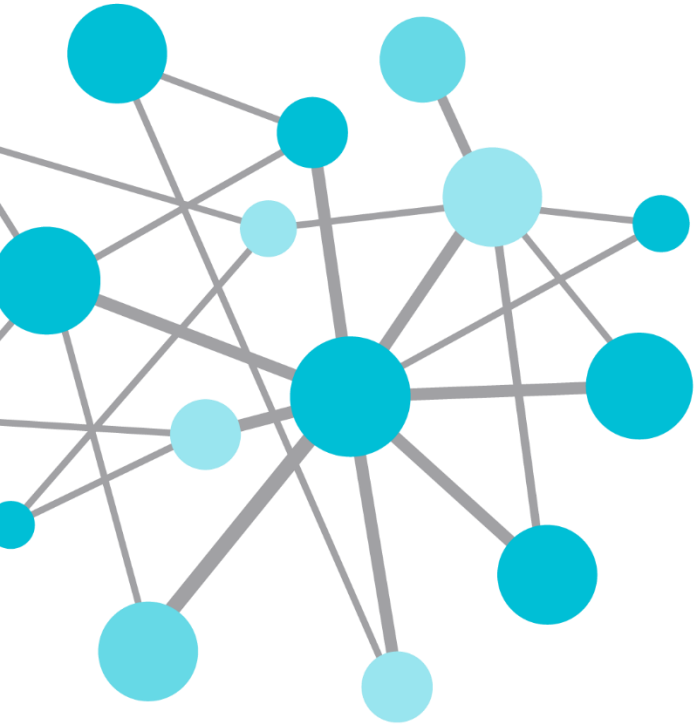


The Janssen Journey to One Enterprise PI System for Real Time Value

Presented by **Carl Van Laer**

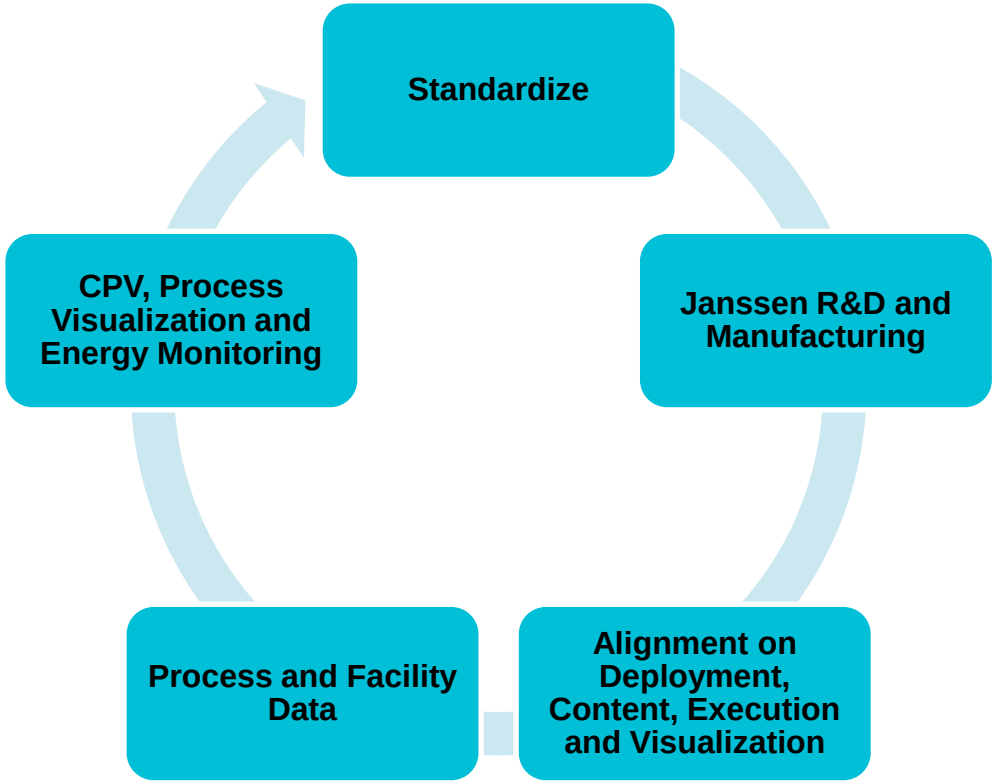
On behalf of Kevin Crean

Agenda

Introduction - SPIRIT & Standards

- Use Case #1 – Global PI AF and Process visualization
- Use Case #2 – Energy and Utility Monitoring
- Other Active Initiatives
- The Next Steps

What is SPIRIT?



- Drive the Use and Standardization of the PI System
- Janssen R&D and Manufacturing
- Alignment on Deployment, Content, Execution and Visualization
- Both Process and Facility Data
- Key enabler to initiatives like CPV, Process Visualization and Energy & Utility Monitoring

SPIRIT Scope

Standardize **Content**	• Naming Conventions • PI AF Templates and Structure
Standardize **Execution**	• PI Interfaces • Maintenance, Support and Governance
Standardize **Visualization**	• Process Visualization and CPV • Energy and Utility Monitoring
Standardize **Deployment**	• Architecture • Qualification

SPIRIT Vision

Integrated Data Management

Continued Process Verification
- Automated Data Collect
- Multiple Sources/ One Solution
- CQA's
- CPP's

Efficiency
- Batch Reporting
- Automatic Data Capture
- Energy Monitoring
- Batch Cycle Time Analysis
- Lean Team Integration

One PI
One reliable source of integrated data, available anywhere, anytime, to anyone

Standardise | Enable | Implement

Globally
to add significant Business Value

Design to Value

Visualisation
- Real Time & Historical
- Standard Process Graphics
- Standard Energy & Utility Graphics
- Standard Asset Structure

Process Analytical Technology (PAT)

JSC RELIABILITY

Agenda

- Introduction - SPIRIT & Standards
- **Use Case #1 – Global PI AF and Process Visualization**
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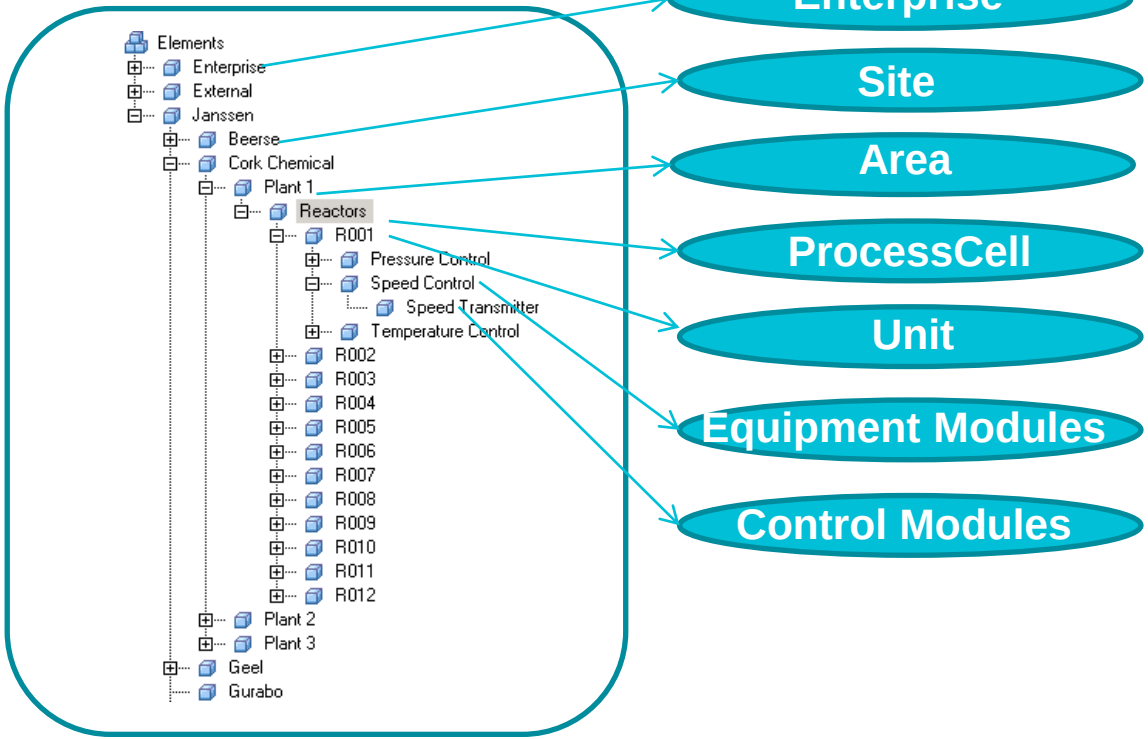
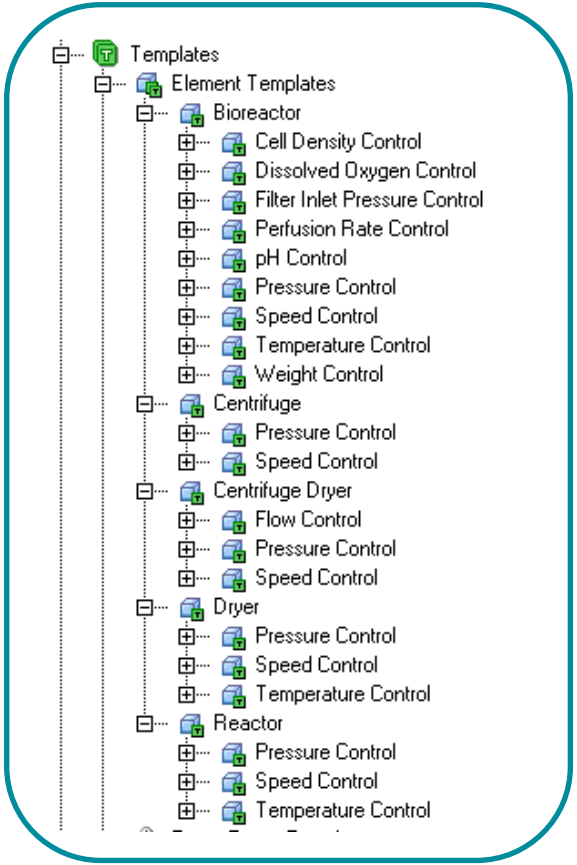
Global PI AF and Process Visualization – Define the Standard

PI AF Database ISA-S88 Model

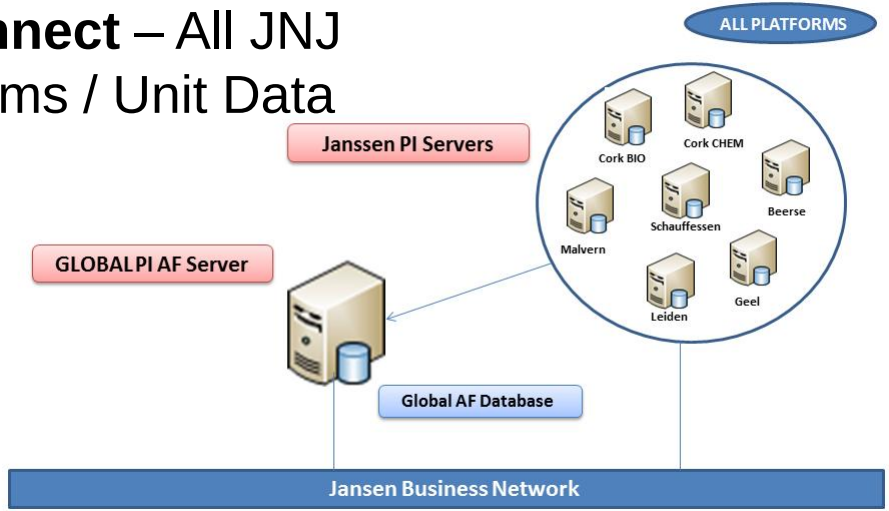


- **Connect** - Standardizing Groups for CPV, Recipe Delivery and Execution Systems
- **Connect** - Business and Technical Owners
- **Review** - Platforms: Small Molecule, Large Molecule, Solids, & PDMS
- **Identify** - Key Unit Types and Unit Process Parameters

Global PI AF and Process Visualization – Implement Global PI AF

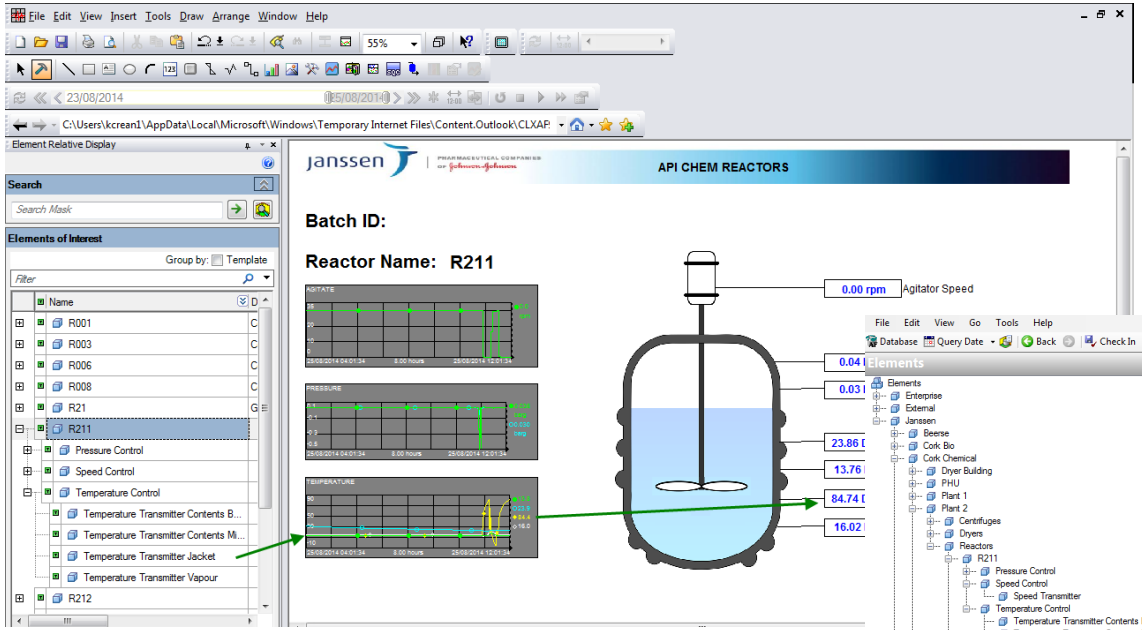


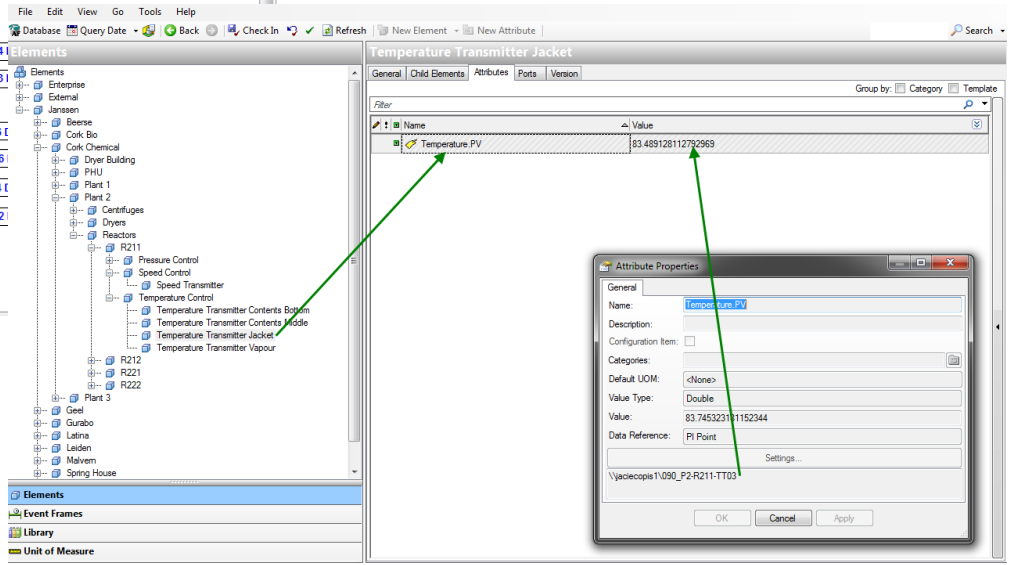
- **Global Server** – Create a Global Asset Framework DB
- **Implement –** Global Unit Templates and PI AF Element
- **Interconnect** – All JNJ PI Systems / Unit Data



Global PI AF and Process Visualization – ProcessBook Displays & Connectivity

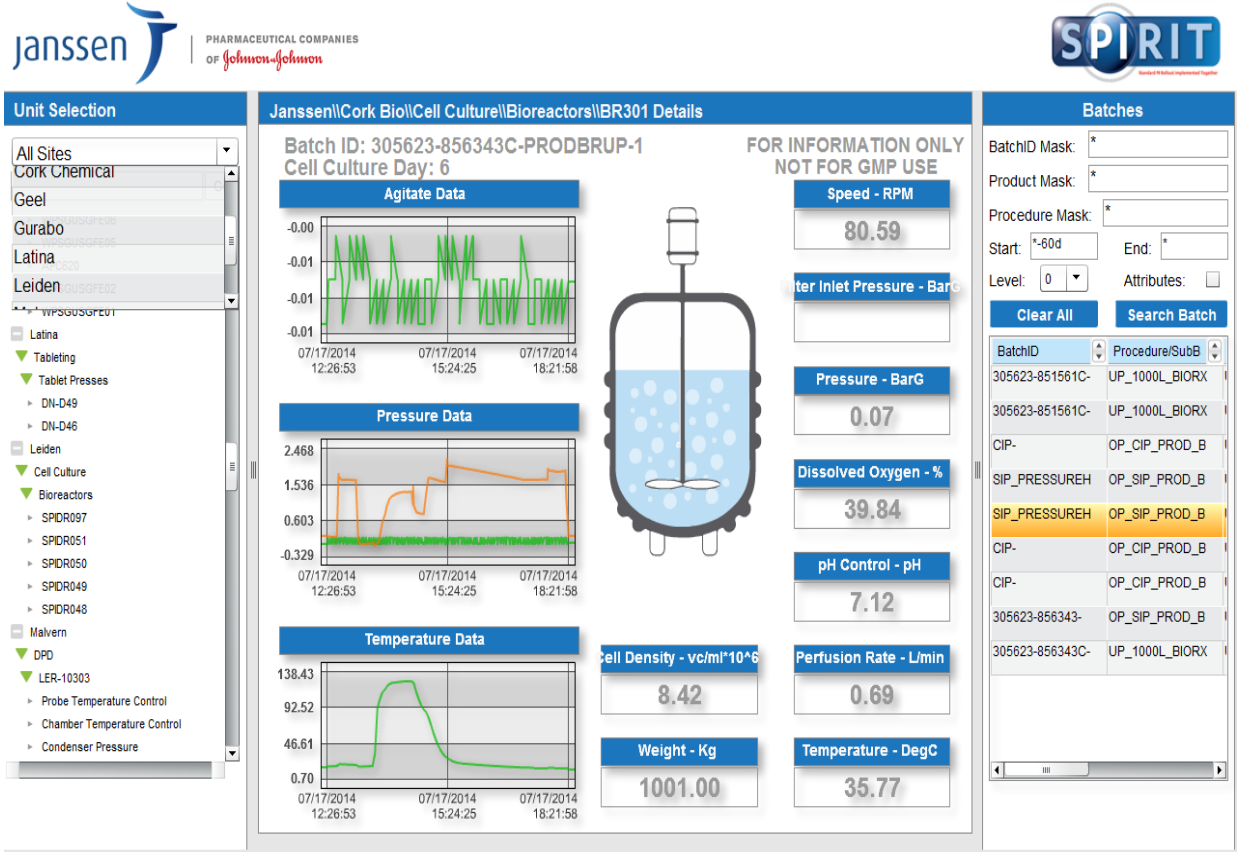
- **Integrate** – ProcessBook Displays – Local / Remote Site Read Verification





- **Global**– PI AF Interconnectivity Established – Read Data on any JNJ PI System

Global PI AF and Process Visualization – Final Livepoint Displays



- **Livepoint –** Web Based PI Client Tool
- **Templates –** One View for each Unit Class
- **Any Unit –** Reactor, Press, Dryer, Coater, Blender, etc
- **Any Platform –** API Chem, Bio, R&D

Global PI AF and Process Visualization – Key Functions/ Benefits

VISUALIZATION	• User can select any unit across any site and visualize the data in real time, historically or across any number of batches, including multiple batch comparison
LAB Vs PRODUCTION	• Lab Unit process performance can be easily compared to equivalent manufacturing performance
DYNAMIC DISPLAYS	• Livepoint Application is dynamically linked to Global PI AF DB. When DB is updated, visualization screens auto refresh with applied changes
SCALABILITY	• Addition of new units or new sites is simple and carried out on PI AF only.
Location Independent	• Data from PI Servers across the globe is visualized from anywhere on one simple application. One PI AF interconnects the enterprise data.

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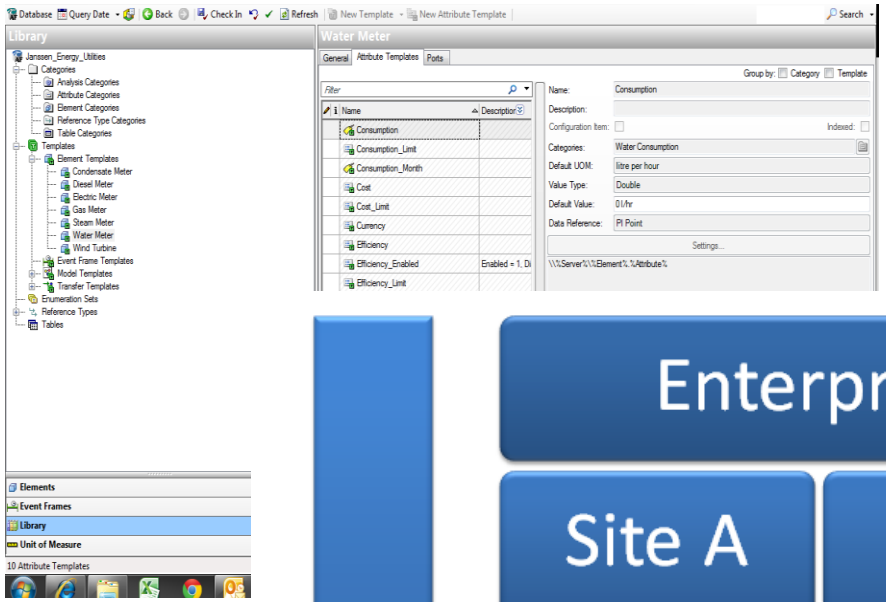
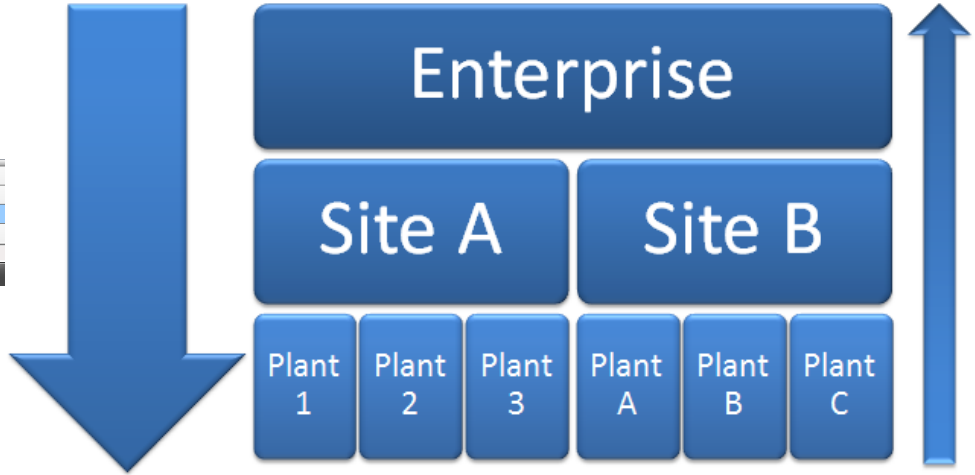
Energy & Utility Monitoring – Hierarchical & Template Approach





Recreate – Leverage templatized approach used for Process Visualization

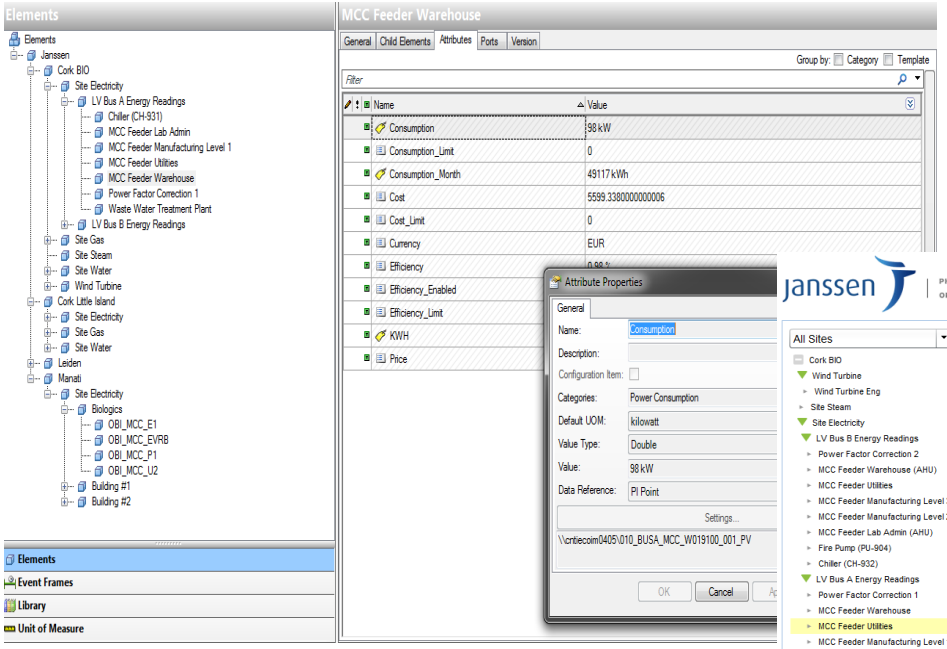
Reuse – Utilize same designated global PI AF Server

Connect – Facility Owners, Energy Campus Groups and ISO Approved Energy Sites

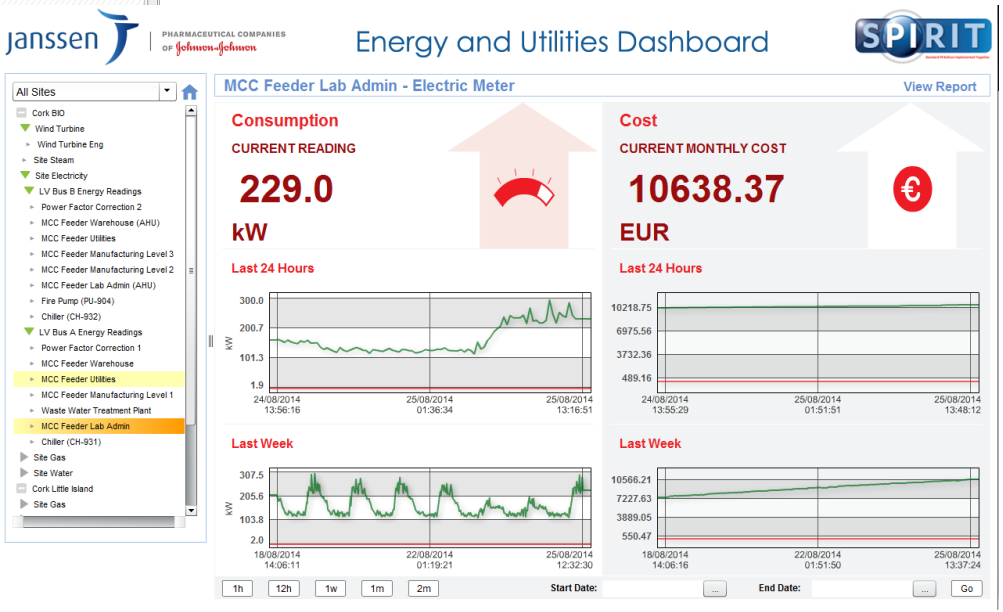
Review – Local requirements at site level and align with global business energy initiatives

Identify – Meter types and establish templates

Energy & Utility Monitoring – Link PI AF Elements with View Templates

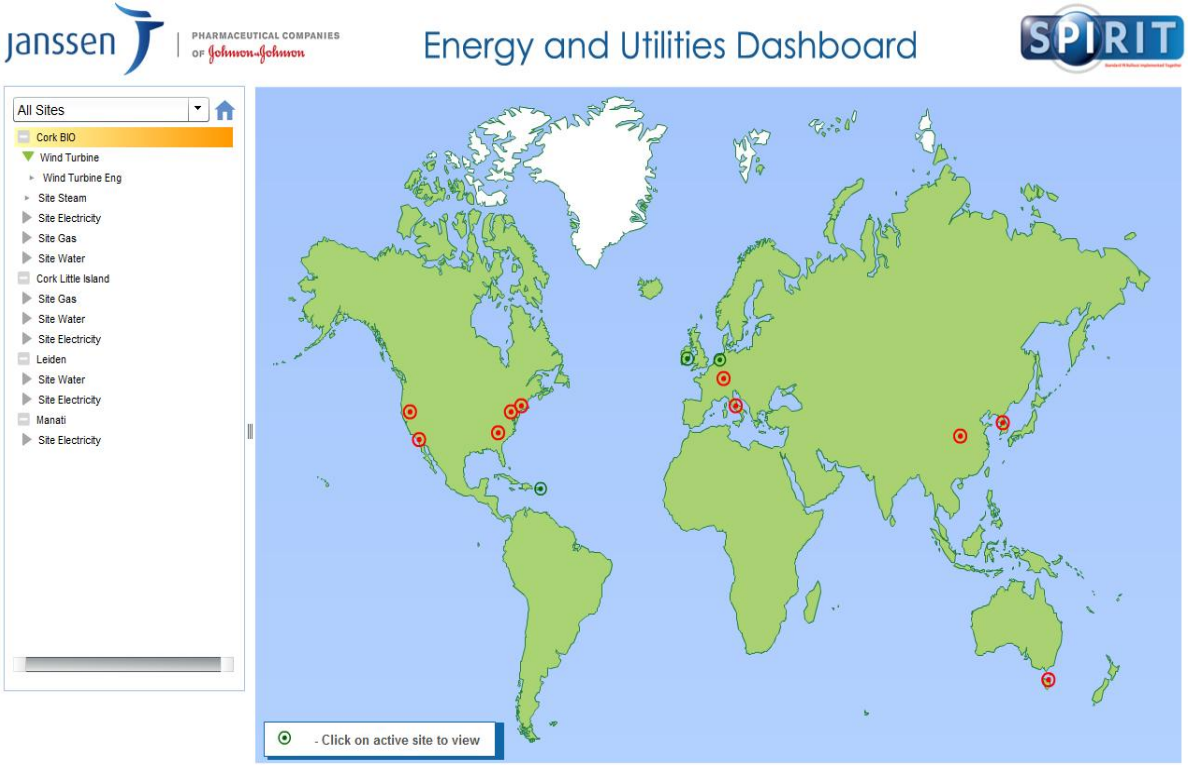


- **Meter View** – One View for all meters: Electrical, Gas, Water, N_2, etc.



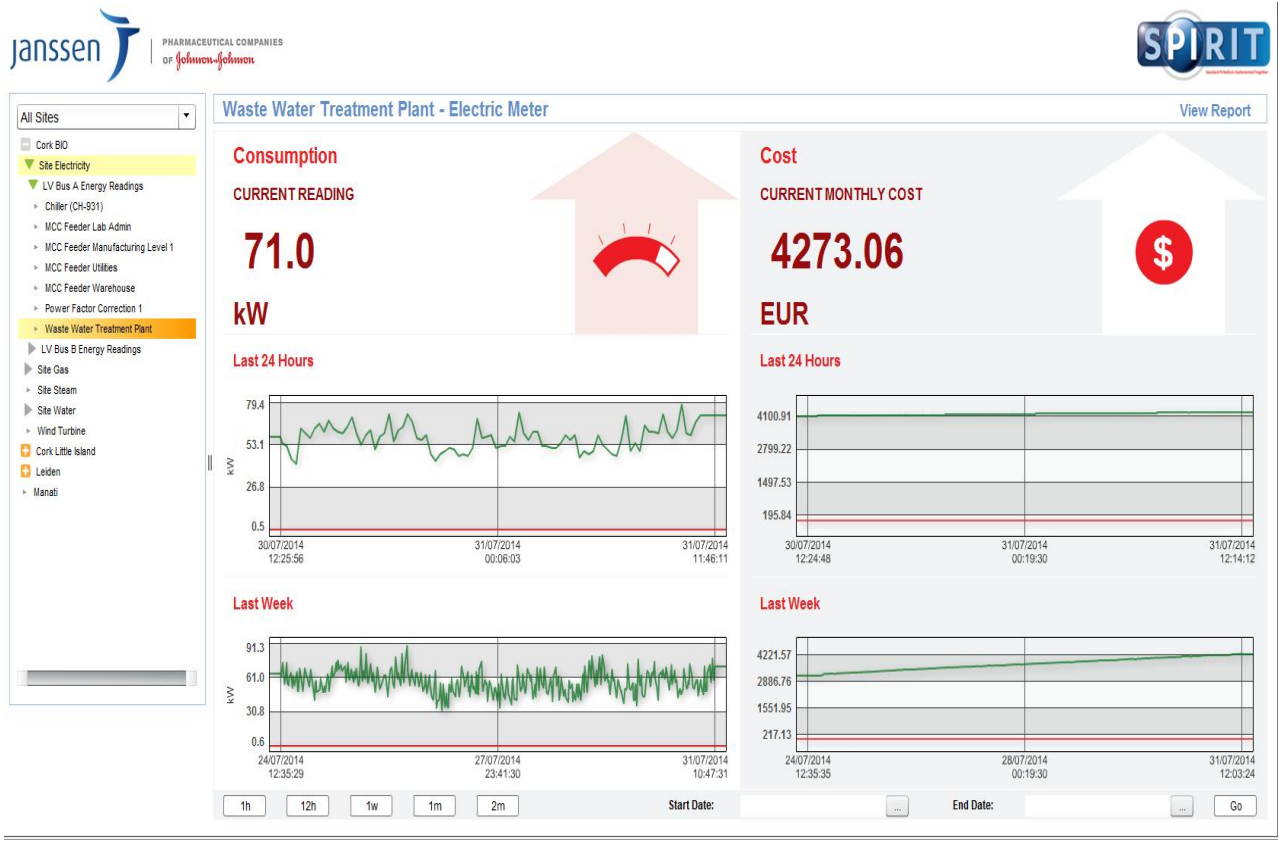
- **Global** – All PI Servers across Enterprise linked using Global PI AF

Energy & Utility Monitoring – Global Enterprise Solution



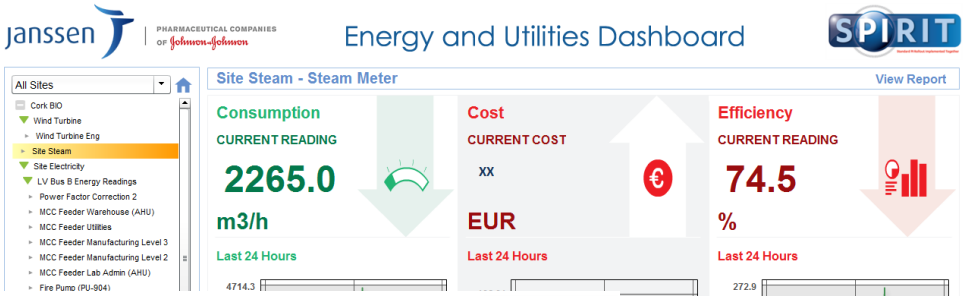
- **Enterprise –** User access to all sites running on system
- **Web link –** One link for all user, both global and local
- **Scalable –** Several sites identified for integration.

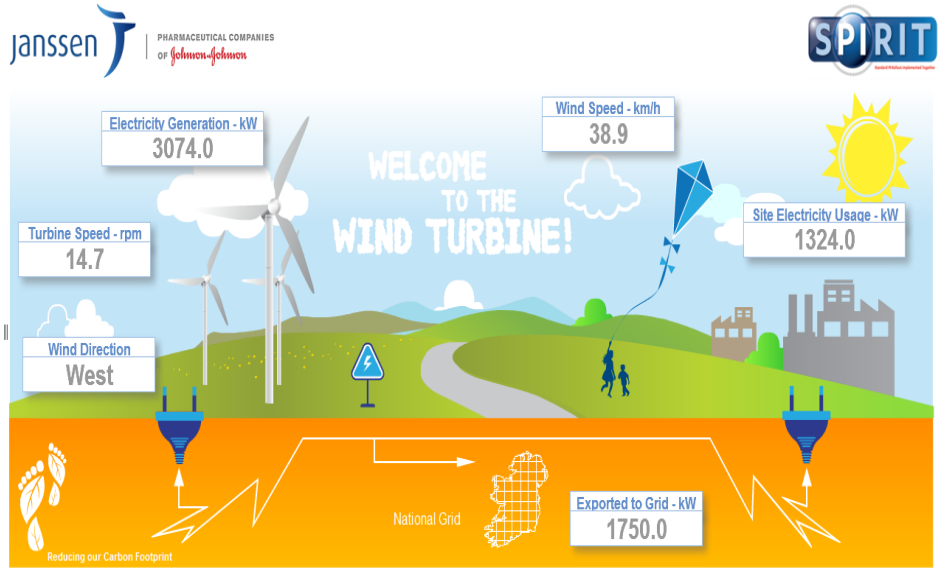
Energy & Utility Monitoring – User Interaction



- **Interaction –** Access any meter/ any site on PI System
- **Trends –** Full Trend interaction. Real time and historical
- **KPIs –** Integrated Metric and Limit capability
- **View –** Every meter at every site in the same way

Energy & Utility Monitoring – Scalable and Flexible





- **Metrics** – Rolling Efficiency Calcs, flexible formulae, tag integration.
- **Views –** Front End Public Views and Engineering Views
- **Reports –** Capability to report contributors based on cost or consumption
- **Green –** Energy Contributor Templates – Wind Turbine

Energy & Utility Monitoring – Key Functions/ Benefits

VISUALIZATION	• See any meter on any site in the same way
ENERGY REVIEW	• Real-time and historical data review functionality
DYNAMIC DISPLAYS	• Livepoint Application is dynamically linked to Global PI AF DB. When DB is updated, visualization screens auto refresh with applied changes
SCALABILITY	• Addition of new meters or new sites is simple and carried out on PI AF only = Process Visualization approach
Location Independent	• Data from PI Servers across the globe is visualized from anywhere on one simple application. One PI AF interconnects the enterprise data.

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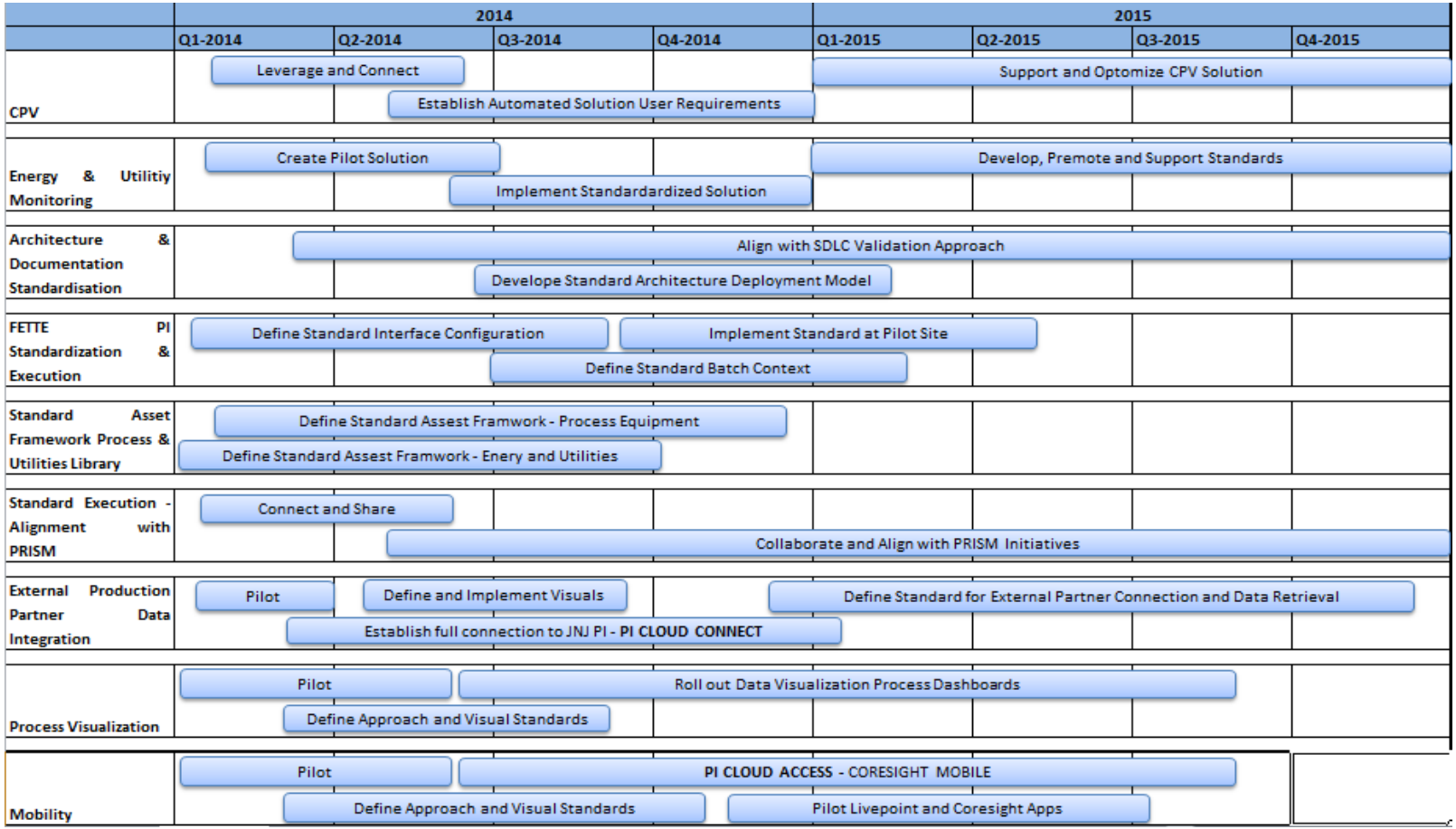
Other Active SPIRIT Initiatives



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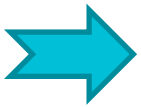


The Next Steps

The Next Steps

- Further collaboration with Technical and Business Systems Owners and establish integration of Standard PI AF and **Process Visualization** with Business Processes.
- Collaborate with Global Energy Owners and begin roll out of **Energy and Utility Monitoring** Solution to additional sites with PI System implemented.
- Connect with OSIsoft Technical Team and 3rd Party Manufacturers to complete implementation of **PI Cloud Connect** application. Integrate with Process Visualization Solution.
- Complete external access using **PI Cloud Access** and **Mobile Solutions** technology.
- Complete development of JNJ PI Playbooks & Standard Deployment Templates.

Benefits of standardization

- Standardized PI System deployment & validation
  - 50% of the cost for server deployment / validation
  - Deploy visualization of new equipment / meters in minutes (when tags are available)
  - No software needs to be installed locally; no modifications need to be made sto software to visualize new components
- Standardized visualization
  - Enables a user works across products / enterprise
  - Is a requirement for batch comparison across the enterprise
- Energy management
  - Data is visualized across the globe – consolidation on enterprise level
  - Created at ISO 500001 certified sites
  - Compare appels with appels – standard calculations/view

Carl Van Laer

- CVLAER1@its.jnj.com

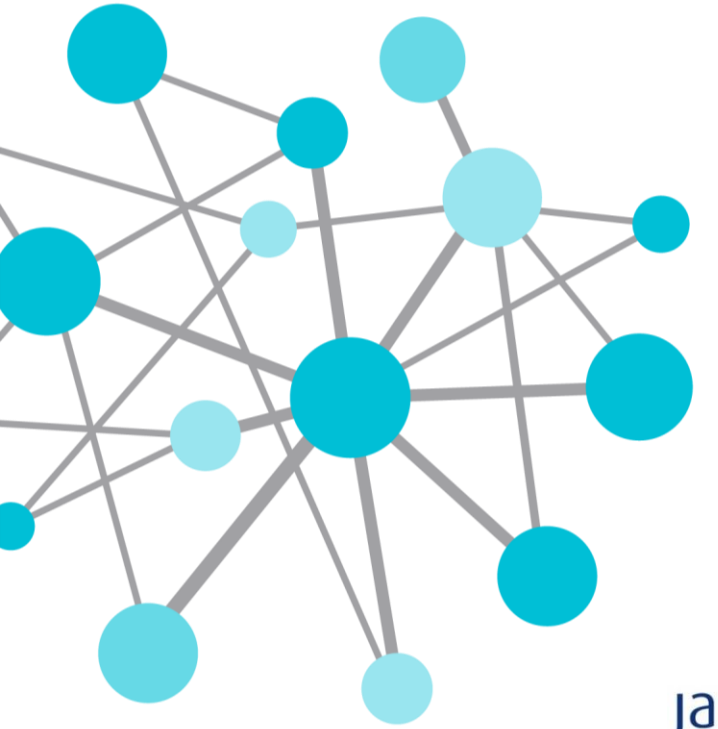
- IT MANAGER MANUFACTURING SYSTEMS

- JANSSEN SUPPLY CHAIN IT

Questions

Please wait for the **microphone** before asking your questions

State your **name & company**



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