COGNITE

DELIVER VIRTUAL OPERATIONS FOR POWER AND UTILITIES WITH COGNITE DATA FUSION

Maintain Operational Excellence • Increase Productivity and HSE • Adapt to Changing Workflow

Given major technological advancements in sensing and communications, ongoing objectives to meet HSE goals, and the need to further optimize operations and maintenance (O&M) activity, the power and utilities industry is primed for adopting virtual operations. This transition and urgency continues to accelerate as skilled labor leaves the field and the industry shifts to working in a post-pandemic era. But realizing virtual operations at scale and unlocking ROI continues to be challenging due to the sheer underlying complexity

of accessing and efficiently using data to make better O&M decisions. In some cases, control systems may still use analog components and alerts, making data access impossible. In other cases, new sensing systems must be integrated with legacy data systems, creating a mismatch of databases, protocols, and standards. All in all, achieving virtual operations first means solving fundamental problems with big, messy industrial data.

Achieving the Unmanned Virtual Power Plant with Data Operations and AI

In order to truly virtualize, operators must be able to combine inspection data (such as video, audible, LiDAR, gas detection, thermal imaging, etc.) with existing data from control systems, CMMS, and ERPs. This requires data aggregation and contextualization in order to create a functional data model that can be used for advanced analysis. With visual data quality and volume, for example, computer vision can be used to identify visual anomalies in image data or

read and process remote analog dials, meters, and displays. Lastly, the analysis output must be made usable by subject-matter experts and field teams through user-friendly, high-fidelity 3D visualizations and digital twins where all known data (from the data model) can be overlaid on alerts and points of interest. Doing this effectively and at reasonable cost and overhead requires a comprehensive platform for Data Operations (DataOps) and AI.

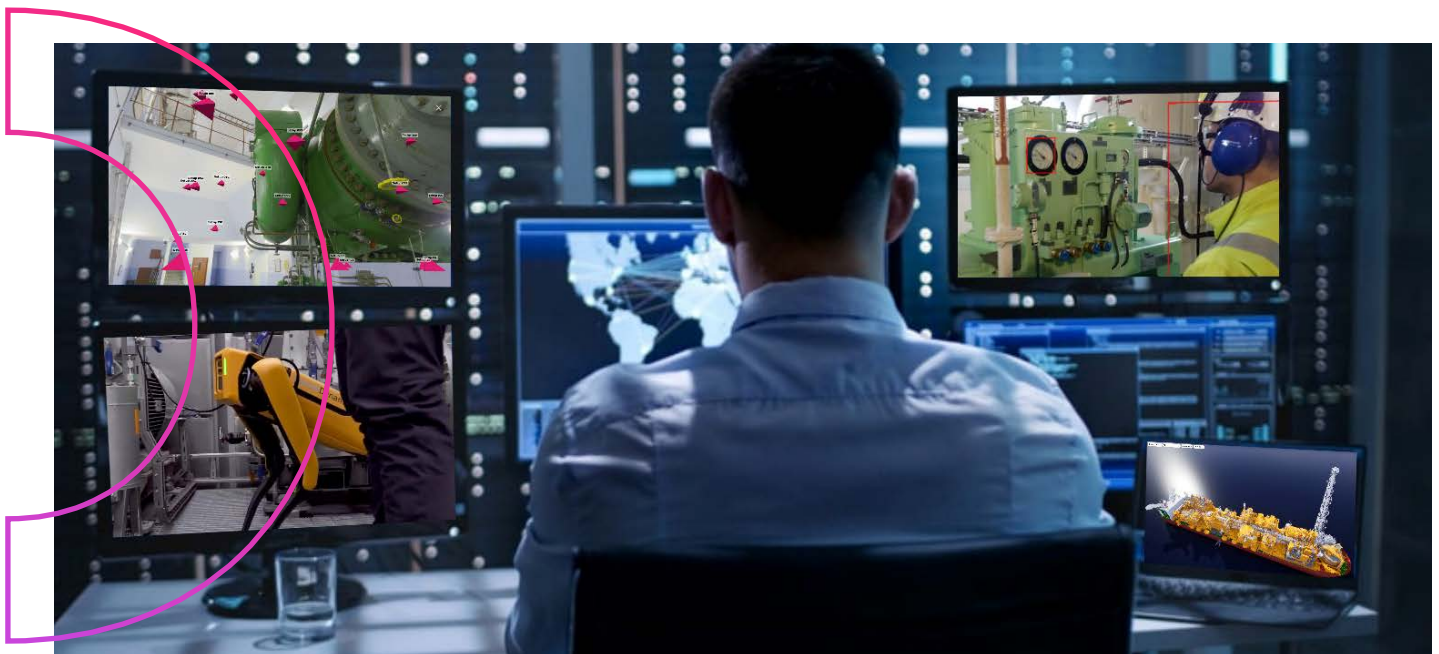Leverage Robotic sensing for Inspection capture

Seamless Integration with SCADA & Control System Data
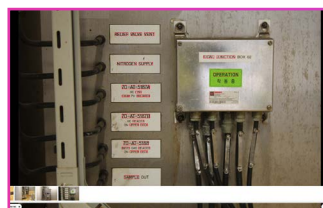
Assisted Data Analysis With Computer Vision

Visualization Through Digital Twins and 3D Renderings

Cognite Data Fusion is the leading industrial data foundation that makes traditionally siloed data available, usable, and contextualized so that operators can efficiently operationalize their data and analysis to achieve remote operations. CDF:

- Aggregates and contextualizes big data from robotics and all available IT and OT data sources
- Empowers data scientists, engineering, domain experts, and analyst workflows
- Enables operationalization and scaling of digital applications with open integrations (APIs/SDKs)
- Ensures data quality and lineage throughout the development pipeline and into the end application

Cognite Data Fusion is Extensible with Robotics Hardware and Off-the-Shelf Applications

Together, Cognite and Boston Dynamics offer next-generation hardware and software so that operators can accelerate their journey towards realizing safer, flexible, efficient remote operations.

SPOT BY BOSTON DYNAMICS
Automated Sensing and Inspection Platform, Ingested and Contextualized by Cognite Data Fusion
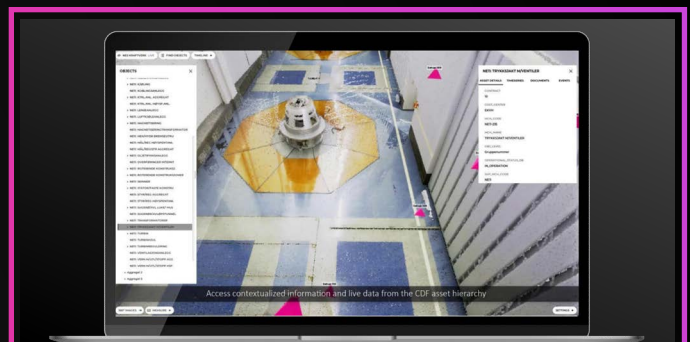
COGNITE REMOTE
Asset Integrity Management Application for Remote Operations, Powered by Cognite Data Fusion