OSIsoft®

REGIONAL SEMINAR 2011

E M E A

Do “More with Less” using PI AF & PI Notifications

Presented by

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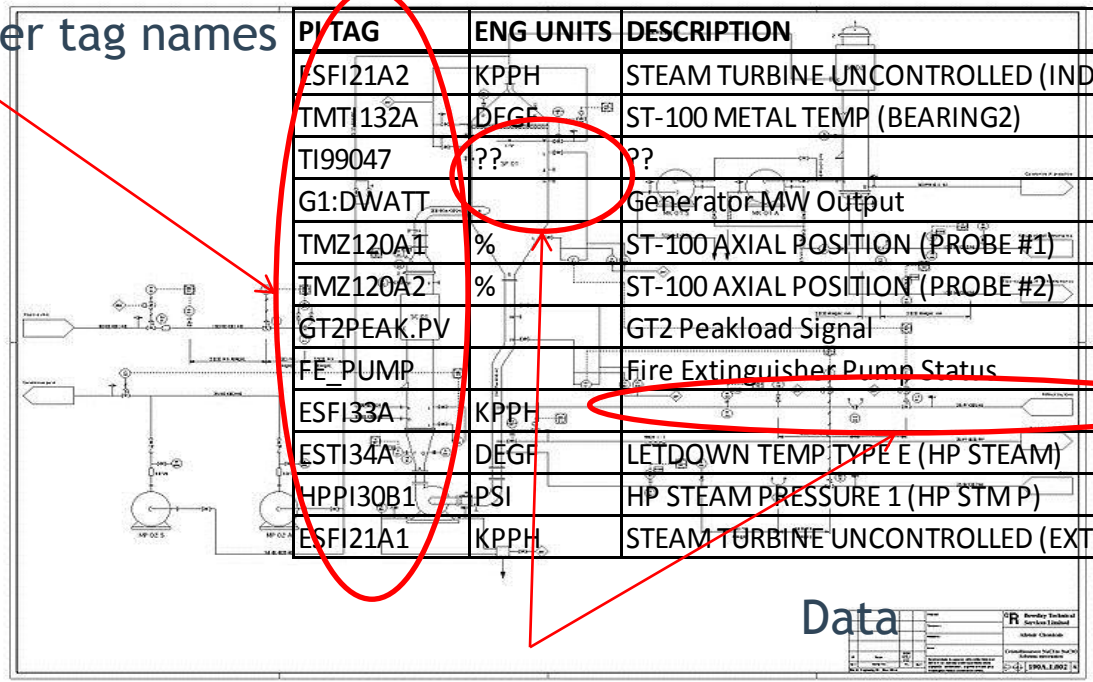
People Think in Terms of Assets

Relate Your Assets to Your Data

Difficult to decipher tag names

PI TAG	ENG UNITS	DESCRIPTION	MIN	MAX
ESFI21A2	KPPH	STEAM TURBINE UNCONTROLLED (IND FLOW)	0	100
TMTI132A	DEGF	ST-100 METAL TEMP (BEARING2)	0	400
TI99047	???	??		
G1:DWATT		Generator MW Output		
TMZ120A1	%	ST-100 AXIAL POSITION (PROBE #1)	-100	100
TMZ120A2	%	ST-100 AXIAL POSITION (PROBE #2)	-100	100
GT2PEAK.PV		GT2 Peakload Signal	0	1
FE_PUMP		Fire Extinguisher Pump Status		
ESFI33A	KPPH		0	425
ESTI34A	DEGF	LETDOWN TEMP TYPE E (HP STEAM)	0	1000
HPPI30B1	PSI	HP STEAM PRESSURE 1 (HP STM P)	-1	1550
ESFI21A1	KPPH	STEAM TURBINE UNCONTROLLED (EXTR FLO)	0	210



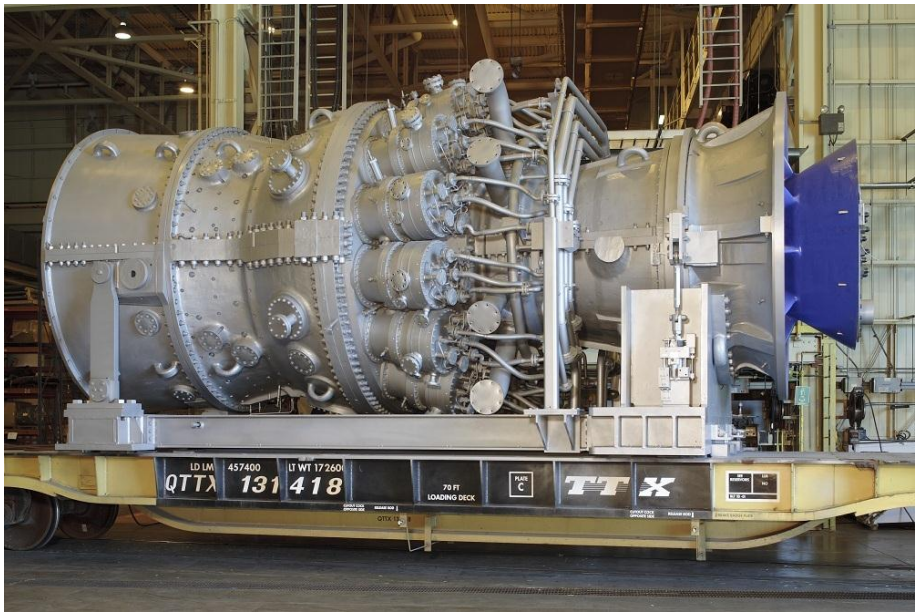
Data

P&ID

Missing or incomplete data – difficult to find what you need

Build a Complete Picture of Your Asset

PI Tags
- Inlet pressure
- Inlet flow
- Ambient temperature

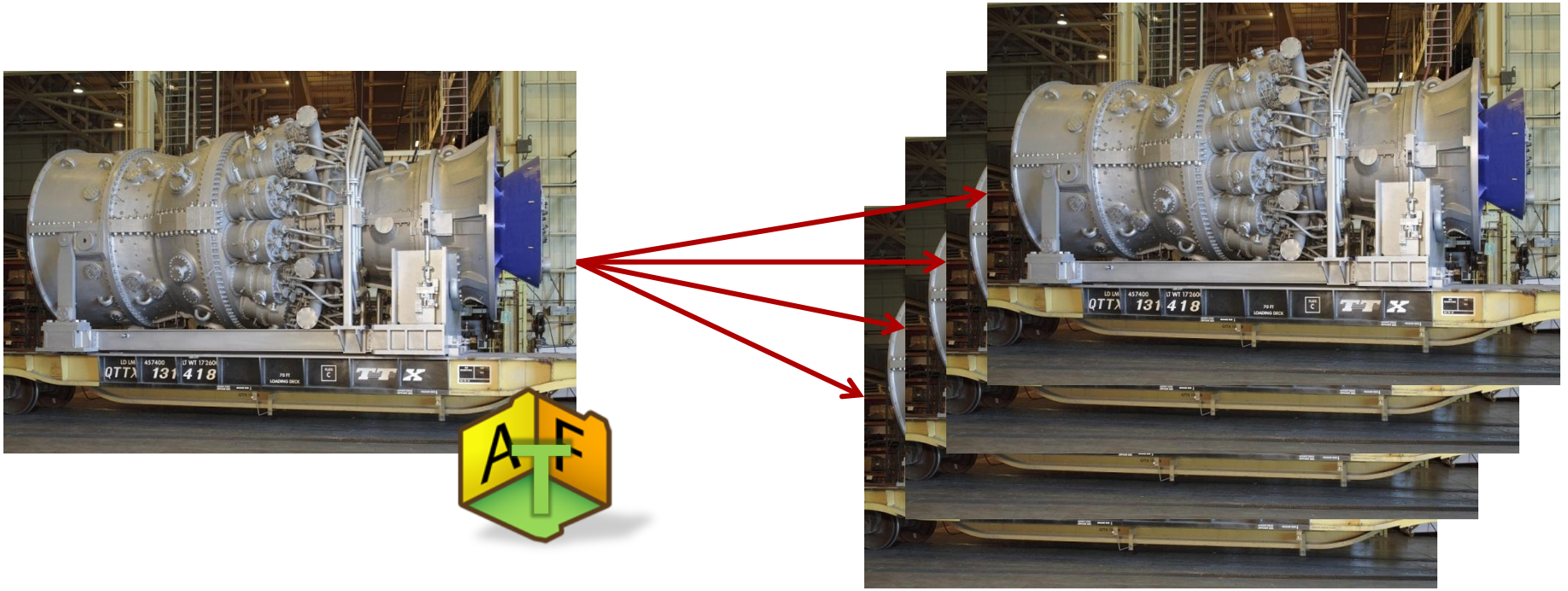


PI Tags
- Exhaust temperature
- Exhaust flow
- Measured MW output

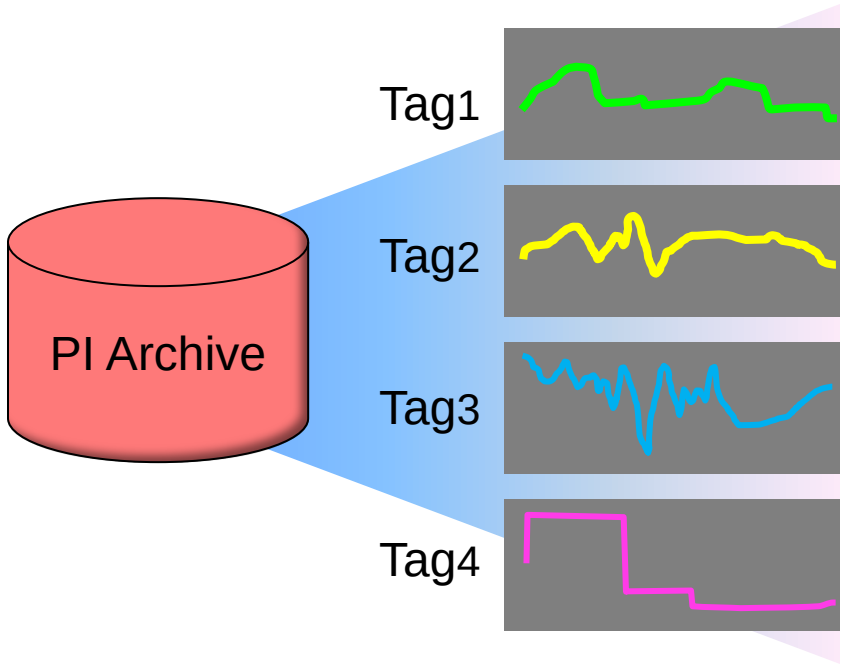
External Databases
- Performance curves
- Last service date
- Design documents
- Inspection best practice

Calculations
- Performance calculations
- KPI’s

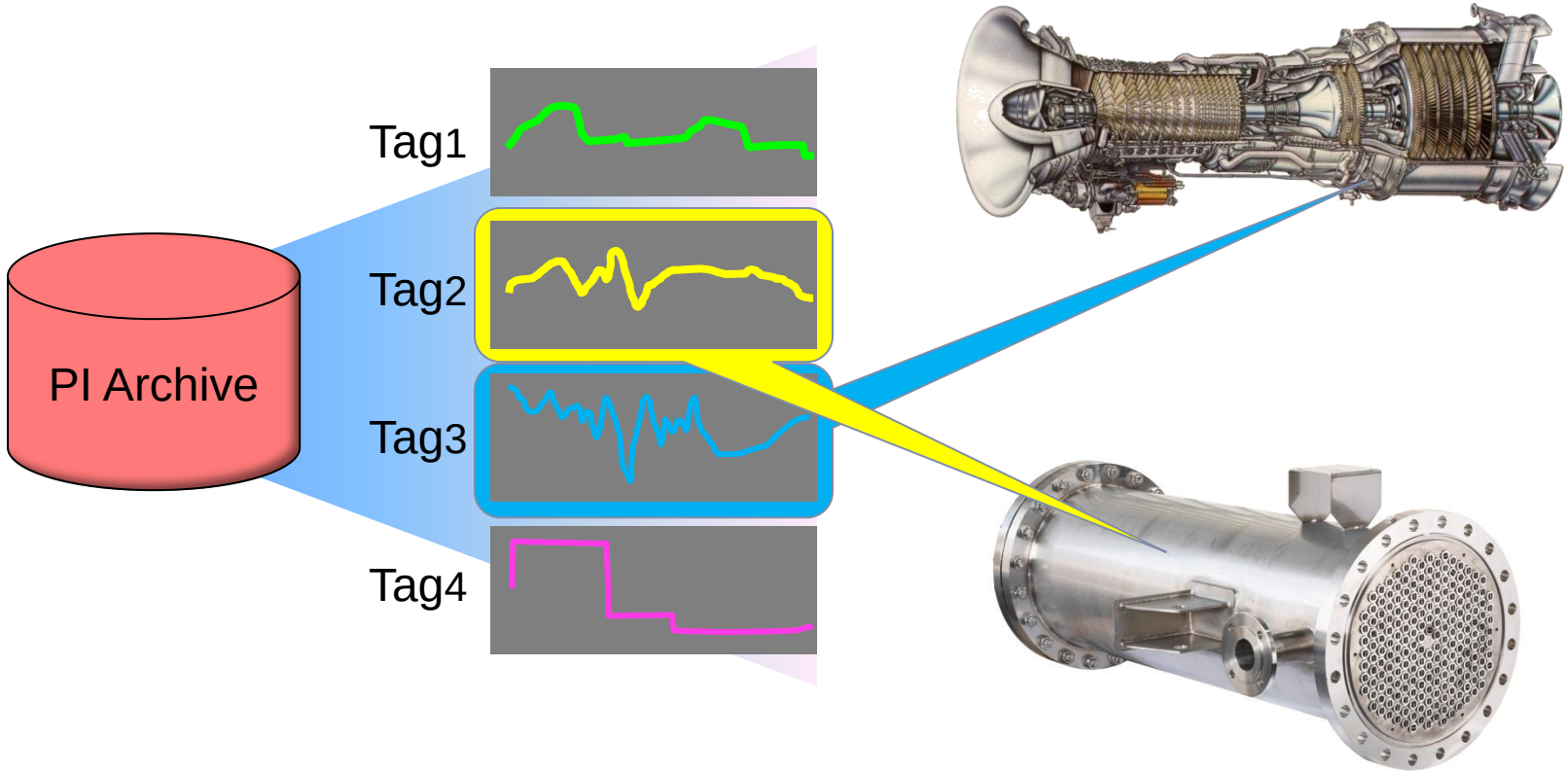
Common View for Similar Assets



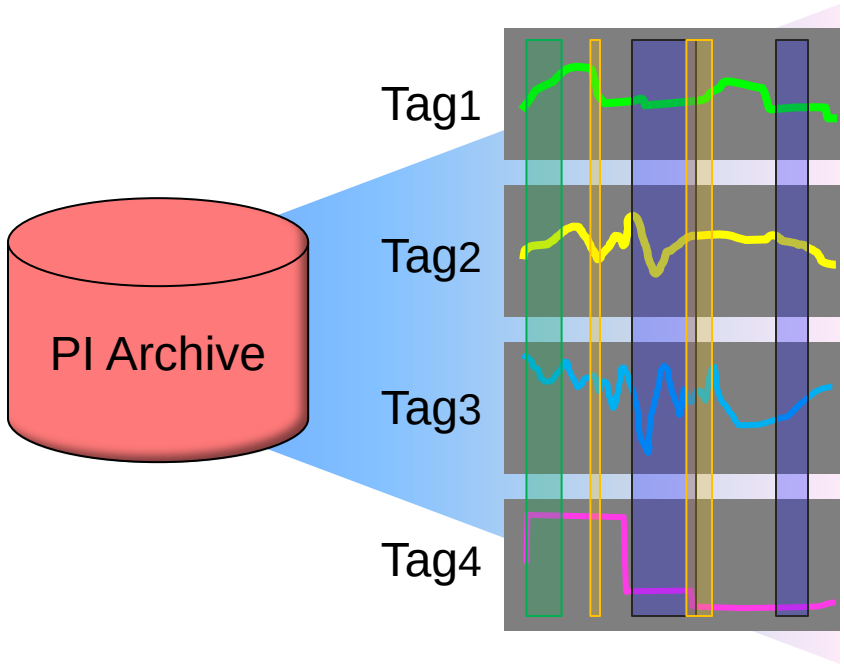
PI Server – Time series data and Tags

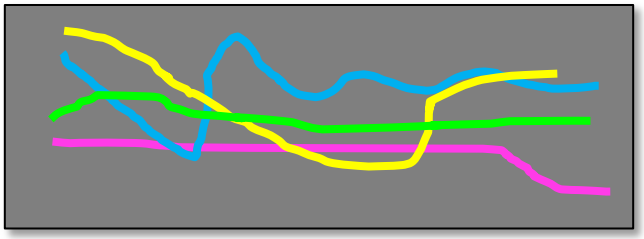


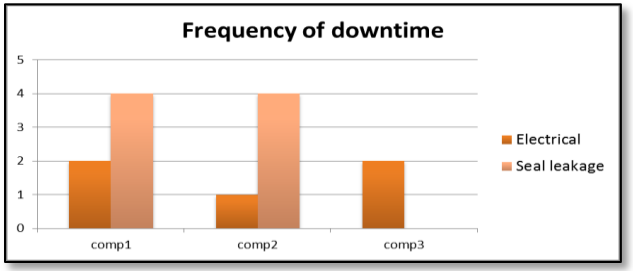
Assets help you find the right Tags



Event Frames help you find the right time periods

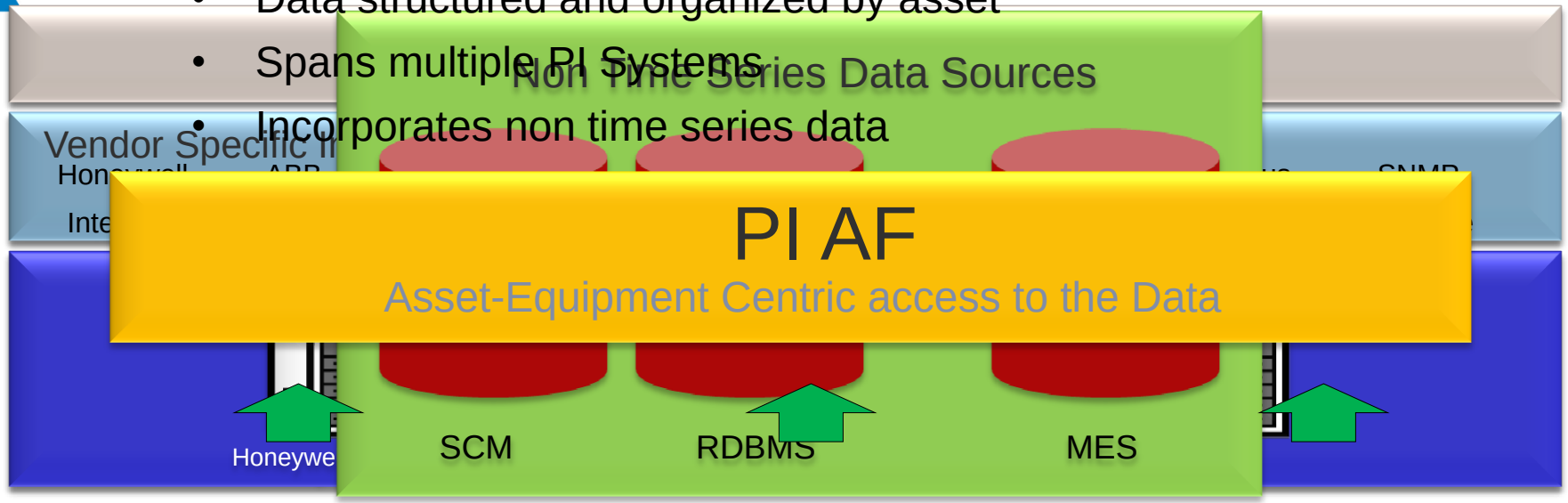




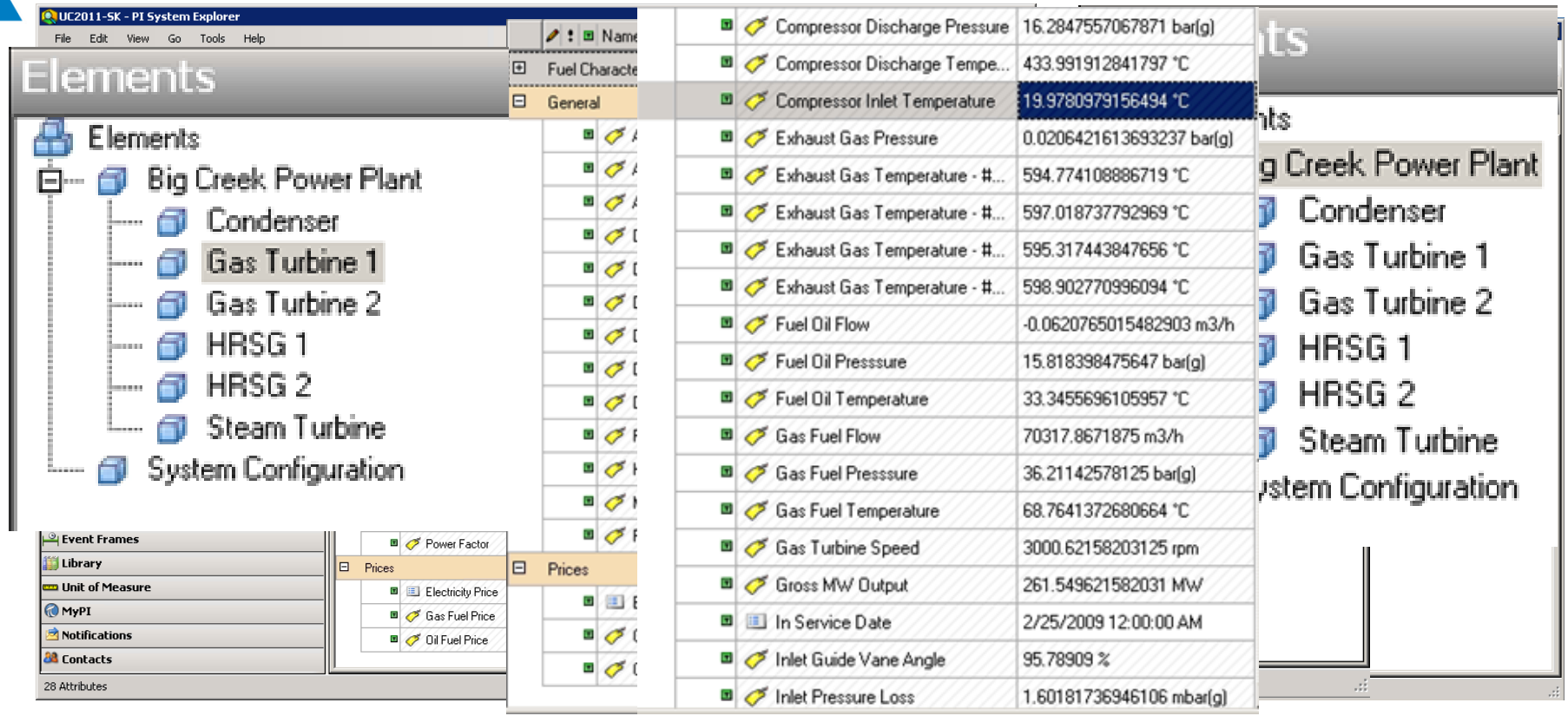


Asset centric

- Data structured and organized by asset
- Spans multiple PI Systems
- Incorporates non time series data

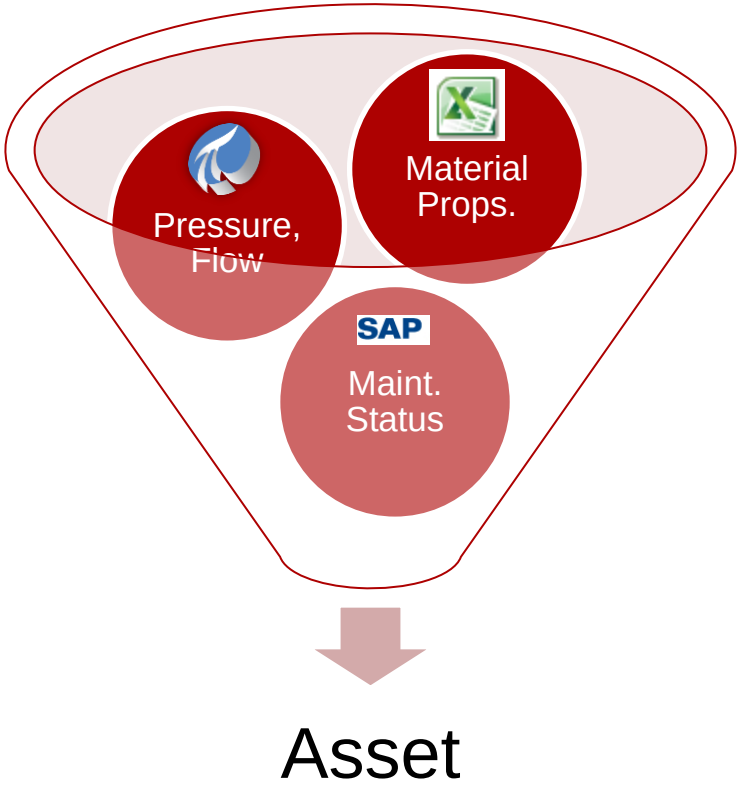


Add Value to your PI System

- 

Add Value to your PI System

- **Tie asset properties to your data**
  - Static values, PI Tags from multiple PI Servers, static or linked Tables
  - Custom data references to other data sources

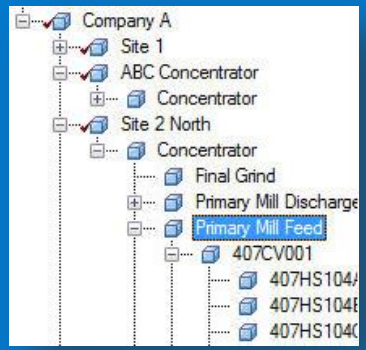


Contextualization

- PI AF provides a **configurable and flexible data abstraction model** to help different users **easily find information** they need to make decisions

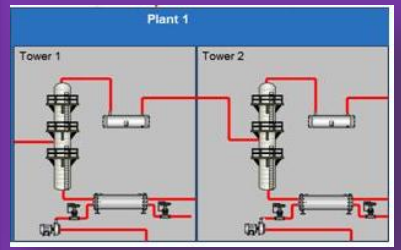
PI AF

Physical / Logical



Element Hierarchy

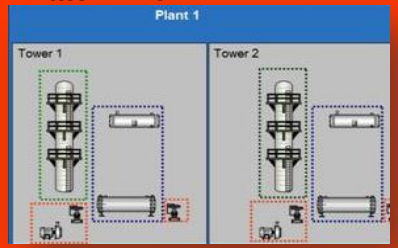
Process Connectivity



Models

Role

Pumps
Used in Report
Critical Parameters
Batch Info

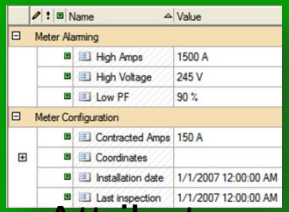


Categories

Event / Time

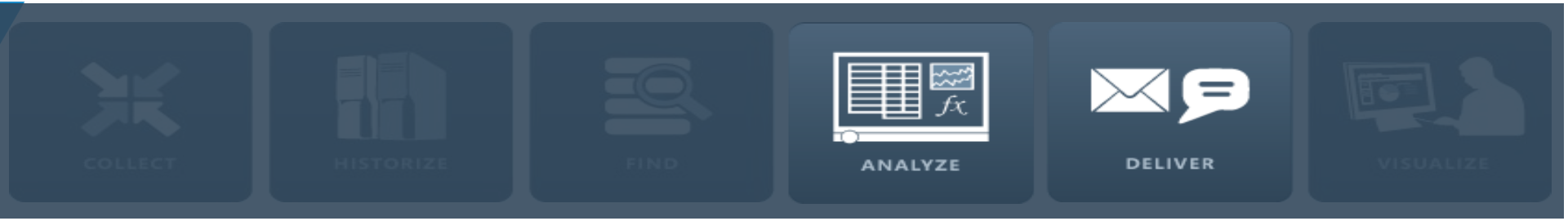
Event Frames

Associated Info



Attributes

PI Notifications



- Architecture
- Base Concept
- Use Case

PI Notifications

- Filter and analyze the ever increasing data streams in real time
- Communicate important events to applications, systems and targeted audiences
- Leverage these events in the PI Client Tools for further analysis

The Context

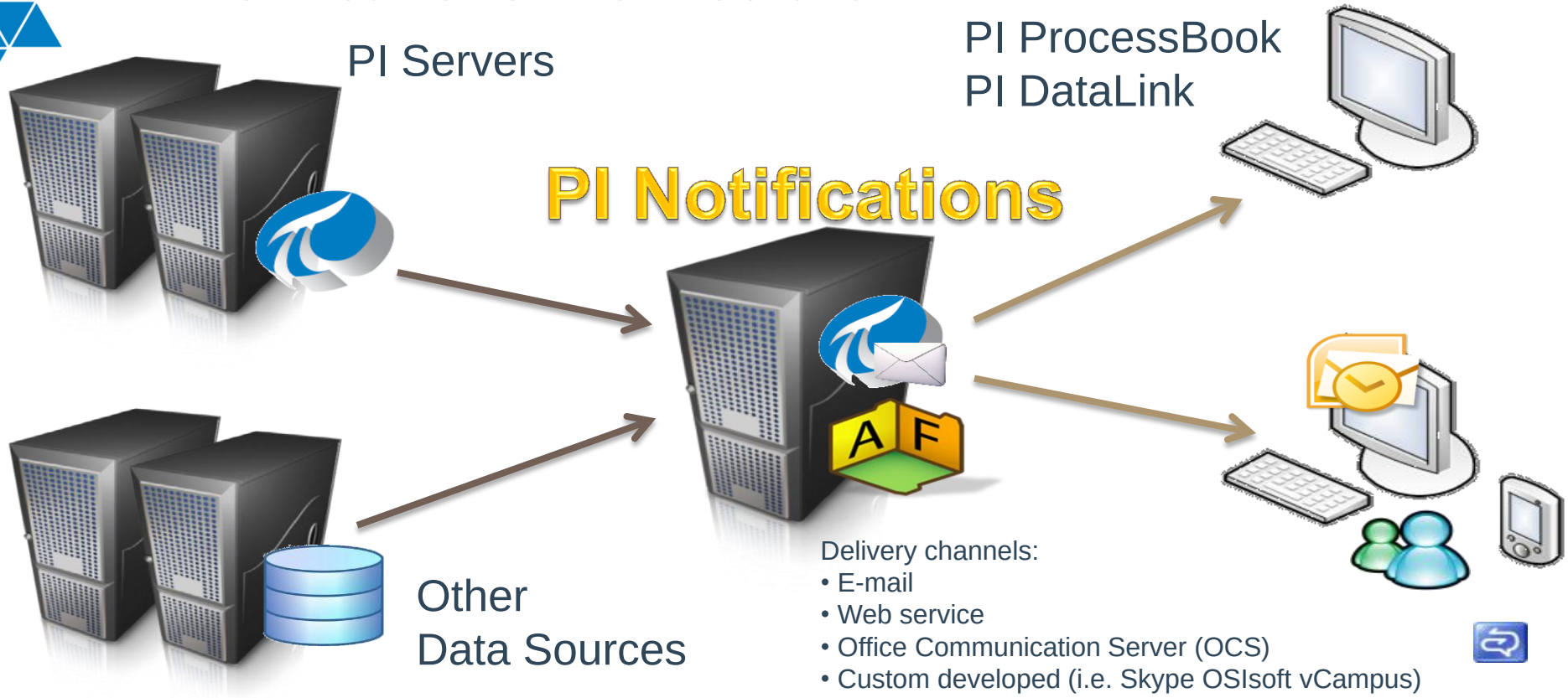
Temperature is too high

Burning money!

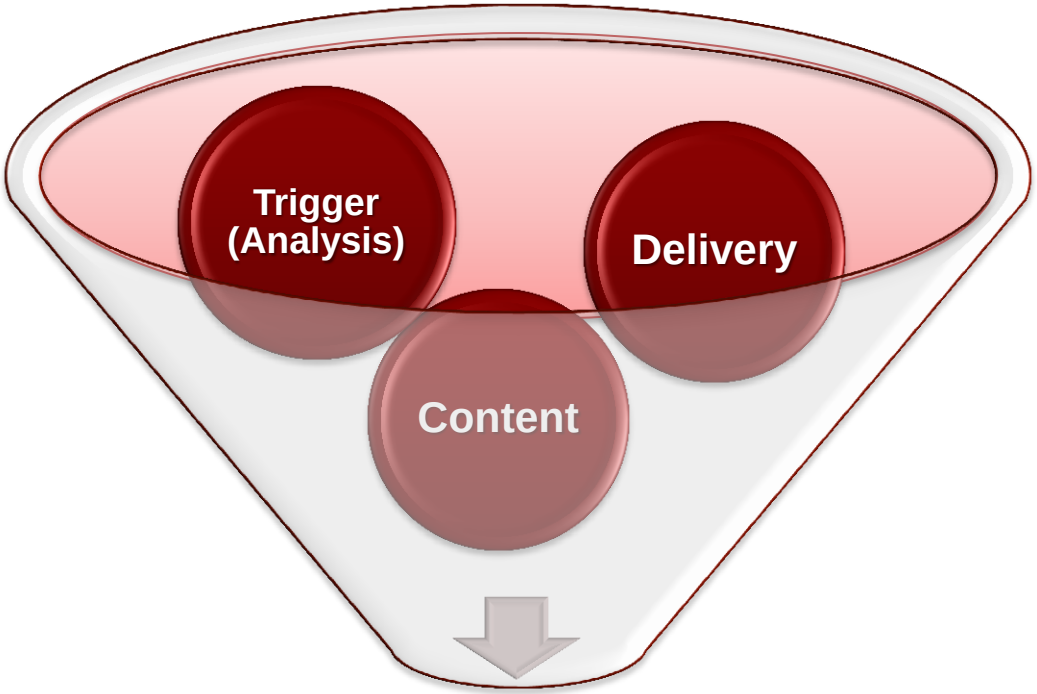
Pressure is critical

High operating cost

PI Notifications Architecture

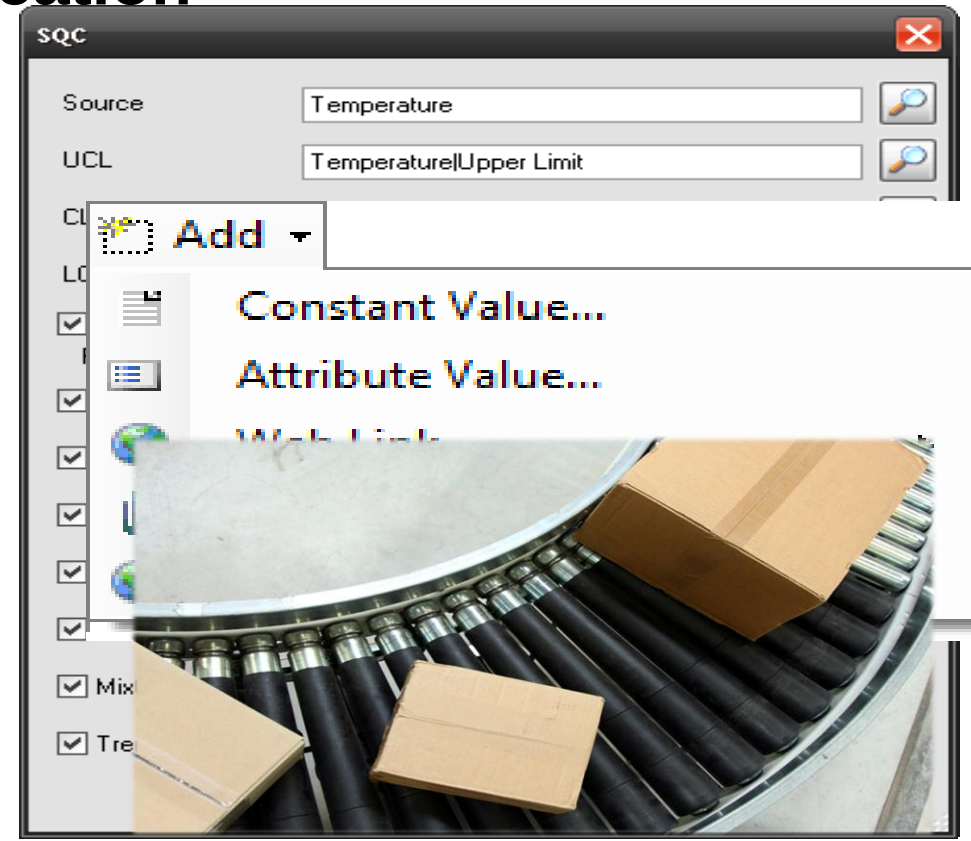


Base Concept of a Notification



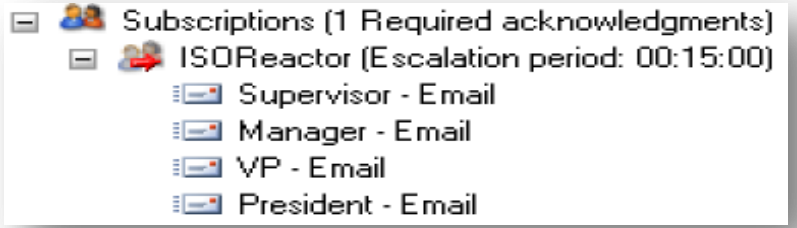
Base Concept of a Notification

- Trigger Conditions
  - Comparison
  - SQC
  - Performance Equations
- Content
  - Standard content of a notification
  - Additional configurable content to make problem solving and decision making processes easier
- Delivery
  - Provide the content to applications/systems/audiences
  - Delivery channels: e-mail/Web service/Office Communicator…

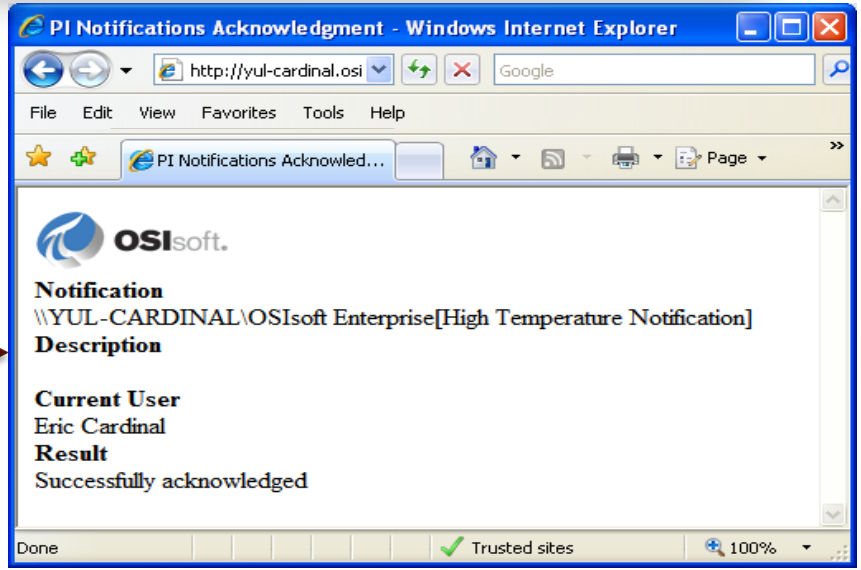


Additional features of PI Notifications

- Acknowledgement
- Escalation team
- Persist history of triggered conditions, duration, acknowledgement method and comments
- Notification template

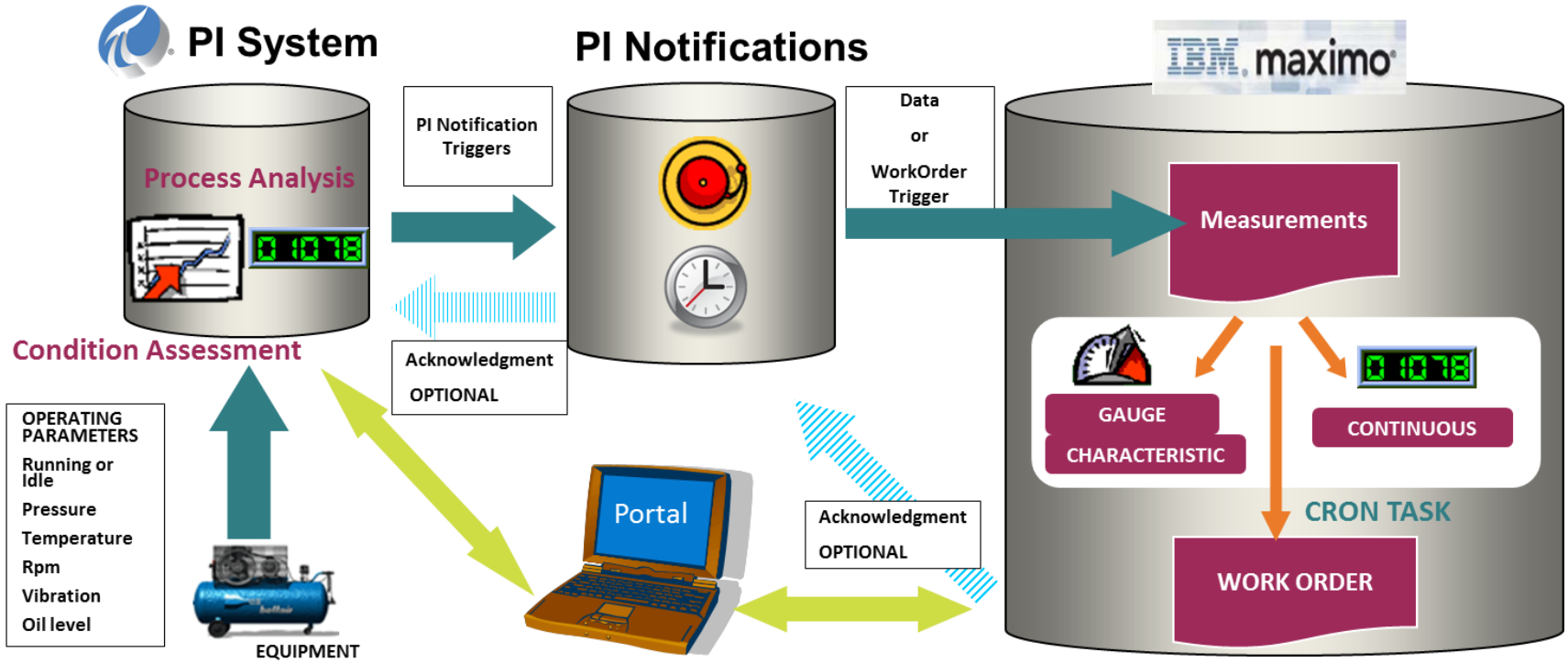


Actions:
Acknowledge
Acknowledge with comment



Automating the transfer of data from the plant-floor up to enterprise-level systems such as SAP & Maximo, or vice versa.

PI AF, PI Notifications, PI Data Access



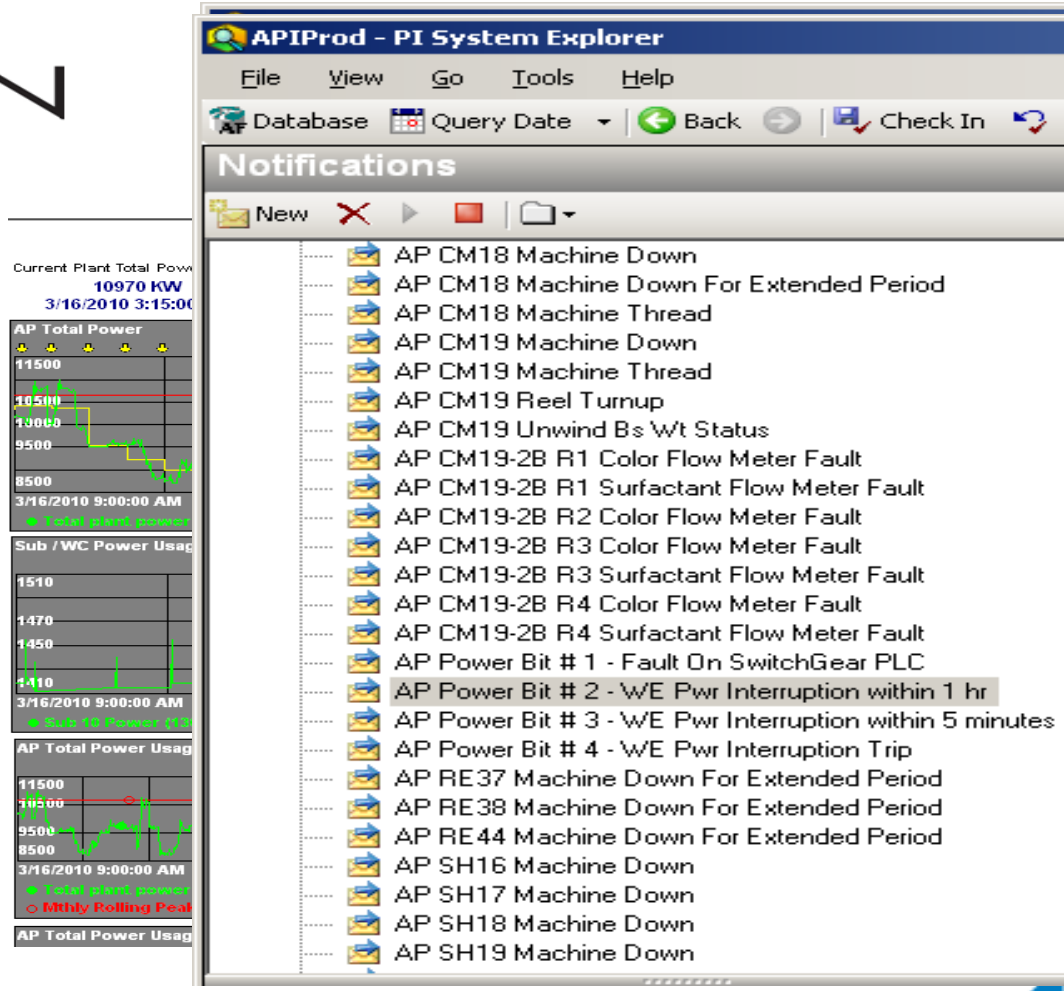
Case Study – Appleton Papers Inc.

- Focused on production of technical papers, performance packaging and encapsulation
- World's largest producer of carbonless paper
- OSIsoft products
  - 3 PI Servers with PI ACE
  - Centralized PI AF and PI Notifications server
- Practical approach
  - Exception management
  - Capitalize on employees knowledge and experience

APPLETON

APPLETON

- Energy management
- Supplier
  Wisconsin Energy (WE)
- Notification when power consumption reaches 90 % of known peak value
- Peak analysis
- Demand Response Program with WE
  - Cost reduction
  - WE can interrupt supply



Thank you