MindSphere Connect and Monitor

Solution brief

A packaged solution to streamline your industrial IoT adoption

Manufacturers are rethinking their operations strategies to maximize production and profits. However, legacy tools and processes can impede these initiatives. With these tools at their disposal, manufacturers lack the operational transparency and actionable insights they need to optimize factory asset health and performance.

Manufacturers can overcome these challenges by adopting MindSphere®, the industrial IoT as a service solution from Siemens, which enables you to securely connect machines, products, plants and systems. By doing so, you gain complete, real-time transparency into, and analysis of asset health and performance.

To help manufacturers streamline their adoption of MindSphere, Siemens has built a collection of packaged solutions for customers in different phases of their digitalization journey. The first is the Connect and Monitor packaged solution, which helps businesses connect critical assets, gain complete operational transparency and take action to optimize performance and health to maximize production and profits.

Custom-built solutions aren't the answer

There are three areas that are of the greatest concern to manufacturers:

- **Asset profiling and inventory:** Manufacturers commonly lack the ability to profile and inventory factory assets, limiting their insight into asset health and value and making it harder to build accurate production schedules

Challenges

- Build accurate production schedules
- Predict, prevent and quickly remediate asset failures
- Consistently meet production goals

Solutions

- Securely connect machines, products, plants and systems
- Simplify corrective actions to meet production goals
- Optimize asset performance and health

Results

- Securely send and store IoT data
- Visualize and analyze connected assets
- Identify trends and changes in time series data

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Solution focus

- **L** **imited operational transparency**: Even brief periods of unplanned downtime create significant overhead and cut into profits. With inadequate transparency into the performance and health of critical systems, manufacturers can't consistently predict, prevent and quickly remediate asset failure

- **Inconsistent performance**: A common byproduct of managing a fleet with limited visibility and assets varying in age, type, provider, etc., is inconsistent performance standards. As a result, manufacturers struggle to understand the maximum performance capability of each asset, and thus have difficultly consistently meeting production goals

Many manufacturers are attempting to overcome these challenges by custom building proprietary applications. However, these applications commonly fail to provide sufficient visibility, require significant personnel and monetary resources and are difficult to maintain and improve over time.

The solution: industrial IoT as a service

MindSphere provides visibility into maintenance history and automated alerts, delivers recommended solutions and simplifies the corrective actions your teams need to meet production goals and prevent unplanned downtime. With vast experience developing industrial solutions, Siemens provides the expertise needed to deliver new value from connected machines.

Connect and Monitor

Key solutions and capabilities

MindAccess IoT Value Plan
MindAccess IoT Value Plan includes all of the elements you need to connect your entire fleet to MindSphere, securely send and store Internet of Things (IoT) data, and visualize and analyze connected assets. MindSphere Asset Manager allows you to onboard and offboard data ingestion points from your account, and configure assets and asset types. Additional administrative capabilities enable you to manage user rights, permissions and subtenants. This solution is available in three tiers (small, medium and large) depending on the scope of your implementation. You can leverage the MindAccess IoT Value Plan for your own use, or to provide IoT services to other parties.

MindSphere application
Visual Flow Creator
Visual Flow Creator is a browser-based work flow editor. Build your work flow to create rules, define key performance indicators (KPIs) and trigger actions, such as email notifications, if defined threshold values are exceeded.

MindSphere application
Visual Explorer
Visual Explorer is a browser-based solution that utilizes Tableau® to create customized, advanced data visualizations and dashboards from complex

data sets. Visualizations can be shared internally and externally to expedite data-driven decision making that will improve the overall health of connected assets. Using Visual Explorer empowers every user in your company, regardless of their skill set, to easily access, analyze and quickly interpret large amounts of data. With creator and viewer accounts available, Visual Explorer has options to build visualizations or use predefined libraries for immediate visualizations that suit your needs.

Key services

Implementation
Implementation services involve connecting your data sources to MindSphere, including data collection, agent onboarding and data model configuration.

Basic enablement
Learn about MindSphere essentials, such as tenancy and connectivity options. Get started using MindSphere components like Visual Flow Creator and Visual Explorer.

Success management
Ongoing support and consultation to guide you through your digitalization journey and help you get the most out of your MindSphere implementation.

Configuration
Receive support for building powerful workflows in Visual Flow Creator and gaining valuable insights from dashboards in Visual Explorer.

Use cases

Asset management
Identify, classify, profile, inventory and track physical assets – all to provide service in the most cost-effective manner. By doing so, you can collect asset data (including production measures and quality, operating hours and more) to build more accurate production schedules and better understand asset availability.

Condition monitoring
Identify and report faults in managed critical assets by tracking identified key parameters/aspects, including vibration, temperature, etc. When these parameters deviate from expected norms, you can pinpoint and act on performance and health issues that may lead to asset failure.

Asset performance management
Compare real-time KPIs against established baseline patterns to help you make sure that identified asset goals are consistently being met. Over time, you can continuously improve asset performance by recalibrating baseline data according to more refined measurements of optimal performance ranges.

Begin your journey
MindSphere makes it easy for you to overcome operational challenges, like limited transparency, inconsistent performance and unplanned asset failure. In the long run, it also creates opportunities for expanding your use of the industrial IoT and digitalizing your business.

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