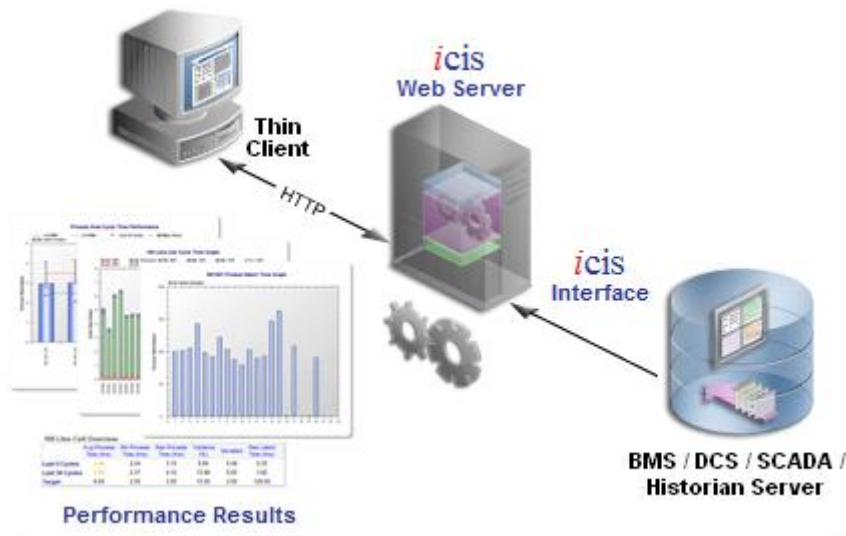# Plant Performance

The *ic*is Plant Performance Application allows for Web based plant performance analysis and cycle time results direct from your desktop browser. The application contains numerous features such as:

- Connection to your Batch Data Historian or to a DCS / SCADA Server

- Business rule definition enabling you to map your process and cycle time information the way you want.

- A full range of metric calculations available and custom ones designed to meet your requirements

- Visualise your plants operational and process performance through feature rich graphs and data table displays

- Obtain real site performance results to aid in target definition, scheduling and process improvements

- Create user defined ad-hoc performance reports.

Introduction

The *ic*is Plant Performance Application is designed for connection to Automation batching applications in a Data Historian or SCADA / DCS system. Using this connection, batch data is sourced and relevant plant cycle time performance calculations are performed. These calculations based on your site business rules generate feature rich result sets and graphical displays that enable you to get instantaneous performance results on your production processes.

The system is non-intrusive to the rest of your Automation architecture with its control system interfaces reading data from the batch repositories and transferring performance data to its own data store.

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Benefits

Discover True Plant Performance

*ic*is Plant Performance enables you to discover your sites true plant performance characteristics. With its cycle time engine leveraging the data within of your Automation and Historian systems you'll start to build an accurate profile of operational and production performance characteristics.
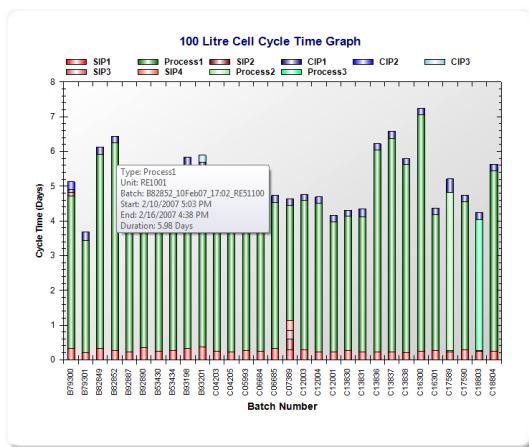
These performance results provide you with the information you need to identify variances in your process and to support Operational and Process change.

Multiple User Application

As the application generates a diverse range of information in user friendly tabular and graphical format it opens up your plant performance data to a whole new audience.

1. Management Review

The application allows for the review of real-time performance information at the highest level of the Manufacturing Process, thus allowing users to verify if site production targets are being met without having to analyse reams of data.

2. Engineering Review

The application allows for the review of real-time and historical manufacturing process cycle times across multiple production runs. This aids in process improvements and helps to visualise performance changes implemented on site.

3. Scheduling Review

The application allows users to obtain a real understanding of a plants true production cycle time and equipment usage in order to aid in more accurate planning and scheduling. Through it latency times of equipment are detailed showing the actual turnaround time of units.

Feature Rich Visuals

*ic*is Plant Performance incorporates user-friendly visuals in the form of tabular and graphical information. This increases the ease of use and training on the system, which in turn generates a high take up on application usage post installation. The result of which brings instant return on investment through cycle time analysis programs and process improvement projects.

iCiS
◆ Plant Performance

Business Rule Definition

*ic*is Plant Performance allows you to build your business rule definition for your entire manufacturing process. On reviewing your manufacturing process in order to build a complete process map you can configure the application for your specific cycle time characteristics and targets.
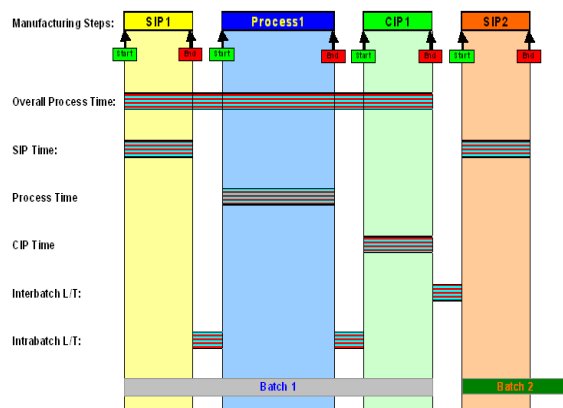

For example:

- Build your Value Stream Map
- Build Cycle Time sequences
- Set recipe based Cycle Time metrics
- Exclude non-production runs from metrics
- Assign Unit cycle types
- Set Cycle Time targets
- Set expiry times for SIP & CIP
- Link process units, cells and areas

Analysis Tools

*ic*is Plant Performance provides various analysis tools that allow users to monitor and review cycle time information.

For example tools include:

- Cell Analysis   - Statistical Analysis
- Unit Analysis   - Trending
- Batch Analysis   - Scorecards
- Phase Analysis   - Annotation

RE1001 Product Batch Time Graph
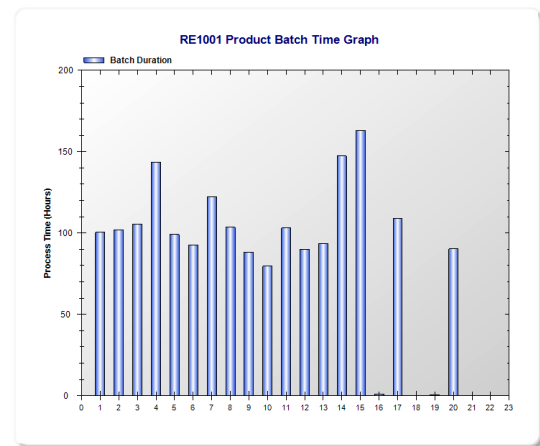
Process Details

|	Batch Name	Unit	Type	Cycle	Start Time	End Time	Duration (Hrs)
1.	B41978_11JAN07_07:51_RE51100	RE1001	B	9	1/11/2007 7:52:37 AM	1/15/2007 12:18:25 PM	100.43
2.	B71392_22jan07_07:42_re51100	RE1001	B	12	1/22/2007 7:41:11 AM	1/26/2007 1:39:22 PM	101.97
3.	b79300_29jan07_07:42_re51100	RE1001	B	13	1/29/2007 7:42:56 AM	2/2/2007 5:02:57 PM	105.33
4.	B82852_10Feb07_17:02_RE51100	RE1001	B	15	2/10/2007 5:03:39 PM	2/16/2007 4:38:17 PM	143.58
5.	B92890_18FEB07_09:40_RE51100	RE1001	B	16	2/18/2007 9:41:27 AM	2/22/2007 12:42:38 PM	99.02
6.	B53434_24Feb07_16:47_RE51100	RE1001	B	17	2/24/2007 4:47:26 PM	2/28/2007 1:18:46 PM	92.52

Reporting Tools

*ic*is Plant Performance provides a number of standard reports for Area, Cell and Unit Cycle Time Information. However in order to provide an additional level of flexibility it also allows for the creation of user defined reports that can be uploaded into the application by a user. This offers end users the ability to design and generate their own reports as required without the need for external 3rd party developers. The reports can be generated manually or may be scheduled for automatic generation by a user who can subscribe to them.

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Energy Consumption

Linking *ic*is Plant Performance to *ic*is Plant Energy enables a site to obtain a true representation of Energy costs per batch and per cycle.

By utilising the unique virtual metering technology of *ic*is Plant Energy a user can obtain a complete energy consumption profile for the main process units and analyse their consumption of Power, Water and Steam per batch and cycle.

Linking in this method provides users with a means to analyse the energy consumption of one batch and cycle versus another, or one unit versus another. This aids in driving down costs and isolating variances in the energy consumption of production units and processes.
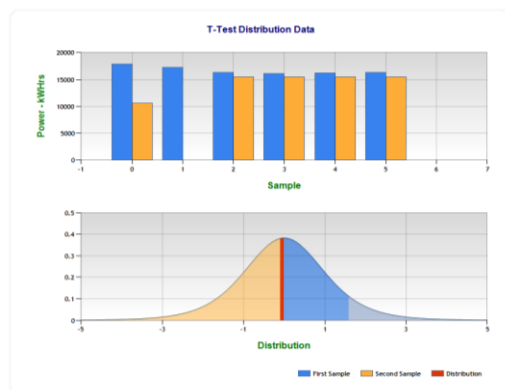
Browser Interface

As *ic*is Plant Performance is web based it allows for user interaction through a standard web browser. This removes the need for client tool installs and support on local desktops. The web server is the single point of installation and as such reduces the amount of Administrative and support tasks to just one machine.
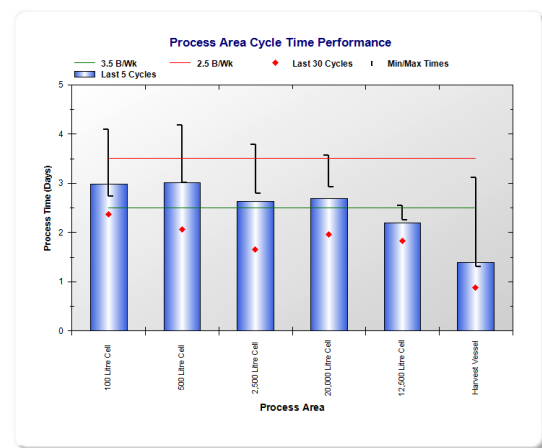
End-User Control

*ic*is Plant Performance provides detailed administration and configuration tools that allow for the control of its security, navigation, unit configuration, interface setup and much more. This ensures that the end-user has complete control over the application once installed. So as a manufacturing process changes with the addition and removal of units and process stages the analysis application can change also without the need for any 3rd party support.

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Product Description and Specification

The Plant Performance Application has been developed through Microsoft .Net Technology and is currently configured to run on version 4 of the framework. The system incorporates the latest features of the framework in its Security, Web Services and Font End design. In order to provide for a better user interaction we use the latest AJAX technology to enhance the user experience.

The report web server runs in Microsoft Internet Information Server (IIS) version 6 or 7, which can be enabled, on any Windows XP Professional or 2000 / 2003 / 2008 server.

The system uses Microsoft SQL Server 2008 R2 Express Edition as its underlying data store for configuration and storage of information.

System Compatibility

The system is currently compatible with:

1. OSI-PI
2. AspenTech
3. Delta V
4. Proficy
5. Wonderware

For other batching or continuous control technologies please contact info@icissoftware.com

Prerequisites

The application requires a report server with:

- Windows XP Professional or Server 2000/2003/2008
- Microsoft IIS 6 or 7
- Batch System Interface*
- 1 GB of RAM
- 1 CPU of 2GHz
- 8GB Harddisk

System Installs

The application ships and installs the following products and components:

- *i*cis Plant Performance 3.0
- . SQL Server 2008 R2 Express**
- .Net Framework 4

*A Batch System Interface is provided by your Data Historian, DCS / SCADA vendor. This will either be in the form of an API, SDK or Web Service. Contact icis for further information on your specific system.

**A full 5 CAL licensed SQL Server 2008 R2 installation is recommended for larger installations.

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