Partner Product

EBG 218-EN

INEA
Mitsubishi Electric competence centre for process control technology

MITSUBISHI ELECTRIC
FACTORY AUTOMATION

C Batch

Batch Process Control

Simpler batch implementation

With PAC control and reliability

e-F@ctory Partner Product

INCREASED SAFETY — S88.01 style recipe running without the need for PCs in runtime operation, means increased security

INTELLIGENT DESIGN — Simultaneous execution of several recipes provides greater flexibility

REAL TIME — Enhanced phase engine system running in real time

Less input. More output.

Mitsubishi PAC Controller

To meet the challenges of modern process control, it is essential to be able to develop and implement new recipes easily, and to be able to make changes to existing recipes quickly, without creating the demand for complex and time-consuming programming. This is the goal of agile process control.

Traditionally, implementing effective batch control systems has meant a PC-based installation coupled within the real-time control loop. But many manufacturers prefer the greater simplicity and inherent reliability of a Programmable Automation Controller (PAC) based system, eliminating the need for PCs on the plant floor.

Programmable Process Automation Controller Platform

To address this, Mitsubishi Electric, the World's largest producer of Factory Automation Products, and INEA, a leading supplier of specialist solutions for the Process Control market, have brought together a complete batch control solution that provides PAC recipe-based control in an ISA S88.01 compliant style.

C Batch provides features such as recipe creation and management, creation of batches and control of their execution, automatic execution of recipes, and simultaneous execution of several recipes – all without leaving the familiar PAC environment.

Industry standards

The S88.01 standard defines a common language and models for the design and specification of systems for batch processing. It enables the cost and complexity associated with dedicated, custom software traditionally needed to implement batch control systems to be eliminated.

It also provides the flexibility to make frequent changes to recipe parameters without the need for the manual reconfiguring of process lines or costly redesigning of batch control software.

The standard therefore provides a path to significant productivity improvements, allowing the same equipment to be used to make multiple products, or to perform any number of different operations, with simple recipe development and deployment.

Improved reliability

With INEA's C Batch tools running on Mitsubishi PAC hardware, the execution of recipes is relocated from the PC platform to a PAC platform. Recipe- based batch process control systems are simplified for easier handling, without essentially reducing the expressive power and the abstraction level.

Software modules

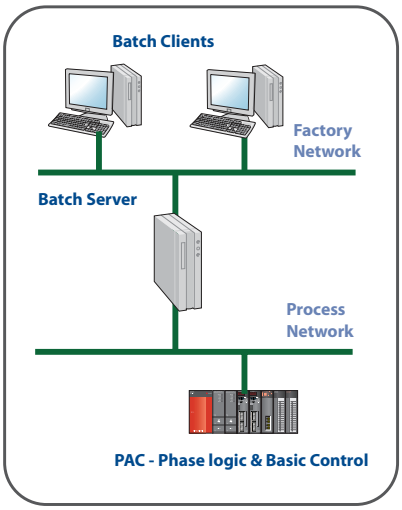
The C Batch software puts the recipe execution engine, phase logic interface, phase logic and basic control on the PAC. Recipe creation and editing is provided through the associated PC software module, and the operator interface is provided by the Batch View software running on Mitsubishi Graphic Operator Terminals (GOTs).

System benefits

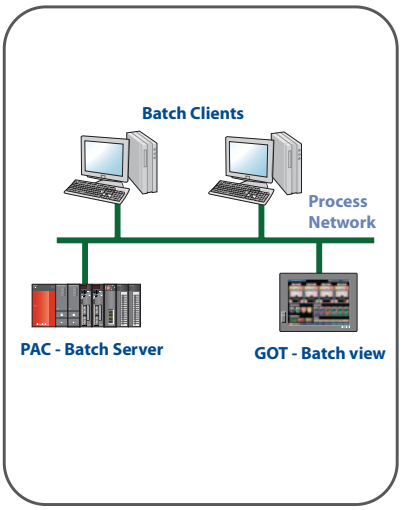
C Batch provides all the features you would expect from traditional PC-based batch control software, but with the reliability for which PACs are renowned, including:

- Simultaneous execution of several recipes with automatic allocation of units for increased productivity
- Support for parallel (AND) as well as selective (OR) branches for improved flexibility
- Execution of the state-transition algorithm of individual phases, extended by the notion of superstates to improve the abstraction level and simpler programming
- High security of control system with isolation from computer viruses and windows OS problems reduces down time
- Configurable behaviour related to propagation of holding transition from phases to recipe and vice versa provides flexible manipulation
- Recipe versus physical model consistency check increases safety
- High availability embedded database technology on PAC platform improves speed and safety
- Scaling of recipe parameters and consequently scaling of production batches improves flexibility
- Controller based architecture with extremely high reliability of standard industrial PAC environment improves safety

Typical S88 system with PC based Batch Engine



C Batch S88 system with Batch Engine on PAC Controller



Typical production line architecture with intelligent automation

- Minimized batch cycle times and deterministic speed of execution improves productivity

Data solutions

C Batch is just one of the many data solutions within Mitsubishi's e-F@ctory automation concept. These data solutions enable manufacturers to realise reduced total cost of ownership, maximised productivity, and seamless integration of products and systems throughout the manufacturing enterprise.

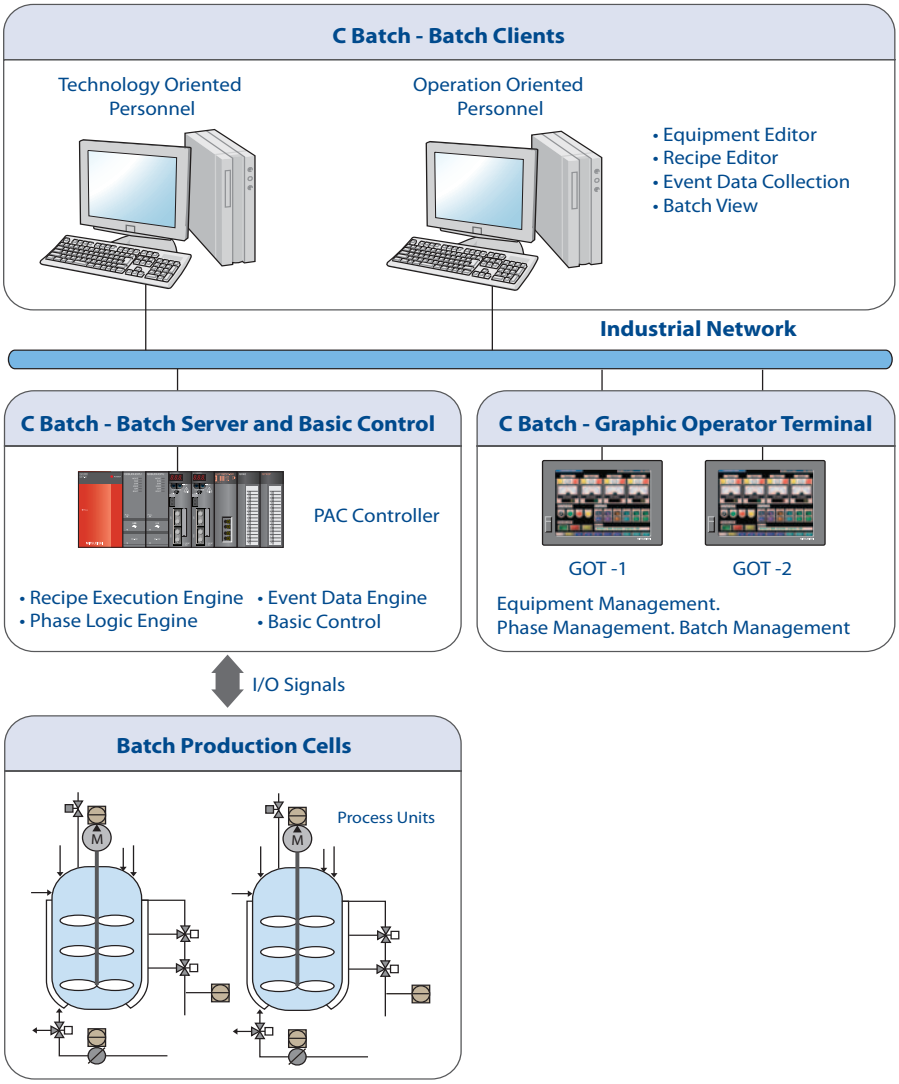
Typical among these are the MES based interface solutions. These reside on the PAC backplane and can be used to capture information directly from the PAC system or in the case of the MES Interface IT also from third party devices and send that information directly to MES and inventory management applications.

Making life easy

Mitsubishi Electric also offer a range of process solutions from dedicated process CPUs (with standalone, multi CPU or redundant configurations) through to isolated analog I/O devices and temperature input modules with wire break detection. These naturally include HART modules.

Additionally, through another Mitsubishi e-F@ctory Partner, Wonderware, process users can reduce their programming and Scada development time with the direct integration of Wonderware's InTouch Scada and Mitsubishi's PX Developer Process CPU programming tool.

Configuration ///



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