

# MindSphere Analyze and Predict

Solution brief

Siemens Digital Industries Software

## A packaged solution to streamline your industrial IoT adoption

MindSphere®, the industrial IoT as a service solution from Siemens, enables you to connect machines, products, plants and systems. By doing so, you can gain complete, real-time visibility into asset health and performance to prevent unplanned downtime. MindSphere delivers capabilities such as predictive model building/deployment, and enables you to identify deviations from key performance indicator (KPI) standards and receive automatic alerts. These capabilities enable you to overcome challenges by better predicting and preventing issues that may lead to asset failure. With many years of developing industrial solutions, Siemens provides the expertise needed to deliver new value from connected machines.

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 MindSphere Analyze and Predict packaged solution provides solutions that enable manufacturers to use integrated data sets and modern data analysis to derive deep, predictive insights about asset health and performance.

### Why manufacturers struggle to predict and prevent unplanned asset downtime

Preventing asset failure is imperative for manufacturers, as even brief periods of unplanned downtime can cut into productivity and profitability. However, without proper operational transparency, it is nearly impossible to understand asset health and performance, and thus equally difficult to predict and prevent unplanned downtime. Instead, given the tools at their

## Challenges

- Prevent asset failure and unplanned downtime
- Provide operational transparency
- Optimize maintenance schedule

## Solutions

- Predict future asset performance
- Optimize product quality
- Enable the user to prepare, visualize and analyze data

## Results

- Enable full contextual analysis of critical assets on MindSphere
- Determine the root cause of production and quality issues
- Boost the cost efficiency and performance of your applications

## Solution focus

disposal, manufacturers are forced to take suboptimal approaches to maintaining asset health and performance:

- **Reactive maintenance approaches** consist of manufacturers running assets until they fail and only then performing maintenance. As a result, these manufacturers incur significant maintenance costs and experience productivity losses due to downtime
- **Scheduled maintenance approaches** are when manufacturers schedule routine, calendar-based services, regardless of asset health or performance. These manufacturers are more vulnerable to wasting resources by servicing healthy machines. They also run the risk of missing urgent maintenance tasks that are key to preventing larger, more expensive equipment failures

Both approaches are expensive, usually fail to deliver their intended results and require devoted resources, diverting team members from core competencies. The Analyze and Predict packaged solution provides manufacturers with the necessary capabilities to predict and prevent unplanned asset downtime.

### Analyze and Predict

#### Key solutions and capabilities

##### MindSphere application Predictive Learning

Increase product performance, perceived product performance and the overall customer experience. Predictive Learning enables you to build models using machine-learning techniques to help you predict future asset performance and optimize product quality. As a result, you can reduce performance issues and prevent potential asset failures.

##### MindSphere application Visual Flow Creator

Use this browser-based workflow editor to build your workflow to create rules, define KPIs and trigger actions, such as email notifications, if defined threshold values are exceeded.

##### MindSphere application Visual Explorer

This browser-based solution uses 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 enables you to build visualizations or use predefined libraries to create visualizations that suit your needs.

##### MindConnect Integration

Combine existing databases, enterprise systems and cloud data sources with data collected on the shop floor to enable full contextual analysis of critical assets on MindSphere.

##### MindAccess IoT Value Plan

The 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.





## 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. Be able to work with MindSphere core components like Asset Manager and MindSphere application Fleet Manager and additional components like Visual Flow Creator.

### 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.

### Analytics consulting

Maximize data insights by working with consultants to improve your analytics workflows in Visual Flow Creator, and optimize your dashboards in Visual Explorer.

### Data science consulting

Consulting available for the Predictive Learning environment. After an initial on-site consultation, receive support in defining data sets and developing models using the MindSphere toolset.



## Use cases

### Predictive maintenance

Continuously collect and analyze real-time asset health and performance data to determine the root cause of production and quality issues. By doing so, you can predict the best time to service assets at the right frequency and with minimal cost before unplanned downtime occurs.

### Optimized predictive maintenance

Enhance predictive maintenance practices by scheduling asset maintenance in a manner that creates efficiencies in asset availability and time and resource allocation. This enables you to maintain assets while still making sure you have the resources to meet production goals.

## Begin your journey

MindSphere enables you to gain complete, real-time transparency into asset health and performance in order to better predict and prevent unplanned downtime. As a result, you are better equipped to maximize profitability and meet production goals. As an end-to-end industrial IoT solution, using MindSphere also creates opportunities to further digitalize your business.

Siemens Digital Industries Software  
[siemens.com/software](https://www.siemens.com/software)

Americas +1 314 264 8499  
Europe +44 (0) 1276 413200  
Asia-Pacific +852 2230 3333

© 2020 Siemens. A list of relevant Siemens trademarks can be found [here](#). Other trademarks belong to their respective owners.

72222-C11 12/20 C