QM Quality Management

SAP R/3 Enterprise
Release 4.70

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16.1 New Developments: PLM Extension 1.10 (EA_APPL 110)

Use

This release information will provide you with an overview of the main developments in release SAP R/3 Enterprise PLM Extension 1.10 (EA-APPL 110) in the area mySAP PLM Quality Management.

Stability Study

You can find a description of this new development in the Release Information for Stability Studies. This release information explains:

- What a stability study is.
- How stability studies are integrated in quality management processes.
- The role of quality notifications in stability studies.
- How the stability study process is structured and how it can be controlled.
- What changes were made to the QM Customizing to include stability studies and how to use the Customizing for stability studies.

You can find a detailed description of the stability study solution in the application help.

Flexible Inspection Specifications

You can find a description of this new development under Release Information for Flexible Inspection Specifications.

This release information explains:

- What flexible inspection specifications are.
- How flexible inspection specifications are used.
- What happens when flexible inspection specifications are implemented.
- How to activate flexible inspection specifications.

16.2 New Business Add-Ins

Use

A series of new Business Add-Ins (BAdIs) allows you to make functional enhancements without modification.

You can find these BAdIs in Customizing under Quality Management -> Environment -> Tools -> Business Add-Ins.

Enhancements (BAdIs) in Quality Planning:
There is one BAdI especially for input processing.

In the Engineering Workbench you can maintain additional customer-specific fields for the inspection plan at characteristic-, operation-, and header level.

When you save the inspection plan in the Engineering Workbench, all of the planning data is made available to a BAdI.

On the overview screen of the Engineering Workbench, you can define an additional pushbutton at characteristic-, operation-, and header level. You can use this pushbutton to call up your own programs.

**Enhancements (BAdIs) for Quality Inspections:**

- Flexible specification selection is supported in a BAdI.
- You can display any desired data in an inspection lot and you can change inspection lot data in the structure QALS_ADDON, using additional subscreen areas.
- In the transactions for the physical-sample record, you can activate an additional tab page depending on the screen control key for the physical sample type.
- You can display additional data on a subscreen of the header screen for results recording.
- You can display additional data on a subscreen of the header screen for the usage decision.
- When you save in results recording, all inspection lot data is made available to a BAdI.
- You can program your own rules for the valuation of characteristics and original values, for example, reject if measured value and tolerance limit are equal.

**Enhancements (BAdIs) for Quality Certificates:**

- You can maintain additional customer-specific fields for the characteristics in the certificate profile. You can make changes to the certificate characteristic data when copying characteristics into the certificate profile.

**Enhancements (BAdIs) in Logistics:**

- You can make changes to the criteria for the assignment of the quality information record in procurement.
- The check of the required QM system in the procurement process can be replaced with a customer-specific program.

**Enhancements (BAdIs) for Quality Notifications:**

- The notification data can be changed when saving.
- You can change the activities of follow-up functions in the action box and the way that they are displayed.
- Depending on the notification type, you can implement the free reference object screen in accordance with your requirements.
- You can replace the node attribute of an object in the document flow graphic of the quality notification. You can, for example, display the inspection lot short text for the object "inspection lot" as an attribute.
- For each notification type, you can use a BAdI to control if the changing of a user status is allowed.
16.3 New Developments: SAP R/3 Enterprise Core 4.70 (SAP_APPL 470)

Use

This release information will provide you with an overview of the main developments in release SAP R/3 Enterprise Core 4.70 (SAP_APPL 470) in the area mySAP PLM Quality Management.

Input Processing for Measured Values

This new development allows you to process measured values according to your own, user-defined rules.

You can find a more detailed description in the Release Information for Input Processing.

New Business Add-Ins

A series of new Business Add-Ins allows you to make functional enhancements without modification.

You can find a description of this new development under Release Information for New Business-Add-Ins in mySAP PLM Quality Management.

New Developments in Notifications: Several Customer Subscreens for Each Notification Type

From release 4.70, it is possible to include one or more customer subscreens in the notification header data for each notification type. The size of the customer subscreens can be freely-defined as long as the sum of the subscreens does not exceed the total size of the tab page.

You can find a description of this new development under Release Information for Customer Subscreens in notifications.

16.4 QM-IM Quality Inspection

16.4.1 Flexible Inspection Specifications

Use

From SAP R/3 Enterprise PLM Extension 1.10 (EA-APPL 110), the new flexible inspection specifications function will be available in Quality Management.

This function is generally used when performing stability studies. However, it can also be used for inspection lots in other processes. To use it in other processes, you must either perform a customer-specific implementation of the corresponding Business Add-In or use customer functions.

Flexible inspection specifications allow you to make changes to inspection specifications during inspection lot creation and within results recording. This is made possible by:

- Flexible specification selection
This function is especially useful in cases where inspections cannot be planned completely in advance, for example:

- Inspections as a service
- Inspections of complaints
- Inspections for stability studies

A **universal plan** contains a wide variety of inspection specifications and all of the inspection characteristics. This universal plan is assigned during inspection lot creation. The flexible inspection specifications function then allows you to select the characteristics and specifications that are actually relevant to the particular inspection.

After specification selection (selection of material specification/task list) during inspection lot creation, the system displays a list of all characteristic specifications that have already been read. From this list you can choose the characteristics that are relevant for the current inspection. These characteristics are then copied to the inspection lot. In addition, you can change the following specifications:

- Operation short text
- Characteristic short text
- All limit pairs (lower/upper tolerance limit, tolerance limit pair 1 and 2, plausibility limits)
- Target value
- Decimal places
- Inspection method
- Info. fields for characteristic
- Sampling procedure
- Selected set
- Control indicator (required characteristic/optional characteristic)

If not all characteristics in the template (universal plan) were copied, or if the specifications of the characteristics were changed, a corresponding system status ("FLEX") will be set in the inspection lot. If errors occur when you are selecting characteristics or changing specifications, these errors will be output in an error log.

You must determine when the flexible inspection specifications function can be used during the implementation process.

For example, in stability studies the flexible inspection specification function can only be used for manual inspection lots with inspection lot origin 16 (inspection lot for initial test or manual inspection lot
Apart from the inspection lot origin, other information from the inspection lot is also available. This information may or may not trigger the opening of a window for the changing of specifications.

You can, for example, use the inspection setup in the material master to plan a manual sample calculation. During inspection lot creation, the system checks whether or not the relevant indicator is set. If manual sample determination is allowed, the flexible inspection specifications function is called, otherwise it is not called. This process can be restricted to specific inspection lot origins.

The flexible inspection specifications function can also be used in to change inspection specifications in results recording.

Using a customer function, you can implement the call of the screen mentioned above with inspection specifications using a pushbutton.

All characteristics for which no results have been recorded, which have not yet been completed, and which are not in skip status are then displayed on this screen.

For the listed characteristics, you can change the following:

- Characteristic short text
- All limit pairs (lower/upper tolerance, tolerance limit pair 1 and 2, plausability limits)
- Target value
- Decimal places
- Inspection method
- Info. fields for characteristic
- Selected set

**Effects on System Administration**

**Activation of Flexible Inspection Specifications**

The function for flexible inspection specifications is available for manual inspection lots for stability studies in the standard. You can change the specifications at lot creation using corresponding follow-up functions for the study.

To use this function for other inspection lot origins, you must perform the following steps:

**Flexible Specifications at Inspection Lot Creation**

You must create an implementation for BAdI QPAP_FLEX_PLAN similar to the one that is used in the stability study for BAdI QPAP_FLEX_PLAN_16.

The inspection lot origin is the filter for the BAdI. This means that you can create different implementations for the different origins.

Within the implementation, more criteria that allow or disallow flexible inspection specifications can be queried. It can, for example, be of significance that a manual sample calculation must be performed (query of QALS-STAT31 = 'X'). This is planned in the inspection data in the material master.
You should also read the documentation for the BAdI definition.

**Flexible Specifications in Results Recording**

To use the flexible inspection specifications function within results recording, you must first activate two customer functions in the customer enhancement QEEM0024. These are:

- EXIT_SAPLQEEM_024
- EXIT_SAPLQEEM_028

Enhancement QEEM0024 is used to implement an extra pushbutton in the header screen for results recording.

In EXIT_SAPLQEEM_024 you must program coding for the call of the function. In EXIT_SAPLQEEM_028 you must program the name of the pushbutton.

The function module QST05_FLEX_PLAN_RES_REC can be called directly within EXIT_SAPLQEEM_024. Since the call of the flexible inspection specifications function is generally to be dependent on certain parameters, such as the inspection lot origin, we recommend that you code additional queries (for example, query of I_QALS-HERKUNFT) in the exit before calling the function module QST05_FLEX_PLAN_RES_REC. Customer-specific requirements can be taken into consideration.

**Notes**

When using the function module in stability studies, corresponding authorization checks have been implemented (see BAdI implementation QPAP_FLEX_PLAN_16). If the flexible inspection specifications function is to be used, you must assign the relevant authorization for object Q_MATERIAL with the value '0' to the relevant users.

The call of this function module depends on certain status fields in the inspection lot.

This should be taken into consideration for customer-specific usages.

A documentation for flexible inspection specifications is included in the BAdI implementation for the stability study (see implementation QPAP_FLEX_PLAN_16).

If you make changes to the specifications for a selected characteristic, the field ET_PLMKBS_TAB-QPMK_REF will be filled accordingly (value 9) by the system and copied to the database table QAMV for characteristic specifications.

A specific system status is set in the inspection lot ("FLEX") if the flexible inspection specifications function was actually used, that is, not all of the characteristics in the task list were copied, or specifications were changed.
16.4.2 QM-IM-RR           Results Recording

16.4.2.1 QM-IM-RR-CHR      Characteristic Results

16.4.2.1.1 Input Processing

Use

This new development allows you to:

- Round entered measured values according to your own rules.
- Convert entered measured values using your own formulas.
- Document the original value.

You can, for example, output the entered value (original value) independently of the planned number of decimal places. If two decimal places have been planned, but your measured value has only one decimal place, then only one decimal place will be output (output = input).

You can also make the number of decimal places dependent on the actual measured size of the measured value (significant digits).

The input is processed using a BAdI method.

To use input processing for measured values, you must first do the following:

- Define the key for input processing, with the attribute of the BAdI parameters, in Customizing. You can find the relevant Customizing table under Quality Management -> Quality Inspection -> Results Recording -> Define Parameters for Input Processing.
- Set the control indicator for input processing in the (master) inspection characteristic.
- Enter the input processing key in the quantitative data of the (master) inspection characteristic.
- Choose "98" as the value for the number of decimal places in the certificate profile for the (master) inspection characteristic.

16.5 QM-QN                Quality Notifications

16.5.1 QM-QN-NT           Creating Quality Notifications

16.5.1.1 New: Several Customer Subscreens Per Notification Type

Use

Several Customer Subscreens:

Up until release 4.6C, for each notification type a maximum of one customer subscreen could be included in the notification header data. An area of 4 lines was reserved for this subscreen. From release 4.70, for
each notification type it is possible to include one or more customer subscreens in the notification header data. The size of the customer subscreens can be freely defined as long as they do not exceed the total size of the tab pages.

Enhancements in User Exits:

In the customer enhancement QQMA0001, the interface of the function modules EXIT_SAPMIWO0_008 and EXIT_SAPMIWO0_008 was enhanced. Three new import parameters allow you to execute your own PBO and PAI program parts, depending on the output location (tab page, subscreen area, screen).

Effects on Customizing

From release 4.70, a second screen area "customer subscreen (>1 Screen/NType)" (091) will be available for the inclusion of customer subscreens in the notification header. Previously, only the subscreen area "customer subscreen (one Screen/NType)" (090) was available for this purpose.

When using screen area 090 you assigned the screen to be included under 'notification header: screen areas'. When you use the new screen area 091, a field for the direct assignment of the screen is available in Customizing for the simplified and extended views.

In Customizing for the simplified and extended views, there is a new field called "tab page allocation". You can use this field to freely choose the number of subscreens (between one and five) that you want to appear on each of the following tab pages: 10\TAB01, 10\TAB02, 10\TAB03, 10\TAB19, 10\TAB20 and 10\TAB21. The fewer subscreens you assign to one tab page, the more space there is available for each subscreen on that tab page.

The predefined number of five possible screen areas for each notification tab page is still the default value, so no further activities are required when upgrading. Note that you can only use one of the screen areas (090 or 091) for each notification type.

16.6 QM-ST Stability Studies

16.6.1 Stability Study

Use

From SAP R/3 Enterprise PLM Extension 1.10 (EA-APPL 110) the new stability study function will be available in Quality Management.

Stability studies are performed to examine the effects of different conditions, for example, temperature, humidity, brightness and so on, on a product and on the properties of this product over a predefined period of time.

To perform a stability study, you must form physical samples of the product and store these physicals samples under controlled conditions (storage conditions). Then parts of these physical samples must be removed at planned or unplanned times during the stability study and tested according to predefined or flexible inspection specifications.

The stability study is integrated in the quality management processes (quality notification, sample management, inspection planning, and inspection processing), and also uses plant maintenance functions,
for example, maintenance planning and scheduling.

Since some existing SAP objects have been used in the development of this new solution, some new terms have been created (see glossary):

- Stability study: Quality notification with particular notification type
- Testing schedule: Maintenance plan with particular maintenance plan type
- Strategy: Maintenance strategy

The stability study has its own node in Customizing under *Quality Management*.

The delivery of several Customizing settings for the stability study allows you to use the functions immediately.

You can adapt the process to suit any additional requirements you may have by changing or enhancing the default settings.

**Quality Notifications as Basis for Stability Studies**

Stability studies are based on quality notifications with specific notification types (see information for Customizing). Each stability study is stored in the system as a quality notification. All objects that are created in the course of the stability study are assigned to this notification. Examples of such objects are:

- Initial sample
- Stability bill of material
- Any documents
- Inspection lot for initial test
- Physical samples for the storage conditions
- Testing schedule for storage conditions with the associated inspection plans
- Inspection lots for the stability tests

You can also assign any objects that are defined as "business objects" in the SAP system to stability studies. The assignments of all objects to the stability study and the relationships between these objects can be displayed in a graphic using the document flow of the notification.

Various other quality notification functions are available for stability studies, for example, connection to the SAP Business Workflow, structuring and printing of additional shop papers, free configuration of the user interface, or freely-definable partner determination procedures.

**Controlling the Process Using the Action Box and Follow-Up Functions**

The stability study process is controlled using the action box in the notification. The delivered follow-up functions for this action box serve as proposals. You are free to make any required changes. Changes to the follow-up functions can be made without modification.

When a follow-up function is executed, a corresponding user status is set in the stability study that reflects the current processing status. You can change or extend the status profile as required. User statuses can be used to create worklists for processing and evaluating stability studies. In addition, the user status is used to control which follow-up functions can currently be executed, and which ones are currently unavailable.

**Process Phases of a Stability Study**
Once the study has been opened, the process is divided into the following phases:

- **Phase 1 - Initial test**
  - Assign stability bill of material
  - Create physical sample record for initial sample
  - Confirm or release initial sample
  - Create inspection lot for initial test
  - Test initial sample
  - Make a decision as to whether the stability study will be continued or not

- **Phase 2 - Stability planning**
  - Specify storage conditions
  - Perform inspection planning for each storage condition
  - Perform test scheduling for each storage condition
  - Calculate storage quantities; label samples; place samples in storage
  - Determine start date

- **Phase 3 - Stability tests**
  - Call current worklists for the stability tests to be executed
  - Simulate future worklists using a graphical scheduling overview
  - Automatically create inspection lots for each date and storage condition
  - Execute and complete stability tests
  - Complete or cancel stability studies (or deactivate/activate)
  - Remove stability samples from storage, form reserve samples

**Note**

*New User Parameter Q_EWB_CALL*

You must perform inspection planning for the storage conditions in stability studies using the Engineering Workbench (EWB). You can use the EWB to assign a strategy and maintenance packages to an inspection plan for a storage condition.

A new user parameter Q_EWB_CALL, was introduced to call the EWB. This new parameter has the following effects:

If the value ‘X’ is set in this parameter in your user settings, the EWB will automatically be called when you display the plan from the testing schedule, inspection lot, results recording, or usage decision. In an
inspection plan, you can then also display the packages assigned for a storage condition in an operation.

If this parameter is not set, transaction QP03 will be called for the display of an inspection plan, or the corresponding transaction will be called for routings or reference operation sets. This is the same scenario as in previous releases.

Note that you can switch between display and change transactions in the EWB, as long as you have the appropriate authorizations.

The user parameter mentioned above is not just used in stability studies. It can be used switch to the EWB from other transactions to display the plan.

*Maintenance of Report Variants*

Report variants used in stability studies cannot be maintained in Customizing. You maintain these variants directly in the relevant report or transaction.

**Effects on Customizing**

The stability study functions can be used immediately with the delivered Customizing settings. You do not need to perform any additional Customizing activities to be able to perform a stability study in the system.

The follow-up functions delivered by SAP for the notification can be used as delivered, but are a proposal. The process controlled by the follow-up functions can be changed or supplemented using customer-specific modules and follow-up actions.

The status profile can also be adapted to suit your requirements using user statuses.

We recommend that you test the process with the delivered default settings in a test system before making any changes.

The Customizing functions for the stability study are included in a separate node under "Quality Management" in the IMG.