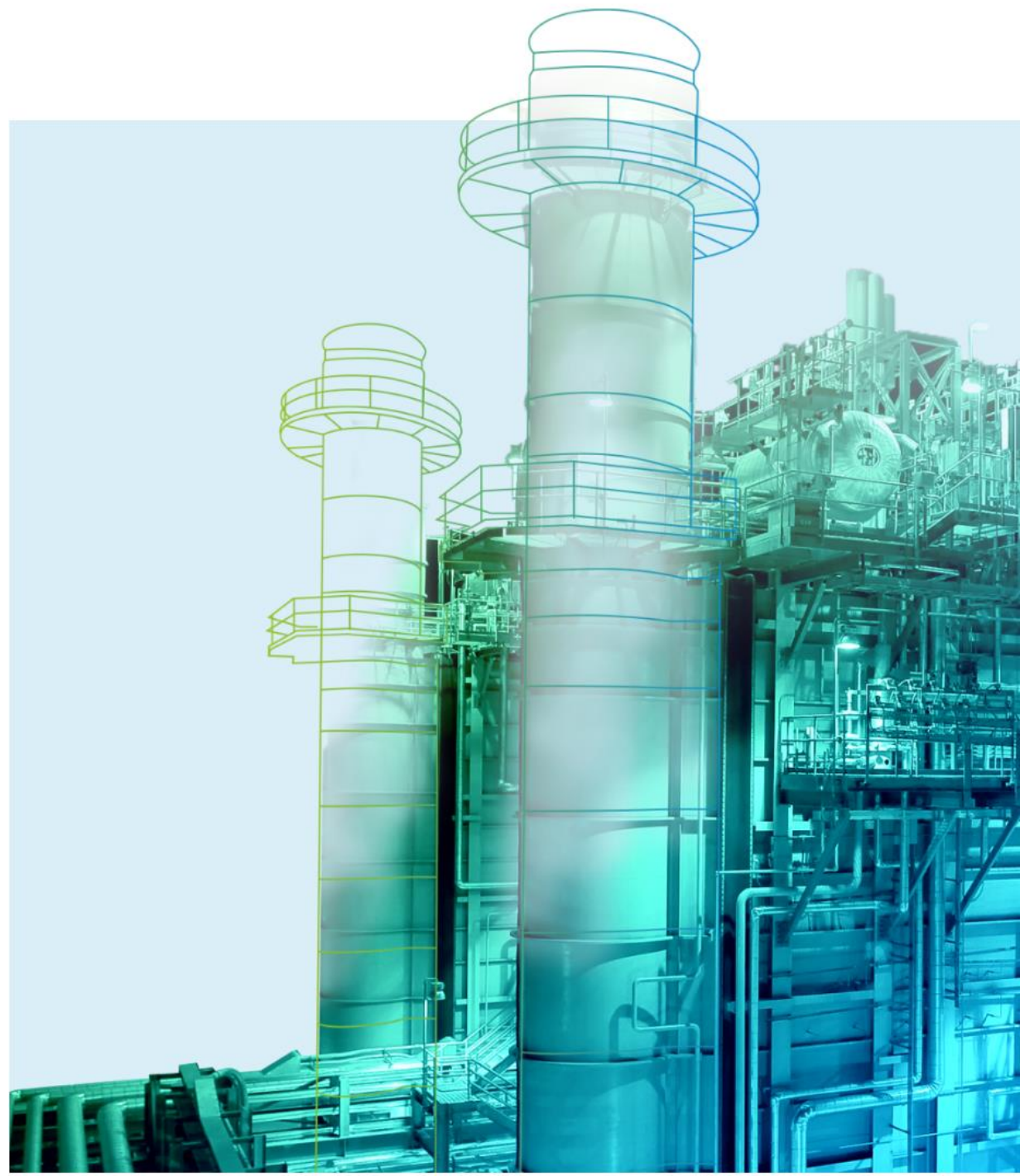




Operational 3D Digital Twins

For Complex Industrial Environments



Visionaize

Expert Team

Experienced, driven, and proven leadership, supported by 120+ data scientists, engineers, and developers

World-Class Customers



Global Reach

Find our offices located in Silicon Valley, Irvine, India, and Saudi Arabia

Highly Focused Industrial Solutions

3D Digital Twin, AI, VR/AR, and Intelligent Process Automation (IPA)

The Industrial World is Drowning in Data

Industry 4.0, IIoT Sensors, System Generated,
Real Time, Historical, Trends, Relationships.....

COVID-19 has accelerated digital transformation by 10 years
...AND we are still in the early stages!

“Unplanned downtime is costing us \$490M per year. We have all the data needed to solve the problem; we just need to contextualize it in a meaningful way.”

– VP Operations, Top 5 Global Oil Company

Digital Twin

“The Digital Twin is a *living learning model* that allows you to deliver business value by constantly making sure that Twin is a replica of the asset so you can get *insight into that asset and take action.*” - Colin Parris

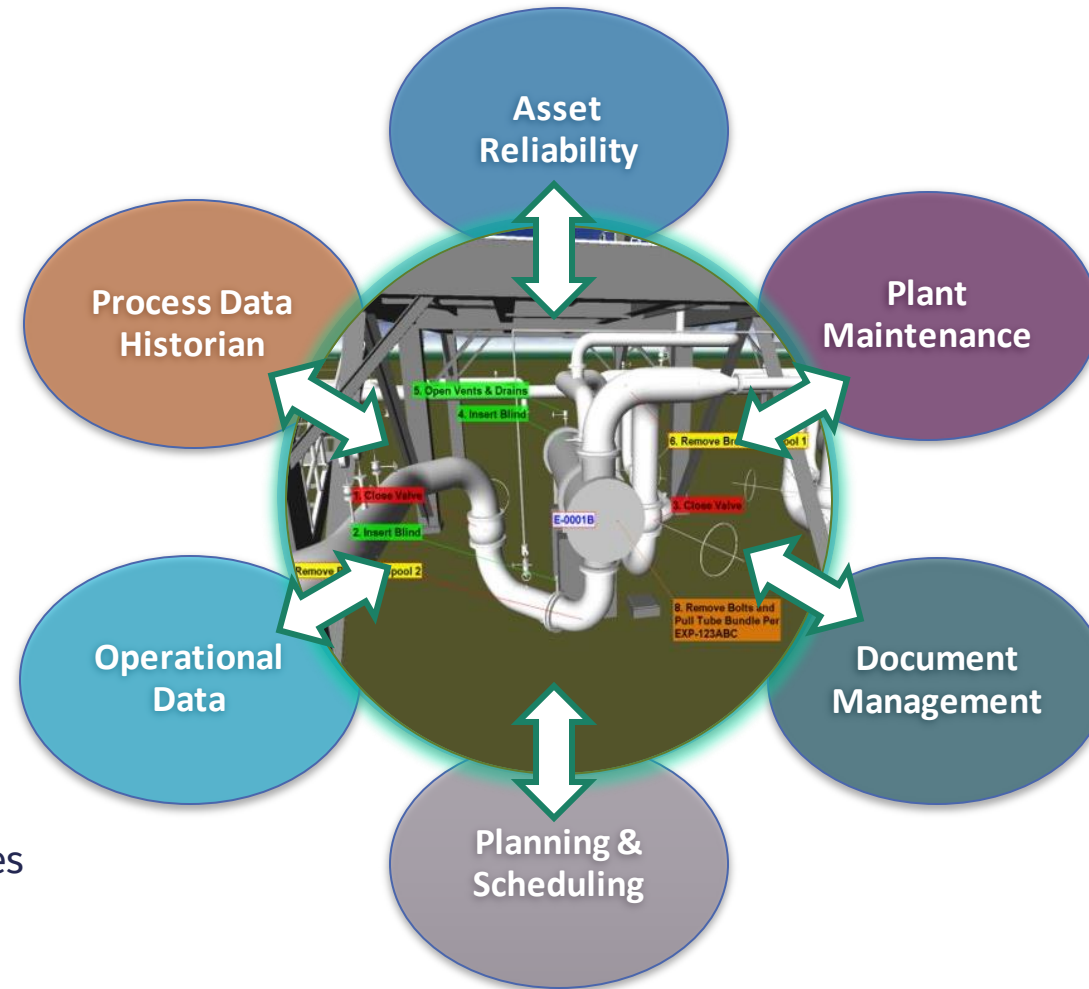


- ✓ Immersive 3D model to contextualize real-time & historical asset data
- ✓ Situational Risk Awareness with real-time monitoring & alerting
- ✓ Visualize predictive analytics to optimize operational efficiency
- ✓ Platform for Advanced Solutions like AI, AR, VR, and Simulations



Operational 3D Digital Twin

- ✓ **Advanced Visualization**
3D Model available 24/7/365
Intuitive and Data Driven
- ✓ **Integration of Enterprise Data**
Contextualize data from real-time IIoT sensors, historians & enterprise Systems of Record
- ✓ **Platform for Advanced Solutions**
Role-based Advanced Work Packages
VR, AR, AI & Simulations
- ✓ **Deploy, Maintain, & Sustain**
Rapid Deployment, Document Required Updates
Robust Model Management of Change

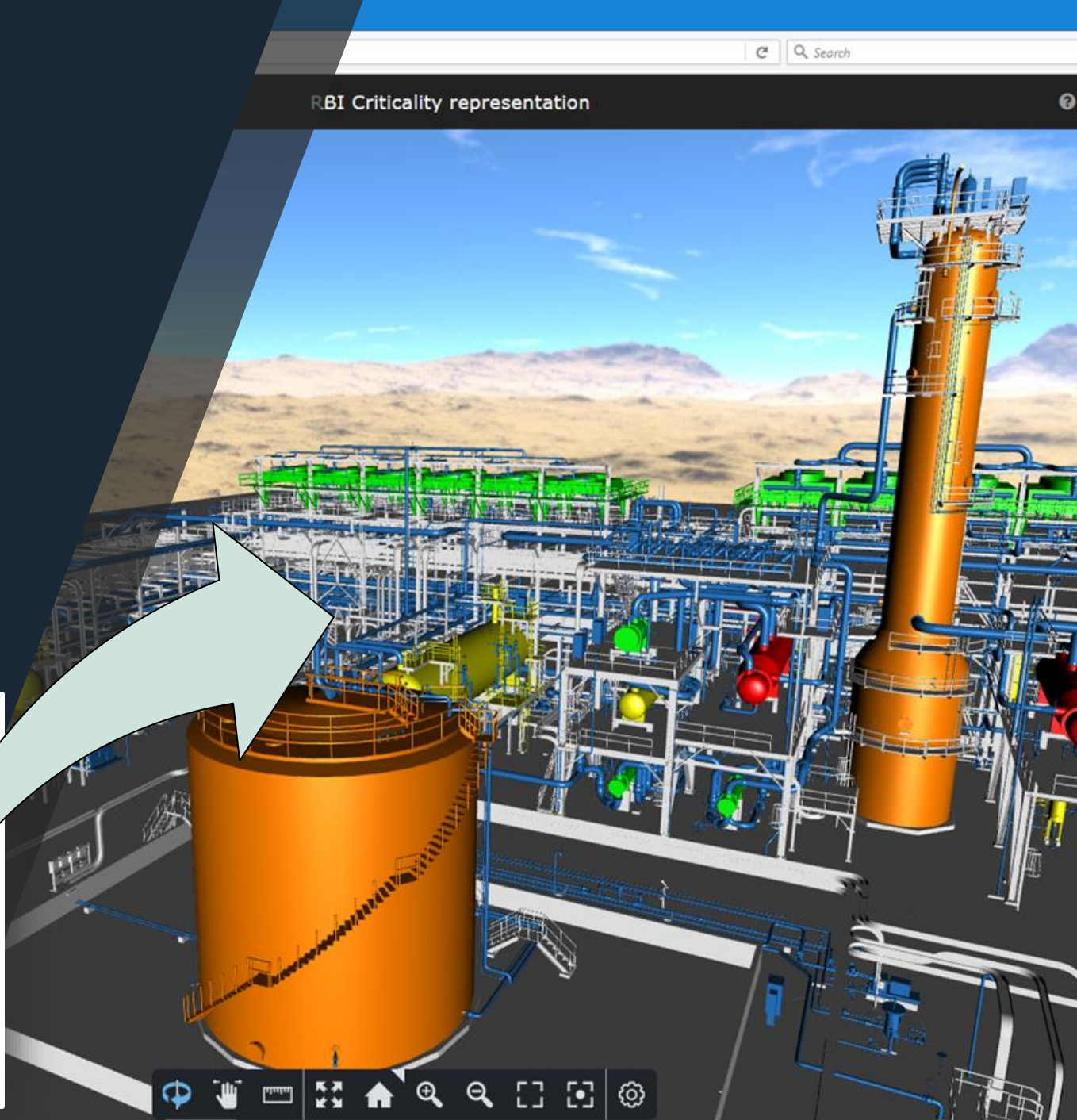
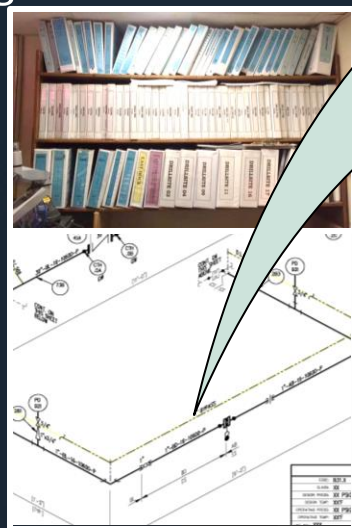


Situational Risk Awareness

Operational 3D Digital Twin

Silos of data and 2D diagrams become solutions-based Integrated Visualization:

- Role-based Access and Work Packs
 - Risk Based Inspection
 - Operator Training and Execution
 - Document Management
- Intuitive Real-time data driven insights
- Improved planning and Implementation
 - Automate & Optimize
 - AI Predictive Models
- VR & AR Solutions
 - Operator Training
 - Operator Rounds
- Animations & Simulations

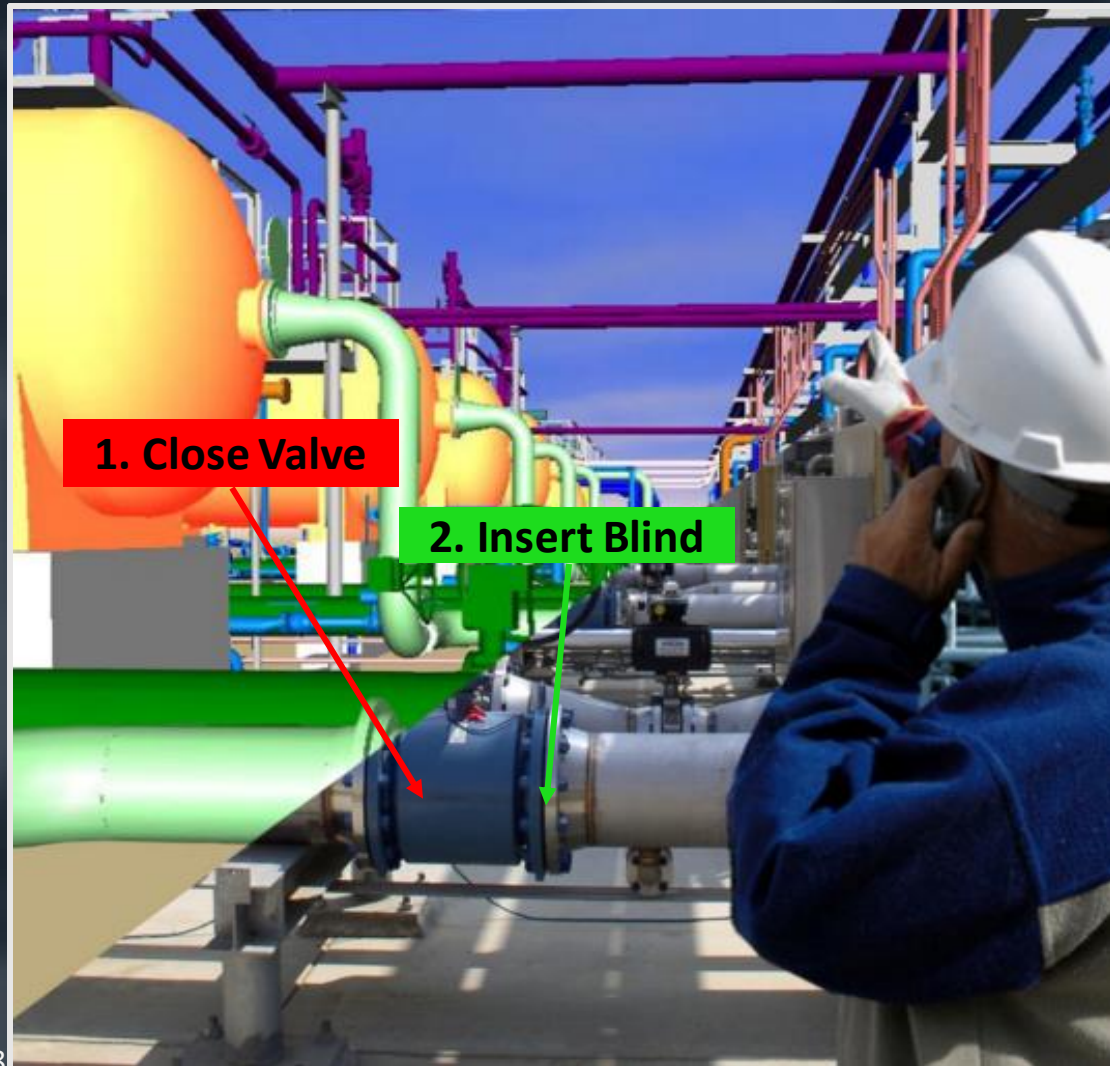


V-Suite Enterprise References

Document Management: Locate *relevant* documentation, e.g., Work Packages, Interactive Technical Manuals, P&IDs, PFDs, and other Data Sheets, Circuit or Loop drawings, etc.

On-Demand access to Interactive Technical Manuals, Videos, Data Sheets and Documents

V-Suite Methods to Consume



Mobile

Role Based Work Packages for Engineering, Safety, Operations & Maintenance.



Virtual Reality

Collaborate and remotely gain understanding of planned activities.



Augmented Reality

Perform critical tasks with efficiency and certainty while mobilized.

V-Suite Demonstrated Success

أرامكو السعودية
saudi aramco



Saudi Aramco, Saudi Arabia
World's Largest facility of its kind

Optimized Inspection & Maintenance

- **\$15.6 MM in benefits over 5-yrs ***
- **287% Annual ROI ***



PBF Energy – Wilmington, California
Approx 170K bbd – Electrostatic Precipitator

Disaster Recovery

- Plant back online 1-month ahead of schedule
- **\$50 MM in benefits** – in year 1 (\$500K project cost)

ExxonMobil

ExxonMobil – Torrance, California
166,000 barrels per day - #1 Crude Unit

Mechanical Failure

- Recovered 13 days ahead of schedule
- **\$15 MM in benefits** – in year 1 (\$700K project cost)



CHS Cooperative, McPherson, KS
Approx 100K bbd – Brownfield

Data Consolidation & Contextualization

- Payback in 13.4 months *
- **132% Annual ROI ***



Shell Oil Refinery - Alberta, Canada
Approx 150k bbd - Bitumen Upgrading

Transform Inspection Practices

- **Saved in excess of \$1M in the 1st year**
- Reduced RBI inspection schedule by > 60%

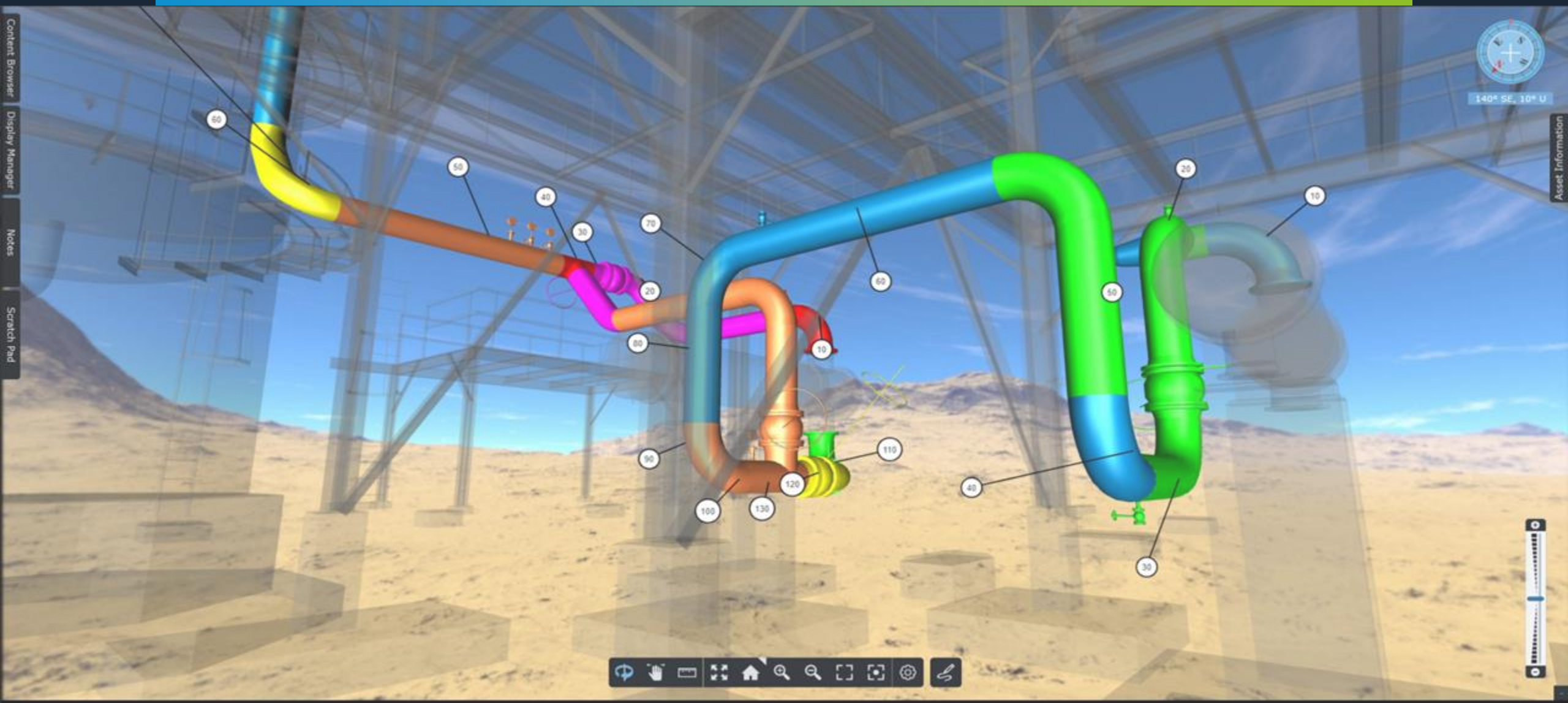


Plains Midstream – Canada
2 million barrels per day

Remote Operations

- **Projected \$10M value**
- **Faster incident recovery**
(10 days every 5 years)

Discussion – Q&A



SUPPORTING SLIDES
OR ADDITIONAL CONTENT



Digital Twin – Applications

Platform for Advanced Applications & Solutions, VR, AR, AI, & Simulation

Asset Digital Twin (Asset Performance Optimization)			Thermal Digital Twin (Operations Optimization)			Process Digital Twin (Process Mining Business Optimization)		
Equipment Health Anomaly Detection	Reliability Management	Maintenance Optimization	Thermal Performance	Operational Flexibility	Outage Management	Dispatch Optimization	Optimal Outage Planning	Portfolio Planning
Asset Condition Monitoring	Predictive Diagnostics	Asset Maintenance Strategy	Plant Efficiency Optimizer	Operational Excellence (OE)	Plant Maintenance Management	Plant Dispatch Optimizer	Enterprise Maintenance Planning	Load Forecasting
		Plant Asset Life Optimizer		Plant Start-up Optimizer Solutions		Plant Dispatch Excellence		Fleet Dispatch Excellence



V-Suite Create & Maintain Digital Twin

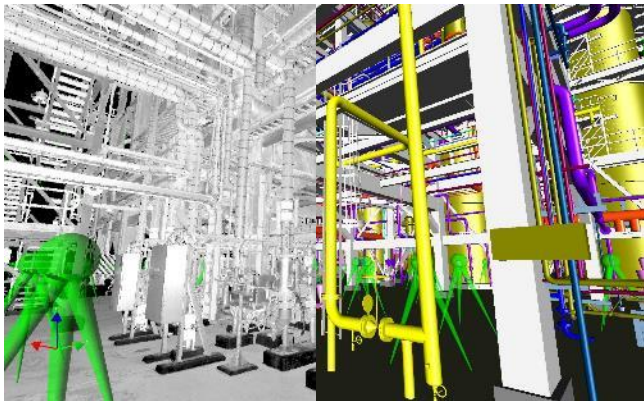
As-designed

1

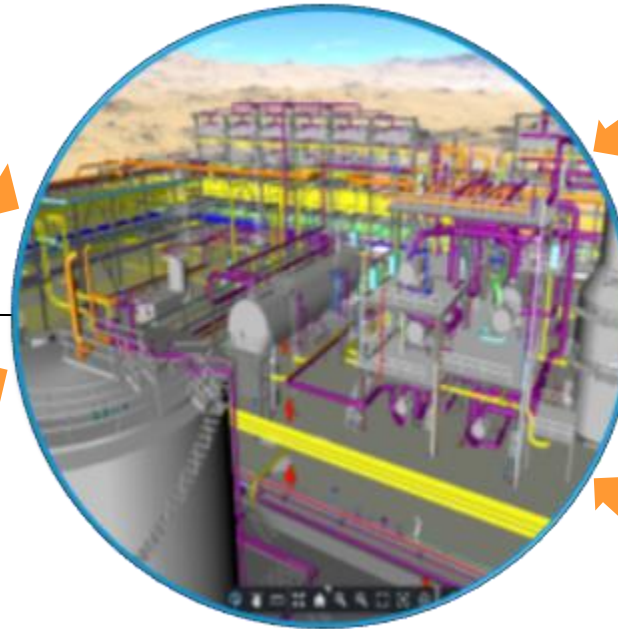


As-built
As-is

2



V-Suite 3D Digital Twin



V-Suite MMOC (Change Management)
Create and update the 3D Model
Keep up to date & online 24/7/365



- ✓ **Dynamic Visualization**
- ✓ **Integration with Business-Critical Systems**
- ✓ **Platform for Advanced Solutions**
- ✓ **Time to Value: Deploy, Maintain, & Sustain**

V-Suite Applications – User Interface



On Premise

- Desktop Application
- Workflow and Solutions Automation
- Authoring w/ Robust MMOC
(*Model Management of Change*)



Cloud

- Web Applications
- Cloud Ready Architecture
- Low IT Footprint
- Unlimited Users
- Integrated & Data Driven
- Interoperable



Mobile

- Native Mobile Applications
- Knowledge Books
- Advanced Work Packages
- Work Online & OFFLINE