FIELD system Basic Package

Issues to be addressed in improving your factory

Due to changes in the market and intensifying competition, factories are being asked to address various issues such as improving productivity, shortening delivery times, ensuring quality, reducing costs, and securing traceability.
How to tackle these issues?

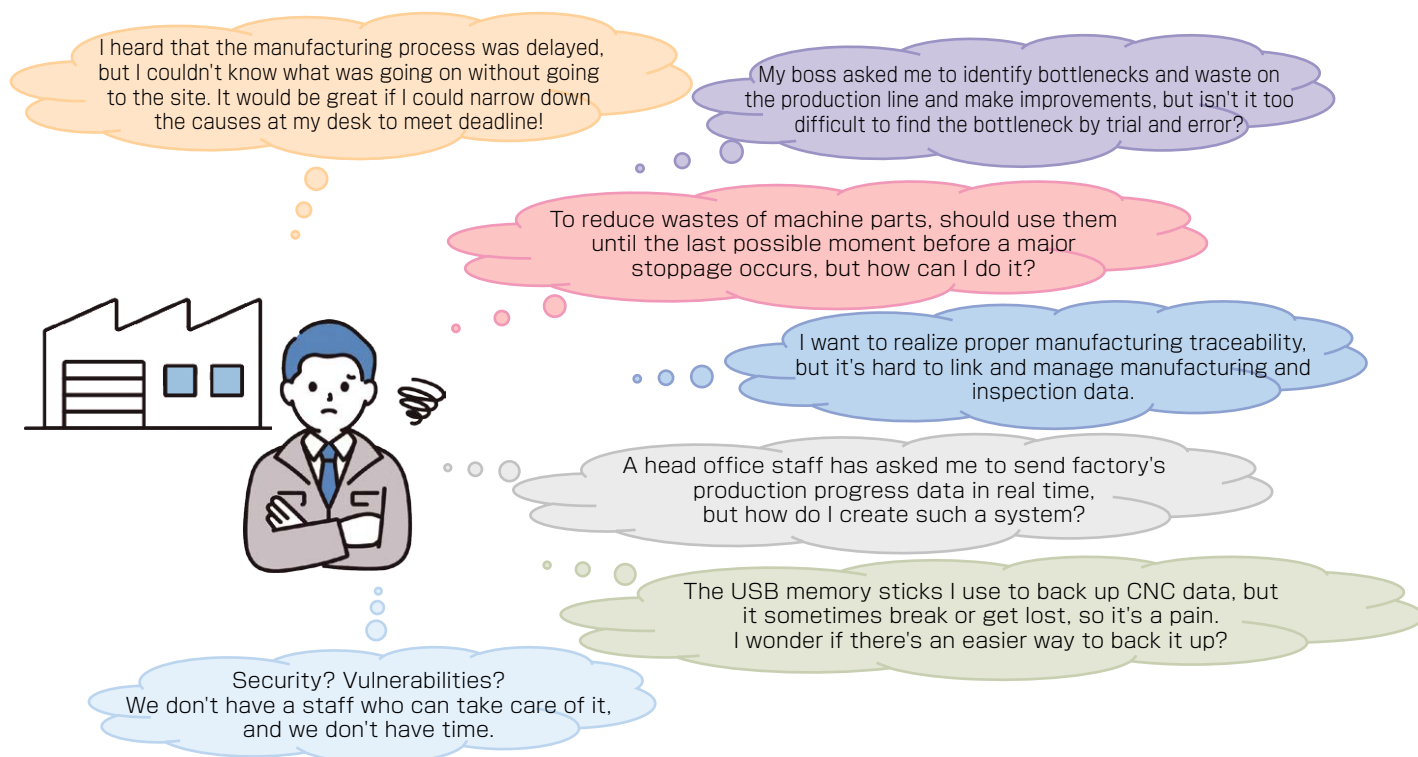> I heard that the manufacturing process was delayed, but I couldn't know what was going on without going to the site. It would be great if I could narrow down the causes at my desk to meet deadline!

> My boss asked me to identify bottlenecks and waste on the production line and make improvements, but isn't it too difficult to find the bottleneck by trial and error?

> To reduce wastes of machine parts, should use them until the last possible moment before a major stoppage occurs, but how can I do it?

> I want to realize proper manufacturing traceability, but it's hard to link and manage manufacturing and inspection data.

> A head office staff has asked me to send factory's production progress data in real time, but how do I create such a system?

> The USB memory sticks I use to back up CNC data, but it sometimes break or get lost, so it's a pain. I wonder if there's an easier way to back it up?

> Security? Vulnerabilities? We don't have a staff who can take care of it, and we don't have time.
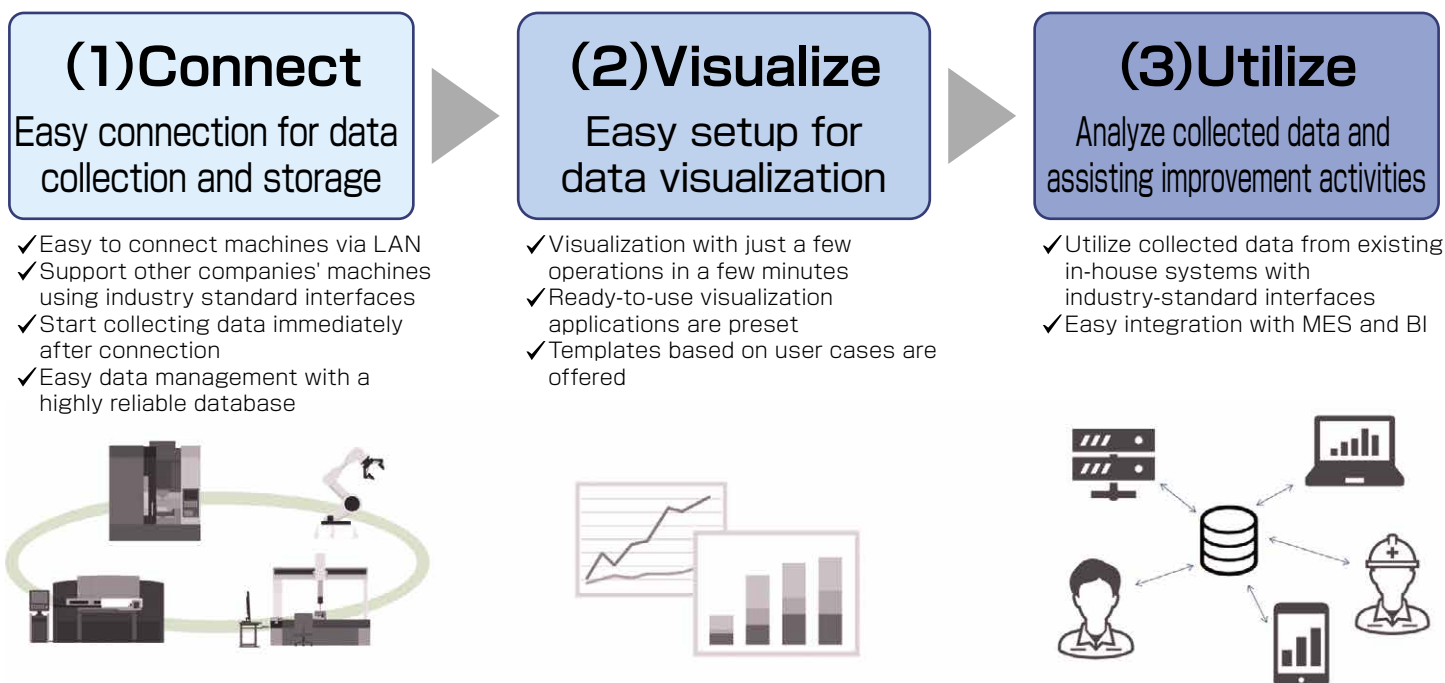
Solve issues with FIELD system Basic Package

To solve issues in your factory, visualization and analysis are necessary to understand the current situation.
FIELD system Basic Package is the all-in-one data utilization platform that connects to machines via network, making the current situation of your factory visible through data that was previously difficult to see, and then using that data to solve issues.

Using the power of data collected from factory machines, it helps solve issues in your factory, such as improving productivity and quality.

(1)Connect
Easy connection for data collection and storage

✓Easy to connect machines via LAN
✓Support other companies' machines using industry standard interfaces
✓Start collecting data immediately after connection
✓Easy data management with a highly reliable database

(2)Visualize
Easy setup for data visualization

✓Visualization with just a few operations in a few minutes
✓Ready-to-use visualization applications are preset
✓Templates based on user cases are offered

(3)Utilize
Analyze collected data and assisting improvement activities

✓Utilize collected data from existing in-house systems with industry-standard interfaces
✓Easy integration with MES and BI

Examples of issues that can be resolved with FIELD system Basic Package

FIELD system Basic Package helps resolve issues at your factory.

Issues	Solutions
The operating status of factory machines cannot be understood from a desk.	Machine data is collected, the situation is visualized, and operating status, production forecasts, and results are managed by your PC on a desk.
Don't know where the bottlenecks and wastes are on your factory production line	Automatically record the start and end times of each machine and workpiece, revealing variations in processing cycle times and workpiece backlogs between processes.
Want to reduce maintenance costs while avoiding major machine stoppages	Visualize machine tool servo data and using AI to detect early signs of machine abnormalities and prevent major machine stoppages in advance.
Difficult to associate and manage manufacturing traceability data and inspection data	Connect to various machines in factory and centrally manage data. Storing data from various machines in a unified format, making it easy to associate heterogeneous data.
Want to pass on production results to a factory management system, etc.	Easily provide collected data to external systems using industry-standard APIs. Associate production results data to in-house systems such as production management systems.
Having trouble managing CNC backups Want to transfer CNC programs to other machine tools	Replace your USB memory with CNC backup, restore, and program transfer feature. Manage and control CNC by reading and writing CNC macro variables.
There are no engineers in factory who can handle security issues such as vulnerability	Apply security programs provided on a regular or emergency basis to address vulnerabilities.

FIELD system Basic Package Data infrastructure overview

Business improvement at factories is carried out in the following order: data collection from machines, visualization, analysis, and improvement. If you have a platform that can connect to machines, collect data, and manage the data from analysis to utilization, you can work toward improvement efficiently.
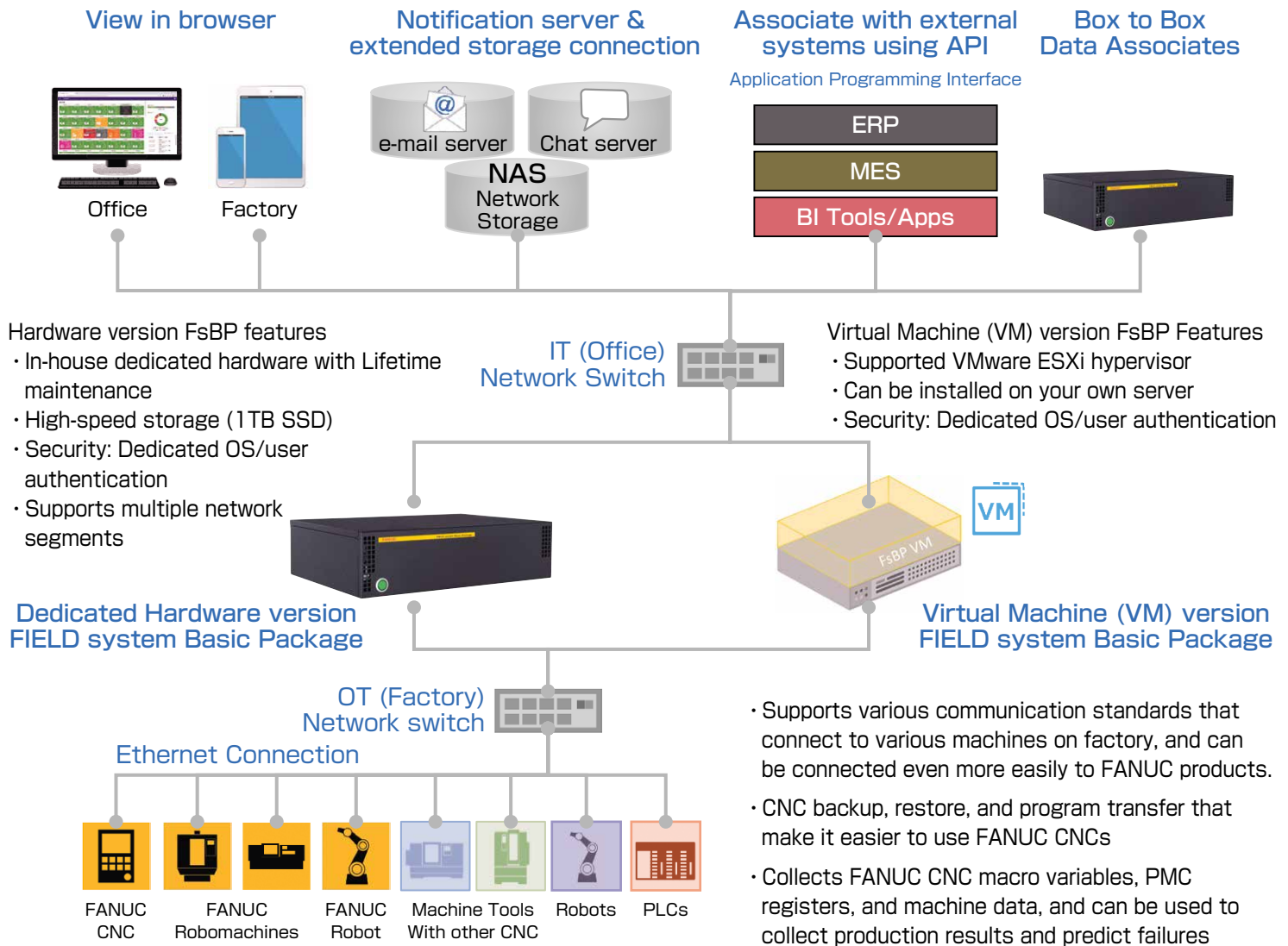
FIELD system Basic Package provides a mechanism for collecting, analyzing, and utilizing data from machines as a data platform necessary for business improvement. By easily utilizing on-site data, you can improve productivity and preventive maintenance of machines.

FIELD system Basic Package also manages work data of machines and the people who operate it. By connecting IT (Office) systems and OT (Factory) systems, FIELD system Basic Package assists the digitalization of your factory.
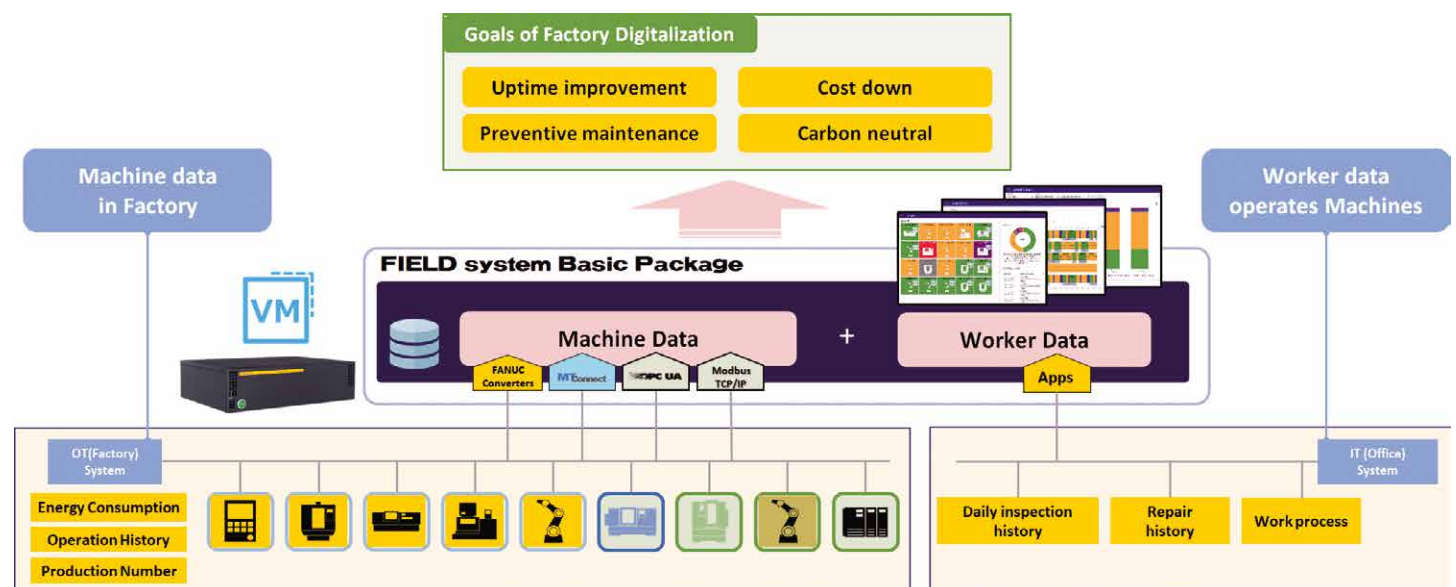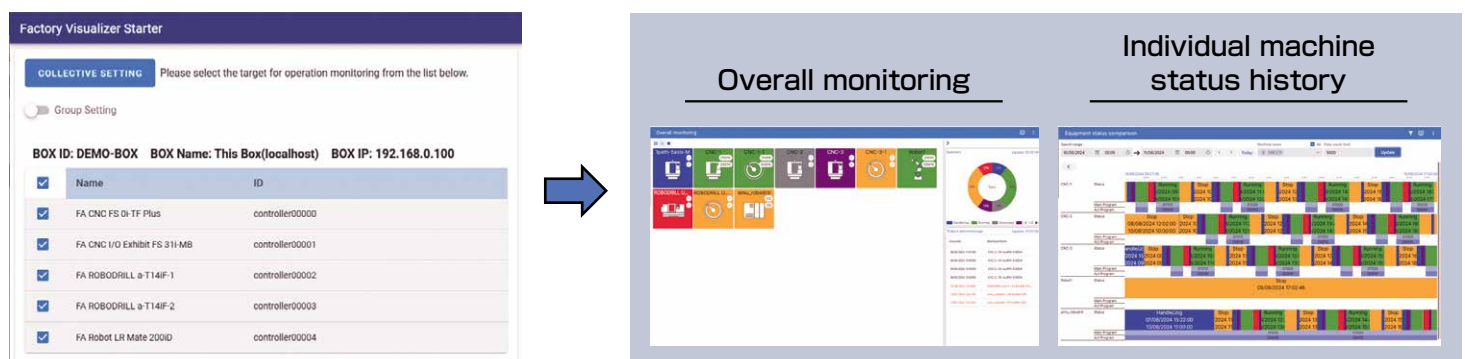
Features and system configuration of FIELD system Basic Package

- Check operating status of factory machines from office using a PC or smartphone
- Notify by email when processing is completed or an alarm occurs
- Collected factory data can be easily used with various tools and systems
- By associating data across multiple boxes, you can centrally manage operating status of large-scale production line machines
- Offering a dedicated hardware version with lifetime maintenance and a virtual machine version that uses your own server

View in browser

Office　　Factory

Notification server & extended storage connection

e-mail server　　Chat server

NAS
Network
Storage

Associate with external systems using API

Application Programming Interface

ERP

MES

BI Tools/Apps

Box to Box Data Associates

IT (Office) Network Switch

Hardware version FsBP features
- In-house dedicated hardware with Lifetime maintenance
- High-speed storage (1TB SSD)
- Security: Dedicated OS/user authentication
- Supports multiple network segments

Virtual Machine (VM) version FsBP Features
- Supported VMware ESXi hypervisor
- Can be installed on your own server
- Security: Dedicated OS/user authentication

FsBP VM

VM

Dedicated Hardware version FIELD system Basic Package

Virtual Machine (VM) version FIELD system Basic Package

OT (Factory) Network switch

Ethernet Connection

FANUC CNC　FANUC Robomachines　FANUC Robot　Machine Tools With other CNC　Robots　PLCs

- Supports various communication standards that connect to various machines on factory, and can be connected even more easily to FANUC products.
- CNC backup, restore, and program transfer that make it easier to use FANUC CNCs
- Collects FANUC CNC macro variables, PMC registers, and machine data, and can be used to collect production results and predict failures

With FANUC products, you can easily connect and visualize your machines in just 5 minutes.

Connecting to FANUC CNC-equipped machine tools, robots, and ROBODRILLs is much easy.
Simply specify network address of each machine to start collecting and visualizing data.

Factory Visualizer Starter

COLLECTIVE SETTING Please select the target for operation monitoring from the list below.

Group Setting

BOX ID: DEMO-BOX　BOX Name: This Box(localhost)　BOX IP: 192.168.0.100

	Name	ID
☑	FA CNC FS 0i-TF Plus	controller00000
☑	FA CNC I/O Exhibit FS 31i-MB	controller00001
☑	FA ROBODRILL a-T14iF-1	controller00002
☑	FA ROBODRILL a-T14iF-2	controller00003
☑	FA Robot LR Mate 200iD	controller00004

Overall monitoring

Individual machine status history

- Enter name and IP address of machines you want to monitor and click "collective setting" button.
- Automatically connect to machines, collect data, analyze status, and begin visualization on monitoring screen

The data platform that can collect, manage and utilize data from various machines in factory

FIELD system Basic Package manages each process of collect, store, and use of data separately.
Collected data can be provided openly and securely to other systems.

✓**Collect Data**
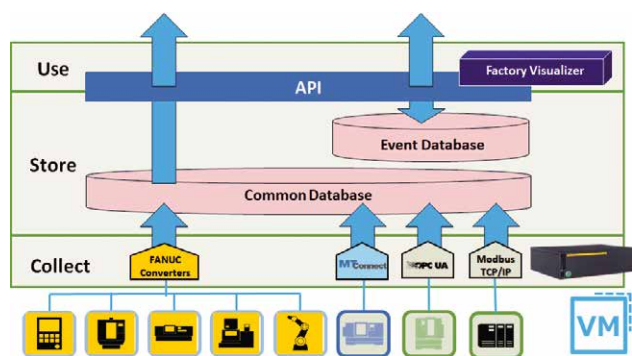Collect data from machines in factory via network.

✓**Store Data**
Equipped with two databases to suit your needs

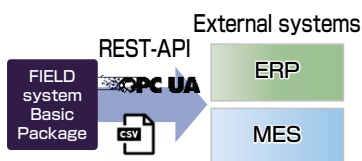🗄 **Common Database**
Standardize, organize and store various machines data in factory.

🗄 **Event Database**
Data extracted from the Common Database and external data (people, things, machines data, etc.) are also customized and stored.

✓**Use Data**
Data can be provided to external systems via OPC UA, REST-API, and CSV for analysis and utilization.

✓**Compatibility with FANUC CNCs**
For machine tools with FANUC CNC, operating status can be classified in detail, and the reason for machine stoppage and alarm contents can be found.

A use case to organize events occurring throughout factory via collected data

By connecting FIELD system Basic Package to machines and sensors in your factory and collecting and analyzing data, you can not only monitor operation status of machines, but also machining program contents, identification of workpiece, measurement dimensions, etc.
This can be useful for factory 4M change management, production progress management, manufacturing traceability, etc.
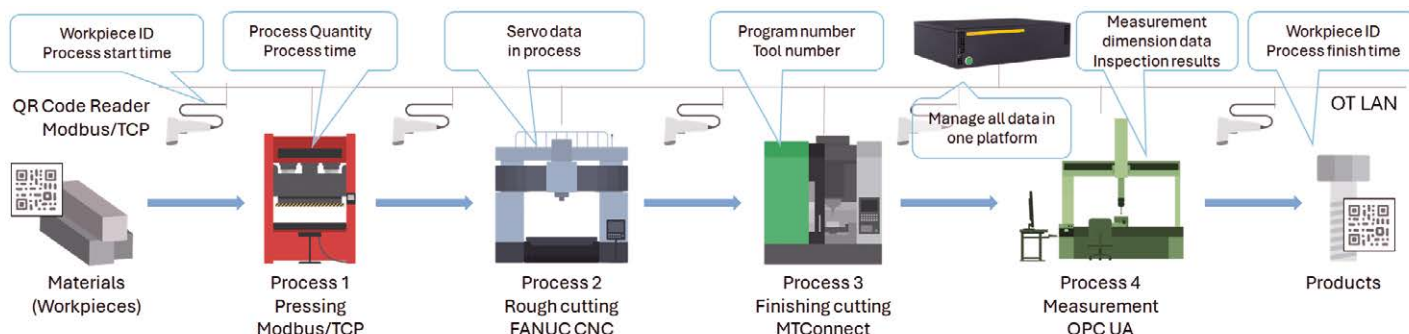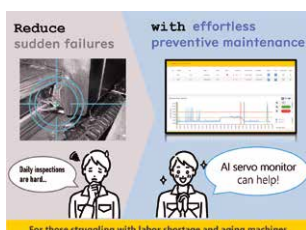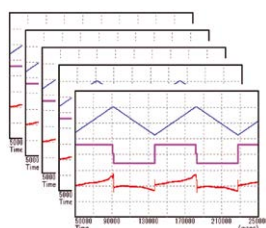
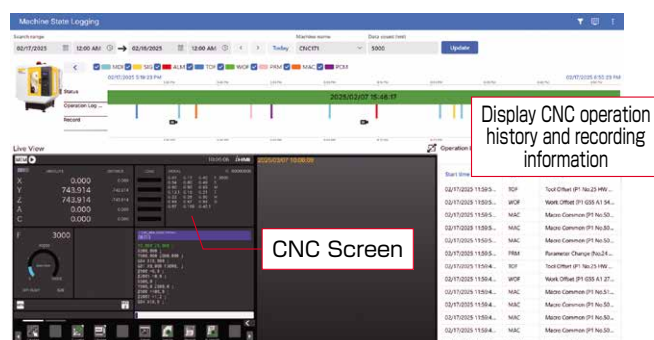## Offering a lifetime maintenance and software updates for safely and securely use

We will provide a life-time maintenance service for FIELD system Basic Package for as long as you use it.
In addition, the software usage fee includes regular feature additions and security support, so you can continue to use it conveniently and safely in the future.
Here are some of the features added to FIELD system Basic Package recently.

· Servo data collection and integration with other apps by acquiring servo data from FANUC CNCs, it is now possible to analyze it using Servo Viewer and AI Servo Monitor applications.

· CNC program transfer, macro variable API is now possible to transfer CNC program files from our CNCs and read and write CNC macro variables, and an API has been provided. This makes it possible to link and control with external devices such as MES.

· Associates with FANUC CNC optional function, machine status monitoring (the visual assist feature), is available.
· By managing machine status, CNC screen, and camera video, it is possible to verify operation details when machine trouble occur.

Display CNC operation history and recording information

CNC Screen

FIELD system Basic Package Specifications

Hardware version FIELD system Basic Package
FIELD BASE Pro (Generation 2)
Hardware Specifications (Maximum 50 machines connection)

Items	Specification
CPU	Intel Xeon Processor 4 Cores
Memory	16GB
Storage	SSD 960GB
Dimensions	W382 × D281 × H103 (mm)
Weight	Approximately 6kg
Power Consumption	Maximum 100W
Temperature	0 to 45℃ (In operation) -20 to 60℃ (In storage)
Relative Humidity	75% or less, no condensation
Installation Locations	Meets following conditions: IEC60664-1 Pollution Level 2 (Office, etc.)

Virtual Machine(VM) version FIELD system Basic Package
Virtual machine recommended requirement
(Maximum 50 machines connection)

Items	Recommended Specification
Hyper Visor	VMware ESXi
CPU	Intel Xeon 4 virtual cores or more
Memory	16GB or more
Storage	SSD 1TB or more

Virtual machine recommended requirement
(Maximum 100 machines connection)

Items	Recommended Specification
Hyper Visor	VMware ESXi
CPU	Intel Xeon 8 virtual cores or more
Memory	32GB or more
Storage	SSD 2TB or more

FIELD system Basic Package Software Specifications

Items	Specification

Connectable devices (manufactured by FANUC)	FANUC CNC: (Ethernet connection required, please contact us for details)
	    FANUC Series 15*i*/16*i*/18*i*/21*i*/30*i*/31*i*/32*i*/35*i*/0*i*、Power Mate *i*-D/H、Power Motion *i*-A (include Plus models)
	FANUC Robots: (Please contact us for details)
	    R-30*i*B/R-30*i*B Plus (include Mate/Compact/Mini)
	FANUC Robomachines: (Please contact us for details such as Compatible models and connection methods)

Examples of data that can be collected from our products	CNC Machine Tools:
	    Running program name, production number, running G/M/T code, spindle speed and load, alarms, macro variables, PMC signals, servo data (Servo and Spindle Axis data such as position, velocity and torques, etc., CNC operation status) etc.
	Robots:
	    Running program name, alarms, torque, current, axis position, register value, I/O value, etc.

Connectable devices (other manufacturers)	CNC machine tools, robots, and PLCs that support OPC UA or MTConnect connections PLCs and machines that support Modbus/TCP connections
Shortest data collection period	1ms (FANUC CNC servo data), 100ms (FANUC robot), 500ms (other than the above)
Supported data input formats	MTConnect、OPC UA(UA4MT/umati and EUROMAP 77/83 complied), Modbus/TCP, REST API with HTTPs
Supported data output formats	OPC UA(UA4MT/umati MachineTool Basic Server Profile complied), CSV file output, REST API with HTTPs
Number of devices that can be connected	5, 10, 20, 30, 50, 70, 100 devices (A separate annual software license must be purchased, and 70, 100 device connections are only available in the VM version)
Data association interfaces and apps	Spreadsheet software, BI tools, MES, ERP, etc. Software that supports REST-API or OPC UA

For more information, please contact to an inquiry form in our website or FANUC local office.

FIELD system Basic Package introduction
https://www.fanuc.co.jp/en/product/field/basic/

FIELD system Basic Package Video
https://www.youtube.com
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