FUJITSU Cloud Service K5 COLMINA Platform
Service Details Instruction Manual
(Version 1.0.1)

Preface

Thank you for considering the FUJITSU Cloud Service K5 COLMINA Platform (called "this service" below).
This document, the *FUJITSU Cloud Service K5 COLMINA Platform Service Details Instruction Manual* (called "this document" below), is intended for customers who have signed a contract for this service or are deploying this service. We ask for your understanding regarding the following matters.

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<Terms>

Term	Description	Remarks
K5	Fujitsu's Cloud Platform.	
K5 Authentication Platform	K5's Authentication PaaS. Provides account management and authentication functionalities.	
COLMINA	Abbreviation for COLlaborative Monozukuri INnovation Agent. It represents Fujitsu's digital place for manufacturing.	
Data visualization powered by Intelligent Dashboard	Fujitsu's solution to support overall optimization and also visualization across entire factories. The optimization will lead to business solutions in the manufacturing industry, and the visualization effectively uses IoT.	
Tenant ID	ID for each tenant. It is issued when the contract is signed.	
Dashboard screen	Screen displaying Intelligent Dashboard. It can display data hierarchically by unit (country, region, factory, line, facility, etc.) or in a graph.	
Drill down	Operation to go down in the level of data aggregation, one by one. It moves from summary data to more detailed data.	
Service application number (Service contract ID)	Service application number issued in the moment service contract is established.	
Factory ID	ID of a factory to be visualized for use with Intelligent Dashboard. The service user is asked to decide an arbitrary ID when signing the contract.	
Factory name	Name of a factory to be visualized for use with Intelligent Dashboard. The service user is asked to decide an arbitrary name when signing the contract.	
Sequential performance data	Performance data produced/generated at a factory, etc.	
Performance data by minute	Sequential performance data summarized into performance data by minute.	
Performance data by hour	Sequential performance data summarized into performance data by hour.	
Performance data by shift	Sequential performance data summarized into performance data by shift.	
Performance data by day	Sequential performance data summarized into performance data by day.	
Performance data by week	Sequential performance data summarized into performance data by week.	
Performance data by month	Sequential performance data summarized into performance data by month.	
Performance data by fiscal year	Sequential performance data summarized into performance data by fiscal year.	
CSV edit tool	Excel tool. It is used during master maintenance in Intelligent Dashboard. You can download it from the K5 portal site.	
Default screen	At the beginning of service after the contract is concluded, the screen appearing after login is called a default screen. Some customers may sign a multi-tenant contract. Default screens are template screens commonly provided to tenants.	
Detailed card	Screen information displaying the details of an alarm on the screen	
TLS TLS 1.2	Abbreviation for Transport Layer Security. TLS is a protocol for providing the required communications security over a computer network, such as the Internet. The main functions provided by this protocol are authentication of the identity of communicating parties, encryption of the contents of communication, and detection of falsified data. TLS 1.2 can use SHA-256 (encryption scheme) and an authenticated encryption method as the encryption scheme.	

| | The COLMINA Platform permits communication only with TLS 1.2. | |

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Chapter 1　　　FUJITSU Cloud Service K5 COLMINA Platform

1.1.　Overview
This service provides a platform for total connections from factories to maintenance sites. It is divided into COLMINA Platform and COLMINA Service. Below is an explanation of each service.

1.1.1.　COLMINA Platform
1.1.1.1.　COLMINA Portal

Provides access to COLMINA Platform and COLMINA Service functionalities. Following operations are available in COLMINA Portal screen:

> ➢ User management (add, edit and delete)
> ➢ Data reception status confirm
> ➢ Service usage statistics (disk usage)
> ➢ Access to data visualization service (Intelligent Dashboard)
> * "Data reception setting" and "Stored data confirm" displayed on COLMINA Portal screen are not yet available to use.

1.1.1.2.　Data reception

Receive CSV format files through API provided by this service.

A reception number is attributed to each CSV file received and the result of reception process is stored at data arrival record table.

1.1.1.3.　Data storage

Files received by data reception service are stored as structured data into data storage area.

1.1.1.4.　Authentication

This service can authenticate users based on user name and password.

1.1.2.　COLMINA Service
1.1.2.1.　Data visualization powered by Intelligent Dashboard

Data received and stored into data storage area can be visualized.

(a) Data visualization

Stored data can be split into layers and displayed in graphs at Dashboard screen. It also can display images uploaded by service user.
1. Layer types examples: Country, region, factory, production line and facility
2. Graph type examples: hourly, yearly, monthly and daily

(b) Alarm

Alarms can be displayed at Dashboard screen based on parameters previously set by user.

(c) Master maintenance
1. Screen design settings
Setup contents (template, graph, alarm, screen transition layer, etc.) and register images to be displayed at Dashboard screen.
2. User access management
Roles and access rights for functions can be defined for each user.
3. Sequential performance and aggregated performance data output
Stored data can be downloaded as CSV files.

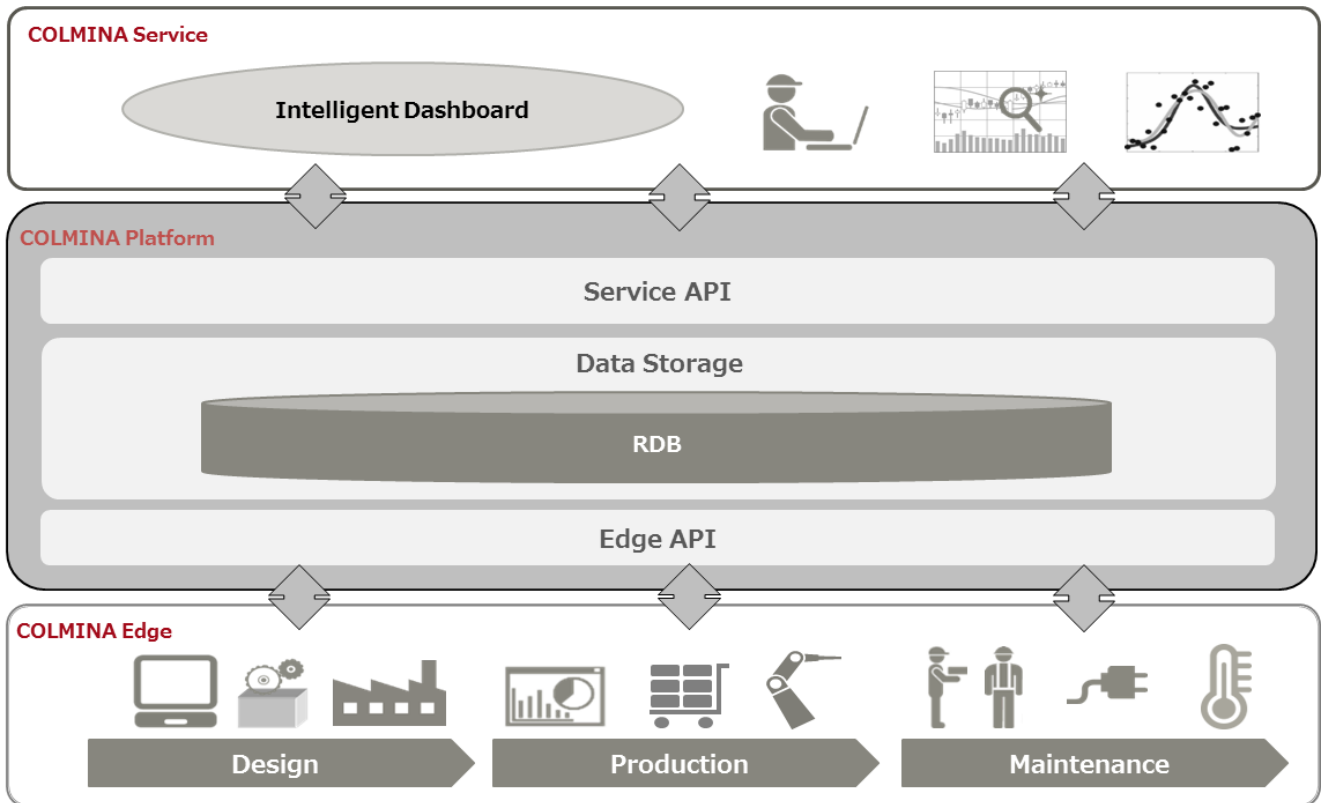For an outline of this service, see "Figure 1.1. Outline Diagram" below.

Figure 1.1. Outline Diagram

1.2. Features

A feature of the data reception is cloud storage for the sequential performance data produced or generated in factories and elsewhere. The service user can store the data on the cloud through an API. The user creates a sending program to allow access to the API. When data is received as a CSV file on the cloud, the reception outcome is recorded in the data arrival record table. Even if the data is received as an error for some reason, it is recorded in the data arrival record. The error data is not stored. So the cloud can store just the normal data.

A feature of usage statistics is to obtain tenant's, which logged user belongs to, system usage statistics from server and display on usage statistics verification screen. Used and remaining disk space of structured data's data storage area are available. Also it's possible to select the month and year of the usage statistics.

As a feature of K5 Portal support, this service's new contract application, change contract application and contract cancellation can be managed at K5 Portal.

As a feature of data visualization, this service can visualize normal and abnormal conditions throughout a factory and display alarms in a timely manner. This can, for example, improve the speed of improvement from error occurrence detection to recovery, and enable efficient management of the lines throughout a factory and efficient management by apparatus level.

The service users can define, in detail, what data is visualized and how data is displayed on the screen. The users can define hierarchical levels like country, region, factory, and line for the visualized data. They can prepare a world map, Japan map, factory layout plan, and other diagrams. They can also get graphs displayed on their images. Furthermore, the range of data shown to each user can be defined for the visualized data. The data visualization does not require the service users to prepare complex programs because they can get the necessary definitions by editing various master data with the CSV edit tool and uploading the data.

A feature of data storage is the capability to store structured data (RDB) into data storage area.

1.3. Documents

The following table shows the arrangement of documents for this service.

Table 1.3. Documents

Manual Name	Description
FUJITSU Cloud Service K5 COLMINA Platform Service Details Instruction Manual	Describes the service specifications of this service. (This document)
FUJITSU Cloud Service K5 COLMINA Platform User Guide	Support manual for the design and development of applications utilizing this service
FUJITSU Cloud Service K5 COLMINA Platform API Reference	Contains information on the APIs provided with this service.

Chapter 2 Service Specifications

2.1. COLMINA Platform

2.1.1. COLMINA Portal

Portal that provides access to functionalities of COLMINA Platform and COLMINA Service.

For functionalities provided by COLMINA Portal, see following table 2.1.1. COLMINA Portal function list.

Table 2.1.1. COLMINA Portal function list

No.	Function name	Function overview
1	Usage statistics verification	Provides means to verify resource usage statistics.
2	User setting	Provides user management functionality.
3	Data reception status confirm	Provides means to verify data reception status stored in data arrival record table.
4	Intelligent Dashboard	Provides access to data visualization powered by Intelligent Dashboard service.

2.1.1.1. Usage Statistics Verification

Initial screen of portal provides statistics about current number of registered users, structured data's disk usage and remaining space. Also there is an option to filter statistics data by year and month.

*Number of Data Lake API (RDB/NoSQL) calls and unstructured data's disk usage and remaining space are displayed but currently not covered by this service.

List of factories allowed to be used in Intelligent Dashboard can be obtained by contacting the help desk. For details, see the *User Guide*.
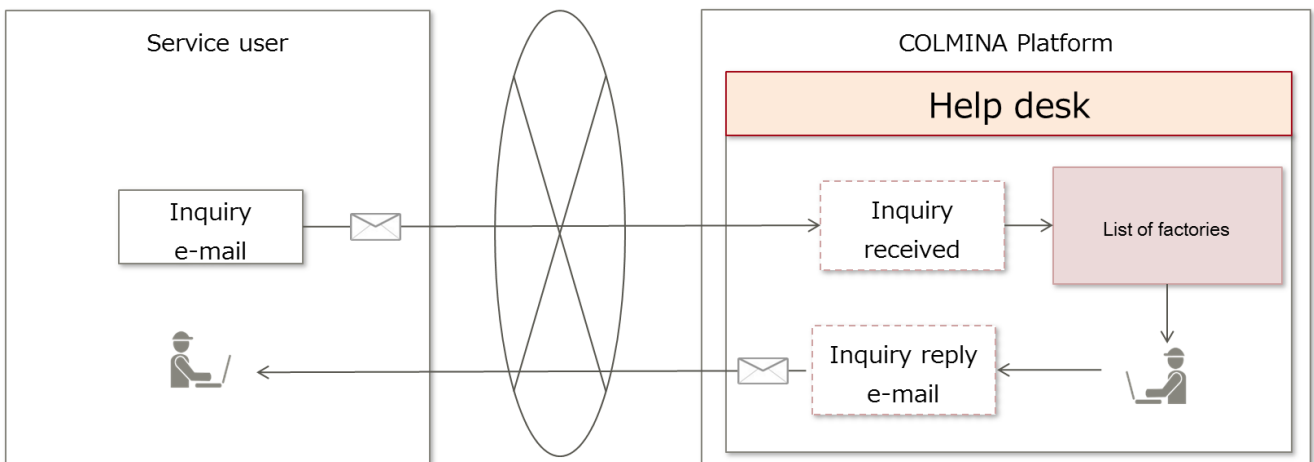
Figure 2.1.1.1. Inquiry List of Factories

2.1.1.2. User Setting

Provides a screen to view, register, edit, delete or unlock users.

New user registration requires a user name, password, utilization period and role.

Only password, utilization period and role can be changed after the user registration. An expiration date is set for the password, so the password must be changed regularly before expiry.

2.1.1.3. Data Reception Status Confirm

Provides a screen to verify the data reception status stored at data arrival records written by data reception process.

Reception number, reception status, reception result, period of data reception are available as search conditions. If reception number is specified, other search conditions won't be applied.

2.1.1.4. Intelligent Dashboard

Provides access to Data Visualization powered by Intelligent Dashboard.

For details, see "2.2.1. Data Visualization powered by Intelligent Dashboard".

2.1.2. Data Reception

Sequential performance data produced or generated in factories and elsewhere can be stored in the cloud through an API.

Service user must implement a sending program to access the API.

A reception number (API receiving date and time + tenant ID + 5-digit sequential number) is added to each instance of receiving, and the reception outcome is recorded in the data arrival record table. Even if the data is received as an error for some reason, it is recorded in the data arrival record. For details on the sending program, see the *API Reference*.

For an outline of data reception, see "Figure 2.1.2. Data Reception" below.
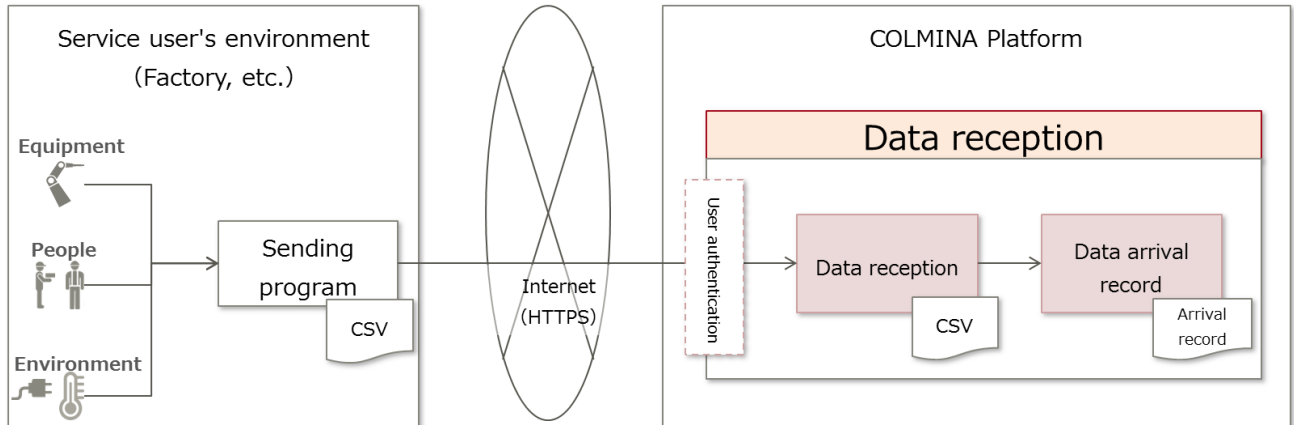
Figure 2.1.2. Data Reception

2.1.3. Data Storage

Converts structured data in CSV format received through data reception ("sequential performance data") into RDB format and stores it in the data storage area. The data is converted into RDB format and stored in the data storage area. Out of the structured data, error data is not stored, and only normal data is stored. Tenant ID, Place ID, time, data type and data element are used as a key for storing the data. If the newly received key is identical to (same as) the existing one, last received data overwrites the existing one.

For an outline of data storage, see "Figure 2.1.3. Data Storage" below.
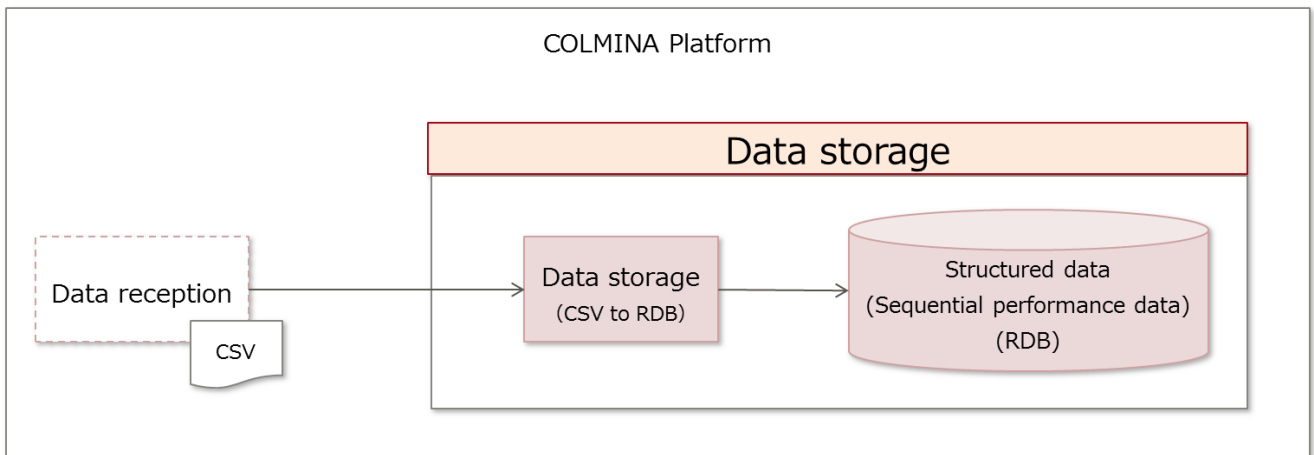
Figure 2.1.3. Data Storage

2.1.4. Authentication Function

When the sending program accesses the API in data reception, the user is authenticated with user name and password

for data sending user. When the user is logging in to Intelligent Dashboard, this user is authenticated with user name and password for Intelligent Dashboard.

You are provided with a user name and temporary password when a new contract is concluded. Before the initial login to start using the service, go to the password change URL to change your temporary password. For details, see the *User Guide*.

For an outline of the authentication function, see "Figure 2.1.4. Authentication Function" below.
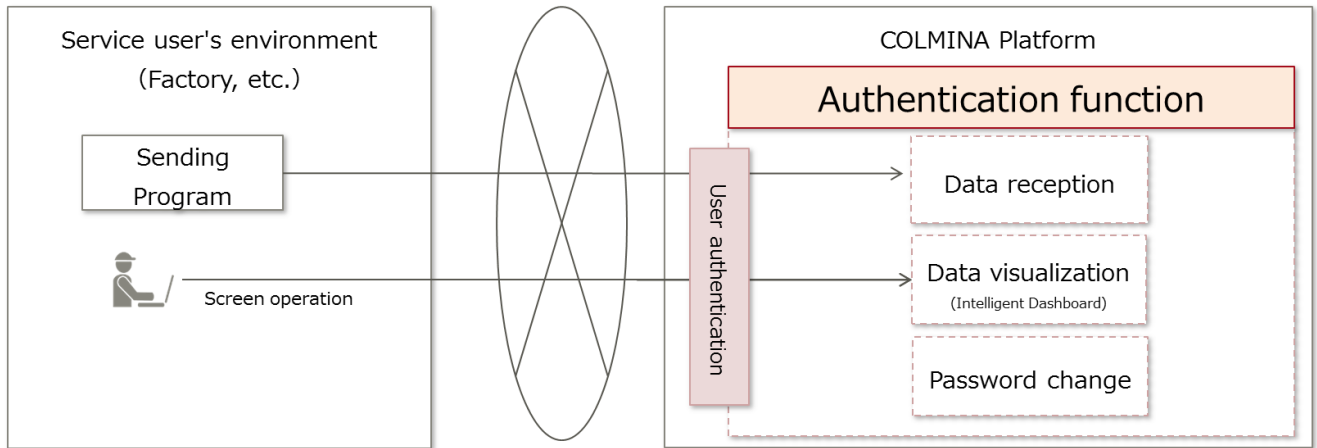
Figure 2.1.4. Authentication Function

2.2.　COLMINA Service
2.2.1.　Data Visualization powered by Intelligent Dashboard

Intelligent Dashboard is provided as a function for visualizing stored data. Number of factories available for registration on Intelligent Dashboard depends on the contracted plan. (Factories with different names are regarded as different factories.)

For an outline of Intelligent Dashboard, see "Figure 2.2.1. Intelligent Dashboard Outline" below.

Figure 2.2.1. Intelligent Dashboard Outline

For details on the functions provided by Intelligent Dashboard, see "Table 2.2.1. Intelligent Dashboard Functions" below.

Table 2.2.1. Intelligent Dashboard Functions
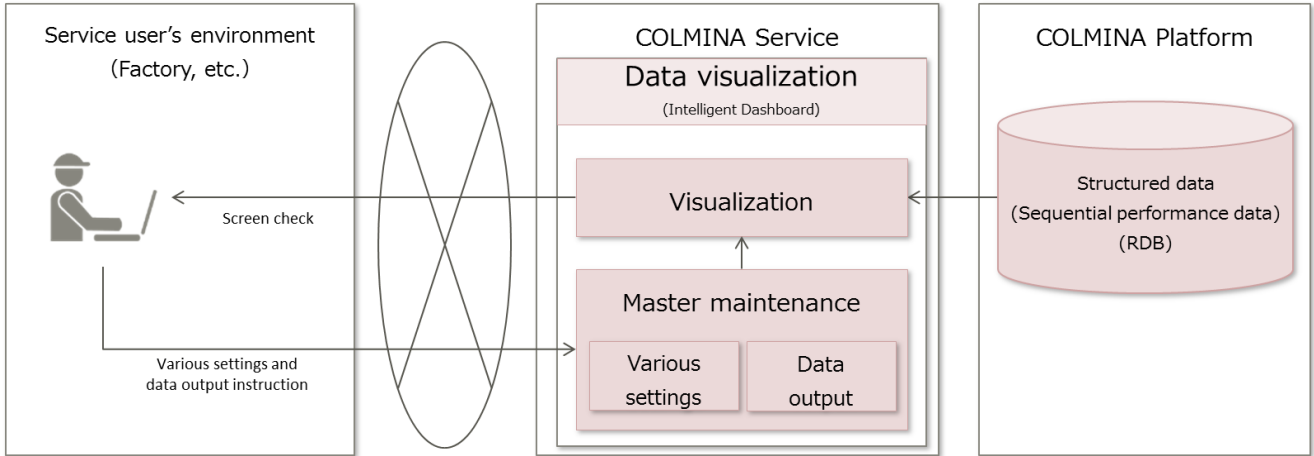
No.	Function Name	Subject	Functional Outline
1	Visualization	User	You can display the dashboard screen with a hierarchical display, alarm display, graph display, etc.
2	Alarm history	User	You can search for recorded alarm history or alarm information arbitrarily to display them.
3	Change the displaying date/time	User	You can have the drawn data displayed on the screen redrawn with data of an arbitrary date and time.
4	Screen refresh	User	You can have the drawn data displayed on the screen redrawn with the latest data.
5	Status and comment input	User	You can enter a status for an alarm that has occurred.
6	Display language switching	User	You can switch the display language on the display screen.
7	Access log	Administrator	You can search the access status (access date and time, accessing user name, and accessed level), names of accessed screen and messages of users arbitrarily and display them.
8	Batch aggregation	Administrator	You can create aggregated data grouped by time, location and other forms from stored sequential performance data. However, it is necessary to set the aggregating conditions in the master as it does not aggregate automatically.
9	Batch log	Administrator	You can arbitrarily search for and display data. The data consists of batch processing times (start year, month, day, and time (hour and minute)), processing result levels (information or error), types (batch name), and messages (information message at processing start, for example, and generated error message).
10	Master maintenance	Administrator	You can output and register editable master data (user settings, factory settings, authority settings, locale settings, screen design settings, and data aggregation settings), output other data, and register image data.

2.2.1.1.　User Functions

(1)　Visualization

The system administrator arbitrarily defines screen and user information in masters on the service user side. The top screen for each logged-in user is displayed from the definitions. Users can display screens by level in a hierarchy, alarms that have occurred, and multiple graphs.

This service provides default screens as template screens. This document describes visualization along the lines of the default screen setting examples.

For examples of screen display with visualization on default screens, see "Table 2.2.1.1.1. Default Screen Examples" below.

Table 2.2.1.1.1. Default Screen Examples

No.	Default Screen Example	Outline
1	Hierarchical screen display	You can display (drill down) prepared screens at hierarchical levels.
2	Alarm display	You can display information on an alarm that has occurred, on the screen.
3	Graph display	You can simultaneously display multiple prepared graphs for a comparison.

The system administrator arbitrarily defines images and screens suiting a hierarchy (line, facility, etc.) within an actual factory as hierarchical screen. Then, users can display screens at each level in the hierarchy (country to region to factory to line to facility and so on). The screen content is easy to understand and see as a mental picture, so it can be easy to visualize the hierarchical structure in a factory.

To go from top to bottom in the screens prepared as a hierarchy, drill down the hierarchy, level by level. To go from bottom to top, you can use a topic path to jump instantly to a higher level and view the screen.

For an example of a hierarchy in visualization, see "Figure 2.2.1.1.1. Example of a Hierarchy with Visualization" below.
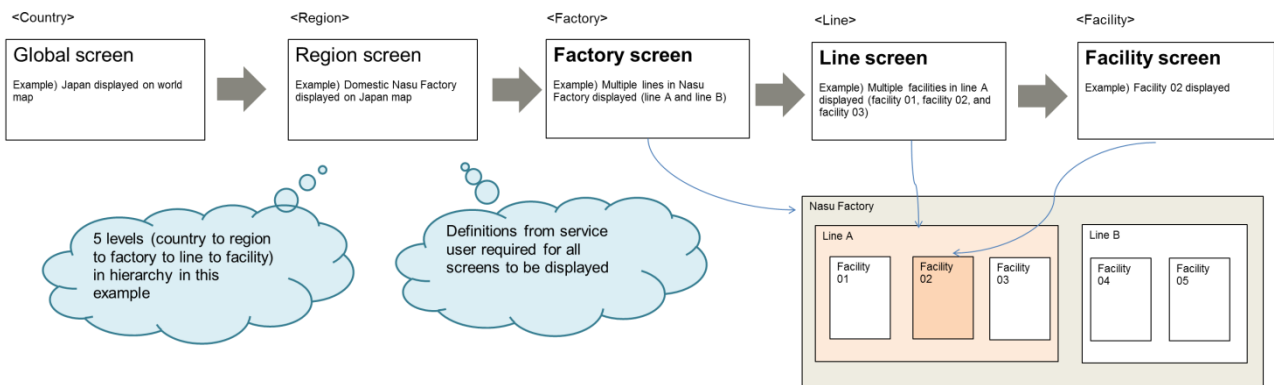
Figure 2.2.1.1.1. Example of a Hierarchy with Visualization

In the alarm display function, by setting in advance a threshold (range) for target place and target data, when an object data enters the threshold range, an alarm is displayed. Depending on the range of the thresholds, you can change the kind of alarm in accordance with definitions of caution, warning, emergency. By defining the target place, it is possible to visually display where the problem is occurring (occurrence of an abnormal value), and by inputting the correspondence situation, it allows the users to deal with the problem leaving records from the occurrence of the abnormality to the countermeasure.

"Figure 2.2.1.1.2. Example of Alarm Display with Visualization" shows an example of alarm display with visualization.
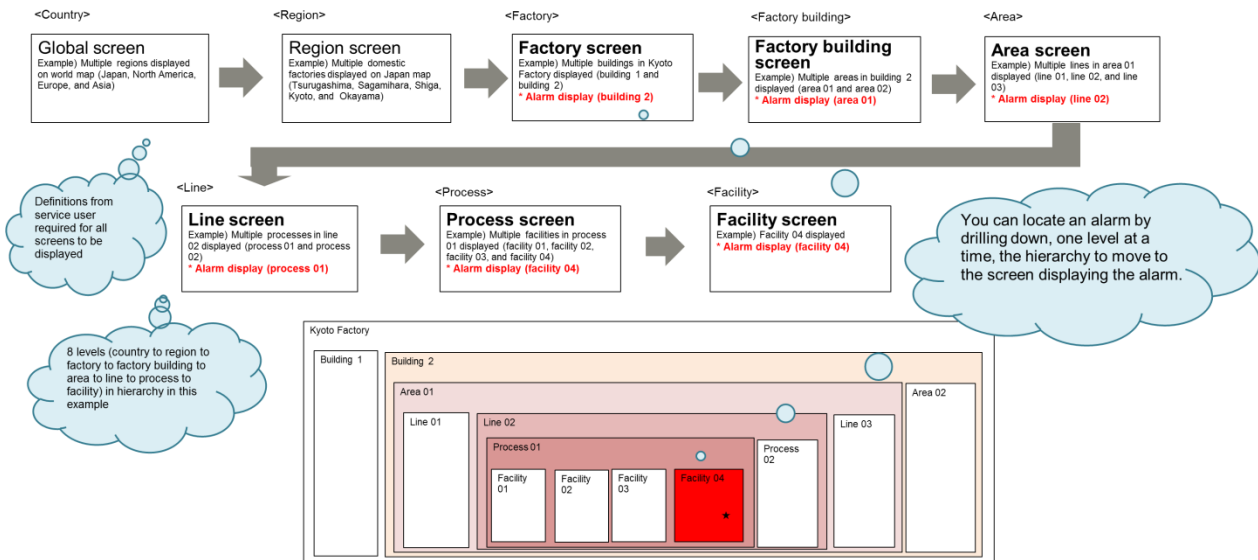
Figure 2.2.1.1.2. Example of Alarm Display with Visualization

The system administrator arbitrarily defines screens that show graphs of the status of multiple factories, multiple lines, and multiple facilities, as screens displaying a graph list. By comparing multiple assorted graphs shown on one screen at the same time, users can look for the cause of a problem to improve quality or increase efficiency.

(2) Alarm History

The states exceeding the thresholds and the input comments and the states in alarm input are recorded. Alarm history is a function for referring to these records. Alarm history can be searched for by time and place of occurrence, alarm level and correspondence situation. Up to 1,000 items (up to 20 items per page) can be listed.
"Table 2.2.1.1.2. Alarm History Search Conditions" shows the alarm history search conditions.

Table 2.2.1.1.2. Alarm History Search Conditions

No.	Search Item	What is Selected/Entered for Search
1	Alarm occurrence time	Start year, month, day, and time (hour and minute) and end time (hour and minute) of alarm occurrence
2	Place	Unit of the hierarchy defined by the service user, such as line or facility. By selecting from a higher level in the hierarchy, you can drill down to select the lower-level target under the current level.
3	Alarm level	Attention, Warning, Emergency
4	Status	Up to ten items can be set arbitrarily (Example: Open, Checking, Investigating, Preparing, Request, Re-Investigation, Ongoing, Closed, etc.)

(3) Change the Displaying Date/Time

Users can change the displaying date/time of data drawn on the screen configured by the system administrator to an arbitrary date and time. After the displaying date/time is changed, the change stays in effect until the displaying date/time is changed to a different date/time, the screen is refreshed, or the user logs off.

(4) Screen Refresh

Users can redraw, with the latest data, the data drawn on the screen configured by the system administrator.

(5) Status and Comment Input

You can enter a status for the alarm on the comment input window of the detailed card where the alarm occurred. For example, after a person in charge enters or updates the status, a factory manager, a line administrator, and so on can quickly understand the latest status of the alarm.

The maximum entry for a status comment is 256 characters. Each person who responds can add to or delete the entered contents of the status comments.

The entered status comment will also be output to the access log. Only the system administrator can browse the access log.

(6) Display Language Switching

Users can switch display languages. Though the standard display language is English, system administrators can arbitrarily define up to 5 additional combinations of a locale and a language.

2.2.1.2. Administrator Functions

(1) Access Log

The system administrator can check the access status of a user from the access log screen.

For details on access log search conditions, see "Table 2.2.1.2.1. Access Log Search Conditions" below.

Table 2.2.1.2.1. Access Log Search Conditions

No.	Search Condition	Description
1	Access date and time	You can specify the access period (start year, month, day, and time (hour and minute) and end year, month, day, and time (hour and minute)).
2	Log level	You can specify a log level (information or error).
3	User name	You can specify a user name.

For details on the items that can be displayed and checked in the access log, see "Table 2.2.1.2.2. Access Log Check Items" below.

Table 2.2.1.2.2. Access Log Check Items

No.	Display Item	Description
1	Access date and time	You can display the access period (start year, month, day, and time (hour and minute) and end year, month, day, and time (hour and minute)).
2	User name	You can display the user name of the accessing user.
3	Access level	You can display the access level (information or error).
4	Access type	You can display the screen name of the accessed screen.
5	Message	You can display information messages, such as that at processing start, and generated error messages.

(2) Batch Aggregation

By starting batch aggregation on Intelligent Dashboard, you can create aggregated data from the sequential performance data. The methods of processing the aggregation are time aggregation, location aggregation, and other aggregation. You can edit aggregation processing by factory, but batch aggregation processes the aggregation master records of all the factories in timely as one system.

For descriptions of the aggregation processing methods, see "Table 2.2.1.2.3. Aggregation Processing Methods" below.

Table 2.2.1.2.3. Aggregation Processing Methods

No.	Aggregation Processing Method	Aggregation Description
1	Time aggregation	Summarizes data into data with a larger time unit. For example, this processing summarizes sequential performance data into performance data by minute, or summarizes performance data by minute into performance data by hour. The total is calculated for each data place or data type.

2	Location aggregation	Calculates the total as location data at a higher level in the hierarchy. For example, this calculation summarizes facility performance data into process performance data or process performance data into line performance data. Aggregation is done by aggregation time and data type.
3	Other aggregation	Generates an average value, minimum/maximum value data, and data converted by unit, based on a calculation specifying a calculation method or correction value.

The sequential performance data stored by this service, various aggregated performance data created by batch aggregation, access log, and batch log are retained. For the retention periods of this data, see "Table 2.2.1.2.4. Target Data Retention Periods" below. The defaults are the recommended maximum values. You can request a reduced data retention period via the help desk. For details, see the *User Guide*.

Table 2.2.1.2.4. Target Data Retention Periods

No.	Data Subject to Data Retention Period	Retention Period (Default Value (Recommended Maximum Value))
1	Sequential performance	60 days
2	Performance data by minute	60 days
3	Performance data by hour	365 days
4	Performance data by shift	365 days
5	Performance data by day	365 days
6	Performance data by week	60 months
7	Performance data by month	60 months
8	Performance data by fiscal year	10 years
9	Access log	365 days
10	Batch log	365 days

(3) Batch Log

The system administrator can check the batch aggregation processing status by factory.

For example, suppose that a user notices that data has not updated on a dashboard screen. In this case and others like it, the user then makes an inquiry to the administrator. The administrator can quickly check the status of batch processing about to examine the possibility that the batch abnormally ended as the cause.

For details on the batch log search conditions, see "Table 2.2.1.2.5. Batch Log Search Conditions" below.

Table 2.2.1.2.5. Batch Log Search Conditions

No.	Search Condition	Description
1	Batch processing date and time	You can specify the batch processing date and time (start year, month, day, and time (hour and minute) and end year, month, day, and time (hour and minute)).
2	Log level	You can specify a log level (information or error).

For details on the items that can be displayed and checked in the batch log, see "Table 2.2.1.2.6. Batch Log Display Items" below.

Table 2.2.1.2.6. Batch Log Display Items

No.	Display Item	Description
1	Batch processing date and time	You can display the batch processing date and time (start year, month, day, and time (hour and minute) and end year, month, day, and time (hour and minute)).
2	Processing result level	You can display the batch processing result level (information or error).
3	Batch type	You can display the name of the processed batch.
4	Message	You can display information messages, such as that at processing start, and generated error messages.

(4) Master Maintenance

The system administrator can configure and manage various master table data with the master maintenance function.

The master maintenance workflow is as follows.

- Output master table data.
  Download a CSV file of the master table data to be edited.
- Edit master table data.
  Edit the downloaded master table data in CSV format on the CSV edit tool.
- Register master table data.
   Upload the edited master table data in CSV format.

You can download the CSV edit tool from the K5 PaaS portal site. For details on the CSV edit tool, see the *User Guide*.

For a description of the master maintenance function, see "Table 2.2.1.2.7. Master Maintenance Function" below.

Table 2.2.1.2.7. Master Maintenance Function

No.	Master Maintenance Function Name	Master Table Data Type	Functional Outline
1	Output master table data	-	- Downloads master table data in a CSV file.
2	Edit master table data	User settings	- Sets a COLMINA user as an Intelligent Dashboard user.
3		Factory settings	- Sets a factory ID to be used with Intelligent Dashboard.
4	(CSV edit tool used)	Authority settings	- Sets screens to be displayed for each user as display authority. - Sets the users granted administrator authority to execute the master maintenance function.
5		Locale settings	- Defines the combination of a default display language and time zone.
6		Screen design settings	- Settings for adding a new screen - Settings of common screen elements - Settings of arbitrarily defined screen elements - Screen display authority settings
7		Data aggregation settings	- Sets a batch aggregation processing method to aggregate performance data.
8		Resource settings	- Sets the text to be displayed on the screen.
9	Register master table data	-	- Uploads edited master table data in CSV format.
10	Output data	-	- Downloads sequential performance data as a CSV file.
11	Register image data	-	- Uploads image data.

(a) Editing master table data

You can download various editable master table data in a CSV file.

For details on the types of editable master tables, see "Table 2.2.1.2.8. Editable Master Table Data" below.

Table 2.2.1.2.8. Editable Master Table Data

No.	Master Table Data Type	Main Editing/Setting Target	Key Information
1	Alarm Master	Alarm type	Tenant ID, Place ID and Alarm ID
2	D3 Graph Master	Screen design settings	Tenant ID and Object ID
3	Locale Master	Locale settings	Tenant ID and Locale Category
4	Language Master	Language settings	Tenant ID, and Language Division
5	Object Master	Screen design settings	Tenant ID and Object ID
6	Object Style Master	Screen design settings	Tenant ID and Object ID
7	Place Master	Factory settings	Tenant ID and Place ID
8	Place Date Control Master	Aggregation period for each place	Tenant ID and Place ID
9	Resource Master	Resource settings	Tenant ID, Resource ID and Language Division
10	Role Master	Factory and authority settings	Tenant ID and Role ID
11	Screen Master	Authority, screen design and factory settings	Tenant ID and Screen ID
12	Screen Data Master	Screen design settings	Tenant ID, Screen ID, Component ID, Object Sequential Number
13	Screen Item Master	Authority and screen design settings	Tenant ID, Screen ID, Component ID, Object Sequential Number
14	Threshold Master	Alarm judgment condition	Tenant ID, Place ID, Alarm ID, Alarm Level, Time Type, and Time
15	User Master	User settings	Tenant ID and User ID
16	User Auth Master	User settings, authority settings	Tenant ID, user ID and Role ID
17	Totaling master	Data aggregation settings	Tenant ID and Order
18	Globe Master	Globe attribute settings	Tenant ID, Screen ID and Item ID
19	Screen Item Extension Master	Setting attributes of circle and cylinder on the globe	Tenant ID, Screen ID, Place ID, and Item ID

The following tables describe the editable master table items.

Items of "Registering user ID", "Registration Date and Time", "Updating user ID", "Update Date and Time", "Registered Factory ID" are automatically registered in the system for each master table so you can not edit them.

However, only the registered factory ID of the screen master can be updated when the system administrator authority user uploads it.

For details on the alarm master table items, see "Table 2.2.1.2.9. Alarm Master Table Items" below.

Table 2.2.1.2.9. Alarm Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	place_id	Place ID	Alphanumeric characters only		2	* Required item Alarm occurrence location (Locale ID of locale master)
3	alarm_id	Alarm ID	Alphanumeric		3	* Required item

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
			characters only			Unique ID assigned to each alarm type
4	data_sbt	Data Type	Alphanumeric characters only			Data type as alarm
5	data_cat	Data Element	Alphanumeric characters only			Data element as alarm.
6	alarm_history_reg _kbn	Alarm History Registration Category	Only from 0 to 9		1	0: Do not register, 1: Always register, 2: Register at status change
7	comment_txt	Comment	Arbitrary data			Common master item
8	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
9	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
10	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
11	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
12	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the D3 graph master table items, see "Table 2.2.1.2.10. D3 Graph Master Table Items" below.

Table 2.2.1.2.10. D3 Graph Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	object_id	Object ID	Alphanumeric characters only		2	* Required item Definition Object (Object ID of object master)
3	graph_type	Graph type	Alphanumeric characters only	5		Specifies a graph type. 0010: Card format 0020: List format 0030: 2-bar chart 0040: 1-line chart + 1-bar chart 0050: 1-stacked bar + 1-line chart 0060: 1-bar chart + 2-line chart 0070: Graph with 1 to 10 lines 0090: Doughnut graph 0100: Gauge bar graph

						0110: Pie chart
						0120: 2-bar chart + 2-line chart
						0130: 3-bar chart
						0140: Stacked bar chart
						0150: Donut chart
						0160: Stacked Bar(one) + Line Graph(two)
4	graph_color	Graph color	Alphanumeric characters and symbols only			Graph display color If there are multiple data items, specify colors with comma-separated values. Specify a color name or a hexadecimal color code.
5	alarm_color	Graph color (alarm)	Alphanumeric characters and symbols only			Graph display color at the alarm time Specify a color name or a hexadecimal color code.
6	radius	Circle radius (inner and outer)	Numerical value (unsigned, without decimal part)			Specifies circle radius (inner radius and outer radius in this order) with comma-separated values for a pie chart.
7	alart_radius	Circle radius (inner and outer) (alarm)	Numerical value (unsigned, without decimal part)			Specifies circle radius (inner radius and outer radius in this order) with comma-separated values for a circle.
8	label_font	Character font in graph	Alphanumeric characters and symbols only	32		Font size of characters displayed in a pie chart, doughnut graph, or gauge graph
9	alart_label_font	Character font in graph (alarm)	Alphanumeric characters and symbols only	32		Font size of characters displayed in a pie chart, doughnut graph, or gauge graph at the alarm time
10	label_color	Character color in graph	Alphanumeric characters and symbols only	20		Color of characters displayed in a graph (values, unit, and legend of a pie chart, doughnut graph. or gauge graph) Specify a color name or a hexadecimal color code.
11	alart_label_color	Character color in graph (alarm)	Alphanumeric characters and symbols only	20		Color of characters displayed in a pie chart, doughnut graph, or gauge graph at the alarm time Specify a color name or a hexadecimal color code.
12	label_locate	Character display position in graph	Alphanumeric characters and symbols only	32		Position of characters displayed in a pie chart, doughnut graph, or gauge graph Specify the position in the x,y format.
13	alart_label_locate	Character display position in graph (alarm)	Alphanumeric characters and symbols only	32		Position of characters displayed in a pie chart, doughnut graph, or gauge graph at the alert time Specify the position in the x,y format.
14	unit	Display unit in graph	Alphanumeric characters and	32		Unit displayed in a pie chart, doughnut graph, or gauge graph

15	bar_width	Bar width in bar chart	Numerical value (unsigned, without decimal part)	32		Bar width in a bar chart
			symbols only			
15	bar_width	Bar width in bar chart	Numerical value (unsigned, without decimal part)	32		Bar width in a bar chart
16	bar_margine	Bar spacing margin	Numerical value (unsigned, without decimal part)	32		Spacing between bars in a multiple-bar chart
17	x_unit_resource_id	Label resource ID of X-axis unit	Alphanumeric characters and symbols only	8		Unit of X axis (Resource ID of Resource Master). When the time type of Screen data master is 100, specify eight units to be used for each time type, separated by commas [Sequential, minute, hour, shift, day, week, month, year]
18	x_unit_locate	Label display position of X-axis unit	Alphanumeric characters and symbols only	20		Display position of the X-axis unit Specify the position in the x,y format.
19	x_scale	X-axis scale interval	Numerical value (unsigned, without decimal part)	8		Number of auxiliary scale units on the X-axis
20	x_scale_type	X-axis scale type	Alphanumeric characters and symbols only	20		If the X-axis is dates in the yyyy/mm/dd format, specify 1.
21	x_scale_format	X-axis display format	Alphanumeric characters and symbols only	20		If the X-axis is dates in the yyyy/mm/dd format, specify the display format of the scale, such as "mm/dd". In the case of no input, it is displayed in the following format according to the time type value of the screen data master 010: minutes (0 to 59) 020: minutes (0 to 59) 030: hours(0 to 24) 040: hours (0 to 24) 050: days (1 to 31) 060: days (1 to 31) 070: months (1 to 12) 080: years (yyyy)
22	y1_unit_resource_id	Unit Label Resource ID of Y Axis	Alphanumeric characters and symbols only	8		Label that will be displayed as leftside unit of Y axis (Resource ID of Resource Master)
23	y1_unit_locate	Leftside Unit Label Display Location of Y axis	Alphanumeric characters and symbols only	20		Display position of the left Y-axis unit Specify the position in the x,y format.
24	y1_max_val	Max value of leftside Y axis	Numerical value (unsigned,	15		Maximum value on the left Y-axis If not specified, the maximum value

						without decimal part)			among the data is used.
25	y1_min_val	Min value of leftside Y axis	Numerical value (unsigned, without decimal part)	15		Minimum value on the left Y-axis If not specified, the minimum value among the data is used.
26	y1_scale	Number of scale units on left Y-axis	Numerical value (unsigned, without decimal part)	8		Number of auxiliary scale units on the left Y-axis
27	y1_0axis_view_flg	Display division of Left Y-axis and 0-axis	Numerical value (unsigned, without decimal part)	1		Display specification of　0-axis in Left Y-axis Display 1:0-axis line
28	y2_unit_resource_id	Label resource ID of right Y-axis unit	Alphanumeric characters and symbols only	8		Resource ID of the right Y-axis unit
29	y2_unit_locate	Label display position of right Y-axis unit	Alphanumeric characters and symbols only	20		Display position of the right Y-axis unit Specify the position in the x,y format.
30	y2_max_val	Maximum value on right Y-axis	Numerical value (unsigned, without decimal part)	15		Maximum value on the right Y-axis If not specified, it is the maximum value in the data.
31	y2_min_val	The minimum value of Right Y-axis	Numerical value (unsigned, without decimal part)	15		Minimum value on the right Y-axis If not specified, it is the minimum value in the data.
32	y2_scale	Number of scale units on right Y-axis	Numerical value (unsigned, without decimal part)	8		Number of auxiliary scale units on the right Y-axis
33	margine_top	Top margin of graph	Numerical value (unsigned, without decimal part)	5		Size of the margin at the top of the graph
34	margine_bottom	Bottom margin of graph	Numerical value (unsigned, without decimal part)	5		Size of the margin at the bottom of the graph
35	margine_left	Left margin of graph	Numerical value (unsigned, without decimal part)	5		Size of the margin on the left side of the graph
36	margine_right	Right margin of graph	Numerical value (unsigned, without decimal part)	5		Size of the margin on the right side of the graph
37	graph_dot	Line chart dot display	Alphanumeric characters and symbols only			Whether to display dots on a line in the line chart. For multiple lines, specify comma-separated values.

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
						Specify 1 to display dots.
38	limit_condition_flg	Threshold judgment condition flag	Alphanumeric characters and symbols only	1		Specifies how to judge the threshold. If the flag is 1, values less than or equal to the threshold are judged as an alarm. If the flag is any value other than 1, values equal to or greater than the threshold are judged as an alarm.
39	limit_data_number	Threshold number	Numerical value (unsigned, without decimal part)	2		Specifies the data number used for a threshold judgment ("1" for the first one).
40	note_resource_id	Legend resource ID	Alphanumeric characters and symbols only			Resource ID for a legend For multiple IDs, specify comma-separated values.
41	note_locale	Legend display position	Alphanumeric characters and symbols only			Position of a placed legend Specify the position in the (x1,y1),(x2,y2) format.
42	note_setting	Character size of scale/unit/legend	Alphanumeric characters and symbols only			Character size of scales, units, and legends
43	comment_txt	Comment	Arbitrary data			Arbitrary comment
44	reg_user_id	Register ID	Alphanumeric characters and symbols only			Automatically sets the user at the registration time.
45	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Automatically sets the date at the registration time.
46	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Automatically sets the user at the update time.
47	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Automatically sets the date at the update time.
48	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register Automatically sets the target factory at the registration time.

For details on the locale master table items, see "2.2.1.2.11. Locale Master Table Items" below.

Table 2.2.1.2.11. Locale Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	locale_kbn	Locale category	Alphanumeric characters and symbols only	5	2	* Required item Locale setting ID (en_US)

3	language_kbn	Language Division	Arbitrary data			Language(Language Master ID)
4	resource_id	Resource ID	Alphanumeric characters only			The name of the locale category (Resource ID of resource master)
5	time_zone	Time zone	Alphanumeric characters and symbols only	6		Time difference value from UTC (United States: -06:00, Tokyo: +09:00,)
6	date_fmt	Date format	Alphanumeric characters and symbols only	16		YYYY/MM/DD, etc.
7	time_fmt	Time format	Alphanumeric characters and symbols only	16		HH:MM:SS, etc.
8	comment_txt	Comment	Arbitrary data			Common master item
9	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
10	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
11	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
12	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
13	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the object master table items, see "Table 2.2.1.2.12. Object Master Table Items" below.

Table 2.2.1.2.12. Object Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	object_id	Object ID	Alphanumeric characters only		2	* Required item Screen object ID
3	object_sbt	Object type	Alphabetical characters only	3		Menu: MNU, Image: IMG, Card: CRD, List: LST, Graph: GRH, Link: LNK, Alarm: ALM, Alarm details: ACD, CMP; Component, LBL; Label, GLB: Globe
4	disable_flg	Inactive/Active flag	Only from 0 to 9	1		0: Active, 1: Inactive
5	path	Path	Alphabetical characters only			Image data file name
6	comment_txt	Comment	Arbitrary data			Common master item
7	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
8	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
9	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
10	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
11	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the object style master table items, see "Table 2.2.1.2.13. Object Style Master Table Items" below.

Table 2.2.1..2.13. Object Style Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	object_id	Object ID	Alphanumeric characters only		2	* Required item Definition Object (Object ID of object master)
3	fore_color	Character color	Alphanumeric characters and symbols only	20		Specify by Color Name or hexadecimal color code Specify two colors in the CSV format for objects whose Screen Item Master link mode is 3 (Example Except current time type selection, current time type selection -> white, # 45c2c0)
4	background_color	Background color	Alphanumeric characters and symbols only	20		Specify by Color Name or hexadecimal color code Specify two colors in the CSV format for objects whose Screen Item Master link mode is 3 (Example Except current time type selection, current time type selection -> white, # 45c2c0)
5	width	Width	Numerical value (unsigned, without decimal part)	5		Width of a placed object (number of pixels)
6	height	Height	Numerical value (unsigned, without decimal part)	5		Height of a placed object (number of pixels)
7	font	Font name	Arbitrary data	32		Font name of displayed characters
8	font_size	Font size	Numerical value (unsigned, with decimal part)	5		Font size of displayed characters
9	boarder_style	Border style	Alphanumeric characters only	20		Border style of a placed object Specify an HTML style name.
10	boarder_color	Border color	Alphanumeric characters and symbols only	20		Border color of a placed object Specify a color name or Hexadecimal color code Border Color of the Object that will be placed Need to be specified by Color Name or hexadecimal color code Specify two colors in the CSV format for objects whose Screen Item Master link mode is 3 (Example Except current time type selection, current time type

						selection -> white, # 45c2c0)
11	glass_rate	Transparency	Numerical value (unsigned, without decimal part)	3		Transparency of a placed object Specify a value from 0 to 100.
12	max_line	Maximum number of lines	Numerical value (unsigned, without decimal part)	3		Maximum number of displayed lines
13	max_length	Maximum number of characters	Numerical value (unsigned, without decimal part)	4		The maximum number of display characters
14	line_cnt_or_newline	Validity Division of newline	Numerical value (unsigned, without decimal part)	1		Display method with specification of the maximum number of characters 1:Newline Display
15	delimiter_format_flg	Delimiter Format Flag	Alphanumeric characters and symbols only	1		Numeric value according to locale Three-digit delimiter character and decimal point display flag 1: Display (Example: locale is de_DE12345.5 -> 1.234,) Other: Three-digit delimiter is not displayed, the decimal point is a period
16	decimal_precision	Decimal Precision	Alphanumeric characters and symbols only	1		Minimum number of digits to be displayed after the decimal point specified by 1 to 3
17	comment_txt	Comment	Arbitrary data			Common master item
18	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
19	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
20	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
21	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
22	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the Place master table items, see "Table 2.2.1.2.14. Place Master Table Items" below.

Table 2.2.1.2.14. Place Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	place_id	Place ID	Alphanumeric characters only		2	* Required item ID indicating country / factory / process / apparatus
3	resource_id	Resource ID	Alphanumeric characters only			The name of the locale category (Resource ID of resource master)
4	locale_kbn	Locale category	Alphanumeric characters and symbols only	5		User's language (country) (Locale category of locale master)
5	parent_place_id	Parent Place ID	Alphanumeric characters only			Parent Place ID (not set for the one at the top)
6	comment_txt	Comment	Arbitrary data			Common master item
7	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
8	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
9	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
10	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
11	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register
12	route_place	Route Path for Place ID	Alphanumeric characters and symbols only			Top most Place ID's route path, automatically created on Master Maintenance including its own Place ID. Route path separator is [/] (Slash).

For details on the date control master table items by location, see "Table 2.2.1.2.15. Place Date Control Master Table Items " below.

Table 2.2.1.2.15. Place Date Control Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	place_id	Place ID	Alphanumeric characters only		2	* Required item Alarm occurrence location (Place ID of Place master).
3	st_biz_hour	Business hours (start)	Only from 0 to 9	4		Start time of business hours (HH24MI format)
4	st_biz_dayofweek	Day of week (start)	Only from 0 to 9	1		1: Sunday, 2: Monday, 3: Tuesday, 4: Wednesday, 5: Thursday, 6: Friday, 7: Saturday
5	st_biz_monthday	Fiscal month (start)	Only from 0 to 9	2		Start date of a fiscal month (DD format) Month boundary by monthly aggregation
6	st_biz_month	Fiscal year (start)	Only from 0 to 9	4		Start month of a fiscal year (MMDD format) Year boundary by every year aggregation
7	st_1st_period	First quarter (start of first half-year)	Only from 0 to 9	4		Start month of the first quarter (MMDD format)
8	st_2nd_period	Second quarter (start)	Only from 0 to 9	4		Start month of the second quarter (MMDD format)
9	st_3rd_period	Third quarter (start of second half-year)	Only from 0 to 9	4		Start month of the third quarter (MMDD format)
10	st_4th_period	Fourth quarter (start)	Only from 0 to 9	4		Start month of the fourth quarter (MMDD format)
11	comment_txt	Comment	Arbitrary data			Common master item
12	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
13	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
14	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
15	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
16	st_1st_shift	Shift 1 (start)	Only from 0 to 9	4		Start time of the first shift (HH24MI format)

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
17	ed_1st_shift	Shift 1 (end)	Only from 0 to 9	4		End time of the first shift (HH24MI format)
18	st_2nd_shift	Shift 2 (start)	Only from 0 to 9	4		Start time of the second shift (HH24MI format)
19	ed_2nd_shift	Shift 2 (end)	Only from 0 to 9	4		End time of the second shift (HH24MI format)
20	st_3rd_shift	Shift 3 (start)	Only from 0 to 9	4		Start time of the third shift (HH24MI format)
21	ed_3rd_shift	Shift 3 (end)	Only from 0 to 9	4		End time of the third shift (HH24MI format)
22	st_4th_shift	Shift 4 (start)	Only from 0 to 9	4		Start time of the fourth shift (HH24MI format)
23	ed_4th_shift	Shift 4 (end)	Only from 0 to 9	4		End time of the fourth shift (HH24MI format)
24	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the resource master table items, see "2.2.1.2.16. Resource Master Table Items" below.

Table 2.2.1.2.16. Resource Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	resource_id	Resource ID	Alphanumeric characters only		2	* Required item Resource ID
3	locale_kbn	Locale category	Alphanumeric characters and symbols only		3	* Required item User's language (country) (Locale category of locale master)
4	message	Message	Arbitrary data			Display content
5	resource_fuc_id	Resource function id	Alphanumeric characters only	3		ID that identifies the purpose of special use in the system
6	default_pkg_flg	Default package flag	Only from 0 to 9	1		1: default package 0: specific to tenant
7	comment_txt	Comment	Arbitrary data			Common master item
8	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
9	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
10	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
11	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and			Common master table item

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
			millisecond)			
12	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the role master table items, see "Table 2.2.1.2.17. Role Master Table Items" below.

Table 2.2.1.2.17. Role Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	role_id	Role ID	Alphanumeric characters only		2	* Required item ID assigned according to the authority of the user
3	factory_id	Factory ID	Alphanumeric characters only			Factory subject to maintenance with factory administrator authority (Place ID of Place master).
4	resource_id	Resource ID	Alphanumeric characters only			Role name (Resource ID of resource master)
5	sys_reserve_flg	Admin Flag	Alphanumeric characters and symbols only	1		0: system administrator 1: factory administrator blank or none of the values above: common user
6	comment_txt	Comment	Arbitrary data			Common master item
7	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
8	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
9	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
10	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
11	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the screen master table items, see "Table 2.2.1.2.18. Screen Master Table Items" below.

Table 2.2.1.2.18. Screen Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	screen_id	Screen ID	Alphanumeric characters only		2	* Required item Screen Screen ID of screen master
3	resource_id	Resource ID	Alphanumeric characters only			Screen name (Resource ID of resource master)
4	comment_txt	Comment	Arbitrary data			Common master item
5	no_menu_flg	System menu hide flag	Alphanumeric characters and symbols only	1		1: Hide system menu
6	role_id	Role ID	Alphanumeric characters only			Required authority to display this screen (Role ID of role master)
7	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory registered in master maintenance browsed by this screen (Place ID of Place master) * Default value "W00" or ID of the factory defined in application * Editable only by system administrator
8	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
9	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
10	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
11	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item

For details on the screen data master table items, see "Table 2.2.1.2.19. Screen Data Master Table Items" below.

Table 2.2.1.2.19. Screen Data Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	screen_id	Screen ID	Alphanumeric characters only		2	* Required item Screen Screen ID of screen master
3	area_id	Component ID	Alphanumeric characters only	8	3	In the case of object arranged on the screen directly,specify the fixed value 0 In the case of internal object of Component, specify Parent Component ID
4	object_seq	Object sequential number	Numerical value (unsigned, without decimal part)	3	4	Number to identify all the objects in the screen. (Object serial number of screen item master)
5	time_sbt	Time type	Alphanumeric characters only	3		010: Timely(Sequential performance), 020: Minutely, 030: Hourly, 040: By shift, 050: Daily, 060: Weekly, 070: Monthly, 080: By fiscal year
6	scale_sbt_real	Realtime Scale Type	Alphanumeric characters only			0: Time / Calendar scale (= 1 hour at present), 1 or more: specified number * minute past scale (Example 20 → past 20 minutes)
7	scale_sbt_minute	Per Minute Scale Type	Integer value (unsigned)			0: Time / Calendar scale (= current hour), 1 or more: specified number * minute past scale (Example 20 → past 20 minutes)
8	scale_sbt_hour	Hourly Scale Type	Integer value (unsigned)			0: Time / Calendar scale (= current day), 1 or more: specified number * hour past scale (Example 20 → past 20 hours)
9	scale_sbt_shift	Per Shift Scale Type	Integer value (unsigned)			1 or more: specified number * past days scale (0 can not be specified) (Example 20 → past 20 days)
10	scale_sbt_day	Daily Scale Type	Integer value (unsigned)			0: Time / Calendar scale (=current month), 1 or more: specified number * day past scale (Example 20 → past 20 days)
11	scale_sbt_week	Weekly Scale Type	Integer value (unsigned)			1 or more: specified number * past 7 days scale (0 can not be specified) (Example 2 → past 14 days)
12	scale_sbt_month	Monthly Scale Type	Integer value (unsigned)			0: Time / Calendar scale (=current year), 1 or more: specified number

						* past month scale (Example 6 → past 6 months)
13	scale_sbt_year	Yearly Scale Type	Integer value (unsigned)			1 or more: specified number * past year scale (0 can not be specified) (Example 3 → past 3 years)
14	data_sbt1	Data type 1	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
15	data_cat1	Data element 1	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
16	data_sbt2	Data type 2	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
17	data_cat2	Data element 2	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
18	data_sbt3	Data type 3	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
19	data_cat3	Data element 3	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
20	data_sbt4	Data type 4	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
21	data_cat4	Data element 4	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
22	data_sbt5	Data type 5	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
23	data_cat5	Data element 5	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)

24	data_sbt6	Data type 6	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
25	data_cat6	Data element 6	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
26	data_sbt7	Data type 7	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
27	data_cat7	Data element 7	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
28	data_sbt8	Data type 8	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
29	data_cat8	Data element 8	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
30	data_sbt9	Data type 9	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
31	data_cat9	Data element 9	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
32	data_sbt10	Data type 10	Alphanumeric characters only			Code to identify the type of stored primary and secondary data (power usage, production volume, etc.)
33	data_cat10	Data element 10	Alphanumeric characters only			Category to further identify an element of data stored by data type (for example, to identify the fluctuating, fixed, and proportional-to-production parts out of actual energy use)
34	alarm_id	Alarm ID	Alphanumeric characters only			Target alarm ID when referring to alarm data
35	alarm_level	Alarm level	Alphanumeric characters only			ID uniquely managed for a log, attention, warning, or emergency (managing names by locale)
36	comment_txt	Comment	Arbitrary data			Common master item

No.	Item Name	Name	Attribute			Remarks
37	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register
38	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
39	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
40	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
41	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item

For details on the screen item master table items, see "Table 2.2.1.2.20. Screen Item Master Table Items" below.

Table 2.2.1.2.20. Screen Item Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	screen_id	Screen ID	Alphanumeric characters only		2	* Required item Screen. (Screen ID of screen master)
3	area_id	Component ID	Alphanumeric characters only		3	In the case of object arranged on the screen directly,specify the fixed value 0 In the case of internal object of Component, specify Parent Component ID.
4	object_seq	Object sequential number	Numerical value (unsigned, without decimal part)	3	4	* Required item Unique sequential number for each object as many as displayed for the same screen
5	x_axis	X coordinate	Numerical value (unsigned, without decimal part)	5		X coordinate of an object placed in the area of a screen function (number of pixels counted from the top left)
6	y_axis	Y coordinate	Numerical value (unsigned, without decimal part)	5		Y coordinate of an object placed in the area of a screen function (number of pixels counted from the top left)
7	object_id	Object ID	Alphanumeric characters only			Object to place on the screen (Object ID of object master)
8	resource_id	Resource ID	Alphanumeric characters only			Contents displayed by Object. (Resource ID of resource master)

9	place_id	Place ID	Alphanumeric characters only			Data location targeted by data elements such as graphs (Place ID of Place master)
10	link_mode	Link method	Alphabetical characters only	1		Transition method to the linked screen after clicking, 0: Moves to the screen of Dashboard Screen ID. 1: Screen of the Dashboard Screen ID is displayed on another screen. 2: Specified URL is displayed on another screen. 3: Transit the screen with the screen ID and time type specified in the CSV format [screen ID, time type] in the link URL
11	link_url	Link URL	Alphanumeric characters and symbols only			Link URL or Dashboard Screen ID of the destination of transition after clicking To specify the time type, specify the link method to 3 and specify it in the format of [screen ID, time type]. (Example: Display Screen ID, CJP screen with time type 050 specification -> CJP, 050)
12	comment_txt	Comment	Arbitrary data			Common master item
13	role_id	Role ID	Alphanumeric characters only			ID assigned according to the authority of the user (Role ID of role master)
14	refresh_interval	Redraw interval	Single-byte numerals	8		Screen redraw interval (in milliseconds)
15	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
16	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
17	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
18	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
19	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the threshold master table items, see "2.2.1.2.21. Threshold Master Table Items" below.

Table 2.2.1.2.21. Threshold Master Table Items

No.	Item Name	Name	Attribute	Number of Digits (Decimals)	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	place_id	Place ID	Alphanumeric characters only		2	* Required item Location of threshold determination target data (Place ID of Place master)
3	alarm_id	Alarm ID	Alphanumeric characters only		3	* Required item Alarm ID of the judgment result (Alarm ID of alarm master)
4	alarm_level	Alarm level	Alphanumeric characters only		4	* Required item Level of judgment result (caution / warning / emergency) (Resource ID of resource master)
5	time_sbt	Time type	Alphanumeric characters only	3	5	* Required item 010: Timely(Sequential performance), 020: Minutely, 030: Hourly, 040: By shift, 050: Daily, 060: Weekly, 070: Monthly, 080: By fiscal year
6	time	Time	Date (year, month, day, hour, minute, second, and millisecond)	2	6	* Required item Set thresholds (alarm upper limit / lower limit) are enabled only when it corresponds to the time set by on "time" of the master. (If always enabled, 99 is set) For instance, when 9:00 is input, they are enabled when it is 9:00 every day and compared with the past data at the same time (9:00). The type of input numerical value is judged by time type (time_sbt).
7	upper_alarm_value	Alarm value (upper limit)	Numerical value (unsigned, with decimal part)	15(3)		Measured value, calculated value, etc.
8	upper_cond_kbn	Condition category (upper limit)	Alphanumeric characters and symbols only	1		0: Less than, 1: Less than or equal to, 2: Greater than, 3: Greater than or equal to, 4: Equal to
9	lower_alarm_value	Alarm value (lower limit)	Numerical value (unsigned, with decimal part)	15(3)		* Required item Measured value, calculated value, etc.
10	lower_cond_kbn	Condition category (lower	Alphanumeric characters and	1		0: Less than, 1: Less than or equal to, 2: Greater than, 3:

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
		limit)	symbols only			Greater than or equal to, 4: Equal to
11	comment_txt	Comment	Arbitrary data			Common master item
12	resource_id	Resource ID	Alphanumeric characters and symbols only			ID uniquely managed with a dictionary (managing names by locale) (R + 7-digit sequential number)
13	replace_value1	Replacement value 1	Arbitrary data			Value to insert in an alarm message (generated value, etc.)
14	replace_value2	Replacement value 2	Arbitrary data			Value to insert in an alarm message (generated value, etc.)
15	replace_value3	Replacement value 3	Arbitrary data			Value to insert in an alarm message (generated value, etc.)
16	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
17	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
18	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
19	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
20	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the user master table items, see "Table 2.2.1.2.22. User Master Table Items" below.

Table 2.2.1.2.22. User Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	user_id	User ID	Alphanumeric characters and symbols only		2	* Required item ID of user using this system
3	locale_kbn	Locale Category	Alphanumeric characters and symbols only	5		User's language (country) (Locale category of locale master)
4	init_screen_id	Initial Screen ID	Alphanumeric characters only			Screen to be displayed firstly after login (Screen ID of screen master)
5	init_time_sbt	Initial Time Type	Alphanumeric characters only	3		Initial time type (time type of Screen Data Master)
5	comment_txt	Comment	Arbitrary data			Common master item

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
6	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
7	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
8	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
9	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
10	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the user authority master table items, see "Table 2.2.1.2.23. User Authority Master Table Items" below.

Table 2.2.1.2.23. User Authority Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	user_id	User ID	Alphanumeric characters and symbols only		2	* Required item ID of user using this system
3	role_id	Role ID	Alphanumeric characters only		3	* Required item Authority given to users (Role ID of role master)
4	comment_txt	Comment	Arbitrary data			Common master item
5	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
6	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
7	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
8	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
9	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the aggregation master table items, see "Table 2.2.1.2.24. Totaling Master Table Items" below.

Table 2.2.1.2.24. Totaling Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	seq	Order	Numerical value (unsigned, without decimal part)	3	2	* Required item Processing sequence within a batch (from 1)
3	in_sum_range_kbn	Aggregation Range Category (input)	Alphanumeric characters and symbols only	7		Category specifying the aggregation target range of input for processing (time axis) (010: Timely(Sequential performance), 020: Minutely, 030: Hourly, 040: By shift, 050: Daily, 060: Weekly, 070: Monthly, 080: By fiscal year)
4	out_sum_range_kbn	Aggregation Range Category (output)	Alphanumeric characters and symbols only	7		Category specifying the aggregation target range of output for processing (time axis) (010: Timely(Sequential performance), 020: Minutely, 030: Hourly, 040: By shift, 050: Daily, 060: Weekly, 070: Monthly, 080: By fiscal year)
5	retroactive_term	Retroactive period	Numerical value (unsigned, without decimal part)	5		Defines the time for tracing in the past to process the processing target time range. Specify a time value in units of the output time category in the aggregation range category.
6	in_place_id1	Place ID (Input 1)	Alphanumeric characters only			Location of aggregation subjects. (Place ID of Place master)
7	in_data_sbt1	Data Type (Input 1)	Alphanumeric characters only			Specifies the data type of the input target of processing.
8	in_data_cat1	Data Element (Input 1)	Alphanumeric characters only			Specifies the data element of the input target of processing.
9	in_place_id2	Place ID (Input 2)	Alphanumeric characters only			Location of aggregation subjects. (Place ID of Place master)
10	in_data_sbt2	Data Type (Input 2)	Alphanumeric characters only			Specifies the data type of the input target of processing.
11	in_data_cat2	Data Element (Input 2)	Alphanumeric characters only			Specifies the data element of the input target of processing.
12	sum_kbn	Aggregation Type	Alphanumeric characters and symbols only	2		Category specifying the calculation method for aggregation processing (01: sum, 02: avg, 03: min, 04: max)

13	calc_value	Calculation Value	Numerical value (signed, with decimal part)	11		Correction value (coefficient, etc.) used in the four arithmetic operations
14	calc_kbn	Calculation Type	Alphanumeric characters and symbols only	1		0: Use acquisition source location, 1: Use correction value
15	convert_operator	Operator	Alphanumeric characters and symbols only	1		+, -, *, /
16	out_place_id	Place ID	Alphanumeric characters only			Location of output target. (Place ID of Place master)
17	out_data_sbt	Data Type (Output)	Alphanumeric characters only			Specifies the data type of the output target of processing.
18	out_data_cat	Data Element (Output)	Alphanumeric characters only			Specifies the data element of the output target of processing.
19	out_data_unit_kbn	Data Unit Type (Output)	Alphanumeric characters only	3		Unit of the data that is the output target of processing
20	proc_flg	Process Flag	Alphanumeric characters and symbols only	1		Specifies whether to process with the setting of this master line. 0: Do not process, 1: Process
21	comment_txt	Comment	Arbitrary data			Common master item
22	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
23	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
24	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
25	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
26	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the aggregation master table items, see "Table 2.2.1.2.25. Language Master Table Items" below.

Table 2.2.1.2.25. Language Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	language_kbn	Language Division	Alphanumeric characters and symbols only		2	* Required item Language ID
3	resource_id	Resource ID	Alphanumeric characters only			Name of locale category (Resource ID of Resource Master)
4	comment_txt	Comment	Arbitrary data			Common master item
5	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
6	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
7	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
8	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
9	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the aggregation master table items, see "Table 2.2.1.2.26. Globe Master Table Items" below.

Table 2.2.1.2.26. Globe Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	screen_id	Screen ID	Alphanumeric characters only		2	* Required item Screen to be set (Screen ID of Screen Master)
3	key	Item ID	Alphanumeric characters and symbols only		3	* Required item Specifiy the Item ID which defines display method of the globe (Display location, Height, Widht, Rotational speed etc.)
4	value	Value	Arbitrary data			Specify the value for Item ID
5	comment_txt	Comment	Arbitrary data			Common master item
6	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item

7	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
8	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
9	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
10	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

For details on the aggregation master table items, see "Table 2.2.1.2.27. Screen Item Extension Master Table Items" below.

Table 2.2.1.2.27. Screen Item Extension Master Table Items

No.	Item Name	Name	Attribute	Number of Digits	Main Key	Remarks
1	tenant_id	Tenant ID	Alphanumeric characters only	8	1	* Required item ID to identify each tenant
2	screen_id	Screen ID	Alphanumeric characters only		2	* Required item Screen to be set (Screen ID of Screen Master)
3	place_id	Place ID	Alphanumeric characters only		3	* Required item Place of acquisition target data (Place ID of Place Master)
4	key	Item ID	Alphanumeric characters and symbols only		4	* Required item Specifiy the Item ID regarding circle and cylinder arranged on the globe
5	value	Value	Arbitrary data			Specify the value for Item ID
6	comment_txt	Comment	Arbitrary data			Common master item
7	reg_user_id	Register ID	Alphanumeric characters and symbols only			Common master table item
8	reg_datetime	Registering Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
9	upd_user_id	Updater ID	Alphanumeric characters and symbols only			Common master table item
10	upd_datetime	Update Date & Time	Date (year, month, day, hour, minute, second, and millisecond)			Common master table item
11	reg_factory_id	Registering Factory ID	Alphanumeric characters only			Factory to register

(b)　User settings

You can set an Intelligent Dashboard user with a user name registered for a tenant user, by editing the user master and user authority master.

The tenant operator is set as Intelligent Dashboard user when the initial environment is built at the time of a new application. Therefore, they do not need to be set by the system administrator.

To register a user name for a new tenant user, use the COLMINA portal's user settings function. For details, see the *User Guide*.

b.1. Adding a user

Add a user to use Intelligent Dashboard. You can add the user by registering the following master data:

- User master
- User auth master

b.2. Deleting a user

You can delete a user by editing the following master data:

- User master

b.3. Moving a user to another factory

You can move a user to another factory by editing the following master data:

- User master
- User auth master

b.4. Moving a user's authority

You can add a new authority to a registered user or deprive the user of an authority by editing the following master data:

- User auth master

(c)　Factory settings

An application has to be submitted for each factory. Once the application is accepted, you can set factory information to use with Intelligent Dashboard by registering or editing the following master data:

- Place master
- Resource master
- Place Date Control Master
- Role master

(d)　Authority settings

Two types of authority are managed with Intelligent Dashboard: display authority and administrator authority.

- Display authority: Limits which users can display each screen or internal screen element.
- Administrator authority: Limits which users can execute the master maintenance function.

d.1. Display authority

You can configure display authority to limit which users can display each screen and internal screen element by editing the following master data:

- Role master
- Screen master
- Screen item master
- User auth master

d.2. Administrator authority

Authority is divided into three types: system administrator, factory administrator, and user with no authority.

The system administrator has the following privileges:

- Always displayed system menu (still displayed even when "no system menu" is defined in the screen master)

- Can edit master data that does not belong to any factory
- Even has authority as a factory administrator. The administrator can perform master maintenance on any factory.

The factory administrator has the following privilege:
- Can perform master maintenance in the relevant factory

You can configure the system administrator and factory administrator users by editing the following master data:
- Role master
- Screen master
- Screen item master
- User auth master

(e)　Locale settings

You can define the combination of a default display language and time zone by editing the locale master. Then, you can set this definition for individual users. The ID for the combination is the value of a locale category, and you can set the ID in the user master. After you add the locale category, on-screen messages do not display until you add a definition for the added locale category.

(f)　Screen design settings

You can configure screen design by editing the following master data:
- Screen master
- Screen item master
- Screen data master
- Object master
- Object style master

(g)　Data aggregation settings

You can define a batch aggregation processing method to aggregate performance data by editing the aggregation master as data aggregation settings. Through batch processing, you can temporally and locally aggregate data that was sent and saved as sequential performance data.

You can configure data aggregation by editing the following master data:
- Aggregation master

(h)　Resource settings

You can define the text to be displayed on the screen by editing the following master data:
- Resource master

(i)　Registering master data

After editing master table data, you can upload the data in CSV format. If an error occurs, you can check the error details from the access log screen. Master data has to be registered with the same file name as when the data was downloaded. Otherwise, the data cannot be uploaded.

(j)　Outputting sequential performance data.

You can download stored sequential performance data as a CSV file within the data retention period. You can download sequential performance data for each selected target period. The maximum number of downloads is 50,000 and when the number gets bigger than the limitation, shortening the target period is required.

(k)　Registering image data

You can register image data by hierarchical type (factory, line, facility map information, etc.) for display on the screen. The limit for the image data file size is 100 MB. If you are registering an image with same file name as existing data, the existing data is overwritten by the new image file.

(l) Note on master maintenance
(1) User names and Place ID, even the ones registered with different factories, must be unique in the system.

2.2.2. Number of Factories

To increase the number of factories used with Intelligent Dashboard, you need to submit a change application via K5 portal. For details, see the *User Guide*.

To visualize factories, the contract must be concluded for each factory name. After the plan's change application, send additional information to the help desk such as factory ID and factory name to visualize (or delete). Also, you cannot change to plan with less number of factories.

2.3. Considerations About Charges

The service user is charged monthly at a fixed rate, according to the selected plan, from the service start date notified by e-mail.

Changes to the plan are applied monthly starting from the change start date of the new plan.

On plan's change, the "application date" is considered to be the date when the help desk receives the additional information necessary to change the plan. Until its change start date, service user will be charged according to the previous plan. For details on the application time, see the *User Guide*.

The contract for this service can be canceled as needed. However, the monthly fee is still charged for the contract cancellation month. Charges are not made on a per diem basis.

Chapter 3　　　Operation

3.1.　Scope of Service Provision

The sending program and network of the service user are outside the scope of service.

For the scope of service provision, see "Figure 3.1. Scope of Service" below.
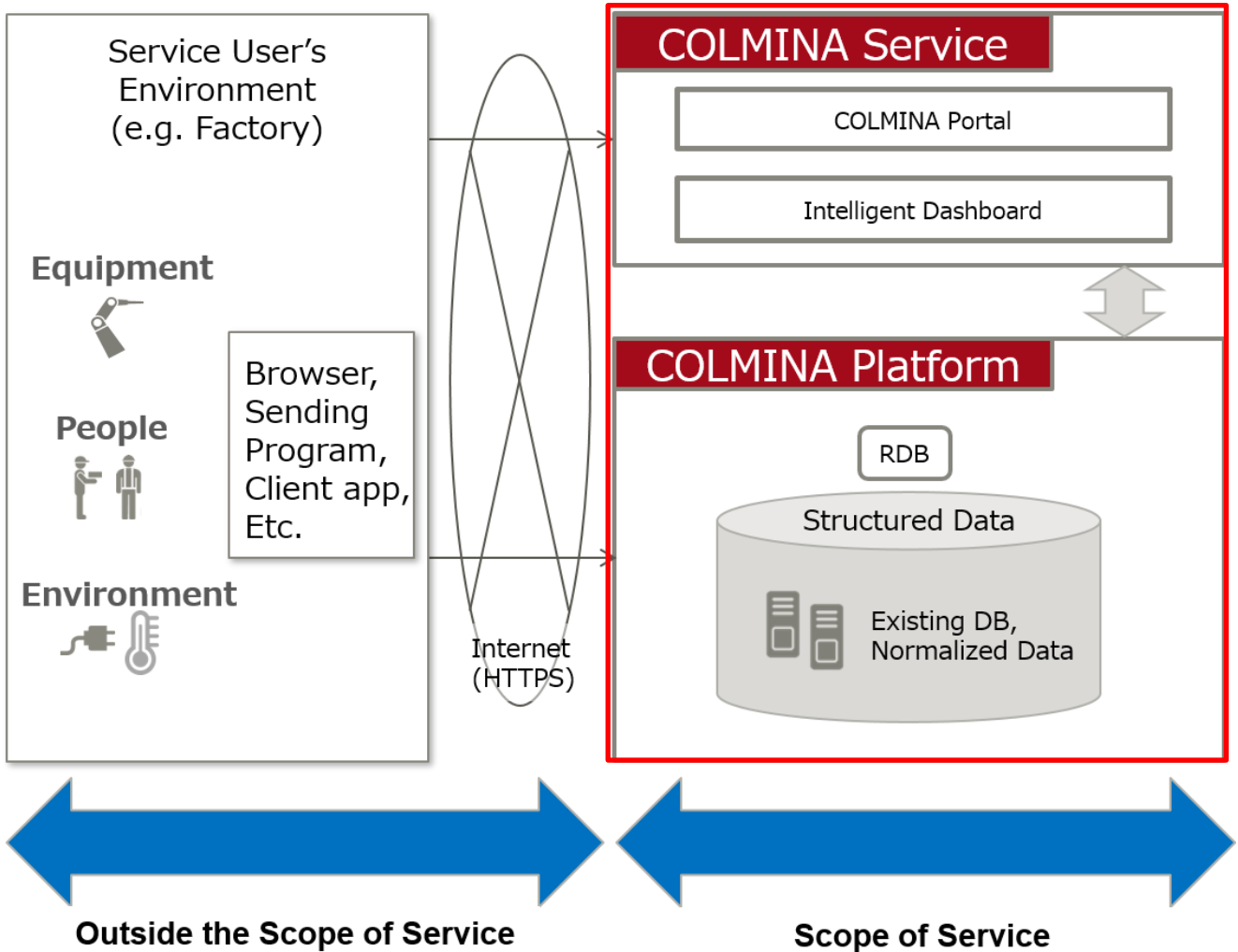
Figure 3.1. Scope of Service

3.2.　Time of Service Provision

This service operates 24 hours a day, 7 days a week. However, the service may be suspended during a time slot where planned or emergency maintenance is performed. Such maintenance may take several hours, and the service is not available during the maintenance (data may not accumulate in some cases). The maintenance time cannot be changed for the customer's convenience.

3.3.　Service Suspension

3.3.1.　Planned Maintenance

This service will be suspended to a service user who is applying for the disk expansion option of the service. The service is suspended during maintenance (in roughly one business days). However, the change work maintenance period may be pushed back or ahead for intensive change work.

3.3.2.　Emergency Maintenance

Fujitsu may perform emergency maintenance work due to the occurrence of a failure or other reasons. A report on this work is released immediately before or after the work. In this case, a failure report cannot be submitted.

3.4. Contact Information for Inquiries

Use the help desk as a contact for inquiries. Prepare to provide the following information when contacting the help desk. For details, see the FAQ and the *User Guide*.

Table 3.4. Information for Inquiries

No.	Item	Information
1	Contract service name	FUJITSU Cloud Service K5 COLMINA Platform
2	K5 contract number	Your K5 contract number.
3	Service application number	Service application number described in the application letter to be received after accepting the new application.
4	Customer's company name	Name of the customer's company
5	Name of customer's person in charge	Name of the customer's person in charge
6	Contact telephone number	Telephone number that can be used to contact the customer
7	Details of inquiry	(1) Use type (inquiry, change application, or failure notification) (2) Contents * Inquiry (user information or factory information used with Intelligent Dashboard) * Change application (password initialization, batch aggregation start interval, data retention period, or increasing/decreasing the number of factories, category of default locale) * In a failure notification, provide as much detailed information as possible. Examples include the date of occurrence, an incident description, and the work procedure.

Chapter 4　　　Limitations

4.1.　COLMINA Platform Limitations

4.1.1.　Data Reception

(1) This section shows data reception limitations.

Table 4.1.1.1. Data Reception

Outline	Description
Data amount per communication session	517 KByte / 1,000 records
Transmission interval	1 time / minute
Maximum number of columns in CSV file	15
Maximum record size in CSV file	529 Bytes (Average: 75 Bytes)

* If even one of these limitations is exceeded for any element, data may not be received correctly.

(2) This section shows data format limitations.

Table 4.1.1.2. Data Format

Outline	Description
Character code used in this service	UTF-8
Line feed code used in this service	LF
CSV layout used in this service	Data with comma-separated values, each enclosed in double quotation marks (Example: "value","val,ue")
Date format used in this service	Notation in the YYYY-MM-DD hh:mm:ss.SSS format (Example: 2017-05-25 20:42:36.123)

(3) If the data to be stored has the same key item (time, data type, data element, etc.) as that in already registered data, the new data will overwrite the registered information.

(4) This service uses the transmission protocol HTTPS and the POST method.

(5) Access to this service may be denied to a service user whose use is so intensive that it may seriously harm the service or constantly exceeds data reception limitations.

(6) Regardless of remaining disk volume, sequential performance data can't be stored over 80 million records.

(7) To increase users limit, submit for a plan change application. If the change application is accepted by Fujitsu, the customer will be notified about the change start date. New plan will be valid on change start date. Note that service user can't change to a plan that will reduce the current users limit.

(8) To increase disk space, submit for a plan change application. If the change application is accepted by Fujitsu, the customer will be notified about the change start date. Customer won't be able to use the service on the notified date while change work will be done. Note that service user can't change to a plan that will reduce the current disk space.

(9) To increases the number of factories, submit for a plan change application and then send an e-mail to the help desk about which factory should be added or removed. If correct information arrives to the help desk and the change application is accepted by Fujitsu, the customer will be notified about the change start date. Fujitsu will also notify the change work date. New plan will be valid on change start date. Note that service user can't change to a plan that will reduce the current number of factories.

(10) Service user shall be solely responsible regarding the utilization of this service to receive and store data. Customer shall agree that Fujitsu will use following information for the purpose of improving the quality of service and the functions provided, and publishing the compiled statistics on performance. However, customer data itself will not be used by Fujitsu without prior consent.

Table 4.1.1.3. Target Data by Information Acquisition Location

Information Acquisition Location	Target Data
Servers and communication apparatus	Communication information (time, access count, and volume of communication)
	Server performance information (load and status of service use)
	System log
	Log of component applications/middleware of this service

(11) Any service user who will use personal information or personal data in this service or provide such information or data to Fujitsu has to meet the following requirements. The user is required to make the necessary announcement to the owners of the personal information or personal data, or obtain consent from the owners. The service user is also required to guarantee and announce that providing the information or data to Fujitsu or use of the information or data by Fujitsu does not violate any country's laws and regulations or third-party rights.

(12) When Fujitsu detects data suspected to be infected with a virus in Fujitsu's company environment, data used in this service by a service user may be deleted without prior notice for the purpose of protecting the environment.

(13) This service does not recover registered or created data. The service user is responsible for making backups of the necessary data, restoring the backups, and recreating data from the backups.

(14) The service user needs to prepare data in CSV format for use with this service, and send it to the specified URL of the service. (CSV is the prescribed format for the service.)

(15) In addition to the service description, the service details instruction manual at the following URL sets forth the license terms and conditions applicable to open source and other software to be separately identified by Fujitsu as part of this service. If the license terms and conditions set forth in said service details instruction manual are contrary to the provisions of the service description, the license terms and conditions set forth in said service details instruction manual shall prevail.
https://k5-doc.jp-east-1.paas.cloud.global.fujitsu.com/doc/en/colminapf/document/manual/servicedetails.pdf

4.2.   COLMINA Service Limitations
4.2.1.   Data Visualization
(1)   For information on client environments, see the following document:
https://k5-doc.jp-east-1.paas.cloud.global.fujitsu.com/doc/en/colminapf/document/manual/requirements.pdf

(2)   The service user can add languages for display on the dashboard screens. A total of six languages can be added including Japanese.

(3)   The service user needs to prepare the images to be displayed on the dashboard screens, such as factory images, line images, facility images, alarm images and icons.

(4)   "CRLF" is the line feed code used when a CSV file is uploaded or downloaded in master maintenance. Only CSV files containing definition information for screen design settings can be uploaded.

(5)   The maximum number of records in stored data downloaded as a CSV file in master maintenance is 50 thousand. If the number of downloaded records exceeds the limit value, split the download into multiple downloads, such as by shortening the target period selected for each download. Then, download the data again.

(6)   The maximum number of stored records in sequential performance data is 80 million records.

(7)   The dashboard screen resolution is Full HD (1920 x 1080). Part of the screen might not be displayed with resolutions below this.

4.3.   Other Limitations
4.3.1.   Encrypted communication method
The COLMINA   is performing encrypted communication of https. For encrypted communication, only TLS 1.2 communication is permitted as a protocol. In terms of security enhancement, TLS 1.0 / 1.1 is not allowed.

4.3.2.   Language Used
COLMINA Platform portal is offered in Japanese and English.
The service user can add languages to display on the dashboard screens. A total of six languages can be added including Japanese, combining languages and locale categories.

4.3.3.   Period of Data to be Aggregated
Sequential performance data can be aggregated until its time past 240 hours in Coordinated Universal Time (UTC).

4.3.4.   Use Region
This service is provided in the following region:
- East Japan region 2

4.3.5. Contract Information Confirmation and Fee Confirmation

Contract information confirmation and confirmation of fees after an optional service change, etc. will be reflected on the K5 portal screens at the beginning of the month after the month that charging begins.

Chapter 5   Explanation of Important Matters

5.1. Scope of Support

Please note that Fujitsu cannot provide support regarding problems with communication apparatus and information collection terminals prepared by the customer. Contact your seller for support.

5.2. Suitability of Accumulated Data

The customer is responsible for judging the suitability of and using the accumulated data that this service has collected and accumulated.

Furthermore, recent developments in some countries have seen a move to introduce laws and regulations prohibiting the transfer of data, particularly data that constitutes personal information, outside their own region. The customer is responsible for checking and complying with such laws and regulations. (We do not recommend storing personal information and confidential information with this service.)

5.3. Login Information Management

The customer is responsible for managing the login user names and passwords required when using this service. If login user names and passwords become known to others, it may result in unreasonable charges and data leaks due to unintended access. For this reason, the customer is responsible for managing the login user names and passwords.

5.4. Referencing Customer Data

This service may reference the contents of customer data when executing the data sending API or providing various functions. However, this data is only used to provide the functions or check the contents of inquiries, and is not used for any other purpose.

5.5. Using Accumulated Data

Various information is obtained during the period that this service is in use. Fujitsu shall use this information, without the consent of or compensation to the customer, for the purpose of improving the quality of service and the functions provided, and publishing the compiled statistics on performance. However, customer data itself will not be used by Fujitsu without prior consent.

Table 5.5. Target Data by Information Acquisition Location

Information Acquisition Location	Target Data
Servers and communication apparatus	Communication information (time, access count, and volume of communication) Server performance information (load and status of service use) System log Log of component applications/middleware of this service Frequency of use and contents used of the service and service portal/usage count, types, and parameters of APIs (including internal APIs)/amount of disk use, number of users, number of factories used, etc.

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http://hg.grauw.nl/grauw-lib

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when.js

https://github.com/cujojs/when

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zip.js

https://github.com/gildas-lormeau/zip.js

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Autolinker.js

https://github.com/gregjacobs/Autolinker.js

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tween.js

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fontmetrics.js

https://github.com/Pomax/fontmetrics.js

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almond

https://github.com/jrburke/almond

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RequireJS

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http://knockoutjs.com/

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Knockout ES5 plugin

https://github.com/SteveSanderson/knockout-es5

topojson

https://github.com/mbostock/topojson

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mersenne-twister.js

https://gist.github.com/banksean/300494

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NVIDIA GameWorks Graphics Samples

https://github.com/NVIDIAGameWorks/GraphicsSamples

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NoSleep.js

https://github.com/richtr/NoSleep.js

> NoSleep.js v0.5.0 - git.io/vfn01

> Rich Tibbett

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jsep

https://github.com/soney/jsep

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https://github.com/mapbox/earcut

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kdbush

https://github.com/mourner/kdbush

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https://github.com/BinomialLLC/crunch

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crunch_lib.cpp

https://github.com/Apress/html5-game-dev-insights/blob/master/jones_ch21/crunch_webgl/crunch_js/crunch_lib.cpp

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texture-tester

https://github.com/toji/texture-tester

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pako

https://github.com/nodeca/pako

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protobuf

https://github.com/dcodeIO/ProtoBuf.js

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gltf-WebGL-PBR

https://github.com/KhronosGroup/glTF-WebGL-PBR

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Draco

https://github.com/google/draco

Tests
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The CesiumJS tests use the following third-party libraries and data.

Jasmine

http://jasmine.github.io/

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