



Knowledge Graph

Asset and Performance Cortex Graphs

Power advanced analytics with a holistic view of operations

The Challenge

Vast amounts of disparate data provide siloed pockets of information that prevent energy and manufacturing organizations from having a holistic view of their operations that both people and AI can understand. Further still, organizations struggle to understand the impact of asset and processes on operational performance.

Our Solution

SymphonyAI's knowledge graph provides an interconnected and comprehensive view of assets and processes. Users can quickly navigate the asset and performance cortex graphs and use an AI copilot to gain a complete view of their operations. The combination of these graphs allow users to analyze asset conditions, measure key performance metrics and perform impact analyses.

Continuous Improvement

Understand the impact of asset performance and process deviations on operations

Complete Visibility & Easy Access

Use the knowledge graph to quickly access all information and relationships related to an asset or process, including live time series data, alerts, work orders, documents, drawings (P&IDs), and images from a single location.

Identify potential origin of KPIs degradations

Key performance indicators (KPIs) identify issues but often lack the traceability to determine the potential origin. Create a performance cortex graph with tailored KPIs and their interdependence. Perform AI impact analysis to trace possible origins of problems.

Analyze performance with AI

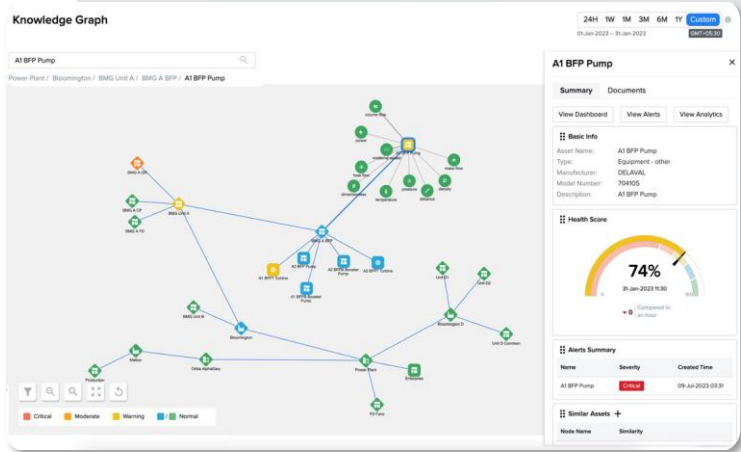
Access the knowledge and performance cortex graphs with an AI copilot and use natural language to find relevant information, understand dependencies, and analyze operational performance.



Asset Cortex Graph

Unify all asset and process data into a single location with:

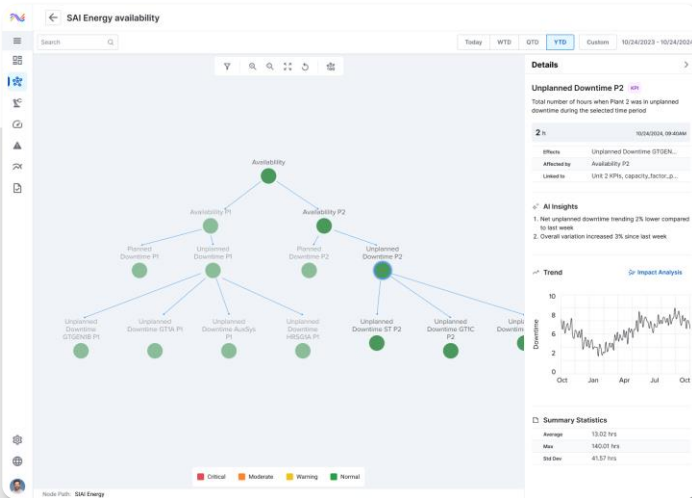
- **Real-time data access** – Analyze asset health scores, predictive recommendations, alerts, and associated documents and drawings.
- **Asset and process models** – Use an asset model for an equipment-centric view or a process model that represents the flow of operations.
- **AI Copilot analysis** – Use the built-in copilot to query any data in the knowledge graph and receive recommended actions.



Performance Cortex Graph

Align operational goals and strategic objectives with:

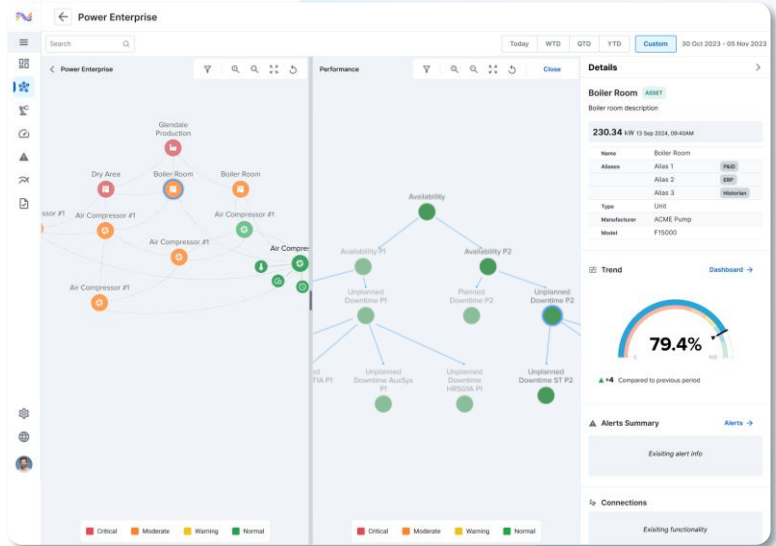
- **Pre-populated KPIs** – Choose relevant KPI groups or individual KPIs for graph construction. An AI assistant will auto-suggest dependencies, which users can modify before finalizing the graph.
- **Impact Analysis** – Trace the origin of KPI degradations using graph dependencies and AI-based data analysis models.
- **Asset and process analysis** – Navigate from the performance cortex graph back to the asset cortex graph and vice-versa to analyze which assets and processes are impacting performance



Switching to a graph database visualizer, the facility manager can explore the interconnected data visually, where batches, suppliers, machines, and operators are represented in their dynamic context, offering a 360 degree view into more than just data.

- Verdantix

Generative AI With Knowledge Graphs: A Giant Leap For Industrial Data Management



Holistic Operational Context

Side-by-side views of the asset and performance cortex graphs provide unparalleled insights to understand how assets and processes impact performance.



Predictive AI insights

Recommendations and alerts from predictive AI models are made available in the knowledge graph along with other relevant information.



Generative AI copilot

Query data in the knowledge and performance cortex graph with an AI copilot to perform impact analyses and receive recommended actions.



Seamless Navigation

Use KPI dependencies and AI models to identify the potential causes of asset or process deviations. See upstream and downstream processes that are being impacted.

For more information visit:

symphonyai.com/industrial/knowledge-graph/

