

# Insights Hub Capability Packages Product Sheet



The Insights Hub Capability Packages provide you with a dedicated Insights Hub Account which is required to use different IIoT capabilities for developers, operators and end users depending on the Insights Hub Capability Package you choose.

## Prerequisites

Web browser	An HTML5 capable Internet browser is required (e.g. Mozilla Firefox or Google Chrome). The recommended screen resolution is 1024x768 or higher. Mobile devices are supported through the use of HTML5 capable Internet browsers. Screen size of the mobile device should be minimum 10" .
Insights Hub Cloud Resources	For productive use of an Insights Hub Capability Package, a subscription to an IIoT Data Package (XS / S / M / L / XL) is required. In addition, some specific capabilities require additional Cloud Resources, e.g., Data Contextualization or Integrated Data Lake (IDL). For more information, please refer to the Product Sheet for Insights Hub Cloud Resources available at <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/MindSphere-Product-Sheets">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/MindSphere-Product-Sheets</a> .
Insights Hub Asset Attributes	For productive use of an Insights Hub Capability Package, a subscription to Insights Hub Asset Attributes is required. For available subscription options please refer to Chapter "Insights Hub Asset Attributes Description" of this Product Sheet.

## Insights Hub Capability Packages

Access to your Account	The Insights Hub Capability Packages provide you with a dedicated Insights Hub Account. An Account can have up to 4 Environments depending on the Insights Hub Capability Package which serve a certain purpose. Per default, you
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	will always receive one Productive Environment. Additional Environments can be requested in <a href="#">Support Center</a> .
Description of Insights Hub Capability Packages	<p>Different Insights Hub Capability Packages are available (Basic/Standard/Premium). You are only authorized to utilize the Insights Hub Capability Package to which you hold a valid subscription. Basic, Standard and Premium differ in terms of capabilities and general functionalities included. General functionalities are underlying services, enablers and components required for the capabilities.</p> <ul style="list-style-type: none"> <li>• Basic: <ul style="list-style-type: none"> <li>▪ Kick-start your IIoT journey, focusing on connecting assets to acquire IoT data, visualize and explore acquired data with simple &amp; easy-to-use dashboard visualizations and third party applications to start discovering insights.</li> <li>▪ Use it for a small-scale use case or project scenarios.</li> <li>▪ Develop, integrate and use applications productively within your own Account leveraging Industrial IoT APIs and prebuilt components.</li> </ul> </li> <li>• Standard (additional to Basic Capability Package): <ul style="list-style-type: none"> <li>▪ Continue your journey by utilizing your semi-structured &amp; unstructured data and advanced dashboard visualizations.</li> <li>▪ Realize IIoT use cases globally to improve product quality, production performance and maintenance.</li> <li>▪ Develop, integrate, test and use applications productively within your own Account leveraging Industrial IoT APIs and prebuilt components.</li> <li>▪ Provision applications to other Insights Hub customers' Accounts and publish new applications via the Store for fast go-to-market.</li> <li>▪ Manage and execute your AI models on predictive analytics to get more insights from your data.</li> </ul> </li> <li>• Premium (additional to Basic and Standard Capability Packages): <ul style="list-style-type: none"> <li>▪ Discover data semantics on a large scale with full capabilities.</li> <li>▪ Seamless integration into your own enterprise ecosystem.</li> <li>▪ Optimize your production life cycle and engineering with fast set up digital twins for connected shop floors.</li> </ul> </li> </ul> <p>Select the Insights Hub Capability Package that best suits your requirements and use cases.</p>
Upgrades for Insights Hub Capability Packages	<p>The following upgrades to your existing Insights Hub Capability Packages are available:</p> <ul style="list-style-type: none"> <li>• Basic to Standard Upgrade</li> <li>• Standard to Premium Upgrade</li> </ul>

<b>Insights Hub Capability Packages – Overview</b>			
<b>Environments</b>	<b>Basic</b>	<b>Standard</b>	<b>Premium</b>
<b>Productive Environments</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Developer Environments</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Test Environments</b>	<b>-</b>	<b>2</b>	<b>2</b>
<b>Capabilities</b>	<b>Basic</b>	<b>Standard</b>	<b>Premium</b>

<b>Asset Manager &amp; Asset Management</b>			
Onboard, configure & manage Assets	✓	✓	✓
<b>Insights Hub Factory Twin</b>			
Optimize shopfloor operations using IoT data enabled simulations			✓
<b>Connect your Things</b>			
Connect your Assets using a PC as a gateway	✓	✓	✓
Connect your own hardware	✓	✓	✓
Use MindConnect hardware	✓	✓	✓
Zero touch onboarding with OPC UA PubSub and MindConnect MQTT	✓	✓	✓
Maintain your connected devices	✓	✓	✓
<b>Data Sharing</b>			
Share Asset data across Accounts and Environments	✓	✓	✓
<b>Data Contextualization</b>			
Discover schema & query physical data		✓	✓
Query semantically contextualized data			✓
<b>DevOps Cockpit</b>			
Integrate applications (w/o hosting)	✓	✓	✓
Test applications in Development Environment	✓	✓	✓
Provision applications to own Environments for own productive use	✓	✓	✓
Provision applications to dedicated Test Environments for testing		✓	✓
Provision applications to other Insights Hub		✓	✓

customers' Accounts for usage within different Environments			
Publish applications in Store			✓
<b>Identity Provider Federation</b>			
Bring your own Identity Provider (IdP) and integrate it with your Account			✓
<b>Integrated Data Lake</b>			
Store, organize, tag and search any kind of data		✓	✓
<b>Insights Hub Monitor</b>			
Explore basic dashboards	✓	✓	✓
Explore Assets	✓	✓	✓
Explore Events	✓	✓	✓
Explore Work Orders	✓	✓	✓
Analyze Time Series	✓	✓	✓
Generate Forecasts on time series data	✓	✓	✓
Generate Anomaly Detections on time series data	✓	✓	✓
Configure simple KPIs	✓	✓	✓
Configure Rules	✓	✓	✓
Explore advanced Dashboards		✓	✓
Configure advanced KPIs		✓	✓
<b>Visual Flow Creator</b>			
Define data flows to analyze, orchestrate, interact and visualize data	✓	✓	✓
<b>Predictive Learning Essentials</b>			
Seamless integration with IDL and Time Series data for model validation and execution		✓	✓

Bring your own models in types of Docker Image and Jupyter Notebook for scheduled executions



## Description of Capabilities

### Asset Manager & Asset Management

Description	<p>Asset Manager is available via user interface accessible from your Launchpad and can be used to:</p> <ul style="list-style-type: none"> <li>• Onboard &amp; offboard Assets to your Account.</li> <li>• Configure Assets and Asset Attributes.</li> <li>• Manage the Sharing of Assets under a Collaboration between Environments using Data Sharing capabilities.</li> </ul> <p>Asset Management is available via its respective APIs and allows you to create, read, update and delete Assets through an appropriate user interface developed by you.</p>
Third-Party Terms	<p>Third-Party Terms for Asset Manager are available under “administration tools” via the following web link:  <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a>.</p>
Documentation	<p>For further details about Asset Manager &amp; Asset Management please see the documentation available via the following links:  <a href="https://documentation.mindsphere.io/resources/html/asset-manager/en-US/index.html">https://documentation.mindsphere.io/resources/html/asset-manager/en-US/index.html</a> and <a href="https://developer.mindsphere.io/apis/advanced-assetmanagement/api-assetmanagement-overview.html">https://developer.mindsphere.io/apis/advanced-assetmanagement/api-assetmanagement-overview.html</a>.</p>

### Insights Hub Factory Twin

Description	<p>Insights Hub Factory Twin application enable you to define and manage the connections between virtual models (i.e., the digital representation for a physical object) and onboarded Assets.</p> <p>Insights Hub Factory Twin application) provides you with the following capabilities:</p> <ul style="list-style-type: none"> <li>• Configure connection between enterprise applications and Insights Hub using Insights Hub Factory Twin. The application enable physical and virtual model mapping and connection to supported enterprise applications with the Insights Hub. It also allows to configure the model for simulation and run it using operational data of an Asset.</li> <li>• Optimize shopfloor operations using IoT data enabled simulations with Insights Hub Factory Twin which allows you to create, manage and run simulations between physical Assets and their discrete event models. With this application, you can build a connection between Assets and their corresponding discrete event simulation models. This application leverages the connection to provide physical Asset IoT data as an input into the discrete events simulation model.</li> </ul>					
Limitations	<p>(1) Enterprise applications are not part of our Offering. It is your responsibility to procure and maintain appropriate licenses for such enterprise applications. Such enterprise applications are solely operated by you. Enterprise applications currently supported are listed below (subject to change and for informational purposes only; please verify with your sales representative):</p> <table border="1" data-bbox="566 1910 1423 1972"> <tr> <td data-bbox="566 1910 853 1972"><b>Insights Hub Digital Twin application:</b></td> <td data-bbox="853 1910 1141 1972"><b>Supported enterprise application:</b></td> <td data-bbox="1141 1910 1423 1972"><b>Supported connectors:</b></td> </tr> </table>			<b>Insights Hub Digital Twin application:</b>	<b>Supported enterprise application:</b>	<b>Supported connectors:</b>
<b>Insights Hub Digital Twin application:</b>	<b>Supported enterprise application:</b>	<b>Supported connectors:</b>				

	<table border="1" data-bbox="566 202 1425 272"> <tr> <td data-bbox="566 202 852 272">Insights Hub Factory Twin</td> <td data-bbox="852 202 1137 272">Tecnomatix Plant Simulation</td> <td data-bbox="1137 202 1425 272">Connector for Plant Simulation</td> </tr> </table> <p data-bbox="566 278 1485 491">(2) The connection of the supported enterprise application to Insights Hub Factory Twin requires the local installation of corresponding supported connector package listed above which contains connector software and associated Deployment and Development Guides. The connector package will be made available for download via the Siemens Support Center portal ("Support Center").</p> <p data-bbox="566 497 1485 825">(3) If you wish to develop and create your own custom connector (e.g. to connect further enterprise applications to a Digital Twin application), you are solely responsible for (i) developing such custom connector in accordance with the Connector Development Guide, (ii) properly installing, configuring and using it, (iii) properly connecting it to Insights Hub , (iv) deploying it in accordance with the relevant Deployment Guide (if applicable), and (iv) regularly monitoring the content, integrity, security, accuracy and timeliness of the data transmission (e.g. by monitoring such transmission over Insights Hub). Such custom connectors are not part of our Offering.</p>	Insights Hub Factory Twin	Tecnomatix Plant Simulation	Connector for Plant Simulation
Insights Hub Factory Twin	Tecnomatix Plant Simulation	Connector for Plant Simulation		
Export Control Regulations	The connector software provided by us as part of the connector packages is classified as AL = 5D002C1A, ECCN = 5D002ENCB1.			
Third-Party Terms	Third-Party Terms for Insights Hub Factory Twin are available via the following web link: <a data-bbox="566 1002 1477 1066" href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .			
Documentation	For further details about Insights Hub Factory Twin, please see the documentation available via the following links:  <a data-bbox="566 1193 1385 1257" href="https://documentation.mindsphere.io/resources/html/factory-twin/en-US/index.html">https://documentation.mindsphere.io/resources/html/factory-twin/en-US/index.html</a> .			
<b>Connect your Things</b>				
Description	<p data-bbox="566 1342 1477 1374">Connect your Things provides you with the following connectivity capabilities:</p> <ul data-bbox="566 1381 1477 1779" style="list-style-type: none"> <li data-bbox="566 1381 1477 1449">• Connect your assets using your PC as a gateway with MindConnect Software Agent,</li> <li data-bbox="566 1455 1477 1561">• Connect your individual hardware using MindConnect API Services, MindConnect MQTT Services, MindConnect OPC UA PubSub Services and MindConnect Library,</li> <li data-bbox="566 1568 1477 1636">• Use MindConnect Hardware (e.g. MindConnect Nano, MindConnect IoT2040),</li> <li data-bbox="566 1642 1477 1710">• Zero touch onboarding using MindConnect OPC UA PubSub Services and MindConnect MQTT Services,</li> <li data-bbox="566 1717 1477 1779">• Maintain connected devices by using MindConnect Device Management Services.</li> </ul>			
Description of MindConnect Software Agent	MindConnect Software Agent is a software that allows you to connect supported third party devices to your Insights Hub Account. It also allows you to collect data from industrial devices using supported field protocols such as S7, OPC-UA, EtherNet/IP and Modbus TCP and to transfer the collected data to your Account via an established connection.			

	<p>The software will be made available for download on Insights Hub and must only be used on supported third-party hardware devices. For further information as to which hardware devices are currently or will be supported, please verify with your sales representative.</p> <p>Hardware devices are not part of your subscription to an Insights Hub Capability Package and are solely operated by you. It is your responsibility to procure such hardware devices. We grant you a Perpetual license to use the MindConnect Software Agent.</p>
Description of MindConnect API Services and MindConnect Library	<p>MindConnect API Services are available via their respective Insights Hub API and allow you to transfer data between your Account on Insights Hub and on-premise hardware devices or on-premise connectivity software from Siemens or from third parties, provided such hardware or connectivity software is compatible with the MindConnect API Services. MindConnect Library provides a Software Development Kit (SDK) that enables programming of customer specific or use case specific agents. This SDK uses MindConnect API Services.</p>
Description of MindConnect MQTT Services	<p>MindConnect MQTT Services are available via their respective Insights Hub API and allow you to transfer data between your Account on Insights Hub and on-premise hardware devices or on-premise connectivity software from Siemens or from third parties, provided such hardware or connectivity software is compatible with the MindConnect MQTT Services.</p>
Description of MindConnect OPC UA PubSub Services	<p>MindConnect OPC UA PubSub Services are available via their respective Insights Hub API and allows you to transfer data between your Account on Insights Hub and on-premise hardware devices or on-premise connectivity software from Siemens or from third parties, provided such hardware or connectivity software is compatible with the MindConnect OPC UA PubSub Services.</p>
Description of MindConnect Hardware	<p>MindConnect Nano and MindConnect IoT2040 are pre-configured devices which allow connectivity to Insights Hub. The devices support the transmission of data encrypted through a secured internet connection to Platform.</p> <p>These hardware devices are not part of your subscription to an Insights Hub Capability Package and are solely operated by you. It is your responsibility to procure such hardware devices.</p> <p>For more information, please refer to the Product Sheets for MindConnect Nano and MindConnect IoT2040 available at <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/MindSphere-Product-Sheets">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/MindSphere-Product-Sheets</a>.</p>
Description of MindConnect Device Management Services	<p>MindConnect Device Management Services provide backend services to configure, maintain and update your connected devices. The services are available via their respective Insights Hub APIs. It covers the following services:</p> <ul style="list-style-type: none"> <li>• Device Management allows to maintain an inventory of all connected devices as well as to manage the lifecycle of device types. The device type is used when determining which software (especially firmware) can be installed on which device instance. A device can only be onboarded to Insights Hub via an Agent. Credentials for accessing Insights Hub are tied to Agents created by using Agent Management Service.</li> <li>• Deployment Workflow allows to deploy software packages or configuration files to devices. You can model the deployment operations as a workflow</li> </ul>



	<p>state machine according to your needs, while deploying artifacts or configuration to your devices.</p> <ul style="list-style-type: none"> <li>• Device Configuration allows to (re-)configure devices. This service uses Deployment Workflow for controlling the update process and for tracking the result of the update with a predefined deployment model. It also allows to store, manage and version configuration files.</li> <li>• Device Status allows to monitor the health status (e.g., online/offline) of devices on Insights Hub.</li> <li>• Firmware Deployment allows to initiate jobs for deploying firmware releases on devices. This service initiates a job instance on Deployment Workflow to download firmware artifacts onto devices by using a predefined deployment model. It generates a URL for devices to download the artifacts files. Those generated pre-signed URLs may only be used to manage firmware releases to connected edge devices.</li> </ul>
Documentation	<p>For further details about connectivity capabilities please see the documentation available via the following links:</p> <p><a href="https://developer.mindsphere.io/apis/connectivity-mindconnect/api-mindconnect-overview.html">https://developer.mindsphere.io/apis/connectivity-mindconnect/api-mindconnect-overview.html</a></p> <p><a href="https://developer.mindsphere.io/resources/mindconnect-lib-v4/resources-mclib-overview.html">https://developer.mindsphere.io/resources/mindconnect-lib-v4/resources-mclib-overview.html</a></p> <p><a href="https://documentation.mindsphere.io/resources/html/getting-connected/en-US/index.html">https://documentation.mindsphere.io/resources/html/getting-connected/en-US/index.html</a></p> <p><a href="https://developer.mindsphere.io/apis/connectivity-opcuapubsub/api-opcuapubsub-overview.html">https://developer.mindsphere.io/apis/connectivity-opcuapubsub/api-opcuapubsub-overview.html</a></p> <p><a href="https://developer.mindsphere.io/apis/connectivity-mindconnect-async/api-mindconnect-async-overview.html">https://developer.mindsphere.io/apis/connectivity-mindconnect-async/api-mindconnect-async-overview.html</a></p>
<b>Data Contextualization</b>	
Description	<p>Data Contextualization is available via its respective APIs. It is a contextualized data integration framework that allows you to maximize the value of enterprise data from disparate sources along with IoT data. It enables you to infer relationships between various data points and to correlate design, financial and manufacturing data with operational data from physical assets. Data Contextualization provides a complete workflow to register, ingest and search data and associated metadata from external data, build semantic models and finally query to consume correlated data.</p> <p>It is available as:</p> <ul style="list-style-type: none"> <li>• Discovery, enabling schema discovery and query execution on physical data sources.</li> <li>• Essential, enabling schema discovery, semantic model building, contextualization of multiple data sources and query execution on semantic models and on physical data sources.</li> </ul> <p>Data Contextualization capabilities are delivered through following APIs:</p>

	<ul style="list-style-type: none"> <li>• Data Registry Service provides the functionality of data source, data lake and custom data type registration. Currently only IDL is supported for data lake registration.</li> <li>• Data Ingest Service is used post registration to ingest files from various systems and trigger the data ingestion process. It allows application developers to integrate source systems. After the data ingestion is completed, it triggers automatic-schema discovery process and provides schema for ingested data.</li> <li>• Semantic Model Service provides end-to-end capability to create, store, update or delete semantic models.</li> </ul> <p>Data Query Service enables you to create, store, update, and get results for semantic business queries and physical queries.</p>
Required Cloud Resources	<p>For productive use, additional Cloud Resources (Data Contextualization) are required.</p> <p>For more information, please refer to the Product Sheet for Insights Hub Cloud Resources.</p>
Third-Party Terms	<p>Third-Party Terms for Data Contextualization are available via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a>.</p>
Documentation	<p>For further details about Data Contextualization please see the documentation available via the following weblink: <a href="https://developer.mindsphere.io/apis/sdi-datamanagement/api-sdidatamanagement-overview.html">https://developer.mindsphere.io/apis/sdi-datamanagement/api-sdidatamanagement-overview.html</a>, <a href="https://developer.mindsphere.io/apis/sdi-dataquery/api-sdidataquery-overview.html">https://developer.mindsphere.io/apis/sdi-dataquery/api-sdidataquery-overview.html</a> and <a href="https://developer.mindsphere.io/apis/sdi-semantic-modelling/api-sdisemanticmodel-overview.html">https://developer.mindsphere.io/apis/sdi-semantic-modelling/api-sdisemanticmodel-overview.html</a>.</p>
<b>Data Sharing</b>	
Description	<p>Data Sharing enables you to share Asset data across Environments within the same Account or with Environments of other Accounts. It enables customers to grant other Environments access to certain Customer Content (read) under a collaboration ( "Collaboration" ). Once the Collaboration is established, the sharing Environment will be able to share selected Customer Content with the receiving Environment ( "Sharing" ). Collaboration and individual Sharing require prior approval of the involved Environment.</p>
Limitations	<p>Data Sharing allows 1 000 Collaborations per Environment and the Sharing of 250 Assets per Collaboration. One Asset can be shared with up to 10 different receiving Environments.</p>
Documentation	<p>For further details about Data Sharing please see the documentation available via the following link: <a href="https://developer.mindsphere.io/concepts/concept-cross-tenancy.html">https://developer.mindsphere.io/concepts/concept-cross-tenancy.html</a>.</p>

## DevOps Cockpit

Description	<p>DevOps Cockpit brings along collaborative low-code, no-code and codeful application integration and supports the application lifecycle. It combines functionality currently contained in Developer and Operator Cockpit. Further it lets you control which applications you want to productively use or enable OEM Services. Please note: This covers the integration of self-hosted applications. It does not include access to a hosting environment (e.g. Cloud Foundry), which may require additional subscription.</p> <p>The DevOps Cockpit provides:</p> <ul style="list-style-type: none"><li>• Integration of application.</li><li>• Provision of applications to Test Environments during development phase (only for Standard and Premium Capability Packages).</li><li>• Make your application visible in the Development Environment e.g. for testing purposes.</li><li>• Manage versions of your applications.</li><li>• Assign applications to Productive Environments or provision applications to other customer Accounts (only for Standard and Premium Capability Packages).</li><li>• Receive system messages and application requests.</li></ul>
Third-Party Terms	Third-Party Terms for DevOps Cockpit are available via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a>
Documentation	For further details about DevOps Cockpit please see the documentation available via the following link: <a href="https://documentation.mindsphere.io/MindSphere/apps/devops-cockpit/introduction.html">https://documentation.mindsphere.io/MindSphere/apps/devops-cockpit/introduction.html</a>

## Identity Provider Federation

Description	<p>We offer you the possibility to bring your own Identity Provider and federate it with your Account using Security Assertion Markup Language (SAML) or Open ID Connect protocol. Once the federation is established, you can achieve a Single Sign-On (SSO) access to Insights Hub from your Identity Provider.</p> <p>Use Identity Provider Federation to:</p> <ul style="list-style-type: none"><li>• Configure &amp; federate your Identity Provider with Insights Hub.</li><li>• Manage all your Identity Providers from a single user interface.</li><li>• Activate the Identity Provider of your choice.</li></ul>
Third-Party Terms	Third-Party Terms for Identity Provider Federation are available via the following link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .
Documentation	For further details about Identity Provider Federation please see the documentation available via the following link: <a href="https://documentation.mindsphere.io/resources/html/settings/en-US/index.html">https://documentation.mindsphere.io/resources/html/settings/en-US/index.html</a> .

Integrated Data Lake (IDL)	
Description	<p>Integrated Data Lake allows you to store, organize, tag and search any kind of data (structured, semi structured and unstructured) as objects, bring together data from different sources and use it with applications and tools. You can organize data in different folders, associate it with metadata tags, search and delete objects.</p> <p>Seamlessly integrate with your existing subscribed Insights Hub Offerings and work with big data tools of your choice from various cloud service providers.</p>
Required Cloud Resources	<p>For productive use, additional Cloud Resources (Integrated Data Lake) are required. For more information, please refer to the Product Sheet for Insights Hub Cloud Resources.</p>
Third-Party Terms	<p>Third-Party Terms for Integrated Data Lake are available via the following link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a>.</p>
Documentation	<p>For further details about Integrated Data Lake please see the documentation available via the following links: <a href="https://documentation.mindsphere.io/resources/html/integrated-data-lake/en-US/index.html">https://documentation.mindsphere.io/resources/html/integrated-data-lake/en-US/index.html</a> and <a href="https://developer.mindsphere.io/apis/iot-integrated-data-lake/api-integrated-data-lake-overview.html">https://developer.mindsphere.io/apis/iot-integrated-data-lake/api-integrated-data-lake-overview.html</a>.</p>
Insights Hub Monitor	
Description	<p>With Insights Hub Monitor it is possible to explore the performance and condition of Assets, products, or lines in real time, get full and harmonized transparency and root causes from the data of your connected Assets, calculate KPIs, assign work orders within your team and automatically receive notifications when thresholds are exceeded. Insights Hub Monitor offers the following capabilities in the categories “explore” , “analyze” and “configure” :</p> <ul style="list-style-type: none"> <li>• Explore basic Dashboards can be used to visualize time series data and other information (e.g., text, images) on one page with few simple &amp; easy-to-use dashboard visualizations. Insights Hub Monitor includes basic Grafana visualization panels.</li> <li>• Explore Assets provides an overview of Assets configured in the respective Environment, allows to search and filter for relevant Assets based on various criteria, and displays measured data and information from Assets.</li> <li>• Explore Events shows time series events of different severities and allows you to acknowledge events, start work orders and explore Assets.</li> <li>• Explore Work Orders is used to investigate issues and ongoing maintenance activities within your own production and Assets, and it allows you to change status, priority, and assignee of a work order (in which case a message will be sent to the assignee).</li> <li>• Analyze Time Series is a basic analytics application for time series data.</li> <li>• Generate Forecasts based on our Insights Hub Predict framework to enable predictions of KPIs based on time-series data.</li> <li>• Generate Anomaly Detections based on our Insights Hub Predict framework to find anomaly spots from existing time-series data.</li> </ul>

	<ul style="list-style-type: none"> <li>• Configure simple KPIs is used to define and calculate KPIs on time series data by visually selecting input and output variables and writing the calculation formula using JavaScript language.</li> <li>• Configure Rules is used to monitor one or more variables of the respective Assets and define resulting actions such as sending notifications or setting a status indication after the occurrence of an event set, e.g., if the data relating to a certain asset exceeds a threshold defined.</li> <li>• Configure advanced KPIs allows you to create KPIs with a graphical editor and analyze KPIs live, as well as start a root cause analysis.</li> <li>• Explore advanced Dashboards offers you advanced dashboard visualizations as well as refresh features and added “KPI Analysis” widget to do KPI analytics right in the dashboard. Insights Hub Monitor includes advanced Grafana visualization panels. With Insights Hub Monitor Analytics, it is possible to create advanced KPIs and Dashboards on Time Series data as well as on non-time series data from Insights Hub IDL and further do drill-down analysis. IDL is enabled in “Configure KPIs” and “Explore Dashboards” UIs to allow scanning for files that are already uploaded in IDL.</li> </ul>
Limitations	Please note that depending on your dashboard usage, certain technical limitations may apply. For more information, please refer to <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/technical-limitations">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/technical-limitations</a> .
Required Insights Hub Cloud Resources	The number of (simple) KPIs and Rules you can (concurrently) use for Insights Hub Monitor as well as the number of Forecast Executions is limited. These limits are defined by the respective IIoT Data Package size ordered. For more information, please refer to the Product Sheet for Insights Hub Cloud Resources.
Third-Party Terms	Third-Party Terms for Insights Hub Monitor, Explore Dashboards, Explore Assets, Explore Events, Analyze Time Series, Configure Rules, Explore Work Orders, Configure simple KPIs and Generate Forecasts and Generate Anomaly Detections based on Insights Hub Predict framework are available under “Insights Hub Monitor” via the following link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .
Documentation	For further details about Insights Hub Monitor please see the documentation available via the following link: <a href="https://documentation.mindsphere.io/resources/html/operations-insight/en-US/index.html">https://documentation.mindsphere.io/resources/html/operations-insight/en-US/index.html</a> .
<b>Insights Hub Predict</b>	
Description	<p>The Insights Hub Predict framework is accessible from the “Analyze” tab-category of Insights Hub Monitor. It offers end-to-end, out-of-the-box model building that identifies relevant features and generates a unique GAM (Generalized Additive Model) for each time series forecasting or anomaly detections use case, which allows you to</p> <ul style="list-style-type: none"> <li>• forecast your future time series data values with assigned prediction horizon, validation dataset, confidence interval, etc.</li> <li>• detect anomaly spots from your existing time series data values based on different perspectives, normal behaviors configuration, etc.</li> </ul>

	With the user interface of Insights Hub Predict, you can start from "Use Case" and "Dataset" where your Forecast and Anomaly Detection models can be associated, built, and executed. You can make easy configuration of parameters for model building and leverage visualized execution results for further leveraging in your own use cases.
Limitations	Insights Hub Predict is available for customers from either Basic, Standard or Premium Capability Package and by default offers 20 forecasts and 20 anomaly detections per month for free. Customers could purchase Insights Hub Predict Forecast/ Anomaly Detection Upgrade add-on for additional executions. For more information, please refer to <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/technical-limitations">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/technical-limitations</a> .
Third-Party Terms	Please note the Third-Party Terms set out above for Insights Hub Monitor. Additionally, Third-Party Terms for Advanced KPIs Configuration are available under "Insights Hub Monitor Analytics" via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .
Documentation	For further details about Insights Hub Predict framework please see the documentation available via the following link: <a href="https://documentation.mindsphere.io/resources/html/operations-insight/en-US/155197424523.html">https://documentation.mindsphere.io/resources/html/operations-insight/en-US/155197424523.html</a> .

### Visual Flow Creator

Description	Visual Flow Creator enables you to define data flows to analyze, orchestrate, interact and visualize data and design your own workflows via a drag and drop functionality to develop graphic depiction of workflows. You can choose from a variety of pre-configured nodes provided by Siemens or you can deploy your own nodes to Visual Flow Creator for use in your workflows. Create the workflows with the web-based editor to analyze and generate new virtual data points or deliver the formatted data for reporting tools. Flows organized using projects integrate business logic, data processing, event handling, user interaction and visualization. The workflows can be triggered manually, time-based or via RESTful call. You can calculate KPIs or trigger actions. Export and import of flows and projects is supported.
Limitations	The number of flow tabs is limited to 30 per User. The number of nodes for one sheet is limited to 200. The amount of data stored in the context of function node is limited to 128 KB and only one context variable is allowed. The file size is limited to 1 MB for read and write and 100 file transfers per day. Only 2 000 values can be processed per time series request. The calculation duration of a flow must be less than 30 seconds. The number of node context variables in a function node is limited to 5 per node per User. The number of flow context variables in a function node is limited to 20 per node per User. The number of global context variables in a function node is limited to 100 per node per User. It is your responsibility to procure and maintain appropriate licenses for any nodes you deploy to Visual Flow Creator. Visual Flow Creator is a cloud based system where the outcome of data processing is partly out of its control. Visual

	<p>Flow Creator should therefore not be used for monitoring or operation of high risk systems or mission critical assets.</p> <p>All created workflows are visible for all Users of your Environment.</p>
Required Insights Hub Cloud Resources	<p>Executing workflows requires compute hours which are based on execution time. The IIoT Data Packages include Visual Flow Creator compute hours which are limited depending on the size you subscribed to.</p> <p>Please consider that the available workflow execution is based upon a 30% Asset coverage which can be increased by ordering additional workflow execution time quota. The execution time of all workflows for one Account could be limited depending on the application.</p> <p>For more information, please refer to the Product Sheet for Insights Hub Cloud Resources.</p>
Third-Party Terms	<p>Third-Party Terms for Visual Flow Creator are available via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a>.</p>
Documentation	<p>For further details about Visual Flow Creator please see the documentation available via the following link: <a href="https://documentation.mindsphere.io/MindSphere/apps/visual-flow-creator/introduction.html">https://documentation.mindsphere.io/MindSphere/apps/visual-flow-creator/introduction.html</a></p>

### Predictive Learning Essentials

Description	<p>Predictive Learning Essentials allows you to manage the lifecycle of your data, models, and execution environment in an interactive way as subscriber of either Standard or Premium Capability Package to extend your advanced analytics journey on Insights Hub.</p> <p>You can import data in various formats from Insights Hub IDL and Asset-related time series data for model executions either interactively through the integrated Jupyter Lab environment or by the assigned serving environment inside Insights Hub for the model artifacts in types of Docker Image and Jupyter Notebook imported from external repository.</p> <p>The existing add-on of Predictive Learning Essentials will be End of Life/ Service soon and please be noticed by our release notes.</p>
Limitations	<p>Predictive Learning Essentials allows 1000 compute hours per Productive/ Developer/ Test environment in your account during your subscription of Standard/ Premium Capability Package.</p>
Third-Party Terms	<p>Pre-installed open source libraries are listed in the <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">Third-Party Terms</a> available via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a>. Further libraries can be procured by you under separate terms via download from external repositories, i.e. pip (<a href="https://pypi.org/project/pip/">https://pypi.org/project/pip/</a>) for Python. Such libraries are not part of our Offering and solely operated by you.</p>
Documentation	<p>For further details about Predictive Learning Essentials please see the documentation available via the following link: <a href="#">Welcome to Predictive Learning Essentials Help - Developer Documentation (mindsphere.io)</a></p>

## Description of General Functionalities

Agent Management	
Description	Agent Management is a service made available via its respective MindSphere APIs. This service can be used e.g., to create, update, request status or delete an Agent, and allows you to onboard or offboard an Agent.
Documentation	For further details about Agent Management please see the documentation available via the following link: <a href="https://developer.mindsphere.io/apis/connectivity-agentmanagement/api-agentmanagement-overview.html">https://developer.mindsphere.io/apis/connectivity-agentmanagement/api-agentmanagement-overview.html</a> .
Environment Management	
Description	<p>The Insights Hub Capability Packages provide you with a dedicated Insights Hub Account. One Account can have up to 4 Environments depending on the Insights Hub Capability Package which serve a certain purpose:</p> <ul style="list-style-type: none"> <li>• Productive Environment: is intended to be used for production-like scenarios e.g., for global connection of Assets, application usage, etc.</li> <li>• Development Environment: is intended to be used for application development / integration and its operation.</li> </ul> <p>Test Environments: are intended to be used for testing of developed applications.</p> <p>The total number of Environments included in different Insights Hub Capability Packages:</p> <ul style="list-style-type: none"> <li>• Insights Hub Capability Package Basic: 2</li> <li>• Insights Hub Capability Package Standard: 4</li> <li>• Insights Hub Capability Package Premium: 4</li> </ul> <p>Per default, you will always receive a Productive Environment.</p> <p>The creation of a Development Environment (for Basic/Standard/Premium) and 2 additional Test Environments (for Standard/Premium) is optional. For creation of optional Environments, please contact Support.</p>
	<p>You must at least have one Development Environment created, if you would like to:</p> <ul style="list-style-type: none"> <li>• Develop, test and use own applications productively in own Accounts.</li> <li>• Provision applications to other Insights Hub customers' Accounts and publish your applications via the Store.</li> </ul> <p>If you would like to test own applications in a separate Environment, you must create additional Test Environments (only for Standard/Premium).</p>
Event Management	
Description	Event Management is a service available via its respective APIs. This service is used to manage standardized and customized events. Events, alarms, warnings can be received from the field or other applications and be used to inform a User.
Documentation	For further details about Event Management please see the documentation available via the following link: <a href="https://developer.mindsphere.io/apis/advanced-eventmanagement/api-eventmanagement-overview.html">https://developer.mindsphere.io/apis/advanced-eventmanagement/api-eventmanagement-overview.html</a> .



## IoT and Storage Services

Description	<p>IoT &amp; Storage Services are services available via their respective APIs. They cover Aggregate Service, File Service, Time Series Service and Time Series Bulk Service:</p> <ul style="list-style-type: none"><li>• Aggregate Service is used to read aggregated time series values. Retrieve the following aggregated values per interval: Count, Sum, Average, Minimum, Maximum, First Value, Last Value and Standard Deviation.</li><li>• Aggregate Services use pre-calculated intervals to enhance performance upon retrieval. Performing queries that require on-the-fly calculations might perform slower than queries that make use of pre-calculated aggregates. Aggregates are pre-calculated based on incoming raw data with a slight delay. Therefore, it might be possible that the latest time series values are not available when reading aggregates.</li><li>• File Service is used to read, write, delete, upload and update files associated to assets, store metadata information, and search for files by metadata. Since files are always related to an Asset, the instance of an Asset must have been created by you beforehand.</li><li>• Time Series Service can be used to create, read, update and delete dynamic data. Since time series data are always related to an Asset, the instance of an Asset must have been created by you beforehand.</li><li>• Time Series Bulk Service can be used to upload historic time series data using files.</li></ul>
Required Insights Hub Cloud Resources	<p>The time series data ingest volume and file storage you can use is limited. These limits are defined by the respective IIoT Data Package size ordered. For more information, please refer to the Product Sheet for Insights Hub Cloud Resources.</p>
Documentation	<p>For further details about IoT and Storage Services please see the documentation available via the following links:</p> <p><a href="https://developer.mindsphere.io/apis/iot-iotfile/api-iotfile-overview.html">https://developer.mindsphere.io/apis/iot-iotfile/api-iotfile-overview.html</a></p> <p><a href="https://developer.mindsphere.io/apis/iot-iottimeseries/api-iottimeseries-overview.html">https://developer.mindsphere.io/apis/iot-iottimeseries/api-iottimeseries-overview.html</a></p> <p><a href="https://developer.mindsphere.io/apis/iot-iottsaggregates/api-iottsaggregates-overview.html">https://developer.mindsphere.io/apis/iot-iottsaggregates/api-iottsaggregates-overview.html</a>.</p>

## Notification Service

Description	<p>Notification Service is available via its respective Industrial IoT APIs. This service enables you to (i) send emails, mobile push notifications and if available in your region also SMS in relation to certain events defined by you, or (ii) send email notifications to (a group of) individual recipients. We may use a third party service provider to provide you with Notification Service.</p>
Required Insights Hub Cloud Resources	<p>The number of notifications you can use is limited. These limits for SMS, emails and mobile push notifications are defined by the respective IIoT Data Package size ordered. For more information, please refer to the Product Sheet for Insights Hub Cloud Resources.</p>
Documentation	<p>For further details about Notification Service please see the documentation available via the following link:</p>

	<a href="https://developer.mindsphere.io/apis/advanced-notification/api-notification-overview.html">https://developer.mindsphere.io/apis/advanced-notification/api-notification-overview.html</a> .
<b>Upgrade Tool</b>	
Description	Use Upgrade tool to: <ul style="list-style-type: none"> <li>• Order available upgrades (incl. add-ons) to your subscribed Offerings.</li> <li>• Get an overview of your requested and completed upgrades.</li> <li>• Manage pending upgrade requests (authorized Users only).</li> </ul>
Third-Party Terms	Third-Party Terms for Upgrade are available under “administration tools” via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .
<b>Usage Transparency &amp; Usage Transparency Services</b>	
Description	Usage Transparency Service is a service available via its respective APIs and via user interface “Usage Transparency” accessible from your Launchpad. Usage Transparency Service provides transparency for both application operators and application customers to verify daily and monthly aggregated usage for applications. It supports the application operators to monetize their application usage. This service offers insight on your consumption of certain resources and corresponding limits of your Insights Hub Cloud Resources and other subscribed offerings, e.g., API calls, time series data ingest rate. Moreover, you can define metrics within this service so that consumption can be tracked.
Third-Party Terms	Third-Party Terms for Usage Transparency are available under “administration tools” via the following link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .
Documentation	For further details about Usage Transparency Services please see the documentation available via the following links: <a href="https://documentation.mindsphere.io/resources/html/usage-transparency-service/en-US/index.html">https://documentation.mindsphere.io/resources/html/usage-transparency-service/en-US/index.html</a> and <a href="https://developer.mindsphere.io/apis/core-usagetransparency/api-usagetransparency-overview.html">https://developer.mindsphere.io/apis/core-usagetransparency/api-usagetransparency-overview.html</a> .
<b>Settings &amp; Identity and Access Management</b>	
Description	Settings allow managing Users, permissions, rights, roles, groups, access policies, Collaborations and Environment provider information. For every User, an individual login is required. Access policies are available only upon request. Please contact your sales representative or Support to enable use of access policies. Identity and Access Management are services available via their respective Industrial IoT APIs. These services are used to manage users, customers, roles and scopes.
Third-Party Terms	Third-Party Terms for Settings are available under “administration tools” via the following web link: <a href="https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms">https://siemens.mindsphere.io/en/docs/Product-Descriptions-Overview/Third-Party-Terms</a> .
Documentation	For further details about Identity and Access Management please see the documentation available via the following links:

	<a href="https://documentation.mindsphere.io/resources/html/settings/en-US/index.html">https://documentation.mindsphere.io/resources/html/settings/en-US/index.html</a> and <a href="https://developer.mindsphere.io/apis/core-identitymanagement/api-identitymanagement-overview.html">https://developer.mindsphere.io/apis/core-identitymanagement/api-identitymanagement-overview.html</a> and <a href="https://developer.mindsphere.io/apis/core-resourceaccessmanagement/api-resourceaccessmanagement-overview.html">https://developer.mindsphere.io/apis/core-resourceaccessmanagement/api-resourceaccessmanagement-overview.html</a> .
Token Manager Services	
Description	<p>Token Manager Service is available via its respective Industrial IoT APIs. This service is necessary if your applications shall access data without user interaction from other Accounts and/or Environments by issuing access tokens. Before an application can issue access tokens for an Account and/or Environment, the application must be provisioned to this Account and/or Environment and explicit approval for the data access must be obtained by you from the application customer. We will provide technical means for you to obtain such approval via a standard process and template as currently described in more detail in the user documentation for the DevOps Cockpit available via the following web link:</p> <p><a href="https://documentation.mindsphere.io/resources/html/operator-cockpit/en-US/index.html">https://documentation.mindsphere.io/resources/html/operator-cockpit/en-US/index.html</a>.</p>
Documentation	<p>For further details about Token Manager Services please see the documentation available via the following link:</p> <p><a href="https://developer.mindsphere.io/apis/exchange-tokenmanager/api-tokenmanager-overview.html">https://developer.mindsphere.io/apis/exchange-tokenmanager/api-tokenmanager-overview.html</a>.</p>

Insights Hub Asset Attributes Description	
Description	<p>Asset Attributes are properties of Assets or simply the datapoints consumed during Asset Modelling in terms of Variables. An Asset Attribute represents individual data such as temperature, pressure or speed. They can be static, e.g., a serial number or dynamic like temperature where historical data is desired. An Asset comprises of at least one Asset Attribute but can contain more, if required.</p> <p>Asset Attributes created by you are counted independently of their purpose such as monitoring, alarming or structuring. Asset Attributes are always related to a defined Asset Type which can be a custom type or Out of the Box type. Out of the box Asset types are ready templates that have some pre-loaded Asset Attributes that are counted by default.</p>
Required subscription	<p>In order to use the Insights Hub Capability Packages you have to subscribe to Asset Attributes. Asset Attributes are not included in your Capability Package subscription. Subscriptions to Asset Attributes is prepaid &amp; available in different sizes (500/1 000/ 2 500/5 000/10 000/25 000/50 000/500 000 Asset Attributes).You can purchase same size multiple times or a combination of these sizes. The Asset Attributes are provisioned for the subscription term and if the full quota of purchased Asset Attributes is consumed, subsequent usage is restricted. In order to continue usage you would need further purchase of Asset Attributes from the available sizes.</p>

## Export Control Regulations

The services described in this Product Sheet have the following export control classification, unless expressly set out otherwise herein:

AL	N
ECCN	N/EAR99

## Security Information

General	In order to protect plants, systems, machines and networks against cyber threats, it is necessary that you implement and continuously maintain a holistic, state-of-the-art industrial security concept.
Secure communication	Data transmission will be done via HTTPS protocol from Asset to your Environment.

## Definitions

General	Unless otherwise indicated, capitalized terms used in this document shall have the meaning given to them in this document or elsewhere in the Agreement. You may also want to check our <a href="#">Glossary</a> .
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