


Introduction of **GENESIS64**TM



Hyper HistorianTM

September 6, 2023



**Automating
the World**

MITSUBISHI ELECTRIC CORPORATION

- 1. Product Overview**
- 2. Feature Introduction**
- 3. Data Collection and Historian**
- 4. Product Related Services**
- 5. Application examples**

- 1. Product Overview**
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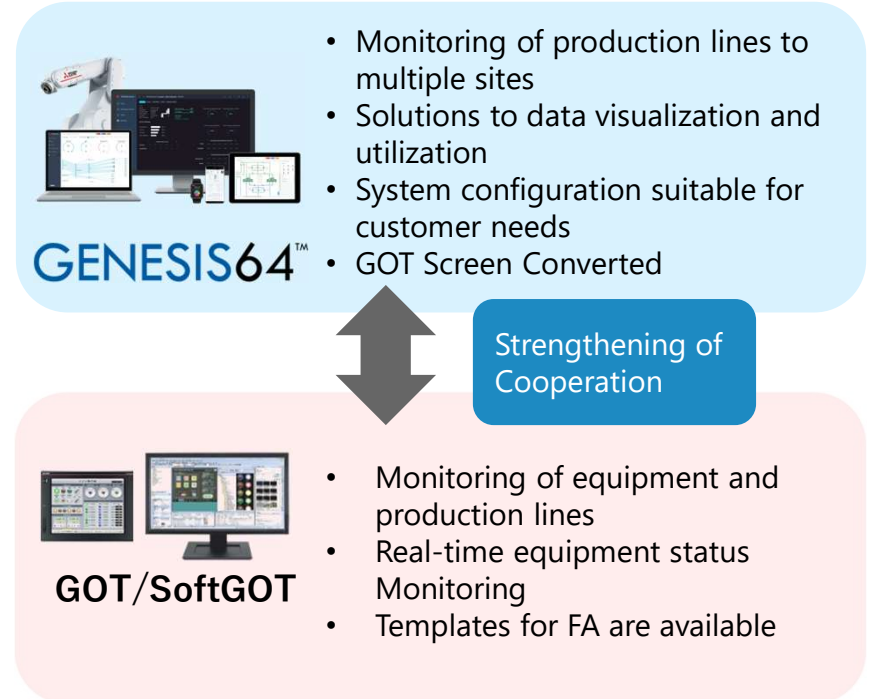
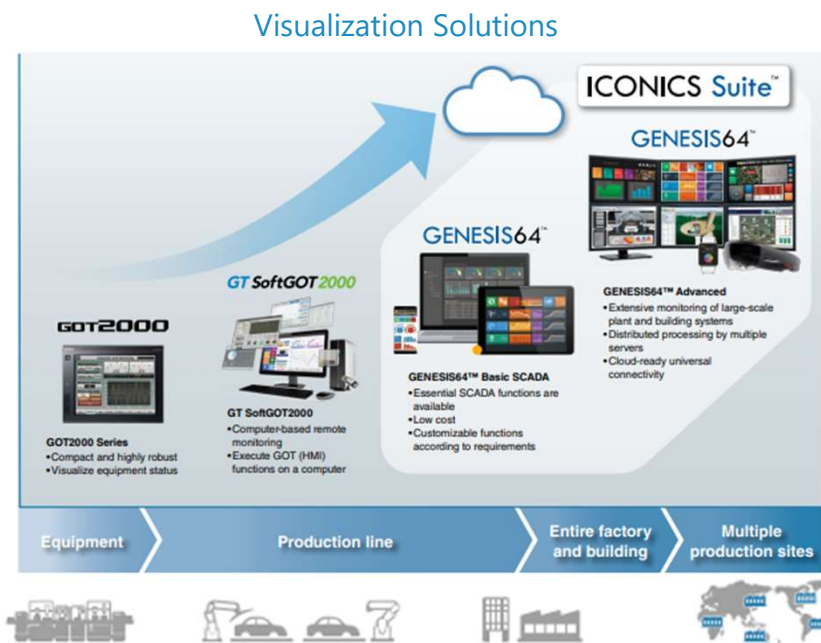
1. Improving manufacturing by utilizing data that was previously invisible

- There is an increasing demand to visualize and utilize various data to improve the performance of corporate activities.
- To realize such a demand, we launched ICONICS' SCADA product "GENESIS64" as a Mitsubishi Electric brand product in March 2021.
- We have been proposing monitoring and control solutions by combining GENESIS64 with our FA components



1. Positioning our visualization products

- In addition to the touch panels being used at production sites, GENESIS64 supports larger-scale and wide-area monitoring applications. Not only strengthening individual products, but we also strengthen cooperation between products.



1. GENESIS64 Product Offerings

- GENESIS64 has two product lineups that scale well depending on user requirements

GENESIS64™ Basic SCADA



- Essential features for SCADA systems
- Build systems that meet your requirement by applying add-on options

For FA Sector (production line)

GENESIS64™ Advanced



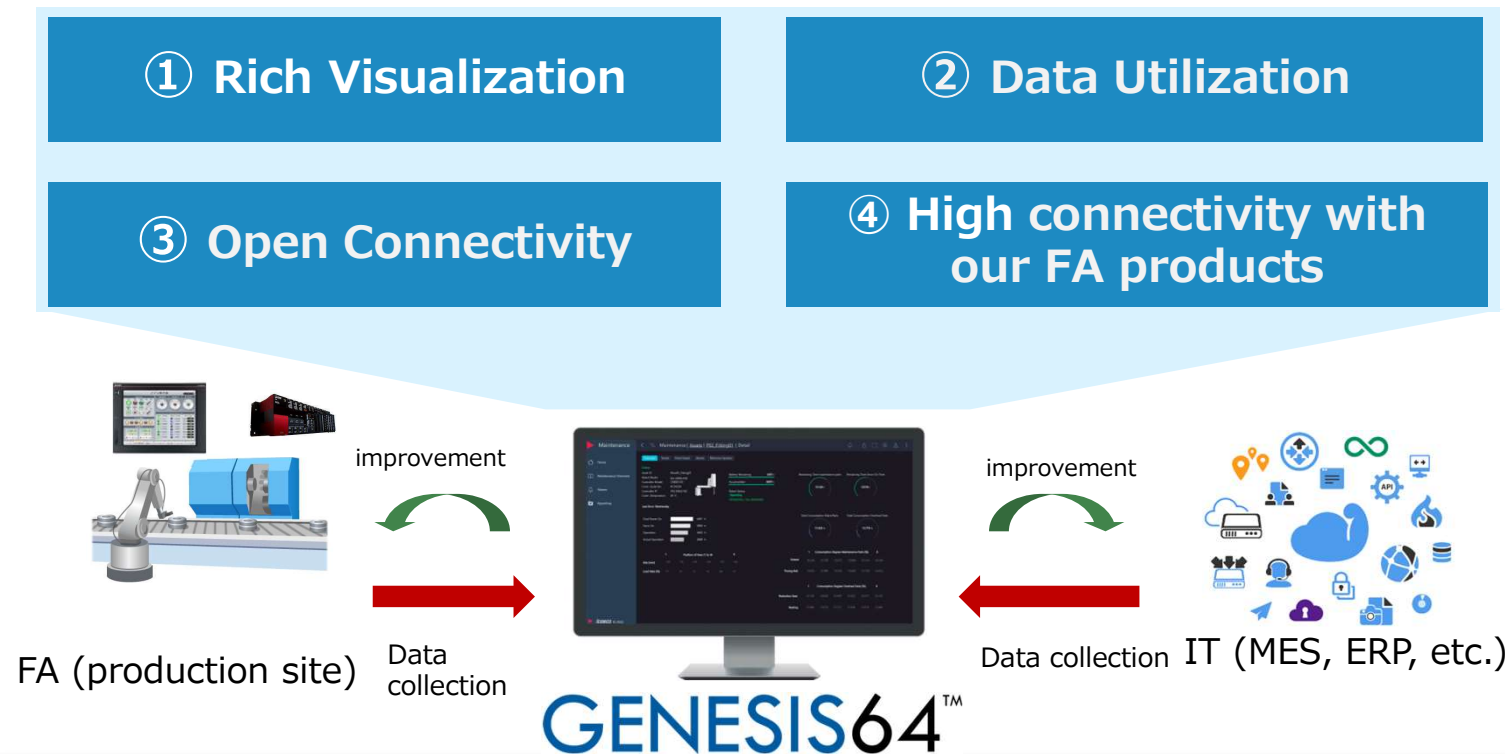
- Large scale requiring high reliability such as redundant system
- Supports cutting-edge technologies from on premise to cloud deployments
- BI capabilities to support large-scale data analysis

For FA Sector (entire plant), PA/Social Infrastructure and BA

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GENESIS64 Concepts – OT and IT Integration

- Enables centralized monitoring, control, and analysis of a wide variety of data, improving operations by connecting automation with business systems



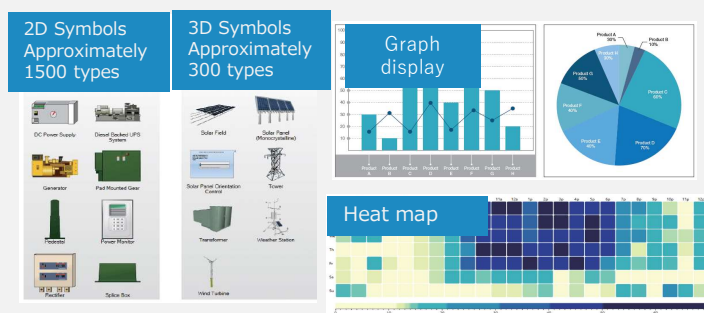
Feature Introduction

GENESIS64 Feature Introduction

- Plenty of visualizing options allow showing data in various display and viewing methods (1/2)

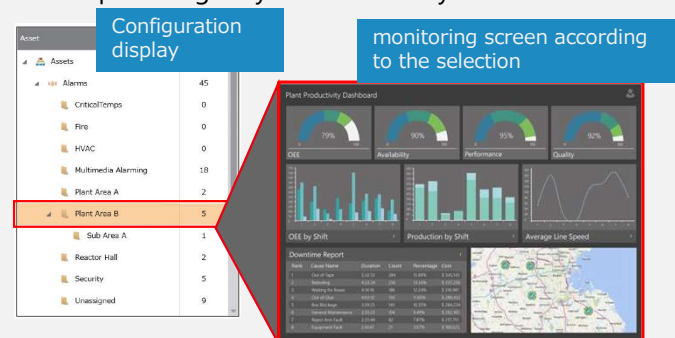
A wide variety of graphic controls are available

Using 2D/3D libraries and CAD data, it is possible to create screens suited to target applications at a low cost.



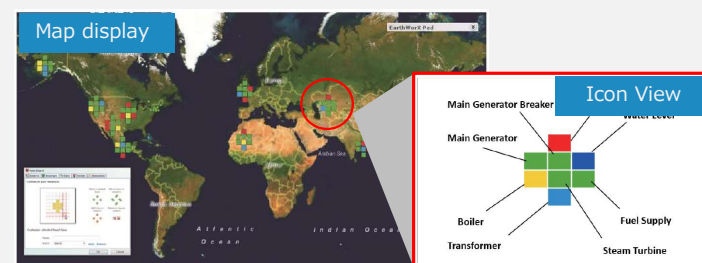
Indication of plant structure using a tree presentation

From the entire plant to on-site equipment you can create screens providing easy access to every asset.



GeoSCADA monitoring by utilizing map data

You can see at a glance the status of factories scattered throughout the country.

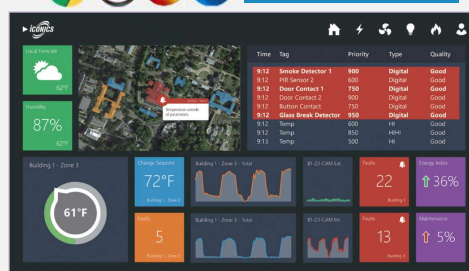


A bird's-eye view utilizing a 3D model

With 3D model displays, the application can be displayed on a single screen, enabling intuitive monitoring.



1. Plenty of visualizing options allow showing data in various display and viewing methods (2/2)



The image shows a smartphone screen displaying a dashboard. At the top, there's a header with 'United States' and a list of cities: 'Miami' and 'Indianapolis'. Below this, there are two circular gauges labeled '08' and '09'. The main area of the screen is a grid of bar charts. The first row has three charts, and the second row has three charts. Each chart has a title and a set of bars. The background of the dashboard is blue and yellow. Above the phone, there are two labels: 'Play' and 'Smartphone display'.

Smartwatch

アラームサーバ

After receiving mail, check details on various screens

Date	Tag	Priority	Time	Locality	Category	Description
2017/01/11 12:14	1000000000	Normal	12:14	1000000000	1000000000	1000000000 1000000000
2017/01/11 12:14	1000000000	Normal	12:14	1000000000	1000000000	1000000000 1000000000
2017/01/11 12:14	1000000000	Normal	12:14	1000000000	1000000000	1000000000 1000000000
2017/01/11 12:14	1000000000	Normal	12:14	1000000000	1000000000	1000000000 1000000000
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2017/01/11 12:14	1000000000	Normal	12:14	1000000000	1000000000	1000000000 1000000000
2017/01/11 12:14	1000000000	Normal	12:14	1000000000	1000000000	1000000000 1000000000

Bar Chart Data:

Category	Value
Ratio of the Red Line	1000000000
Red Speed of Pump in 1 day	1000000000
Compressor usage in 1 day	1000000000
The P20 is 100% in 1 day	1000000000
Water 3 Pressure in 1 day	1000000000

Line Graph Data:

Time	Value
12:00	1000000000
12:10	1000000000
12:20	1000000000
12:30	1000000000
12:40	1000000000
12:50	1000000000
13:00	1000000000
13:10	1000000000
13:20	1000000000
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22:30	1000000000
22:40	1000000000
22:50	1000000000
23:00	1000000000
23:10	1000000000
23:20	1000000000
23:30	1000000000
23:40	1000000

The diagram illustrates a network topology. A central node, labeled 'CAM' and represented by a camera icon, is connected to five peripheral nodes. These nodes include two nodes with binary code (1010011, 0001100, 1010101) and a bell icon, a node with a lightning bolt icon, a node with a warning triangle icon, and a node with a database icon. The connections are shown as lines radiating from the central node to each peripheral node.

[illegible]

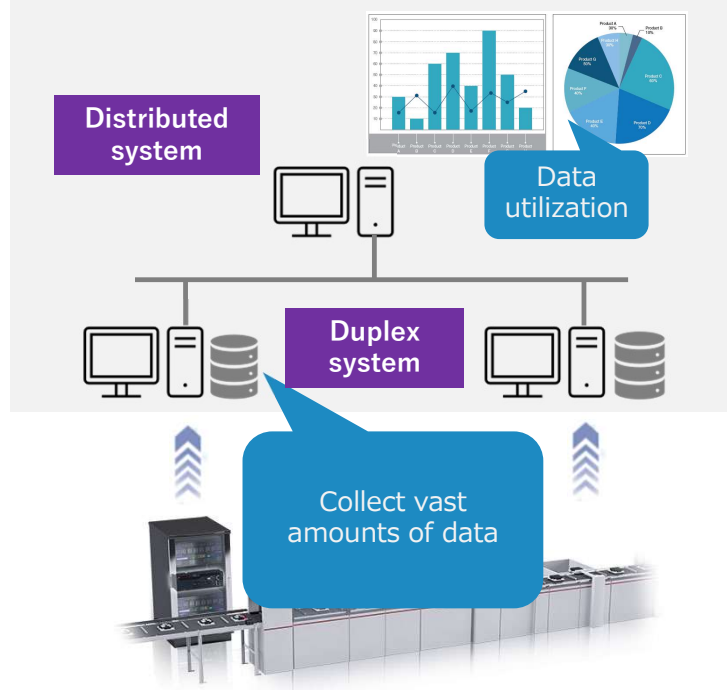
Feature Introduction

GENESIS64 – Processing large amounts of data

- Utilize large amounts of data in large-scale systems

High-speed data collection and reliable system configurations are possible

Data collection at a high speed, 100,000 points per second, makes it possible to store huge amounts of data. In addition, redundant configurations are possible to build highly reliable systems.



Providing a wide variety of ways to utilize data

With various analysis support functions, collected data is processed and displayed for ease of use to assist with identifying and resolving system issues early.



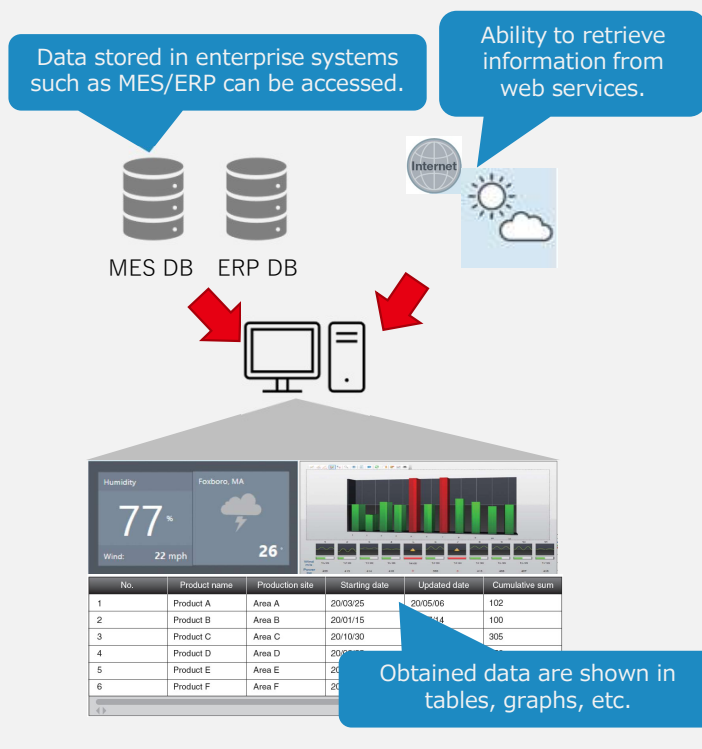
Feature Introduction

GENESIS64 - connectivity to business systems and controllers

- Open connectivity to other systems and various devices

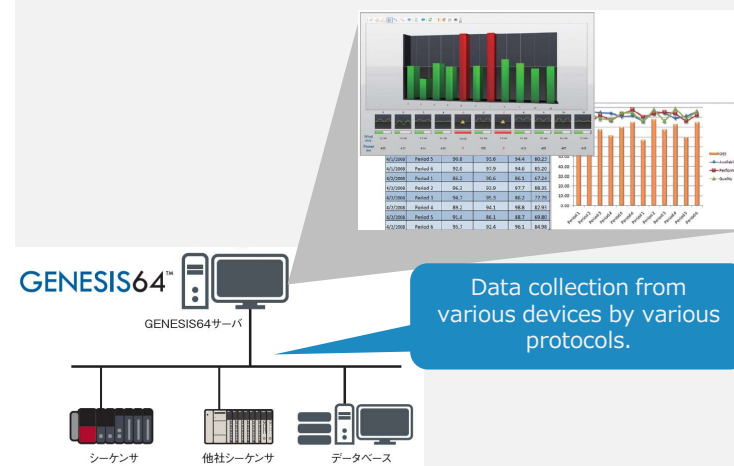
Function to link with higher-level systems and Web services

Data in higher-level systems such as MES/ERP and Web services can be monitored and controlled from GENESIS64.



Supports various protocols

Supports various protocols such as OPC, BACnet, Modbus, etc., It enables to build monitoring systems connected to various lines, facilities, and equipment.



Feature Introduction

GENESIS64 – integration with FA products

4. Lower TCO by
strengthening
connectivity
with our FA
products (1/2)

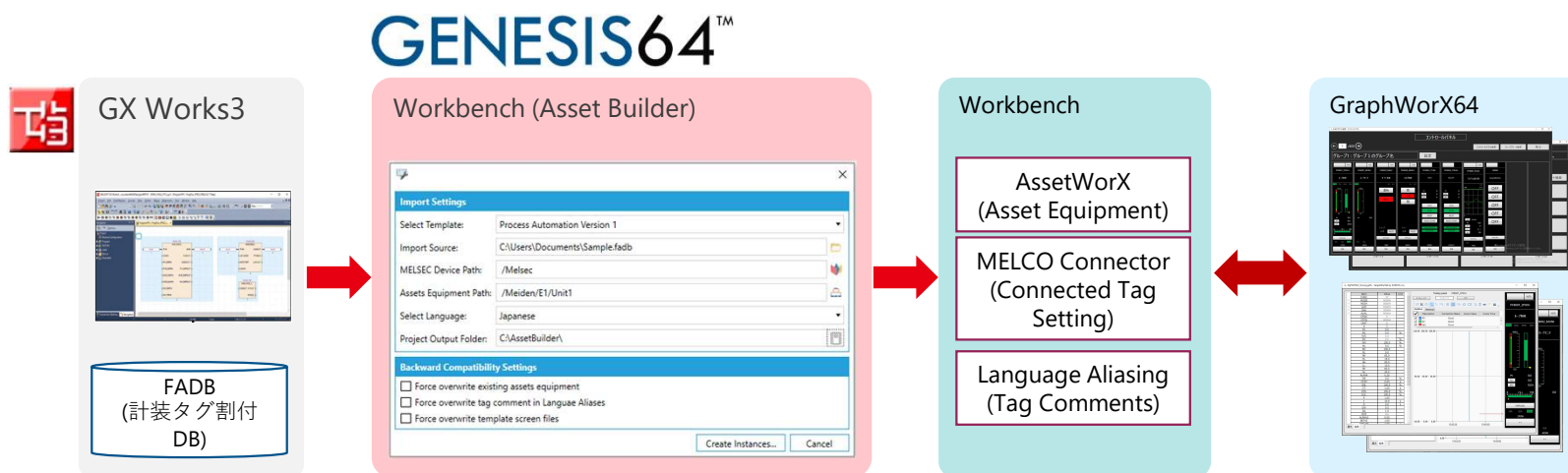
MELSEC/GOT Direct Communication Driver

Provides a communication driver that can be directly connected to Mitsubishi Electric FA products. It realizes high speed and high reliability data collection without the need of an OPC server. We continue to expand connectable FA products and connection routes.

Process Automation Template(Asset Builder)

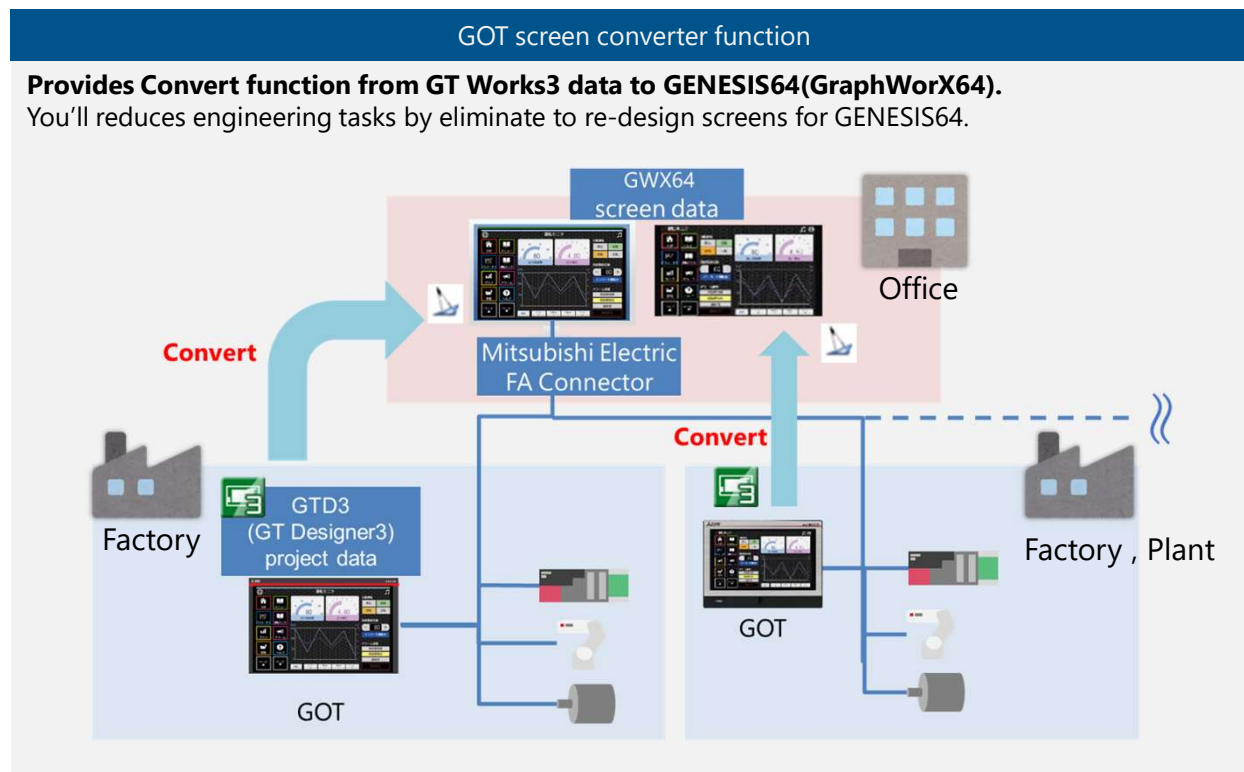
Provides function "Asset Builder" to build monitoring system from GX Works3 Process programs quickly.

Model	Connection Route		
	USB/Serial Communication	Ethernet	CC-Link IE Control
iQ-R/Q	●	●	●
iQ-F/L/FX	●	●	—
Safety PLC (DEC 2023)	●	●	●
GOT2000/ SoftGOT2000	—	●	—
GX Simulator3 RCPU, RSafety, LHCPU, FX5CPU	—	—	—



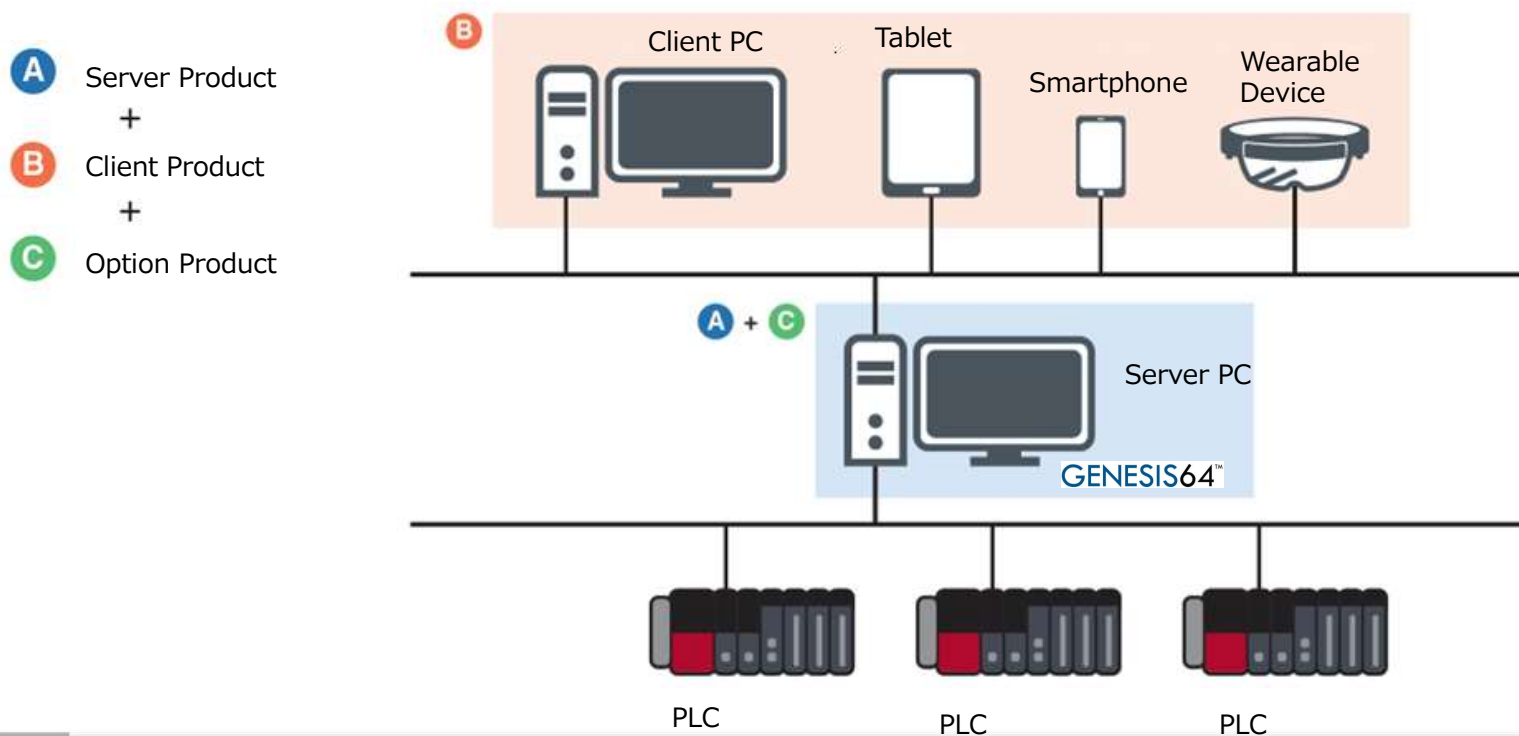
GENESIS64 Feature Introduction

4. Lower TCO by strengthening connectivity with our FA products(2/2)



(Supplement) License Configuration

GENESIS64 licenses are available for server, client, and optional products. There are three types of licenses that can be combined according to the target system size. Please use it.



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Data Collection Using MELCO Advanced Information Modules

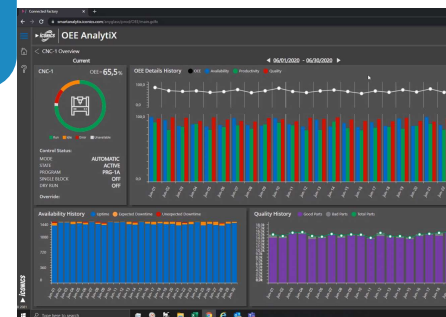
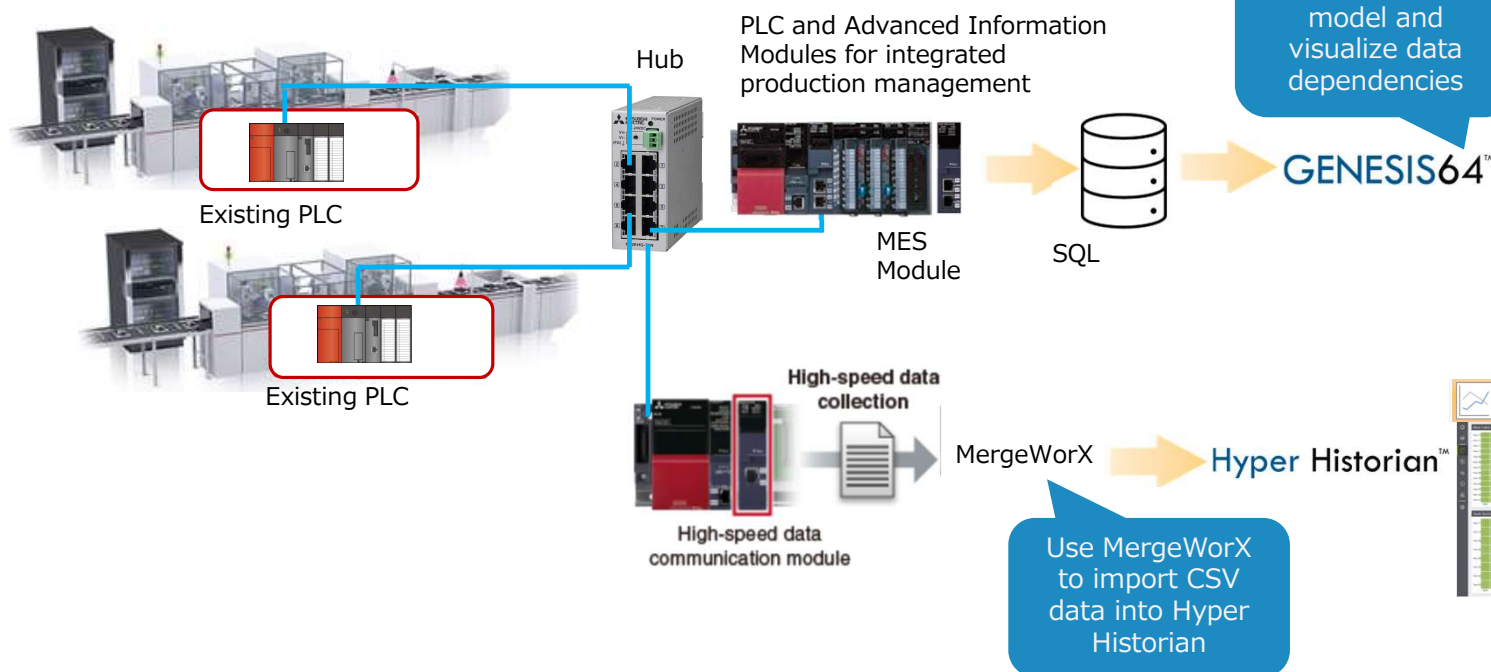
- Adding MELCO FA products and ICONICS software to existing equipment:
- Adding a PLC and Advanced Information Modules for intelligent production management through advanced data collection via MES or Data Logger modules.

MELSEC iQ-R

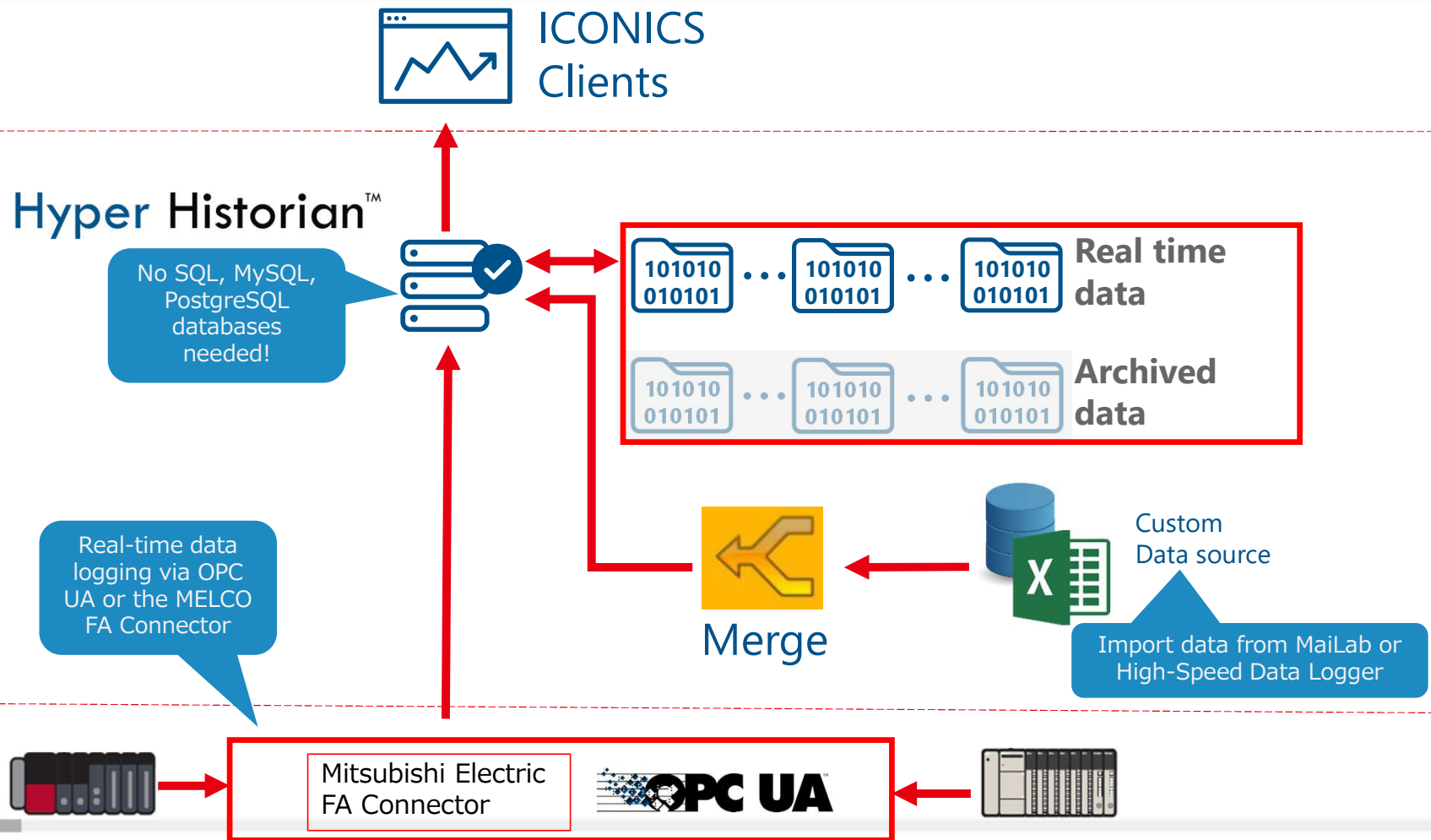
Advanced Information Modules

MES Module

Data Logger



Historian Data



Flavors of Hyper Historian



GENESIS64 Data Logging (Hyper Historian Express)

- Time series data logging included in GENESIS64
- Raw Data Samples, Dead Band Filtering
- Min, Max, Average, Standard Deviation, Totalization
- No extra charge up to 5000 Points

Use for most standard logging requirements. Consumes GENESIS64 tags

Compete against Joywatcher, Elipse, Copa Data, Ignition, Indusoft, InTouch, Progea, GE Cimplicity, etc.
No SQL, MySQL, PostgreSQL databases needed!



Hyper Historian Standard

- Separate Hyper Historian tags
- Full Data Historian (advanced filtering and data compression)
- Performance calculation
- Predefined aggregates

Consumes Hyper Historian Tags

Use when Performance Calculations or Redundancy are required



Hyper Historian Enterprise

- Data Historian with Redundancy
- Multiple remote data collectors
- Store and forward technology
- Server to Server Data Synchronization

Compete against OSIsoft, AVEVA Historian, Rockwell Historian, GE Historian

Hyper Historian™

High-Speed, Reliable, Robust Plant Historian

Use Performance Calculations for important production performance indicators

Hyper Historian Express logger does not provide performance calculations. Purchase Hyper Historian Standard option.

Performance Calculations



What was yesterday's total production on Line 1?

`tagtotalize({{data:line1.partscount}}, yday(), today(), 80)`



What's the average production for current month?

`round(tagcount({{data:engine.state}}), bmonth(now()), now(), 80)) / 2`



How many running hours did the pump have?

`tagtimestate1({{data:pump.state}}, bmonth(now()), now(), 80)`

Historical Expressions Accessible just like Tags

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GENESIS64 Maintenance Service (SupportWorX) Overview

- Maintenance services to maximize the value of GENESIS64 and ensure long-term use

License Maintenance

Helps you quickly recover a license when it becomes unavailable (for example, due to server problems).

Software Upgrade

More convenient with security updates and a variety of new features. Get the latest version at no cost or at a discount price. Keep your GENESIS64 up to date.

Providing plenty of technical information

Access rich content to support GENESIS64 (Technical documents, videos, app notes, FAQs, etc.). Help customers solve their problems.

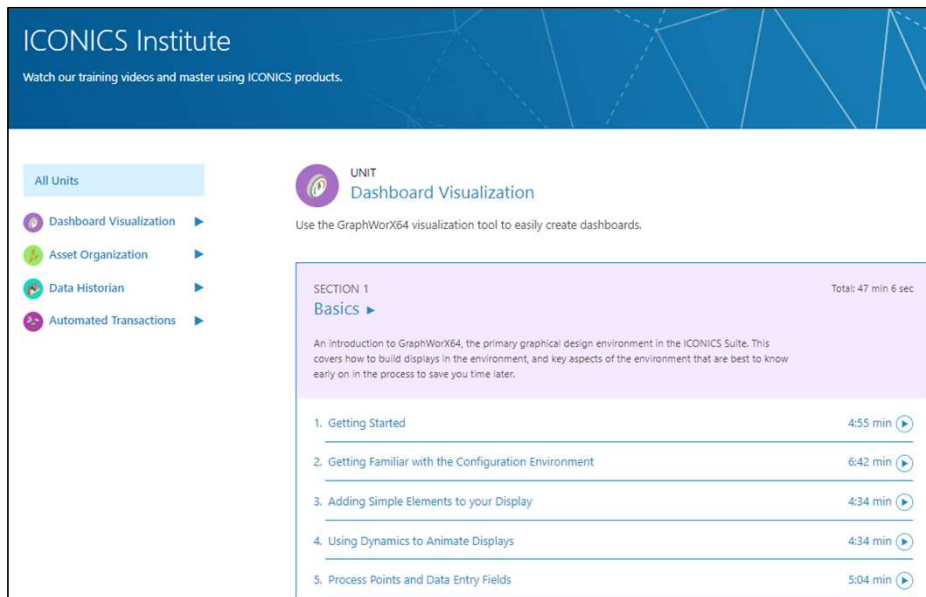
GENESIS64 dedicated support engineers

Support is provided by GENESIS64 dedicated engineers.
We will provide accurate answers to your questions regarding GENESIS.

Self-Training Videos

With ICONICS Institute, get to know how to use ICONICS Software through guided video tutorials, narrated by our software experts themselves. Our videos are divided into easy-to-follow courses that teach all the relevant skills to a topic from start to finish.

<https://iconics.com/Resources/ICONICS-Institute>



ICONICS Institute
Watch our training videos and master using ICONICS products.

All Units

- Dashboard Visualization
- Asset Organization
- Data Historian
- Automated Transactions

UNIT
Dashboard Visualization
Use the GraphWorX64 visualization tool to easily create dashboards.

SECTION 1
Basics ▶ Total: 47 min 6 sec

An introduction to GraphWorX64, the primary graphical design environment in the ICONICS Suite. This covers how to build displays in the environment, and key aspects of the environment that are best to know early on in the process to save you time later.

1. Getting Started	4:55 min ▶
2. Getting Familiar with the Configuration Environment	6:42 min ▶
3. Adding Simple Elements to your Display	4:34 min ▶
4. Using Dynamics to Animate Displays	4:34 min ▶
5. Process Points and Data Entry Fields	5:04 min ▶

Product Training Classes

Online in Singapore Time Zone

<https://iconics.com/Resources/Training>

Training

ICONICS training classes are packed with hands-on, in-depth interactions with our products. Tips and shortcuts offered by ICONICS' expert instructors will help you develop your applications quickly and efficiently.

We offer an array of training courses on ICONICS GENESIS64, GENESIS32, Hyper Historian, and AnalytiX Product Suites. Official ICONICS training is scheduled at ICONICS' global support centers. Custom training courses are available by request and may be conducted at customer locations. For additional information, please contact ICONICS or its sales representatives.

ICONICS Instructor led training:

- Globally Scheduled Online Trainings
- 2-day and 3-day Classes or 1 Week Packages
- On-site Training with Customer Specified Content



GENESIS64 Maintenance Service (SupportWorX) Details

<Dedicated Site (ICONICS Community Portal)>

- A Web site where SupportWorX subscribers can access software maintenance resources and technical information whenever they need it.
- [Supported Languages] : Japanese, English
- [Information] : ① S/W resource (installer, update module)
- ② Technical (Video explaining know-how collection and design/mounting method)

Know-how collection



Dedicated site

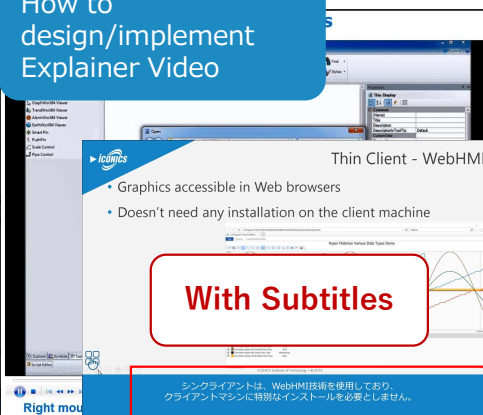


Installer



Get the latest
installer

How to
design/implement
Explainer Video



With Subtitles

Product Related Services

- **(2) GENESIS64 Maintenance Service (SupportWorX) Details**
- < only for SupportWorX subscribers >
- GENESIS64 dedicated engineers are available to assist you with your specific setup needs.
- In addition to phone calls and e-mail, the subscribers can utilize a Web conferencing tool (Teams).
- By sharing the setting screens and reference materials, we contribute to early resolution of inquiries and problems.



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Application examples by ICONICS

ICONICS has a 35-year history, and its solution has been introduced by major companies in various fields such as building and factory monitoring and manufacturing management.



Our sales experience in the domestic and Asian markets

- Widely adopted as manufacturing monitoring in FA field as well as building monitoring, water treatment, power utility



(1) Museum
Tower Kyobashi
Tenant Service



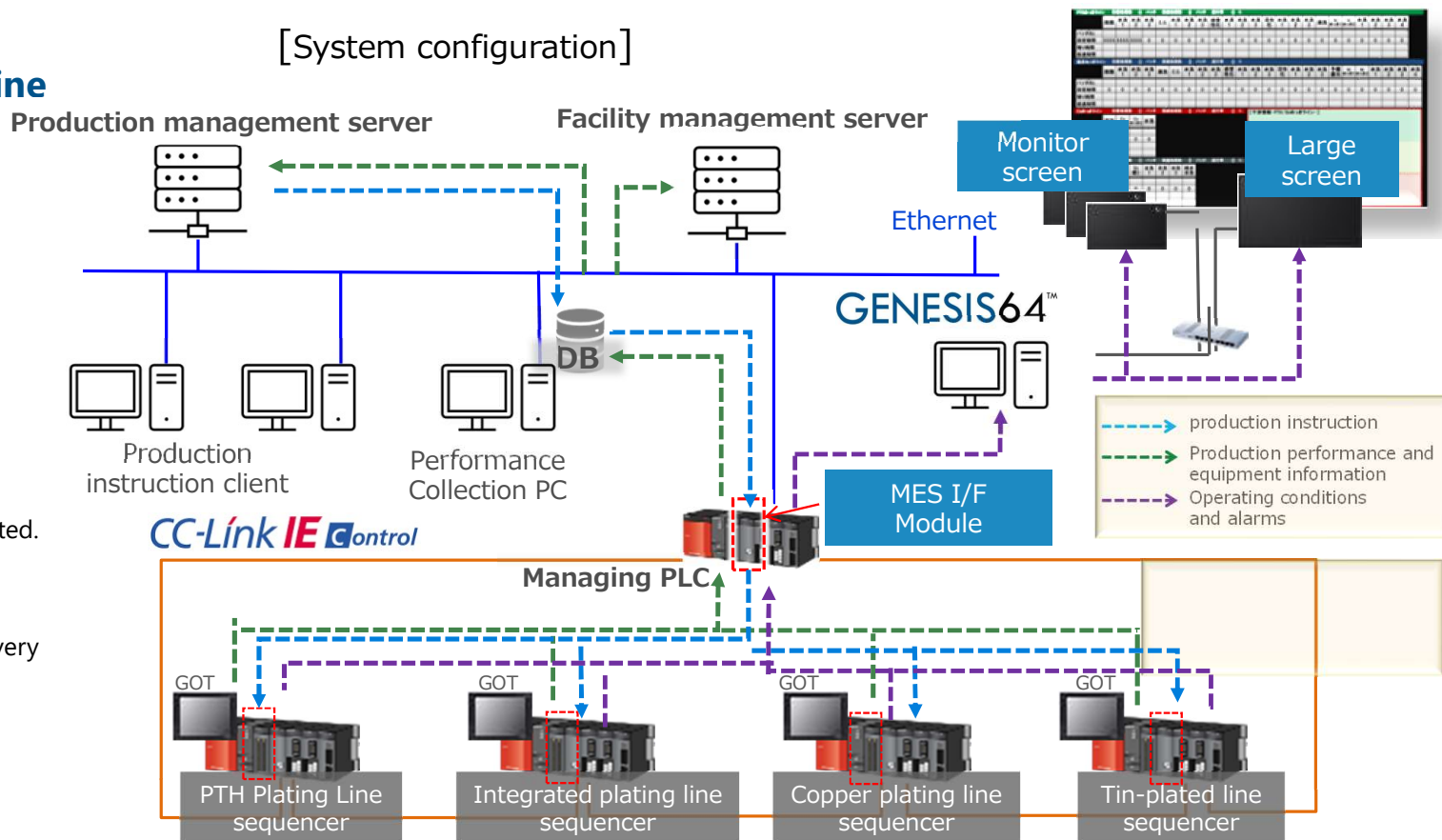
(2) South Beach Complex
Commercial Building

Fields and applications	Applicable system name	Applicable region
FA	Firing furnace system	Thailand, Japan
	Semiconductor plating processing line	Japan
	Automobile production line	Japan
	Auto parts production line	Japan
	Food and beverage production line	Japan
Buildings	Museum Tower Kyobashi Tenant Service (1)	Japan
	South Beach Complex Commercial Building (2)	Singapore
Equipment, Utilities	Liquid Crystal Glass Substrate Factory	China
	Thermal Power Plant Utility Equipment	Indonesia
Water treatment	Water treatment plant	India

Example (1): Semiconductor plating line (Japan)

Added GENESIS64 to an environment where MES systems have already been built for production management and equipment management.

- (1) Since the servers are distributed by application, operation at low load is possible
- (2) Various data formats are supported. In this case, for implementation by referring to the existing DB, Realize system construction with short delivery time

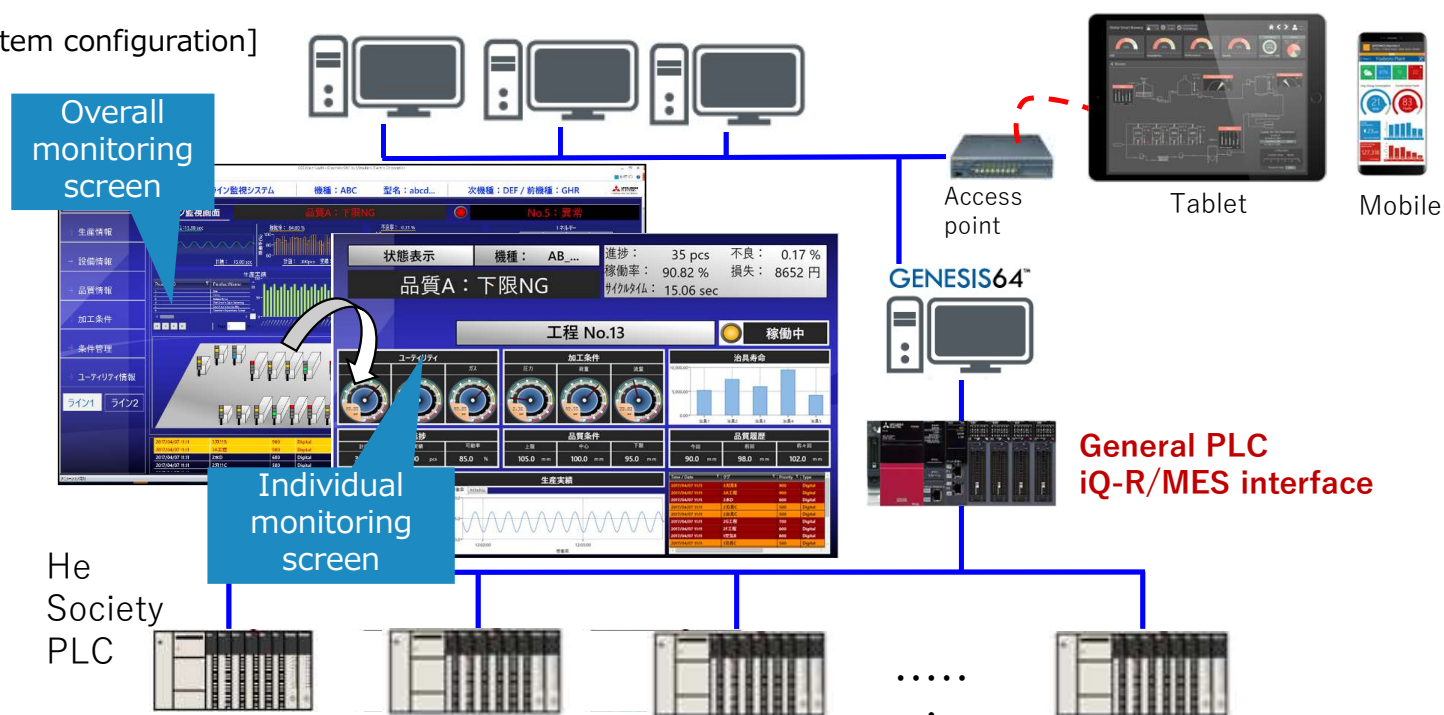


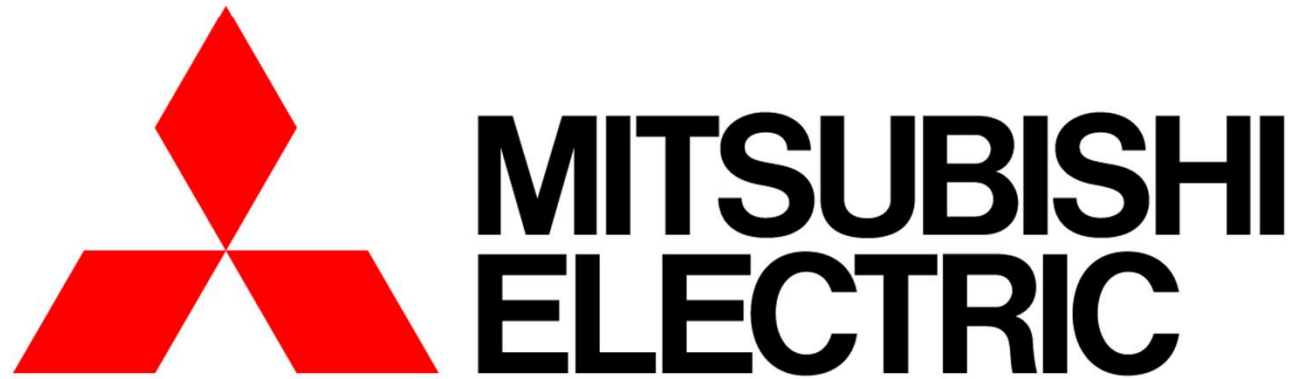
Example (2): Automotive Parts Production Line (Japan)

We have deployed our PLC as the general PLC and introduced GENESIS64. This has the following effects:

- (1) Introduction of visualization system without remodeling to existing system
- (2) In addition to building a highly graphic monitoring screen, it also supports flexible visualization using tablets and mobiles

[System configuration]





Changes for the Better