

State of the art processes to capture the Digital Twin – International standardization efforts for data handover requirements

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27 November 2018

An abstract graphic on the left side of the slide, composed of numerous overlapping triangles in various shades of blue, ranging from dark navy to light sky blue, creating a complex, crystalline or low-poly effect.

Digital Twins and Digital Transformation

**\$1.6 TRILLION
POTENTIAL
SAVINGS**

RELATED TO
DIGITAL TRANSFORMATION
IN THE OIL & GAS SECTOR



**World Economic Forum
Digital Transformation
Initiative**

In collaboration with Accenture

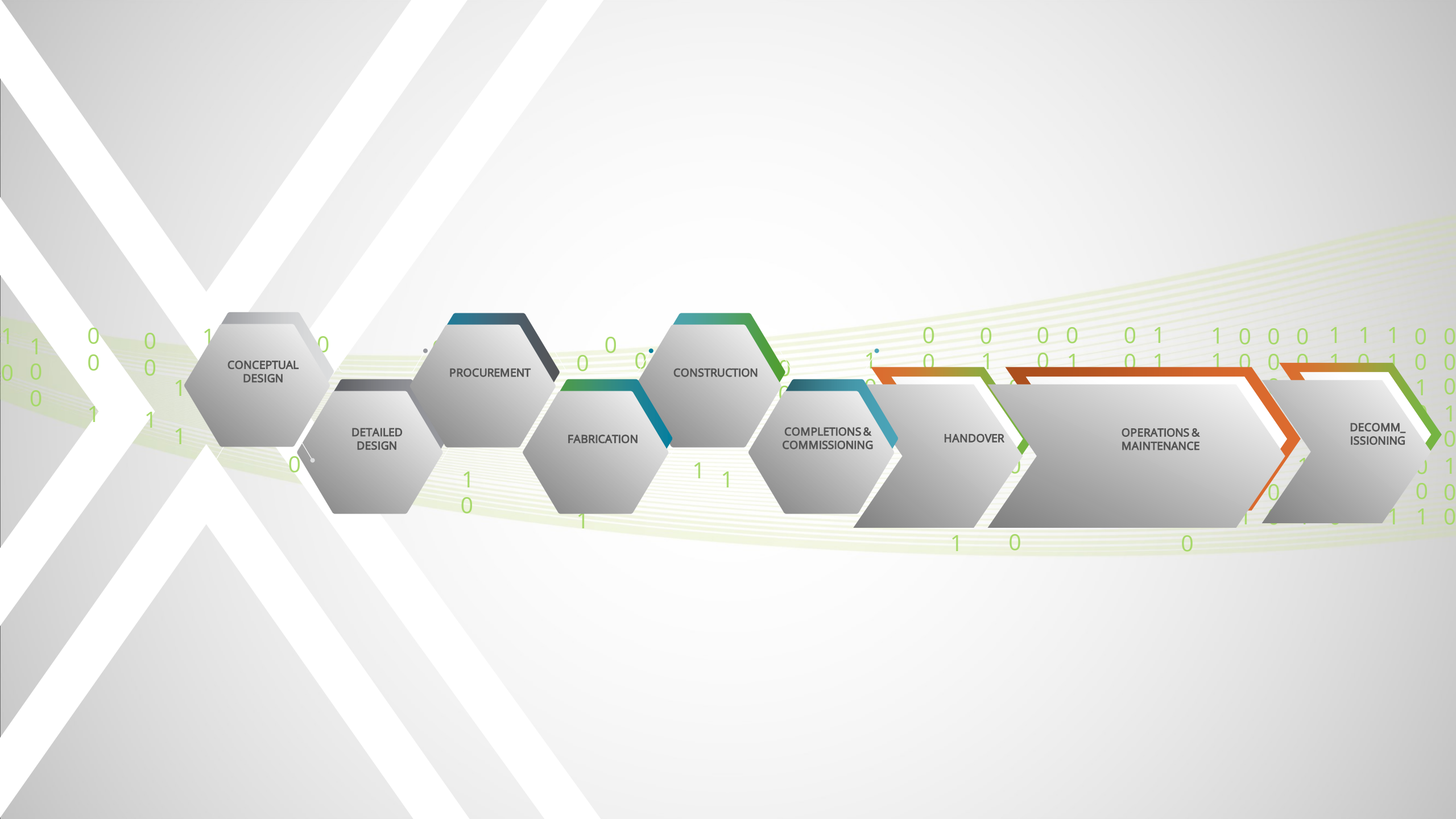
**OIL AND GAS INDUSTRY
EXECUTIVE SUMMARY
JANUARY 2017**



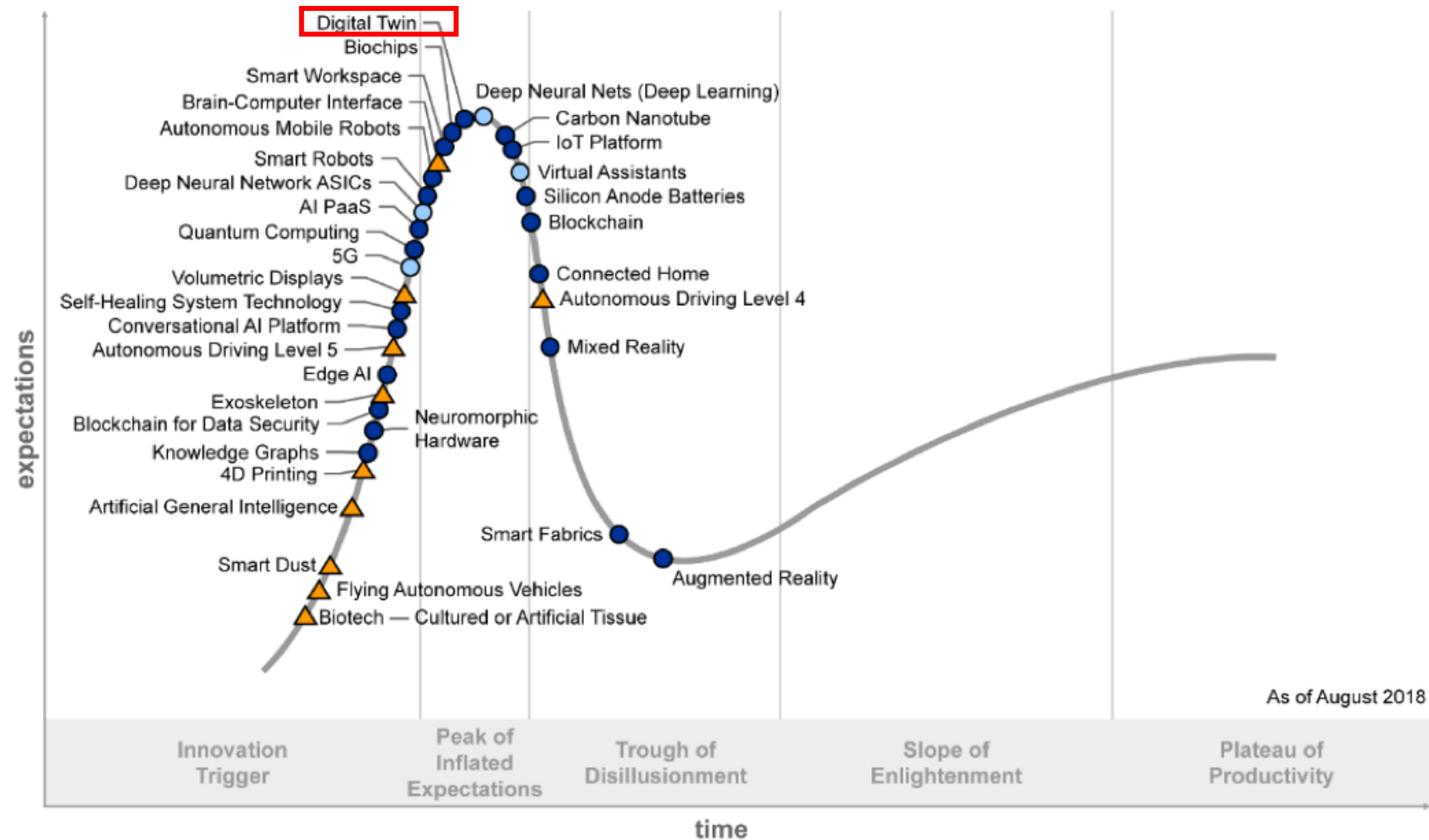
**VALUE
AT
STAKE**

DIGITAL
TWIN





Digital Twin – Gartner Hype Curve 2018



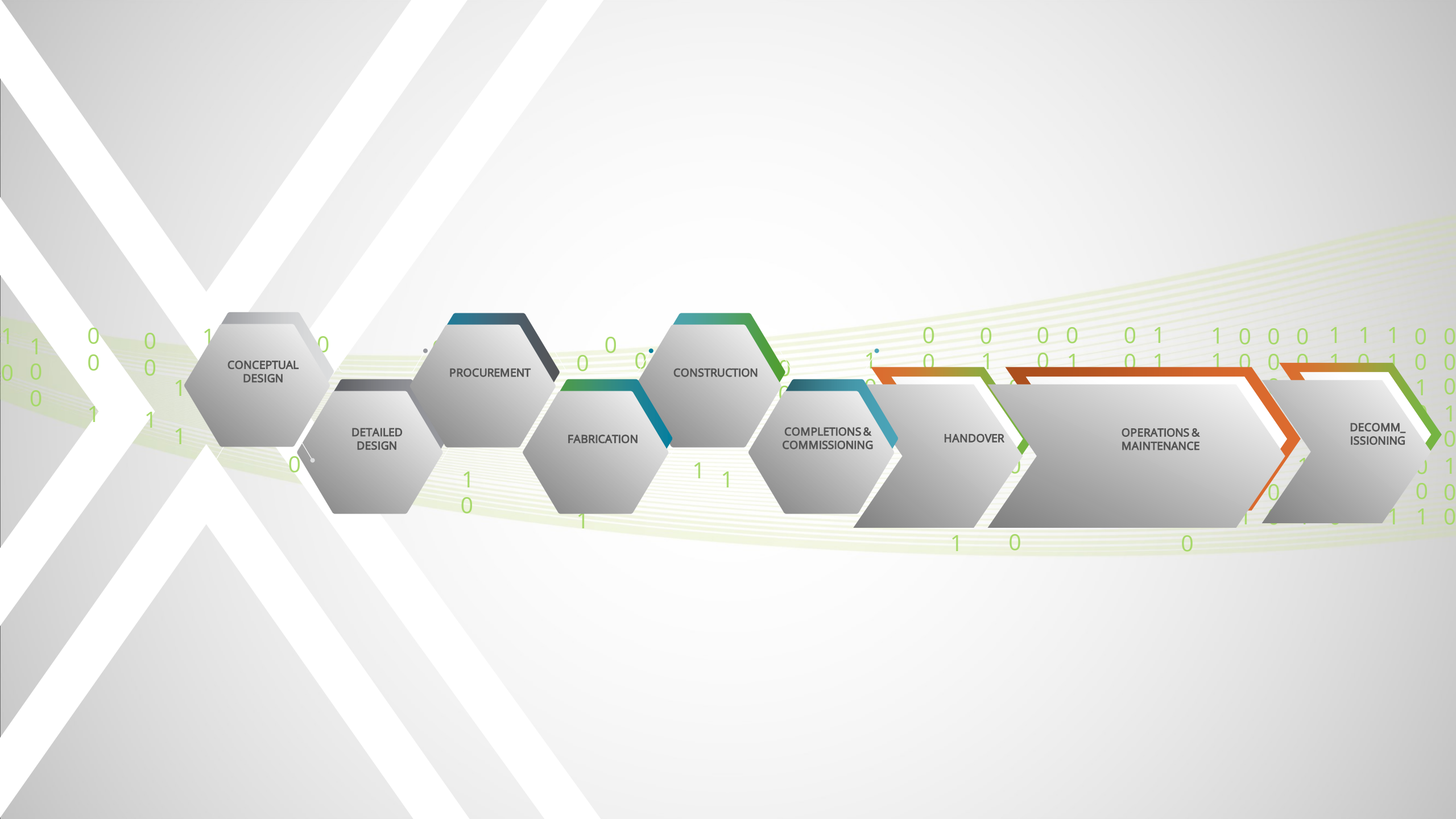
Plateau will be reached:

○ less than 2 years ● 2 to 5 years ● 5 to 10 years ▲ more than 10 years ⊗ obsolete before plateau





Capture and handover of the digital twin

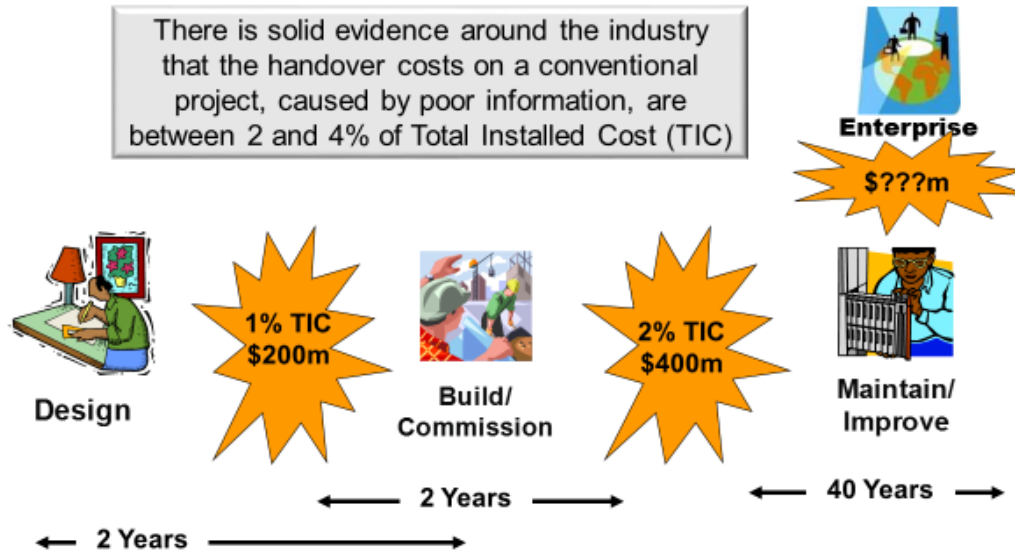


Handover business opportunity

The Owner Operator Challenge

INPEX

There is solid evidence around the industry that the handover costs on a conventional project, caused by poor information, are between 2 and 4% of Total Installed Cost (TIC)



“There is solid evidence around the industry that the handover costs on a conventional project, caused by poor information, are between 2 and 4% of Total Installed Cost (TIC)”

June 6 2012

Information Management for Mega-Projects.

The background is a dark blue field filled with glowing binary code (0s and 1s) and abstract geometric patterns. On the left, there are large, overlapping triangles in shades of teal and light blue. Diagonal bands of binary code and glowing lines sweep across the image, creating a sense of digital flow and connectivity.

CFIHOS

Capital
Facilities
Information
HandOver
Specification



POPULATE OPERATIONAL SYSTEMS

OPERATIONS WORK PROCESSES

PROCESS SAFETY MANAGEMENT

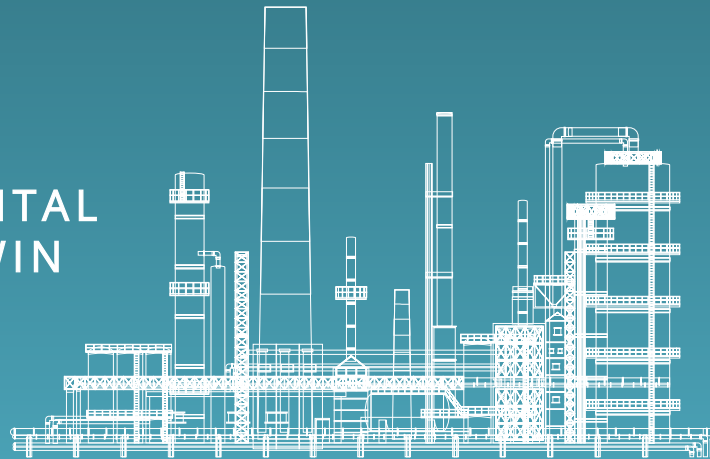
1st

CFIHOS
COMPLIANT
ASSET
LIFECYCLE
INFORMATION
MANAGEMENT
SYSTEM

PROJECTS

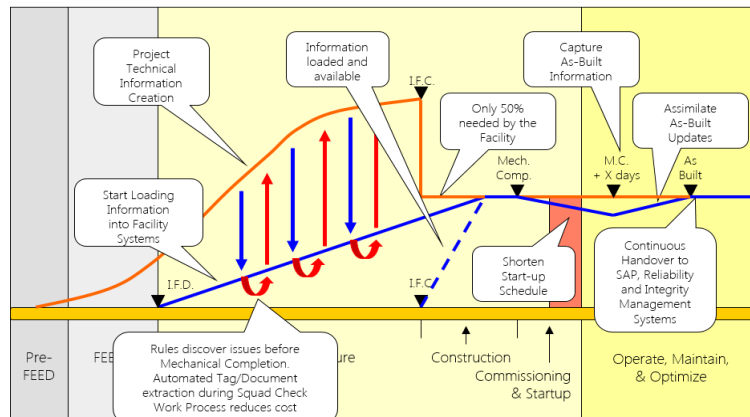
DIGITAL
TWIN

OPERATIONS



Strategic Data and Documents for Operations – CFIHOS V1.3

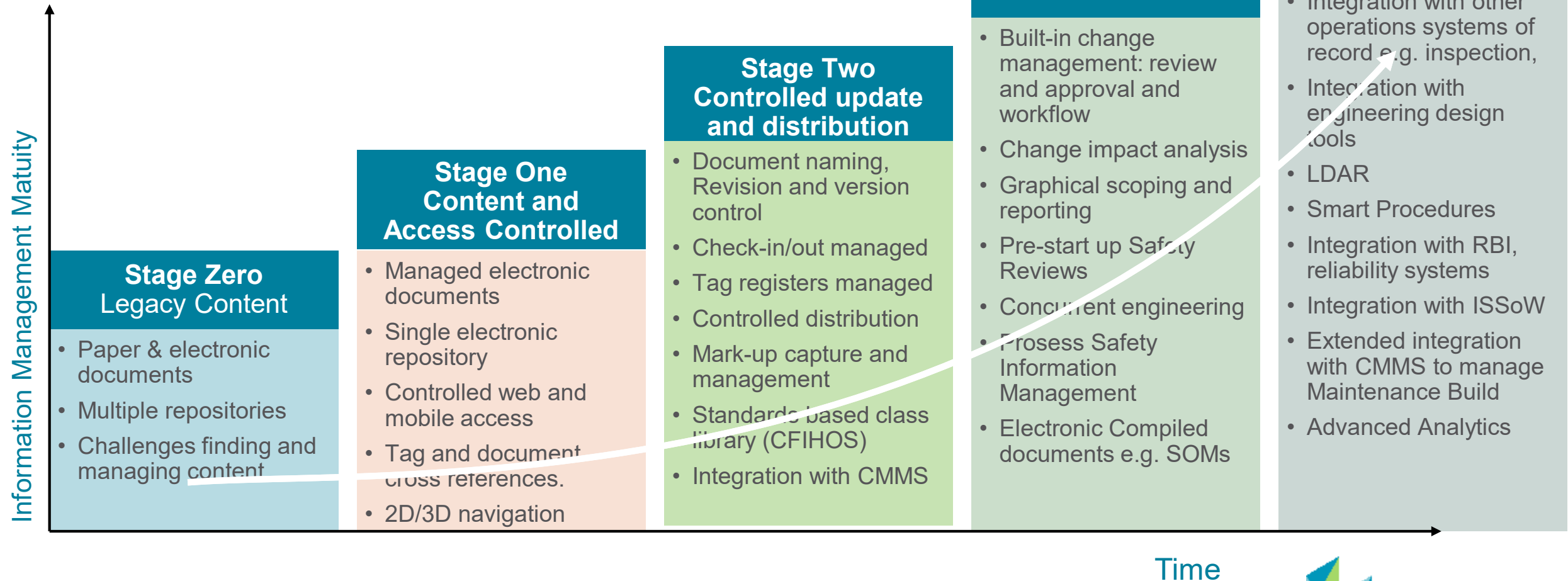
- Operational Work Processes
- Data and Document Deliverables
- Data Register Project Deliverables
- Project Execution Playbook





Establishing the Digital Twin for brownfield assets

Climbing the Information Management maturity curve



Capturing the digital twin and management for brownfield facilities

Rapid Capture

Identifying Best Masters

Extract intelligence & creates links

Quality Control & Reporting

Information Browsing

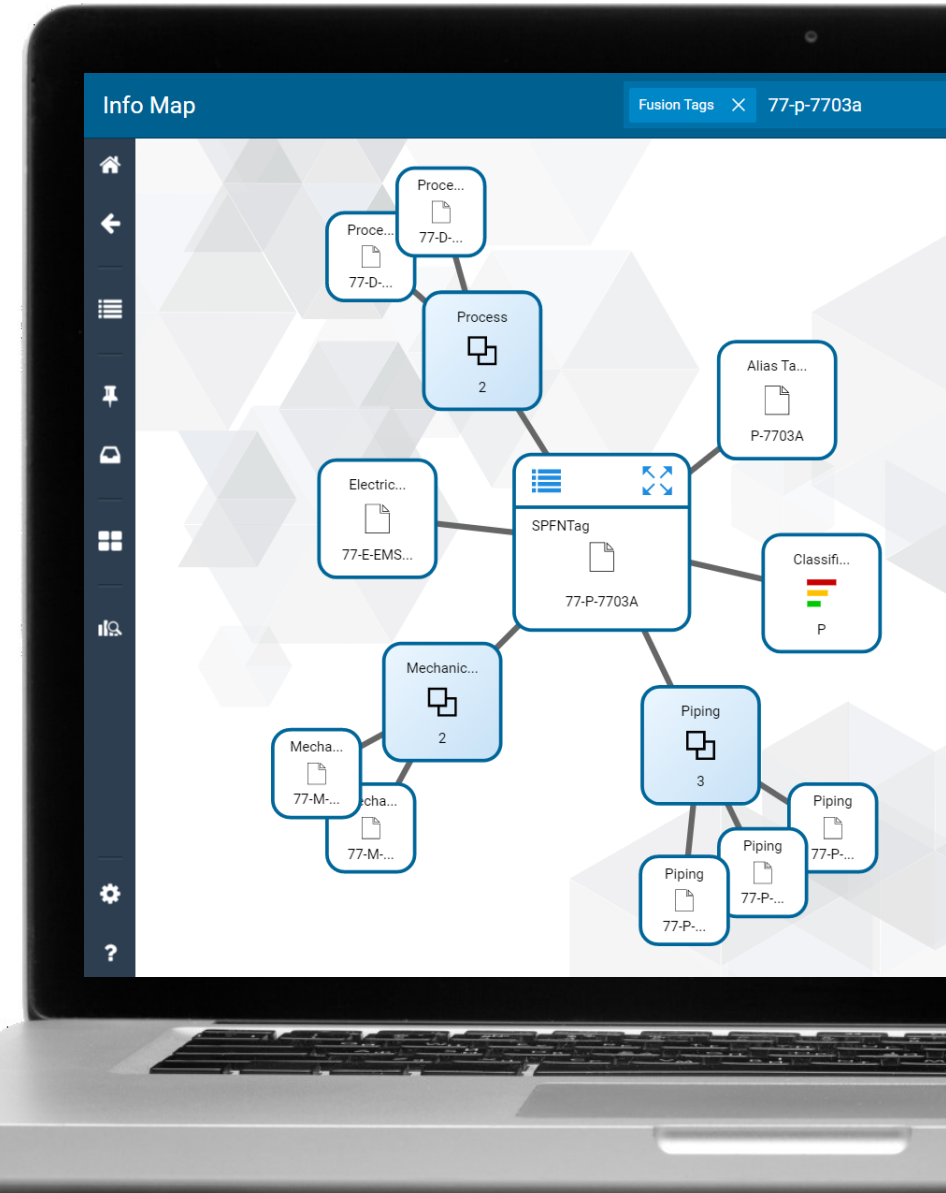
Information Sustainment

Leverage with value added work processes

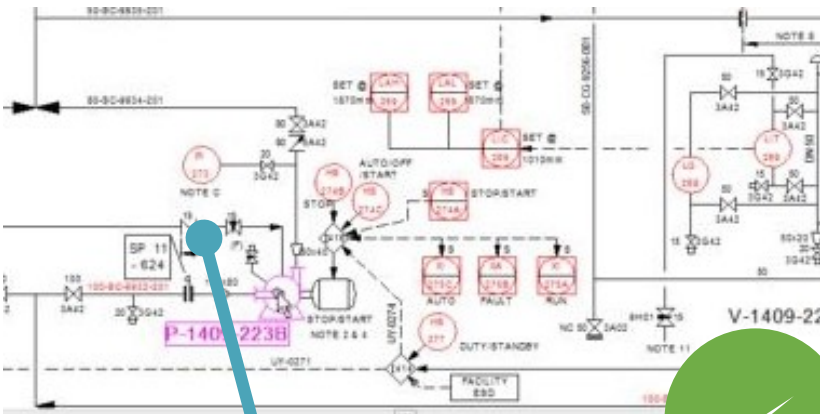
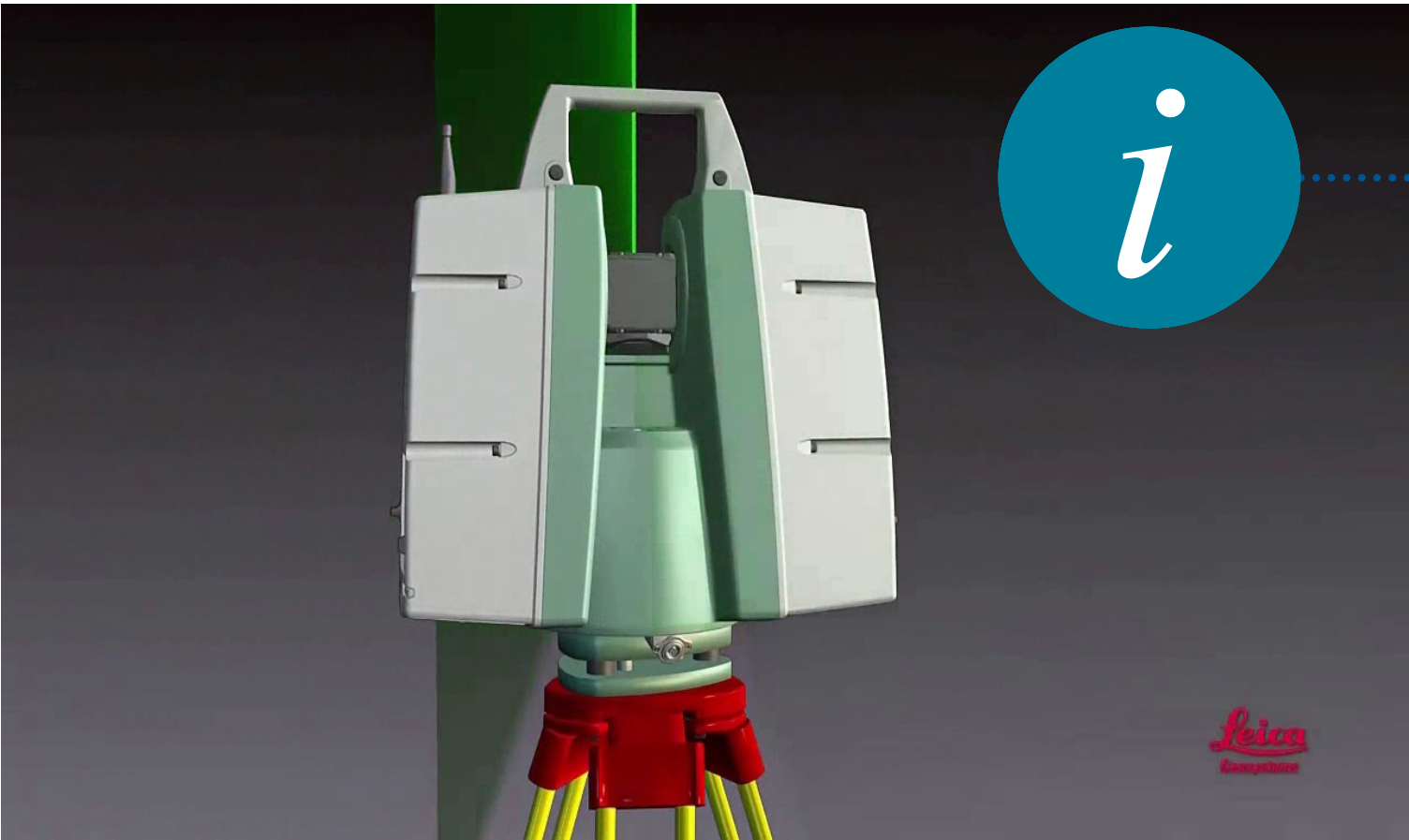
Information at your fingertips

Improves Decision Support

Improves Operations Efficiency



Link Tags & Documents with Laser Scans



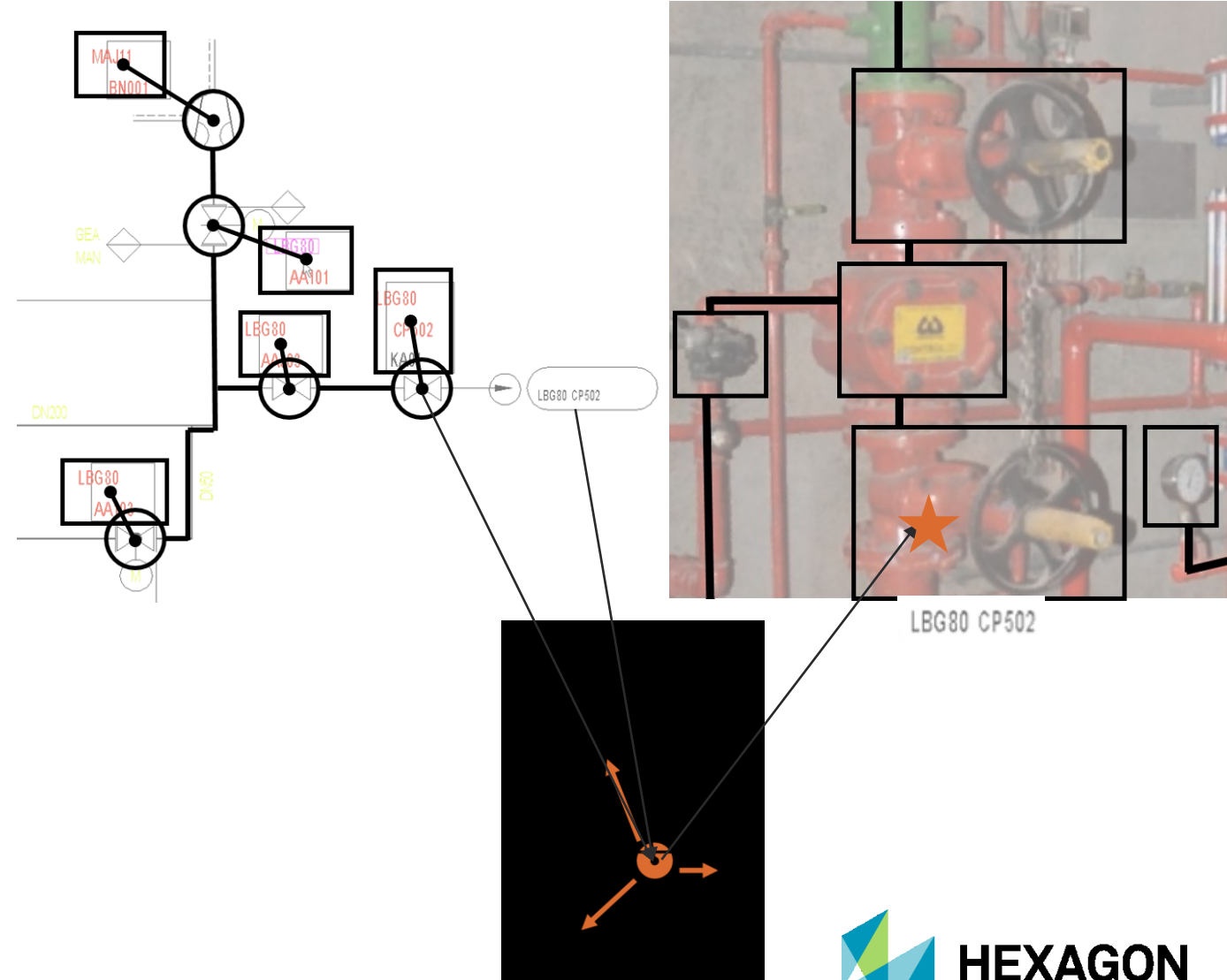
Leica High Definition Survey

R&D auto-tagging on Laser Scans supported by Artificial Intelligence

Identify and link equipment on P&IDs and isometrics

Detection of equipment and piping in laser scans

Correlation of P&IDs against laser scans





Interoperability of the Digital Twin in the Owner Operator IT landscape



Cloud Integration via web service APIs (RESTful/Odata 4)



SDx Connector for Plant Maintenance and OSIssoft



WEB
SERVICES

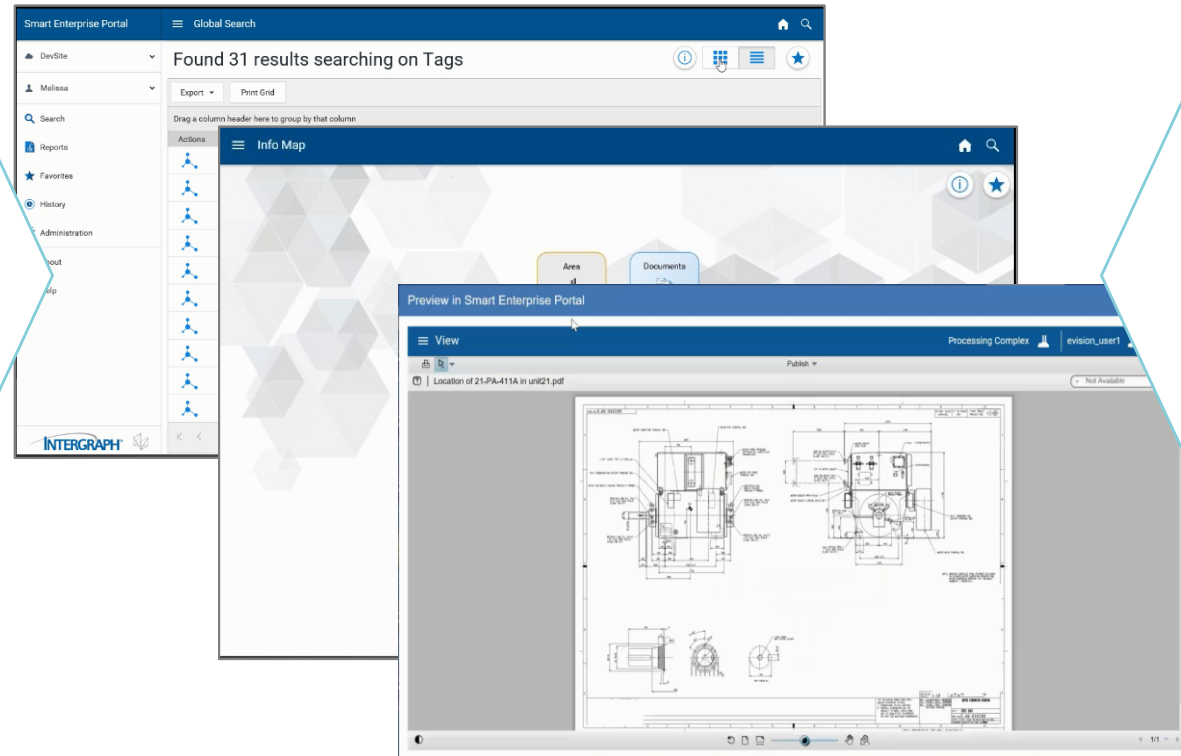
SAP® Certified
Powered by SAP NetWeaver®



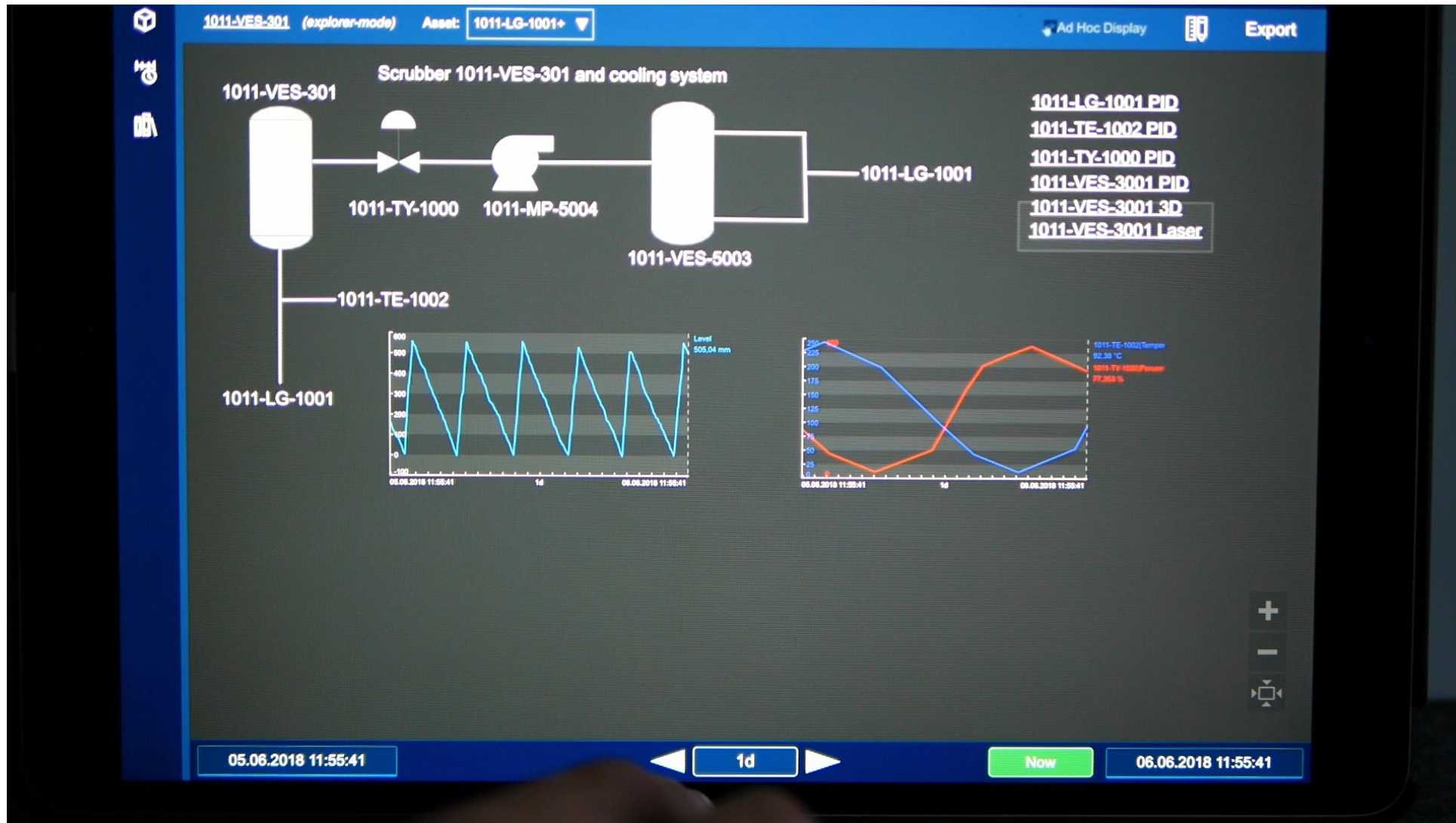
- Tag synch to SAP
- Equipt synch from SAP
- Notifications to SAP
- 2-way look-up



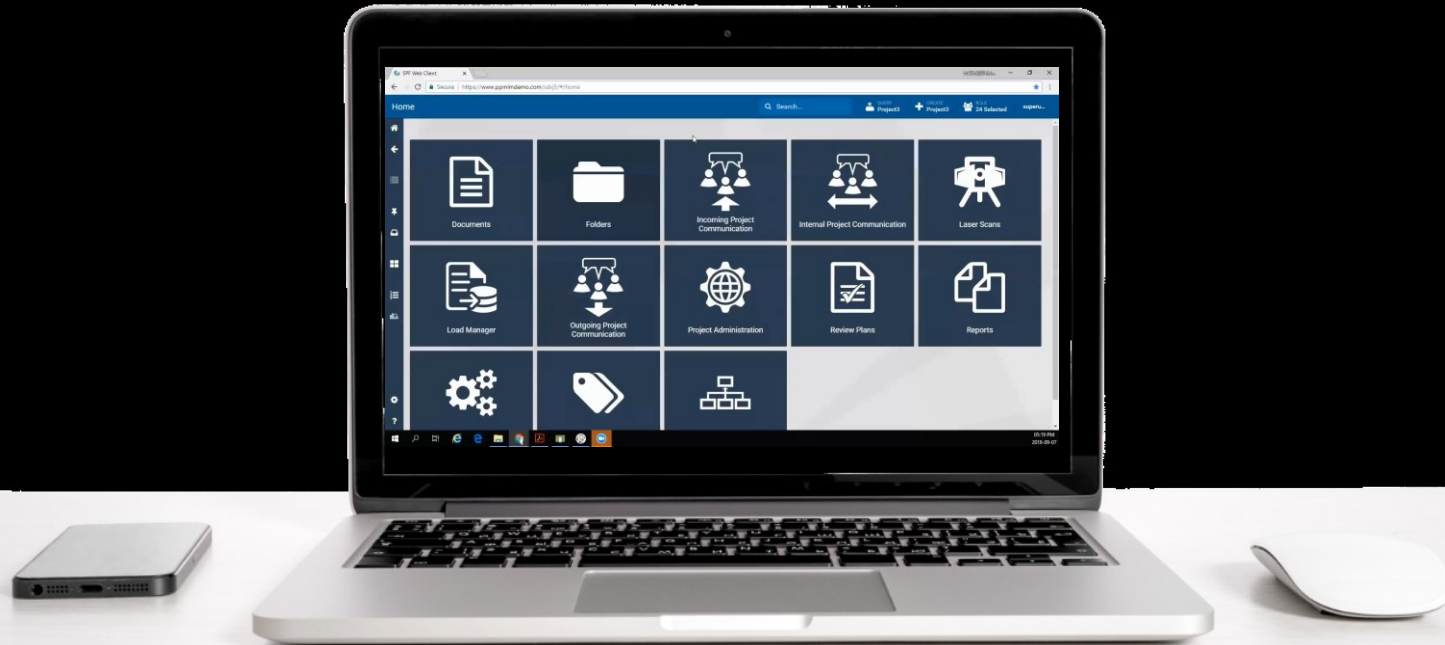
- Tag synch to AF
- 2-way look-up



Access to the Digital Twin from OSI PI



Integration with Operations Management



Digital Transformation whitepapers

Digital Transformation Practice

<http://forms.hexagonppm.com/20180801-PPM-WP-ThePathtoPerfectProjectPerformanceDigitalTransformationofProjects>

<http://forms.hexagonppm.com/20180801-PPM-WP-DigitalTransformationofFacilityOperations>



Securing
Operational
Excellence

THANK
Shaping SMART Change

YOU!