DIGITAL INDUSTRIES SOFTWARE

What's new in Opcenter Execution Process 4.3

Enabling the design and rollout of global manufacturing templates

Benefits

- Provide state-of-the-art platform to deploy predefined industry templates
- Translate business processes into codeless business logic with an open engineering and execution platform
- Synchronize business with manufacturing, including integrating automation and batch execution
- Deliver just-in-time and intuitive execution support for complex shop floor operations and seamless user experience for production operators

Summary

Opcenter™ Execution Process software is the Siemens Digital Industries Software manufacturing execution system (MES) for the consumer packaged goods, food and beverage and chemical industries. Using 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 4.3, which is part of the Xcelerator portfolio, the comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software, provides new capabilities for operation scheduling with material constraints, continuous quality control processes, traceability of material carriers, on-demand manual process execution, additional enterprise resource planning (ERP) interfaces and more.

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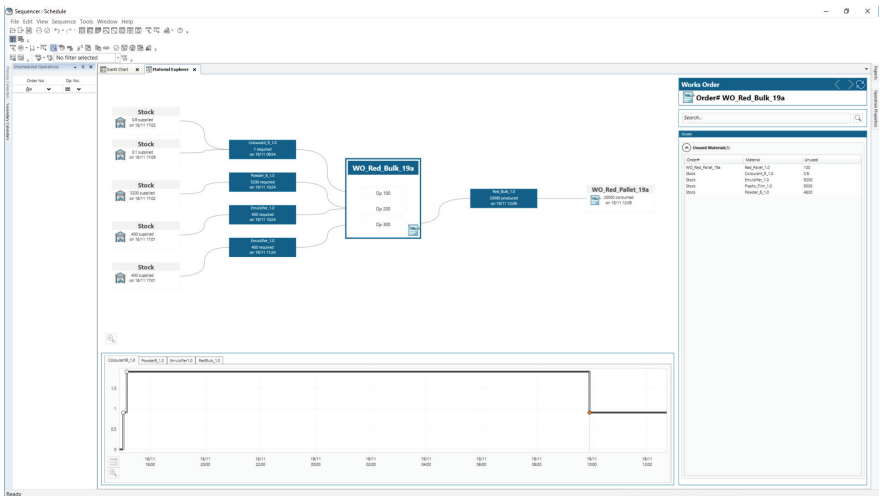
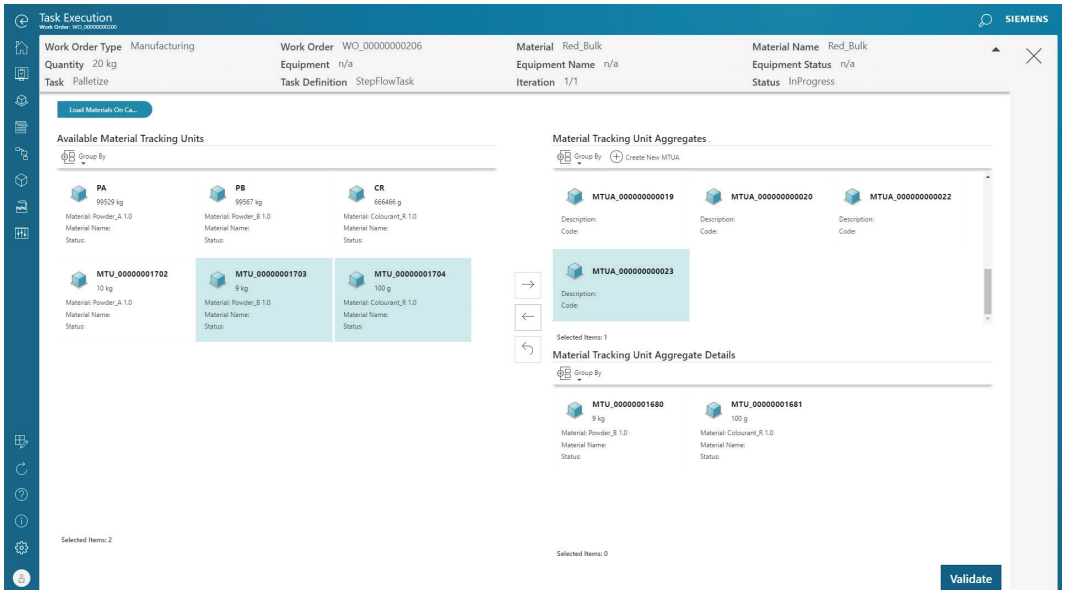
Benefits *continued*

- Integrate quality tests in shop floor processes, including lot quality control and information exchange with laboratory personnel
- Facilitate advanced planning and scheduling of operations and resources, optimizing equipment use and increasing efficiency

Leveraging the native integration with Opcenter APS software, operation scheduling is improved to take into account not only the equipment availability but also the materials necessary to complete the operation. Opcenter EX PR can be used to send material inventory details, the necessary ingredients and the product of each operation to Opcenter APS. With this information, Opcenter APS can be used to perform the operations' advanced scheduling by selecting the necessary material lots from the inventory, but also by establishing the relationship between the semi-finished goods produced by primary work orders, which become the input materials required by secondary and packaging work orders. This intrinsic and detailed dependency can be visualized in material explorer, which shows to the planner the selected lots and quantities necessary for realizing a given operation.

Opcenter Execution Process 4.3 introduces an easy way to configure continuous quality control processes based on produced quantity or a recurrent timer. You will be able to design workflows to manage the sampling and testing activities, using the out-of-the-box tasks that integrate natively with Opcenter Research, Development and Laboratory (RD&L), or any other custom tasks that might be necessary. Once the quality workflows are in place, you can assign them to a sample definition when the process needs to be triggered, which can be based on the amount of produced quantity or on a recurrent timer. For example, you can define by taking a sample of 1 liter for every 100 liters produced. During the execution of the work order, the system will automatically start the quality control process at the right moment as soon as the produced quantity reaches the limit for sampling. You can also define by taking a sample of 1 liter every 2 hours. In this case the system will automatically start the quality control process and remind the operator with a red dot indicator if the tasks are not performed on time, thus helping the operator to perform the quality control at the right time.

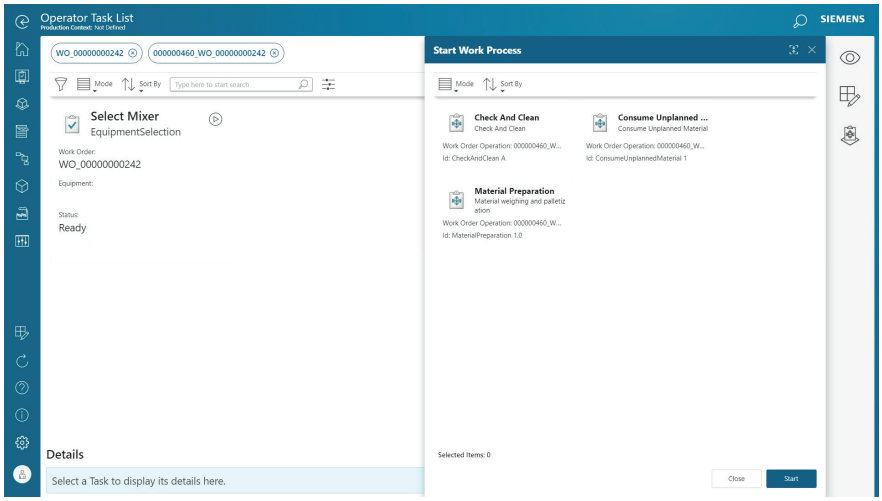




In both cases, the shop floor operator user experience remains straightforward: He or she simply has to perform the tasks displayed on the operator cockpit, which will automatically pop up at the right moment.

In Opcenter Execution Process 4.3, material tracking unit aggregates can be used to model many types of material carriers such as pallets, cages, containers, shipping boxes and even trucks. This new release extends its capabilities to handle the materials in these carriers. It will be possible, for example, to prepare materials for production and load them into one or more carriers and have them moved to the production area. Once the carrier barcode is scanned at the production line, the operator can simultaneously confirm the consumption of all the materials. Moreover, this release provides traceability for all movements and activities performed with these carriers. When moving a pallet from location A to B, for example, the system will trace the movement for every single material tracking unit inside that pallet.

One of the main pillars of Opcenter Execution Process is the capability to translate business processes into codeless business logic with an open engineering and execution platform. These business process flows are based on tasks that are orchestrated by a workflow engine, guiding the shop floor operator and automation systems in realizing manufacturing operations. In Opcenter Execution Process 4.3, Siemens is introducing the capability to let shop floor operators select and manually start work processes with tasks. In a similar way, the production coordinator is also capable of selecting a work order operation and starting an activity on-demand, effectively pushing tasks to the shop floor. This capability is ideal for managing activities that are not meant to be automatically started by the system; for example, waste and scrap management, rework activities, checklists, shift logbook, nonconformance declaration and others. Additionally, the production coordinator has visibility into all the activities performed on the work orders, including visualizing the workflow progress as the tasks are executed on the shop floor.



Finally, this release also improves the vertical integration with ERP systems by adding new interfaces that can be used to download information with message-based integration provided by Opcenter Connect for Manufacturing Operations management (CN MOM). This release provides the capability to download material classifications, characteristics and production versions. This information is included in Opcenter Execution Process and is readily available for custom implementations. It is now also possible to download entire work masters from external systems, including their operations with complete specifications for parameters, materials, equipment and processes.

In summary, using Opcenter Execution Process 4.3 optimizes the manufacturing efficiency with the advanced scheduling of operations (considering available equipment and necessary materials). It also facilitates the configuration and execution of continuous quality control processes, seamlessly integrating manufacturing and quality activities. This release also provides new capabilities to perform, control and monitor unpredicted activities on the shop floor and new out-of-the-box integration messages to download information from ERP systems. These improvements and many others are available now with Opcenter Execution Process 4.3.

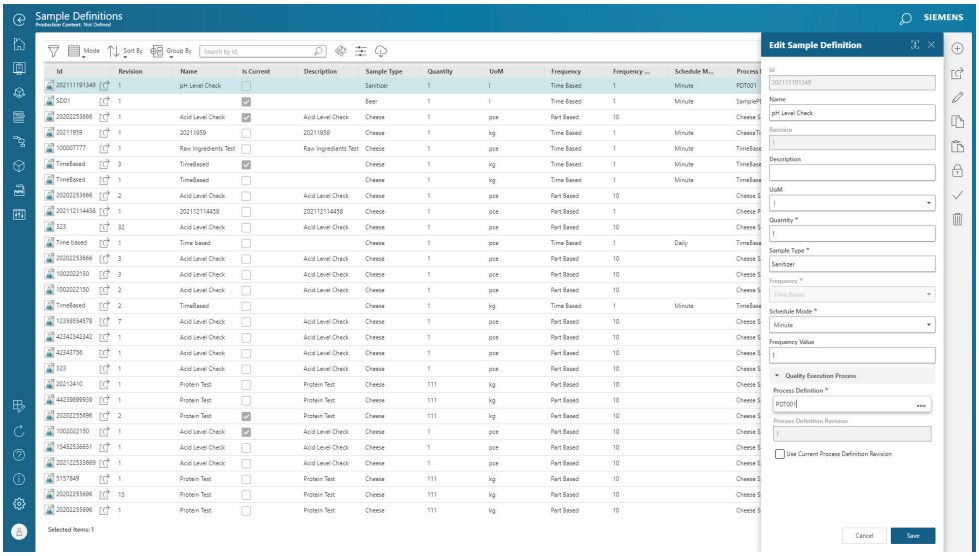
Features

Advanced operation scheduling with material constraints

- Schedule operations considering material available in the inventory and materials to be produced by other operations
- Ideal for scheduling primary and secondary work order with semifinished goods dependency
- Using Opcenter APS, view the planned material lots and quantities for a given operation in material explorer

Continuous quality control

- Easily define sampling and quality processes based on produced quantity or recurrent timer
- The system automatically starts the quality control process according to the produced quantity
- In the time-based quality control activities, the operator is notified if the quality tasks are not performed on time



Traceability and additional functionalities to manage material carriers

- Traceability of all movements performed with pallets, containers, cages and carriers
- New operational user interface to easily place material tracking units in pallets
- Possibility to consume all materials in a pallet with single barcode scanning

On-demand process execution

- Process engineers can design workflows to be executed manually and on-demand
- Shop floor operators can start new work processes at any time directly from the operator cockpit
- Production coordinators can manage the workflows assigned to the work order and monitor their progress
- Production coordinators can start new work processes on-demand, which will trigger new tasks for the shop floor operators

Additional standard ERP interface messages

- Download of material classifications and characteristics
- Download of production versions
- Download of production routings as work masters

Serviceability and extensibility improvements

- OpenAPI specification support: faster and easier discovery and testing of available application programming interfaces (APIs) deployed in your solution
- Improved auto-numbering capabilities with new time formats and the possibility to assign multiple alternative numbering patterns, including support of regular expressions and custom numbering parts
- New advanced mode for the configuration of signal rules, including a SQL-like syntax to configure complex filter expressions and support mathematical and logical operators

Performance improvements

- Improved performance of the business task flow orchestration engine, allowing tasks to be displayed and processed faster thanks to a new internal caching mechanism
- Significant improvements to read data via complex OData queries thanks to the optimization in the OData serialization layer

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