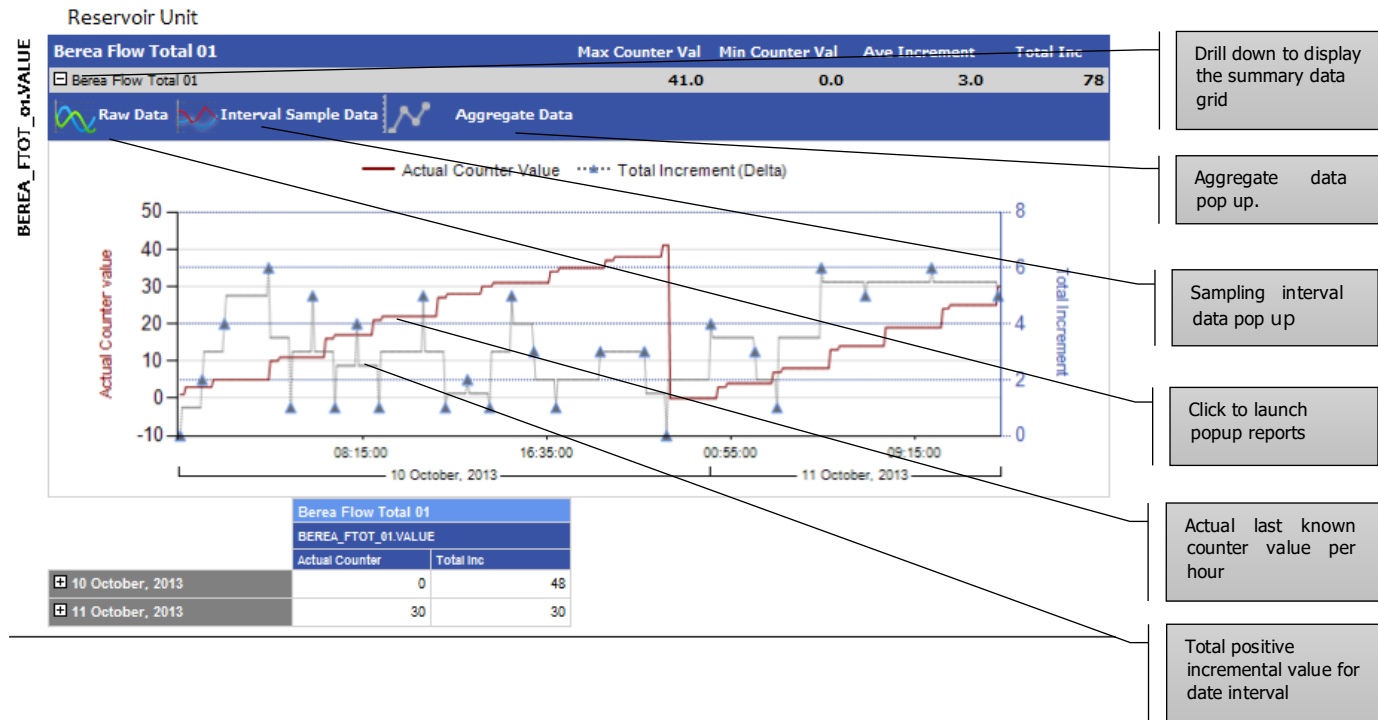
3.3.2. Report Parameters

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

Site	Work Unit
This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)	This is a list of work unit, which may be controlled by the selected site(s).

Signal	Analog Description
This is a list of signals, select to narrow down the report to specific signals.	This is a list a list of counter items filter by parent parameters

3.3.3. Report Layout



3.4. Counter Bar Chart

Counter bar chart shows a total incremental contribution over time illustrated for each counter item. Distribution illustrates any deviations from the norm.

3.4.1. Report Component and Measures

Trend by Counter	Summary
Column chart - A summary of counter tag behaviour is plotted on the column chart per tag, values on the y-axis and day and time on the category axis.	Data grid - A summary data grid is created for each counter item, rows group by day and columns grouped by item description.

Popup Link
Links - created to enable launching of popup chart plotted from raw data, interval sampled data and aggregate data. Aggregate data section - pop up shows several aggregated measurements of data for the selected period of time e.g. total, maximum and minimum. Sampling interval data - pop up shows a pre-set number of sample data points evenly distributed over time. Raw data pop up - shows real-time logged data.

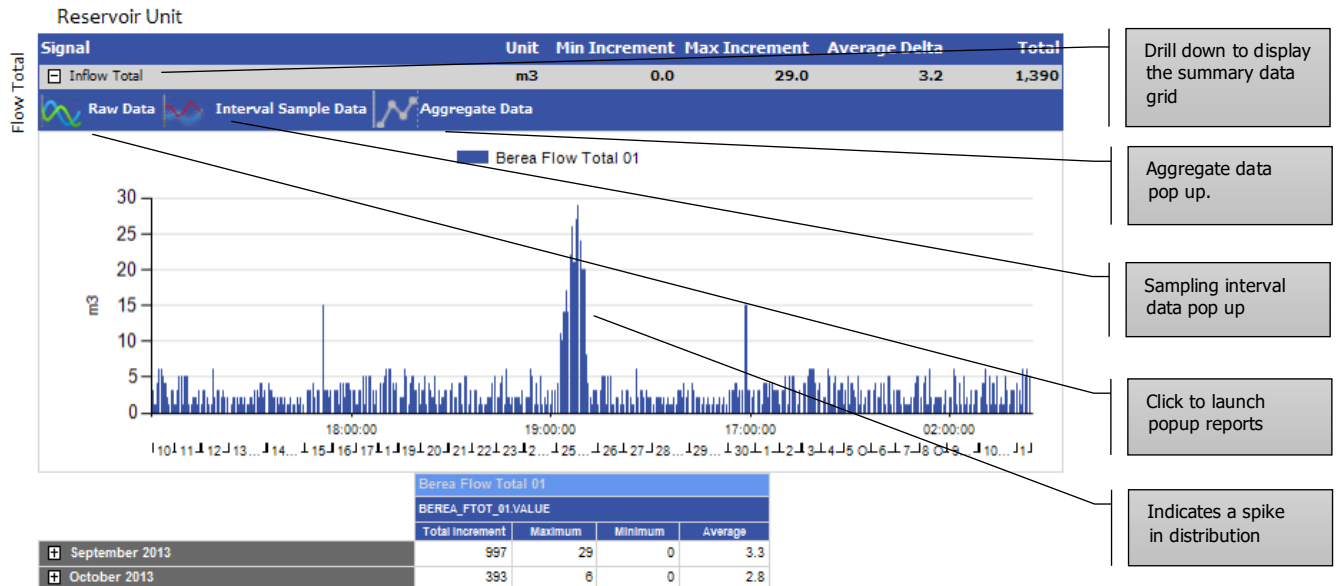
3.4.2. Report Parameters

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

Site	Work Unit
This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)	This is a list of work unit, which may be controlled by the selected site(s).

Signal	Counter Description
This is a list of signals, select to narrow down the report to specific signals.	This is a list a list of counter item descriptions.

3.4.3. Report Layout



3.5. Digital Event Table

Summarized event occurrence and on duration is represented in a table format with different signal types grouped together. The user can drill through to a detailed time series report.

3.5.1. Report Components and Measures

Popup Links

Data Grid-This data grid summarizes the events as they occurred. The data grid is grouped by site, work unit and day on rows. The data grid is pivoted on signal types and signals. Drilldown enables you to expand and collapse per work unit and day. The detail drill through action allows the user to view the events in a detail time series list format.

3.5.2. Report Parameters

Date from and Date To

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

Site

This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)

Work Unit

This is a list of work unit, which may be controlled by the selected site(s).

Signal

This is a list of signals, select to narrow down the report to specific signal(s) hence digital items.

3.5.3. Report Layout

Report period - from 12/16/2012 12:00:00 AM to 5/19/2013 12:00:00 AM

	Comms Monitor		Incomer		Pump Auto/Man	
	On Hours	On Count	On Hours	On Count	On Hours	On Count
Unknown	00:00:08	3	00:03:27	23	00:00:00	
Pump 1	00:00:00		00:00:00		07:16:12	65
Pump 2	00:00:00		00:00:00		07:16:12	65
Total	00:00:08	3	00:03:27	23	14:32:25	130

Drill through to a detailed report.

Drill down to display data for a day.

Summary data grid

3.6. Monthly Summary Matrix

Report summarizes daily aggregated values per item across a period. Aggregation is based on the calculation type specified for the item. Where all analog items will aggregate an average value across the day, counters will rollup total positive incremental values and digitals will display an average on duration state as a percentage.

3.6.1. Report Component and Measures

Monthly Summary

Data Grid/Matrix – Created to summarise data per site, area, work unit and individual items. Columns are grouped by day and aggregate calculations per day are done depending on the item type. Average for analog, total for counters and on present for digitals.

3.6.2. Report Parameters

Date from and Date To

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

Site

This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)

Area

This is a list of physical or functional areas configures usually under a site.

Work Unit

This is a list of work unit, which may be controlled by the selected site(s).

Signal

This is a list of signals, all items under a selected signal will be returned on the report

3.6.3. Report Layout

Berea Res			October											Aggregate total per item
			1	2	3	4	5	6	7	8	9	10	11	
Pump Station														
Motor 01	Berea Motor 01 Speed	A	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	
Motor 02	Berea Motor 02 Speed	A	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0
Motor 03	Berea Motor 03 Speed	A	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0	1,443.0
Reservoir														
Comms	B/R Communication Downtime	Bit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	B/R Communication Failure	Bit	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0
Mains	B/R Mains Failed	Bit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pump 01	B/R Pump 01 Auto	Bit	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5

Aggregate total per item

Items and their unit of measures per production unit

3.7. Compliance Matrix

Report graphically illustrates compliance against a report target. The compliance is evaluated across signal type and signal for each functional area per site. Indicates compliance or non-compliance against the input target.

3.7.1. Report Component and Measures

Compliance Matrix

Data Grid-Table matrix summarizes compliance. The data grid rows are grouped by site and work unit. Column grouping is done on Signal type and signal which can be expanded to view the actual values

3.7.2. Report Parameters

Date from and Date To

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

Site

This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)

Work Unit

This is a list of work unit, which may be controlled by the selected site(s).

Signal

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

Compliance target

Capture a specific compliance target.
Note do not include the"%".*

3.7.3. Report Layout

		Analysis							Level	Aggregate total per item
		 pH	 Residual Chlorine	Compliance	Average	 Turbidity	Compliance	Average	 Sump Level	Aggregate total per item
Vereeniging	Pipe A12			98.38%	1.87		99.77%	0.10		Aggregate total per item
	Pipe A19			98.62%	1.73		99.85%	0.13		Aggregate total per item
Zandspruit 2	N/A									Aggregate total per item
Zuikerbosch	Pipe B04			97.20%	1.55		97.30%	5.34		Aggregate total per item
	Pipe B10			98.82%	1.55		99.46%	0.28		Aggregate total per item
	Pipe B15			99.73%	1.80		99.89%	0.17		Aggregate total per item

3.8. Event Time Series Table

Event time series table shows detail events per occurrence or state change. The individual table columns can be sorted.

3.8.1. Report Component and Measures

Events time series

Data Grid - Represents a series of events. The data grid enables users to sort report by specific columns.

3.8.2. Report Parameters

Date from and Date To

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

Site

This is a list of configured sites, by selecting at least one or more sites you narrow down the report to specific site(s)

Work Unit

This is a list of work unit, which may be controlled by the selected site(s).

Signal

This is a list of signals, select to narrow down the report to specific signal(s) hence digital items.

3.8.3. Report Layout

Switchboard / Manage Report

[Help?](#)



Event Time Series

Event occurrences illustrated in a table that is ordered by the event time stamp. Data can be reorganised by selecting the appropriate column header to order by.

Report generated at 10/10/2013 2:01:15 PM

Report period - from 10/10/2013 12:00:00 AM to 10/10/2013 12:00:00 AM						
Work Unit	Signal	Tag Description	Tag Name	Date Time	Value	Quality
Pump 2	Pump Running	Hector Norris Pump 02 Run	HCTNS_RUN_02.VALUE	10/10/2013 5:58:36 AM	1	1
Pump 2	Pump Running	Hector Norris Pump 02 Run	HCTNS_RUN_02.VALUE	10/10/2013 5:58:10 AM	0	1
Pump 2	Pump Running	Hector Norris Pump 02 Run	HCTNS_RUN_02.VALUE	10/10/2013 5:57:45 AM	1	1
Pump 2	Pump Running	Hector Norris Pump 02 Run	HCTNS_RUN_02.VALUE	10/10/2013 5:56:35 AM	0	1
Pump 3	Pump Running	Hector Norris Pump 03 Run	HCTNS_RUN_03.VALUE	10/10/2013 5:55:57 AM	1	1
Pump 3	Pump Running	Hector Norris Pump 03 Run	HCTNS_RUN_03.VALUE	10/10/2013 5:50:38 AM	0	1

Sortable header

3.9. Data Collection Performance

Adroit SCADA Intelligence has a data warehouse database assigned. The performance of this database and server is monitored through various process measures on the ETL run. The report indicates performance around data collection and processing of the data.

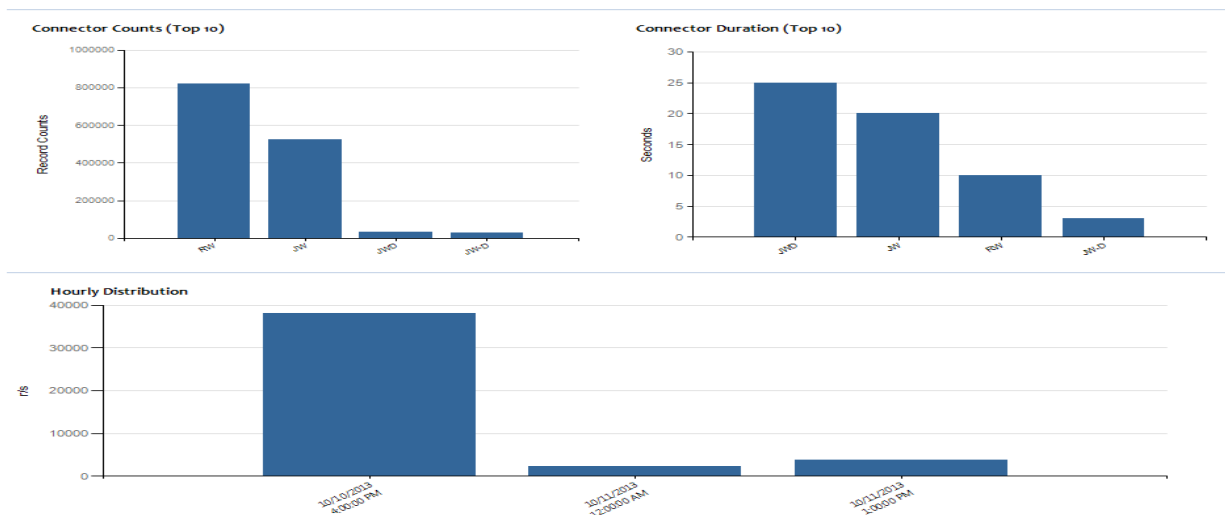
3.9.1. Report Component and Measures

Connector Groups This grouping consists of different connectors e.g. Connector 1 and Connector 2 are processed as group. If one connector fails, the entire group fails.	Grouping Connectors This show the total duration of individual grouping connectors.
Connectors Failures % This returns results of each connector failure rate in percentage	Errors per Connector It shows the error count on each connector
Connector counts (Top 10) It returns top 10 connectors by record count.	Connector Duration (Top 10) This returns the highest or longest duration per connector.
Hourly Distribution This returns record per second for all connector on each hour.	

3.9.2. Report Parameters

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



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.

