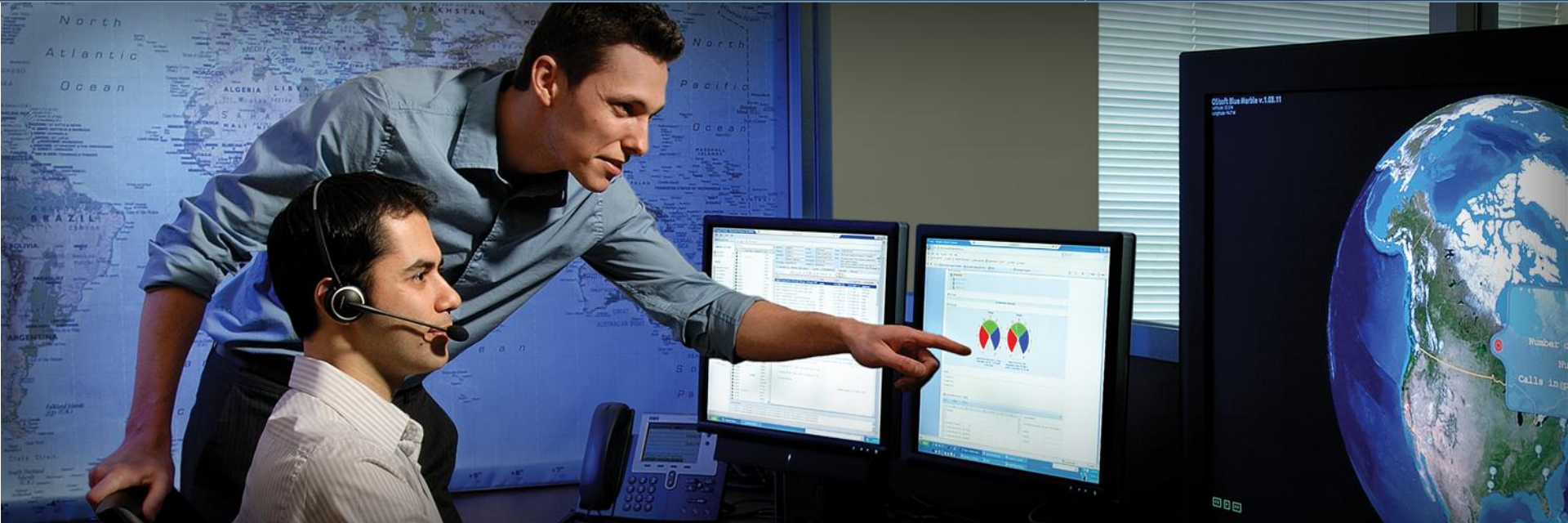




Regional Seminar Series Warszawa, Poland



Individual Product Functionality Presentation

Tadeas MARCINIAK
Customer Support Engineer
OSIsoft

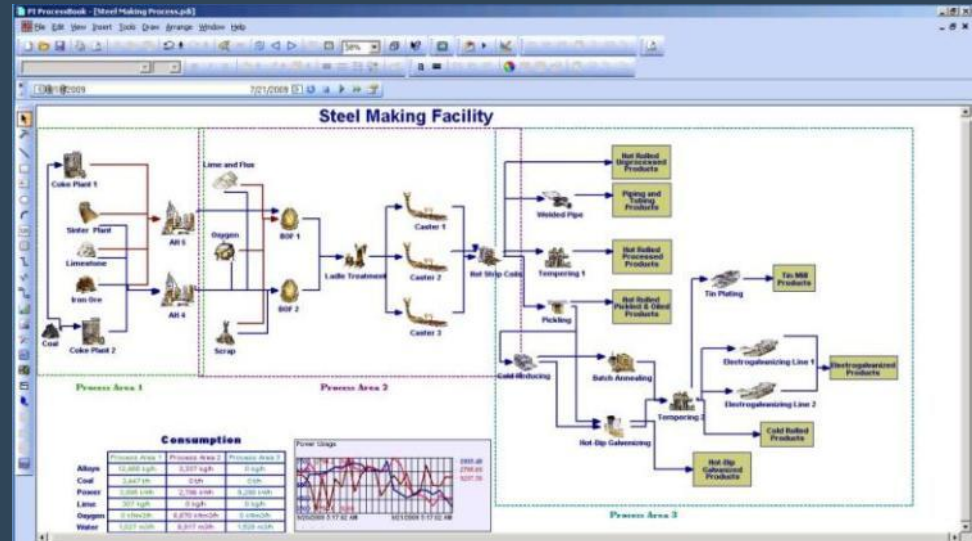
7th October 2010

Real Time Information - Currency of the New Decade

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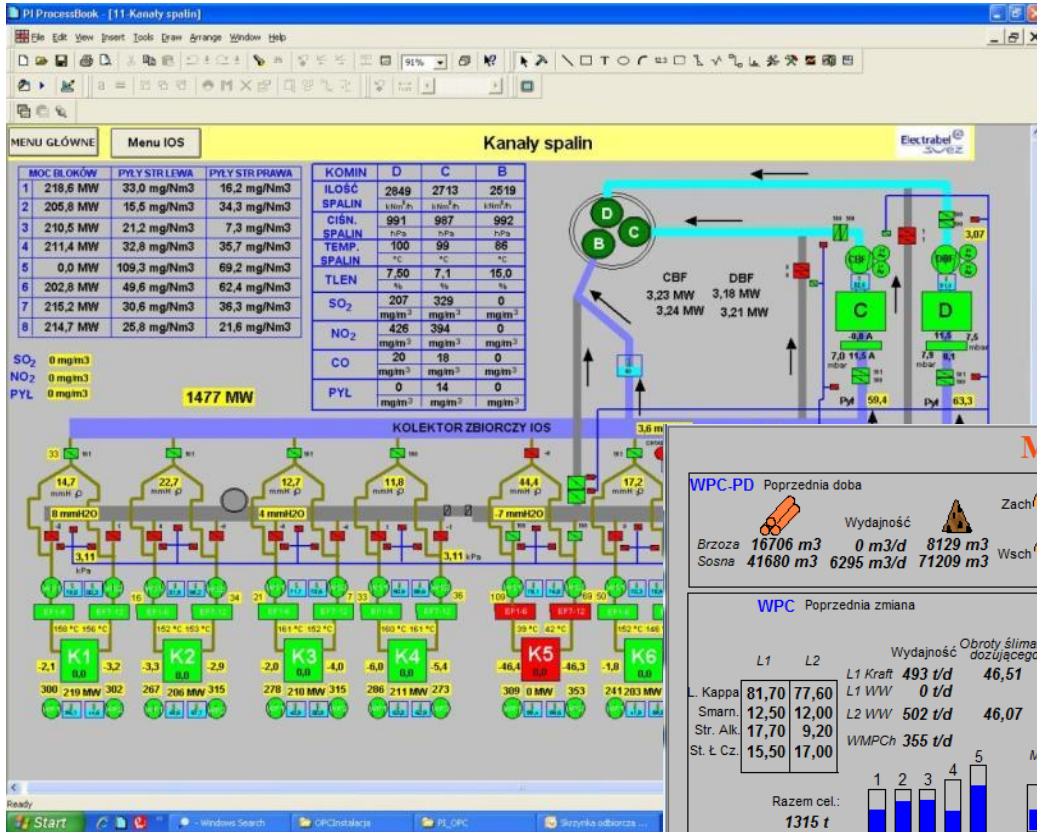
- **PI ProcessBook**
 - PI SQC (Statistical Quality Control)
 - Element Related Displays
- **PI DataLink**
 - Power Pivot
- **PI WebParts**
- **Batch/Event Frames**
- **PI AF**
 - PI Notifications

PI ProcessBook

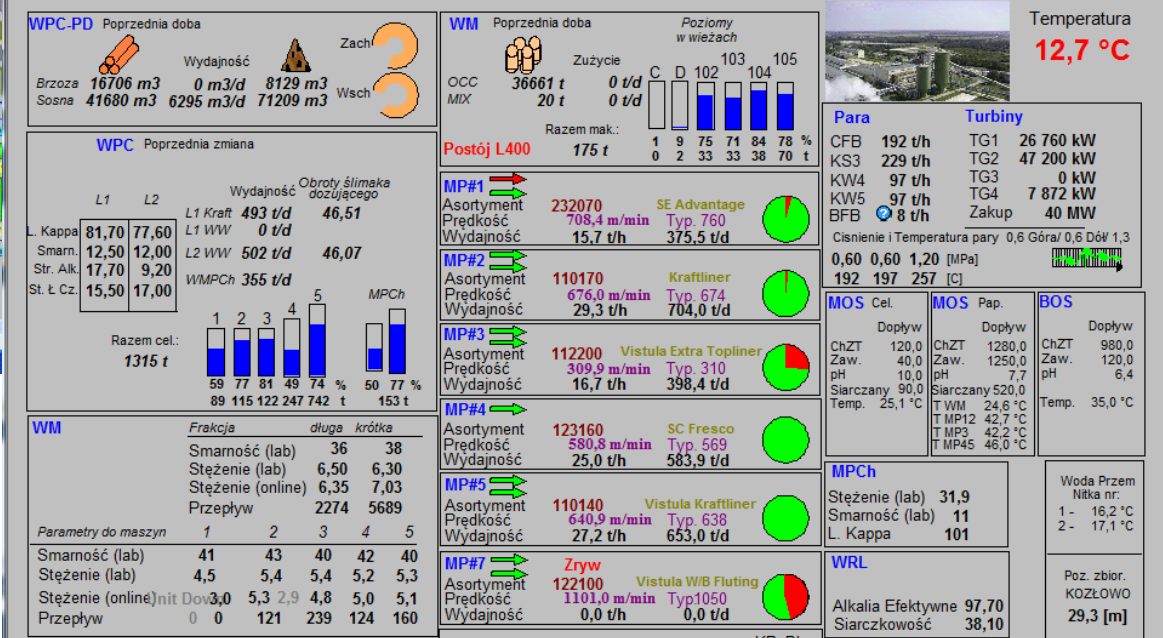


- PI ProcessBook is tool for graphical dynamic presentation of data and processes
- PI ProcessBook provides tools to create custom “applications” used to analyze data (mostly, VBA)
- PI ProcessBook is integration environment
 - Active X Provider and Container
 - Data from a variety of sources
 - time-series
 - relational databases
 - AF - asset-centric data
- PI ProcessBook can export displays for use in other PI System tools (e.g., PI WebParts)

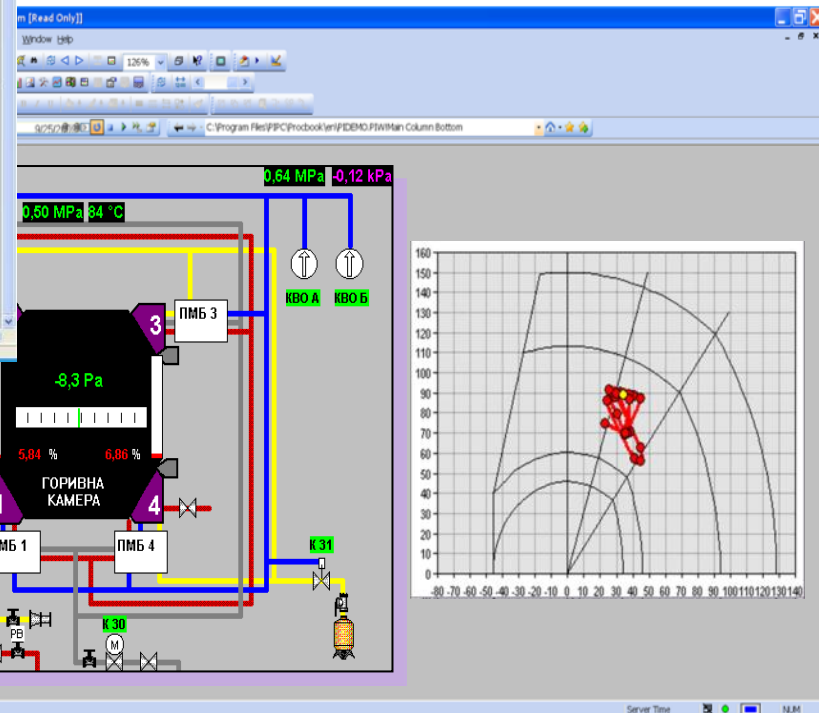
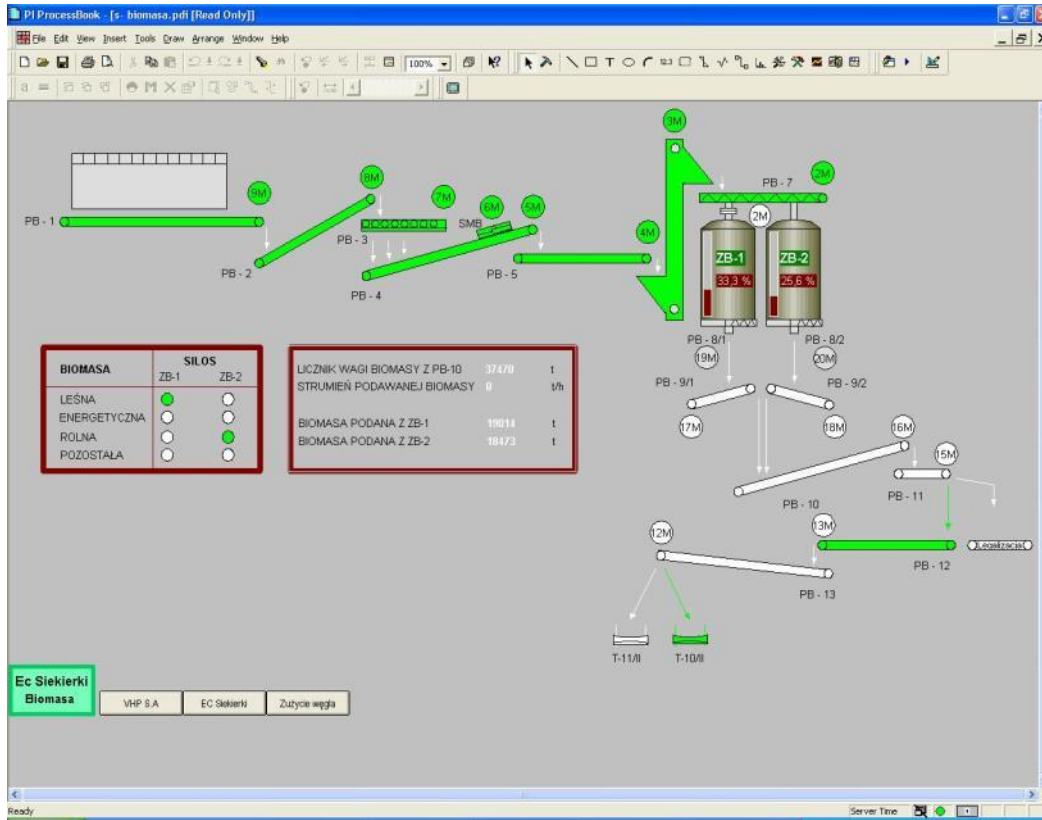
Introducing PI ProcessBook

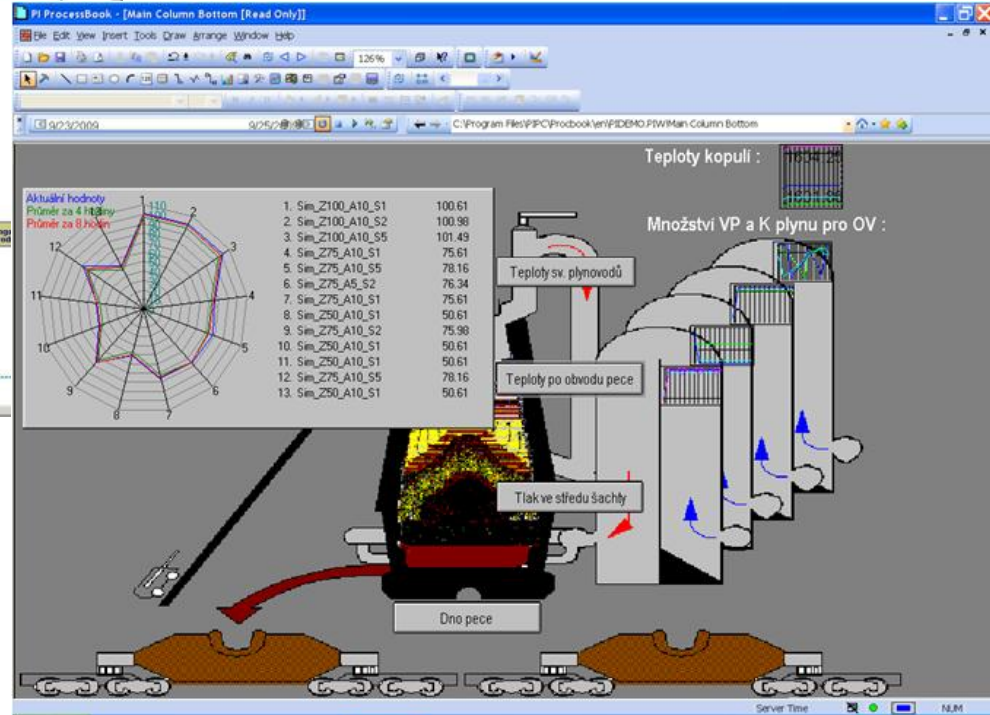
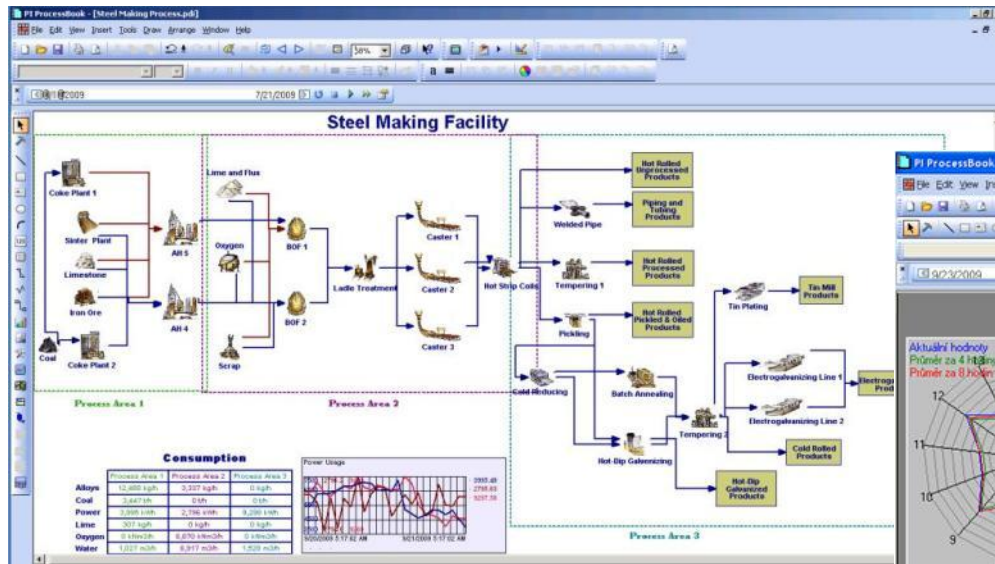


Mondi Świecie S.A. - Mill Overview

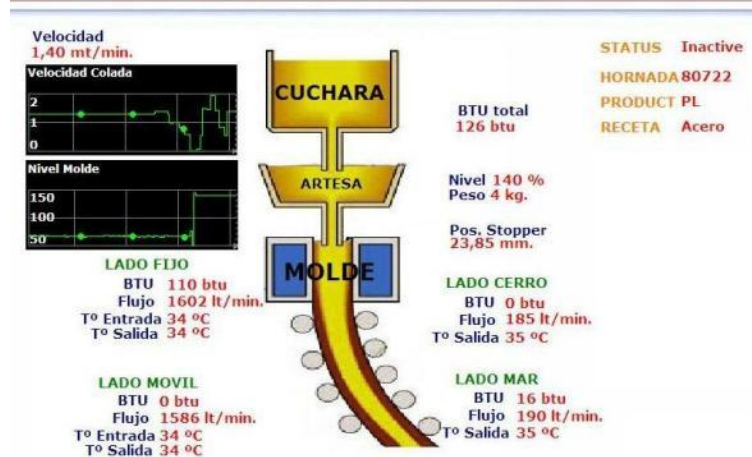


Introducing PI ProcessBook

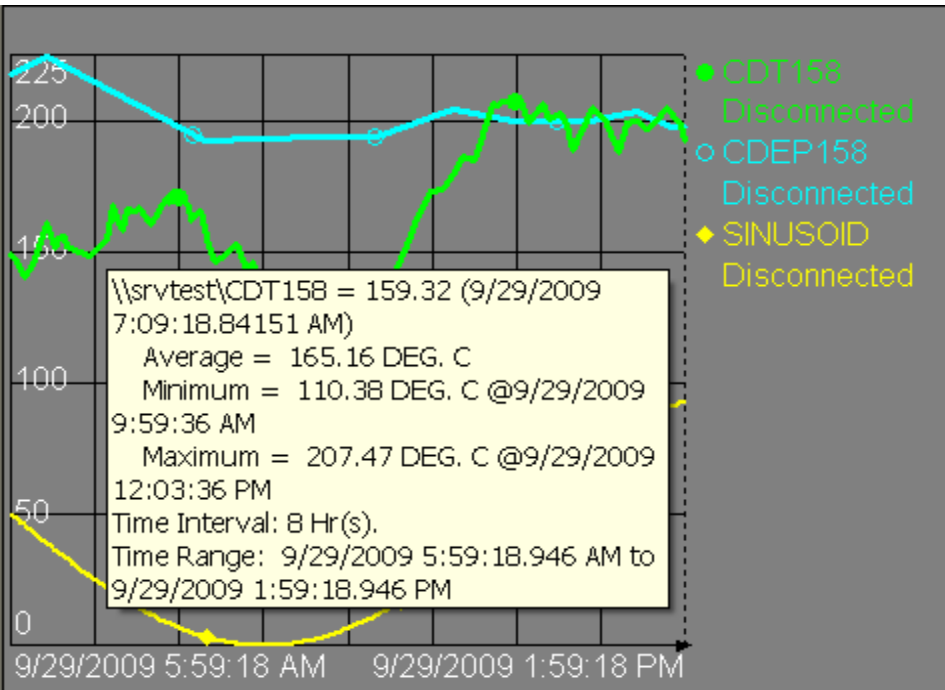




COLADA PLANCHONES



PB 3.2 - ToolTips and Details



Data Source: \\srvtest\CDT158 Option: Statistics

Trend1

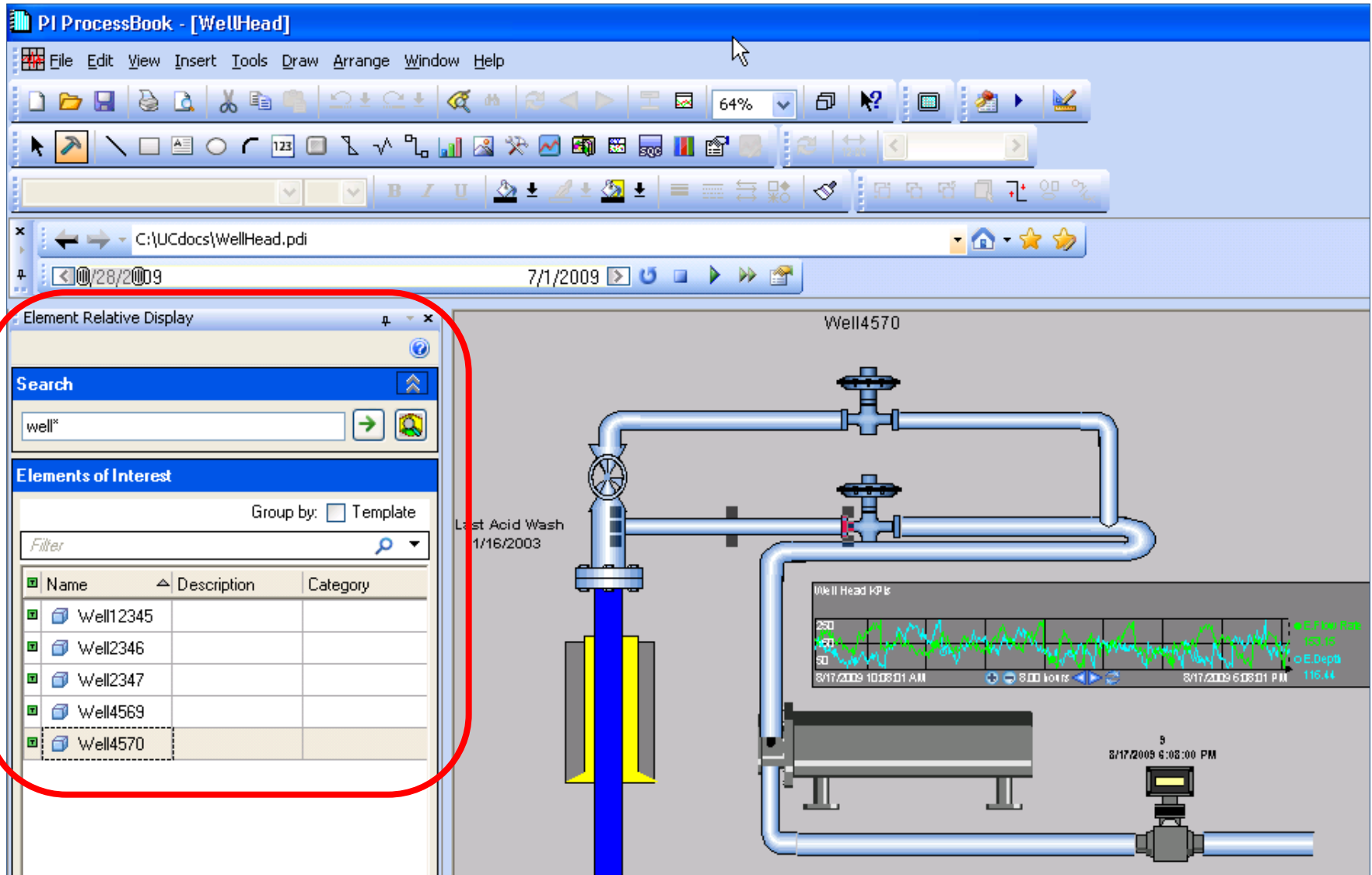
Statistics	Value	Timestamp
Data Type	Float 32	
Average	165.44	
Minimum	110.38	9/29/2009 9:59:36 AM
Maximum	207.47	9/29/2009 12:03:36 PM
Range	97.092	
StdDev	28.268	
PStdDev	28.268	
Count	28800	
Time Interval	8 Hours	
Time Range	Start Time	9/29/2009 6:02:01 AM
	End Time	9/29/2009 2:02:01 PM

● sinusoid
 56.3399
 7/19/2007 6:02:32

\\ccoen\sinusoid (7/19/2007 6:02:32)
 Average = 69.00
 Minimum = 56.34 @7/19/2007 6:02:32 PM
 Maximum = 81.73 @7/19/2007 5:02:41 PM
 Time Interval: 1 Hr(s).
 Time Range: *-1 Hour to *

● CDT158
 118.848
 7/19/2007 6:02:32

PB 3.2 - AF Element Relative Displays



The screenshot displays the PI ProcessBook interface. The main window shows a process diagram for 'Well4570' with various pipes, valves, and a wellhead. A red circle highlights the 'Element Relative Display' window on the left. This window contains a search bar with 'well*' entered, a table of 'Elements of Interest', and a filter dropdown. The table lists several wells, with 'Well4570' selected. Below the diagram, a 'Well Head KPI' chart shows a fluctuating green line graph over time, with data points for 'O.E. Flow Rate' (153.15) and 'O.E. Depth' (116.44).

Well4570

Last Acid Wash 1/16/2003

Well Head KPI

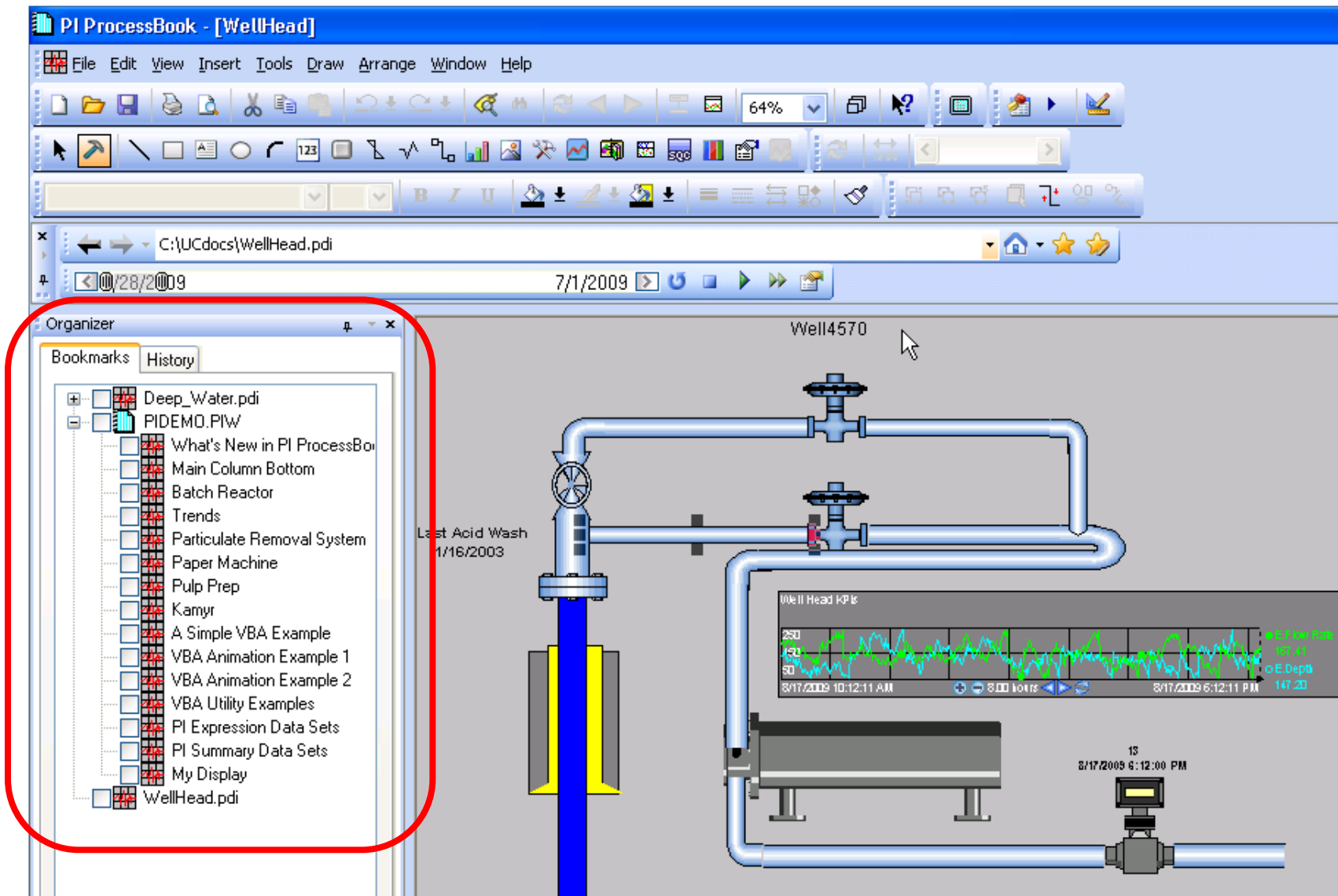
Name	Description	Category
Well12345		
Well2346		
Well2347		
Well4569		
Well4570		

O.E. Flow Rate 153.15
O.E. Depth 116.44

8/17/2009 10:08:01 AM 8:00 hours 8/17/2009 6:08:01 PM

5
8/17/2009 6:08:00 PM

PB 3.2 - Display Browsing and Bookmarking



The screenshot displays the PI ProcessBook interface for a process named "WellHead". The main window shows a process diagram with blue pipes, valves, and a wellhead. A graph titled "Well Head KPIs" is overlaid on the diagram, showing two data series: "E.Flow Rate" (green line) and "E.Depth" (blue line). The graph's x-axis represents time from 8/17/2009 10:12:11 AM to 8/17/2009 6:12:11 PM. The y-axis ranges from 50 to 250. The graph shows the E.Flow Rate fluctuating between approximately 100 and 200, while the E.Depth fluctuates between approximately 100 and 150. A mouse cursor is positioned over the "Well4570" label in the diagram.

The "Organizer" window is open on the left side of the screen, showing a tree view of bookmarks. The "Bookmarks" tab is selected, and the tree view shows a hierarchy of folders and files. The "WellHead.pdi" file is highlighted at the bottom of the tree. The "History" tab is also visible, showing a list of recently accessed files.

The "Organizer" window content:

- Bookmarks
- History
- Deep_Water.pdi
- PIDEMO.PIW
 - What's New in PI ProcessBo
 - Main Column Bottom
 - Batch Reactor
 - Trends
 - Particulate Removal System
 - Paper Machine
 - Pulp Prep
 - Kamyr
 - A Simple VBA Example
 - VBA Animation Example 1
 - VBA Animation Example 2
 - VBA Utility Examples
 - PI Expression Data Sets
 - PI Summary Data Sets
 - My Display
 - WellHead.pdi

PB 3.2 - Office Communicator Integration



The screenshot displays the PI ProcessBook interface for a wellhead system. The main window shows a schematic diagram of Well4570 with various pipes, valves, and a wellhead. A data table is overlaid on the diagram, showing the following information:

Well Head KPIs	
250	o E Flow Rate
150	188.26
50	o E Depth
122.18	

The interface includes a menu bar (File, Edit, View, Insert, Tools, Draw, Arrange, Window, Help), a toolbar with various icons, and a status bar showing the date 7/1/2009. A 'Contacts' window is open on the right side, listing various roles and names, including:

- MS Office Communicator Contacts
 - Information Management
 - Dale Milton
 - Information Systems
 - Kevin Lee
 - Maintenance Engineers
 - Aaron Tucker
 - Operators
 - Stan Prosovski
 - Process Control Engineers
 - Carl Bertoni
 - Process Engineers
 - Lalit Subramaniam
 - Quality Compliance
 - Nicole Prevensky
 - Other Contacts

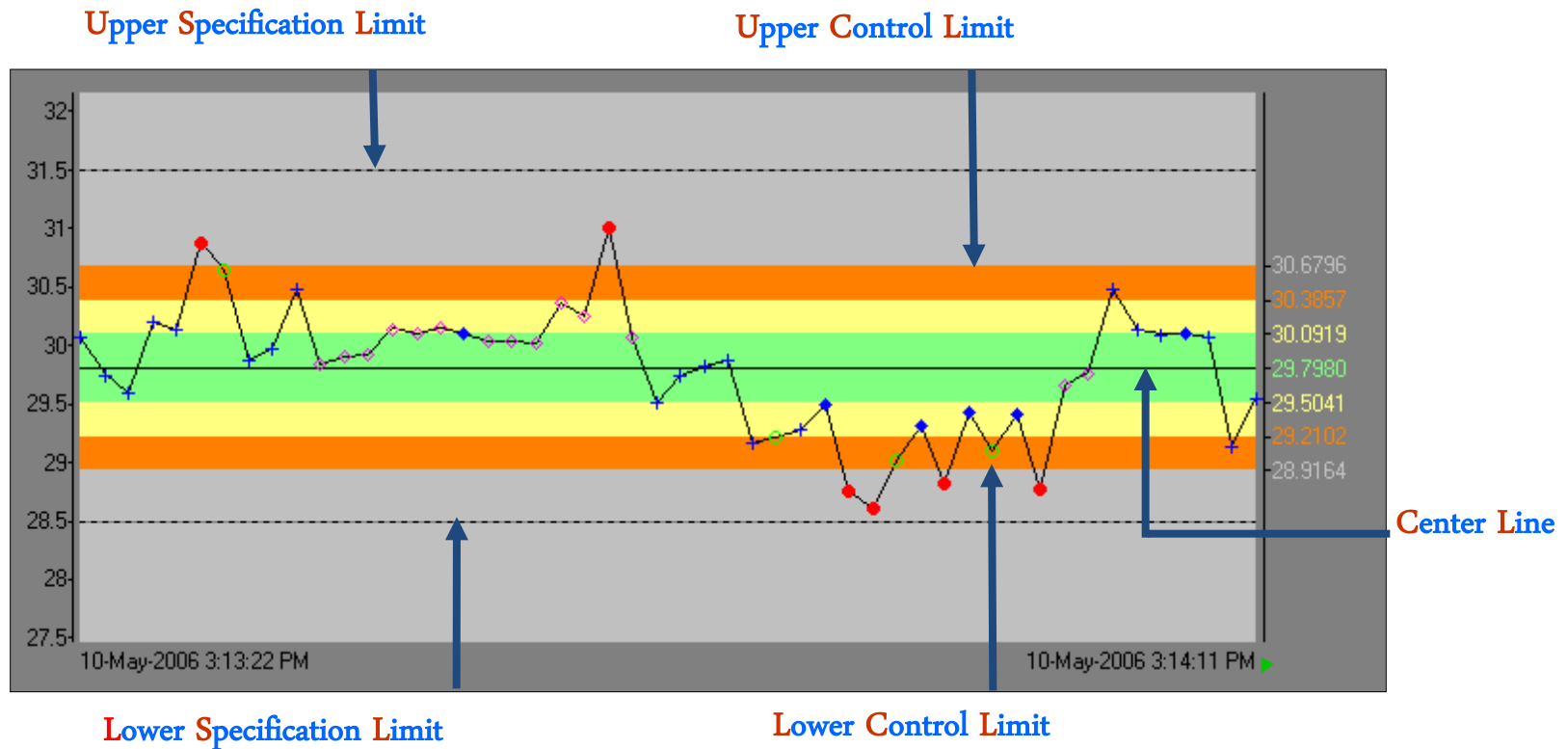
PB 3.2 - ProcessBook Playback Feature



The screenshot displays the PI ProcessBook interface. The main window shows a plot titled "Plot with Limits" with a blue data series labeled "IntenseData" and a value of 179.83 DEG. C. Two horizontal red dashed lines represent the "LOWER LIMIT.Value" at 100 and the "UPPER LIMIT.Value" at 200. The plot's x-axis shows a time range from 9/28/2009 4:10:00 AM to 9/28/2009 8:10:00 AM, with a 4.00 hours duration. A "Playback Options" dialog box is open in the foreground, showing settings for "Time Ranges" (Display Range: ~4 Hour), "Playback Period" (Start: 9/28/2009 12:00 AM, End: 9/28/2009 1:38 PM), "Refresh" (Refresh Rate (Sec): 5), and "Speed" (1 Minutes Per Second).

PI SQC Client

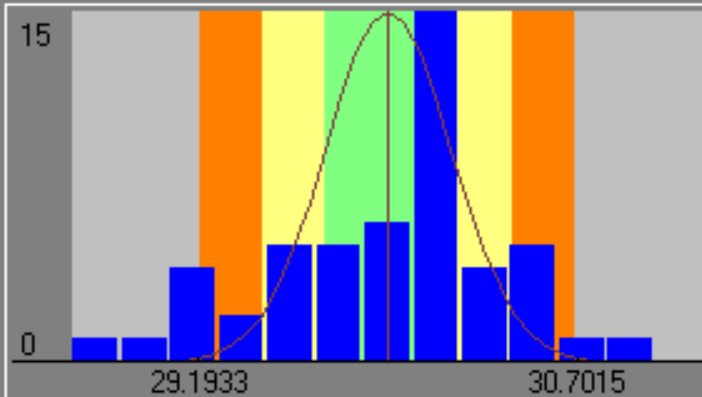
- SQC (Shewhart) Charts integrated in PI Process Book



PI SQC (Statistical Quality Control)



SQC Plot - 1 : [Individuals]



Histogram

(distribution)

Chart Tag: STATIONARY3
donnée stationnaire 30
Value: 29.9884
USL/LSL: 31.5 / 28.5
STDEV: 0.47392
Cpk: 1.01804

Statistics

Statistical Quality Control Details

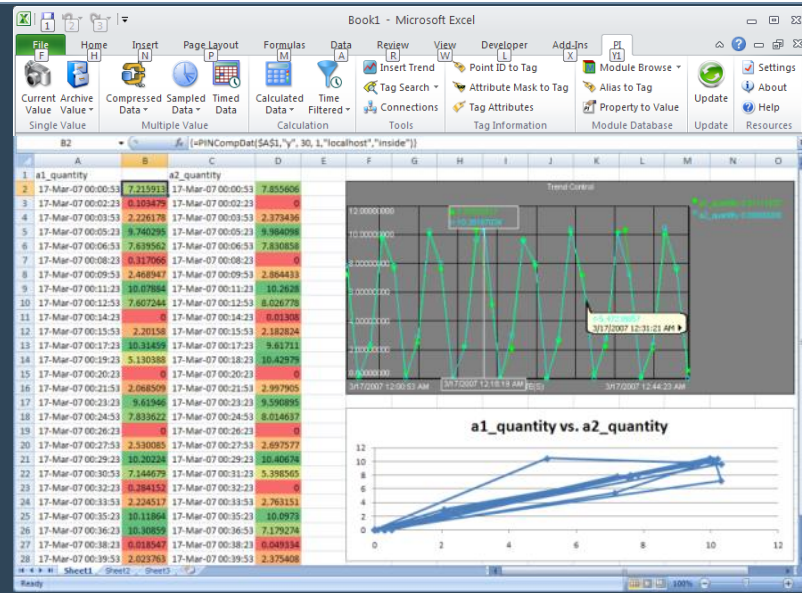
Options: Control Limits

Variable	Value
Upper Specification Limit	31.5
Upper Control Limit	30.5855
Center Line	29.8922
Lower Control Limit	29.1989
Lower Specification Limit	28.5

Details

Help Save Data To File Close

PI DataLink



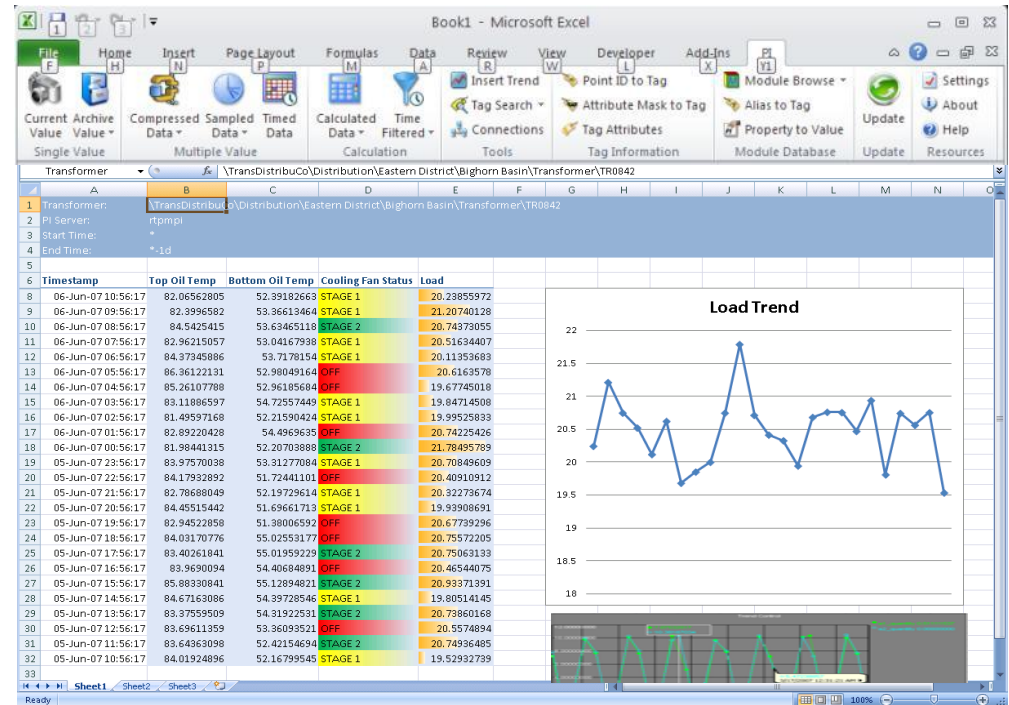
Introducing PI DataLink



- PI DataLink is an Excel add-in that allows users to access time-series data and metadata stored in the PI System
- Used for reporting, data mining, charting, and analysis

Main functions:

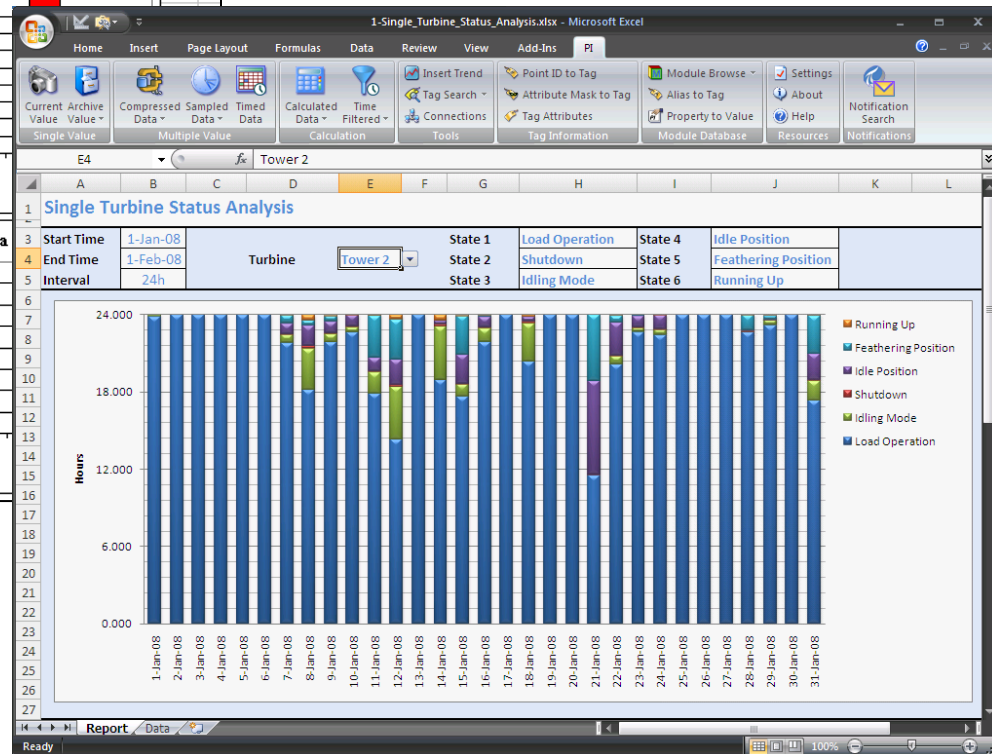
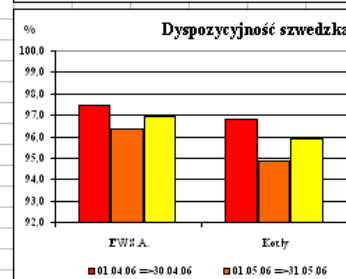
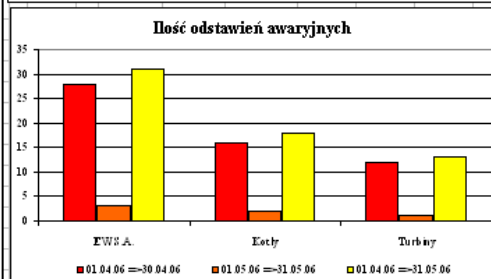
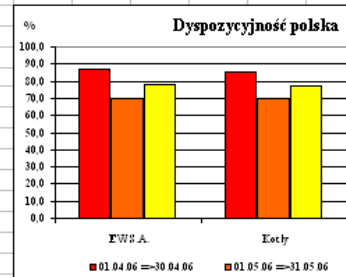
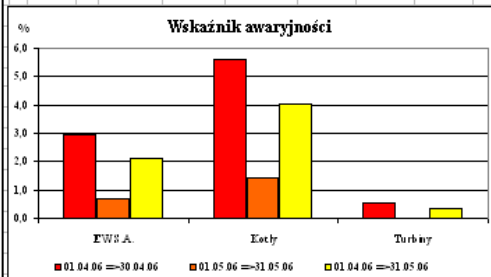
- Current data visualization
- Calculated data
 - total, maximum, minimum, average, ...
- Time filtered calculations
 - amount of time over which a PI System expression is true (e.g. job time of specific device in a month)
- PI ProcessBook style trend object



Introducing PI DataLink



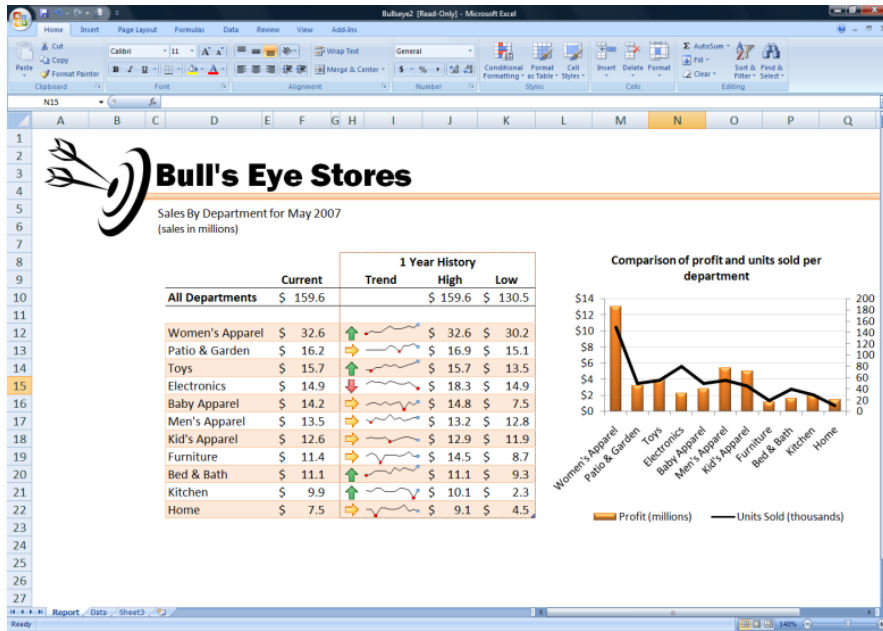
Wskaźniki dyspozycyjności i awaryjności												urządzenia									
Zakład	01.04.06 =>30.04.06						01.05.06 =>31.05.06						01.04.06 =>31.05.06								
	Awaryjność		Dyspozycyjność		Ilość		Awaryjność		Dyspozycyjność		Ilość		Awaryjność		Dyspozycyjność		Ilość				
	Wskaźnik	Ilość awarii	poliska	szwedzka	uruchom	Wskaźnik	Ilość awarii	poliska	szwedzka	uruchom	Wskaźnik	Ilość awarii	poliska	szwedzka	uruchom	Wskaźnik	Ilość awarii	poliska	szwedzka	uruchom	
Kotły	5,6	16	85,2	96,8	56	1,4	2	70,3	94,9	21	4,0	18	77,8	95,9	77						
Turbiny	0,6	12	90,3	98,8	46	0,0	1	70,3	99,5	19	0,4	13	80,1	99,1	65						



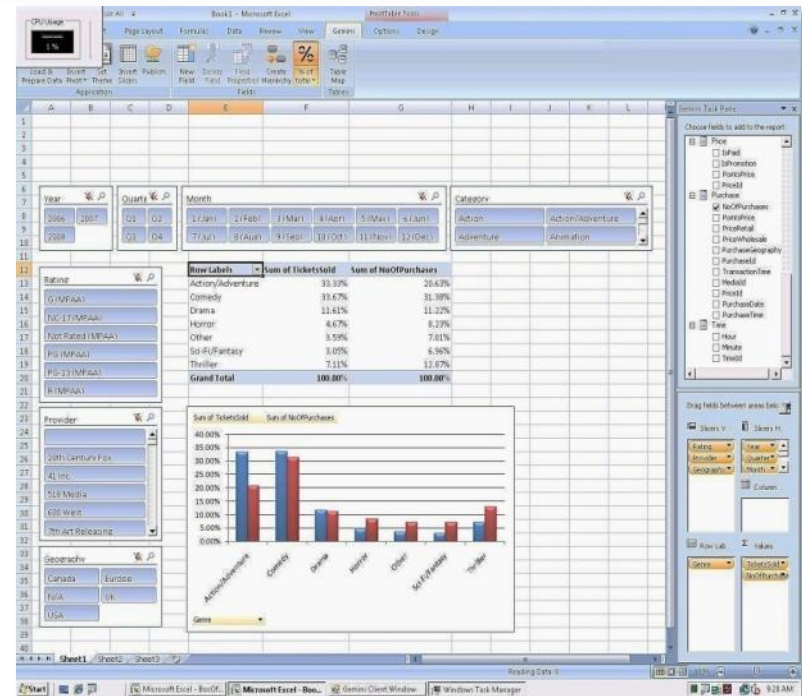
Powerful Personal Analysis Tools

Drive personal productivity and insight

Microsoft®
Excel 2010



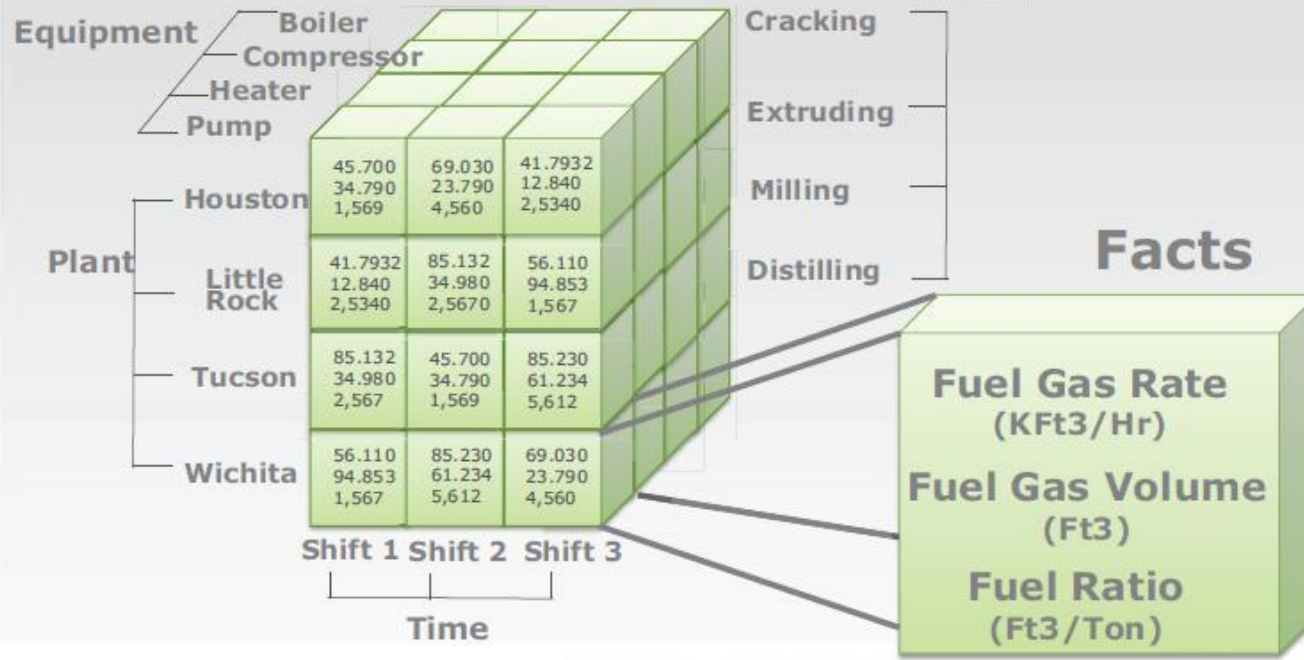
Easier navigation with Slicers



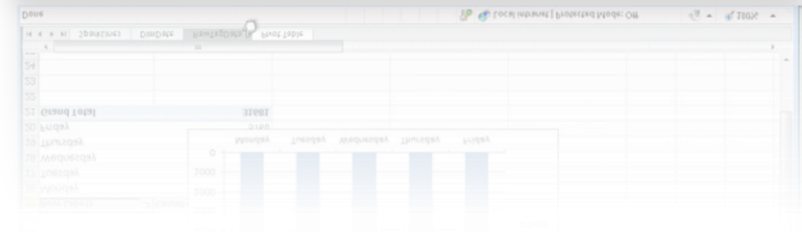
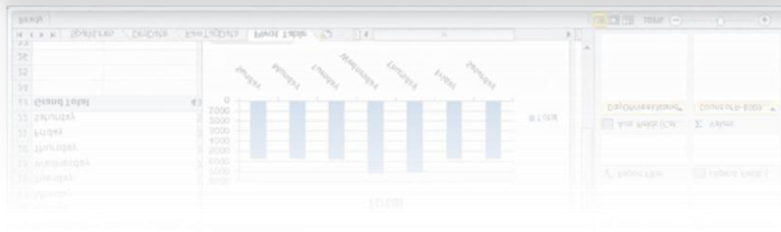
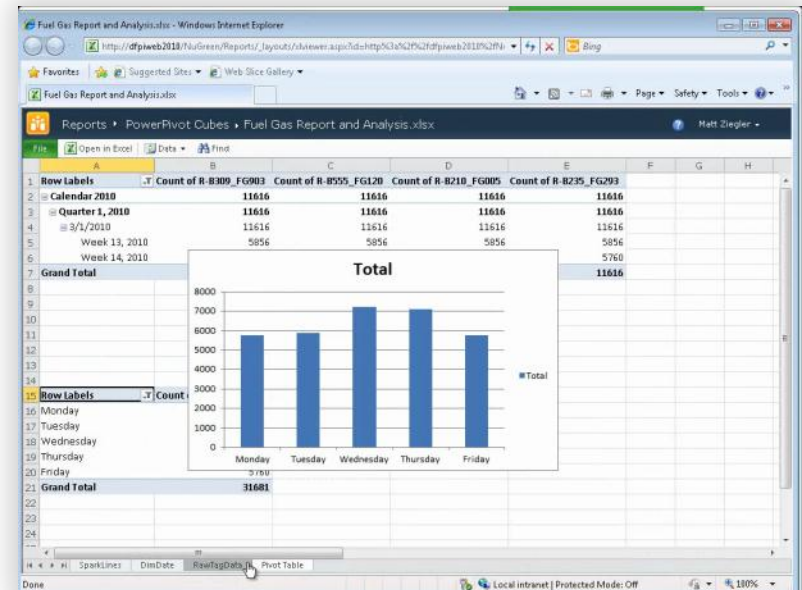
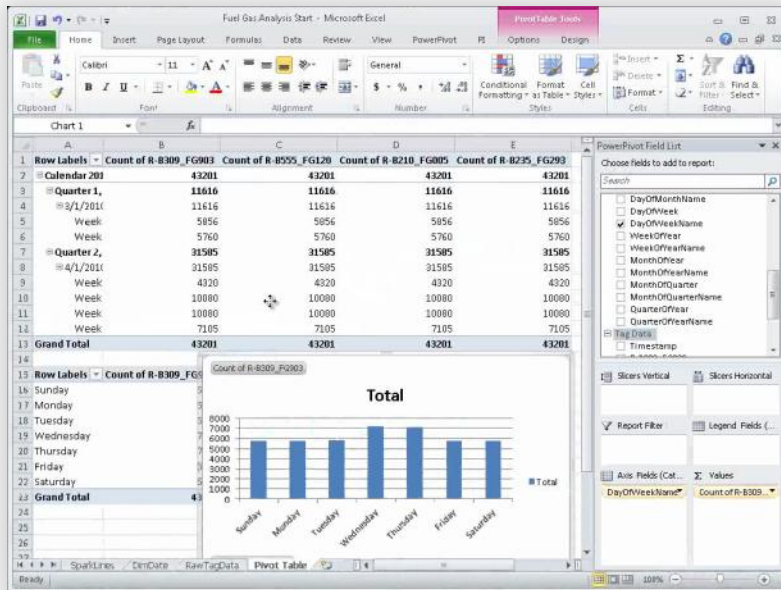
Improved formatting and charts

POWERPIVOT DATA "CUBE"

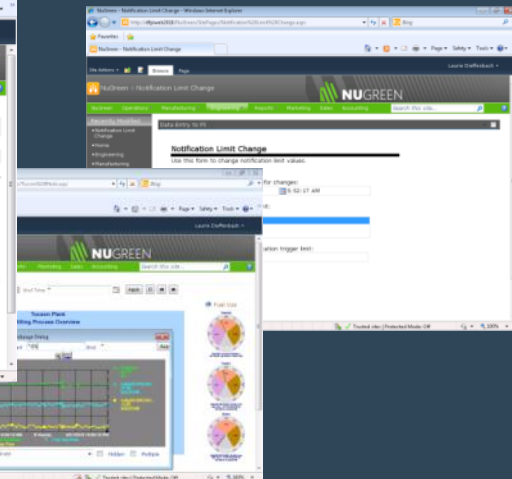
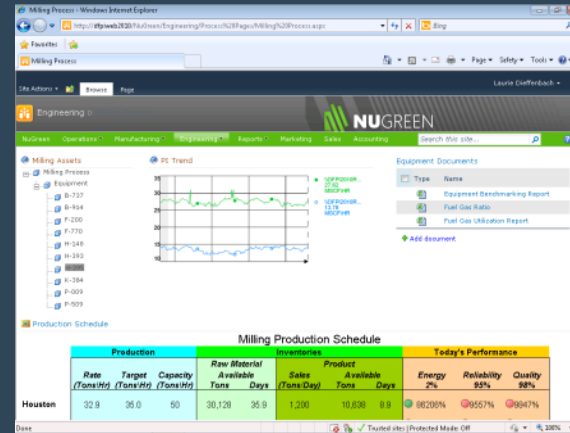
Dimensions



Publish and Share with SharePoint and DataLink Server



PI WebParts



What is PI WebParts?

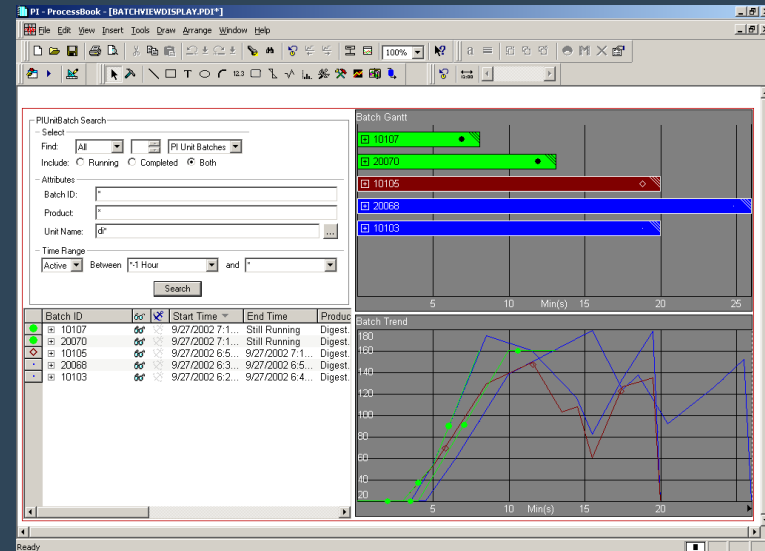


- PI System on the web
 - time-series
 - relational
 - web services data

- Relies on the Microsoft SharePoint Platform



Batch/Event Framing



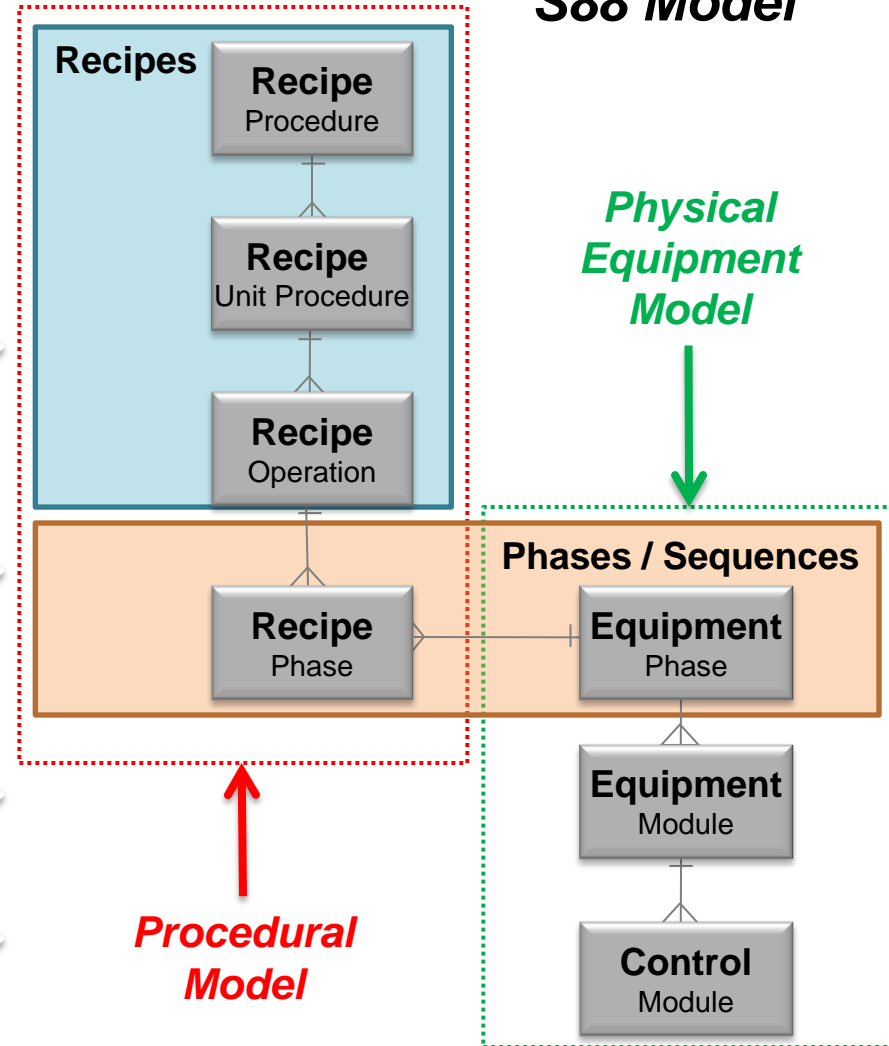
Batch Concept through S95* & S88**



S95 Model

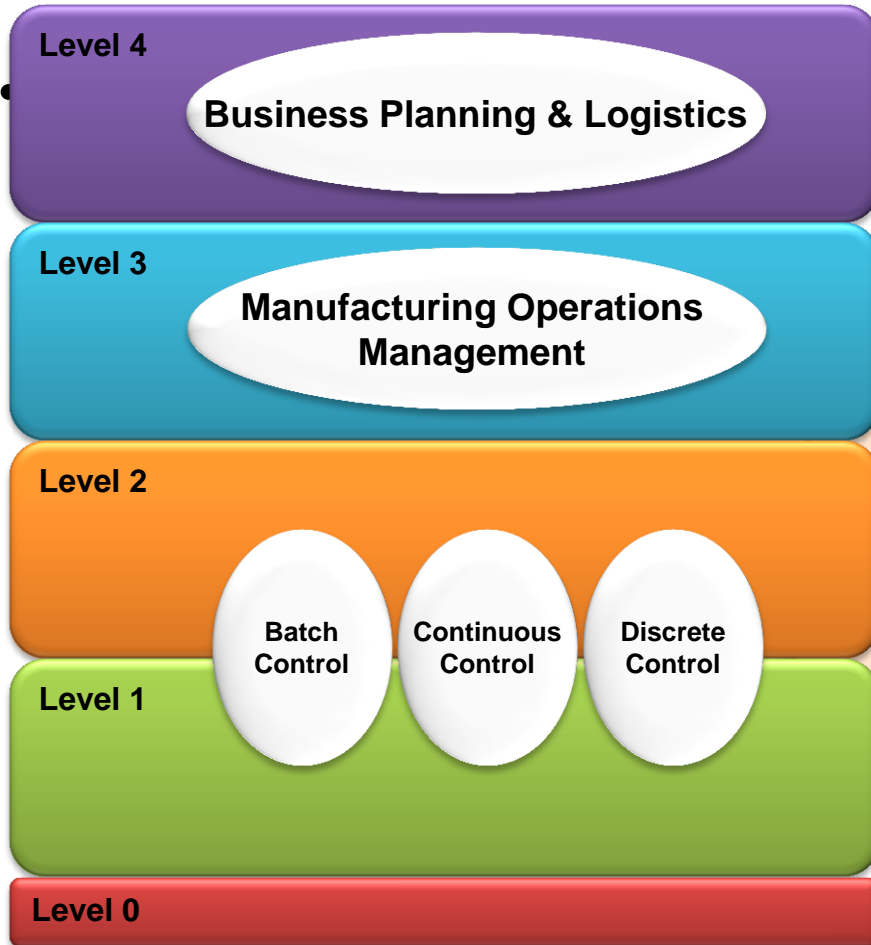


S88 Model



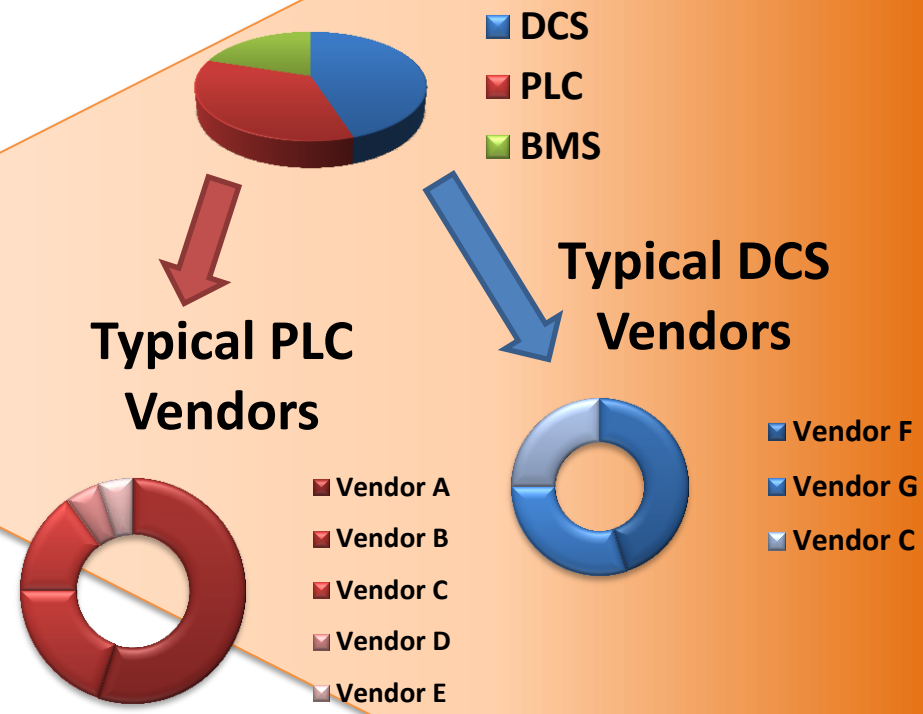
* ANSI/ISA-88 - IEC 61512 - Batch Control

** ANSI/ISA-95 - IEC 62264 - Enterprise-Control System Integration

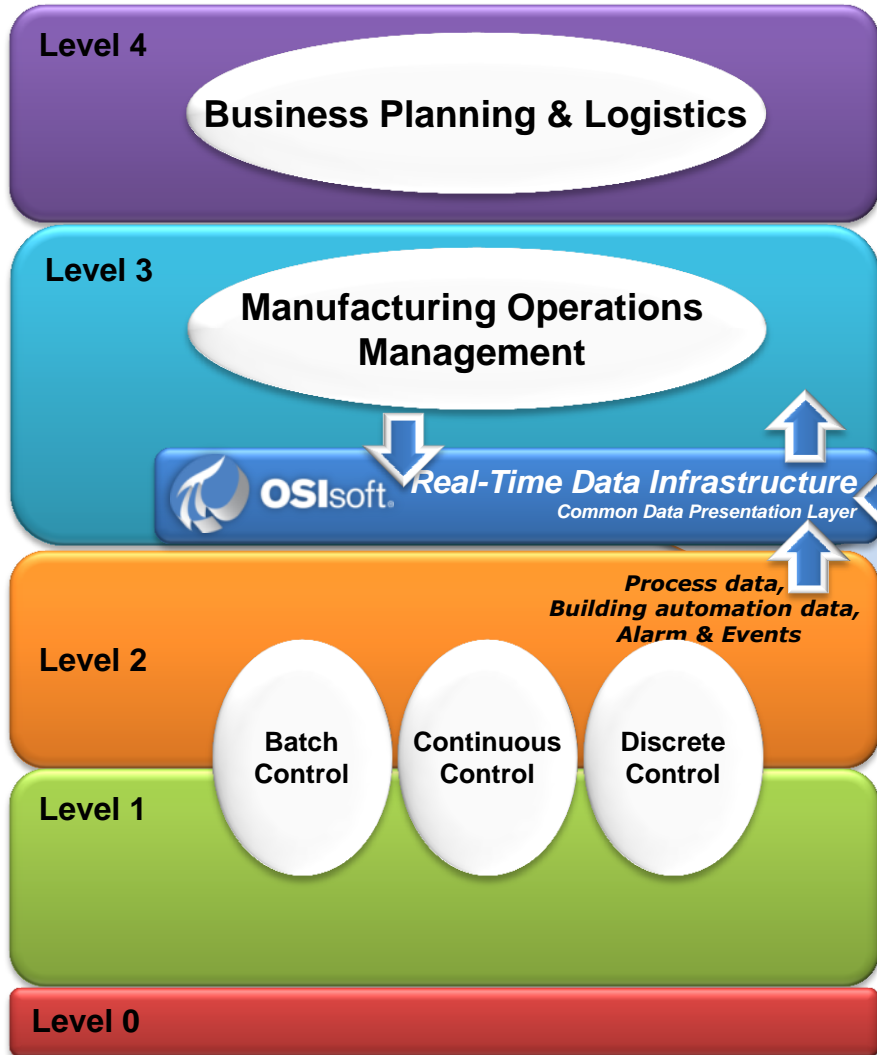


Variable PCS Landscape

Typical Process Control System Landscape



Common Infrastructure for Collecting Data



OSIsoft PI Server

Tag Data

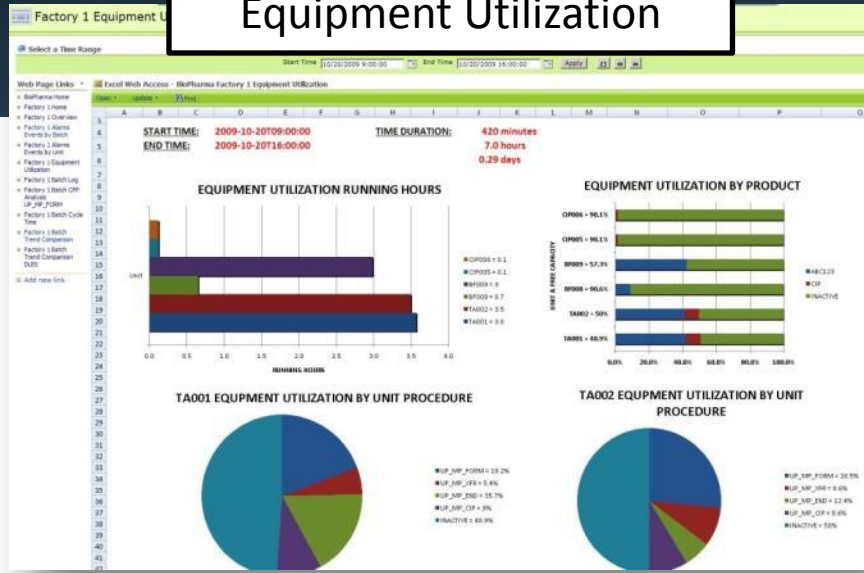
Batch ID	Product	Unit Name	Start Time	End Time
UBED-1-531L		Unit 1	17/08/2006 3:21...	588 Running
UBED-2-520L		Unit 2	17/08/2006 3:21...	588 Running
UBED-3-529L		Unit 3	17/08/2006 3:21...	588 Running
15.00	2006.8.17	Hourly	17/08/2006 3:00...	588 Running
ii Digest_UBED-1345	Digest-4201	Digester 1	17/08/2006 2:54...	17/08/2006 3:30
UBED-1-530L		Unit 1	17/08/2006 2:53...	17/08/2006 3:21
UBED-2-529L		Unit 2	17/08/2006 2:53...	17/08/2006 3:21

Equip / Batch Context

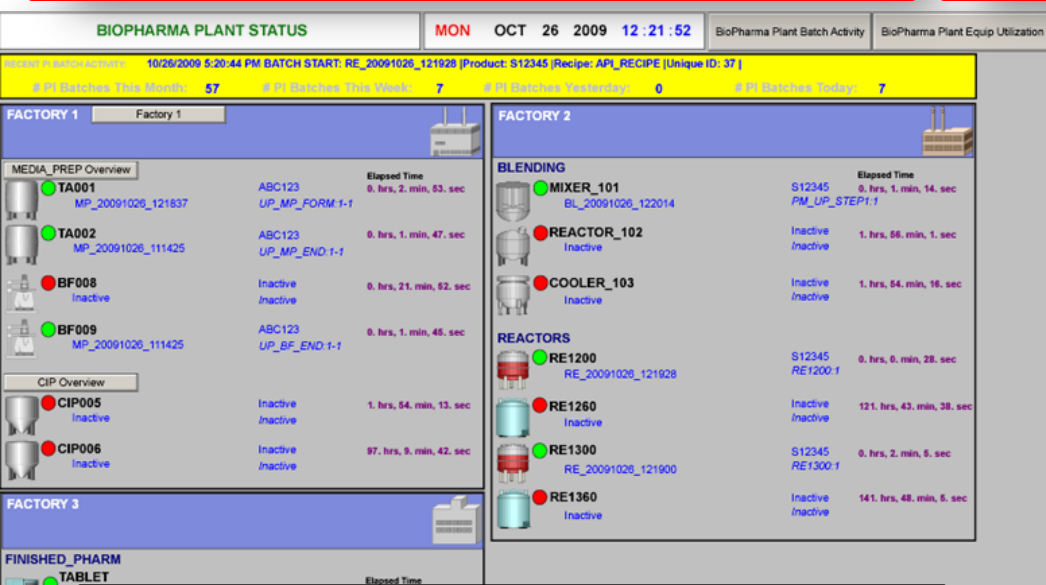
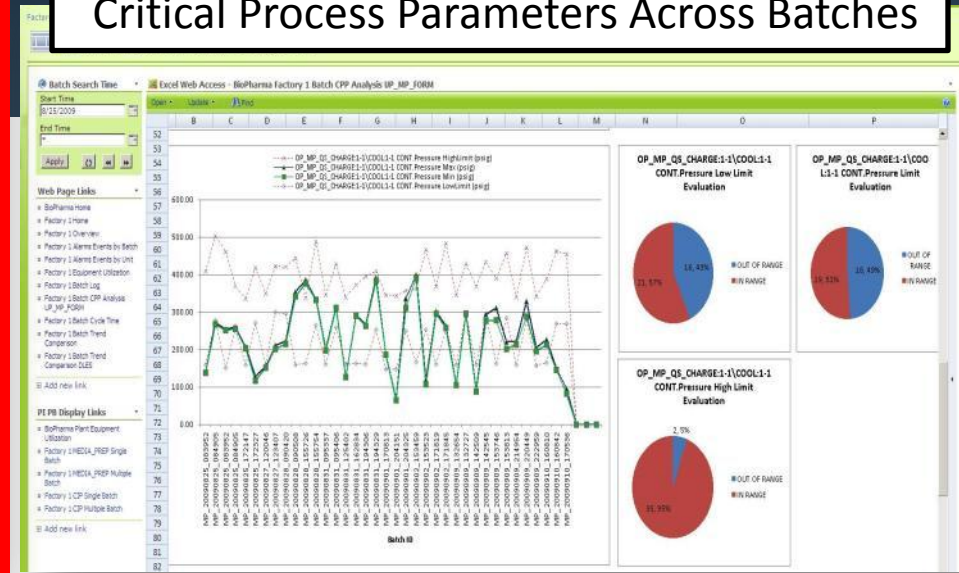
Process Control System Landscape with PI

- DCS
- PLC
- BMS
- MES

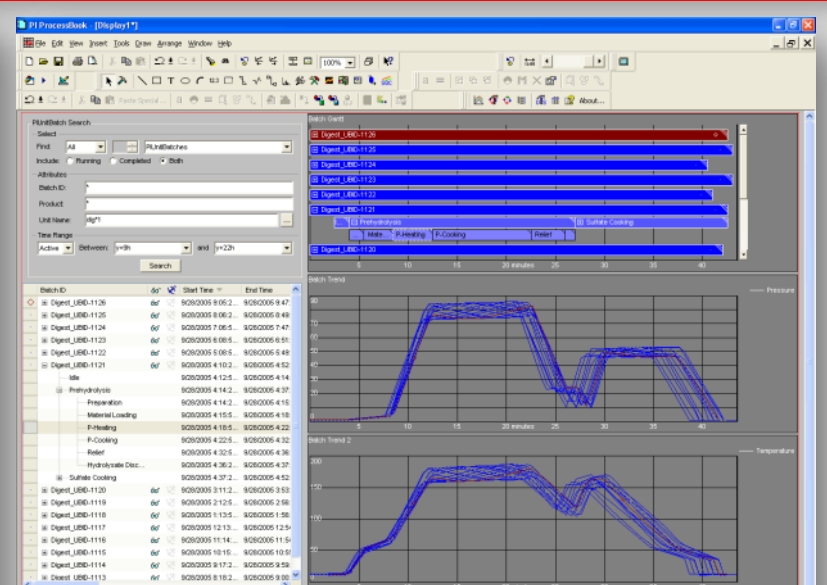
Equipment Utilization



Critical Process Parameters Across Batches



Multi-Site/Multi-Factory Process Visibility



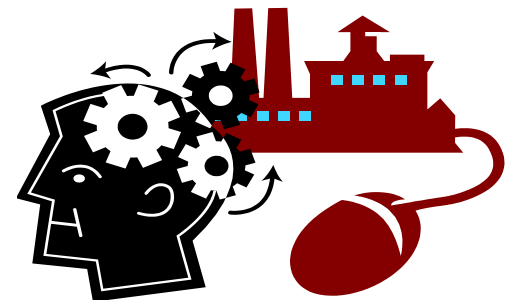
Batch Trends / Golden Batch Analysis

PI AF





- A database of user configured “Process Object Models” called elements which represent the logical components - the assets - in your process.
- The elements form a data directory “middle layer” for PI System clients which **transforms PI System data into information.**





PI AF Example - Module Related Display



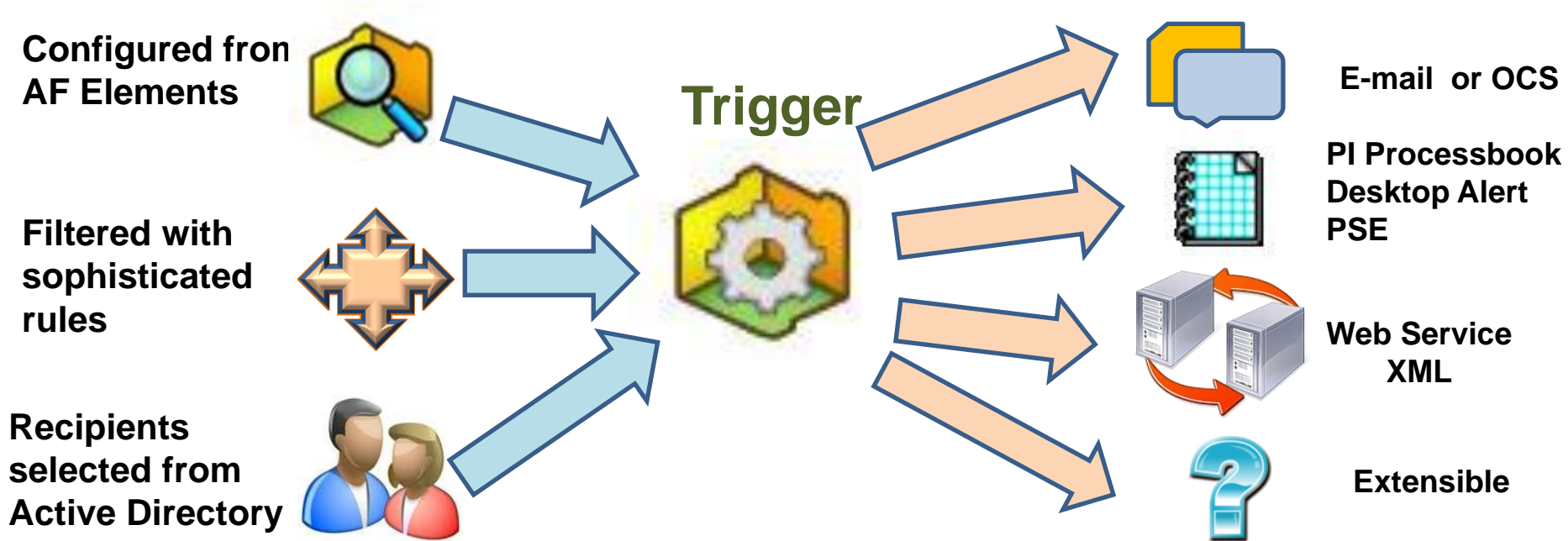
Line 1 Data:

- E..Mixer 1|Flow: 0.00 Kg/Min
- E..Mixer 1|State: Fill
- E..Mixer 1|Flow Total: 21007.40 KG
- E..Mixer 1|SetPoint: 650.00 Kg/Min
- E..Mixer 1|Valve: CLOSED
- E..Mixer 2|Flow: 675.75 Kg/Min
- E..Mixer 2|State: Drop
- E..Mixer 2|Flow Total: 5743.89 KG
- E..Mixer 2|SetPoint: 650.00 Kg/Min
- E..Mixer 2|Valve: OPEN

Line 2 Data:

- E..Mixer 1|Flow: 685.19 Kg/Min
- E..Mixer 1|State: Drop
- E..Mixer 1|Flow Total: 4377.18 KG
- E..Mixer 1|SetPoint: 650.00 Kg/Min
- E..Mixer 1|Valve: OPEN
- E..Mixer 2|Flow: 0.00 Kg/Min
- E..Mixer 2|State: Fill
- E..Mixer 2|Flow Total: 14.89 KG
- E..Mixer 2|SetPoint: 650.00 Kg/Min
- E..Mixer 2|Valve: CLOSED





Features

- Templates
- Custom Content
- Acknowledgement and Escalation

Delivery Channels

- User can create their own
- OSIsoft vCampus – XML & Skype



Thank you

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