

iQ Platform-compatible PAC PackML Solution

PackML
an **OMAC** standard
OMAC.org

Tech-note



Industry-specific Broadcast

Unified monitoring screens and operations ensure easier operation and maintenance across the line

Standardized monitoring screens and operability across different manufacturers realizes efficient operation of any machine with a familiar interface in the production line.

Standardized management of IT system and shop-floor data

PackTags standardizes the communication and management processes related to production data such as machine status (normal/error) and workpiece data. Seamless integration of different manufacturers' machines, reduced startup time and automatic production line start/stop contributes to more efficient troubleshooting.

Convenience

- Unified monitoring screens and operability ensure easier operation and maintenance
- Standardized data management between IT systems and shop-floor devices
- Standardized software enables efficient production line configuration
- Simplified OEE*¹ measurement improves productivity
- Easier status monitoring ensures optimum operations

Standardize software for more efficient production line configuration

Standardization of various development software can be achieved by simple modularization of software functions utilizing embedded PackML basic functions (supported with implementation guide). This is useful for improving the overall efficiency of both existing and new production lines.

Improves productivity with easier measurement of OEE

PackML enables the utilization of a standardized method to collect data from various equipment and entire lines throughout the shop floor. By simplifying OEE*¹ measurement, the performance of equipment and entire production lines are improved by analyzing and managing data utilizing PackML.

Optimum operations with easier status monitoring

System alarm notifications helps maintenance personnel and operators to take significant actions based on information related to system changes.

*1. Overall equipment effectiveness



What is PackML?

PackML is an industry technical standard proposed by the OMAC Packaging Workgroup (OPW). Various industries such as the food and beverage industry have adopted this standard. The standard promotes the uniform collection of data from machines and production lines, which is then utilized to measure OEE. Together with PackTag, the two features enable consistent monitoring and control of various manufacturers' machines. The most recent ISA88 industry standard incorporates OPW's PackML and PackTags.

* OMAC: Organization for Machine Automation and Control

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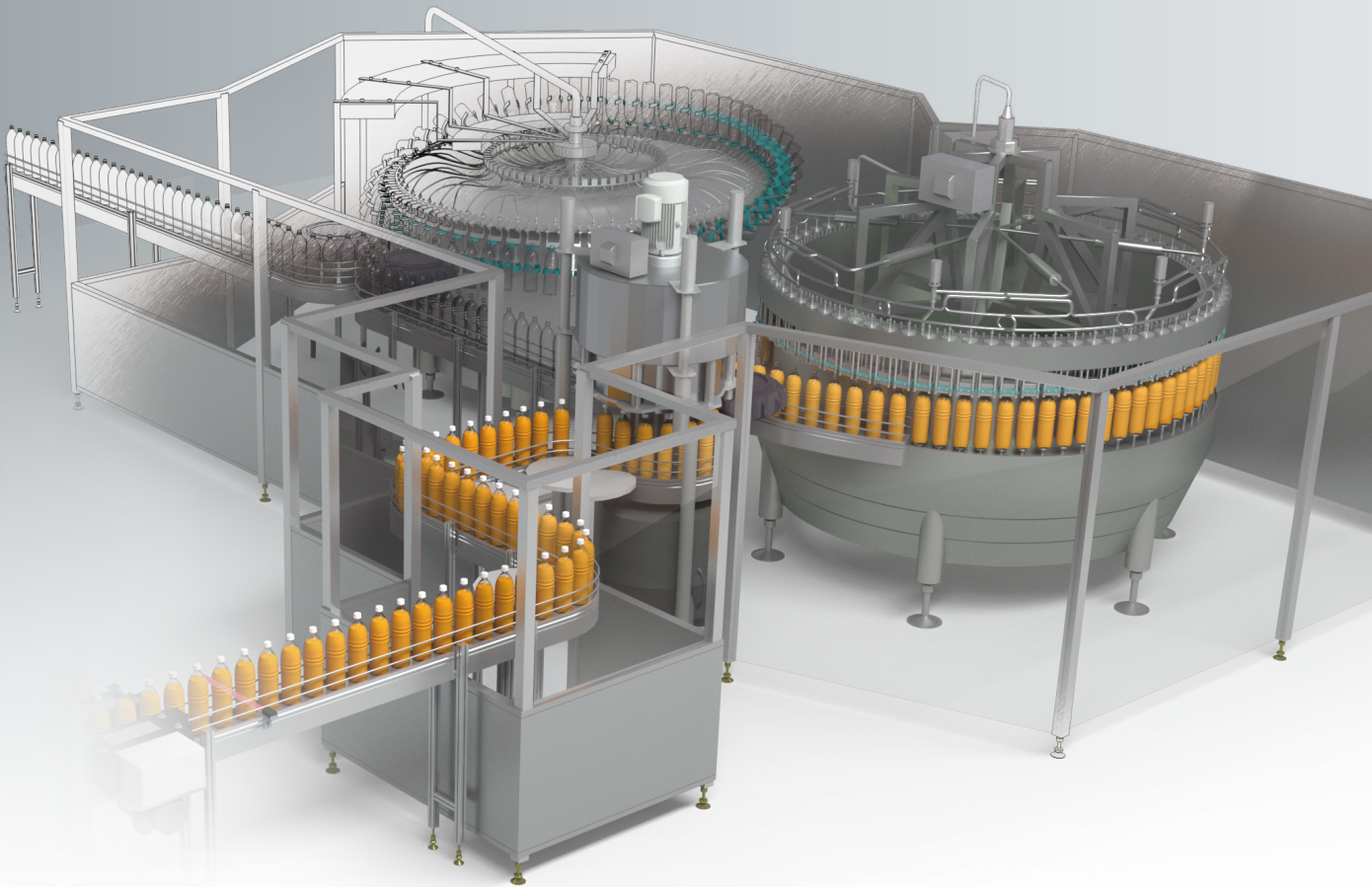
Implementation benefits

■ For the end user

- 1 Standardized data management reduces engineering and system setup time when modifying existing and/or implementing new lines.
- 2 Unified look and feel ensures monitoring of screens and operability are consistent, reducing overall training costs when installing or reconfiguring production lines and when troubleshooting for maintenance.
- 3 Continuous productivity improvement is possible by improving the equipment operating ratio, measurement process, product quality evaluation, and performance of the entire production line.

■ For the OEM

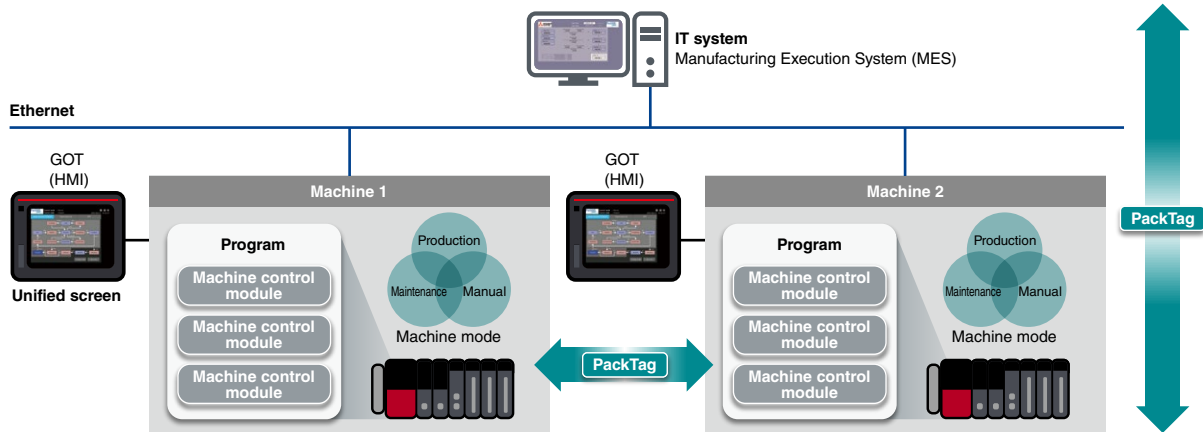
- 1 Utilizing sample projects (software) as standard templates substantially reduces engineering and development time.
- 2 Standardization of software functions and reusable programming allows lower cost development by utilizing existing software and program assets.
- 3 By reducing the volume of programming tests and adopting modular software programming, the amount of time required to debug the system is significantly reduced.
- 4 After-sales support such as function updates and failure correction are easier with standardized software templates, simplifying training.



1 Standardization of the production line

The management of multiple devices and machine data is relatively easy by utilizing a standard data template across different suppliers. Through this standardization, overall system cost can be reduced by streamlining device implementation and execution.

- Unified monitoring screen and operability
- Open connectivity with standardized information (PackTags)
- Productivity management utilizing OEE
- Standardized programs



• Overall equipment effectiveness (OEE)

Measuring OEE in real-time enables monitoring of current status, improving productivity.

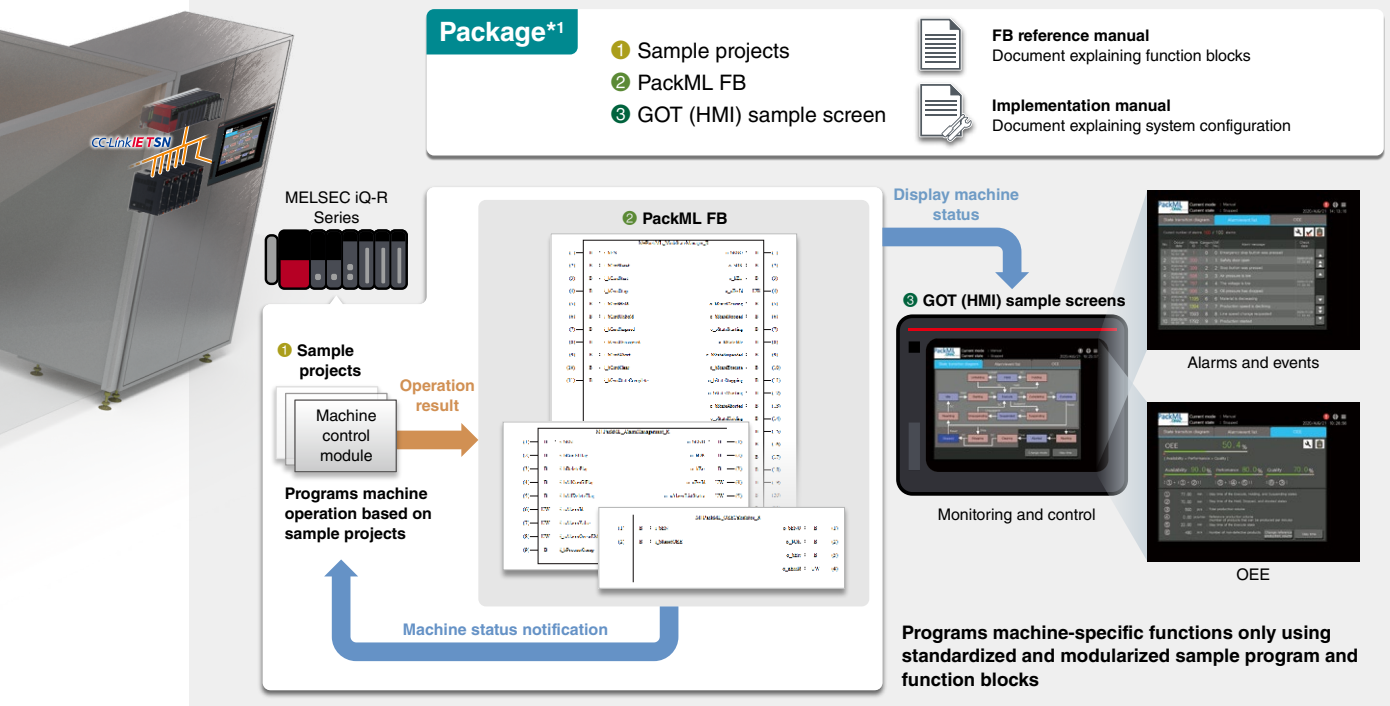
$$OEE = \text{operating ratio} \times \text{performance} \times \text{quality}$$

- Operating ratio**..... Production is operating as scheduled
- Performance**..... Production is operating according to specifications
- Quality** Production quality within specified parameters

2 Mitsubishi Electric PackML features and tools

Based on the OMAC PackML standard, this solution not only delivers all the advantages of standardization including a reduced learning curve for operators, but also addresses many manufacturer concerns about utilizing standards. From streamlining the deployment of the PackML standard to providing predefined HMI templates, ready-made function blocks, and an implementation manual, the time required for configuration is reduced.

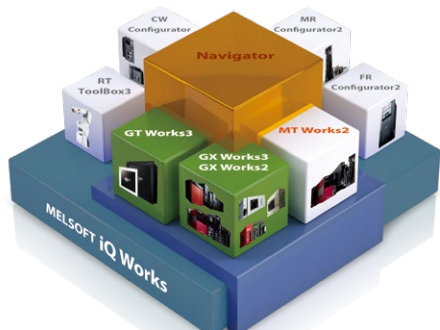
- Programmable logic controller sample projects
- PackML FB
- GOT (HMI) sample screen
- Manual
- FB reference manual
- PackML introduction manual



*1. PackTag is supported in the future.

Mitsubishi Electric factory automation product lineup helping to reduce overall implementation costs

Engineering software



MELSOFT iQ Works

System management software

MELSOFT Navigator

Programmable controller engineering software

MELSOFT GX Works3

Robot engineering software

MELSOFT GX ToolBox3

Inverter setup software

MELSOFT FR Configurator2

Motion controller engineering software

MELSOFT MT Works2

HMI/GOT screen design software

MELSOFT GT Works3

C Controller setting and monitoring tool

MELSOFT CW Configurator

Servo setup software

MELSOFT MR Configurator2

Controller

PAC



• MELSEC iQ-R Series

Highly scalable controller that realizes highly accurate and large-capacity machine control.



• MELSEC iQ-F Series

Compact controller ideal for small- to medium-scale control.

Motion module, motion controller, simple motion module



• Motion module

Enables various motion control such as positioning (including single and multi-axes control), synchronous, cam, speed, and torque control. Also, easier implementation of linear interpolation through support of PLCopen® Motion Control function blocks.

• Motion controller

Enables advanced motion control with various positioning programs. Ideal for multiple axis and high-speed systems.

• Simple motion module

Easily enables positioning control utilizing control programs only. Synchronous and electronic cam control are supported.

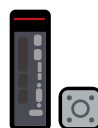
HMI



• GOT2000 Series

Low-profile front face equipped with all functions required for HMI

AC servo



• MELSERVO-J5 Series

Best-in-class high-performance servo amplifier and motor. Enables maximum machine performance, thereby contributing to improved productivity.

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For safe use

• To use the products listed in this publication properly, always read the relevant manuals before use.

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