

PM-CONTROL

What is new in V12.2

Process Management System WinCC Add-ons

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PM-CONTROL

New Features in Version 12.0



UNICODE



Controls for WinCC Unified



Parameters relevant for Signature



XML Import/Export of Recipes via Script

PM-CONTROL

New Features in Version 12.0



Changing Recipe states via Script



Reason for Change when saving Recipes/Products



Extended Disposition List



MQTT Station

PM-CONTROL

New Features in Version 12.0



New Function Blocks for Calculations and Aggregations



Drag & Drop



Search & Replace

PM-CONTROL

New Features in Version 12.1



New Controls for WinCC Unified



Visibility and editability of pages in Recipe System

PM-CONTROL

New Features in Version 12.2



New control for WinCC Unified: “OrderView”



New features in WinCC Unified control “RecipeEdit”



Recipe copy upon release



XML export upon Recipe release

PM-CONTROL

New Features in Version 12.2



Extended regular expressions for job header validation



Support of new SCADA system and operating system versions

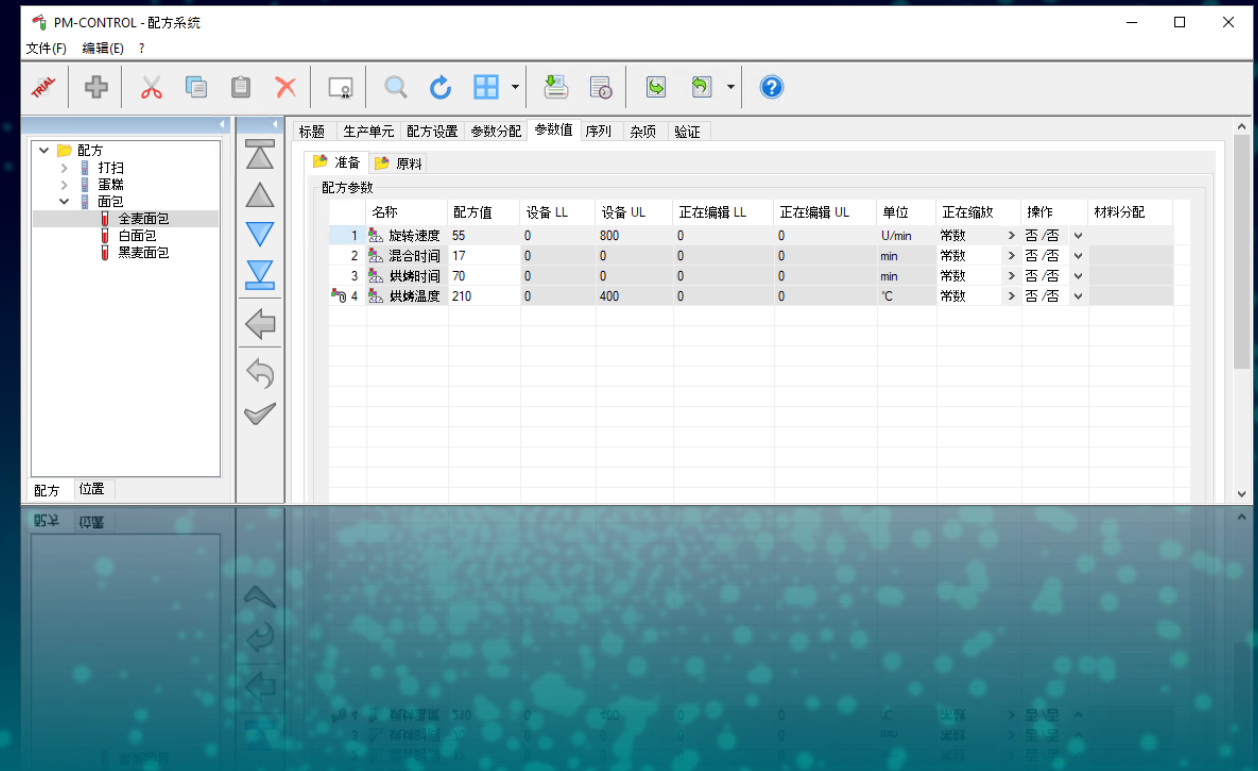


Automatic Backups

New in Version 12.0 UNICODE

All parts of PM-CONTROL (including PM-SERVER) support UNICODE encoding.

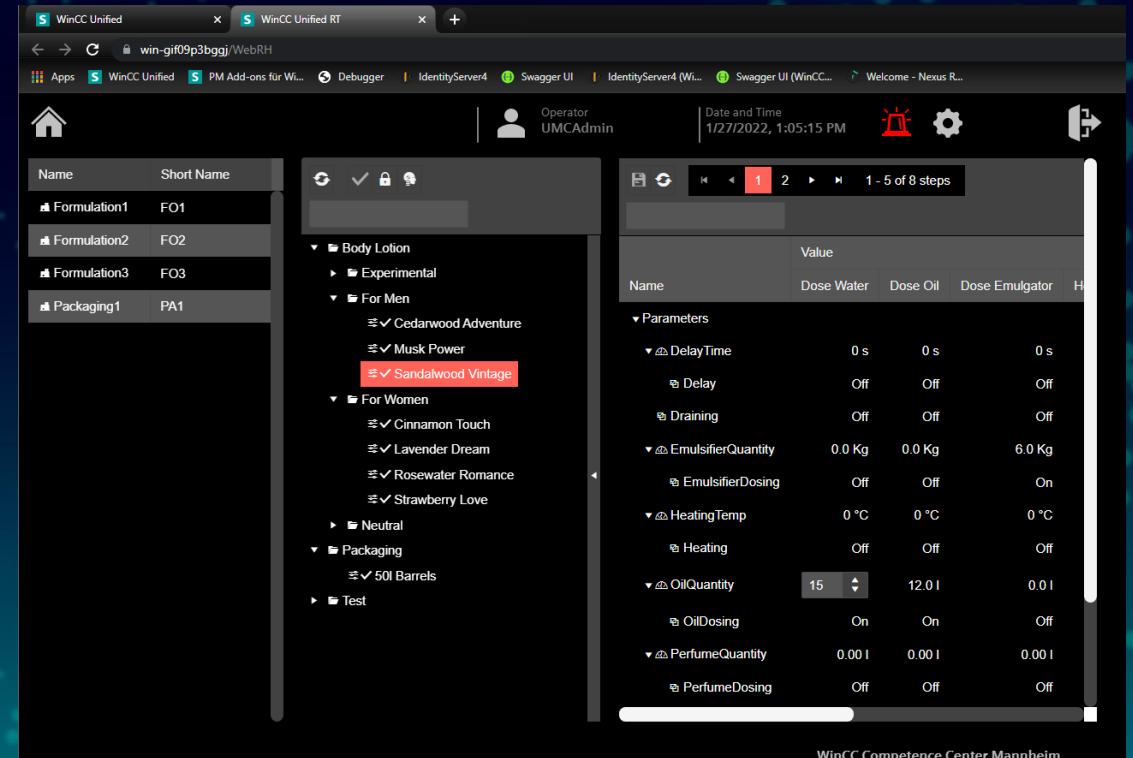
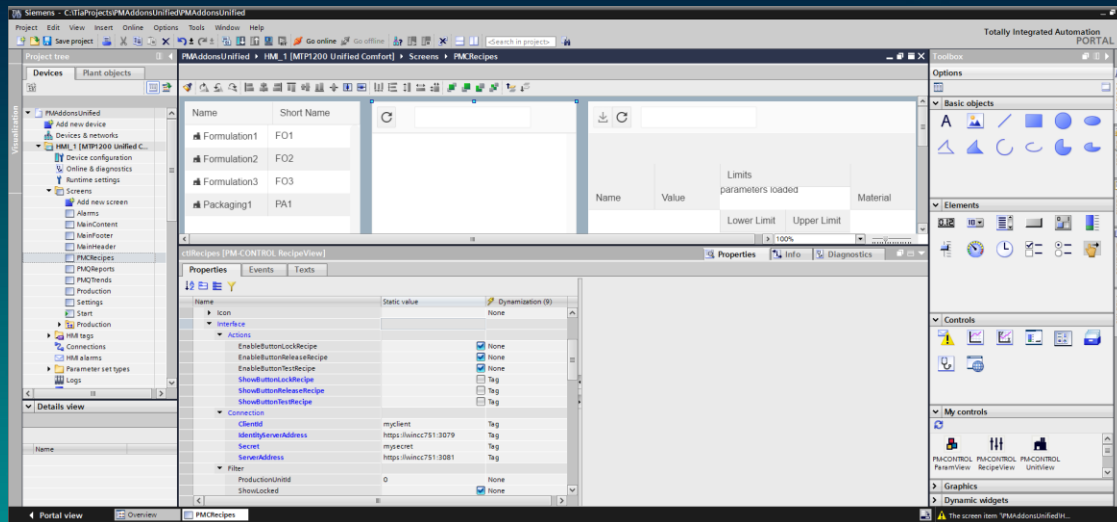
It is now possible to change the language independently of the Windows setting “Locale for non-UNICODE applications”.



New in Version 12.0 Controls for WinCC Unified

For WinCC Unified there are new UI controls:

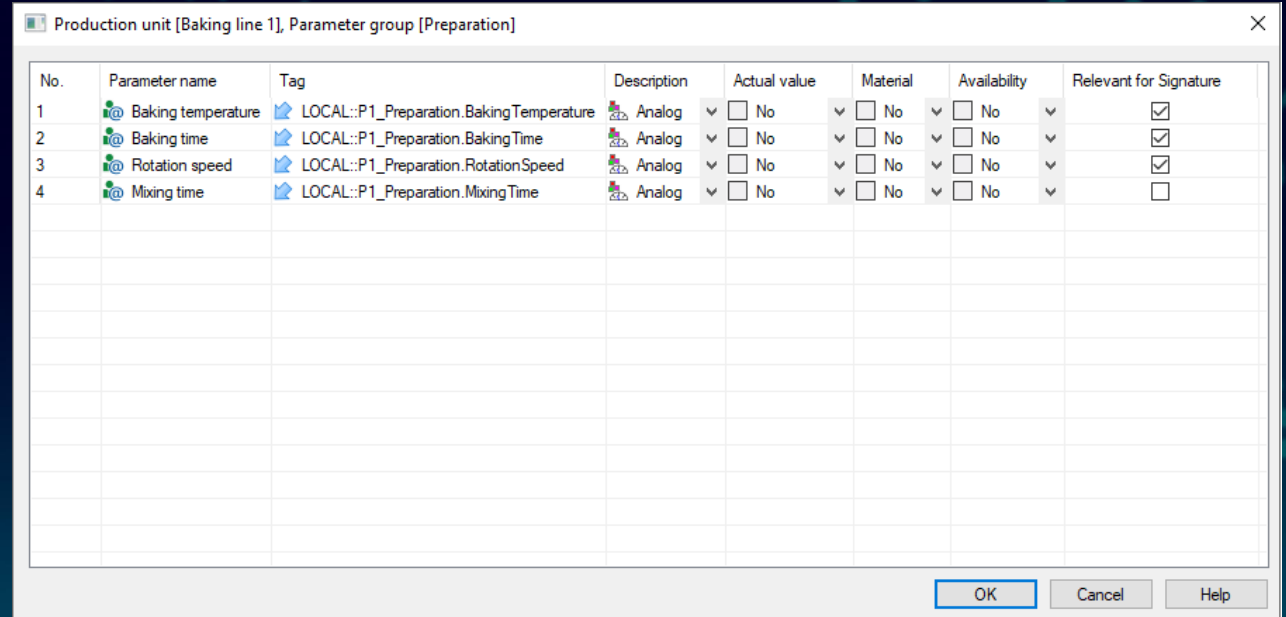
- For Selection of a Production Unit
- For Selection of a Recipe
- For displaying and editing Parameters of a Recipe



New in Version 12.0 Parameters relevant for Signature

In PM-CONTROL Topology Parameters can be marked as relevant for Signature.

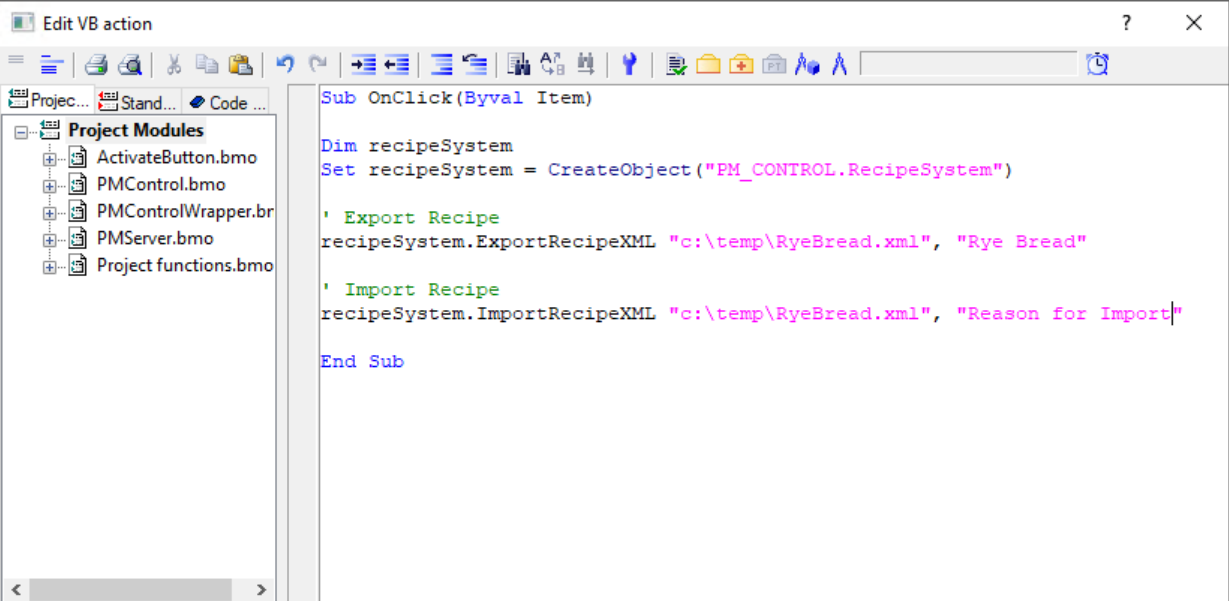
When editing Recipes only marked Parameters will have an effect on the Parameter Values Signature of the Recipe.



No.	Parameter name	Tag	Description	Actual value	Material	Availability	Relevant for Signature
1	Baking temperature	LOCAL::P1_Preparation.BakingTemperature	Analog	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input checked="" type="checkbox"/>
2	Baking time	LOCAL::P1_Preparation.BakingTime	Analog	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input checked="" type="checkbox"/>
3	Rotation speed	LOCAL::P1_Preparation.RotationSpeed	Analog	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input checked="" type="checkbox"/>
4	Mixing time	LOCAL::P1_Preparation.MixingTime	Analog	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/>

New in Version 12.0 XML Import/Export of Recipes via Script

It is possible to import and export Recipes via script e.g. with VBS.



```
Sub OnClick(Byval Item)
Dim recipeSystem
Set recipeSystem = CreateObject("PM_CONTROL.RecipeSystem")
' Export Recipe
recipeSystem.ExportRecipeXML "c:\temp\RyeBread.xml", "Rye Bread"
' Import Recipe
recipeSystem.ImportRecipeXML "c:\temp\RyeBread.xml", "Reason for Import"
End Sub
```

Line: 10
Column: 10

New in Version 12.0

Changing Recipe states via Script

The state of a Recipe can now be changed via script.

```
Sub OnClick(Byval Item)
Dim recipeSystem
Set recipeSystem = CreateObject("PM_CONTROL.RecipeSystem")

' Release Recipe
recipeSystem.ReleaseRecipe "Rye Bread", "Reason for Release"

' Set Recipe for Testing
recipeSystem.TestRecipe "Rye Bread", "Reason for Test"

' Lock Recipe
recipeSystem.LockRecipe "Rye Bread", "Reason for Lock"

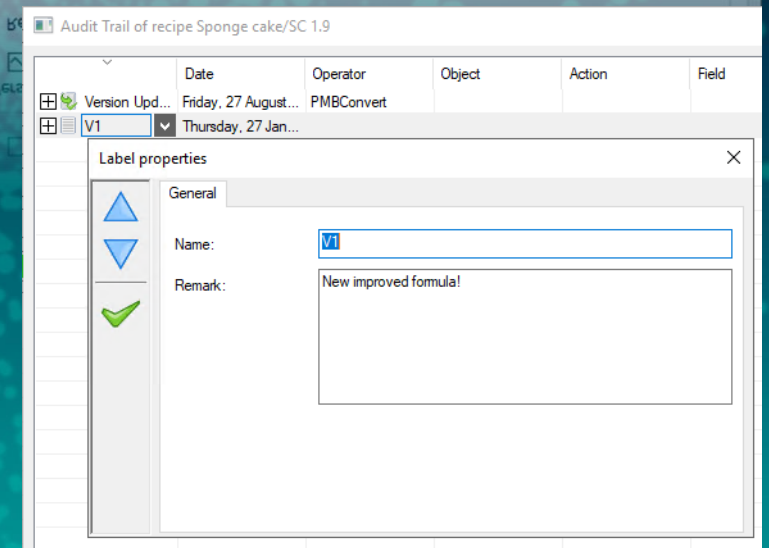
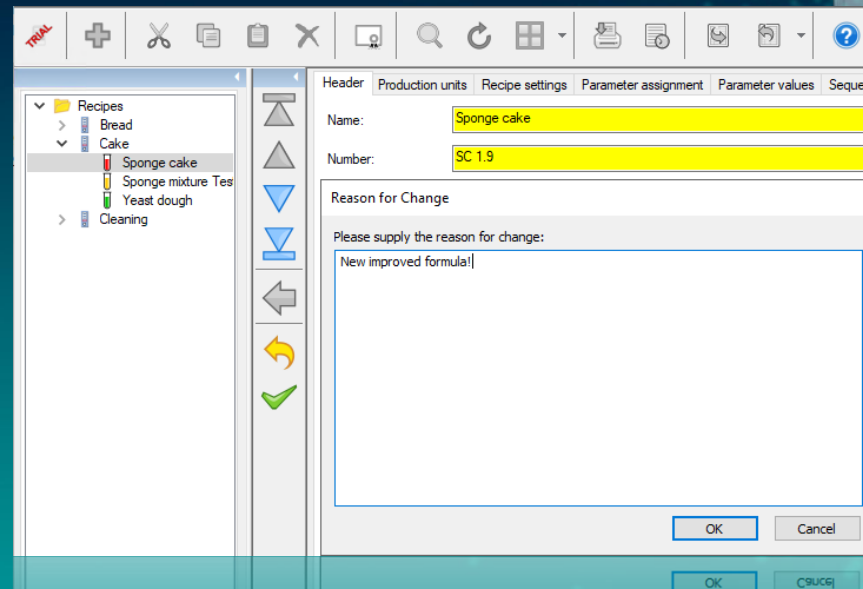
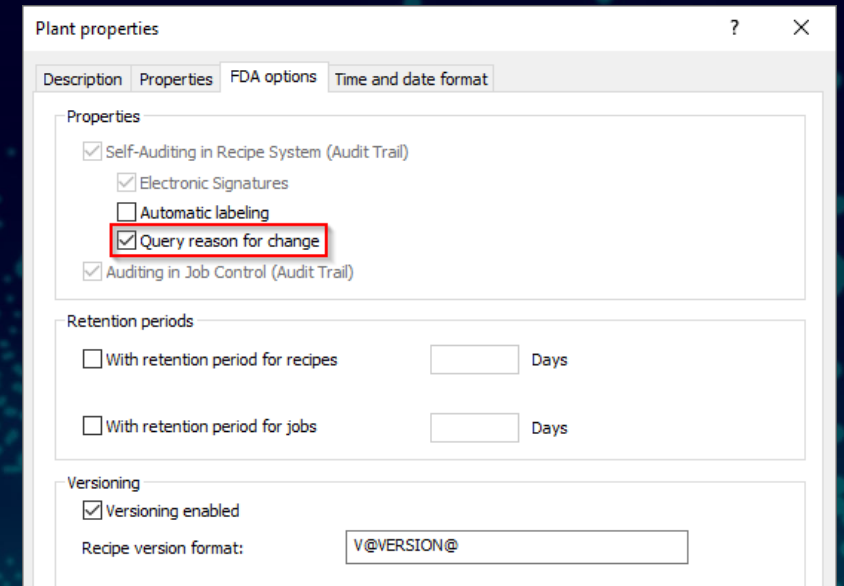
End Sub
```

New in Version 12.0

Reason for Change when saving Recipes/Products

A reason for change can be queried when releasing a Recipe/Product („Versioning enabled“) or every time a Recipe/Product is saved („Automatic labeling“).

The reason for change is displayed in the Audit Trail.

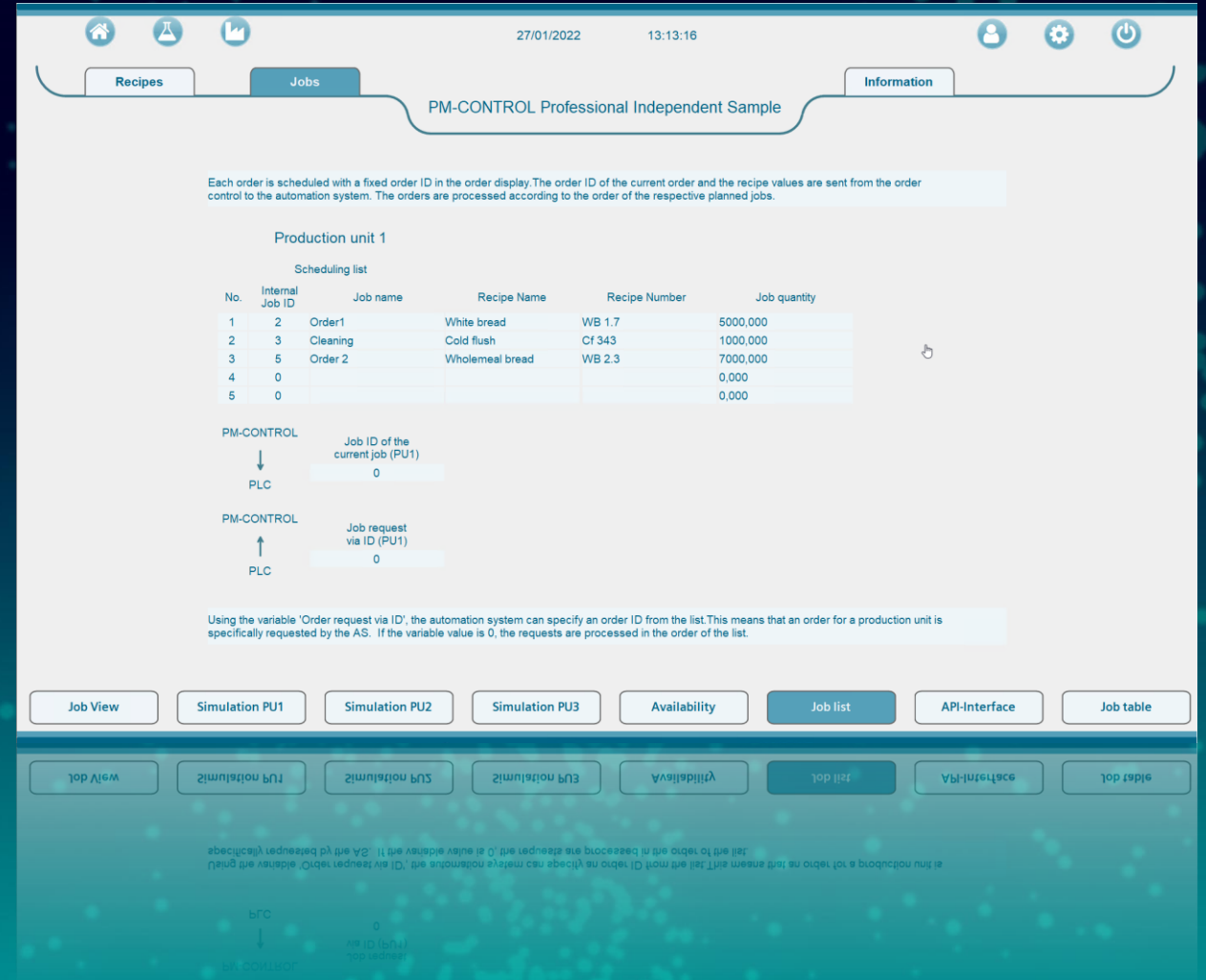
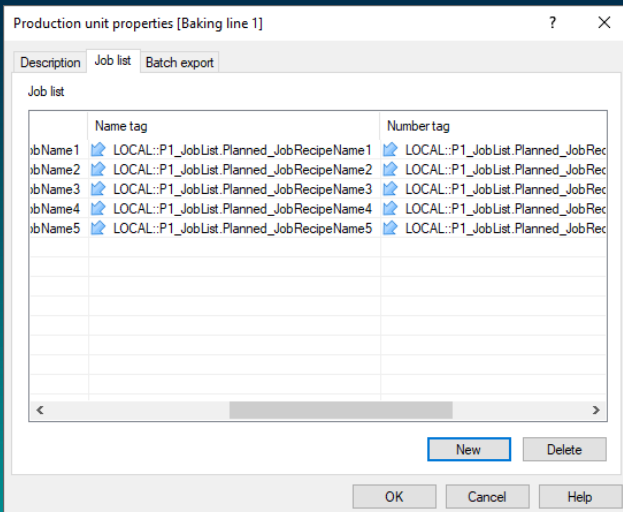


New in Version 12.0

Extended Disposition List

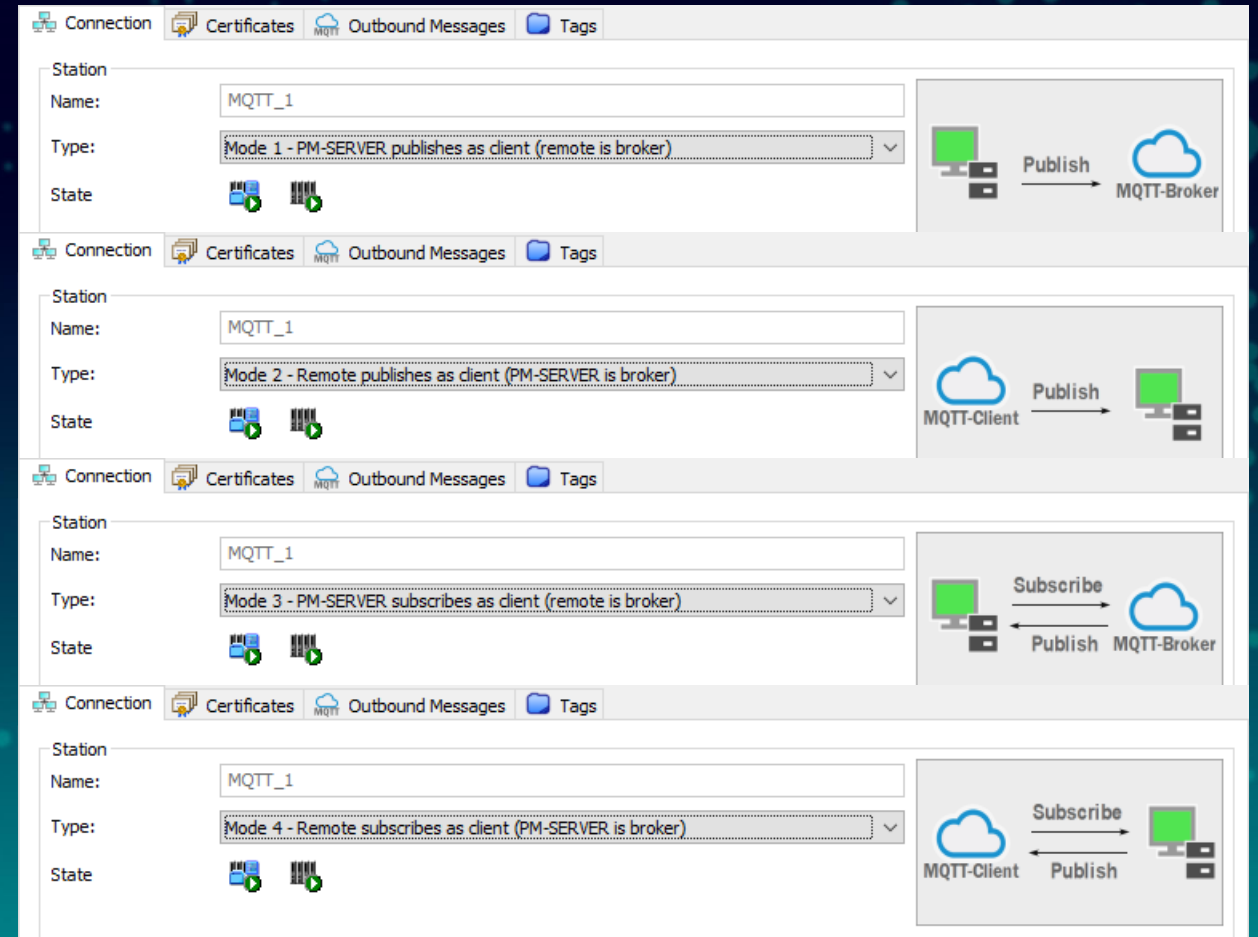
Columns in the disposition list:

- Job-ID
- Job-Name
- **New: Name (Recipe/Product-Name)**
- **New: Number (Recipe-/Product-Number)**
- **New: Job Quantity**



New in Version 12.0 MQTT Station

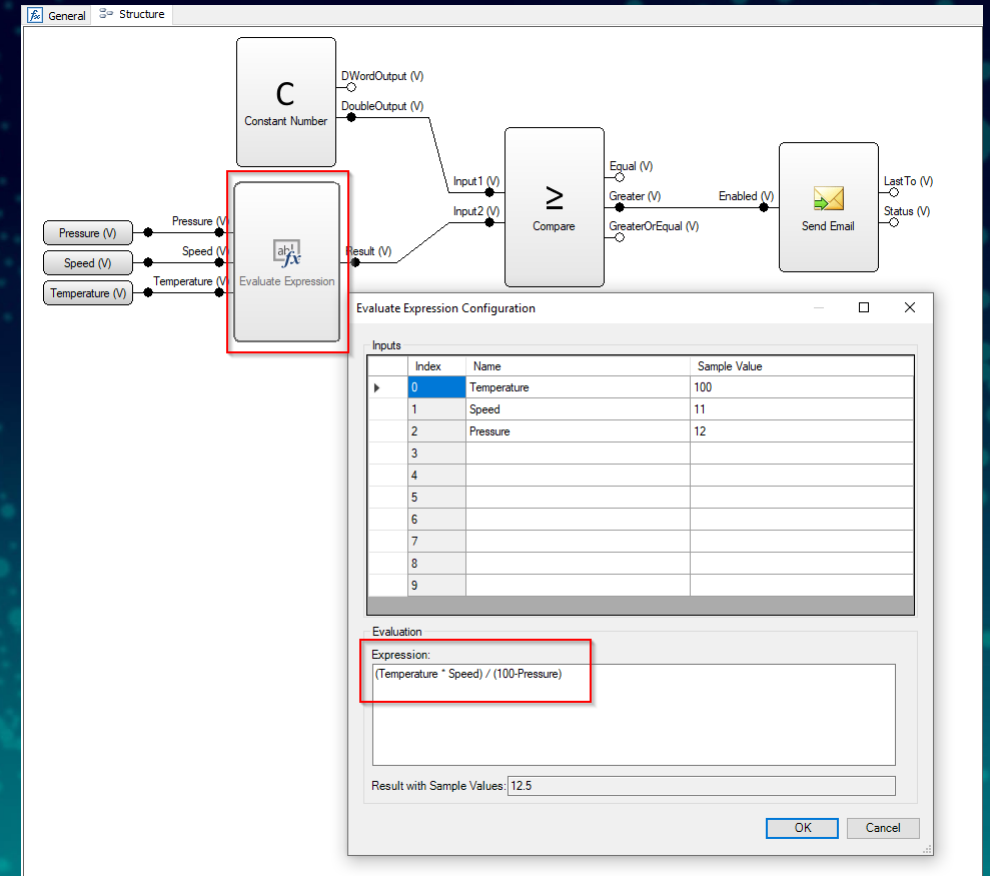
- New MQTT Station type with support for
 - MQTT 3.1, MQTT 3.1.1 and MQTT 5
 - SSL 2 and 3
 - TLS 1.0, 1.1 and 1.2
- All four possible operating modes supported
 - PM-SERVER publishes as client (remote is broker)
 - Remote publishes as Client (PM-SERVER is broker)
 - PM-SERVER subscribes as client (remote is broker)
 - Remote subscribes as client (PM-SERVER is broker)



New in Version 12.0

New Function Blocks for Calculations and Aggregations

- “Evaluate Expression” function block
 - Evaluates arbitrary numerical expression for up to 10 inputs
 - In place evaluation with sample values



New in Version 12.0

New Function Blocks for Calculations and Aggregations

- “State Mapping” function block allows prioritized evaluation of an arbitrary number of test expressions build from up to 10 inputs

The screenshot shows the 'State Mapping Configuration' dialog box. It contains two main tables: 'Inputs' and 'Rules'.

Inputs Table:

Index	Name	Sample Value
0	Temperature	80
1	Speed	600
2	Pressure	12
3		
4		
5		
6		
7		
8		
9		

Rules Table:

Rule	Result	Execution priority
Temperature > 100	1	
Temperature > 70 AND Speed < 500	2	
Temperature > 70 AND Speed > 500 AND Pressure < 13	3	

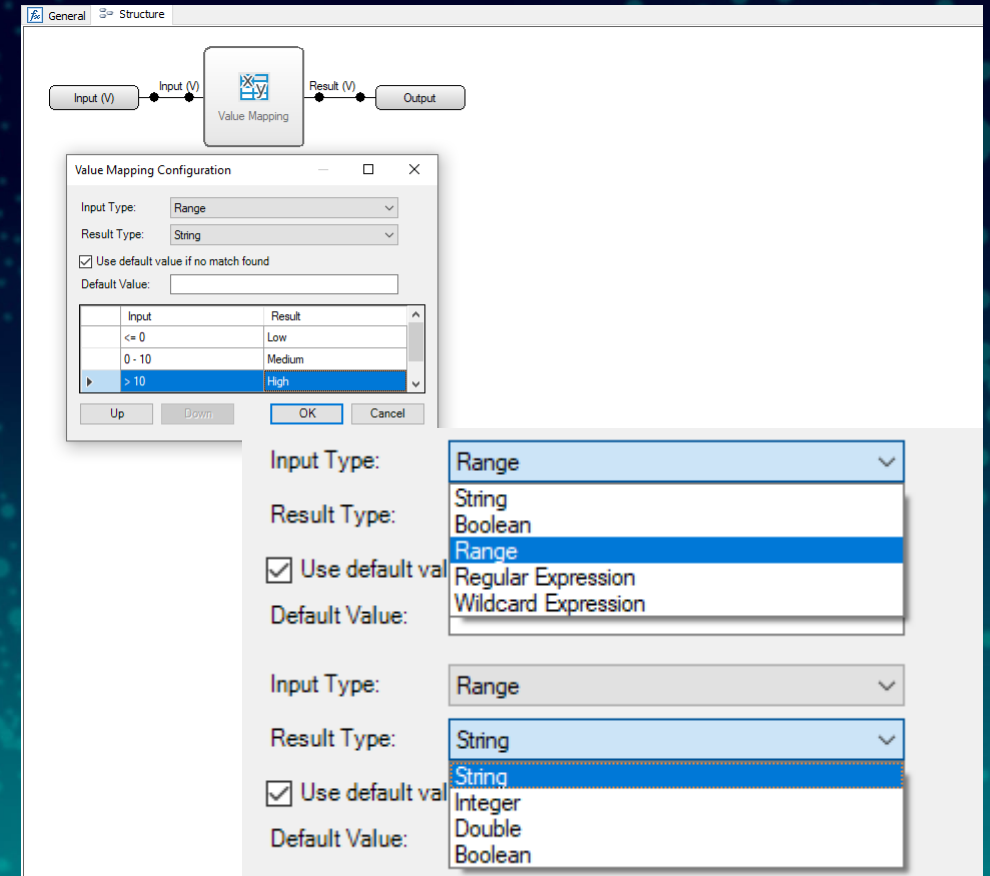
The 'Execution priority' column is highlighted in green for the third rule. A vertical arrow points downwards from the 'Execution priority' header to the third rule, indicating that the rule with the highest priority (lowest number) is executed first.

At the bottom of the dialog, there are 'Up' and 'Down' buttons, a 'Result with Sample Values: 3' field, and 'OK' and 'Cancel' buttons.

New in Version 12.0

New Function Blocks for Calculations and Aggregations

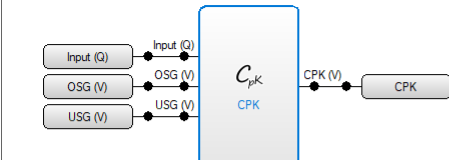
- “Value Mapping” function block to “map” arbitrary input values to dedicated output value



New in Version 12.0

New Function Blocks for Calculations and Aggregations

- CPK (Process capability index) function block
(*Formula source Wikipedia.com)



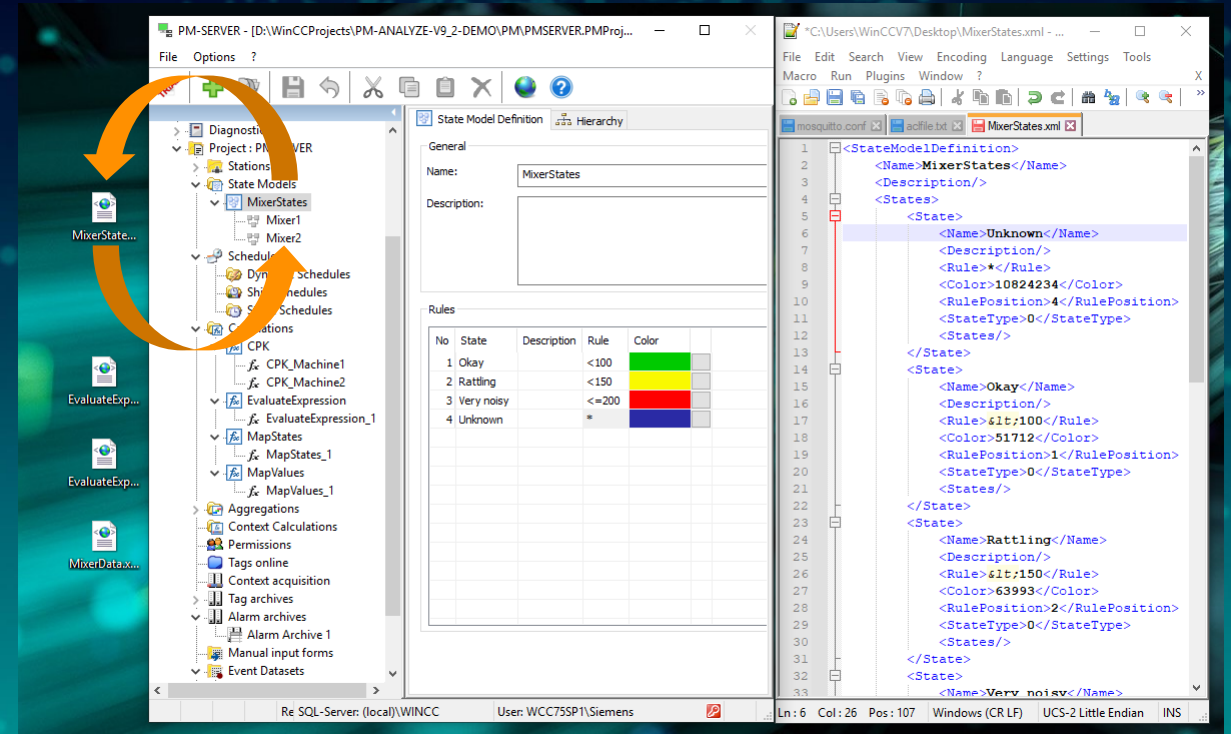
Index	Description
$\hat{C}_p = \frac{USL - LSL}{6\hat{\sigma}}$	Estimates what the process is capable of producing if the process mean were to be centered between the specification limits. Assumes process output is approximately normally distributed.
$\hat{C}_{p,lower} = \frac{\hat{\mu} - LSL}{3\hat{\sigma}}$	Estimates process capability for specifications that consist of a lower limit only (for example, strength). Assumes process output is approximately normally distributed.
$\hat{C}_{p,upper} = \frac{USL - \hat{\mu}}{3\hat{\sigma}}$	Estimates process capability for specifications that consist of an upper limit only (for example, concentration). Assumes process output is approximately normally distributed.
$\hat{C}_{pk} = \min \left[\frac{USL - \hat{\mu}}{3\hat{\sigma}}, \frac{\hat{\mu} - LSL}{3\hat{\sigma}} \right]$	Estimates what the process is capable of producing, considering that the process mean may not be centered between the specification limits. (If the process mean is not centered, \hat{C}_p overestimates process capability.) $\hat{C}_{pk} < 0$ if the process mean falls outside of the specification limits. Assumes process output is approximately normally distributed.
$\hat{C}_{pm} = \frac{\hat{C}_p}{\sqrt{1 + \left(\frac{\hat{\mu} - T}{\hat{\sigma}}\right)^2}}$	Estimates process capability around a target, T. \hat{C}_{pm} is always greater than zero. Assumes process output is approximately normally distributed. \hat{C}_{pm} is also known as the Taguchi capability index. ^[2]
$\hat{C}_{pkm} = \frac{\hat{C}_{pk}}{\sqrt{1 + \left(\frac{\hat{\mu} - T}{\hat{\sigma}}\right)^2}}$	Estimates process capability around a target, T, and accounts for an off-center process mean. Assumes process output is approximately normally distributed.

New in Version 12.0

Drag & Drop / Copy & Paste

- Drag and drop between PM-SERVER and Windows desktop/explorer and text editors
 - PM-SERVER to Windows desktop/explorer => generates xml export file
 - Windows desktop/explorer to PM-SERVER => imports xml file
 - PM-SERVER to PM-SERVER => copy

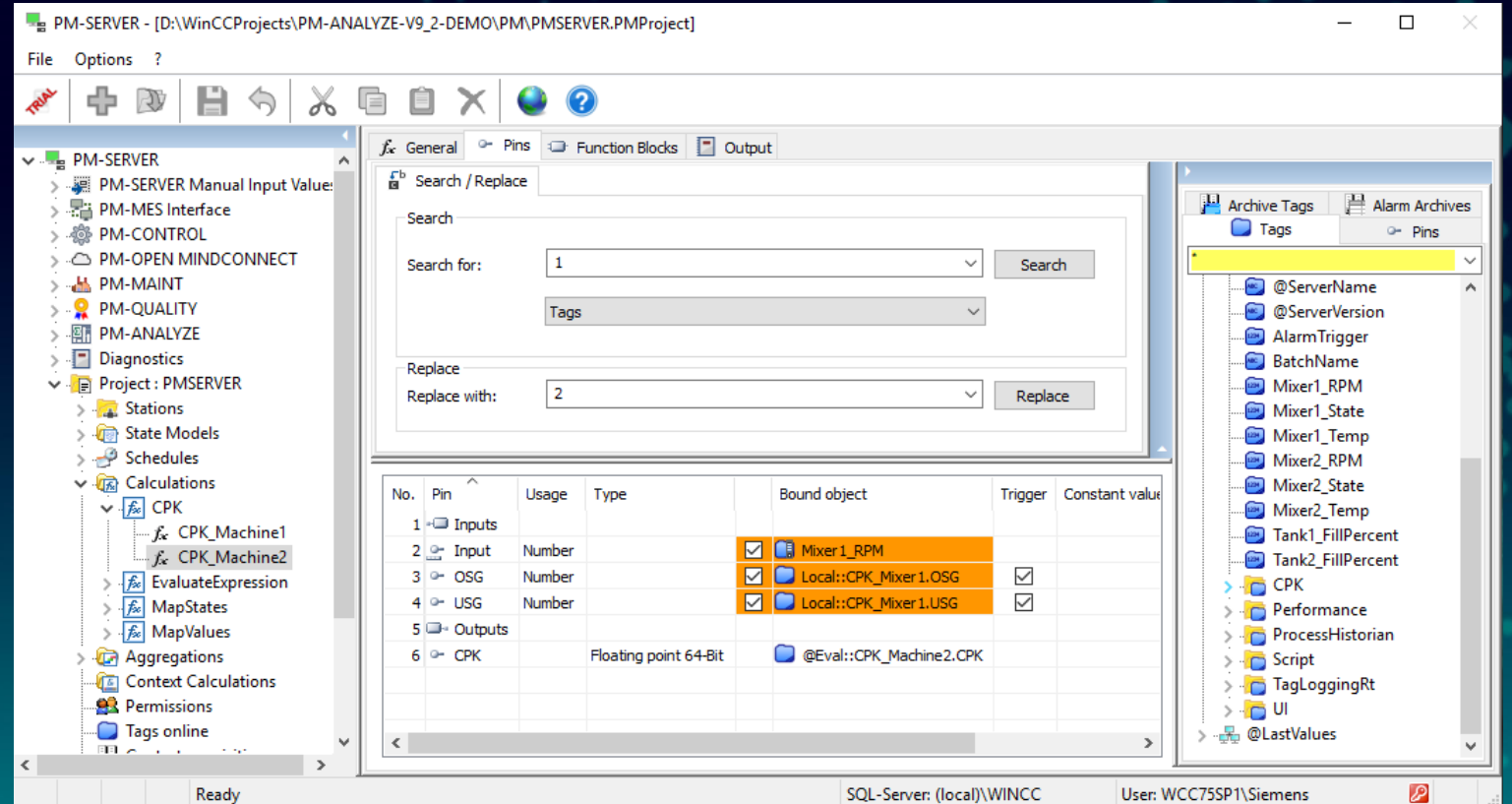
- Available for
 - State model definitions & instances
 - Calculation schemas & instances
 - Event dataset definitions
 - Range dataset definitions



New in Version 12.0 Search & Replace

- Search & replace function to “rewire” tag bindings or change object names in:

- Calculations
- Tag archives
- Event datasets
- Range datasets

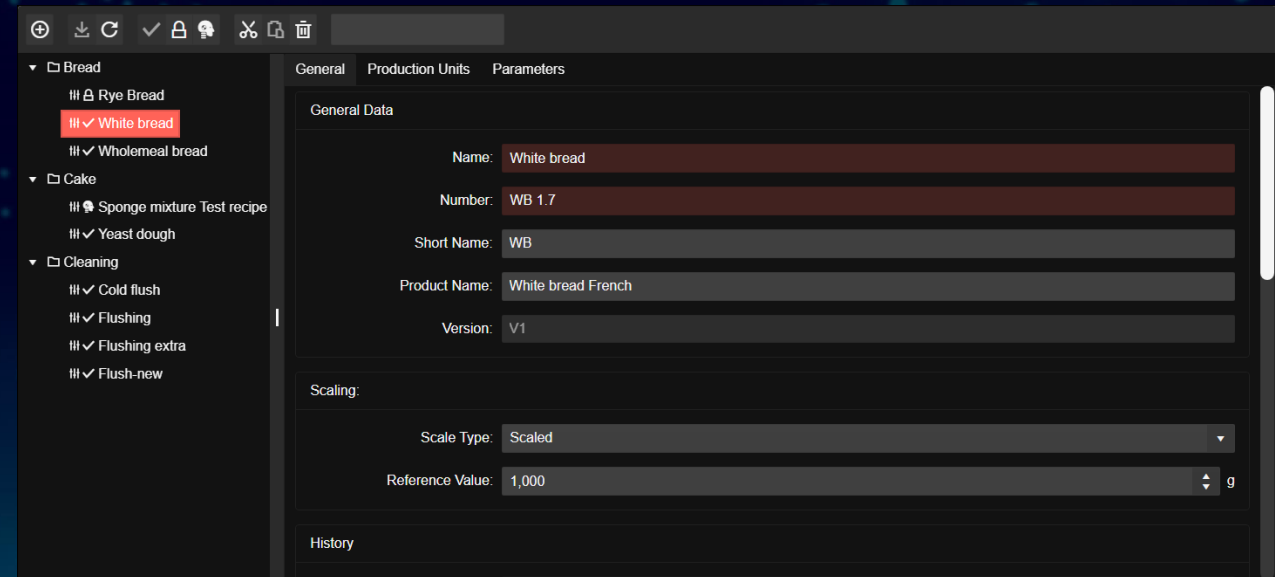
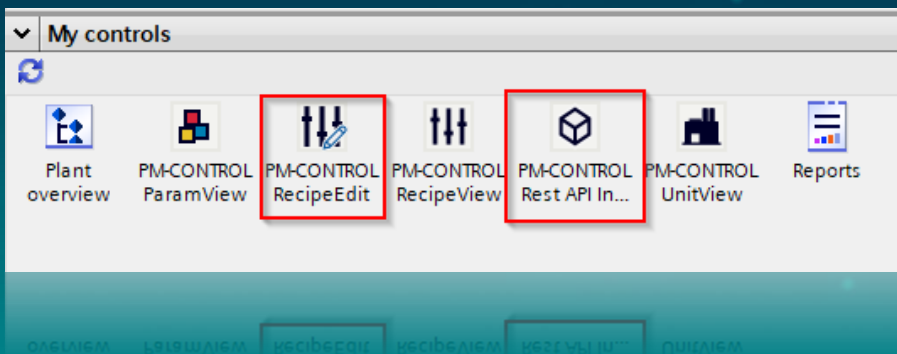


New in Version 12.1

New Controls for WinCC Unified

There are new controls for using PM-CONTROL with WinCC Unified:

- „PM-CONTROL Recipe Edit“ for managing and editing recipes and recipe groups
- “PM-CONTROL Rest API Invoke” to access the PM API via JavaScript

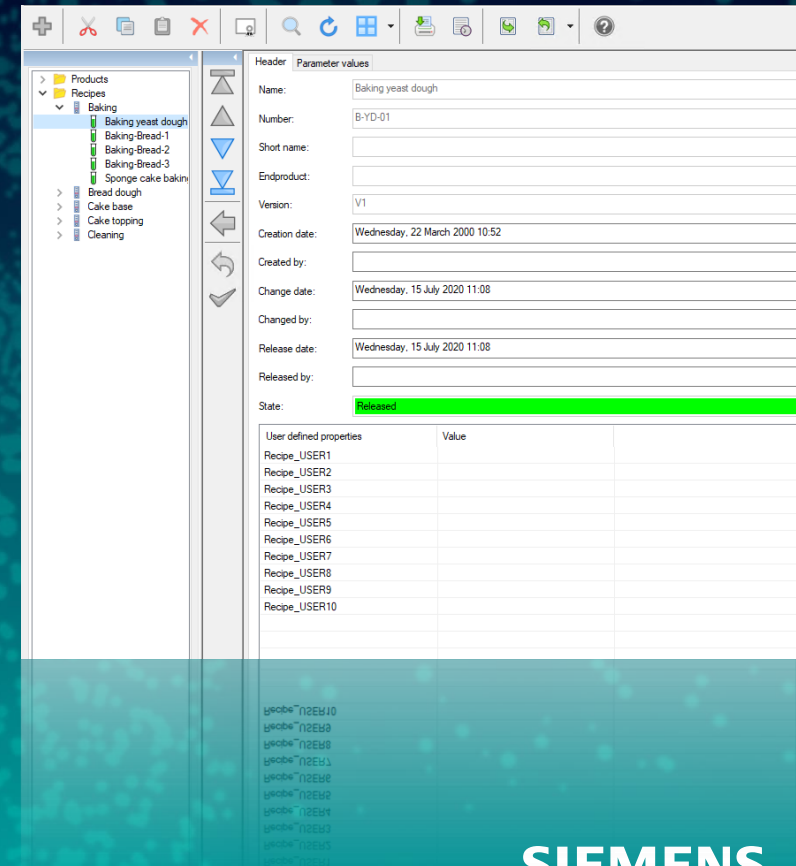
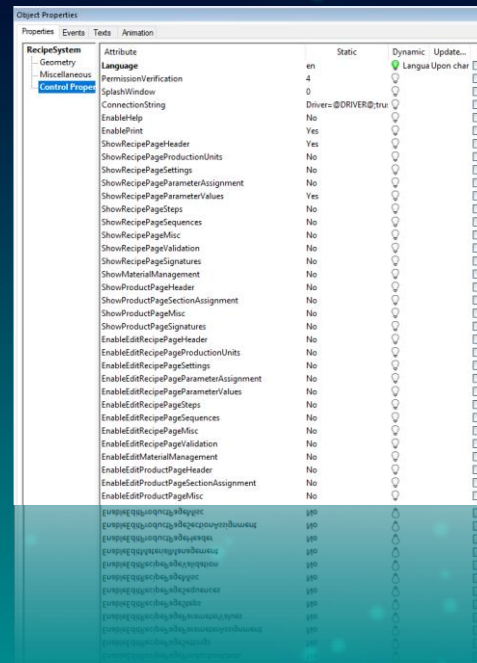


New in Version 12.1

Visibility and editability of pages in Recipe System

The Recipe System (ActiveX Control) got new properties:

- Show...: Controls the visibility of pages in the Recipe System.
- EnableEdit...: Controls the editability of pages in the Recipe System.



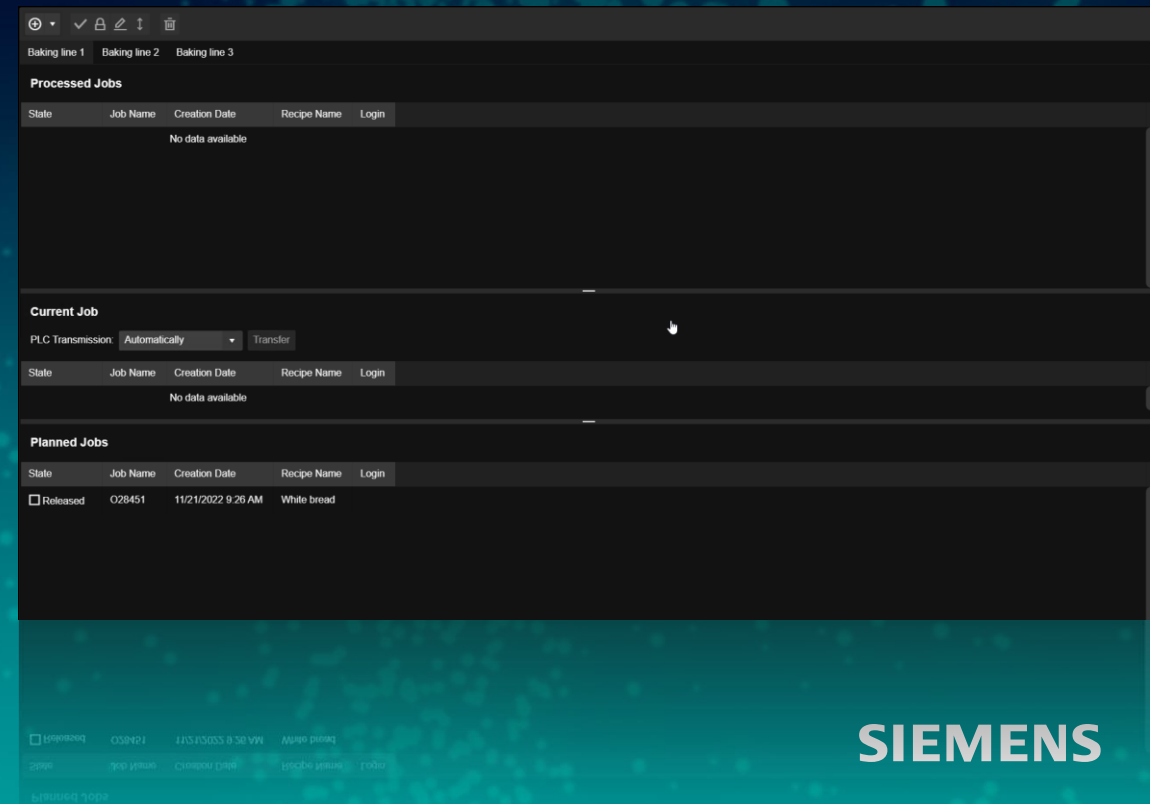
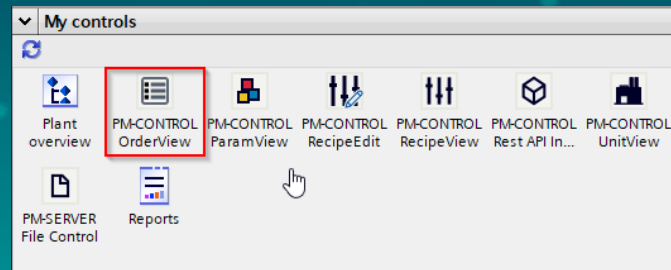
New in Version 12.2

New control for WinCC Unified: “OrderView”

For WinCC Unified there is a new UI control “OrderView”.

This enables managing Orders in Unified Runtime:

- Overview of Orders (planned, current and processed)
- Creation, editing and deletion of Orders
- Moving Orders
- Releasing/locking Orders
- Loading manually

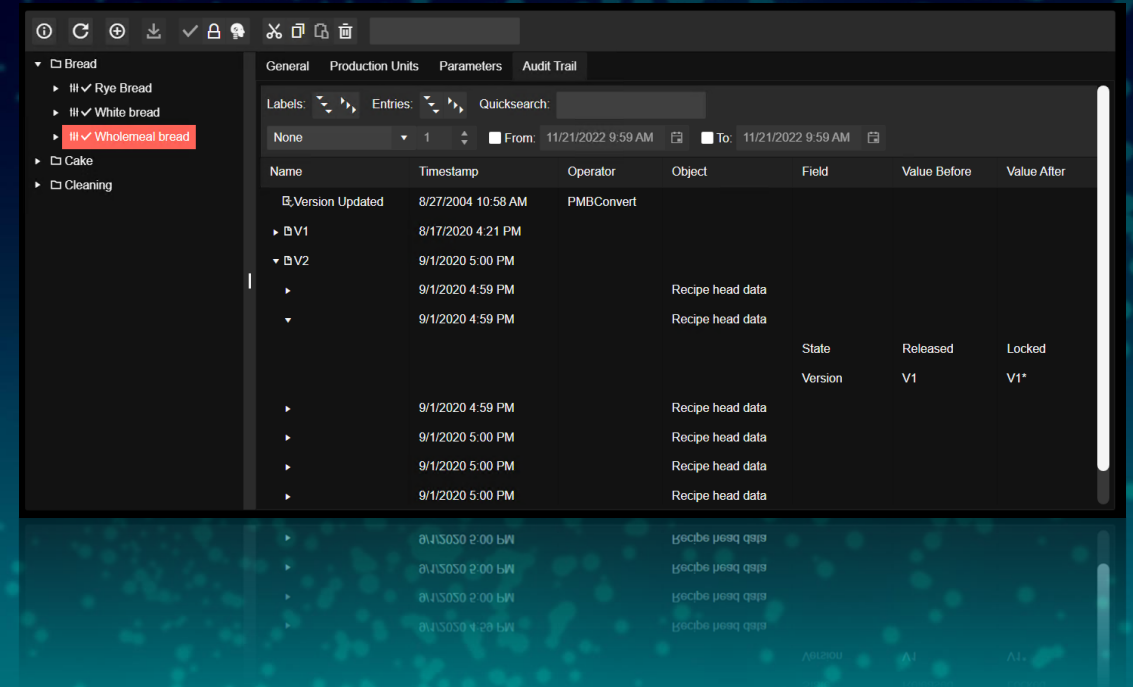


New in Version 12.2

New features in WinCC Unified control “RecipeEdit”

The WinCC Unified control “RecipeEdit” got new features:

- Displaying and filtering of Recipe Audit Trails
- Signing Recipes
- Editing limits of Recipe parameters
- Copy/Paste of Recipes

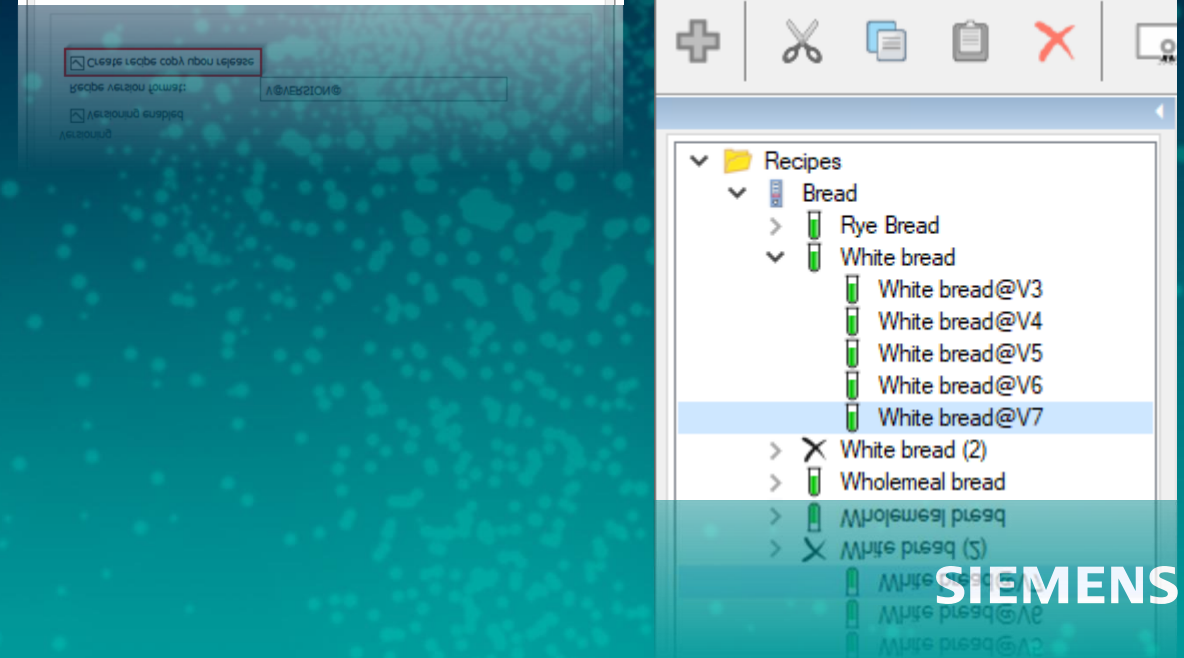
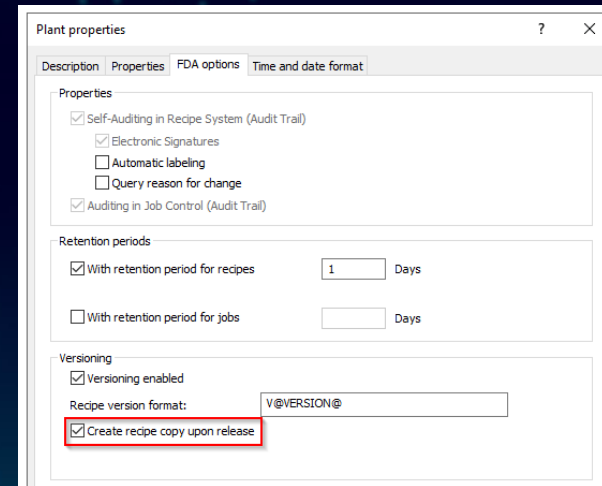


New in Version 12.2

Recipe copy upon release

Upon release of a new Recipe version a 1-to-1 copy of the Recipe can be created.

By this you can create Orders which use different versions of the Recipe.

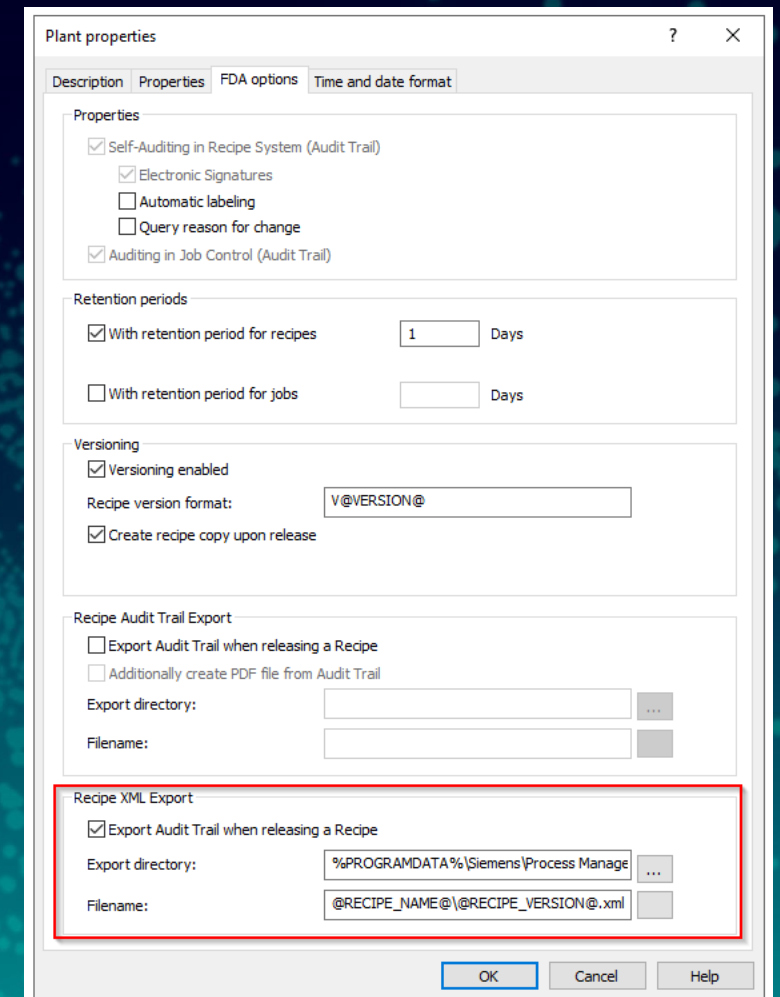


New in Version 12.2

XML export upon Recipe release

Upon release of a new Recipe version an XML export can be created of this Recipe (e.g. for archiving or documentation purposes).

The export path and file name settings are equivalent to the Recipe Audit Trail Export, but can be configured independently.



New in Version 12.2

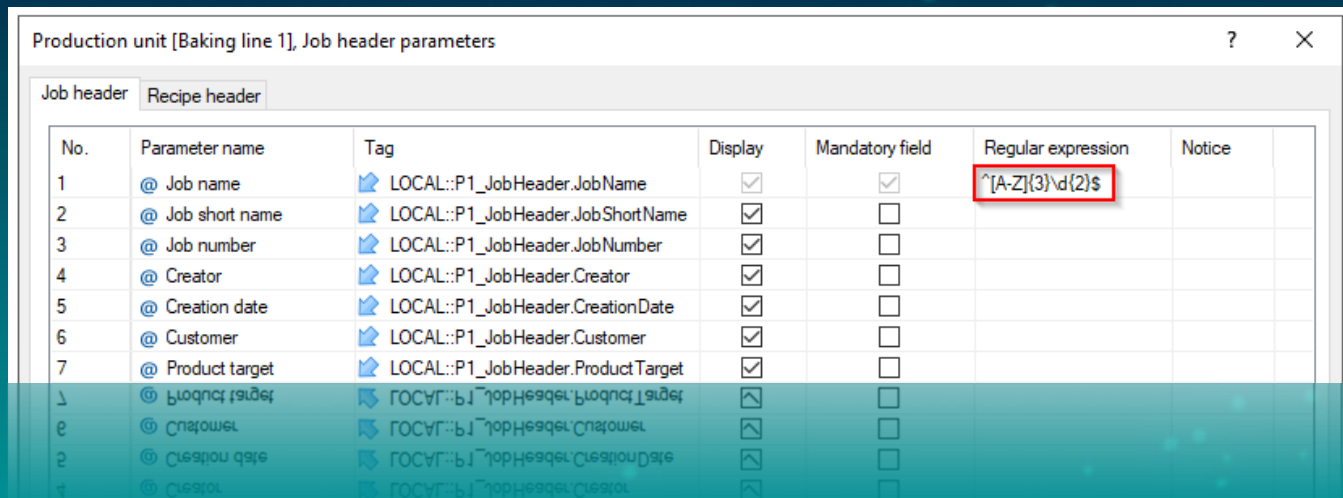
Extended regular expressions for job header validation

For validation of Job header parameters extended regular expressions may be used; e.g. with “quantifiers”.

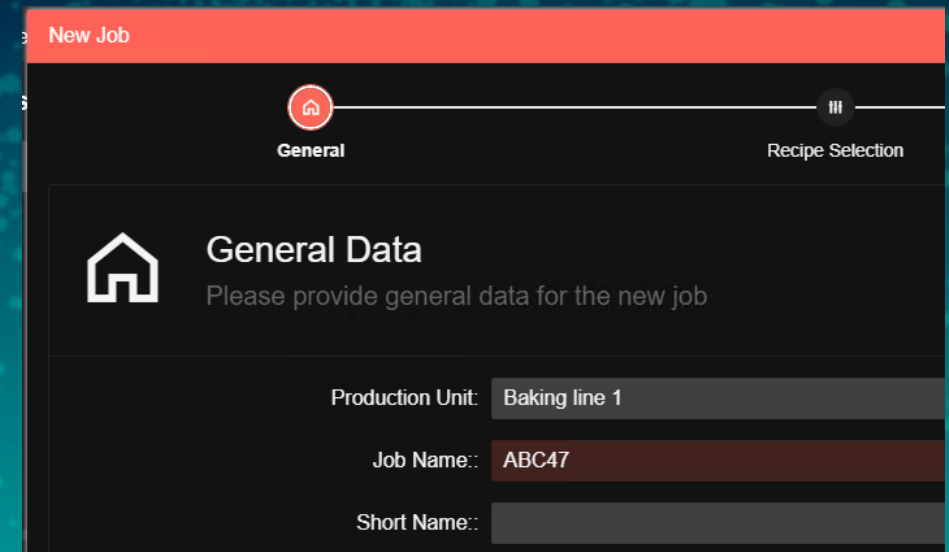
An expression like “`^[A-Z]{3}\d{2}$`” matches 3 capital letters and 2 digits.

The documentation of the regular expression language can be found online:

<https://learn.microsoft.com/en-us/dotnet/standard/base-types/regular-expression-language-quick-reference>



No.	Parameter name	Tag	Display	Mandatory field	Regular expression	Notice
1	@ Job name	LOCAL::P1_JobHeader.JobName	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<code>^[A-Z]{3}\d{2}\$</code>	
2	@ Job short name	LOCAL::P1_JobHeader.JobShortName	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
3	@ Job number	LOCAL::P1_JobHeader.JobNumber	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4	@ Creator	LOCAL::P1_JobHeader.Creator	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
5	@ Creation date	LOCAL::P1_JobHeader.CreationDate	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
6	@ Customer	LOCAL::P1_JobHeader.Customer	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
7	@ Product target	LOCAL::P1_JobHeader.ProductTarget	<input checked="" type="checkbox"/>	<input type="checkbox"/>		



New Job

General Recipe Selection

General Data

Please provide general data for the new job

Production Unit: Baking line 1

Job Name: ABC47

Short Name:

New in Version 12.2

Support of new SCADA system and operating system versions (1)

Support of the following operation system versions:

- Windows 10 Professional, Enterprise
- **Windows 11 Professional, Enterprise**
- Windows Server 2016
- Windows Server 2019
- **Windows Server 2022**

New in Version 12.2

Support of new SCADA system and operating system versions (2)

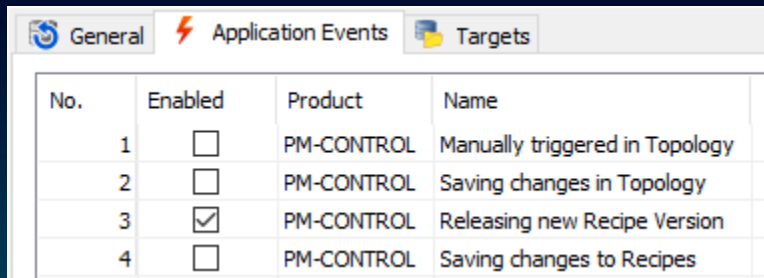
The following SCADA system versions are supported:

- WinCC V7.4 SP1 / V7.5 (ab Update 1)
- WinCC V7.5 SP1
- WinCC TIA V15
- WinCC TIA V16
- WinCC TIA V17
- **WinCC TIA V18**

New in Version 12.2 Automatic Backups

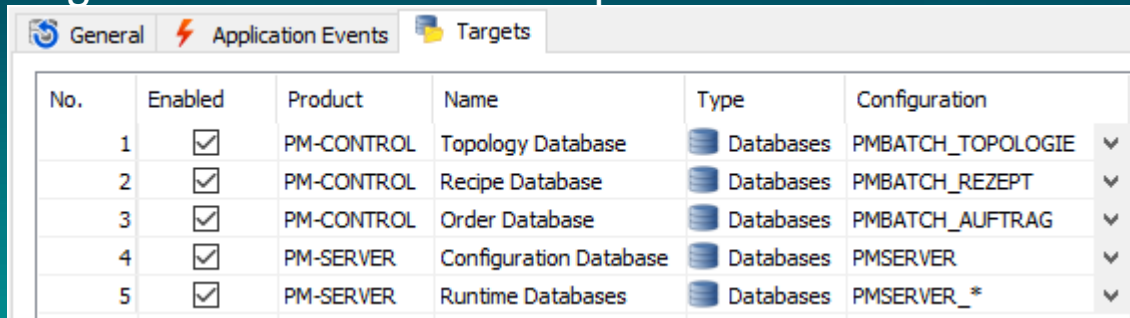
In PM-SERVER you can define backups.

These can be triggered by time or by an event – e.g. when a new Recipe version is released.

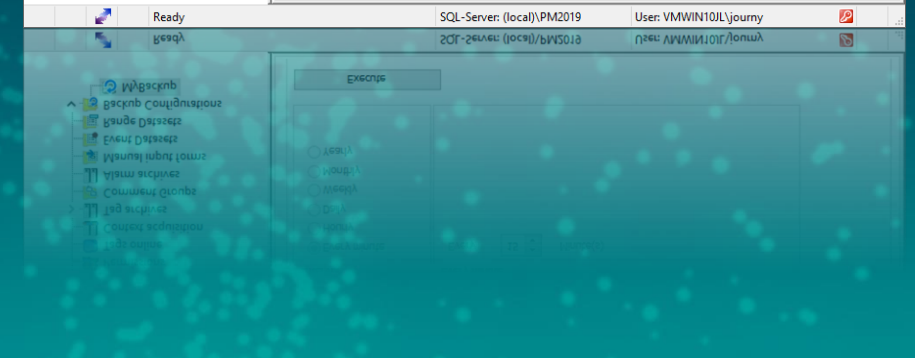
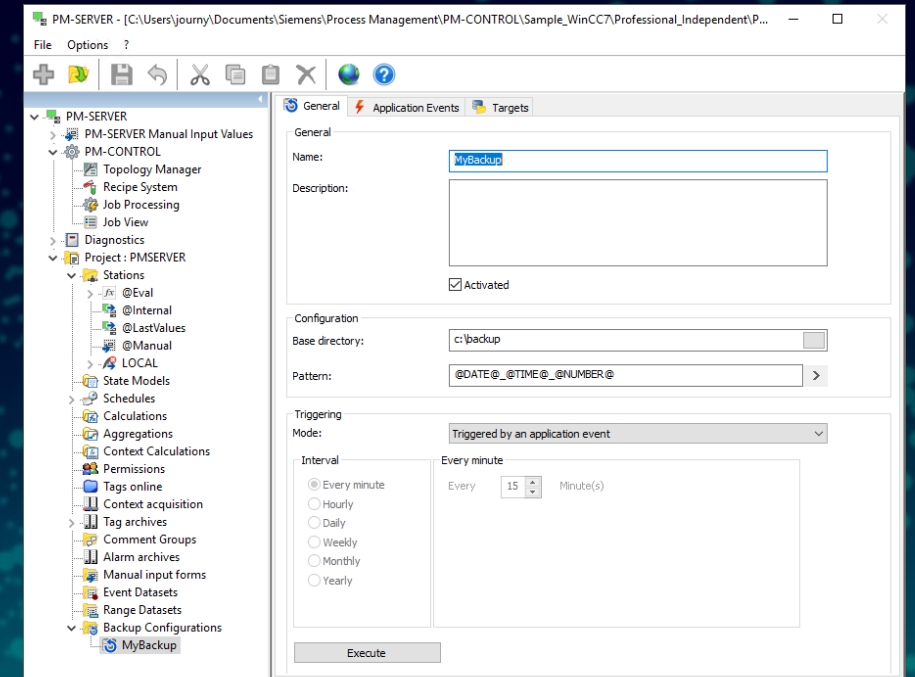


No.	Enabled	Product	Name
1	<input type="checkbox"/>	PM-CONTROL	Manually triggered in Topology
2	<input type="checkbox"/>	PM-CONTROL	Saving changes in Topology
3	<input checked="" type="checkbox"/>	PM-CONTROL	Releasing new Recipe Version
4	<input type="checkbox"/>	PM-CONTROL	Saving changes to Recipes

The backup can contain databases, files and folders. Custom targets can be defined if required.



No.	Enabled	Product	Name	Type	Configuration
1	<input checked="" type="checkbox"/>	PM-CONTROL	Topology Database	Databases	PMBATCH_TOPOLOGIE
2	<input checked="" type="checkbox"/>	PM-CONTROL	Recipe Database	Databases	PMBATCH_REZEPT
3	<input checked="" type="checkbox"/>	PM-CONTROL	Order Database	Databases	PMBATCH_AUFTRAG
4	<input checked="" type="checkbox"/>	PM-SERVER	Configuration Database	Databases	PMSERVER
5	<input checked="" type="checkbox"/>	PM-SERVER	Runtime Databases	Databases	PMSERVER_*



| Contact

Issuer: Siemens AG
WinCC Competence Center Mannheim

Phone: +49 621 1723 1010

E-Mail: wincaddon.automation@siemens.com

Internet: <https://www.siemens.com/process-management>