

# What's new in Opcenter Execution Process 3.3

## Enabling process-driven manufacturing through a scalable approach

### Benefits

- Provides visibility and synchronization with all manufacturing operations
- Facilitates native orchestration of heterogeneous activities
- Delivers full traceability of operations and materials
- Integrates sampling and quality control with Opcenter RD&L
- Supports multiple versions of SIMATIC BATCH software

### Summary

Opcenter™ Execution Process (EX PR) software (formerly known as SIMATIC IT Unified Architecture Process Industries) is Siemens' manufacturing execution system (MES) for the process and consumer packaged goods industries. Opcenter Execution Process can help you increase traceability, manage orders more efficiently and monitor production in real time – all based on a state-of-the-art platform and application approach. Opcenter Execution Process is part of the Xcelerator portfolio of solutions and services from Siemens Digital Industries Software.

In this release, the integration with SIMATIC BATCH is further enhanced with full high-availability and new functionalities. It is now easier to trigger a workflow execution in Opcenter EX PR based on SIMATIC BATCH events, which will guide and control shop floor activities. For example, during the execution of a batch, it may be necessary to

perform a quality check or add or discharge materials. The actions for the quality checks can be performed on Opcenter EX PR, using the new quality tasks orchestrated in a workflow, including work instructions to guide the operator. Once the actions have been correctly performed, Opcenter EX PR can send back the results of the actions and reactivate the batch execution.

This release also provides native integration with Opcenter Research, Development and Laboratory (RD&L) software, streamlining sample and request management between the two systems.

The new quality task enables at-line test execution and data collection by shop floor operators with its intuitive user experience. Once the operator has input the parameter values in Opcenter EX PR, the sample analysis is generated by Opcenter RD&L and then synchronized in Opcenter EX PR. This integration enables

The screenshot shows a 'Task Execution' window with a 'Quality Check' table. The table has columns for 'Parameter', 'Assign Date', 'Low Spec', 'Value', 'High Spec', and 'MS'. The 'Value' column for 'pH' is highlighted in yellow, indicating a deviation from the high specification.

Parameter	Assign Date	Low Spec	Value	High Spec	MS
pH	7/6/2020	2.00	2.40	2.50	0
PH	7/6/2020	8.00	10.75	10.75	0
Param1	7/6/2020	4.00	7.00	10.00	0
Param2	7/6/2020	15.00	40.00	45.00	0

the design of workflows evaluating the sample status to take quality control actions or to trigger rework processes.

The off-line testing tasks (sampling and wait) are enhanced to benefit from the native integration with Opcenter RD&L.

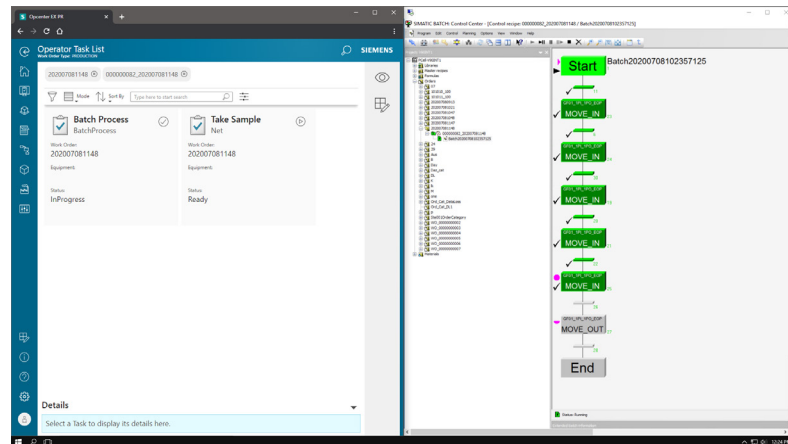
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It is now possible to configure the tasks to handle partial sample analysis, which enables the possibility of performing multiple tests over the same sample. This is particularly useful, for example, when performing physical, biological and chemical tests.

Opcenter EX PR 3.3 introduces the new step flow app and concept, with a light engine that orchestrates user interface steps guiding shop floor operators through the execution of any given manufacturing activity. Comparable to a classic installation wizard, the rendered flow of steps is a succession of user interface components displayed to the operator. This functionality is ideal for modeling simple and repetitive activities that can be broken down into single steps. Each step is composed of a unique user interface and a list of possible transitions (for example: success, failure or abort). The process engineer can design step flows by simply defining the transitions between individual steps and, optionally, their repetition and cancellation routes.

For example, weighing and dispensing operations typically require certain steps such as material selection, scale selection, scale tare, weight acquisition and scale release. With the step flow, you can easily define the execution sequence of those steps by simply linking their transitions. This allows for maximum re-use, since the steps can be present in many step flows, which accelerates the design phase. To facilitate even more, a graphical representation of the step flow is available during the design, showing all the selected steps and their transitions. The graphical representation is automatically generated, providing good visibility and readability to the process engineer.

The enhancements to material issuing and control now provide status control for lots and material tracking units, as well as lot expiration and due date



control. The controls can be configured to block the material usage during the production activities or to simply show warning messages. These controls are already embedded into the preparation and consumption tasks, but they are also available as a service for custom business logic implementation.

Material and lot potency are now available as new properties and the quantity set-point calculation is automatically performed during the execution of preparation and consumption tasks. The potency calculation is also available as a method for custom business logic implementation.

The new configuration app provides an easy way to manage configuration data that can be used by standard or custom business logic. The configuration keys are organized by domains, and they can be set with multiple values. The app also provides encryption for sensitive data and user-friendly user interfaces. Out-of-the-box configuration keys are available to support the new native integration with Opcenter RD&L and to activate the SIMATIC BATCH engineering data initialization needed for SIMATIC BATCH task execution.

Lastly, continuous improvement in the documentation brings a revised user manual to this release. The content is now focused on end-user procedures rather than app functionality. The

chapters are now organized in sections that facilitate reading:

- How to configure the production environment
- How to configure the production process
- How to manage production execution
- How to monitor production execution

## Features

### SIMATIC BATCH integration enhancements

- Full high-availability integration between SIMATIC BATCH and Opcenter EX PR
- Trigger natively MES work processes based on SIMATIC BATCH events to guide and control operator activities
- New configurable MES task to set SIMATIC BATCH phase parameter value or unblock phases
- Detailed documentation explaining how to exchange messages with SIMATIC BATCH through SIMATIC IT batch integration layer
- Detailed documentation explaining how to trace in Opcenter EX PR all the material movement operations performed on SIMATIC BATCH (MoveIn, MoveOut, MoveThru, MoveTransform, MoveTransformIn and MoveTransformOut)

### Quality execution and native integration with Opcenter RD&L

- New native integration with Opcenter RD&L via HTTP/HTTPS communication and SWAC-based user interfaces
- Sample analysis is generated by Opcenter RD&L and then synchronized in Opcenter EX PR
- Evaluate the sample analysis status in Opcenter EX PR workflow to take quality control actions and implement rework processes
- In case of re-analysis performed in Opcenter RD&L, an indicator is available and sent back to Opcenter EX PR with the new results, enabling custom business logic implementation
- Sample data and parameter values are available in Opcenter EX PR for custom business logic and reporting

### At-line testing task integrated with Opcenter RD&L

- The new task provides sample data collection for shop floor operators
- Intuitive user experience with colors showing values in or out of specification
- Supports handling of multiple parameter groups
- User interface shows the sample details and operation context

### Offline testing task enhancements

- The sampling and wait tasks can now be configured to use the new native Opcenter RD&L integration
- Data exchange with third-party laboratory information management systems (LIMS) is still possible via Opcenter Connect
- Offline testing now supports partial sample analysis, ideal for managing samples that are tested in various phases, such as physical, biological and chemical tests

### Material issuing enhancements

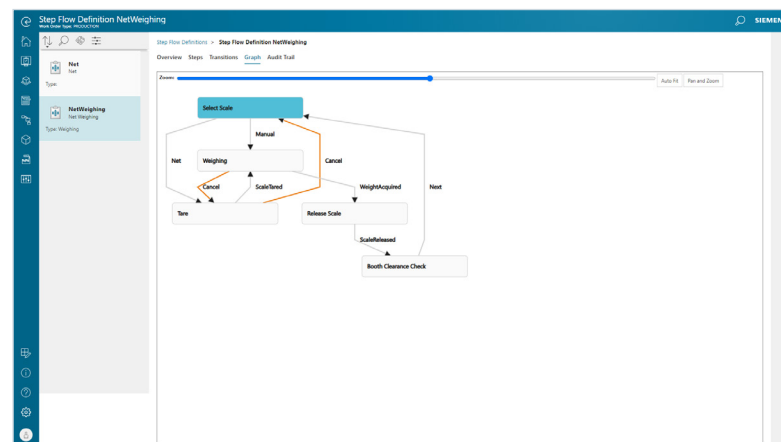
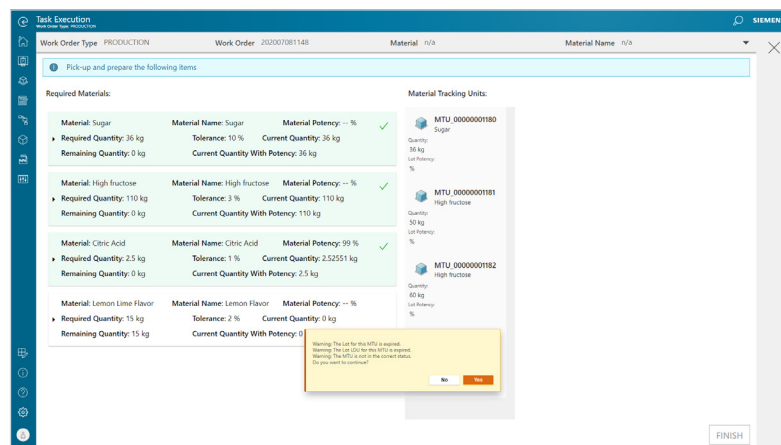
- Lot and material tracking unit status control
- Lot expiration and due date control
- Lot and material controls can be configured to block usage or show warning only
- Lot and material potency calculation at run-time to adjust set-point quantities
- Material issuing controls are already available in the preparation and consumption tasks, but can also be used by custom business logic

### New step flow app

- Light engine that orchestrates user interface steps that can be custom UI

components, SWAC components or even work instructions

- Ideal for modeling simple and repetitive activities that can be broken down into single steps
- The step flow is designed by simply defining the transitions between individual steps
- A graphical representation of the step flow is available during the design, displaying all steps and transitions
- Steps templates can be developed and re-used in step flows to accelerate the design phase
- During run-time execution, it allows the operator to focus and complete an activity with multiple steps in a single task



### New configuration app

- User-friendly and easy way to manage configuration data that can be used by standard and custom business logic
- Define a configuration domain and add your own configuration keys
- Support of multiple values for a single configuration key
- Optional configuration value encryption to protect sensitive data
- Out-of-the-box configuration domain and keys for integration with SIMATIC BATCH and Opcenter RD&L

### Revised user manual

- Content reviewed to focus on end-user functionality instead of the app structure
- New table of contents oriented towards functionalities, organized in chapters that facilitate reading

### New production historical records (traces)

- Work order creation
- Work order change status
- Work order operation change status

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