On-Premise PI System success and a future look at OSIsoft Cloud Services (OCS)

Mark Gutgesell – Process Engineer

Unilever Kilbourn Facility

November 5, 2020

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About Unilever

Slogan - “Feel Good, Look Good, and get more out of life”

Vision

Unilever has a simple but clear purpose – to make sustainable living commonplace.

Value & Principles

To succeed requires "the highest standards of corporate behavior towards everyone we work with, the communities we touch, and the environment on which we have an impact.“

Strategy

To achieve our purpose of making sustainable living commonplace

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Who We Are

161,000 employees

28 Sustainable Living brands

49% of management are women

€51 billion turnover in 2018

400 brands in 190 countries

No. 1 employer of choice in 50 markets in 2018

2.5 billion people use Unilever products to feel good, look good and get more out of life

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Stone Technologies, Inc.

Systems Integrator

Marc Gallant, VP: Digital Transformation
mgallant@stonetek.com
www.stonetek.com

CSIA CERTIFIED

CONTROL ENGINEERING System Integrator HALL OF FAME

@Stone_Tek

On-Premise PI success Agenda

- Unilever Kilbourn Site Overview
- PI Project Overview
- Strategy Future

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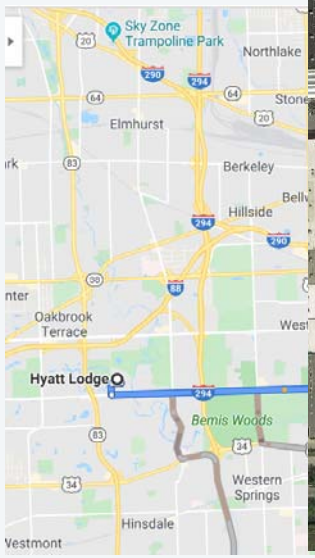
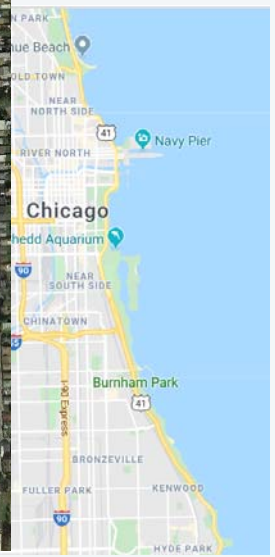
Unilever Kilbourn Site Overview





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Unilever Kilbourn Site Overview

- What do we make?
  - 5 product Formulas
  - 7 Lines, 14 Product Sizes
    - 0.32 Oz Portion Packs to 2,000 Pound Totes

- 196k Sq. Ft – Production and Packaging
  - Minimal warehousing onsite
- Largest Unilever Dressings Factory in the World

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Project Overview

- Project Scope
  - Data & Visibility Before PI
  - Justification
  - Quick Wins
    - Sucrose Silo
    - Inventory Sheet Digitalization
  - Packaging Analytics
  - Plant Mass Balance

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Project Overview

- Lacked Processing Data Visibility
- Insufficient Packaging Data Flexibility
  - Difficult to manipulate data
  - Did not have desired visibility
  - Multiple data platforms
  - Contractors needed to add/manipulate our data
- Waste Tracking needs
- Highly Integrated Plant
  - Gathering Data to one source is relatively simple

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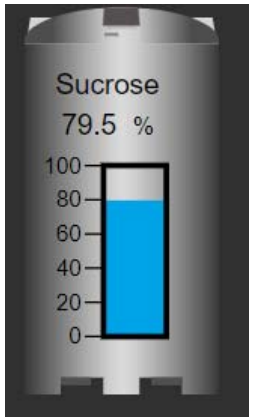
Project Overview – Quick Wins – *Sucrose Silo*

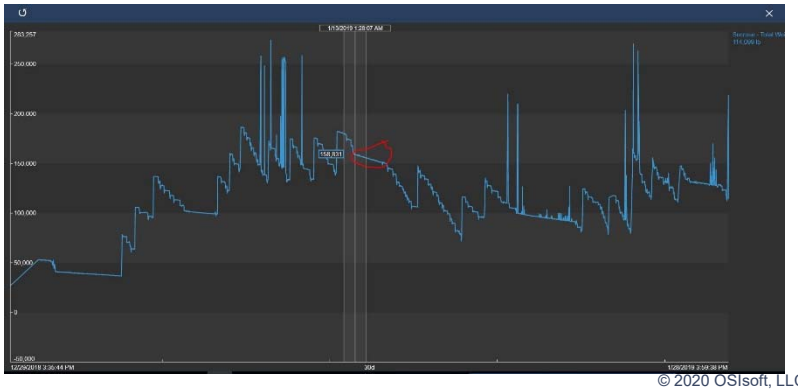
Visibility of Process

Waste treatment load was increasing

- Silo level values were imported into PI
- Over weekend, saw level drop incrementally
- Discovered leak in tank



400k lb loss prevented Annually (2 full Silos)



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Project Overview – Quick Wins – *Inventory Sheet*

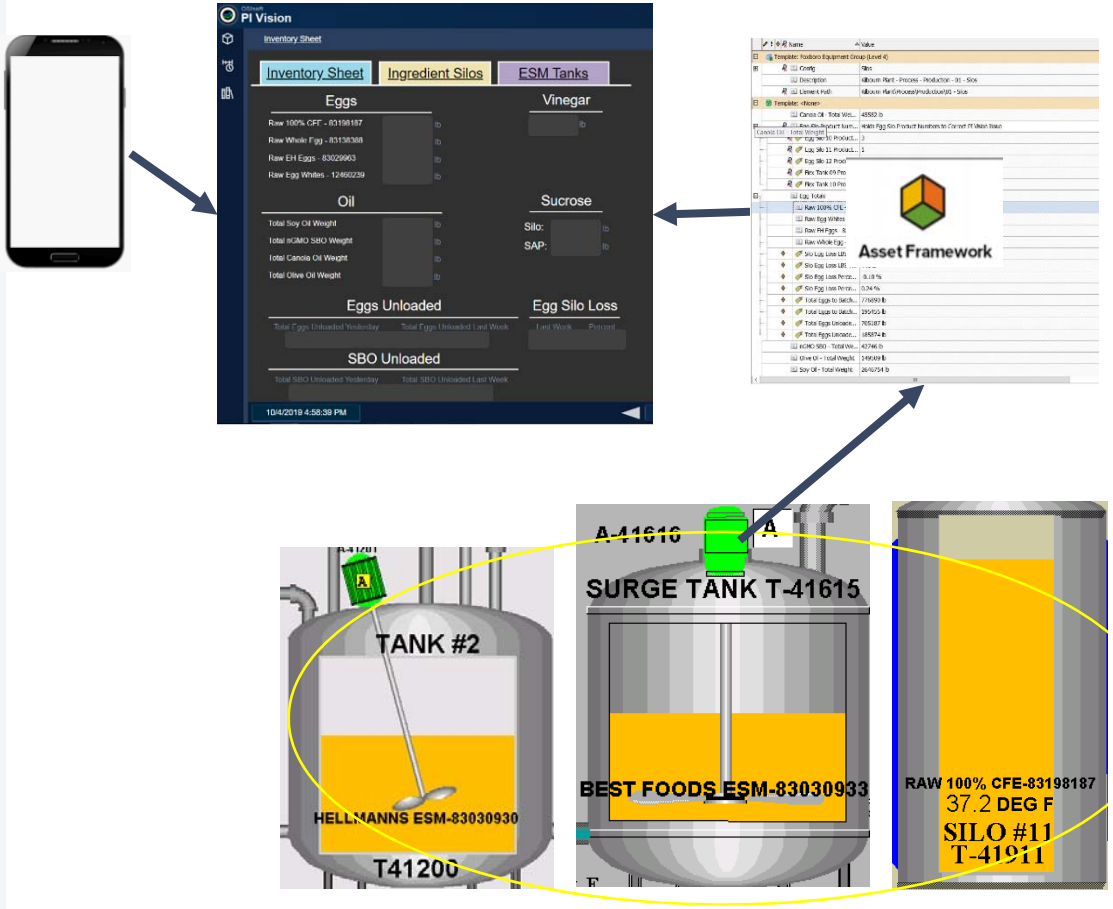
Visibility of Process - Analytics

Before - Midnight Manual Entry Sheet

- Inconsistent and inaccurate
- Paper sheet sent to planning team
- Manual Calculations to convert % Tank level to pounds of material

Now - Real Time Digital Sheet

- All data calculated into one location for total weight of each material



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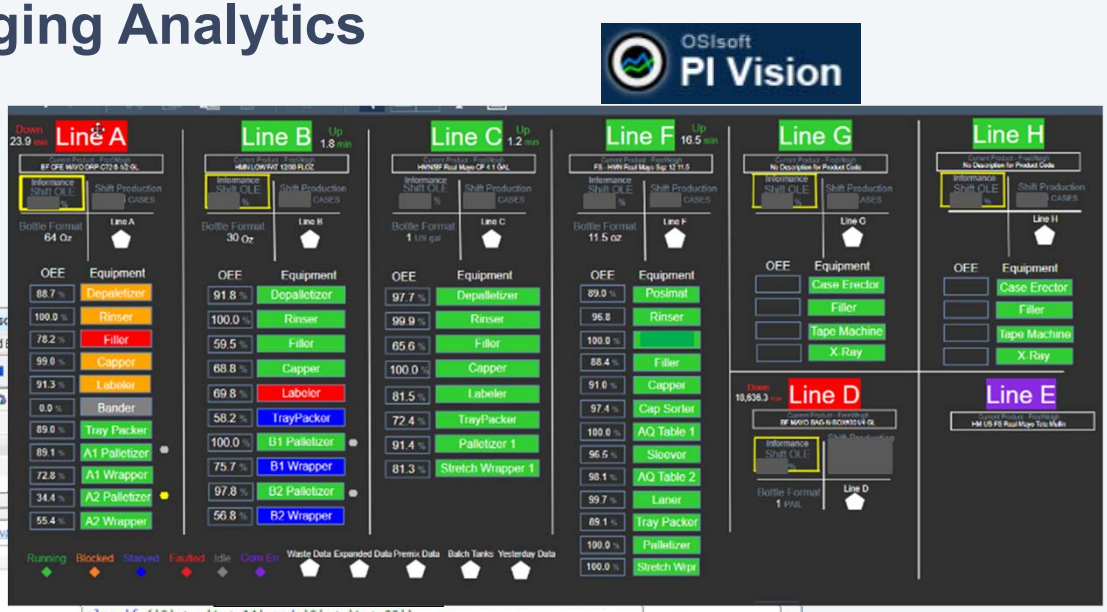
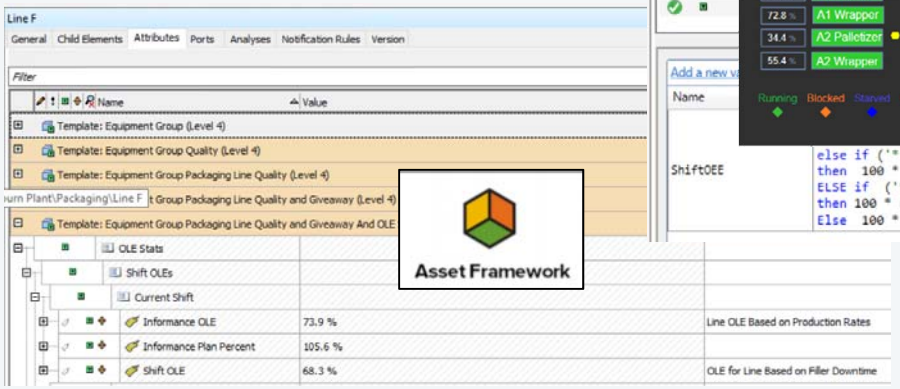
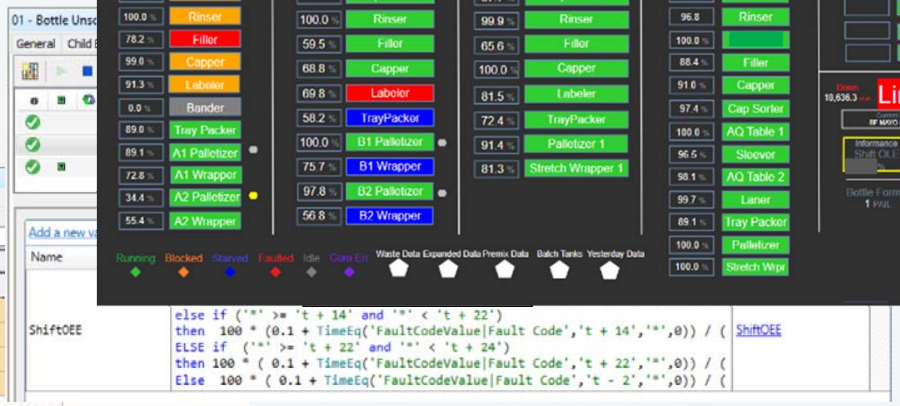
Project Overview - Packaging Analytics

- Rejects and Alarms
- Uptime/Downtime
- OEE/OLE
- Cases Produced







Asset Framework

OLE – Overall Line Effectiveness

OEE – Overall Equipment Effectiveness

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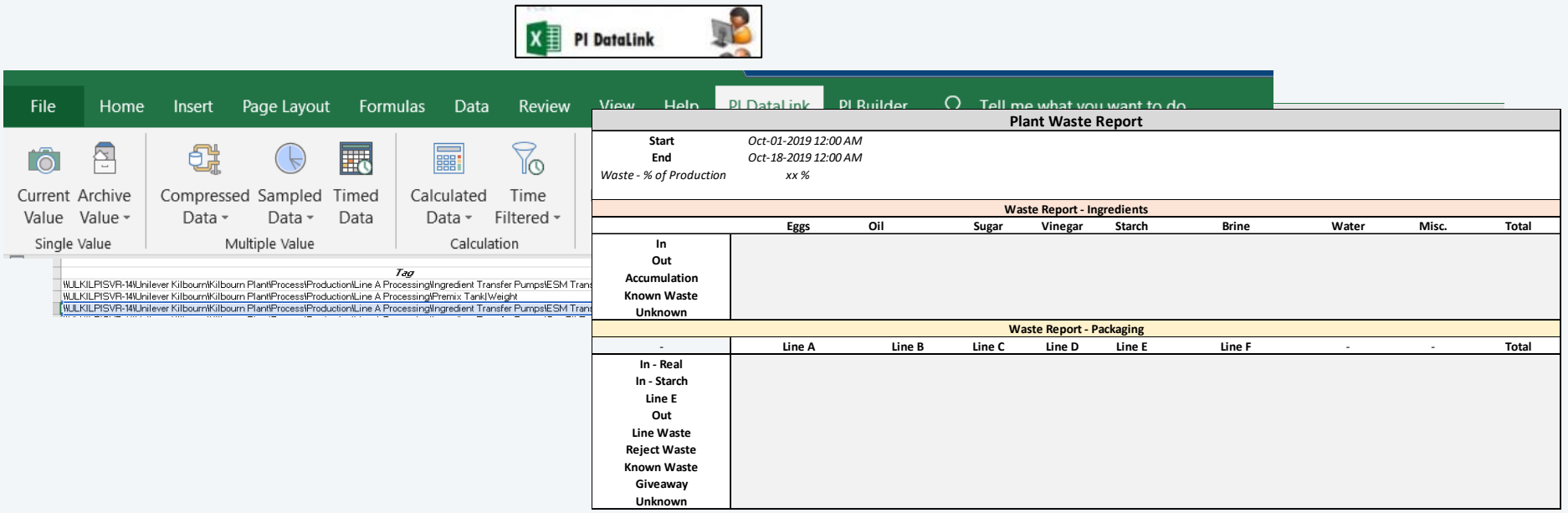
Project Overview - Plant Mass Balance

- Using PI Datalink to create a Mass Balance of entire plant for waste visibility & Tracking



Plant Waste Report

Start	*Oct-01-2019 12:00 AM*
End	*Oct-18-2019 12:00 AM*
Waste - % of Production	*xx %*

Waste Report - Ingredients

	Eggs	Oil	Sugar	Vinegar	Starch	Brine	Water	Misc.	Total
In									
Out									
Accumulation									
Known Waste									
Unknown									

Waste Report - Packaging

-	Line A	Line B	Line C	Line D	Line E	Line F	-	-	Total
In - Real									
In - Starch									
Line E									
Out									
Line Waste									
Reject Waste									
Known Waste									
Giveaway									
Unknown									

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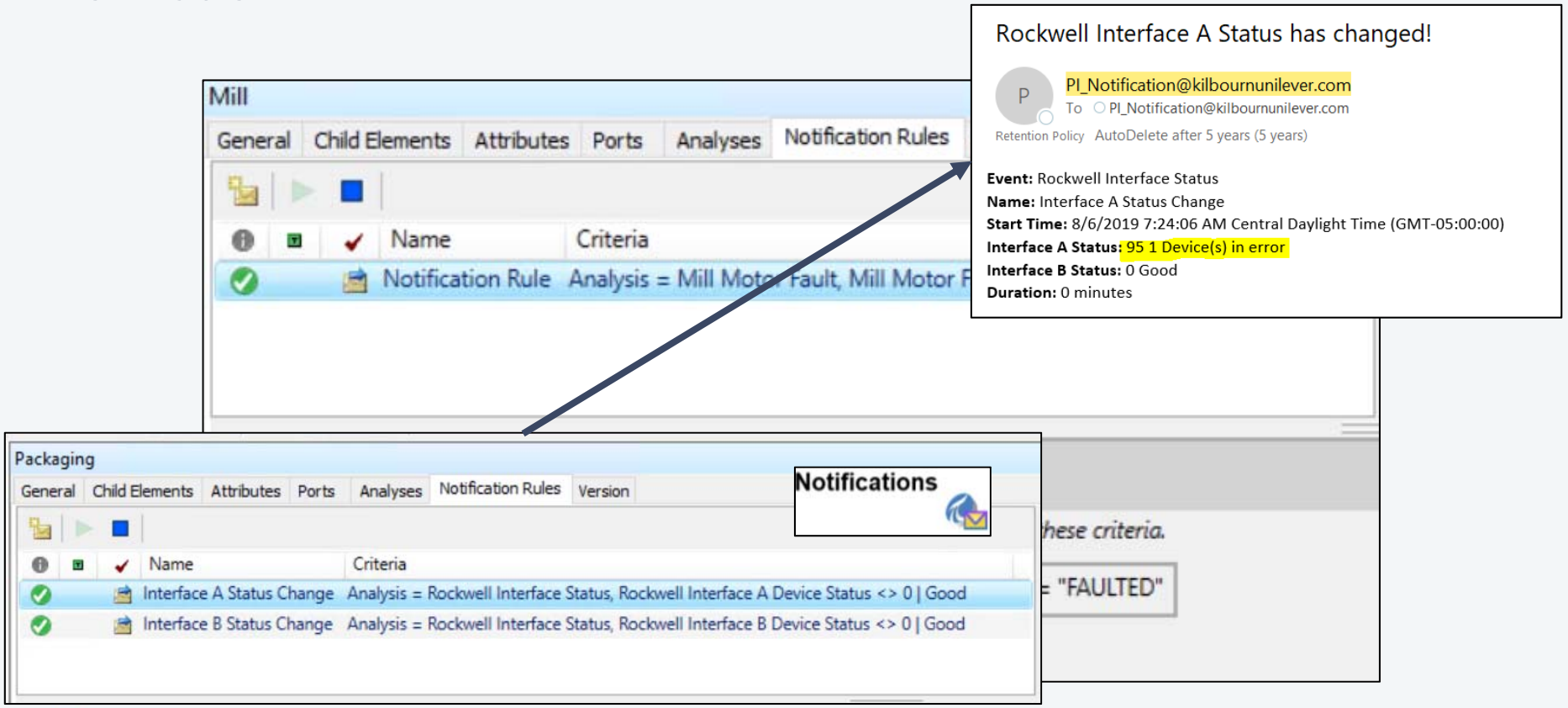
Project Overview - Email Notifications for Alarm information



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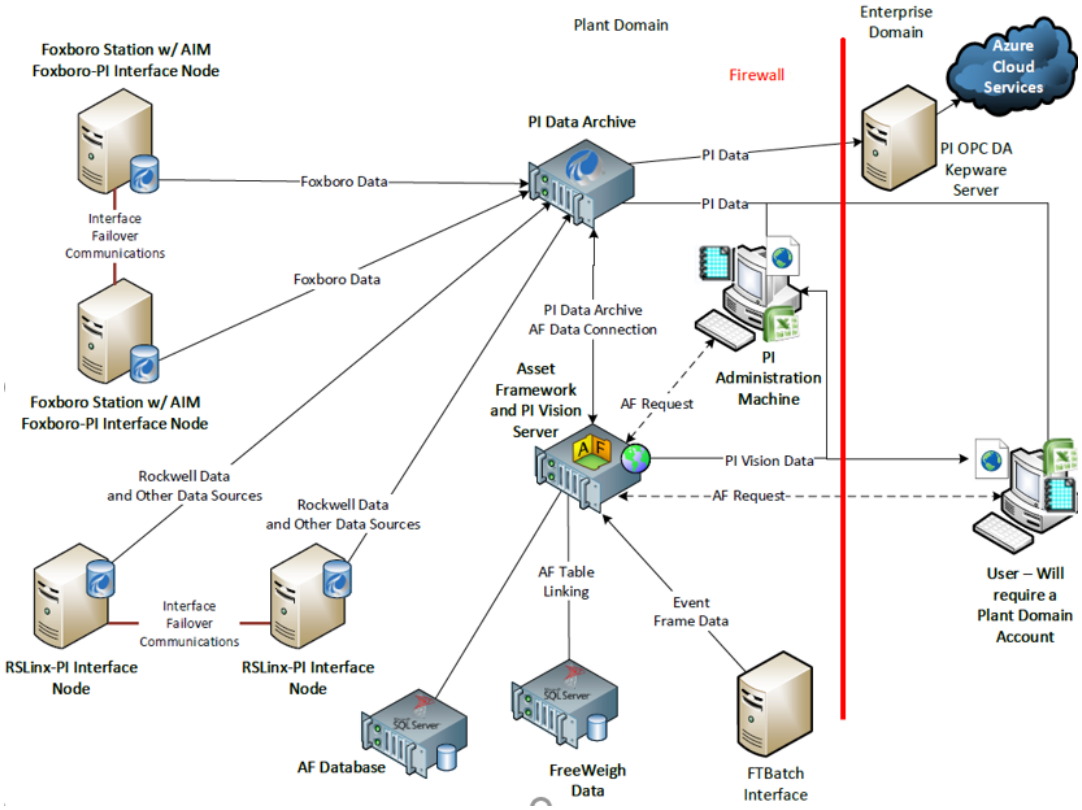
Current PI System - Overview

- 20,000 tag system
- 6,000 currently in use
  - 2000 Foxboro tags
  - 3000 Rockwell tags
  - 1000 Calculated tags
- 40 active Users
- Architecture
  - Redundant Interface Nodes
  - Standalone SQL Standard
  - Standalone PI Data Archive Server
  - Asset Framework and PI Vision Server
- MettlerToledo Quality data
- FTBatch Event data



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OSIsoft Cloud Service(OCS)

A future look

Hunter Mathews – System Engineer and PI Admin, Unilever Kilbourn Facility

November 5, 2020

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OCS Lighthouse Agenda

- Quick Access
- Contextualization
- Visualization

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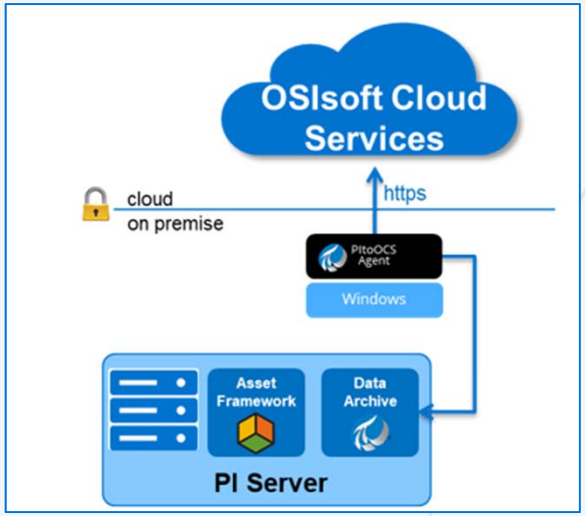
DATA PATH



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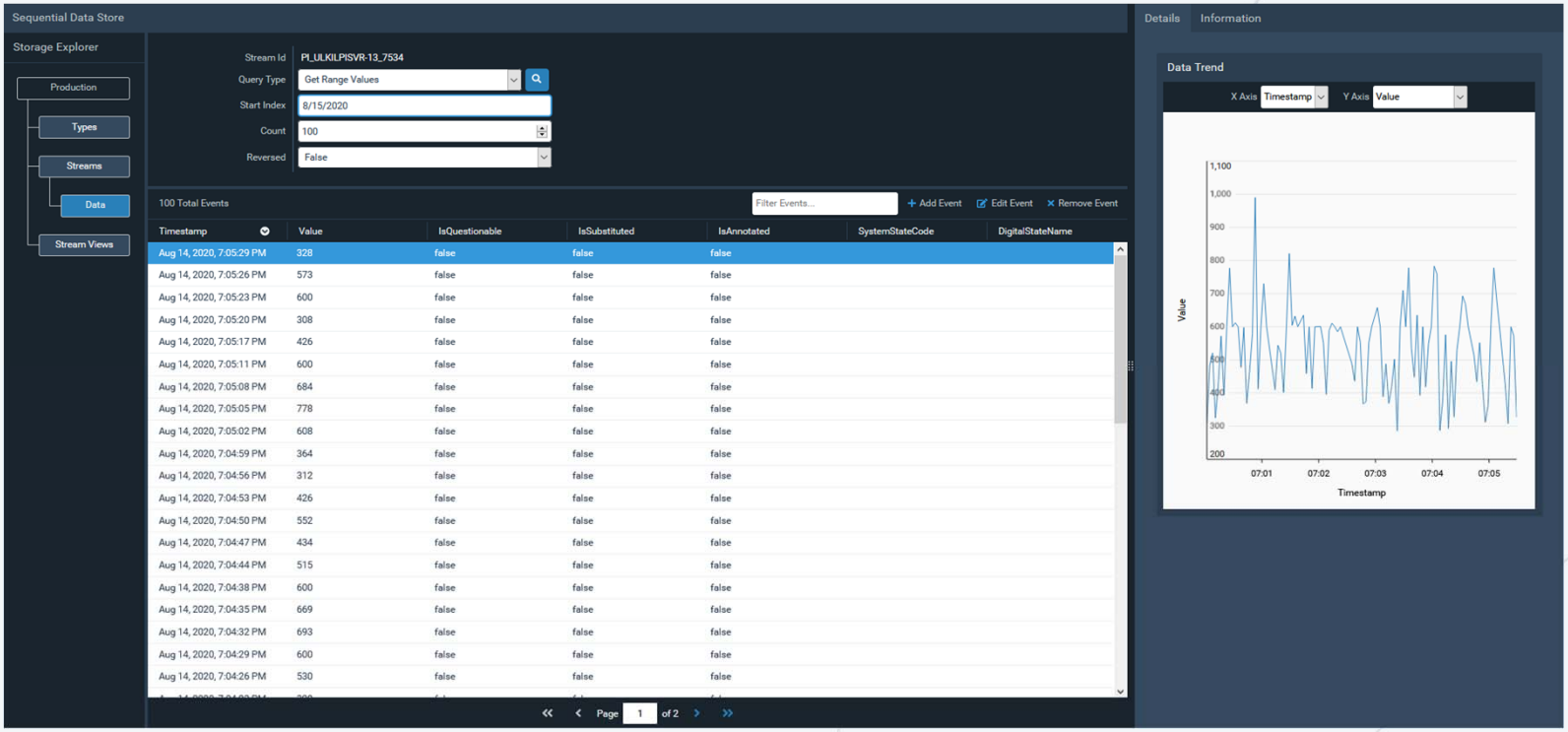
Quick Access - Sequential Data Store



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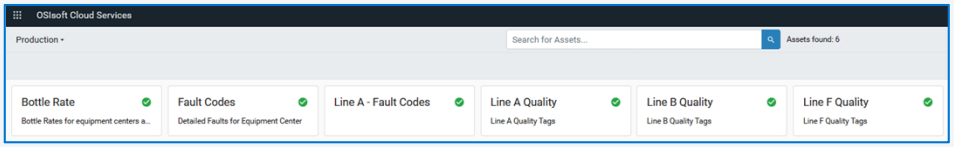
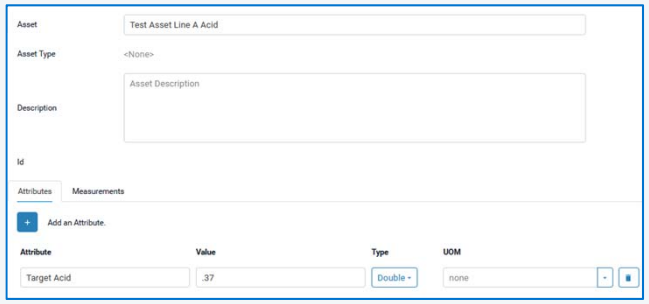
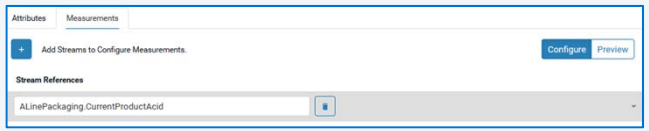
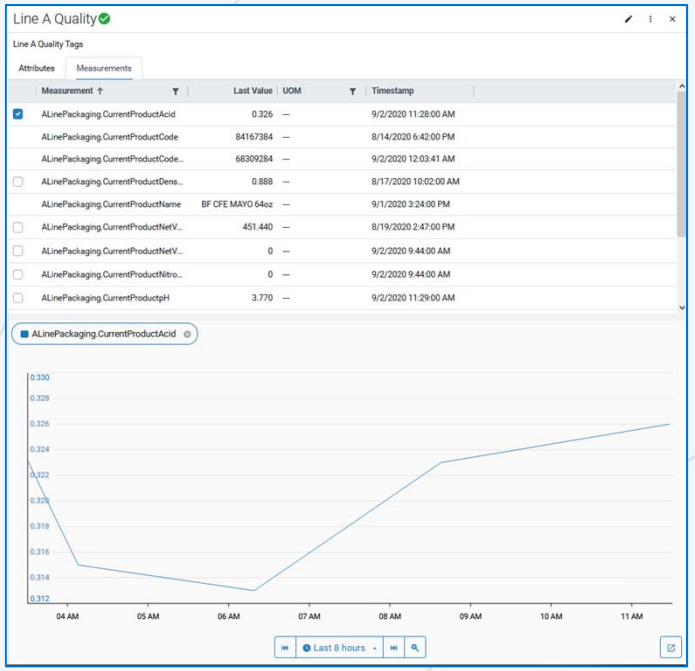
Contextualization - OCS Assets









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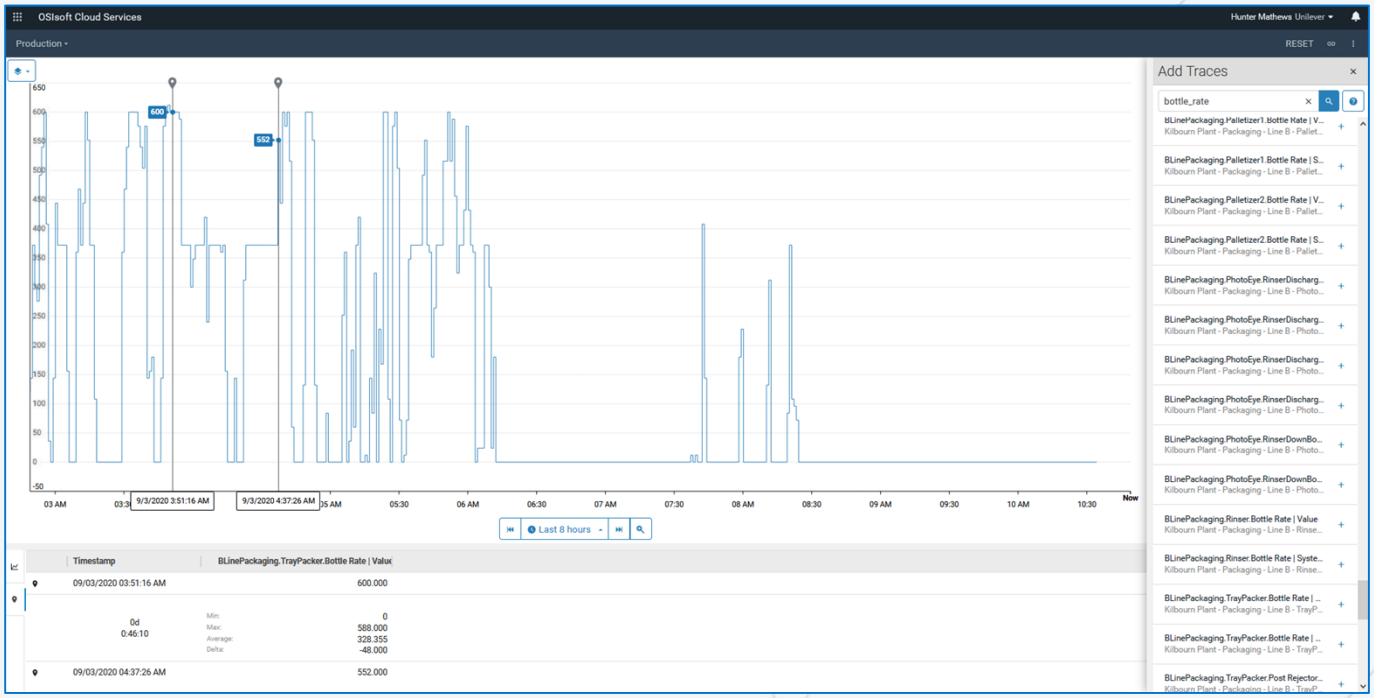
Visualization - Trending in OCS



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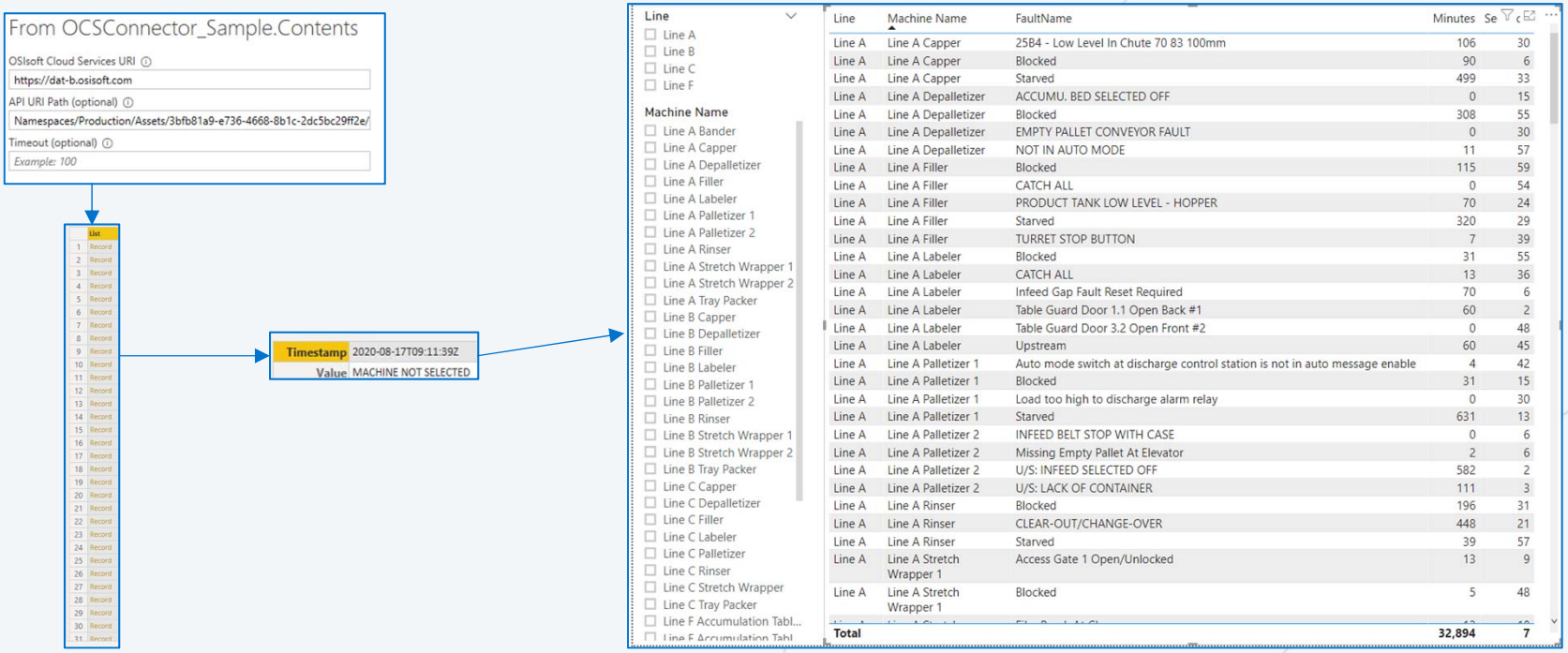
Visualization – OCS API to Power BI



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Pulling Cloud Data into Power BI

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OCS Benefits

- **Improved** ability to drill into line data to understand fault code details across equipment and shifts to aid improving performance
- **Maintained** site security, by sharing data externally
- **Drove** continuous improvement efforts (OEE)
- Unplanned benefit: Covid-19 efforts

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