Life-cycle digital twins – a practical approach
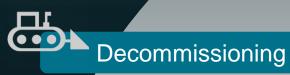
Adrian Park, Vice President
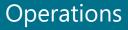
November 11th, 2020

DIGITAL TWIN

Real-time on demand access to data across the the IT-landscape

Facility Configuration

Transactional Data

Realtime data

Process Simulation

Geospatial data

Time series data
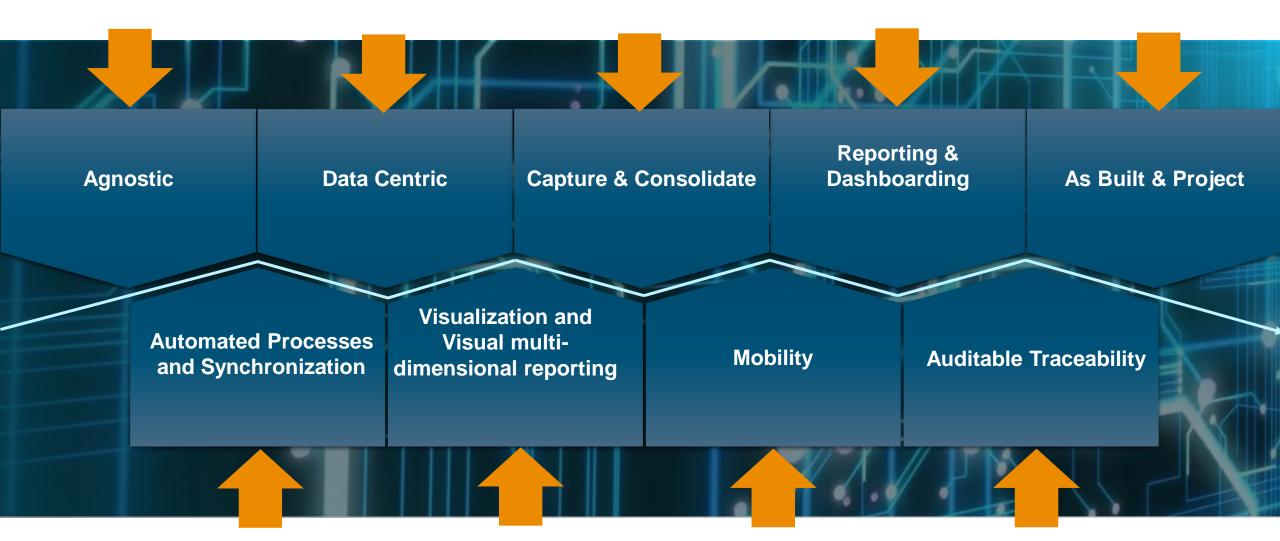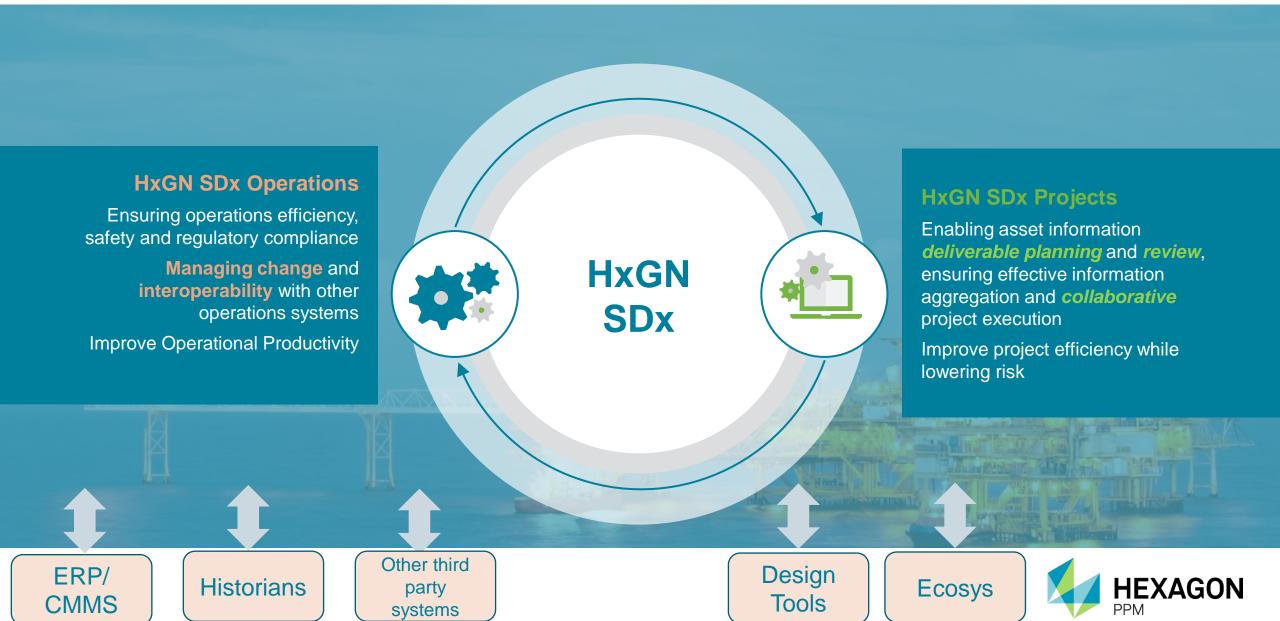
Hexagon's Digital Twin Solution

Agnostic

Data Centric

Capture & Consolidate

Reporting & Dashboarding

As Built & Project

Automated Processes and Synchronization

Visualization and Visual multi-dimensional reporting

Mobility

Auditable Traceability

HEXAGON

HxGN SDx® Managing the facility Digital Twin

HxGN SDx Operations

Ensuring operations efficiency, safety and regulatory compliance

Managing change and **interoperability** with other operations systems

Improve Operational Productivity

HxGN SDx Projects

Enabling asset information *deliverable planning* and *review*, ensuring effective information aggregation and *collaborative* project execution

Improve project efficiency while lowering risk

HxGN SDx

ERP/ CMMS

Historians

Other third party systems

Design Tools

Ecosys

HEXAGON PPM

Demonstration

SDx Data Capture

Confidential

Document Reader inputs:
- PDF Reader
- Drawing Reader
- Model Reader
- Laser Scan
- Document Reader

Staging Area
- Document Information
- Tags and Attributes
- Inconsistency Reporting
- Data Consolidation
- Validation - QC

Database Reader inputs:
- Design Tool Data
- 3rd Party Data
- SAP Data e work order
- Oracle SQL or
- Registers

HEXAGON
PPM

Quality Control and reporting
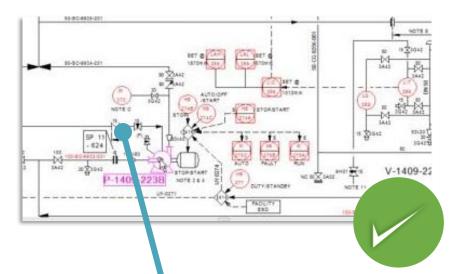
TAG COMPLETENESS REPORT

Tag Information							
Name	Description	XC	CFT	MA	DS	3D Model	CA
409-E-130B	Exchanger	✗	✗	✗	✗	✗	
409-P-221	WASH COLUMN PUMP	✓	✗	✗	✗	✗	✗
409-E-224	Exchanger	✓	✓	✗	✗	✗	
409-F-445A	Furnace	✗	✗	✓	✗	✗	
409-E-227C	Exchanger	✓	✗	✗	✗	✗	
409-E-226A	Exchanger	✓	✗	✗	✗	✗	
409-P-227A	Pump	✓	✗	✗	✗	✗	✗
409-V-227	Vessel	✓	✓	✓	✗	✗	
409-P-222	WASH COLUMN PUMP	✓	✗	✗	✗	✗	✗
409-P-801C	Pump	✓	✗	✗	✗	✗	✗
409-P-422	Pump	✓	✗	✗	✗	✗	✗
802-80-PV-003	Vertical Pump	✓	✗	✗	✗	✗	✗
409-P-426A	Pump	✓	✗	✓	✗	✗	✗
409-F-221	Furnace	✓	✗	✓	✓	✗	
07-25-PV-003	Vertical Pump	✓	✗	✗	✗	✗	✗
09-V-224	DEETHANISER COLUM	✓	✓	✓	✓	✗	

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PPM

Link Tags & Documents with Laser Scans

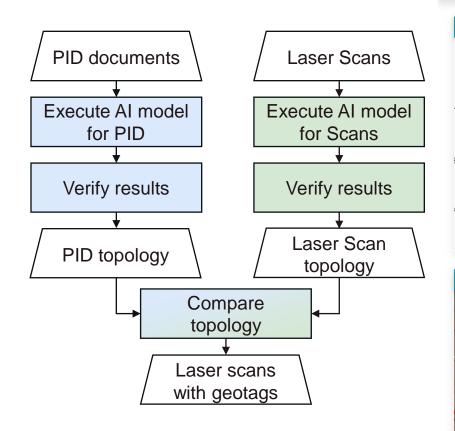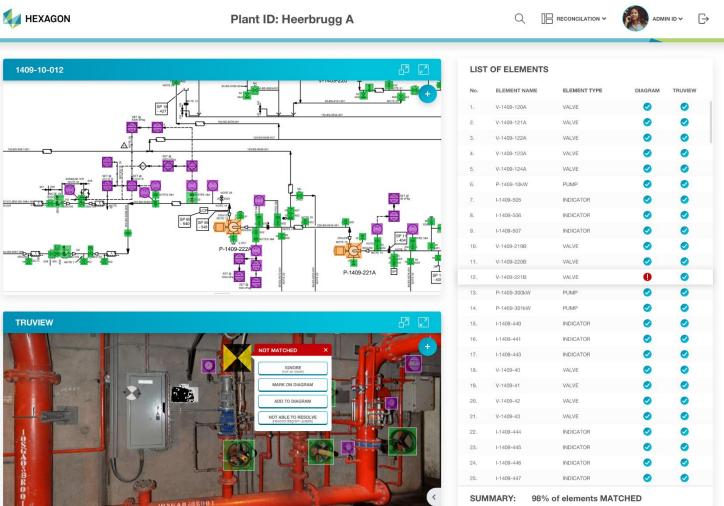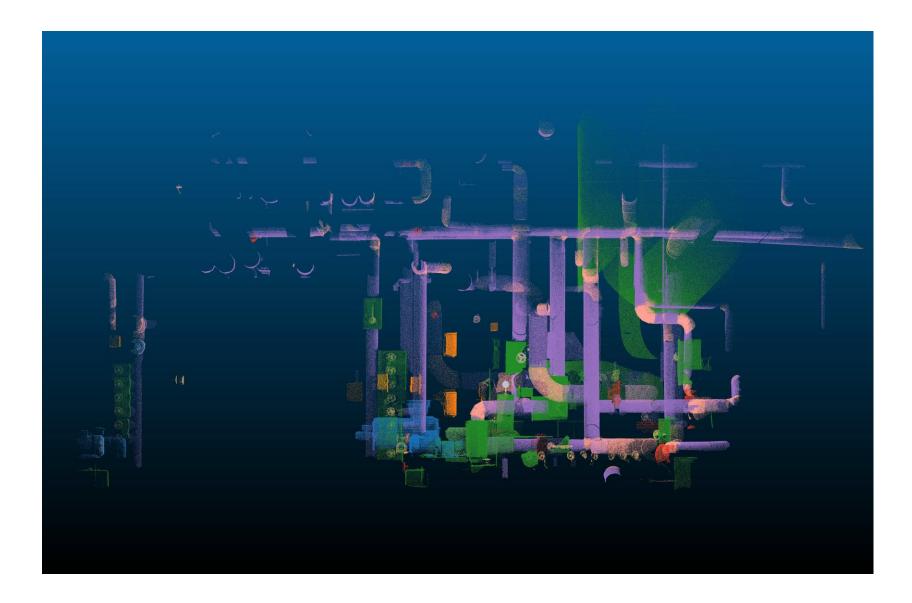## Leica High Definition Survey

Autotagging Overview

Autotagging Component detection in Laser Scans

Situational Awareness

Situational Awareness

Engineering Data

Real-time Data

Geospatial Data

Analysis

Awareness

Risk — High

Readiness — Low

Insightful Construction and Operations

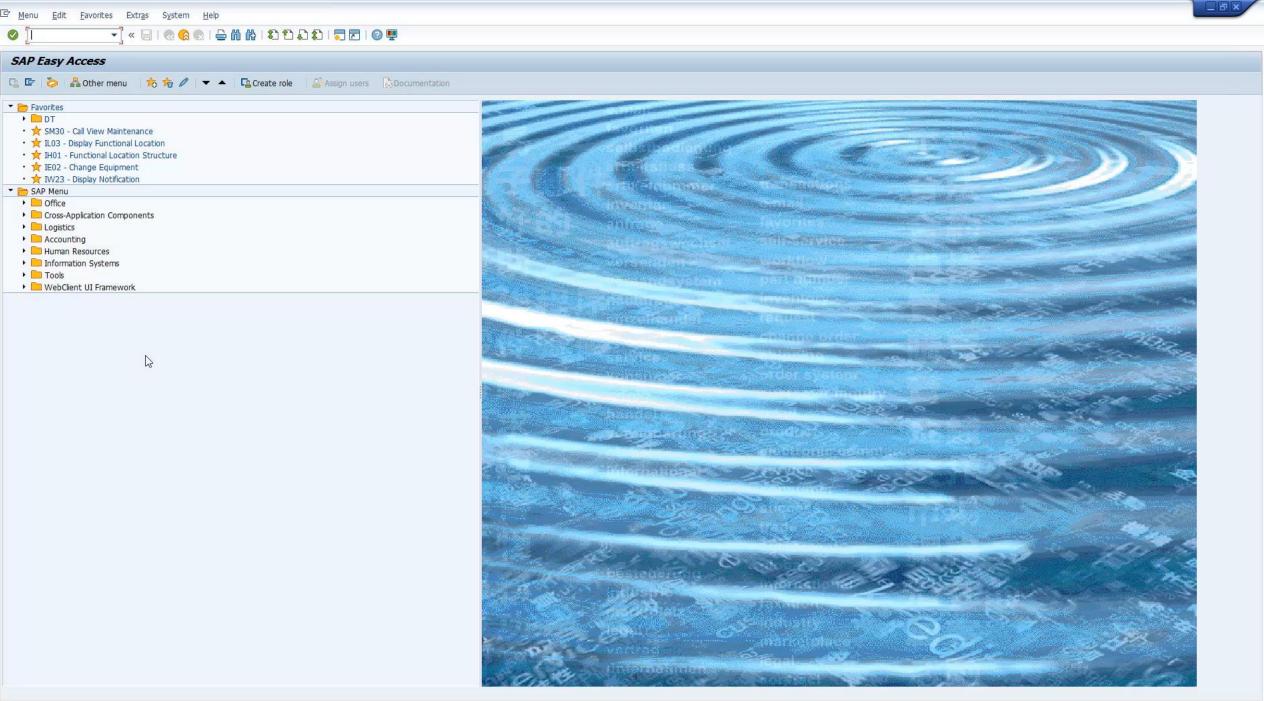Efficient support + Safer Workplace

HEXAGON PPM
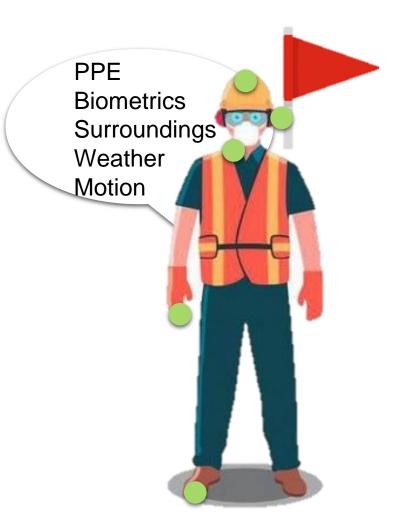
Digital Twin interoperability across the IT landscape

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SDx Connector for Plant Maintenance and data historians

WEB SERVICES

Digital Twin

HxGN SDx®

IBM maximo · SAP

- Tag synch to CMMS
- Equipt synch from CMMS
- Notifications to CMMS
- 2-way look-up

2021

OSIsoft · aspentech

- Tag synch to AF
- 2-way look-up

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SAP Easy Access

Other menu ⭐ ⭐ ✏️ ▼ ▲ | Create role | Assign users | Documentation

- ▼ 📁 Favorites
  - ▶ 📁 DT
  - ⭐ SM30 - Call View Maintenance
  - ⭐ IL03 - Display Functional Location
  - ⭐ IH01 - Functional Location Structure
  - ⭐ IE02 - Change Equipment
  - ⭐ IW23 - Display Notification
- ▼ 📁 SAP Menu
  - ▶ 📁 Office
  - ▶ 📁 Cross-Application Components
  - ▶ 📁 Logistics
  - ▶ 📁 Accounting
  - ▶ 📁 Human Resources
  - ▶ 📁 Information Systems
  - ▶ 📁 Tools
  - ▶ 📁 WebClient UI Framework

ERD (1) 100   ISR-VS-ERP6   OVR

In conclusion…
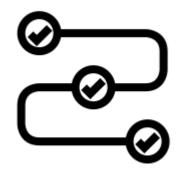
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Digital Twin – Practical Considerations

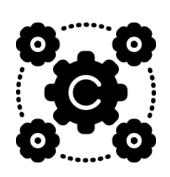Capture and Validate

Sustain

Simple, Zero footprint web access

Interoperability with Operations systems

Situational Awareness

HEXAGON

Thank you !

Hexagon is a global leader in digital solutions that improve productivity and quality for manufacturing, infrastructure, safety and mobility applications. We create Smart Digital Realities™ that empower the future of autonomy across production and urban ecosystems.

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