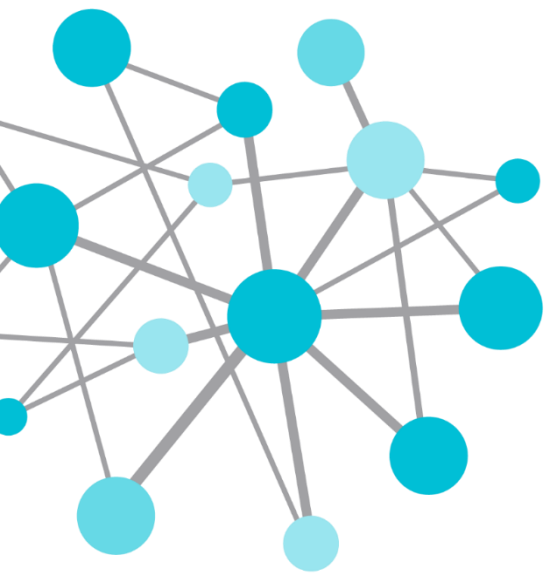


OSIsoft®

# REGIONAL SEMINAR 2014

The **Power** of **Data**

DECISION READY IN REAL-TIME



# PI System @BASF

## Past, Present & Future

Presented by **Geoffery Thornton, Automation / Process Control Engineer**  
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# Agenda

- About BASF
- Landscape and history of the PI System @BASF
- Use of the PI System @BASF
  - Past
  - Present with use case
  - Future
- Questions

# About BASF Corporation

- BASF Corporation is the North American affiliate of BASF SE, Ludwigshafen, Germany.
- BASF is the world's leading chemical Company
- 14 operating divisions arranged into 5 segments

» Chemicals	» Inter-mediates	» Monomers	» Petro-chemicals		
» Performance Products	» Dispersions & Pigments	» Care Chemicals	» Nutrition & Health	» Paper Chemicals	» Performance Chemicals
» Functional Materials & Solutions	» Catalysts	» Construction Chemicals	» Coatings	» Performance Materials	
» Agricultural Solutions	» Crop Protection				
» Oil & Gas	» Oil & Gas				



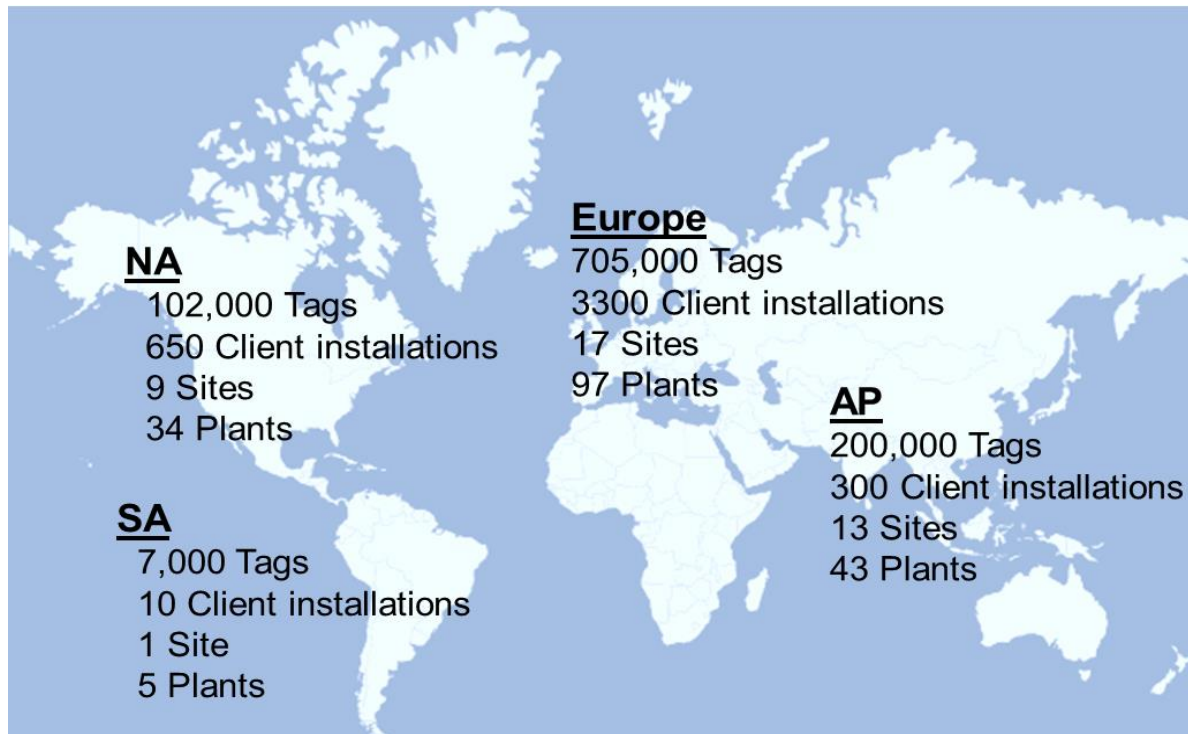
# BASF Footprint

Over 112,000 employees  
at nearly 400 production  
sites worldwide.

~17,000 employees in NA

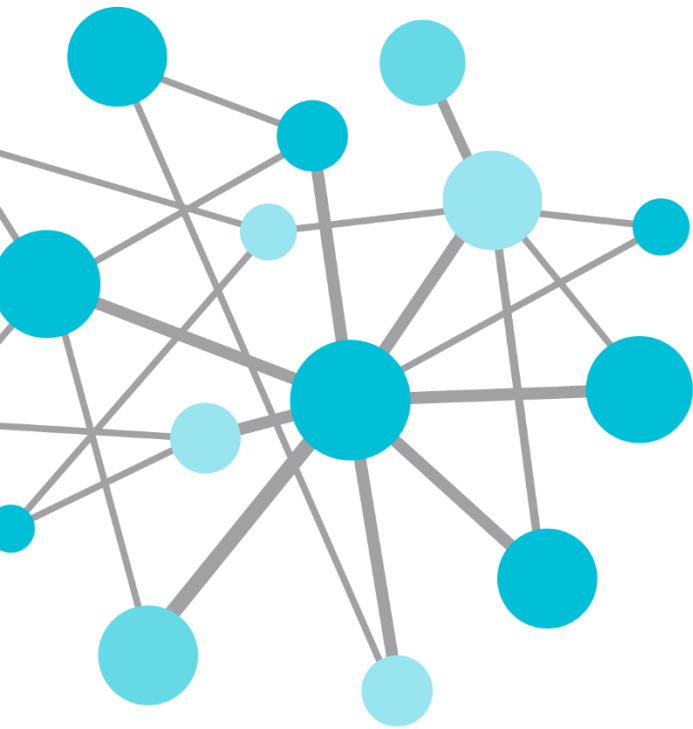
# Landscape and History

- The PI System is one of two approved solutions @BASF
- Installations date back to mid 90's
- Popular choice among acquired companies.
- >1 Million tags
- ~3300 users
- ~115 Servers
- Very reliable



# Evolution of the PI System in BASF NA

- The PI System in BASF Corporation (North America) has increased mainly due to acquisitions over the last 10 years:
  - Engelhard | Ciba | Cognis | Verenum
- Many challenges  $\Rightarrow$  many thoughts  $\Rightarrow$  many solutions



# PI System @BASF: Past



# PI System @BASF: Past



- **PI ProcessBook**

- Process optimization
  - Predefined templates for batch comparison
  - Global harmonization of like processes
- DCS Graphic Emulation
  - Production engineer's & manager's window to process
  - Generating FDS documentation

- **PI DataLink**

- Batch sheets / shift change support
- Daily reports (reduce hands in the DCS)
- Yield calculations
- Downtime reports
- Heat exchanger fouling prediction

# PI System @BASF: Past



- **PI ACE**

- Plant utility consumption calculations and daily usage closure

- **Performance Equations**

- Rolling averages (hourly, daily, etc.)
- Support for PI Batch Generator
  - Create triggers for batch active
  - Step support

# PI System @BASF: Past

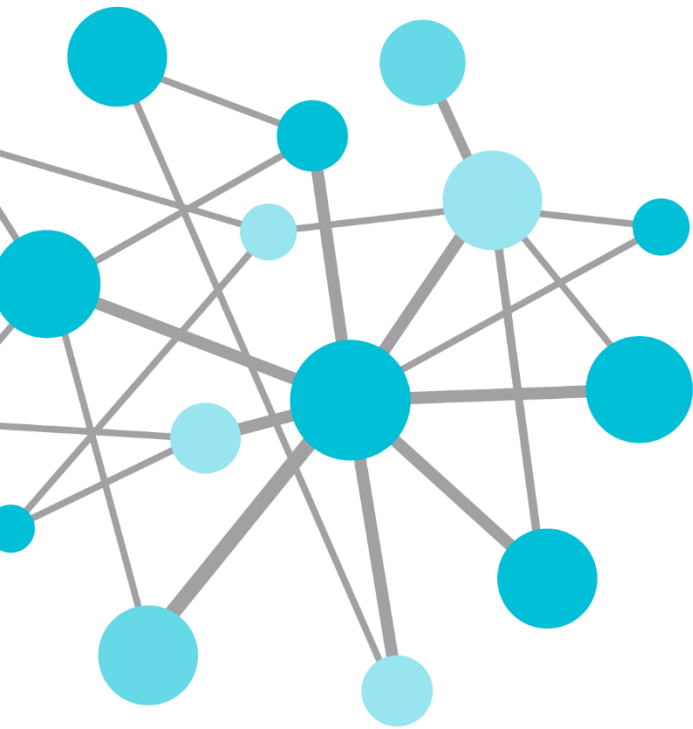


- **PI Batch**

- PI Batch interface with S88 compliant DCS installations
  - Detailed batch comparisons
  - Process optimization
  - Asset effectiveness data collection
- PIBaGen
  - PI Batch support for non S88 batch implementations
  - Asset effectiveness data collection

- **Custom Scripting**

- Detailed batch analysis
- Batch profile diagnostics
- Asset effectiveness data collection
- Downtime reports
- Alarm system performance monitoring for legacy DCS.

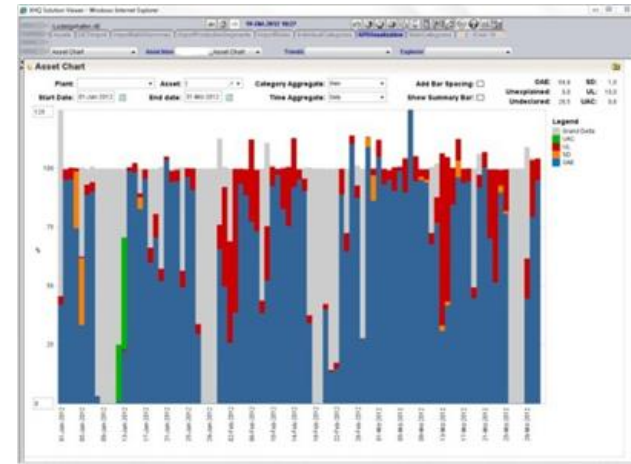


# PI System @BASF: Present

# Asset Effectiveness (AE) Data Collection

Leveraging OSIsoft PI System to allow engineers to go stay at home on the weekend and still meet corporate reporting requirements for asset utilization.

In addition to specific reporting requirements, the method of reporting to central database



## Business Challenge

- Global corporate requirement for reporting specific data related to asset utilization.
- Accurate manual data collection / input creates additional burden at sites.

## Solution

- Leverage OSIsoft PI System to collect required data:
  - PI Batch Database
  - PI Batch Generator
  - Advanced PI System tools

## Results and Benefits

- Reduced time required for AE data collection.
- Improved AE Data accuracy
- Improved transparency for asset utilization

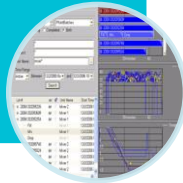
# First Challenge – Data Collection

- Specific data
- Reporting format
- Existing tools inadequate
- Sites not prepared to collect & report as required
- Need consistent solution

# Solution: Leverage the PI System toolset

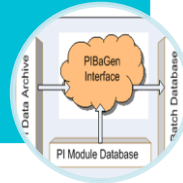
- S88 compliant systems
- Training & implementation
- Benefits well beyond AE!

## PI Batch interfaces



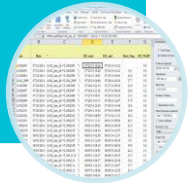
- PI Batch for non S88 compliant systems
- Similar strategy and benefits to standard PI Batch Interfaces
- **Performance Equations to the rescue!**

## PIBaGen



- Non S88 systems without PI Batch License
- Training and implementation
- Some work in DCS may be required
- **PINCompFilDat**

## PI DataLink

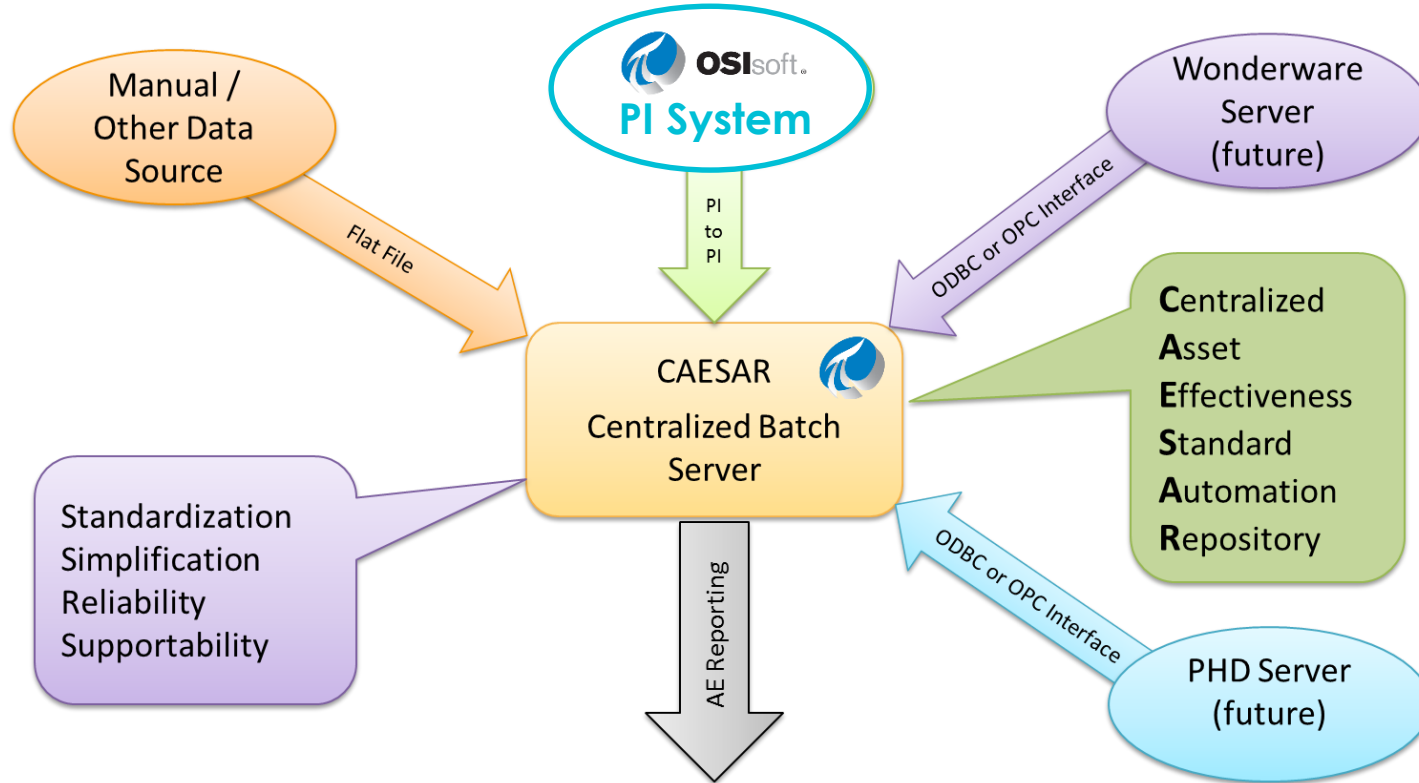


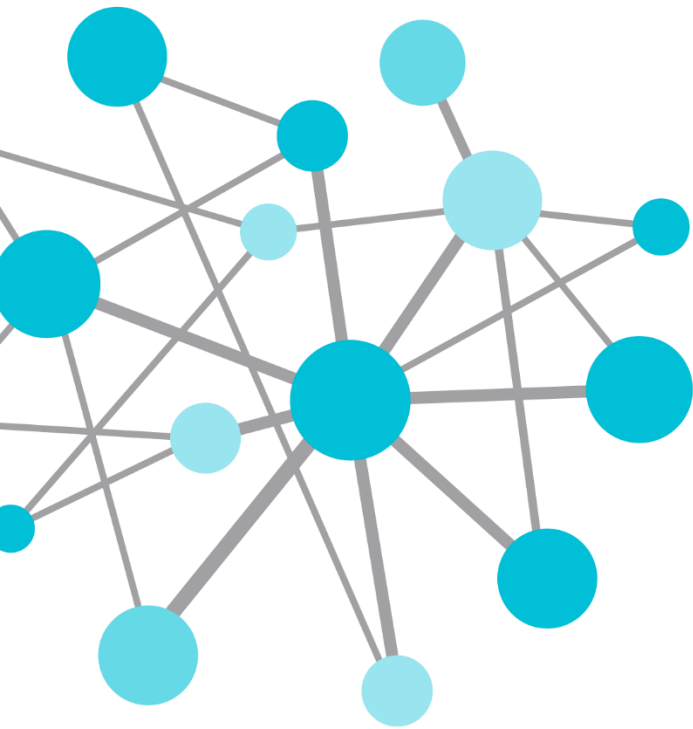
# Next Challenge – Database Population

- Evolving / custom built program
- Moving from Excel to Oracle hosted data
- Only format supported is **Batch** – PI Batch or equivalent
  - Many sites do not have PI Batch or the equivalent
  - Must maintain connections for 60+ sites to database in Germany



# Solution: CAESAR





# PI System @BASF: Future

# PI System @BASF: Future



- PI AF - Plants | Sites | Corporation
- PI Batch / PI Event Frames at all Batch sites using the PI System
- PI Notifications to replace home grown notification tools.
- PI Manual Logger to increase resolution of data not automatically collected



# PI System @BASF: Future

- PI ActiveView?
- PI Coresight?
- PI Webparts?
- PI Web Services?



# PI System @BASF: Future



# PI System @BASF: Summary

The PI System footprint @BASF has grown dramatically over the past 10 years due to acquisitions.

- With acquisitions, came many different approaches to common opportunities.
- Many of the solutions were “custom developed” for specific reasons

Additional functionality has been added over time, but not fully utilized.

- Lack of training or knowledge of the functionality
- Lack of resources to implement

The demands of operating in today’s market require Operational Excellence to thrive and even compete.

- Best practices
- Transparency

# PI System @BASF: Summary

Migrate from customized solutions to vendor solutions.

- Upgrade resilience
- Benefit from product roadmaps
- Let the experts develop the solutions

Consolidate the “many thoughts and solutions” to standardized solutions:

- Benefit from tools like PI AF
- Support Operational Intelligence initiatives

Develop multi-site user community to promote best practices.

- Standard solutions
- Advanced solutions
- Custom solutions where necessary
- Leverage the tools we've already purchased!

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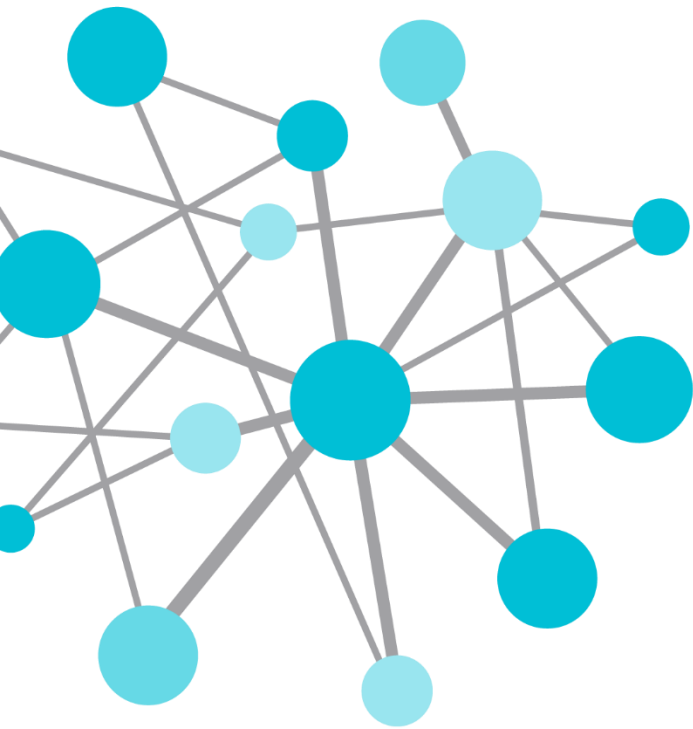
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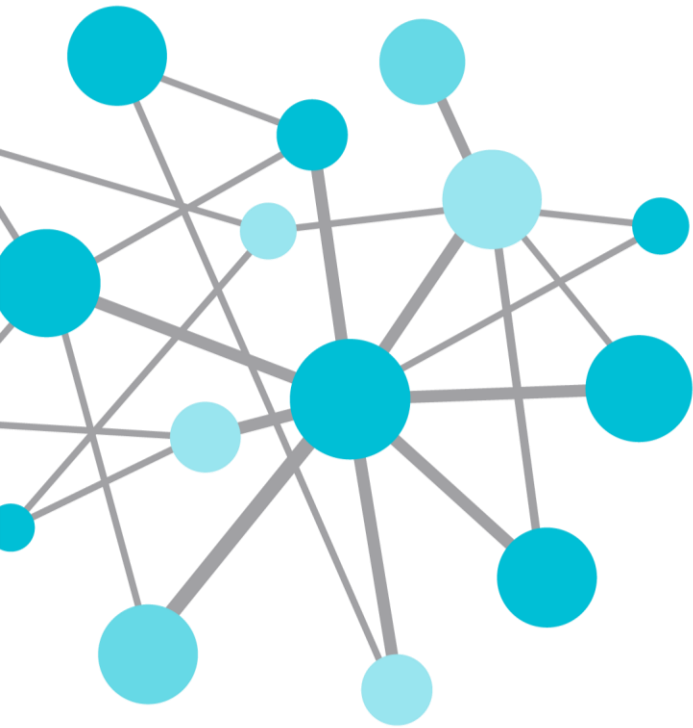


# Questions

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



**Please state your name  
and your company**



THANK  
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