

AVEVA PI WORLD

Life After PI ProcessBook

Best Practices and Lessons Learned in Migrating 1,000's of displays to PI Vision & PI AF

Presented By:

Damon Crawley, Phillips 66

Joe Rose, RoviSys

The AVEVA logo is displayed in white, bold, sans-serif capital letters. It is positioned in the bottom right corner of the slide, partially overlapping the abstract background graphics.

CAUTIONARY STATEMENT



FOR THE PURPOSES OF THE "SAFE HARBOR" PROVISIONS
OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

CAUTIONARY STATEMENT FOR THE PURPOSES OF THE "SAFE HARBOR" PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

This presentation contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are intended to be covered by the safe harbors created thereby. Words and phrases such as "is anticipated," "is estimated," "is expected," "is planned," "is scheduled," "is targeted," "believes," "intends," "objectives," "projects," "strategies" and similar expressions are used to identify such forward-looking statements. However, the absence of these words does not mean that a statement is not forward-looking. Forward-looking statements relating to Phillips 66's operations (including joint venture operations) are based on management's expectations, estimates and projections about the company, its interests and the energy industry in general on the date this presentation was prepared. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecast in such forward-looking statements. Factors that could cause actual results or events to differ materially from those described in the forward-looking statements include fluctuations in NGL, crude oil, petroleum products and natural gas prices, and refining, marketing and petrochemical margins; unexpected changes in costs for constructing, modifying or operating our facilities; unexpected difficulties in manufacturing, refining or transporting our products; lack of, or disruptions in, adequate and reliable transportation for our NGL, crude oil, natural gas, and refined products; potential liability from litigation or for remedial actions, including removal and reclamation obligations under environmental regulations; limited access to capital or significantly higher cost of capital related to illiquidity or uncertainty in the domestic or international financial markets; and other economic, business, competitive and/or regulatory factors affecting Phillips 66's businesses generally as set forth in our filings with the Securities and Exchange Commission. Phillips 66 is under no obligation (and expressly disclaims any such obligation) to update or alter its forward-looking statements, whether as a result of new information, future events or otherwise.

About Phillips 66



Midstream



Chemicals



Refining



Marketing & Specialties

- Moves crude oil, refined products, natural gas and NGL
- Gathering and processing, pipelines, fractionation, storage, and export facilities
- General partner of Phillips 66 Partners LP
- 50% interest in NGL and natural gas processor, DCP Midstream, LLC

- 50% interest in Chevron Phillips Chemical Company LLC
- Manufactures olefins, polyolefins, aromatics, alpha olefins, styrenics and specialty chemicals globally
- Advantaged ethane feedstock

- Refines crude oil and other feedstocks at 13 refineries in the U.S. and Europe into products (mainly gasoline, diesel and aviation fuel)
- 2.2 MMBD in global refining capacity
- Large, complex refineries with integrated supply and distribution networks

- Markets refined petroleum products (gasolines, distillates and aviation fuels) mainly in the U.S. and Europe
- 7,550 U.S. branded sites
- 1,630 European retail sites
- Finished lubricants and Excel Paralubes base oil joint venture

ROVISYS[®]

Automation & Information Solutions



GLOBALLY LOCATED
US | Europe | Asia



OSIsoft[®]
Select Partner



950+EMPLOYEES
Less than 5% Attrition



25+ Year OSIsoft Relationship

Capabilities for Instrument-to-Executive Solutions

Over 200,000 Hours of PI System Services in 2020

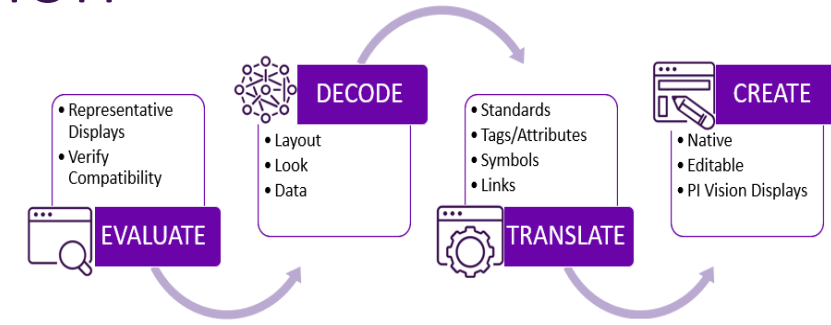
120+ Experienced OSIsoft Solution Resources

OSIsoft's First Select Partner in North America

LEADING INDEPENDENT PROVIDER OF COMPREHENSIVE AUTOMATION & INFORMATION SOLUTIONS

ROVISYS[®]
Automation & Information Solutions

A Strategic Approach for Migrating to PI Vision



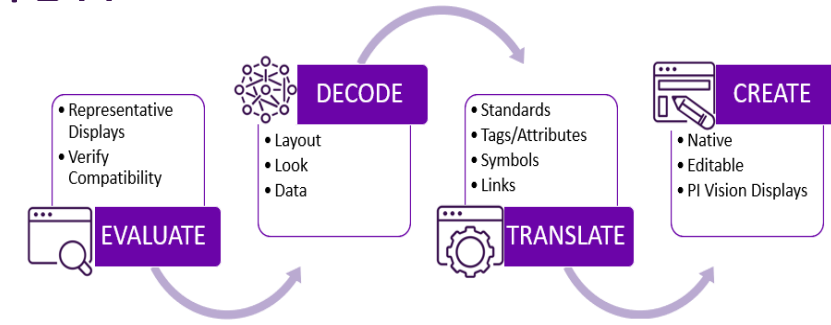
Challenge

Solution

Benefits

With PI ProcessBook at end-of-life coupled with **several strategic initiatives** that leveraged an evolving use of PI AF and PI Vision to support **self-serve access to operational intelligence as key capability to accelerate business value**, Phillips 66 decided to **programmatically convert** approximately 11,000 PI ProcessBook and a portfolio of DCS graphics to PI Vision

A Strategic Approach for Migrating to PI Vision



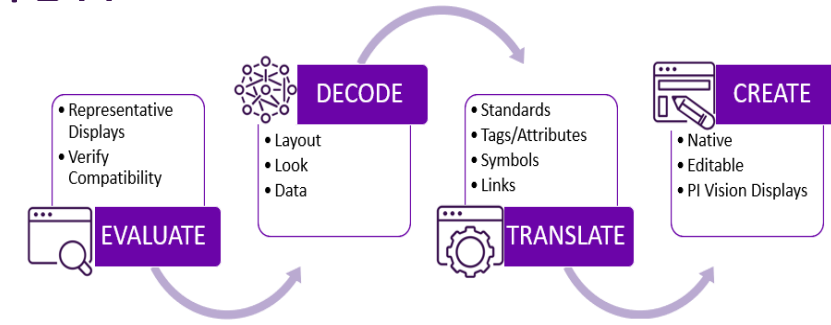
Challenge

Solution

Benefits

Using a **combination of AVEVA's Display Migration Utility and RoviSys' Vision Accelerator Solution**, Phillips 66 enacted a **program to rationalize** useful displays, convert compatible ProcessBook displays to PI Vision, and **create native PI Vision displays from a portfolio of DCS graphic types**

A Strategic Approach for Migrating to PI Vision



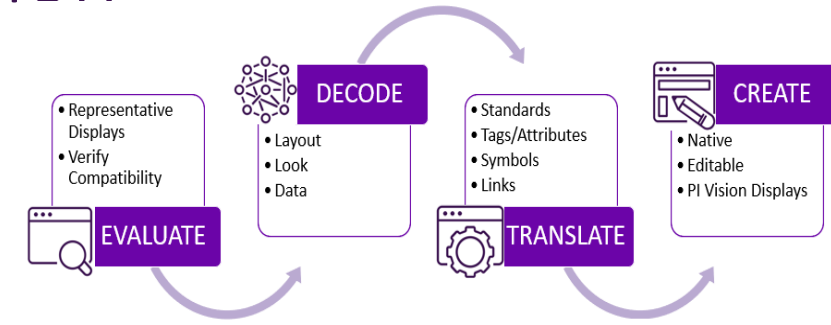
Challenge

Solution

Benefits

Years of knowledge and effort contained in 1,000's of displays **were retained** in the move to PI Vision with programmatic efficiency and accuracy, while supporting the **continued evolution of the PI System** from a tag-based ecosystem to a contextualized, self-serve, asset-based, **operational intelligence capability saving and delivering significant business value.**

A Strategic Approach for Migrating to PI Vision



Challenge

With PI ProcessBook at end-of-life coupled with **several strategic initiatives** that leveraged an evolving use of PI AF and PI Vision to support **self-serve access to operational intelligence as key capability to accelerate business value**, Phillips 66 decided to **programmatically convert** over 11,000 PI ProcessBook and a portfolio of DCS graphics to PI Vision

Solution

Using a **combination of AVEVA's Display Migration Utility and RoviSys' Vision Accelerator Solution**, Phillips 66 enacted a **program to rationalize** useful displays, convert compatible ProcessBook displays to PI Vision, and **create native PI Vision displays from a portfolio of DCS graphic types**

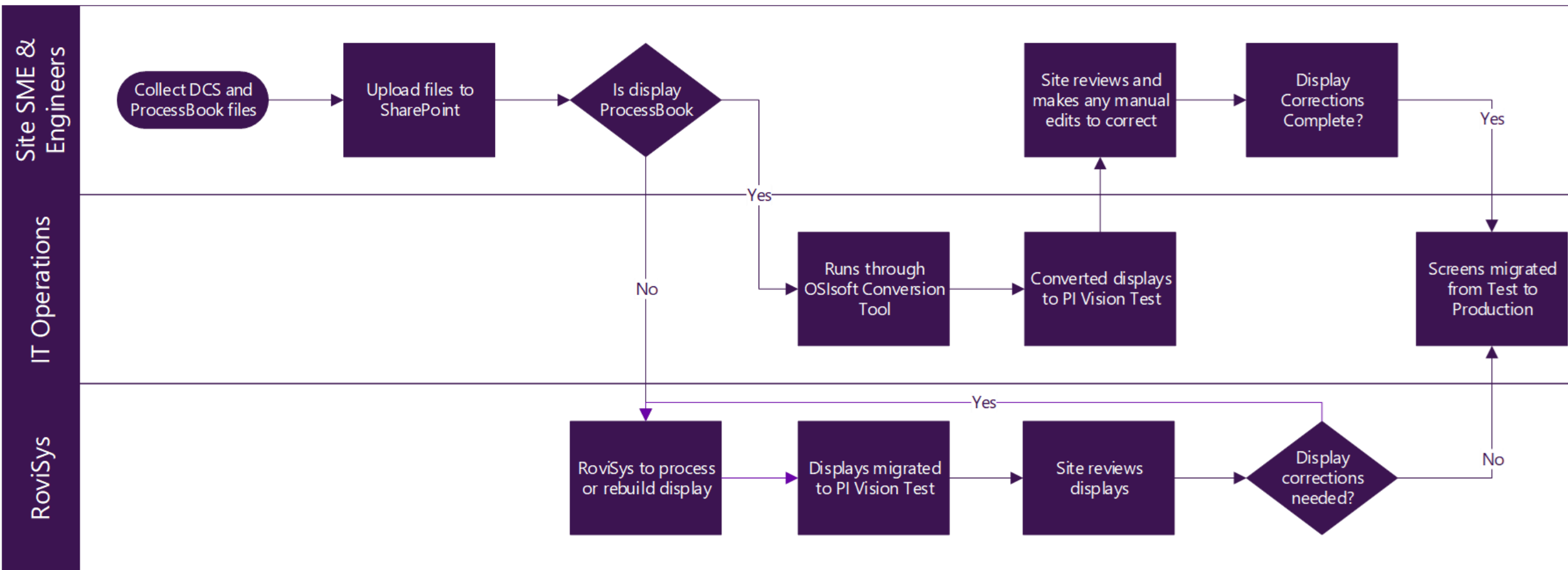
Benefits

Years of knowledge and effort contained in 1,000's of displays **were retained** in the move to PI Vision with programmatic efficiency and accuracy, while supporting the **continued evolution of the PI System** from a tag-based ecosystem to a contextualized, self-serve, asset-based, **operational intelligence capability saving and delivering significant business value.**

Strategic Graphics Migration

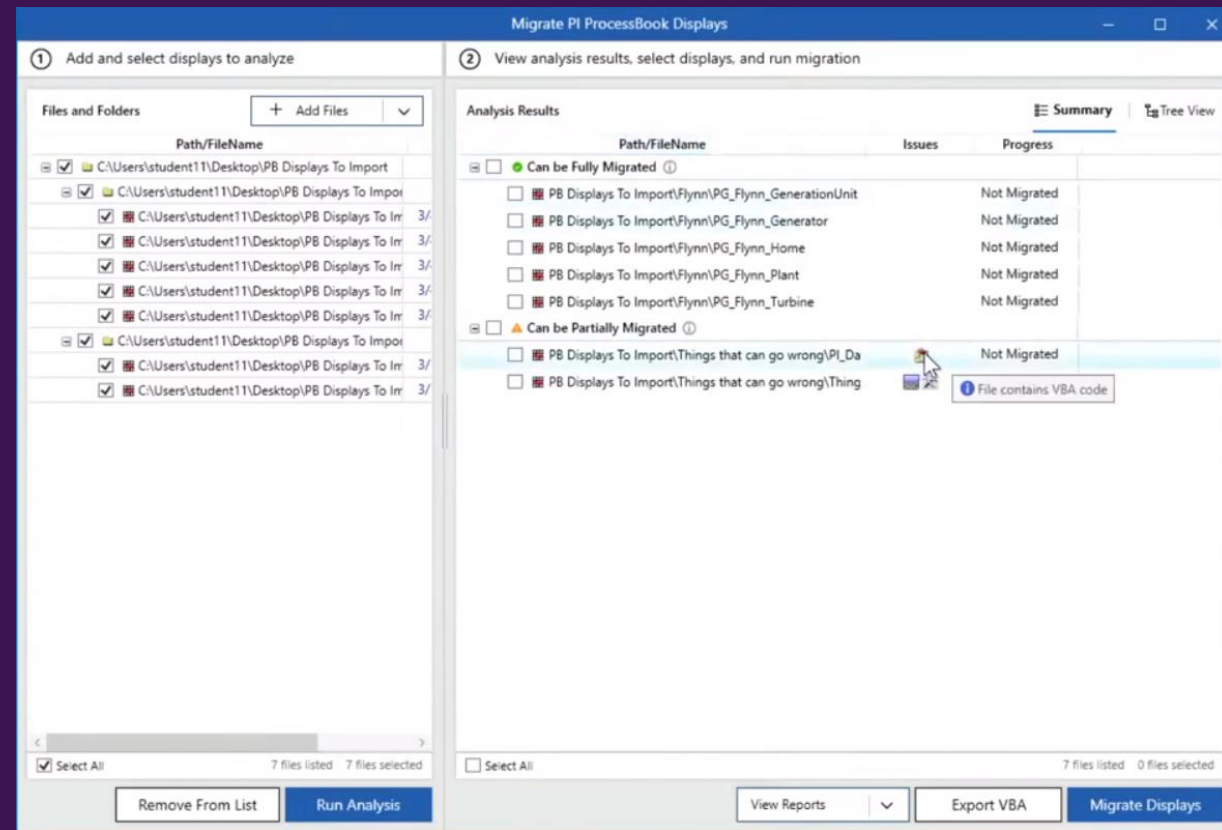
- Display Migration Pilots
- Classify and Count Graphics by source
- Qualify Cost & Business Value – Develop a Business Case
- Develop Implementation Plan
- Rationalize Critical Displays
- Execute PI ProcessBook to PI Vision Display Migration Utility
- Work with RoviSys to Recreate Select Screens from Other Sources
- Verify Converted Displays
- Go Live
- Removal of ProcessBook from user machines

Conversion Process



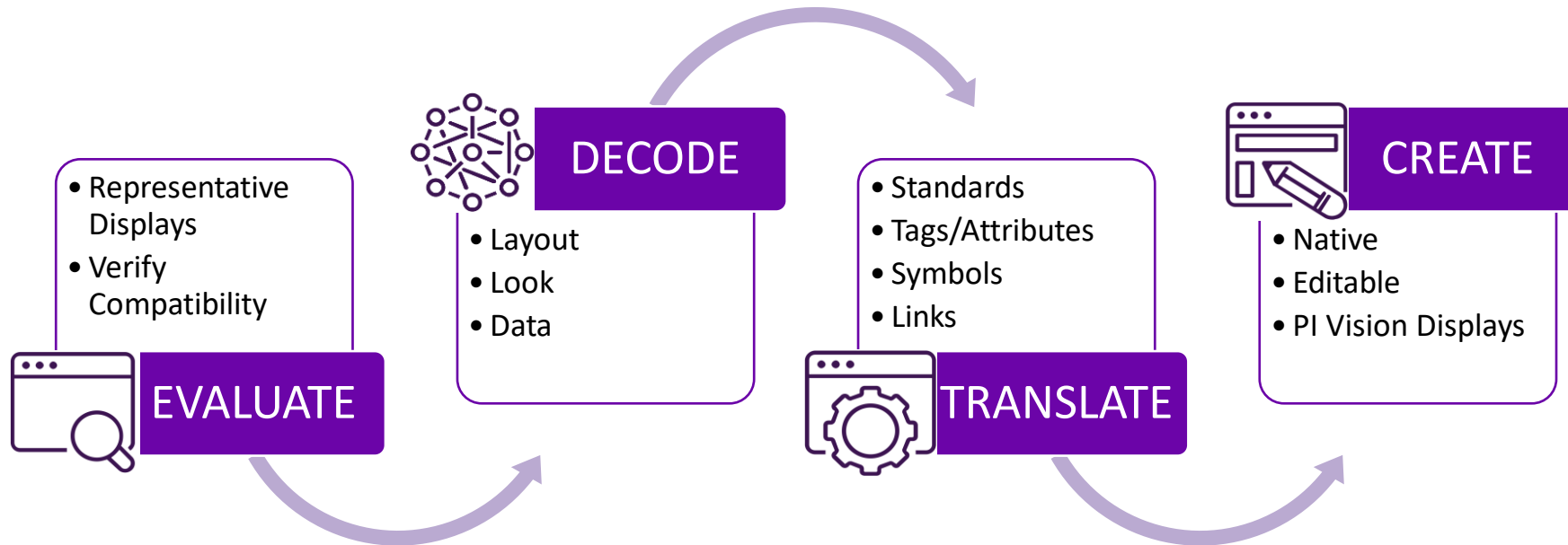
PI ProcessBook to PI Vision Migration Utility

- **Scope: Convert only common-use displays from 13 locations.**
- **Conversion run by centralized IT team**
 - Utilizing a dedicated VDI or VM Server allowed for multiple location processing at once
- **Rapid turn around of converted displays**
 - Conversion completed in approximately 5 weeks
- **Files processed in desired hierarchy reduced IT and location post conversion work**



RoviSys Vision Accelerator Solution

Efficient *process* for migrating existing graphics to native PI Vision displays

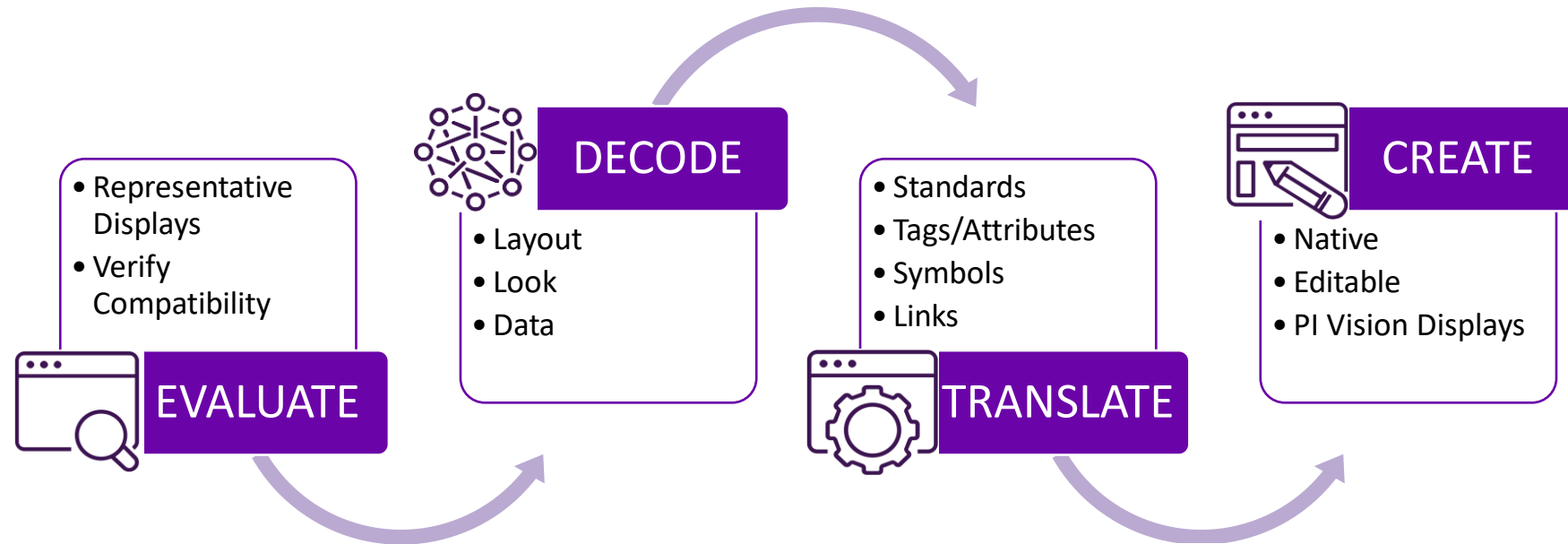


“Necessity is the mother of invention.”

- Plato

RoviSys Vision Accelerator Solution

Efficient *process* for migrating existing graphics to native PI Vision displays



A **programmatic utility** paired with **industry-experienced support** enabled a highly-streamlined process for **converting thousands of graphics to native PI Vision displays**, while **avoiding the errors and constraints** of a manual approach.

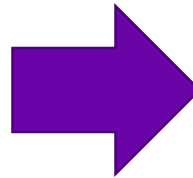
© 2021 AVEVA Group plc and its subsidiaries. All rights reserved.

	Quality	Built-In Validation Process	Native PI Vision Displays	Cost
RoviSys Solution	High	✓	✓	75% Reduction from manual
Manual	Vulnerable to human error	✗	Additional effort required	High

“Necessity is the mother of invention.”

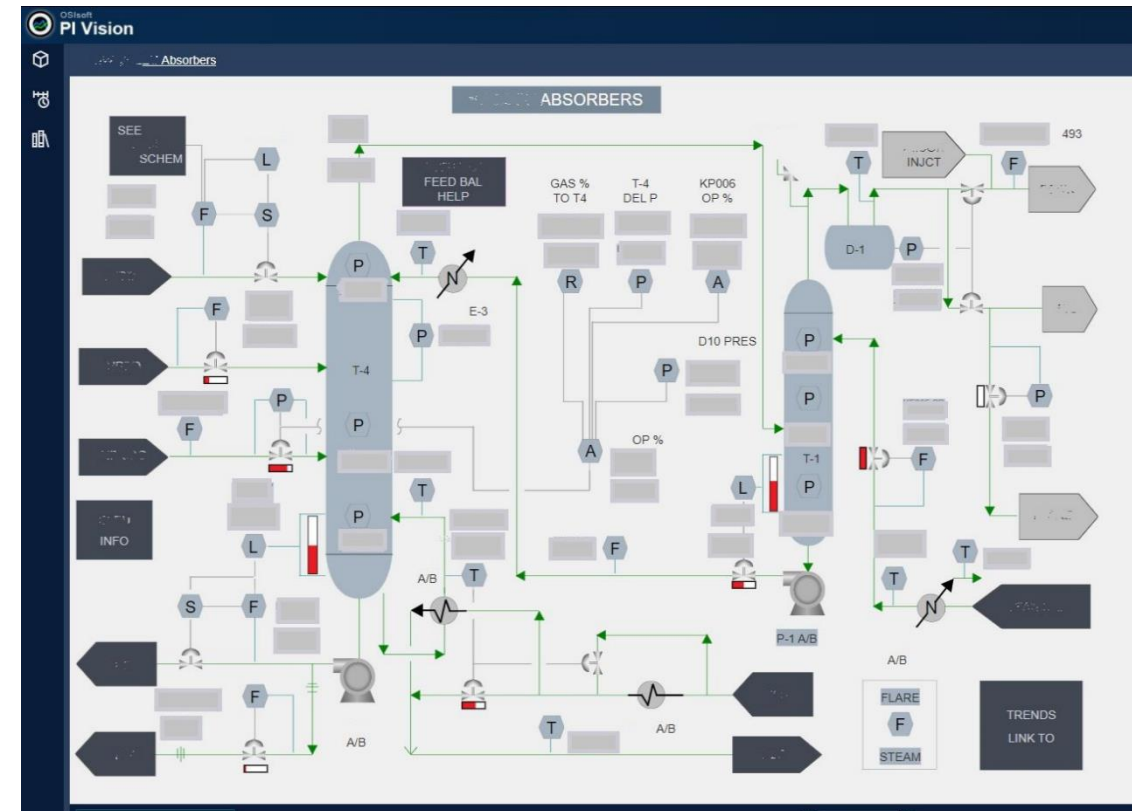
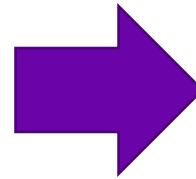
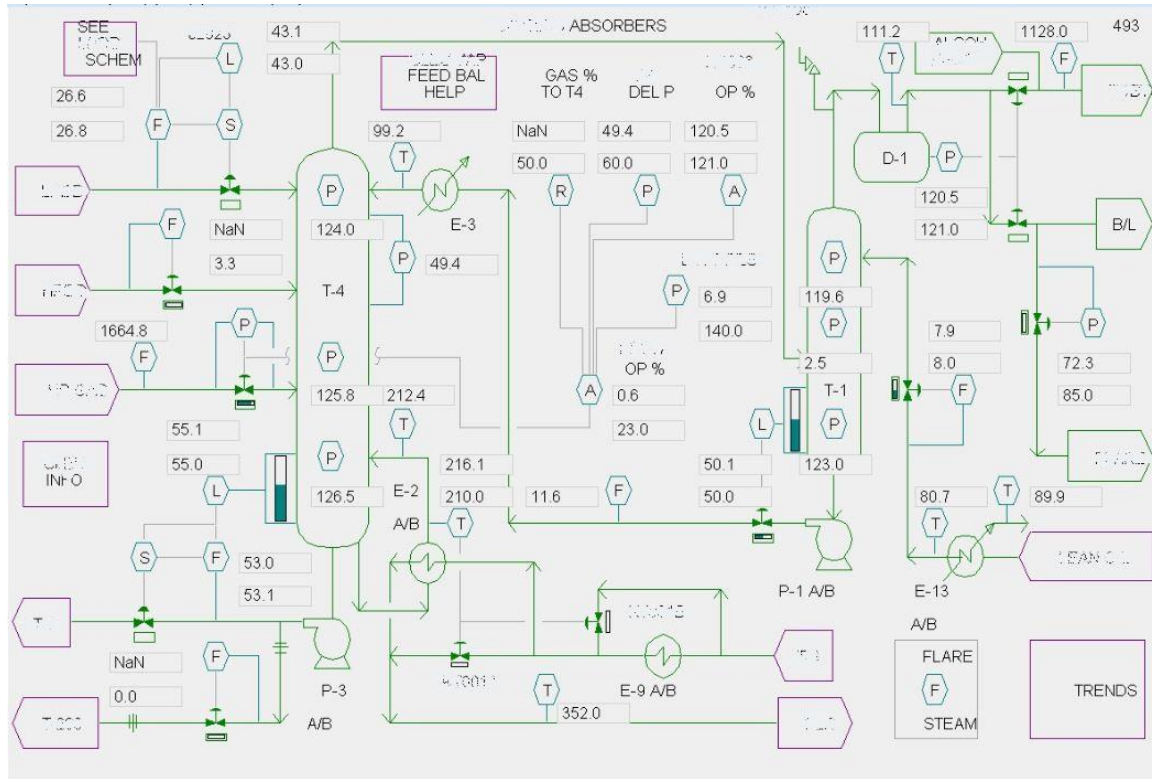
- Plato

• • • • • • • •



RoviSys Vision Accelerator Solution

Example Displays



Lessons Learned

Approaches Not Used

- Background Image with Tag Overlay
- Machine Learning Static Image Creation
- DCS to ProcessBook to Vision

Migration Utility Challenges

- Large File Support
- Font Size Support
- Special Characters

PI Vision 2020 Upgrade

- Polyline Shift Challenges

What Doesn't Migrate (w/Utility)

- VBA Scripting
- Large, Uncompressed Images
- Datasets (in PI Vision 2019)

Display Rationalization

- Difficult to reach consensus
- Everyone *Needs* Every Display

Managing Multiple Sites

- Coordination of local site resources
- Enforcing Standards

Benefits

Highly-Accurate Conversion

- Programmatically Migrated +99% of Displays to PI Vision

Centrally Managed Servers

- Web-Based Visualizations
- No Thick-Clients or Display Files
- Consolidated Visualization Platforms

Increased Security

- Managed Access to DCS Displays
- Active Directory Access Control

Support AF-based Solutions

- PI Vision Aligns with AF
- Asset-Relative Displays
- Hierarchy Navigation & Data In Context

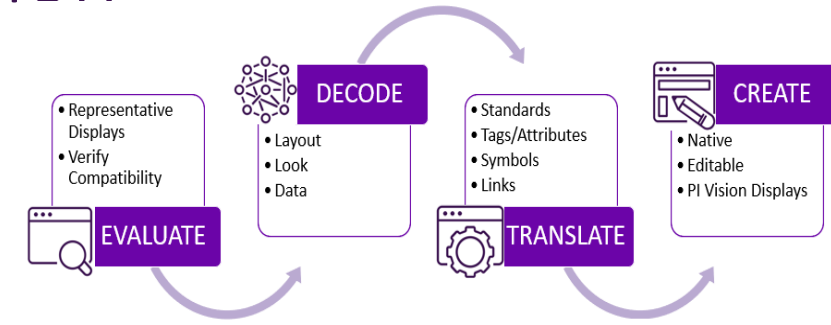
PI Vision Native Solution

- Editable PI Vision Displays
- Leveraging System Symbols

Cost Savings

- Over +15,000 est. Manhours Saved
- Previously Developed Value Retained

A Strategic Approach for Migrating to PI Vision



Challenge

With PI ProcessBook at end-of-life coupled with **several strategic initiatives** that leveraged an evolving use of PI AF and PI Vision to support **self-serve access to operational intelligence as key capability to accelerate business value**, Phillips 66 decided to **programmatically convert** over 11,000 PI ProcessBook and a portfolio of DCS graphics to PI Vision

Solution

Using a **combination of AVEVA's Display Migration Utility and RoviSys' Vision Accelerator Solution**, Phillips 66 enacted a **program to rationalize** useful displays, convert compatible ProcessBook displays to PI Vision, and **create native PI Vision displays from a portfolio of DCS graphic types**

Benefits

Years of knowledge and effort contained in 1,000's of displays **were retained** in the move to PI Vision with programmatic efficiency and accuracy, while supporting the **continued evolution of the PI System** from a tag-based ecosystem to a contextualized, self-serve, asset-based, **operational intelligence capability saving and delivering significant business value.**



Damon Crawley

Business Analyst, Digital IT Refining & Midstream Business Solutions

- Phillips 66
- Damon.Crawley@p66.com



Joe Rose

Southwest Regional Manager

- RoviSys
- Joe.Rose@rovisys.com

This presentation may include predictions, estimates, intentions, beliefs and other statements that are or may be construed as being forward-looking. While these forward-looking statements represent our current judgment on what the future holds, they are subject to risks and uncertainties that could result in actual outcomes differing materially from those projected in these statements. No statement contained herein constitutes a commitment by AVEVA to perform any particular action or to deliver any particular product or product features. Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect our opinions only as of the date of this presentation.

The Company shall not be obliged to disclose any revision to these forward-looking statements to reflect events or circumstances occurring after the date on which they are made or to reflect the occurrence of future events.

 [linkedin.com/company/aveva](https://www.linkedin.com/company/aveva)

 [@avevagroup](https://twitter.com/avevagroup)

ABOUT AVEVA

AVEVA, a global leader in industrial software, drives digital transformation for industrial organizations managing complex operational processes. Through Performance Intelligence, AVEVA connects the power of information and artificial intelligence (AI) with human insight, to enable faster and more precise decision making, helping industries to boost operational delivery and sustainability. Our cloud-enabled data platform, combined with software that spans design, engineering and operations, asset performance, monitoring and control solutions delivers proven business value and outcomes to over 20,000 customers worldwide, supported by the largest industrial software ecosystem, including 5,500 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 6,000 employees at 90 locations in more than 40 countries. For more details visit: www.aveva.com