



DIGITAL INDUSTRIES SOFTWARE

# What's new in Opcenter Execution Discrete 2207

Leveraging out-of-the-box solutions for complex assembly and job shop environments

## Benefits

- Leverage out-of-the-box solutions for complex assembly and job shop environments
- Confirm quality of production by tracking the result of each activity during operation execution
- Support material traceability with shop floor integration
- Provide immediate knowledge about the position of an item in the plant factory
- Enable integration with generic QMS to import quality master data
- Simplify quality operator activity, giving visibility into documents and instructions to correctly perform quality checks

## Summary

Opcenter™ Execution Discrete (EX DS) 2207 software, which is part of the Siemens Xcelerator portfolio, the comprehensive and integrated portfolio of software, hardware and services, is designed to meet the needs of industries that execute sequential discrete manufacturing functions, including:

- Automotive tier suppliers
- Aerospace and defense tier suppliers
- Energy and utilities
- Industrial machinery
- Heavy equipment
- White goods and home appliances

It can also meet the needs of companies performing complex parts manufacturing and assembly and additive manufacturing.

By using Opcenter EX DS you can leverage specialized out-of-the-box (OOTB) functions for complex assembly manufacturing, job shop environments (high complexity, low volume) and automated repetitive manufacturing industries (configurable products, high volume).

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Opcenter Execution Discrete 2207 introduces a new multi-plant architecture that allows you to manage multiple factories from a central installation. In a multi-plant scenario, this manufacturing solution can be configured with both common settings and options for plant-specific tuning, and you can implement run-time operations with a multitenancy approach.

There are many benefits to running a multi-plant scenario:

- Reducing costs due to the need for a limited number of servers, updates and patches
- Simplifying the overall architecture to reduce any human error during system alignment
- Reducing the rollout time for a new plant Enabling standardization and harmonization that imply less configuration effort

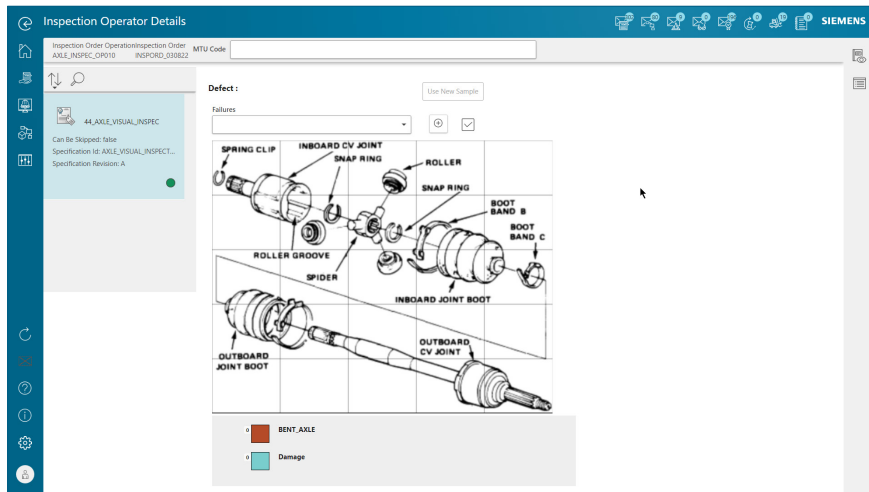
The new multi-plant architecture also provides great value for:

- Business continuity: A plant has no downtime during updates to other plants and there is no need to stop during the rollout of new plants
- Security and usability: You have visibility into and can modify only the data related to your plant
- Robustness: The performance of one plant is not affected by workload peaks or the issues of other plants

**Features**

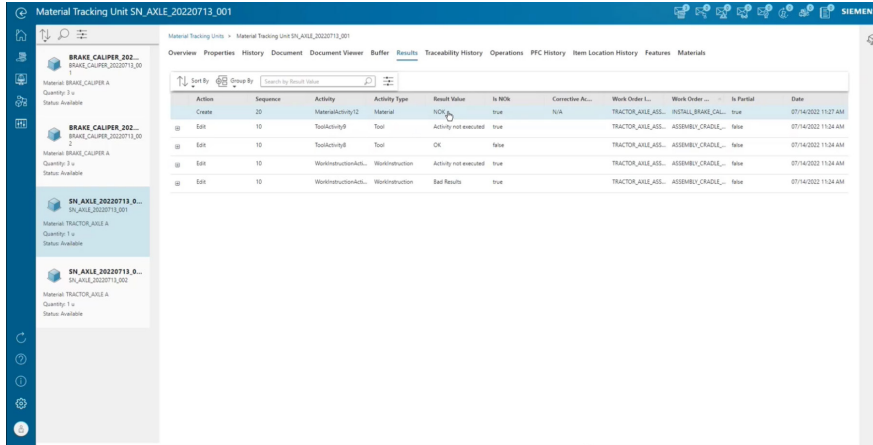
Unit-based quality inspections:

- The Opcenter Execution Discrete Quality Inspection module is supported with an additional configuration option. Inspection can now be configured with a new type of frequency; for example, it can be unit based to execute the inspection at a frequency that is expressed with the implicit unit of measure of the material that is going to be inspected
- During the production execution, the system will count the material produced (for example, completed) of the referenced work order operation and automatically trigger the inspection task only when the value for the sampling frequency is reached



### Disassembly feasible from material consumption

The possibility of disassembling a consumed material tracking unit has been extended to the material consumption context. For example, operators can select and then proceed to dismantle incorrectly assembled pieces from a material tracking unit (MTU), specifying the relative quantity to be disassembled. Partial disassembly is only permitted under certain conditions.



### Enhancement on red lining

The red lining functionality now supports the insertion of brief notes directly on images by using a text box. In addition, the text box accepts Japanese characters, which can be inserted via the IME PAD interface.

### Can be paused by any user

The work order operation can be paused by any user, even if the user did not start it. The configuration key name is updated as a pause/complete work order operation by different users and this key must be enabled.

On the as-built page, it's possible to see all activities performed by the operator. The machine involved in execution of the work order/execution group is automatically set to ready for all production types.

### Use cases with shop floor integration

New interfaces are available to exchange data between the manufacturing execution system (MES) and the shop floor with the purpose of realizing business use cases.

The contracts mentioned below are implemented based on delivered handshake protocols:

- Contract ReqMaterialConsumption
- Contract ExecConsumeMaterials
- Contract TrackItemLocation

Also, a heartbeat mechanism is implemented to check the status of automation node (ATN) instance on the programmable logic controller (PLC) side.

### Import inspection master plan

The inspection master plan can be imported through a properly formatted XML file. By default, the system provides a set of data flows to be used to import specific data types.

### Import work orders from a master plan and as planned

Work order can also be imported from a master plan and as planned through a properly formatted XML file. By default, the system provides a set of data flows to be used to import specific data types.

Once the workflow is imported, message types must be created for both automatic call and automatic response.

### Multi-plant scenario in Opcenter Connect MOM

Opcenter Execution Discrete supports the message exchange with Opcenter Connect MOM in case there is a multi-plant scenario. This can be achieved in one of the following ways:

- Specifying the plant identification (ID) in the XML file that must be exchanged between the two systems
- Specifying the plant ID in a manufacturing operations management (MOM) connection

In OOTB configuration, the shop floor file adapter and input file adapter are already configured to be plant specific, and we linked them to the default plant MOM connection that has the address for the plant in it, for example: `http://myEXDSServer/sit-svc/Plant1`.

### Opcenter Connect MOM direct dispatch

Opcenter Connect MOM direct dispatch is supported for messages exchanged with the shop floor. For a multi-plant scenario, only one plant can be addressed as the MOM connection and that can be overwritten when you configure a direct dispatch.

### Multi-plant scenario in APS

The information exchange between Opcenter Execution Discrete and Opcenter APS also facilitates operation scheduling and advanced planning in case of a multi-plant situation.

There are two possibilities:

- If you have one Opcenter APS per plant then nothing is changed. Advanced planning and scheduling (APS) will be configured with Opcenter EX DS URL for the related plant
- If you have more than one Opcenter APS per plant then the APS configuration needs to be created separately for each plant. Also, a security certificate needs to be imported for each plant

In case of multiple Opcenter APS plants, the service Uniform Resource Identifier (URI) for each plant in respective configuration packages should have the plant ID in it. For example, `http://<server name>/sit-svc/<plantId>/Application/AppU4DM/odata`. Here, `<plantId>` is the plant in case of multi-plant scenario, and if no plant is specified, then it indicates the default plant.

### Result at activity level

As of this version, the concept of result for work order operations has been extended to also include the result at the activity level. At the time the work order is created through the implementation of dedicated configurations, multiple activities are created for the following specification types:

- Materials to be consumed
- Tools to be used
- Inspection definitions
- Work instruction definitions

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