

Best Practices in the PI System and Seeq Integration

“Better together”

Joanna Zinsli – Analytics Engineer



Seeq Overview

Application

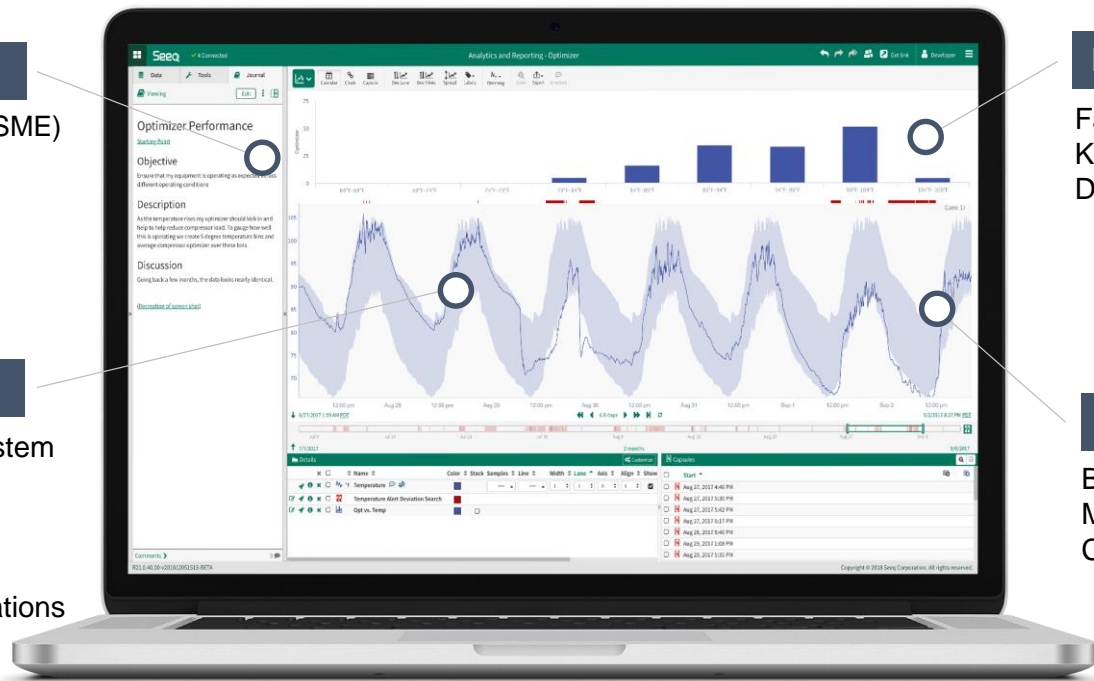
Subject Matter Experts (SME)
Teams and colleagues
Managers

Value from PI Data

Rapid install on the PI System

Use the PI System as the
system of record

Extensive integration with
PI AF, PI EF, & PI Notifications



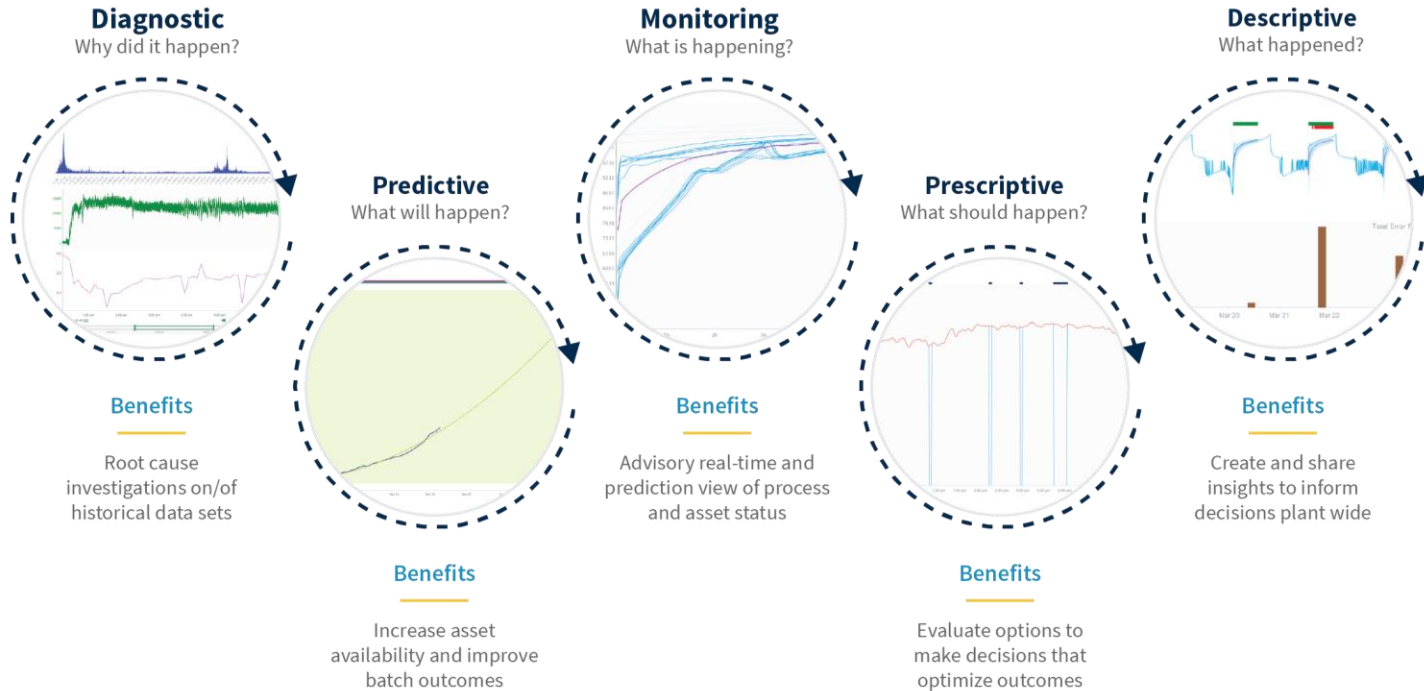
Impact

Faster insights
Knowledge capture
Dynamic reports

Advanced Analytics

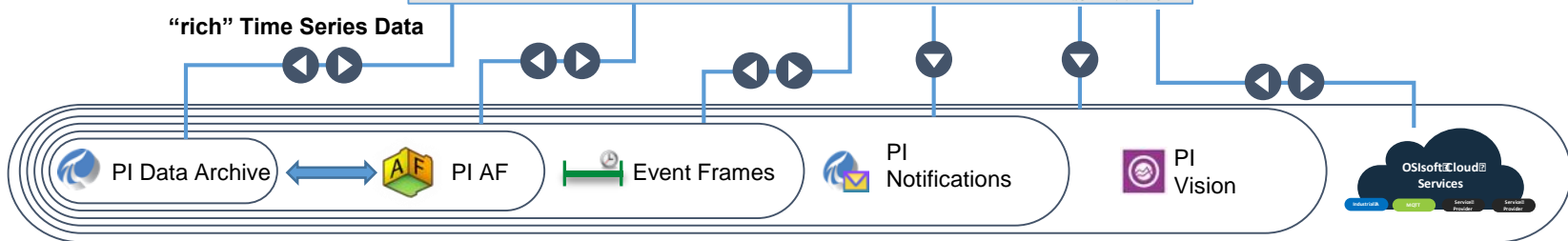
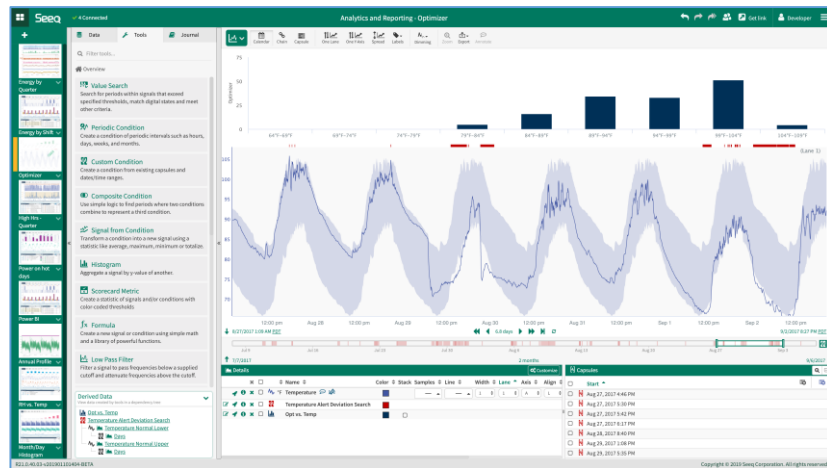
Big data
Machine learning
Cloud or on premise

Analytics Types

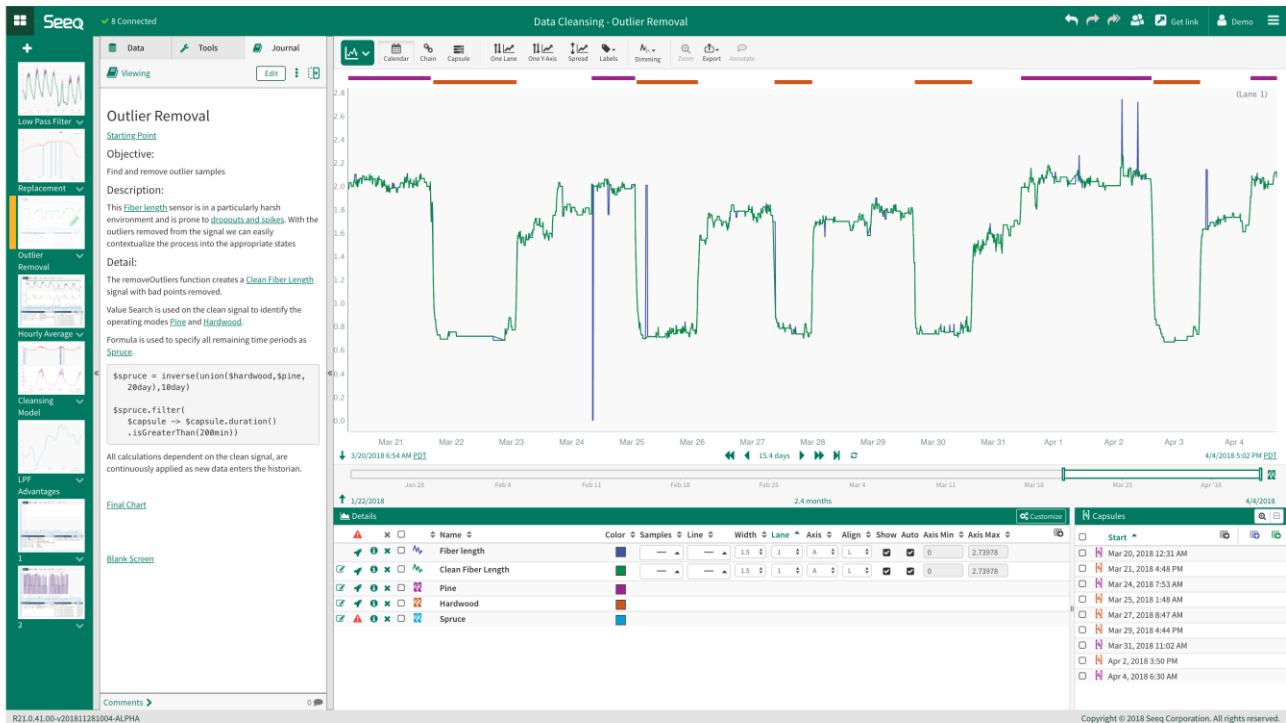


Advanced Analytics with the PI System

Deep Integration and Complementary Capabilities



Example - Data Cleansing in Seeq



Challenge

Process data is full of data integrity challenges – dropouts, noise, process downtimes, meter calibration

Solution

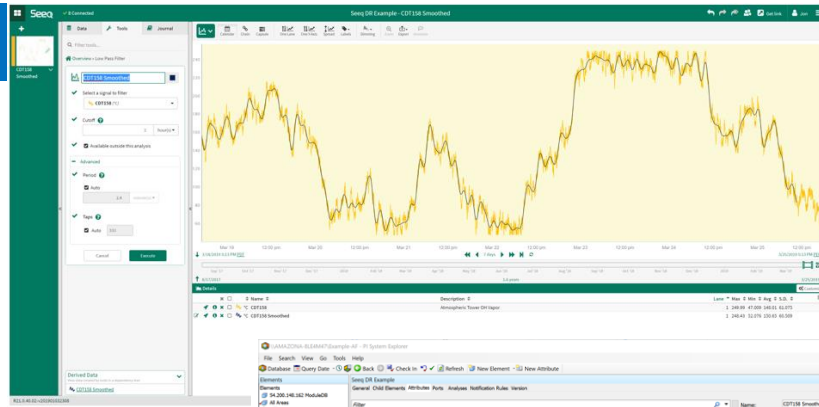
- Advanced algorithms in Seeq formula.
- Many ways to manipulate and adjust signals.
- Single application to a signal applies for all time.
- Extend by writing cleansed data back in the PI Archive to be used in PI AF and PI Vision

Impact

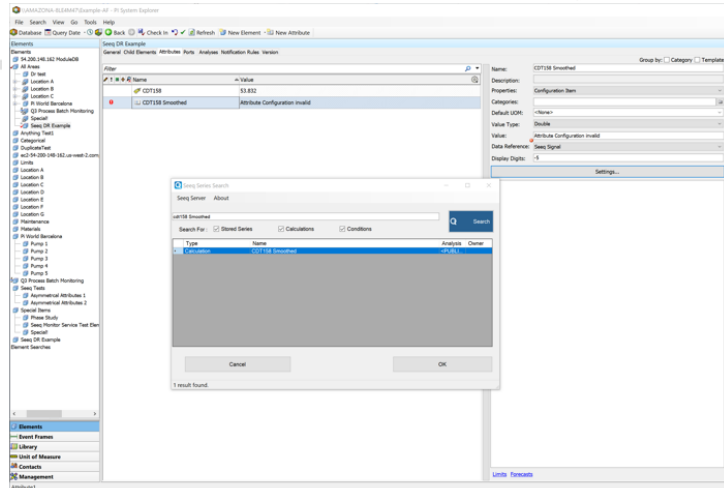
More accurate KPI reporting.
Simplified reporting workflows.

Writing Seeq Signals back to the PI System

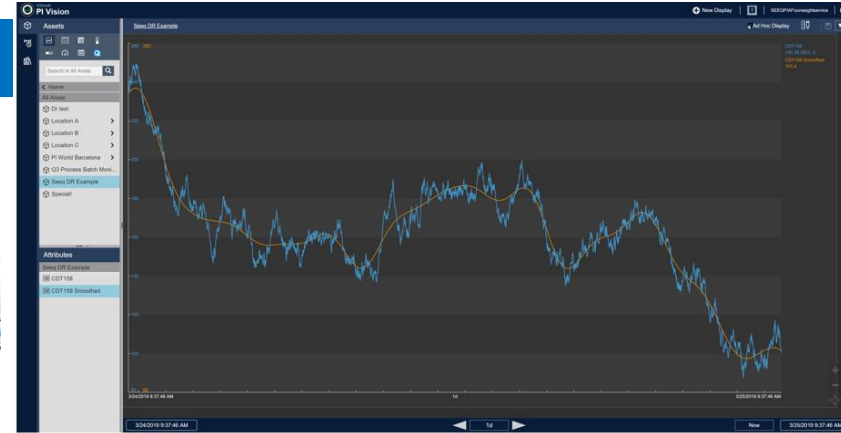
1



2



3



Impact

Make model results or cleansed signals available outside Seeq.

Advanced Asset Monitoring



Challenge

Identify when operating at high risk of salt deposition leading to accelerated corrosion in production assets

- Ex: Crude unit overheads, FCC fractionator overheads, hydroprocessing effluent trains

Solution

- Combine lab data and process data
- Calculate salt deposition temperatures, compare to limits
- Identify and visualize high-risk periods
- Utilize PI AF to scale & extend analytics
- Utilize PI Vision to “Operationalize”

Impact

- Minimize lost production from corrosion damages
- Minimize unplanned shutdowns
- Enable broader access to contextualized operational intelligence

Asset Monitoring: Daily Temperature Excursions

Yellow = Nominal Excursions

Red = Nominal Excursions Exceeding 20 Minutes in Duration

Example - Cooling Tower 3

Area A Temperature Maximum: 84.50°F	Area M Temperature Maximum: 84.37°F	Area Q Temperature Maximum: 86.82°F	Area U Temperature Maximum: 76.53°F	Area V Temperature Maximum: 99.37°F	Area W Temperature Maximum: 80.34°F
Area B Temperature Maximum: 72.38°F	Area N Temperature Maximum: 86.70°F	Area R Temperature Maximum: 82.28°F			
Area C Temperature Maximum: 83.82°F	Area O Temperature Maximum: 83.56°F	Area S Temperature Maximum: 84.75°F	Area X Temperature Maximum: 87.42°F	Area Z Temperature Maximum: 104.47°F	
Area L Temperature Maximum: 96.08°F	Area P Temperature Maximum: 86.71°F	Area T Temperature Maximum: 83.51°F	Area Y Temperature Maximum: 83.84°F		

5/17/2018 8:00 AM CEST

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Seeq & the PI System are Better Together



When might you enhance PI Vision or PI AF with Seeq?

- Ad Hoc Exploration and Investigation
- Collaboration and Knowledge Capture
- Reporting
- Data Cleansing
- Alternative trend displays – Capsule time, Chain View
- Considering exporting PI data to Excel via PI Data Link
 - Multivariate Regression
 - Frequency Analysis
 - Other Advanced Calculations
 - Incorporate other data in an analysis – e.g., refinery plan or outside lab analysis

What are common workflows between PI and Seeq?

- Asset swap/scale out Seeq analysis using PI AF
- Explore complex analyses in Seeq and subsequently codify through PI AF Templates
- Write Seeq cleansed signals or modeled results back to the PI Archive with PI AF Data References
- Utilize PI Event Frames for analysis in Seeq
- Utilize PI Notifications to alert of presence of Seeq conditions

Speaker Information



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the **microphone**

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name & company



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