

Digital Twin Thread

Global Innovation & Digital Engineering

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Digital Thread - ASSET LIFECYCLE ECOSYSTEM

Engineering Data

Asset Data

ENGINEERING DEVELOPMENT

3D MODEL DEVELOPMENT

CONSTRUCTION DEVELOPMENT

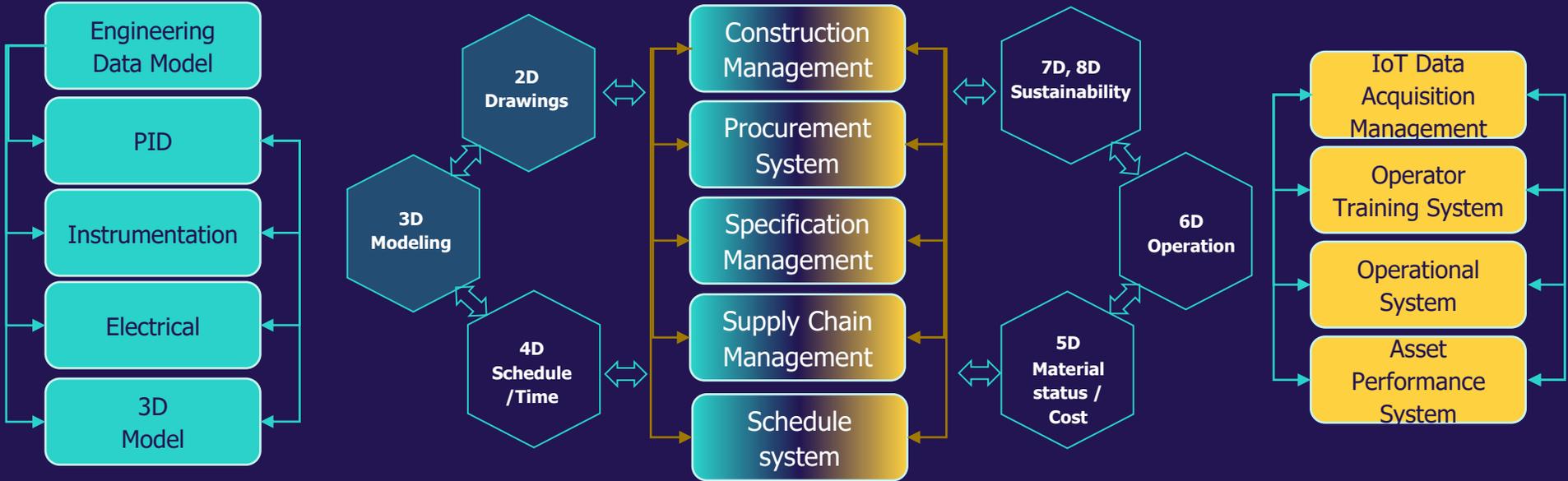
HANDOVER COMMISSIONING

OPERATIONAL EFFICIENCY

Delivery System

Data-Centric

Asset Performance



Portal - Digital Information Hub

Integrated Project Execution



Operation Integrity



8D Digital Plant

1D
Metadata Documents

- Asset Information Management
- Data Centre Engineering
- Compliance and Validation
- Data Analysis & Concept Review
- Feasibility and Studies
- Data Correlation and Integration
- Deliverables Management
- Governance

2D
Drawings

- As Built Validations
- Design Planning
- Process & Pipeline Simulation
- Interdisciplinary Coordination
- Unified Engineering Design Analysis

3D
3D Models

- Laser Scanning
- Immersive Design Review
- Automated Clash Detection
- Contextual Asset Data
- Automated Routing
- Brownfield Tie In
- Digital FEED package
- Digital Estimation
- Process Modelling

4D
Schedule

- Construction Sequence
- Inspection Planning
- Asset Work Packaging
- Advance Work Packaging
- Predictive Planning
- Material Management
- Enterprise Resource Planning
- Manufacturing Master Data Management

5D
Cost

- 5D Progress Measurement
- Material Inspections
- Management
- Maintenance Cost
- Digital Asset Register
- Automated Valuation
- Supply Chain Integration
- Quality Management
- Fabrication & Construction Management
- Risks & Issues Management
- Safety Monitoring and Work Permit
- Decision Support & Visualization (DSV)
- Mobility solutions

6D
Real Time Data

- Remote Process Monitoring
- Remote Asset Control
- Descriptive Analysis
- "Crisis & Emergency Management"
- Connected Worker
- Process Optimization
- Immersive Training
- Virtual Flow Meters
- Extended Collaboration
- Connected Assets
- Business Process Management
- "Maintenance Training Simulation"
- "Steady-State and Dynamic Process Modeling"

7D
Environment Live Streaming

- "Reliability & Integrity Management"
- Emissions Tracking
- "Asset Performance Management"
- Waste Management
- AI Geofencing
- Automated Surveillance
- Connected Assets
- Sustainability solutions
- Unified Operations
- Robotics

8D
Machine Learning Predictive Data

- Unmanned Operations
- Autonomous Operations
- Portfolio Management
- Ecosystem Integration
- Global Visualisation

8D Digital Twin Concept

