NOVEMBER 2022

Innovation at AVEVA

Andrew McCloskey
Chief Technology Officer, AVEVA

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Underlying assertions driving AVEVA innovation

TIME IS PRECIOUS

THE EARTH IS PRECIOUS

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Three key components required to accelerate your digital transformation

Digital Twin

Energy

Power

Marine

Chemicals

Infrastructure

Mining

Food, Bev, CPG, Life Sciences

Water / Wastewater

Data

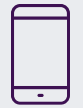
Engineering & Operations

Context & Inference

On-prem, Edge, Cloud

Infused AI & 1st Principles

Experience


Smart Phones

Tablets

Desktops

Wearables

All with ‘Infused AI’ to amplify the customer value

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How **Digital Twin**, Data and Experience come together

Digital Twin

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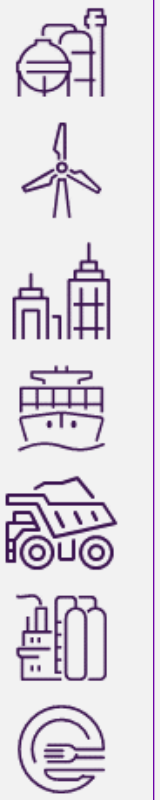
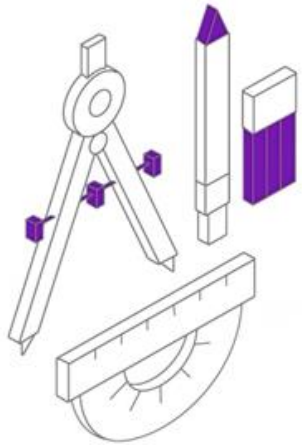
How **Digital Twin**, Data and Experience come together

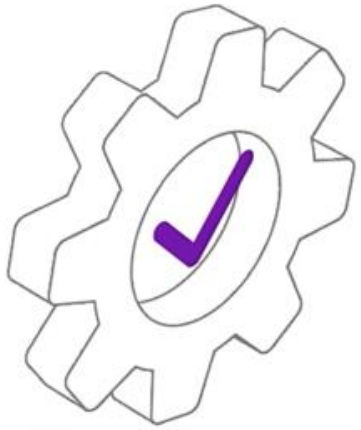
Digital Twin



Design



Operate



Optimize

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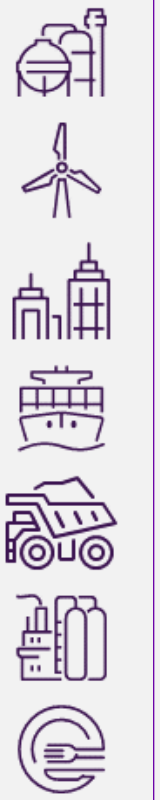
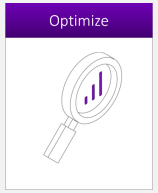
How **Digital Twin**, Data and Experience come together

Digital Twin





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How **Digital Twin**, Data and Experience come together

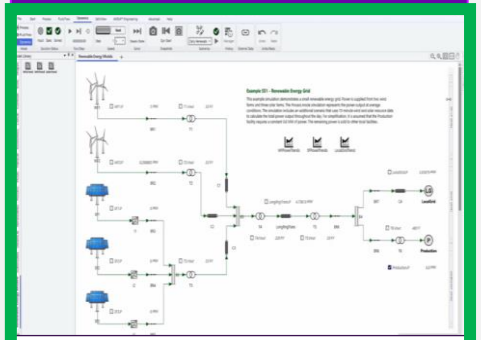
Design

Operate

Optimize

Digital Twin

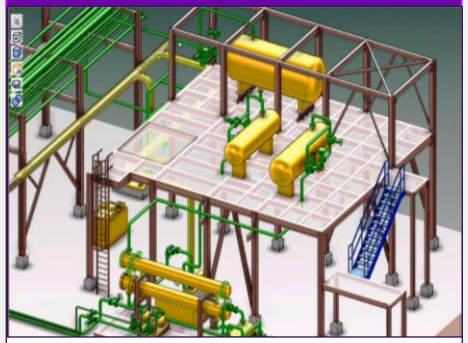
Front End



Process Simulator (Greenfields)

Point Cloud Manager (Brownfields)

Detailed Design

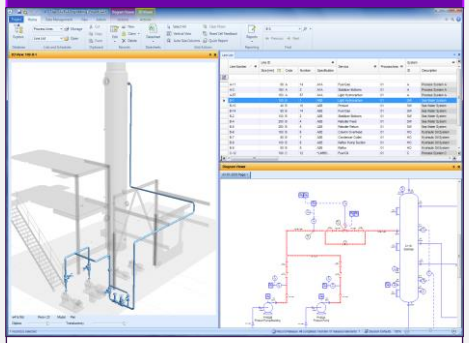


P&ID

Electrical & Instrumentation

E3D Design

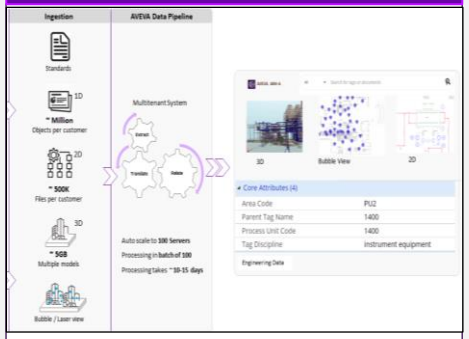
Multi-Disciplined



Engineering

Unified Engineering

Transition to Ops



Operator Training Simulator

Asset Information Management

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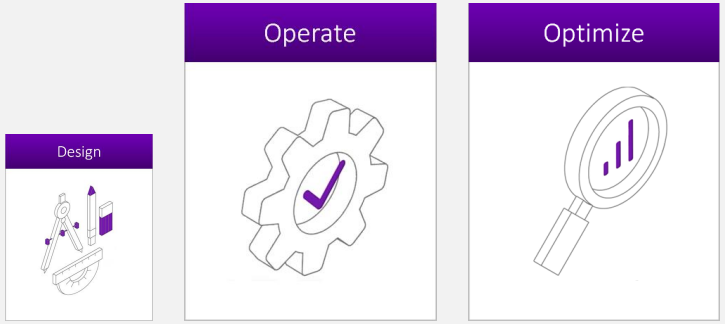
How **Digital Twin**, Data and Experience come together



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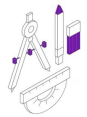
How **Digital Twin**, Data and Experience come together

Digital Twin

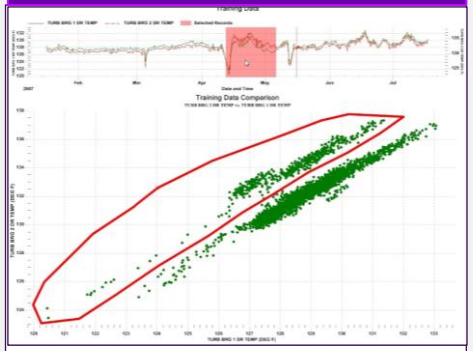
Design



Operate

Optimize

Capabilities

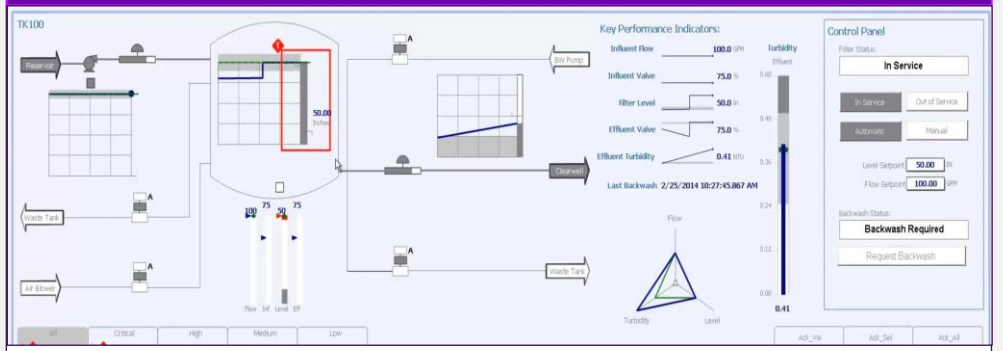


Manufacturing Execution System

Unified Supply Chain

Predictive Analytics

Fit for Purpose SCADA Offers



Edge SCADA

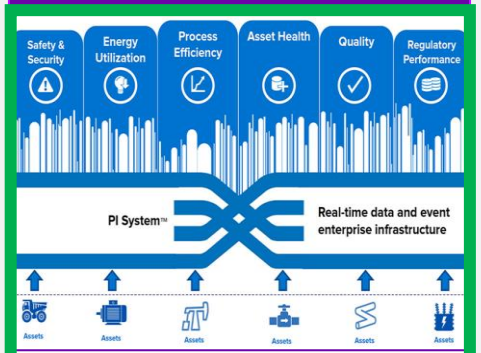
InTouch HMI

System Platform

Plant SCADA

Enterprise SCADA

Data of Record



PI System

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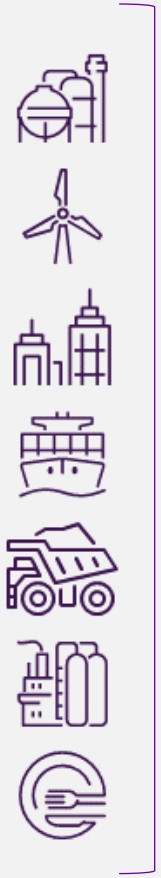
How Digital Twin, **Data** and Experience come together

Digital Twin



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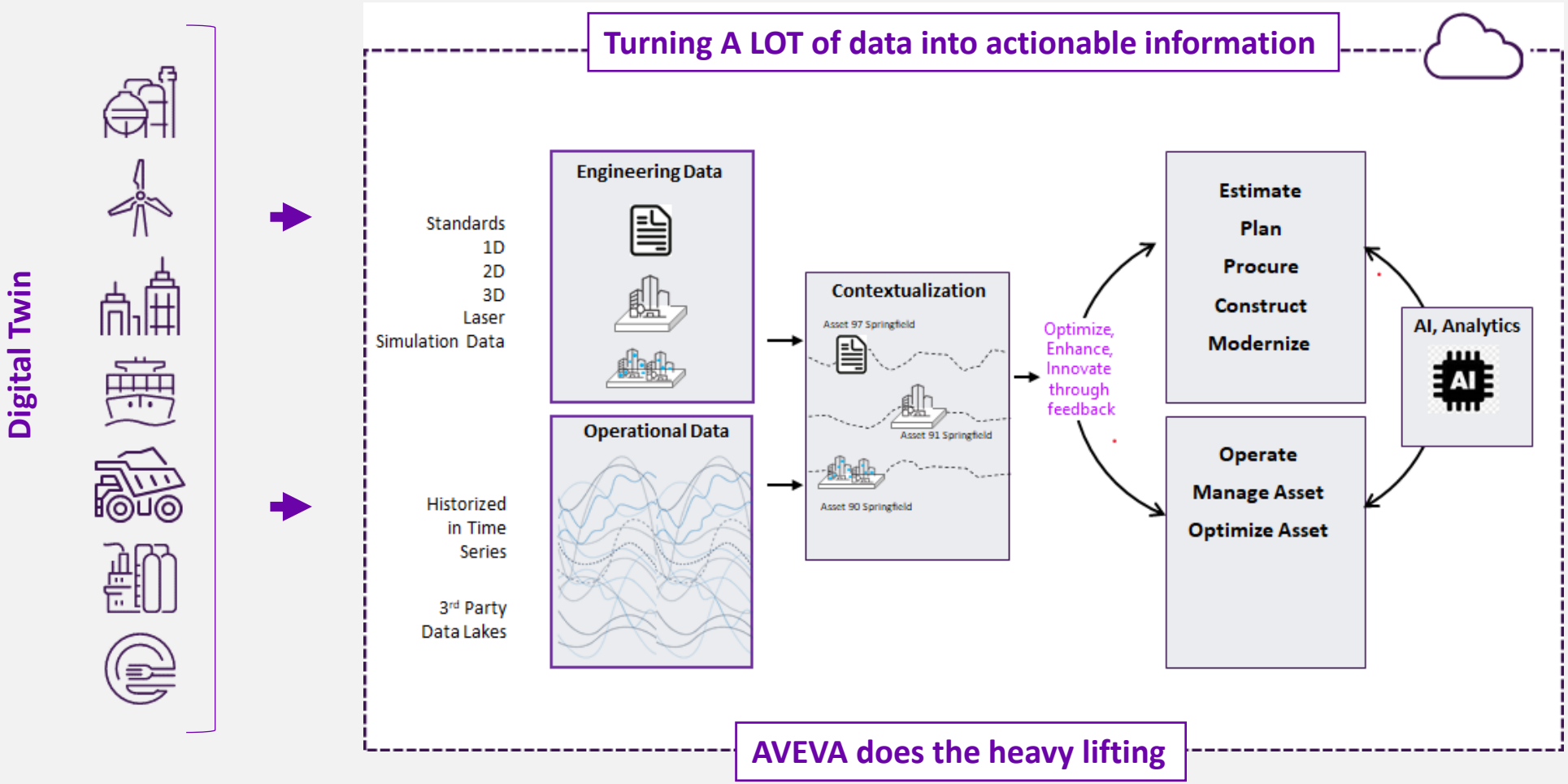
How Digital Twin, **Data** and Experience come together



Actionable Information available via open, robust & consistent API's from AVEVA Connect

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How Digital Twin, Data and **Experience** come together

Digital Twin

Standards
1D
2D
3D
Laser
Simulation Data

Historized in Time Series

3rd Party Data Lakes

Engineering Data

Operational Data

Contextualization

Asset 97 Springfield

Asset 91 Springfield

Asset 90 Springfield

Optimize, Enhance, Innovate through feedback

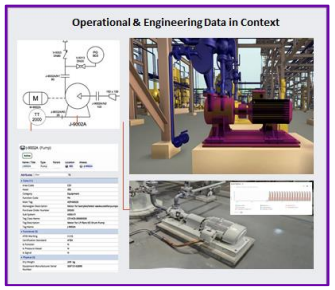
Estimate
Plan
Procure
Construct
Modernize

Operate
Manage Asset
Optimize Asset

AI, Analytics

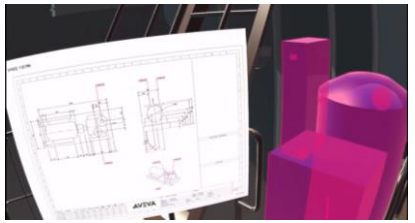
AI

Unmatched User Experience



Insight
(Full Digital Twin)

Unified Operations Center
(Full Digital Twin + much more)



Industrial Metaverse
(Natural Next Extension)

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Demonstration of Innovation in Progress

Covering:

- The Digital Twin
- The Data
- The Experience

With Infused AI

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Innovation in Progress

Demo 1: Birth of the Digital Twin

Customer Value: Using AI to go from laser scan to working 3D model faster than ever – converting a brownfield into a digitized asset.

Demo 2: Data into Actionable Info

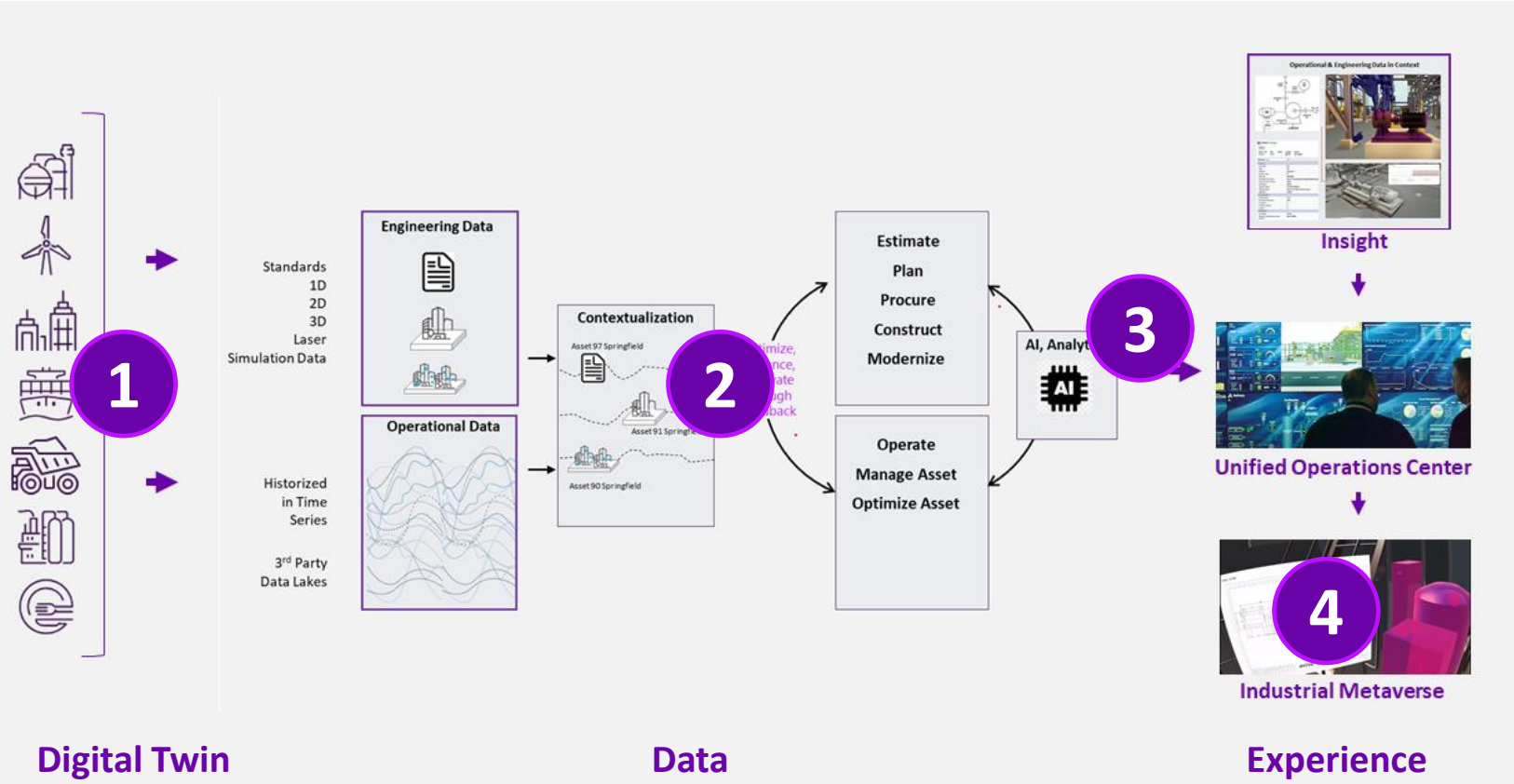
Customer Value: Provides context between engineering data, operational data, and 3rd party data lakes to provide actionable information

Demo 3: AI Infused Throughout

Customer Value: In this case, Vision AI provides unique insights that the human eye or sensors cannot easily detect – w/ integrated experience

Demo 4: Industrial Metaverse

Customer Value: This early PoC shows the incremental, yet highly amazing value for collaborative engineering & remote operations



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Innovation in Progress

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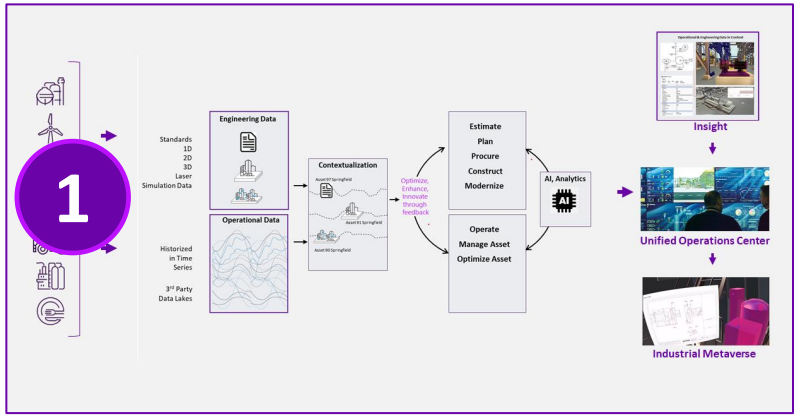
Customer Value: Using AI to go from laser scan to working 3D model faster than ever – converting a brownfield into a digitized asset.



Guest Speaker

Stephen Burrows
R&D Director, Plant 3D

Customer Value Statement

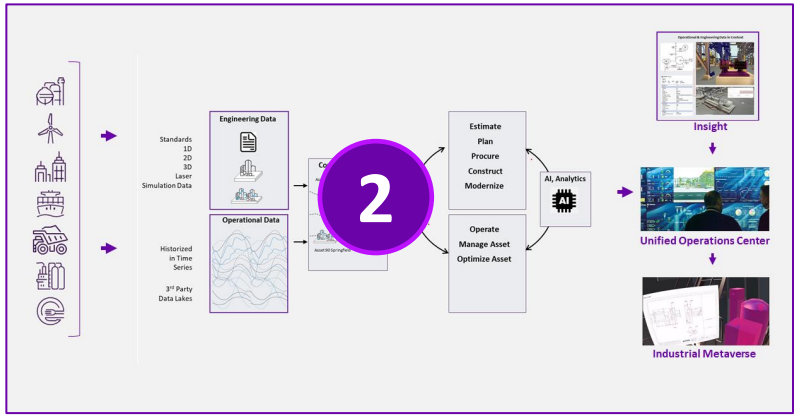
- Digitized brownfields with Infused AI
- Classification capability solves puzzle
- Full 3D modeling with E3D to modernize asset

Going from laser scan to working 3D model using Infused AI

Innovation in Progress

Demo 2: Data into Actionable Info

Customer Value: Provides context between engineering data, operational data, and 3rd party data lakes to provide actionable information



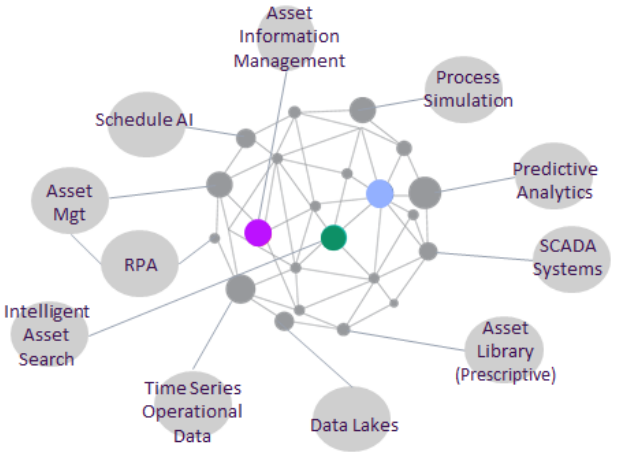
Guest Speakers

Erwin Gove
CTO, Cloud Platform

Sasha Krivonosova
PI System Global Architect

Customer Value Statement

- Turns a lot of data into actionable information
- Performs heaving lifting towards contextualizing multiple sources
- Fully integrated into our market leader Experience offers

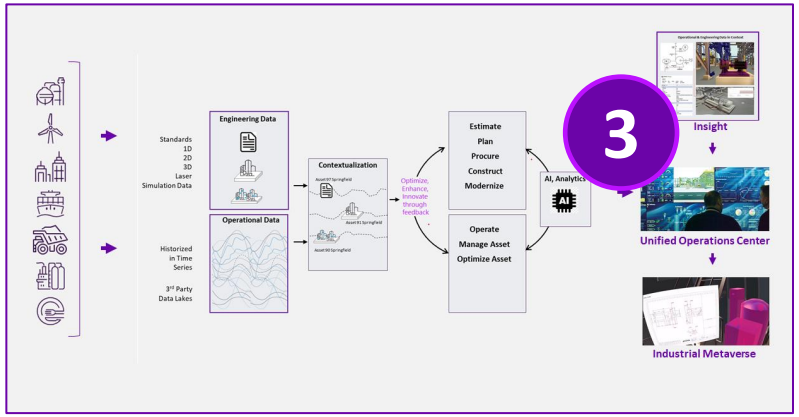


Actionable Information with World Class User Experience

Innovation in Progress

Demo 3: AI Infused Throughout

Customer Value: In this case, Vision AI provides unique insights that the human eye or sensors cannot easily detect – w/ integrated experience

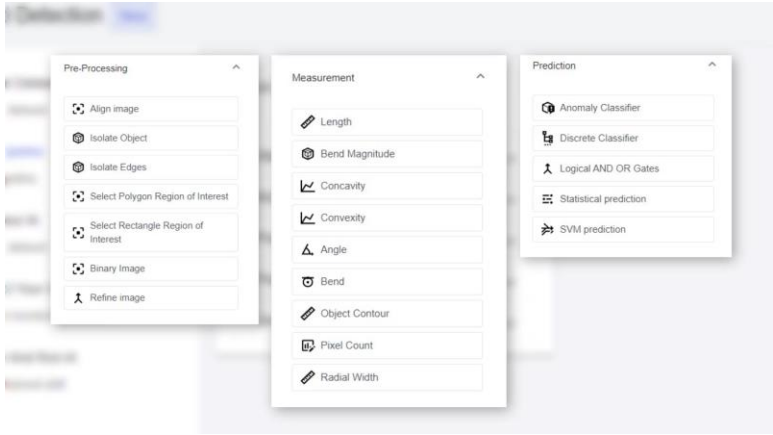


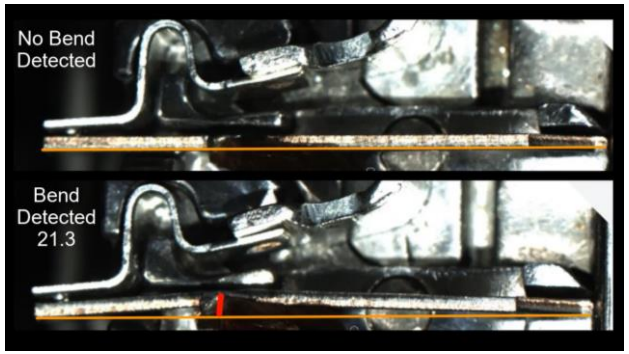
Guest Speaker

Shreeya Mody
AI R&D Team Member

Customer Value Statement

- Catches what sensors and humans cannot
- Augments camera capabilities with Infused AI
- Completely integrated with AVEVA Connect & HMI Offers





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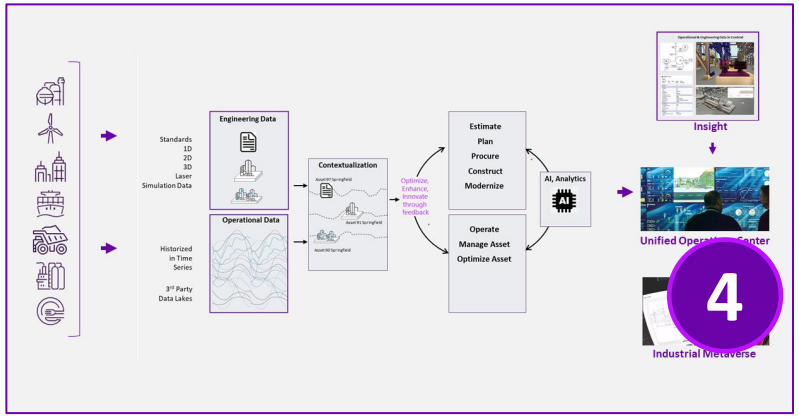
Innovation in Progress

Demo 4: Industrial Metaverse

Customer Value: This early PoC shows the incremental, yet highly amazing value for collaborative engineering & remote operations



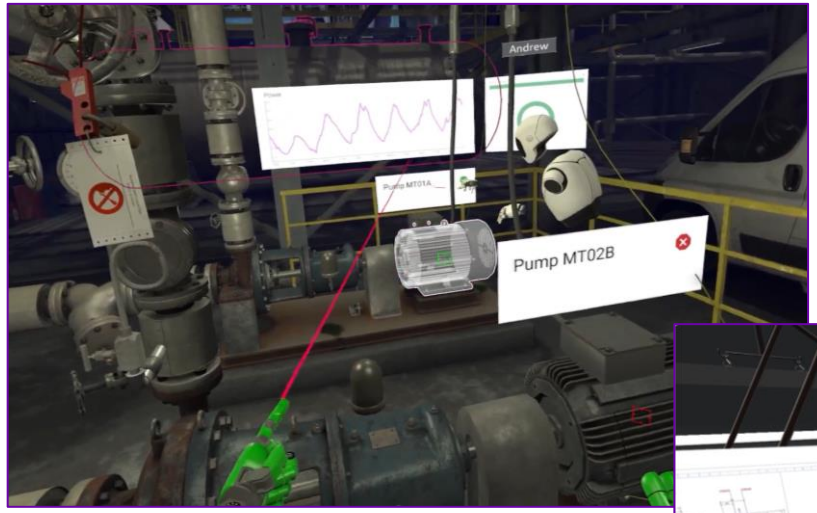
Guest Speaker

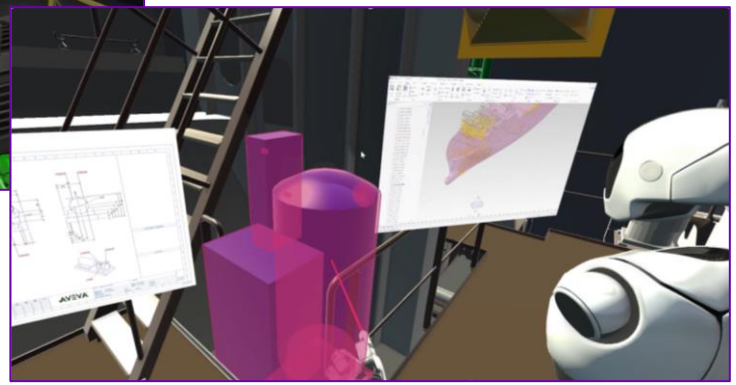
Simon Bennett

Director of Metaverse Business Development

Customer Value Statement

- Naturally extends current capability offered today
- Not about the goggles, as it works on any device
- Highly relevant: 1) Remote Operations & 2) Collaborative Engineering





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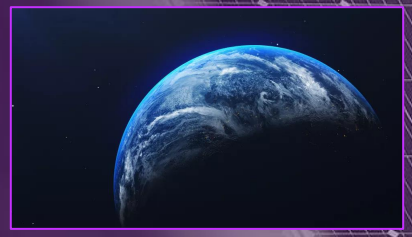
Summary

Time is Precious

Earth is Precious



The core components towards managing / optimizing above:

- The Digital Twin
- The Data
- The Experience

We are uniquely qualified to serve you best!

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AVEVA WORLD

SAN FRANCISCO 2022