

OpreX™ Control Improvement Software

Integrated Recipe Manager (IRM)

IRM

Integrated Recipe Manager

Customer expectations for batch plants

In recent years, batch plants in the chemical, pharmaceutical and food industries have tended to focus on shorter product lifecycles and the speed with which products are brought to market. In addition, in the field of batch systems, there is a demand for quick recipe improvement efforts aimed at improving product quality and reducing the lead time to commercialization. For this reason, batch plants are expected to provide flexible operating environments for all recipe design, implementation and operation tasks that occur on site every day from the system introduction stage.

Integrated Recipe Manager

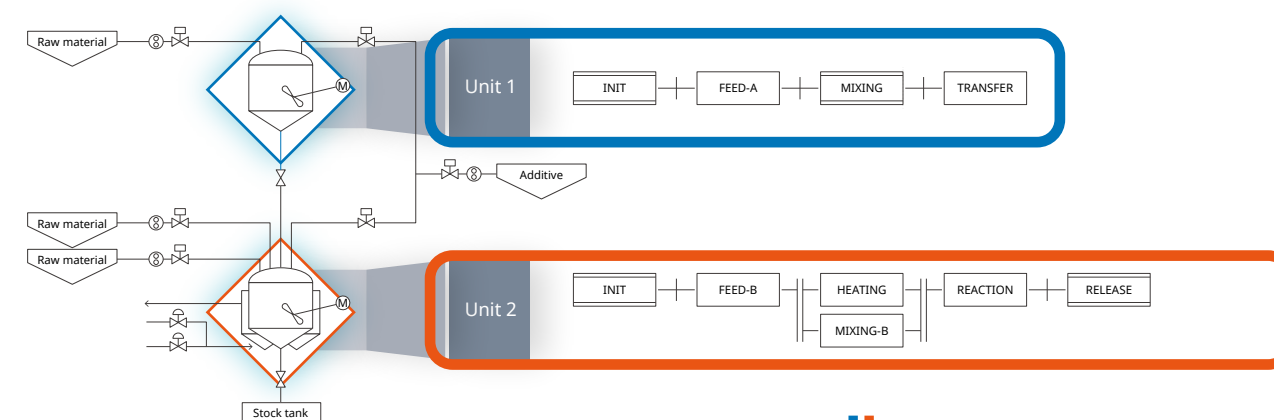
The OpreX Integrated Recipe Manager (IRM) is a new software package from Yokogawa designed to meet the demands for improving batch operations. It provides an engineering environment for integrated management of master recipes handled by both batch control and batch management using drawing tools and reusable template modules. It allows for the creation of requirements specifications for batch processes in CENTUM VP and designing and managing master recipes for more efficient batch control. IRM also enables more uniform quality in high-variety production.

Three Key Points to Efficiently Design Your Batch System

- 01 Aggregating all the information you need to create master recipes much more quickly
- 02 Designed from unit model to operation sequence, with a graphical user interface to simplify recipe engineering work
- 03 Simplified process design and engineering with reusable design modules, resulting in reduced timelines

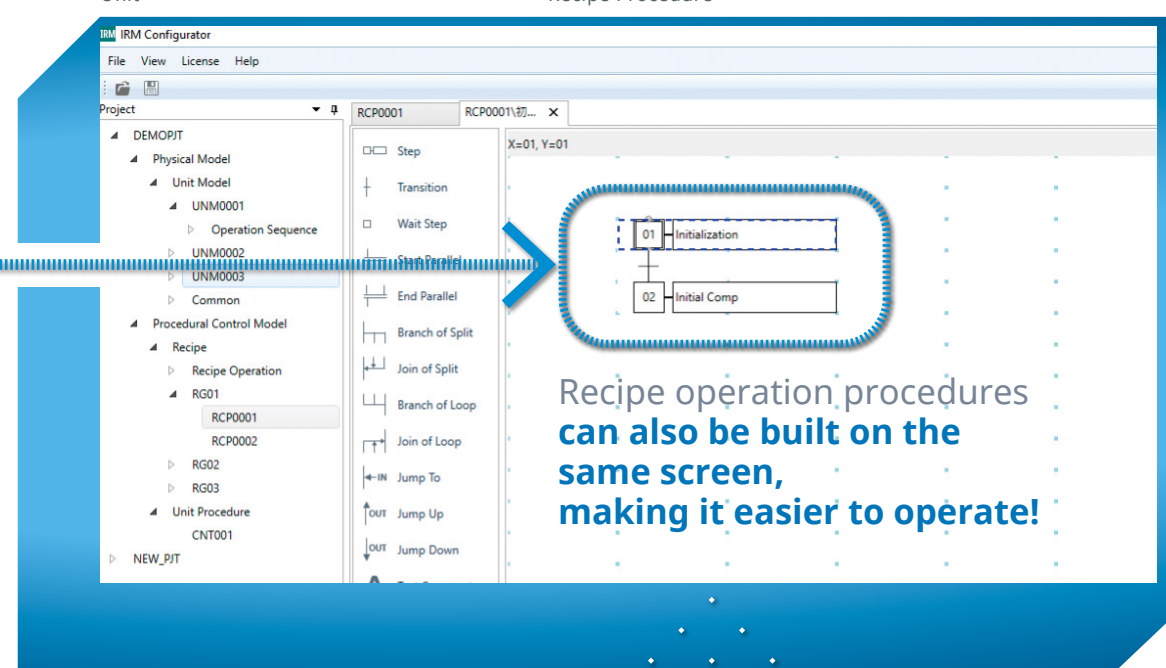
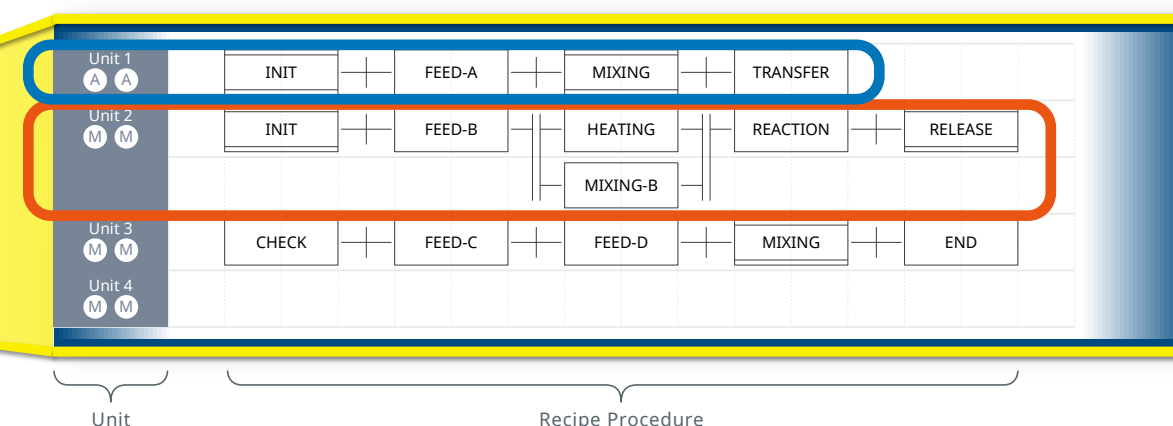
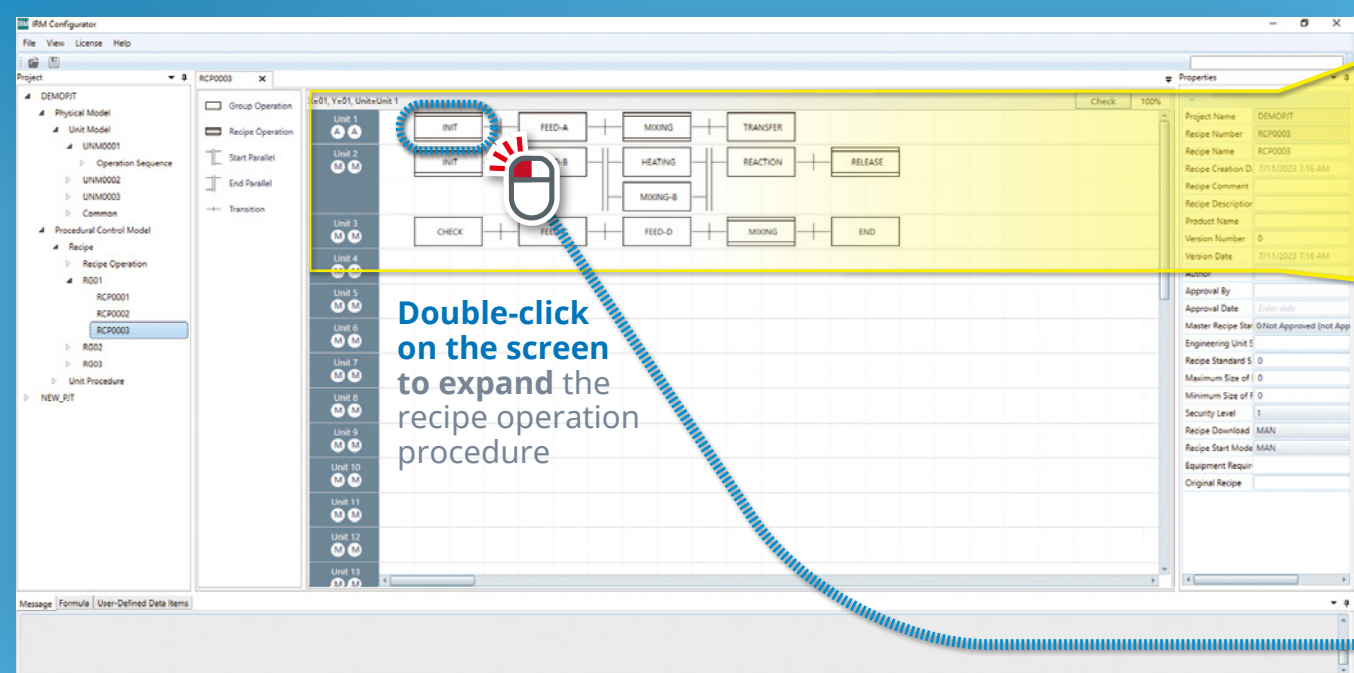
01 Aggregating all the information you need to create **master recipes much quickly**

When creating a master recipe, IRM can aggregate and link the constituent elements such as headers, procedures (recipe unit procedure, recipe operation procedure) and formulas, and also check the physical model screen defined in accordance with ISA-88 for efficient creation.



Recipe Procedure Configurator

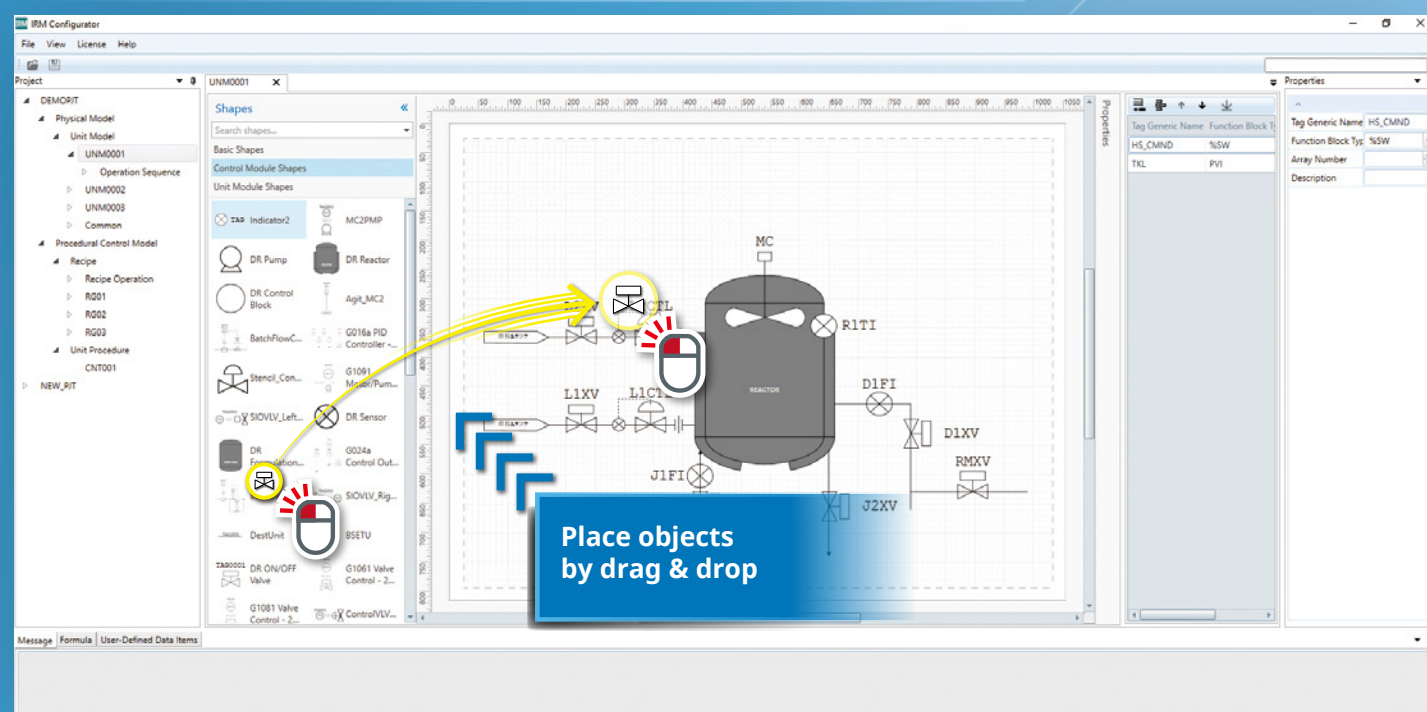
Higher visibility since multiple recipe procedures can be referenced on the same screen!



02 Designed from unit model to operation sequence, with a graphical user interface to simplify recipe engineering work

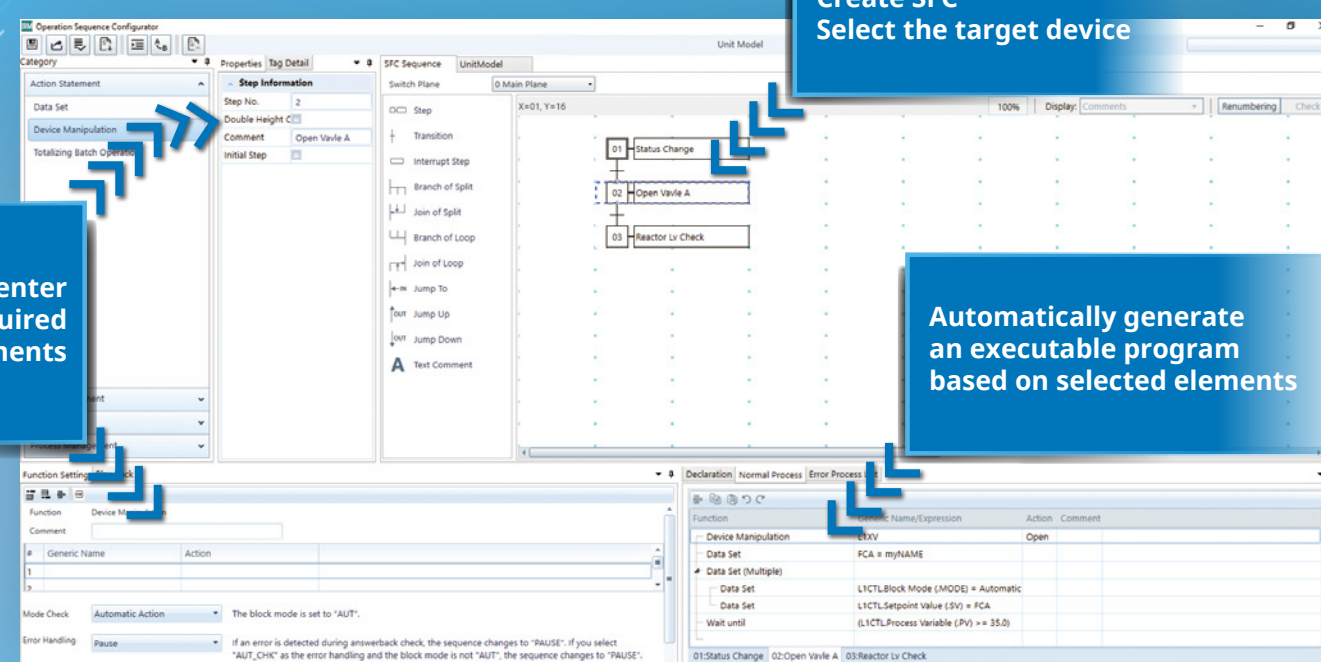
IRM allows you to design from a unit model to a unit sequence in an integrated fashion. It is possible to efficiently create the requirement specifications for the system when the plant is installed. Unit models can be illustrated graphically and related operation sequences can be built without programming through a pull-down selection method. The information in the requirements specifications is used to create batch controls.

Unit Model Configurator



Unit Model Configurator allows you to design unit models in the same manner as typical drawing software. Since IRM uses generic names rather than tag names that depend on actual physical devices, the design of the unit model can proceed even before the input and output information is finalized.

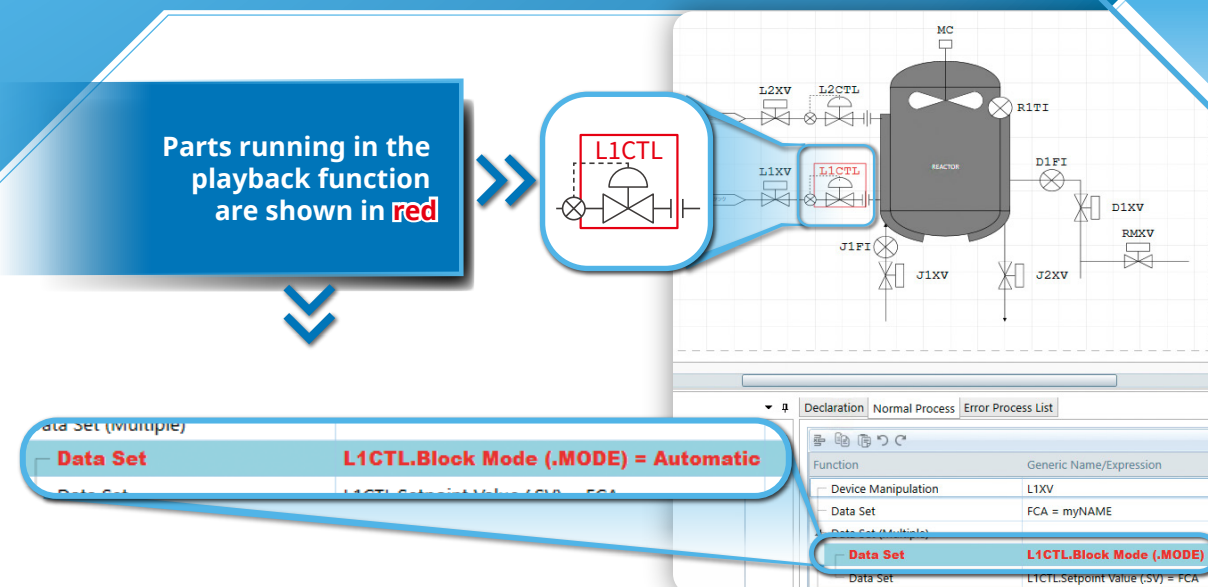
Operation Sequence Configurator



Each step and action in the operation sequence is determined by the definition in the unit model.

The playback feature allows you to see operation sequences you create in action without connecting to CENTUM VP.

Parts running in the playback function are shown in red

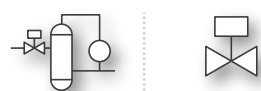


03 Simplified process design and engineering with reusable design modules, resulting in **reduced timelines**

Batch systems are often designed with similar control modules and sequences. IRM allows you to register and reuse control modules, sequences and recipes as parts in your library. By reusing registered parts as templates, you can achieve efficiency and consistent quality in creating system specifications and master recipes.

Register created modules, procedures, sequences, and etc.

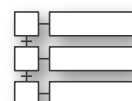
Unit module
Control module



Recipe unit procedure
Recipe operation procedure

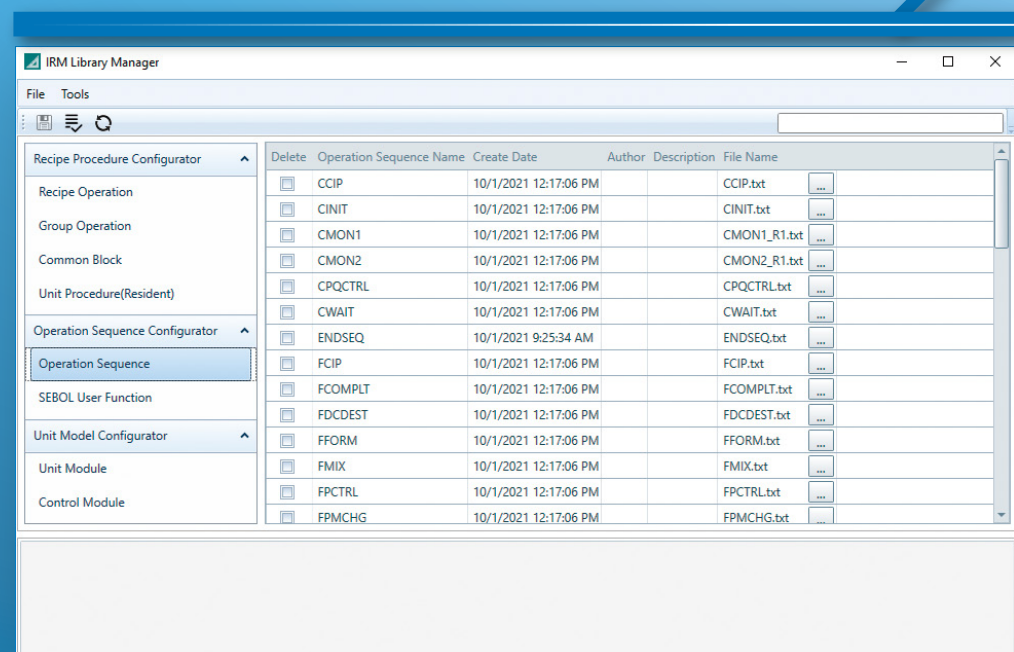


Operation sequence

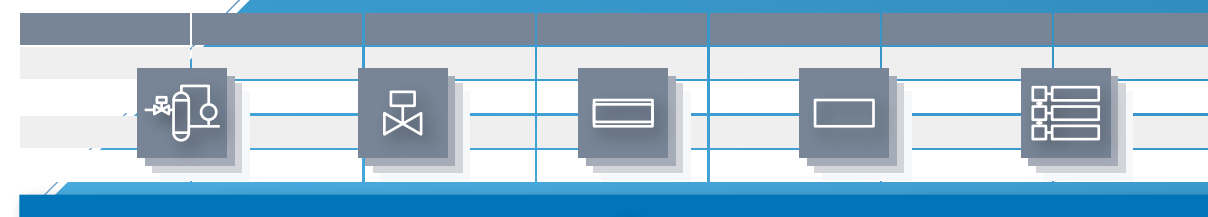


IRM Library Manager

Register and manage unit modules and control modules, recipe unit procedures, recipe operation procedures and operation sequences.

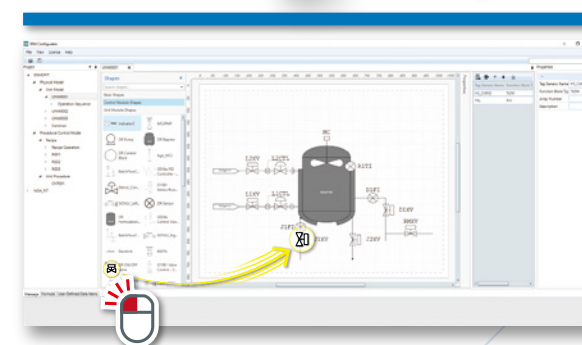


Registered modules

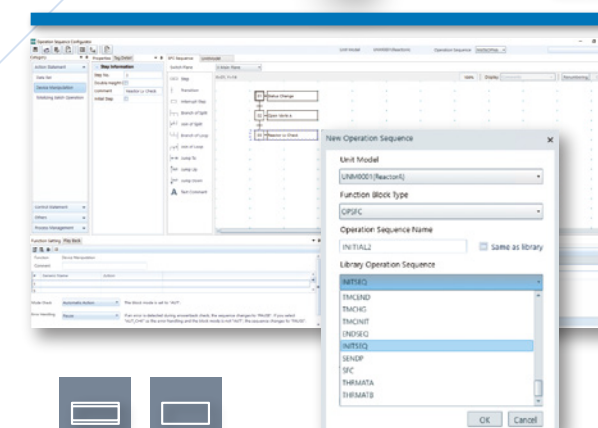


You can reuse the parts registered in the IRM Library Manager in each configurator.

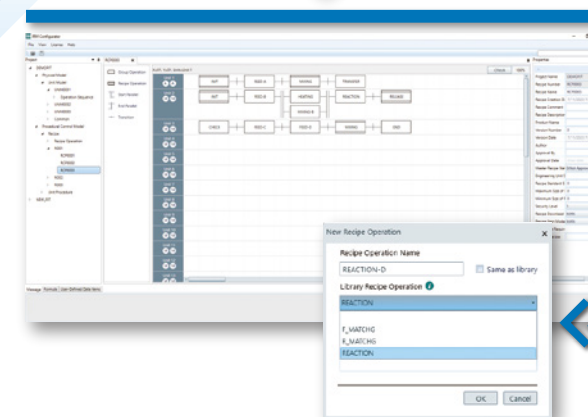
Unit model



Unit sequence



Master recipe

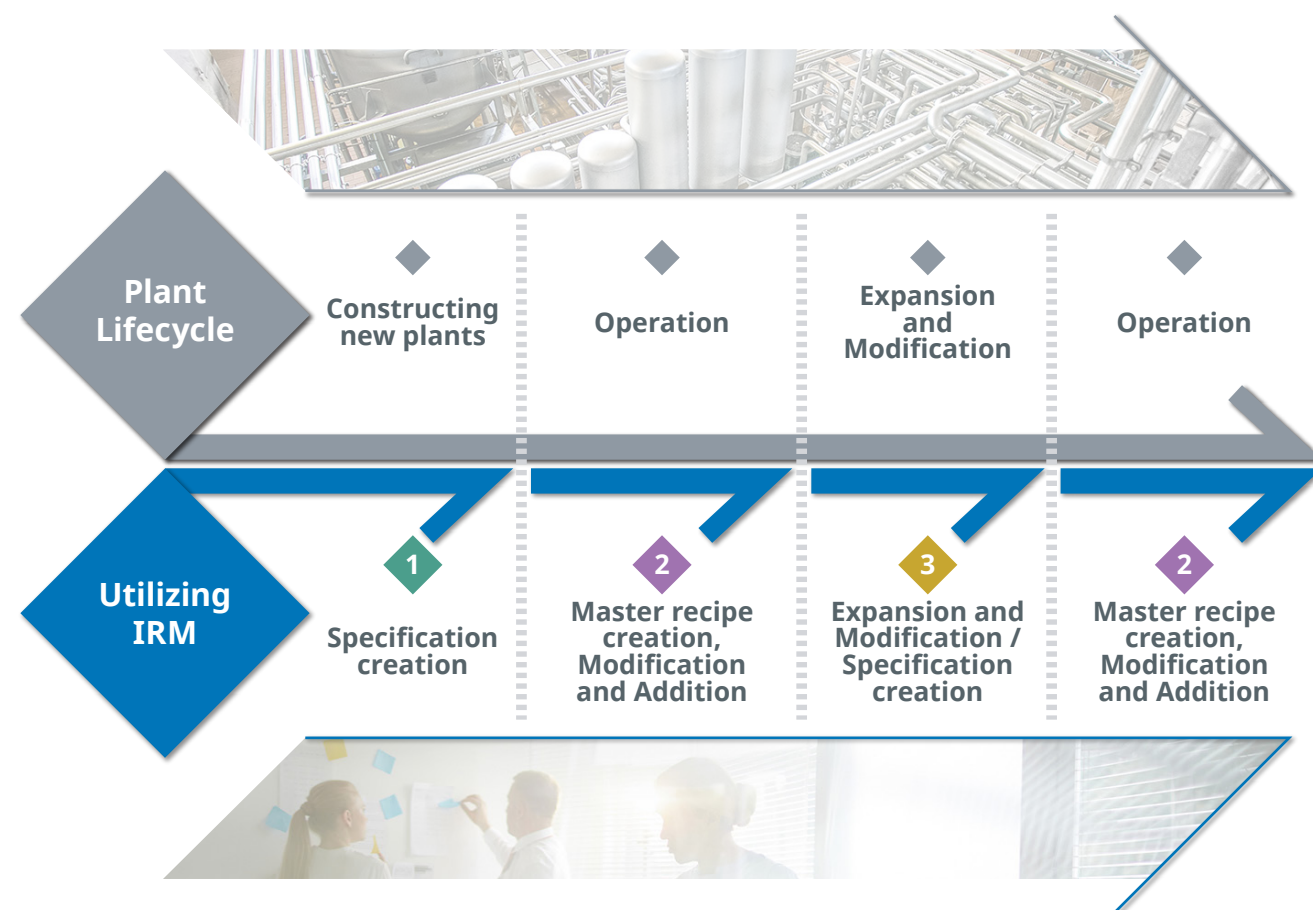


Select on new creation

Utilization in the lifecycle of a batch plant

IRM can be used in a variety of situations, including new batch plant installations and operations, expansion and modification.

- 1 When constructing new plants** It can be used to determine system specifications.
- 2 During plant operation** You can use it to create, modify, and add master recipes, as well as manage them as a whole.
- 3 When expansion and modification** It can be used to determine system specifications for expansion and modification.

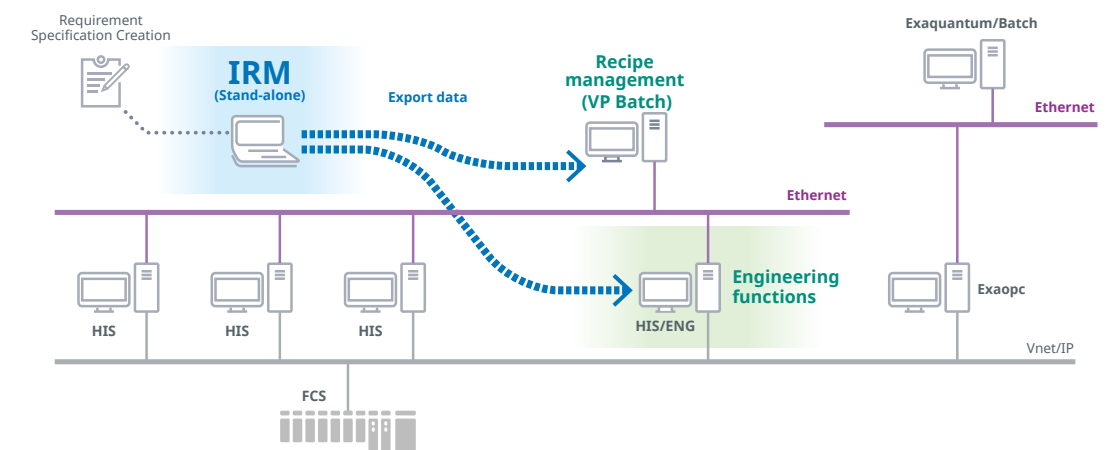


IRM System Configuration

IRM can be configured flexibly depending on how the system operates.

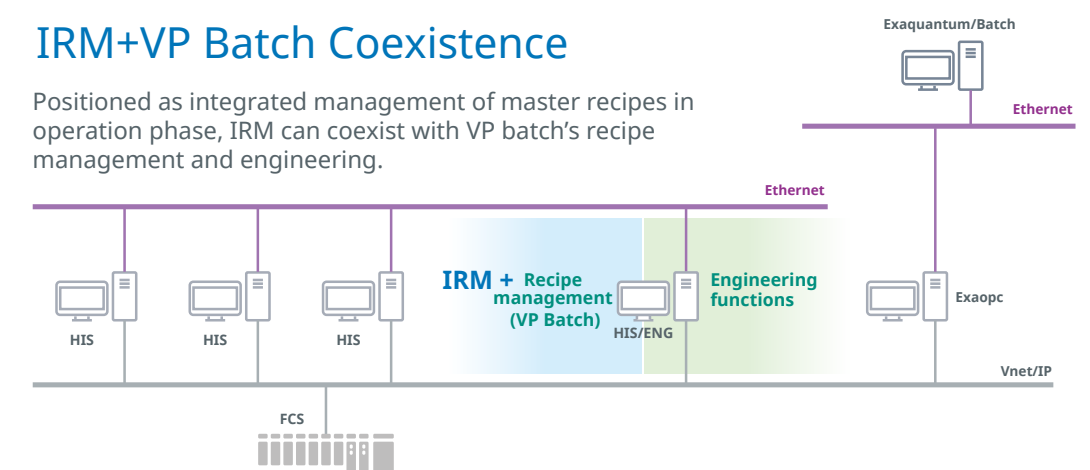
Stand-alone IRM System Configuration

Using IRM, the customer and Yokogawa engineers can meet before the system is implemented and create the requirement specifications.



IRM+VP Batch Coexistence

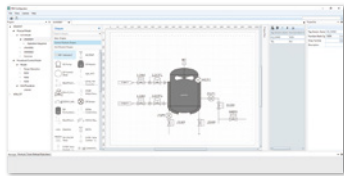
Positioned as integrated management of master recipes in operation phase, IRM can coexist with VP batch's recipe management and engineering.



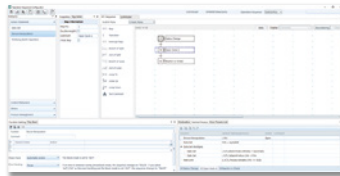
Key features of IRM

IRM Configurator

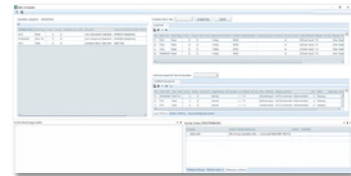
- ◆ **Unit Model Configurator** : Graphically draws and builds unit models that make up a batch plant
- ◆ **Operation Sequence Configurator** : Constructs an operation sequence of units or equipment modules
- ◆ **Data Configurator** : Manages variables defined on an operation sequence
- ◆ **Recipe Procedure Configurator** : Build procedures for non-resident units^(*1)
- ◆ **Unit Procedure Configurator** : Build procedures for resident units^(*2)



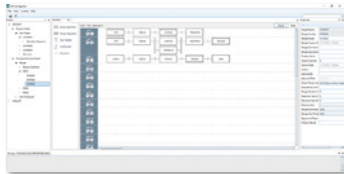
◆ Unit Model Configurator



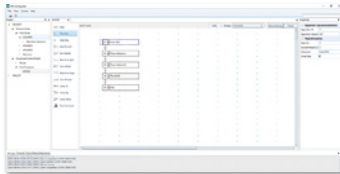
◆ Operation Sequence Configurator



◆ Data Configurator



◆ Recipe Procedure Configurator



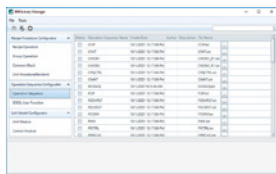
◆ Unit Procedure Configurator

*1 : The units created by the unit procedure vary depending on the product. These units are created using the master recipe of the batch management package (VP Batch).

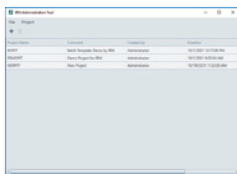
*2 : Units that have a fixed procedure and do not use master recipes, regardless of what unit procedure makes.

Other features

- ◆ **IRM Library Manager** : Build and manage reusable content
- ◆ **IRM Management Tool** : Create and manage IRM projects and back up and restore project data



◆ IRM Library Manager



◆ IRM Management Tool

OpreX™ Through the comprehensive OpreX portfolio of products, services, and solutions, Yokogawa enables operational excellence across the enterprise.

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