Guide for Process Automation in Plant Maintenance (PM)
Configurable Workflow for Automatic Process Execution
## Document History

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<th>Date</th>
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</table>
# Table of Contents

1. Introduction ............................................................................................................................................ 6

2. Getting Started with Process Automation .......................................................................................... 7
   2.1 SAP Business Workflow in General .................................................................................................. 7
   2.2 Process Automation in PM ................................................................................................................. 7
      2.2.1 Terms ........................................................................................................................................... 8
      2.2.2 Functional Overview .................................................................................................................... 9
      2.2.3 Technical Workflow Description ............................................................................................... 13
   2.3 Configuring the Workflow in BRFplus ............................................................................................... 15
   2.4 Additional Documentation ................................................................................................................. 15
      2.4.1 SAP Business Workflow ............................................................................................................ 15
      2.4.2 BRFplus ..................................................................................................................................... 16

3. Activity Overview .................................................................................................................................... 17
   3.1 Target Object Maintenance Plan - BUS1020 ................................................................................... 17
      3.1.1 DLPL - Set Deletion Flag for Maintenance Plan ....................................................................... 17
      3.1.2 INCP - Set Inactive Flag for Maintenance Plan ....................................................................... 17
      3.1.3 RDLP - Clear Deletion Flag for Maintenance Plan ................................................................... 18
      3.1.4 RINP - Reset Inactive Flag for Maintenance Plan ..................................................................... 18
   3.2 Target Object Maintenance Item - EAM_MTI .................................................................................. 18
      3.2.1 ALMI - Allocate Item to Inactive Maintenance Plan ................................................................. 18
      3.2.2 DELT - Delete Technical Object from Object List .................................................................... 19
      3.2.3 DEMI - Deallocate Item from Maintenance Plan ...................................................................... 19
      3.2.4 INCI - Deactivate Item of Maintenance Plan ........................................................................... 19
   3.3 Target Object Equipment Bill of Material - EQUIBOM .................................................................. 20
      3.3.1 ACEB - Activate Equipment BOM ............................................................................................. 20
      3.3.2 DEEB - Deactivate Equipment BOM ......................................................................................... 20
      3.3.3 DLEB - Set Deletion Flag for Equipment BOM ....................................................................... 20
      3.3.4 RDEB - Clear Deletion Flag of Equipment BOM ..................................................................... 21
   3.4 Target Object Functional Location Bill of Material - FLOCBOM ..................................................... 21
      3.4.1 ACFB - Activate Functional Location BOM .............................................................................. 21
      3.4.2 DEFB - Deactivate Functional Location BOM ......................................................................... 21
      3.4.3 DLFB - Set Deletion Flag for Functional Location BOM ............................................................ 21
      3.4.4 RDFB - Clear Deletion Flag of Functional Location BOM ......................................................... 21
   3.5 Target Object Maintenance Task List - BUS1019 ......................................................................... 22
      3.5.1 DLTL - Set Deletion Flag for Maintenance Task List ................................................................. 22
      3.5.2 RDTL - Clear Deletion Flag for Maintenance Task List ............................................................ 22
      3.5.3 RLTL - Set General Release Status for Maintenance Task List .............................................. 22
      3.5.4 URTL - Set Unreleased Status for Maintenance Task List ....................................................... 22
   3.6 Target Object Maintenance Notification - BUS2038 ..................................................................... 23
      3.6.1 CNLT - Display Notification List (IW28) ................................................................................... 23
   3.7 Target Object Maintenance Order - BUS2007 .............................................................................. 23
      3.7.1 COLT - Display Order List (IW38) ............................................................................................ 23
      3.7.2 SMOL - Send E-Mail for Order List .......................................................................................... 23
4 Set Up the Solution ........................................................................................................... 24
4.1 Event Creation .................................................................................................................. 24
4.2 Event Linkage ................................................................................................................... 26
  4.2.1 Link Events to Workflow .......................................................................................... 26
  4.2.2 Link Events to Process Types .................................................................................. 27
4.3 Maintain Agent Assignment in Workflow Tasks (General Task) ...................................... 27
4.4 Configure and Schedule Error Monitoring ................................................................... 27
4.5 Define Inactive Maintenance Plans as Garbage Collectors in BRFplus ........................... 30
4.6 Enable My Inbox for Work Item Processing ................................................................... 30
  4.6.1 SWFVISU - Workflow Visualization Parameter ....................................................... 31
  4.6.2 Configure Target Mapping for Semantic Objects ..................................................... 31

5 How to Adjust the Solution in General ............................................................................ 36
5.1 Workflow Configuration ................................................................................................. 36
  5.1.1 Global properties ..................................................................................................... 36
  5.1.2 Object Types and Activities .................................................................................... 37
  5.1.3 Assign Activities to Process Types ......................................................................... 39
  5.1.4 Assign Process Types to Events ............................................................................. 41
5.2 BRFplus Configuration .................................................................................................. 41
  5.2.1 Definition ................................................................................................................ 41
  5.2.2 Main object types/elements ..................................................................................... 41
  5.2.3 Implementation Steps ............................................................................................. 44
  5.2.4 Where Used in Process Automation? ...................................................................... 44
  5.2.5 Adjusting BRFplus Settings .................................................................................... 58

6 Typical Use Cases ............................................................................................................ 65
6.1 How to Set Up Multiple Inactive Plans (Garbage Collectors) for Different Maintenance Strategies 65
  6.1.1 Scenario ................................................................................................................ 65
  6.1.2 Setup .................................................................................................................... 66
6.2 How to Create Decision Tasks vs. Background Tasks for Plan Deactivation Depending on the Plant .................................................................................................................. 75
  6.2.1 Scenario ................................................................................................................ 75
  6.2.2 Setup .................................................................................................................... 75
6.3 How to Set a Customer-Specific Status for Task Lists with Deactivated Technical Objects Assigned .................................................................................................................. 86
  6.3.1 Scenario ................................................................................................................ 86
  6.3.2 Setup .................................................................................................................... 87
6.4 How to Set a Customer-Specific Status for Bills of Material Assigned to Deactivated Technical Objects .................................................................................................................. 93
  6.4.1 Scenario ................................................................................................................ 93
  6.4.2 Setup .................................................................................................................... 93
6.5 How to Set Up Agent Determination Based on the Type of Technical Object ................. 101
  6.5.1 Scenario ................................................................................................................ 101
  6.5.2 Setup .................................................................................................................... 101
6.6 How to Set Up Agent Determination Based on the Planner Group of the Technical Object .................................................................................................................. 106
  6.6.1 Scenario ................................................................................................................ 106
  6.6.2 Setup .................................................................................................................... 106
6.7 How to Restrict the Solution to Deactivate Only Maintenance Plans ................................ 119
  6.7.1 Scenario ................................................................................................................ 119
  6.7.2 Setup .................................................................................................................... 119
6.8 How to Inform Users About Starting Follow-up Activities ................................................................. 120
  6.8.1 Scenario ........................................................................................................................................ 120
  6.8.2 Setup ........................................................................................................................................ 121
6.9 How to Enable Users to Stop Concurrent Workflows ............................................................................ 121
  6.9.1 Scenario ........................................................................................................................................ 121
  6.9.2 Setup ........................................................................................................................................ 122
6.10 How to Resolve Workflow Errors ........................................................................................................... 123
  6.10.1 Scenario ........................................................................................................................................ 123
  6.10.2 Action ......................................................................................................................................... 123

Abbreviations

EAM       Enterprise Asset Management
PM        Plant Maintenance
ERP       Enterprise Resource Planning
BRF       Business Rules Framework
BRFplus   Business Rules Framework plus
BRMS      Business Rules Management System
UI        User Interface
GUI       Graphical User Interface
ABAP OO   Component of the ABAP programming language that allows object-oriented programming on the basis of classes and interfaces
1 Introduction

The goal of this document is to describe how you can make use of the Process Automation in Plant Maintenance (PM). Workflow templates are developed to react on events in Enterprise Asset Management (EAM) and to automatically start follow-up actions. The guide provides an overview of the numerous options the tool offers for your daily business and it explains how you can easily tailor it to your company’s specific requirements.

The document describes how the Process Automation workflow works, how to setup the system, how the tool can be enhanced and how to handle errors. Additionally, links to the most important information are provided.

This document does not, however, attempt to provide a complete and detailed description of all the various possibilities and enhancements that are available, but rather uses basic examples to illustrate how to use the available enhancement technologies, like additional developments, Customizing or BRFplus configuration. The examples chosen are meant to be representative for similar enhancements in multiple areas of the application.

It is closely related to the EAM functionality in the SAP ERP release based on Enhancement Package 7 using SAP NetWeaver 7.40. However, most of the content and concepts described are independent of the SAP ERP release.

The workflow Deactivation of Technical Objects is available as of

- SAP Enhancement Package 7 (SP15) for SAP ERP 6.0
- SAP Enhancement Package 8 (SP09) for SAP ERP 6.0
- SAP S/4HANA 1709 FPS01
2 Getting Started with Process Automation

This chapter provides some basic information concerning the Process Automation workflow in Plant Maintenance.

2.1 SAP Business Workflow in General

SAP Business Workflow enables designing and execution of business processes within SAP application systems. Workflow processes are delivered as content in the SAP Business Suite. Additionally, customers can not only enhance those workflows provided by SAP, but they can also create their own workflows. SAP Business Workflow is a central component of the SAP system. It enables you to manage the business processes of your organization due to the integration with Organizational Management and standard SAP NetWeaver Business Intelligence for reporting and analysis. The application can be used for auditing and business process compliance.

For further information on SAP Business Workflow see chapter 2.4.

SAP Business Workflow with its WebFlow function is an efficient cross-application tool enabling integrated electronic management of business processes. SAP Business Workflow is a solution which has been integrated fully in the SAP System and which enables customer-specific business process flows to be coordinated and controlled on a cross-application and cross-work center basis. SAP Business Workflow therefore enhances "ready-made" application software. The SAP Business Workflow definition environment can represent business processes simply and can respond to changing external conditions quickly, even in a live system, by adapting the existing business processes.

Many SAP applications use SAP Business Workflow enabling preconfigured workflow scenarios to be reused in various situations. The scenarios can either be implemented without any changes or configured for your business processes by making minor adjustments. These workflow scenarios reduce implementation time significantly and have been optimally configured for the respective application functions.

2.2 Process Automation in PM

Process automation in Plant Maintenance is based on SAP Business Workflow and includes modeling, configuration and the automatic execution of processes. Embedded workflows automate business processes, such as follow-up activities that are to be performed whenever a technical object is deactivated or flagged for deletion. A workflow is an executable embedded process. SAP ships workflow templates that you can adapt and enhance to suit your needs. You can use the Business Rule Framework plus (transaction BRF+) to configure specific details of the process automation according to your needs.
2.2.1 Terms

Source Object Type

Specifies the type of business object that is related to an event. This event then starts a workflow. If an event occurs on an object (the individual record of an object type), the implemented workflow is executed.

Example: equipment

Source Object

Specifies one specific instance of the source object type

Example: equipment 4711 of source object type equipment (EQUI)

Target Object Type

Specifies the type of object on which certain activities are performed in the context of an implemented workflow

Example: maintenance plan

Target Object

Specifies one specific instance of the target object type

Example: maintenance plan 0815 of target object type maintenance plan (BUS1020)

Activity

Specifies which changes are processed on the target object when a triggering event occurs. Based on activities the system creates work items that are executed automatically in the background or by the corresponding agents responsible.

Example: Set Inactive Flag for Maintenance Plan (INCP)

Process Type

Specifies the process that is executed in the context of a workflow. The process type consolidates several activities to be performed when a specific triggering event occurs and defines the sequence of activities to be executed on a target object type or its instances. The process type is assigned to a specific event of the source object type.

Example: Technical Object Deactivated: Process Maintenance Plan and Items (TO_INACT_PROC_MPLAN_ITEM)

Processor

ABAP classes that implement the processing logic to perform the activities
2.2.2 Functional Overview

In Plant Maintenance, technical objects have their own lifecycles and are used in other maintenance objects, such as bills of materials, maintenance plans and items, task lists, maintenance notifications, and maintenance orders. If a technical object is scrapped, you can deactivate the corresponding master record or flag it for deletion, depending on whether the master record is still needed for evaluation purposes or not. When the master record of a technical object is changed, the related maintenance objects are not changed automatically.

The following example shows what happens, when a technical object is deactivated:

<table>
<thead>
<tr>
<th>Every object has its individual lifecycle and responsibility</th>
<th>Realistic Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Object</td>
<td>Technical object is deactivated</td>
</tr>
<tr>
<td>Maintenance Plan / Item</td>
<td>Maintenance plan / item is still active</td>
</tr>
<tr>
<td>Bill of Material</td>
<td>Bill of material is still active</td>
</tr>
<tr>
<td>Task List</td>
<td>Task list is still active</td>
</tr>
<tr>
<td>Order / Notification</td>
<td>Order / Notification still not completed</td>
</tr>
</tbody>
</table>

Together with BRFplus, SAP Business Workflow allows you to implement follow-up activities for the following EAM objects and documents when a technical object is deactivated or flagged for deletion:

- maintenance plans
- maintenance items
- bills of material
- task lists
- maintenance orders
- maintenance notifications

The key features are:

- Determine whether the system performs activity steps automatically or if agents responsible get work items to decide on and then trigger follow-up activities manually
- Assign the responsible agents via BRFplus for each manual decision step depending on several attributes of the affected objects like plant, object type, or maintenance plan category
- Configure the workflow to your needs
2.2.2.1 Maintenance Plan and Maintenance Item

Depending on the constellation of maintenance plans and maintenance items different actions are to be performed. Three actions for these objects are possible that must be processed in sequence:

- Delete the entries containing the technical object from the maintenance item object list
- Deactivate the maintenance item by deallocating the item from the current maintenance plan and assigning it to an inactive maintenance plan that you have defined as a garbage collector in BRFplus
- Deactivate the maintenance plan to which the technical object is assigned

The following pictures show four different scenarios with follow-up activities performed on maintenance plans and maintenance items when a technical object is deactivated.

**Note:** actions that are greyed out are not performed in the corresponding scenario. Generally, workflow steps are performed automatically in the background, except for one step in scenario four where a user decision is necessary.

Scenario 1 - Maintenance Plan with One Maintenance Item

**Master Data (before):**

- Maintenance Plan
- Maintenance Item
- Equipment

**Master Data (after):**

- Maintenance Plan
- Maintenance Item
- Equipment

**Workflow:**

- Equipment deactivated
- Delete equipment from object list
- Deactivate Maint. Plan Item
- Deactivate Maint. Plan

Scenario 2 - Maintenance Plan with Several Maintenance Items
Scenario 3 - Maintenance Item with Piece of Equipment in Object List

Master Data (before):
- Maintenance Plan
  - Maintenance Item
    - Object list
      - Equipment I
      - Equipment II

Workflow:
1. Equipment deactivated
2. Delete equipment from object list
3. Deactivate Maint. Plan Item
4. Deactivate Maint. Plan

Master Data (after):
- Maintenance Plan
  - Maintenance Item II
  - Equipment II

Scenario 4 - Maintenance Plan with Several Maintenance Items and Object List

Master Data (before):
- Maintenance Plan
  - Maintenance Item
    - Object list
      - Equipment I
      - Equipment II

Workflow:
1. Equipment deactivated
2. Delete equipment from object list
3. Deactivate Maint. Plan Item
4. Deactivate Maint. Plan

Master Data (after):
- Maintenance Plan (Deact.)
  - Maintenance Item I
  - Equipment I

* determination of the Maintenance Plan for inactive maintenance items is highly flexible due to evaluation in BRFplus
Depending on the Customizing settings and the settings in BRFplus, the workflow is highly flexible, enabling different scenarios tailored to your business needs.

- In Customizing, you can determine the activities to be performed and their sequence per target object type (for example, for the maintenance plan).
- Via BRFplus, you can determine whether the system performs the customized activity steps for a specific target object type automatically or if agents get work items to decide on. You can assign the agents responsible for each manual decision step.

For more detailed information about the BRFplus configuration, see chapter 5.2.

### 2.2.2.2 Bill of Material

Bills of material that describe the structure of a deactivated technical object are deactivated automatically and set to status **Inactive**. Bills of material that describe the structure of a technical object that is flagged for deletion, are automatically flagged for deletion. It is not possible to configure manual decision steps to be performed.

If the customer needs a different status to be set for deactivated bills of material, this status can be set in the BRFplus rule **RL_BOM_GET_NEWSTATUS** (for more information, see the use case in chapter 6.4).

### 2.2.2.3 Task List

Task lists that are assigned to a deactivated technical object are automatically deactivated and set back to the status **Created**. Thus, the task list can no longer be assigned to a maintenance notification or maintenance order. Task lists that are assigned to a technical object that is flagged for deletion, are automatically flagged for deletion. It is not possible to configure manual decision steps to be performed.

If the customer needs a different status to be set for deactivated task lists, this status can be set in the BRFplus rule **RL_TASKLIST_GET_NEWSTATUS** (for more information, see the use case in chapter 6.3).
2.2.2.4 Maintenance Notification

Not completed maintenance notifications that have a deactivated technical object assigned on header level, are collected in a work item and show up in the workflow inbox to be processed manually by the agents responsible. By default, the person who deactivated the technical object is determined as the agent responsible. However, you can determine a different agent responsible via BRFplus rules (for more information, see chapter 5.2).

It is not possible to configure follow-up activities to be processed automatically by the system.

2.2.2.5 Maintenance Order

Not completed maintenance orders that have a deactivated technical object assigned, are collected in a work item and show up in the workflow inbox to be processed manually by the agent responsible. By default, the person who deactivated the technical object is determined as the agent responsible. However, you can determine a different agent responsible via BRFplus rules (for more information, see chapter 5.2).

It is not possible to configure follow-up activities to be processed automatically by the system.

2.2.3 Technical Workflow Description

This chapter describes how the workflow works in general provided that the solution is properly set up as described in chapter 4.

The starting point for the workflow is an event that is triggered when the status of a technical object is changed.

Frame workflow WS00800023 starts and checks at the very beginning if there are any other workflows already running for this technical object for which the event was raised.

Settings in the Global Properties in Customizing determine if and when the responsible agents are notified about a workflow having started and if they can actively interfere and stop workflows that run in parallel for the same source object. If the users receive a decision work item, they can stop the current workflow or the ones already running or they can decide to proceed all workflows. For more information, see chapter 5.1.1.

Depending on Customizing settings, the system determines all relevant process types and the related parent object types and triggers starting events for the relevant object types. This starts sub-workflow WS00800044.

This workflow triggers the starting and final activities for an object type and determines the relevant object keys for the object type (target objects). The sub-workflow WS00800058 is started for each target object. In Customizing you can define if several objects of this target object type are processed in parallel and if the target objects are processed asynchronously, that is to say independently of each other.

Workflow WS00800058 determines the steps and corresponding activities. The sub-workflow WS00800087 is started for every activity and checks whether the current activity is relevant to the current target object. If the answer is YES, the processor is instantiated and sub-workflow WS00800072 is started. If the answer is NO, sub-workflow WS00800044 is called.

WS00800044, this time called as a sub-workflow, determines sub-object types and the relevant object keys per sub-object type and starts sub-workflow WS00800087 with the activity that is known this time. Sub-workflow
WS00800087 checks whether the activity is relevant to the imported target object: if not, the circle starts again until the right target object type is found for this specific activity.

When the right target object type is found, sub-workflow WS00800072 is finally started to execute the activity on the target object. This workflow calls the BRFplus framework at dedicated points where the behavior of the workflow can be influenced via configurable rules. For more information, see chapters 2.3 and 5.2.

The following chart provides an overview on how sub-workflows call each other (also recursively):

The following example illustrates how the different sub-workflows act together:

You have deactivated a piece of equipment. This piece of equipment is assigned to exactly one maintenance plan with only one single maintenance item. The maintenance plan has no object list assigned.

WS00800023 determines only one process type for processing activities on maintenance plans and items and triggers workflow WS00800044 for the parent target object type maintenance plan.

WS00800044 selects the relevant maintenance plan and starts sub-workflow WS00800058.

WS00800058 determines three activities to be executed (Delete Technical Object from Object List, Deactivate Item of Maintenance Plan, Deactivate Maintenance Plan). For every activity, the same loop is started:

- WS00800087 is started for the first activity (Delete Technical Object from Object List) and finds out that this activity is not relevant to the maintenance plan. Therefore, it calls workflow WS00800044 which selects the sub-object maintenance item. Now the activity is known and workflow WS00800087 starts directly. This time WS00800087 discovers that the activity is relevant to the current object type maintenance item and starts sub-workflow WS00800072 to finally process the activity on the selected item. That includes checks whether the activity shall be executed or not. Since no object list exists, the activity will not be executed.

- The system performs the workflow for the second activity (Deactivate Item of Maintenance Plan). This activity will not be executed either as there is only one maintenance item in the maintenance plan.

- Finally, WS00800087 is started for the last activity (Deactivate Maintenance Plan). WS00800087 discovers that this activity is relevant to the maintenance plan and starts sub-workflow WS00800072 to process the activity on the maintenance plan. All checks are successful and the activity is executed.
2.3 Configuring the Workflow in BRFplus

As described above, the workflow calls the Business Rule Framework plus (transaction BRF+) at dedicated points of time to gather information. You can use BRFplus to configure the following details of the Process Automation via rules:

- Implement checks for individual activities
  - You can define checks for individual activities and determine how the workflow proceeds. You could, for example, determine that the deactivation of a pump leads to the automated deactivation of the relevant maintenance plans whereas with the deactivation of a compressor a decision work item for the agents responsible is created.

- Specify agents responsible for dialog and decision work items
  - Agents responsible who are informed about the workflows and execute the dialog tasks and decision work items can be specified based on properties of the workflow or the objects involved. So you could, for example, specify agents of organizational unit A if a specific pump is deactivated in plant 0001, whereas agents of organizational unit B shall receive work items in their inbox if the same pump is deactivated in plant 0002.

- Define inactive maintenance plans as garbage collectors
  - You can specify inactive maintenance plans of different types (time-based and performance-based) as garbage collectors for deactivated maintenance items. You define these garbage collectors depending on properties of the workflow or the objects involved.

- Determine the status to be set for task lists assigned to deactivated technical objects
  - You can specify a different status for task lists assigned to deactivated technical objects. The preconfigured workflow settings determine that task lists that are assigned to a deactivated technical object are set back to the status 1 (Created). If you, however, want a different status to be set in the task list, you can specify that status in BRFplus.

- Determine the status to be set for bills of material assigned to deactivated technical objects
  - You can specify a different status for bills of material assigned to deactivated technical objects. The preconfigured workflow settings determine that bills of material that are assigned to a deactivated technical object are set to the status 02 (Inactive). If you, however, want a different status to be set in the bill of material, you can specify that status in BRFplus.

For more detailed information on BRFplus, see chapter 2.4 and for configuration of BRFplus, see chapter 5.2.

2.4 Additional Documentation

2.4.1 SAP Business Workflow

- Reference Documentation
- An Introduction to SAP Business Workflow
- Access to Business Workflow Community in SCN
- Business Workflow Community
- Training for SAP Business Workflow
2.4.2 BRFplus

- Business Rule Framework plus (BRFplus)
- Introduction to Business Rule Framework plus
- Community NW ABAP Business Rule Framework (BRFplus)
3 Activity Overview

This chapter describes all the activities that are available with the release of this document. The activities are assigned to target object types.

Before an activity is performed, several checks are processed which can be configured in BRFplus. Several outcomes are possible that are described in detail in chapter 5.2.4.1. The checks depend mainly on properties of the target object. You can configure, for example, that maintenance plans in a specific plant are not deactivated automatically when a technical object is deactivated but that a user decision is required.

- If the workflow creates dialog or decision work items, the agents responsible are always determined via BRFplus rules.
- If any check returns the result listed in the tables below, the following checks are obsolete.

3.1 Target Object Maintenance Plan - BUS1020

3.1.1 DLPL - Set Deletion Flag for Maintenance Plan

- Activity:
  Set Deletion Flag for Maintenance Plan
- Checks:

<table>
<thead>
<tr>
<th>Check</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the activity obsolete?</td>
<td>Don’t start activity</td>
</tr>
<tr>
<td>Is the technical object not referenced in the maintenance plan?</td>
<td>Don’t start activity</td>
</tr>
<tr>
<td>Is the maintenance plan not a strategic plan and has different</td>
<td>User decision</td>
</tr>
<tr>
<td>technical objects or an object list?</td>
<td></td>
</tr>
<tr>
<td>Are there maintenance items containing technical objects not flagged</td>
<td>Don’t start activity</td>
</tr>
<tr>
<td>for deletion?</td>
<td></td>
</tr>
<tr>
<td>Are there object list entries without deletion flag?</td>
<td>User decision</td>
</tr>
</tbody>
</table>

3.1.2 INCP - Set Inactive Flag for Maintenance Plan

- Activity:
  Set Inactive Flag for Maintenance Plan
- Checks:
### Check | Result
--- | ---
Is the activity obsolete? | Don’t start activity
If not a strategy plan: Is another technical object assigned to the maintenance plan or in the object list? | User decision
Are there maintenance items with technical objects that are still active? | Don’t start activity
Are there object list entries with technical objects that are still active? | • User decision

#### 3.1.3 RDLP - Clear Deletion Flag for Maintenance Plan

- Activity: Clear Deletion Flag for Maintenance Plan
- Checks: No checks configured

#### 3.1.4 RINP - Reset Inactive flag for Maintenance Plan

- Activity: Reset Inactive Flag for Maintenance Plan
- Checks: No checks configured

#### 3.2 Target Object Maintenance Item - EAM_MTI

#### 3.2.1 ALMI - Allocate Item to Inactive Maintenance Plan

- Activity: Allocate Maintenance Item to Inactive Maintenance Plan (Garbage Collector) This activity is also a sub activity of activity INCI.
- Checks:

<table>
<thead>
<tr>
<th>Check</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the activity obsolete?</td>
<td>Don’t start activity</td>
</tr>
<tr>
<td>Has no inactive maintenance plan been defined as</td>
<td>Don’t start activity</td>
</tr>
</tbody>
</table>
### 3.2.2 DELT - Delete Technical Object from Object List

- **Activity:**
  
  **Delete Technical Object from Object List**

- **Checks:**

<table>
<thead>
<tr>
<th>Check</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the activity obsolete?</td>
<td>Don't start activity</td>
</tr>
<tr>
<td>Do relevant object list entries have an active piece of equipment assigned?</td>
<td>Don't start activity</td>
</tr>
</tbody>
</table>

### 3.2.3 DEMI - Deallocate Item from Maintenance Plan

- **Activity:**
  
  **Deallocate Item from Maintenance Plan**
  
  This activity is also a sub activity of activity INCI.

- **Checks:**

<table>
<thead>
<tr>
<th>Check</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the activity obsolete?</td>
<td>Don't start activity</td>
</tr>
<tr>
<td>Has no inactive maintenance plan been defined as garbage collector in BRFplus?</td>
<td>Don't start activity</td>
</tr>
</tbody>
</table>

### 3.2.4 INCI - Deactivate Item of Maintenance Plan

- **Activity:**
  
  **Deactivate Item of Maintenance Plan**
  
  This activity calls the activities DEMI and ALMI as sub activities.

- **Checks:**

<table>
<thead>
<tr>
<th>Check</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the activity obsolete?</td>
<td>Don't start activity</td>
</tr>
<tr>
<td>Check</td>
<td>Outcome</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Has no inactive maintenance plan been defined as garbage collector in BRFplus?</td>
<td>Don't start activity</td>
</tr>
<tr>
<td>Is there no technical object in the item data?</td>
<td>User decision</td>
</tr>
<tr>
<td>Are there other technical objects assigned that are not deleted and inactive?</td>
<td>User decision</td>
</tr>
<tr>
<td>Is the item not allocated to a maintenance plan?</td>
<td>Start activity</td>
</tr>
</tbody>
</table>

### 3.3 Target Object Equipment Bill of Material - EQUIBOM

#### 3.3.1 ACEB - Activate Equipment BOM

- **Activity:**
  
  **Set Status 01 (Active).** Value can be influenced via BRFplus.

- **Checks:**
  
  No checks configured

#### 3.3.2 DEEB - Deactivate Equipment BOM

- **Activity:**
  
  **Set Status 02 (inactive).** Value can be influenced via BRFplus.

- **Checks:**
  
  No checks configured

#### 3.3.3 DLEB - Set Deletion Flag for Equipment BOM

- **Activity:**
  
  **Set Deletion Flag**

- **Checks:**
  
  No checks configured
3.3.4 RDEB - Clear Deletion Flag of Equipment BOM

- Activity: Remove Deletion Flag
- Checks: No checks configured

3.4 Target Object Functional Location Bill of Material - FLOCBOM

3.4.1 ACFB - Activate Functional Location BOM

- Activity: Set Status 01 (Active). Value can be influenced via BRFplus.
- Checks: No checks configured

3.4.2 DEFB - Deactivate Functional Location BOM

- Activity: Set Status 02 (Inactive). Value can be influenced via BRFplus.
- Checks: No checks configured

3.4.3 DLFB - Set Deletion Flag for Functional Location BOM

- Activity: Set Deletion Flag
- Checks: No checks configured

3.4.4 RDFB - Clear Deletion Flag of Functional Location BOM

- Activity: Remove Deletion Flag
3.5 Target Object Maintenance Task List - BUS1019

3.5.1 DLTL - Set Deletion Flag for Maintenance Task List

- Activity: Set Deletion Flag
- Checks: No checks configured

3.5.2 RDTL - Clear Deletion Flag for Maintenance Task List

- Activity: Remove Deletion Flag
- Checks: No checks configured

3.5.3 RLTL - Set General Release Status for Maintenance Task List

- Activity: Set Status 4 (Released (General)). Value can be influenced via BRFplus.
- Checks: No checks configured

3.5.4 URTL - Set Unreleased Status for Maintenance Task List

- Activity: Set Status 1 (Created). Value can be influenced via BRFplus.
- Checks: No checks configured
3.6 Target Object Maintenance Notification - BUS2038

3.6.1 CNLT - Display Notification List (IW28)

- Activity:
  Display Notification List
  Only maintenance notifications with the relevant deactivated technical object assigned and with status Outstanding, In Process or Not Completed are selected. The agent responsible can navigate to the notification list from within a work item. You cannot configure follow-up activities to be processed automatically by the system. If you work in SAP GUI, transaction IW28 is called.

- Checks:
  No checks configured

3.7 Target Object Maintenance Order - BUS2007

3.7.1 COLT - Display Order List (IW38)

- Activity:
  Display Order List
  Only maintenance orders with the relevant deactivated technical object assigned and with status Outstanding, In Process or Not Completed are selected. The agent responsible can navigate to the order list from within a work item. It is not possible to configure follow-up activities to be processed automatically by the system. If you work in SAP GUI, transaction IW38 is called.

- Checks:
  No checks configured

3.7.2 SMOL - Send E-Mail for Order List

- Activity:
  Send E-Mail for Order List
  Send an e-mail notifying the persons responsible that a technical object was deactivated and not completed orders must be checked manually. You can determine the recipients of such e-mails via the BRFplus rule for agent determination.

- Checks:
  No checks configured
4  Set Up the Solution

Before workflows can be started, some basic technical settings are necessary as well as the automatic workflow Customizing.


4.1  Event Creation

Check if an event creation is defined for the status change of a functional location or a piece of equipment. You find Event Creation on the system entry page in the SAP Menu under Tools → Business Workflow → Development → Definition tools → Events → Event creation → Status management.

- If you want to define which events should be triggered in accordance with the system status, choose System settings (transaction BSVX).
- If you want to define which events should be triggered in accordance with the user status, choose Customer settings (transaction BSVZ).

Functional location (BUS0010), events Deleted and Inactivated:

![Display View "System status events": Overview](image)

Details:
Equipment (EQUI), events **Deleted** and **Inactivated**:

Details:
4.2 Event Linkage

Two event linkages are necessary to trigger the workflow when the status of a technical object is changed.

4.2.1 Link Events to Workflow

At first, the relevant events must be linked to the workflow WS00800023 via the event type linkage in the event manager of the workflow runtime. Here you define when which event starts which workflow.

You can link the relevant events to the corresponding workflows on the system entry page in the SAP Menu under Tools → Business Workflow → Development → Definition Tools → Events → Event Linkages → Type Linkages (transaction SWETYPV).

Functional location (BUS0010), events Deleted and Inactivated:


Equipment (EQUI), events Deleted and Inactivated:

Furthermore, since the workflows are triggered via events, they have to be linked:

The same details apply to all linkages:
4.2.2 Link Events to Process Types

The process type consolidates the different activities to be performed when a specific triggering event occurs. Thus, the process types must be assigned to the relevant events in Customizing. Preconfigured Customizing settings are delivered for the PM Process Automation. Check whether the process types are assigned to the corresponding events and whether the relevant assignments of process types to events are activated in

Customizing for Plant Maintenance and Customer Service under Master Data in Plant Maintenance and Customer Service → Technical Objects → General Data → Set Workflow for Deactivation/Deletion of Technical Objects (transaction EAMWFCUST).

For more information about Customizing settings specific to workflow, see chapter 5.1.

You can deactivate the linkage between the event and the process type without removing the entry (1).

If you deselect the checkbox, the system does not execute the specified process type in the context of the implemented sub-workflow.

4.3 Maintain Agent Assignment in Workflow Tasks (General Task)

Dialog tasks need an agent assignment. They have to be defined as general tasks in Customizing for SAP NetWeaver under Application Server → Business Management → SAP Business Workflow → Perform task-specific Customizing (transaction OOCU).

First, expand the component structure of PM-EQM and choose Assign Agents (1).
The tasks highlighted in the picture below, are used by the Process Automation workflow. Select each of the tasks listed in the following table, and choose Attributes (1).

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS00800209</td>
<td>Generic decision task</td>
</tr>
<tr>
<td>TS00800263</td>
<td>Decision on Workflow stop</td>
</tr>
<tr>
<td>TS00800268</td>
<td>EAM-WF: Execute dialog activity on obj.</td>
</tr>
<tr>
<td>TS00800273</td>
<td>Execute generic decision option in dial.</td>
</tr>
<tr>
<td>TS00800389</td>
<td>Error: Decision dialog</td>
</tr>
<tr>
<td>TS00800522</td>
<td>EAM-WF: Execute dialog activity on obj.</td>
</tr>
</tbody>
</table>
In addition, task TS 800522 which is not visible in the picture above, also has to be set in the same way. In the popup, select the radio button **General Task (1):**

At the end, all dialog tasks that are listed above and are relevant for the Process Automation workflow must be defined as a **General Task.**
4.4 Configure and Schedule Error Monitoring

Work items that are identified as erroneous can be reprocessed automatically several times. This makes sense for temporary errors like foreign locks.

To configure error monitoring, go to the SAP Menu and choose Tools → Business Workflow → Development → Administration → Workflow Runtime → Work Item Error Monitoring → Configure and Schedule Background Job (transaction SWWD).

Determine the interval between two checks and how often the workflow system should attempt to execute a work item that has a temporary error (1). Confirm your entries with Save and Schedule (2).

4.5 Define Inactive Maintenance Plans as Garbage Collectors in BRFplus

Due to the fact that there is no option for deactivating a maintenance item within the SAP solution, the only way to deactivate an item is to deallocate it and to reallocate this item to an inactive maintenance plan. This prevents any further calls for the corresponding maintenance item. This deactivated plan is called “garbage collector”.

For more information about the configuration of the garbage collector in BRFplus, see chapters 5 and 6.1.

4.6 Enable My Inbox for Work Item Processing

My Inbox is a SAP Fiori app for work item processing. For more information about necessary release and configuration steps, see My Inbox in the SAP Fiori apps reference library.

To use the My Inbox app for this workflow, some configuration steps are necessary in addition to the general configuration steps mentioned in the SAP Fiori apps reference library. The necessary additional configuration steps described below are part of the SAP standard delivery.

Work items appear in the My Inbox app:
4.6.1 SWFVISU - Workflow Visualization Parameter

Agents responsible work on items that are displayed in their My Inbox app. When they execute work items or click on links they should be directed to the corresponding Web UI- or Fiori applications for displaying and changing objects and not navigate to the SAP GUI HTML version of the SAP GUI transaction.

The navigation is performed via Intent-Based Navigation.

To enable intent-based navigation from the work items in the My Inbox app, you must define navigation targets
• for workflow tasks which are used when executing the work item
• for displaying and changing attached objects

To set the visualization parameter for workflows, go to the SAP Menu and choose Tools → Business Workflow → Development → Definition tools → Worklist Client → Workflow Visualization Configuration (transaction SWFVISU).

Choose Task Visualization (1), select dialog task TS00800268 (2) and double-click on Visualization Parameter (3).

Check the settings and compare them with the settings displayed in the following screenshot.

The same settings must be set up for task TS00800273. This task is used for generic dialog tasks after decisions.

Then choose Object Visualization (1) and check if the following 4 entries exist (2):

Select each entry and navigate to the details via double-click on Visualization Parameter in the tree structure. Check the settings and compare them with the settings displayed in the following screenshots:
4.6.2 Configure Target Mapping for Semantic Objects

The intent-based navigation to other Fiori apps when executing workflow tasks only works properly when the parameter `openMode` is set for the relevant target mappings.

Start the Fiori Launchpad Designer and check if this parameter is maintained for the following target mapping:
5 How to Adjust the Solution in General

This chapter describes how to adjust the solution to your business needs in general. It explains all possible ways to configure the workflow and its behavior. The first part of this chapter introduces the possible workflow configuration that can be done via Customizing. The second part introduces BRFplus as a mighty tool for configuration of business rules.

Please refer to chapter 6 to gain information on how to change the setup based on typical use cases.

5.1 Workflow Configuration

The solution is delivered with preconfigured Customizing settings for the workflow. You can enhance and adapt these preconfigured settings in Customizing for Plant Maintenance and Customer Service under Master Data in Plant Maintenance and Customer Service → Technical Objects → General Data → Set Workflow for Deactivation/Deletion of Technical Objects (transaction EAMWFCUST).

5.1.1 Global properties

With Global Properties, the general behavior of the workflow can be changed. The following properties can be set:

- **ALLOW_OPTION_TO_STOP_WF**
  If the property value is set to X, the system raises a decision work item whenever an event triggers a workflow for a source object for which other workflows are already running. The responsible agents receive the work item in their inbox and can decide how to proceed:
  - They can decide to stop this workflow.
  - They can decide to stop any of the workflows that run in parallel for the respective source object.
  - They can decide to continue this workflow as well as the other workflows that run in parallel.
  - They can cancel the action and keep the work item in their inbox.

  See chapter 6.9 for an example.

- **CREATE_INFO_MESSAGE_ON_WFSTART**
  If the property value is set to X, the agents responsible receive an information message whenever a workflow
starts.
See chapter 6.8 for an example.

- **PRIORITY_FOR_INFO_MESSAGE**
  Set the priority of the info message (1 to 9). This number determines the priority of the work item that is created in the Business Workplaces of its recipient whenever several workflows run in parallel for the respective source object. If you enter the value 1, the responsible agents get a pop up indicating the express work item.

### 5.1.2 Object Types and Activities

In the **Object types** folder you can find the configured target object types with their processor classes. These classes contain the logic for the target object type to which they are assigned. The methods are consumed by the workflow (e.g. selection of relevant target objects, calling activities on target objects and so on).

Target object types can have parent object types assigned. In this case the workflow first reads the parent objects. Then, for each parent, the child objects are selected and processed. Dependencies are possible.

By selecting the corresponding check boxes, you can decide for each target object type whether it can be processed in parallel and asynchronously. The **Parallel** checkbox determines that several objects of this target object type are processed in parallel during a workflow. If you select the **Asynchronous** checkbox, you determine that several objects of this target object type are processed independently from each other during a workflow. That means that the calling workflow is decoupled from the processing workflow. In this case, ending the sub-workflow would not end the calling workflow.

For each target object type different activities are predefined. These activities specify which changes can be processed on a specific target object. Activities can be executed automatically and/or in dialog depending on Customizing settings and on the check results for activities which are always processed before executing an activity.

You can specify if the activity is automatically executed or if the corresponding agents receive a decision work item in their inbox and execute it manually. Some of the activities are always executed automatically, others can only be executed manually.

By default, activities are executed in the background if no special check is implemented and if the background object and the dialog task are defined (background and dialog possible). The system also uses the dialog task when an error occurs during the automated process.
If you select the **Only Dialog** checkbox, the corresponding work item has to be executed by the agents responsible. This means that the system uses the respective dialog task and does not execute the work item automatically in the background.

If you select the **S/F Activity** checkbox, the activity is only performed once per object type and not for every target object. The activity is then either performed before the first target object or after the last target object.

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Bp. Obj. Type</th>
<th>Bp. Obj. ID</th>
<th>Object name</th>
<th>Dialog Task</th>
<th>Only Dialog</th>
<th>S/F Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocate item to Main</td>
<td>E100020</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>DS00030243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear deletion flag for Maintenance Plan</td>
<td>E100020</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>DS00030230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reallocate item to Main</td>
<td>E100020</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>DS00030241</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Bp. Obj. Type</th>
<th>Bp. Obj. ID</th>
<th>Object name</th>
<th>Dialog Task</th>
<th>Only Dialog</th>
<th>S/F Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocate Equipment BOM</td>
<td>B02006</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>TSO00002468</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear deletion flag for Equipment BOM</td>
<td>B02006</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>TSO00002469</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity Description</th>
<th>Bp. Obj. Type</th>
<th>Bp. Obj. ID</th>
<th>Object name</th>
<th>Dialog Task</th>
<th>Only Dialog</th>
<th>S/F Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate Functional Location</td>
<td>B01206</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>TSO00002468</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear deletion flag for Functional Location</td>
<td>B01206</td>
<td></td>
<td>Generic exec. backgr. activity on obj.</td>
<td>TSO00002469</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Here, more object types can be defined or activities can be added for object types. To do this, processor and/or activity classes have to be implemented and assigned to the object type or activity. You can also enhance existing classes and assign them to existing object types or activities to influence the predefined processing.

5.1.3 Assign Activities to Process Types

Process types consolidate several activities to be performed when a specific triggering event occurs. They serve as clamps around several activities of a process and are assigned to events.
The following screenshot shows the preconfigured process type `TO_DEL_PROC_MPLAN_ITEM` and its activities:

You can adapt and enhance process types in the following way:

- You can activate or deactivate individual steps of the process types and determine that specific steps are skipped whenever the workflow is executed.
- You can assign several activities to the same step number to run them in parallel.
- You can define new process types and assign activities that have to be performed in a specific step sequence.
- You can decide whether or not the system executes specific process types as soon as the triggering event occurs.
5.1.4 Assign Process Types to Events

Depending on one’s needs, process types can be assigned to workflow events or the execution of process types can be deactivated. If you deselect the Active checkbox, the system does not execute the specified process type in the context of the implemented workflow.

5.2 BRFplus Configuration

You can configure many details of the Workflow: Deactivation of Technical Objects using the Business Rule Framework plus (transaction BRF+). This chapter describes how you can flexibly adapt the workflow to your business needs with BRFplus.

5.2.1 Definition

BRFplus is a business rules management system (BRMS) and part of the SAP NetWeaver ABAP stack. Therefore, all SAP applications that are based on SAP NetWeaver can access BRFplus within the boundaries of an SAP system.
BRFplus offers a unified modeling and runtime environment for business rules that addresses both technical users (programmers, system administrators) and business users who take care of operational business processes (like procurement, bidding, tax form validation, and so on).

In addition to the predefined expression types (decision table, decision tree, formula, database access, loops, etc.) and actions (sending e-mails, triggering a workflow, etc.), BRFplus can be extended by custom expression types. Also, direct calls of function modules as well as ABAP OO class methods are supported so that the entire range of the ABAP programming language is available for solving business tasks.

The execution of functions as well as of single expressions can be simulated. The processing log of the simulation is useful for checking the implementation and for investigating problems.

### 5.2.2 Main object types/elements

#### Application

- The application object serves as a container for all the BRFplus objects that have been assembled to solve a particular business task. It is possible to define certain default settings on application level that are inherited by all objects that are created in the scope of that application.

#### Data Objects

- BRFplus supports elementary data objects (text, number, Boolean, time point, amount, quantity) as well as structures and tables. Structures can be nested. For all types of data objects you can reference data objects that reside in the data dictionary of the backend system. With that, a BRFplus data object does not only inherit the type definition of the referenced object but can also access associated data like domain value lists or object documentation.
Expressions and Actions

- Each expression type defines a self-contained computational unit with a well-defined logic. Expressions use a context or nest other expressions to calculate, determine, or derive a result.
- BRFplus comes with a set of common expression types, but in the delivered templates mainly the types decision table, function call and procedure call are used.

Functions

- A function is used to connect a business application with the rule processing framework of BRFplus. The calling business application passes input values to the function which are then processed by the expressions and rulesets that are associated with the called function. The calculated result is then returned to the calling business application.

Rulesets

A ruleset is a container for an arbitrary number of rule objects which in turn carry out the necessary calculations with the help of assigned expressions and actions. Instead of assigning an expression to a function, you can also assign any number of rulesets to a function. When the function is called, all assigned rulesets are subsequently processed.
5.2.3 Implementation Steps

The following graphic provides an overview of the implementation steps.

```
Create Application
  ↓
Create Function
  ↓
Create and Assign Context Data Objects
  ↓
Create and Assign Rule Set(s)
  ↓
Create and Assign Rules
  ↓
Create and Assign Expressions
  ↓
Create and Assign Actions
  ↓
Activate Objects
  ↓
Simulate Function
  ↓
Implement Function Call
```

5.2.4 Where Used in Process Automation?

BRFplus is used to influence the following steps via rules:

- Perform checks for activities. For more information, see chapter 3.
- Determine the agents responsible for dialog and decision tasks
- Determine inactive maintenance plans as garbage collectors
- Determine the status to be set for maintenance task lists when the corresponding technical object is deactivated
- Determine the status to be set for bills of material when the corresponding technical object is deactivated
The following picture gives an overview when BRFplus is called.

No matter for which step the BRFplus framework is called from the workflow, the procedure is always the same:

- BRF Function with import parameters is called from workflow
- Rules will be processed in BRFplus and returning parameters are set
- Workflow evaluates the results and proceeds accordingly

### 5.2.4.1 Configuring Checks for Activities

With BRFplus you can configure checks that are executed before an activity is performed. The different possible outcomes of such checks are:

- **User decision**
  - Send a decision task to the agents responsible with different configurable decision options
- **Start activity**
  - Start the activity (in background or dialog, depending on the Customizing settings)
- **Don’t start activity**
  - Don’t execute this activity
- **Start separate dialog**
  - Send a dialog work item to the agents responsible to execute the activity in dialog
- **Error**
  - Set the workflow in error state
  - Agents responsible receive a work item to handle the error (execute again, skip activity, and so on)
Different rulesets are delivered with BRFplus to execute checks depending on the activity and the properties of maintenance plans and maintenance items. Different scenarios are described in chapter 2.2.2.1.

5.2.4.1.1 BRF Function

**EAM_WF_GEN_CHK_FOR_ACTIVITY**

- Import parameter: general information about the workflow, such as source object, target object, event, activity and so on (structure `EAM_WF_DETAILS_S`)
- Result data object: outcome as described above and a table of message keys with detailed information about the check result (structure `EAM_WF_ACT_CHECK_RESULT_S`)

5.2.4.1.2 Rules and Functionality

Several rulesets are assigned to a BRF function, exactly one ruleset to each activity. When an activity is imported, only the ruleset that is relevant for this activity is executed.

Every ruleset contains several rules and every rule executes a procedure call to the ABAP backend where the logic is implemented. Every rule can set the flag `CONTINUE_PROCESSING` to `false` to avoid the processing of the following rules. At the beginning of every ruleset, a procedure call is performed to read detailed data of the technical object. At the end of every ruleset the BRF function `EAM_WF_CHECK_FOR_ACTIVITY_TO` is called. The first rule always checks if the activity has since become obsolete. The first rule assigned to the activity "Deactivate the maintenance plan" checks, for example, whether the maintenance plan has already been deactivated.
Function EAM_WF_CHECK_FOR_ACTIVITY_TO has the following rulesets assigned:

- Ruleset RS_CHECK_FOR_ACTIVITY_MAPPING is always executed and not replaceable.
- Ruleset RS_CHECK_FOR_ACTIVITY_MTI is not executable and serves as a template for customer-specific rules.

At the beginning of this ruleset, detailed data of the maintenance item is read via procedure call. The embedded rule RL_CHECK_FOR_ACTIVITY_MTI_DT determines the check result via the decision table DT_CHECK_FOR_ACTIVITY_MTI.

The processing of the workflow can be influenced by adding customer-specific enabled rulesets to a BRF function. The priority you specify for the ruleset determines if a customer-specific ruleset is executed before or after the delivered standard rulesets. Rulesets with a higher priority are executed first. You can specify the priority which is a property of the ruleset in the ruleset header.

### 5.2.4.2 Determining Agents Responsible

If the workflow creates dialog work items or decision tasks, agents responsible need to be assigned for each manual decision step. You determine the agents responsible via BRFplus rules.

The delivered standard rulesets that are assigned to the BRF functions return the workflow initiator as the next agent.

#### 5.2.4.2.1 BRF Function

EAM_WF_GEN_DETERMINE_AGENTS

- Import parameter: general information about the workflow, such as source object, target object, event, activity and so on (structure EAM_WF_DETAILS_S)
- Result data object: table of agents (structure SWFUAGENTS)
5.2.4.2.2 Rules and Functionality

An enabled ruleset `RS_DET_AGNT_GEN_TO` is assigned. The prerequisite that the source object has to be a piece of equipment or a functional location (EQUI or BUS0010) is always fulfilled in this workflow.

At the start of this ruleset, detailed data is selected for the technical object. It contains only one rule `RL_PROCESS_DET_AGENTS_TO` which calls BRF function `EAM_WF_DETERMINE_AGENTS_TO`.

This BRF function provides detailed information about the workflow and about the technical object for evaluation and determines agents responsible based on the imported data.

As there are two objects involved, the technical object and a maintenance item, the agent responsible can either be determined by the technical object details (`RS_DET_AGNT_TO`) or by the maintenance item details (`RS_DET_AGNT_GEN_MTI`).

The BRF function has these two enabled rulesets assigned with low priority so that customer-specific rulesets could be added before or after these delivered rulesets.
At the beginning of ruleset RS_DET_AGNT_GEN_MTI, detailed information of the maintenance item is selected and the embedded rule RL_PROCESS_DET_AGENTS_TO_MTI calls BRF function EAM_WF_DETERMINE_AGENTS_TO_MTI. This function has ruleset RS_DET_AGNT_MTI assigned which determines the agents responsible via decision table DT_GET_AGENTS_MTI.

In the SAP standard delivery, this decision table contains the following attributes:

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVENT</td>
<td>Event</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJTYPE</td>
<td>Source Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJKEY</td>
<td>Source Object Key</td>
<td>Input</td>
</tr>
<tr>
<td>EQART</td>
<td>Equipment Type</td>
<td>Input</td>
</tr>
<tr>
<td>INGRP</td>
<td>Maint. Planner Group</td>
<td>Input</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>Activity</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATOROBJECTTTYPE</td>
<td>Initiator Object Type (US)</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATORAGENTID</td>
<td>Initiator Object ID (User Name)</td>
<td>Input</td>
</tr>
<tr>
<td>TARGET_OBJECT_TYPE</td>
<td>Target Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>WSTRA</td>
<td>Maintenance Strategy</td>
<td>Input</td>
</tr>
<tr>
<td>IWERC</td>
<td>Planning Plant (from Maintenance Item)</td>
<td>Input</td>
</tr>
<tr>
<td>PLAN_TYPE</td>
<td>Plan Type (Strategy, Single Cycle, Multi Counter)</td>
<td>Input</td>
</tr>
</tbody>
</table>
### Adjusting the Solution in General

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAN_SORT</td>
<td>Maint. Plan Sort Field</td>
<td>Input</td>
</tr>
<tr>
<td>AUART</td>
<td>Order Type</td>
<td>Input</td>
</tr>
<tr>
<td>ARBPL</td>
<td>Work Center</td>
<td>Input</td>
</tr>
<tr>
<td>WERGW</td>
<td>Plant for Work Center</td>
<td>Input</td>
</tr>
<tr>
<td>WPGRP</td>
<td>Maint. Planner Group (of Maintenance Item)</td>
<td>Input</td>
</tr>
<tr>
<td>ILART</td>
<td>Maint. Activity Type</td>
<td>Input</td>
</tr>
<tr>
<td>GSBER</td>
<td>Business Area</td>
<td>Input</td>
</tr>
<tr>
<td>OTYPE</td>
<td>Agent Object Type</td>
<td>Result</td>
</tr>
<tr>
<td>OBJID</td>
<td>Agent Object ID</td>
<td>Result</td>
</tr>
</tbody>
</table>

The other ruleset `RS_DET_AGNT_TO` determines the agents via decision table `DT_GET_AGENTS`. In the SAP standard delivery, this decision table contains the following attributes:

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVENT</td>
<td>Event</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJTYPE</td>
<td>Source Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJKEY</td>
<td>Source Object Key</td>
<td>Input</td>
</tr>
<tr>
<td>EQART</td>
<td>Equipment Type</td>
<td>Input</td>
</tr>
<tr>
<td>INGRP</td>
<td>Maint. Planner Group</td>
<td>Input</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>Activity</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATOROBJECTTTYPE</td>
<td>Initiator Object Type</td>
<td>Input</td>
</tr>
</tbody>
</table>
The three BRF functions described above call each other in cascades. The deeper it goes, the more specific information is available for evaluation. The customer can decide which of the two decision tables to use. In case, there are not the right attributes available, the customer can also create an own ruleset and rules with an own decision table.

5.2.4.3 Creating Inactive Maintenance Plans as Garbage Collectors

Some activities for maintenance items (deactivation and allocation) need an inactive maintenance plan as a garbage collector to which the deactivated maintenance items can be assigned.

The maintenance plans created as garbage collectors have to be known by all activities for maintenance plans and maintenance items. These garbage collectors cannot serve as potential target objects and are therefore excluded from the selection.

- When the workflow deactivates maintenance items, it calls an inactive maintenance plan and assigns these maintenance items to it.
- When the workflow selects relevant target objects, it determines all garbage collectors and excludes them from the selection.

The maintenance plan IDs used as garbage collectors are customer-specific and even differ from system to system. Therefore, this configuration or adjustment is mandatory before the mentioned activities can be started via workflow.

For more information about how to configure garbage collectors in detail, see chapter 6.1.

5.2.4.3.1 BRF Functions

EAM_WF_GET_INACT_MPLAN

- Import parameters:
  - general information about the workflow, such as source object, target object, event, activity and so on (structure EAM_WF_DETAILS_S)
  - detailed information about the technical object (structure EAM_WF_TO_DETAILS_S)
- Detailed information about the maintenance item (structure EAM_WF_MPLAN_ITEM_DETAILS_S)
- Result data object: inactive maintenance plan ID (INACT_MPLAN)

**Function: EAM_WF_GET_INACT_MPLAN, Get inactive Maintenance Plans**

- Import parameter: general information about the workflow, such as source object, target object, event, activity and so on (structure EAM_WFDETAILS_S)
- Result data object: table of inactive maintenance plan IDs (INACTIVE_MPLANS)
### 5.2.4.3.2 Rules and Functionality

Both functions have only one ruleset assigned (RS_GET_INACTIVE_MPLAN or RS_GET_INACTIVE_MPLANS) which is not enabled and just serves as a template:

- **Ruleset RS_GET_INACTIVE_MPLAN** determines a specific inactive plan via decision table **DT_GET_INACTIVE_MPLAN**.
- **Ruleset RS_GET_INACTIVE_MPLANS** determines all inactive plans of a logical system via decision table **DT_GET_INACTIVE_MPLANS**.

Decision table **DT_GET_INACTIVE_MPLAN** has the following attributes:

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG_SYSTEM</td>
<td>Logical System (to separate between development and productive system)</td>
<td>Input</td>
</tr>
<tr>
<td>EVENT</td>
<td>Event</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJTYPE</td>
<td>Source Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJKEY</td>
<td>Source Object Key</td>
<td>Input</td>
</tr>
<tr>
<td>EQART</td>
<td>Equipment Type</td>
<td>Input</td>
</tr>
<tr>
<td>INGRP</td>
<td>Maint. Planner Group</td>
<td>Input</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>Activity</td>
<td>Input</td>
</tr>
<tr>
<td>Column name</td>
<td>Description</td>
<td>Type</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>INITIATOROBJECTTYPE</td>
<td>Initiator Object Type (US)</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATORAGENTID</td>
<td>Initiator Object ID (User Name)</td>
<td>Input</td>
</tr>
<tr>
<td>TARGET_OBJECT_TYPE</td>
<td>Target Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>WSTRA</td>
<td>Maintenance Strategy</td>
<td>Input</td>
</tr>
<tr>
<td>IWERT</td>
<td>Planning Plant (of maintenance item)</td>
<td>Input</td>
</tr>
<tr>
<td>PLAN_TYPE</td>
<td>Plan Type (Strategy, Single Cycle, Multi Counter)</td>
<td>Input</td>
</tr>
<tr>
<td>PLAN_SORT</td>
<td>Maint. Plan Sort Field</td>
<td>Input</td>
</tr>
<tr>
<td>AUART</td>
<td>Order Type</td>
<td>Input</td>
</tr>
<tr>
<td>ARBPL</td>
<td>Work Center</td>
<td>Input</td>
</tr>
<tr>
<td>WERGW</td>
<td>Plant for Work Center</td>
<td>Input</td>
</tr>
<tr>
<td>WPGNP</td>
<td>Maint. Planner Group (of maintenance item)</td>
<td>Input</td>
</tr>
<tr>
<td>ILART</td>
<td>Maint. Activity Type</td>
<td>Input</td>
</tr>
<tr>
<td>GSBER</td>
<td>Business Area</td>
<td>Input</td>
</tr>
<tr>
<td>INACT_MPLAN</td>
<td>ID of Garbage Collector Maintenance Plan</td>
<td>Result</td>
</tr>
</tbody>
</table>

Decision table `DT_GET_INACTIVE_MPLANS` has the following attributes:

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG_SYSTEM</td>
<td>Logical system (to separate between development and productive system)</td>
<td>Input</td>
</tr>
<tr>
<td>INACT_MPLAN</td>
<td>ID of Garbage Collector Maintenance Plan</td>
<td>Result</td>
</tr>
</tbody>
</table>

In SAP standard delivery, you can define the garbage collector via the attributes in these tables.
You can adjust the process to your business needs by adding and enabling customer-specific rulesets for each BRF function.

### 5.2.4.4 Determining a Different Status for the Maintenance Task List

Task lists that are assigned to a deactivated technical object are automatically deactivated and set back to the status 1 (Created). You can change this default status and specify a different status for maintenance task lists (`RLTL` and `URTL`) via BRFplus rules.
The delivered ruleset that is assigned to the BRF function returns the status for the activity.
5.2.4.4.1 BRF Function

EAM_WF_TASK_LIST_GET_NEWSTATUS

- Import parameters:
  - general information about the workflow such as source object, target object, event, activity and so on (structure EAM_WFDETAILS_S)
  - detailed information about the technical object (structure EAM_WF_TODETAILS_S)
  - default status value
- Result data object: status to be set in the task list

5.2.4.4.2 Rules and Functionality

An enabled ruleset RS_EAM_WF_TASKLIST_GET_NEWSTAT with low priority is assigned which has the precondition that the result status value is initial.
To define a different task list status, you can define a customer-specific ruleset with a higher priority. This customer-specific ruleset is then executed before the delivered standard ruleset.
The ruleset has only one rule `RL_TASKLIST_GET_NEWSSTATUS` which determines the status via decision table `DT_EAM_WF_TASKLIST_GET_NEWSSTAT`.

The decision table has the following attributes:

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLNST_IMPORT</td>
<td>Status Imported</td>
<td>Input</td>
</tr>
<tr>
<td>EVENT</td>
<td>Event</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJTYPE</td>
<td>Source Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJKEY</td>
<td>Source Object Key</td>
<td>Input</td>
</tr>
<tr>
<td>EQART</td>
<td>Equipment Type</td>
<td>Input</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>Activity</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATOROBJECTTYPETYPE</td>
<td>Initiator Object Type (US)</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATORAGENTID</td>
<td>Initiator Object ID (User Name)</td>
<td>Input</td>
</tr>
<tr>
<td>TARGET_OBJECT_TYPE</td>
<td>Target Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>PLNST</td>
<td>Status</td>
<td>Result</td>
</tr>
</tbody>
</table>

If customers need different attributes, they can create their own rulesets and rules with the corresponding decision tables.

### 5.2.4.5 Determining a Different Status for the Bill of Material

Bills of material that describe the structure of a deactivated technical object are deactivated automatically and set to status 02 (*Inactive*). You can change this default status and specify a different status for a bill of material (ACEB, ACFB, DEEB and DEF7) via BRFplus rules.

The delivered ruleset that is assigned to the BRF function returns the status for the activity.
5.2.4.5.1  BRF Function

EAM_WF_BOM_GET_NEWSTATUS

- Import parameters:
  - general information about the workflow such as source object, target object, event, activity and so on (structure EAM_WF_DETAILS_S)
  - detailed information about the technical object (structure EAM_WF_TO_DETAILS_S)
  - default status value
- Result data object: status to be set in the bill of material

5.2.4.5.2  Rules and Functionality

An enabled ruleset RS_EAM_WF_BOM_GET_NEWSTATUS with low priority is assigned which has the precondition that the result status value is initial.

To define a different BOM status, you can define a customer-specific ruleset with a higher priority. This customer-specific ruleset is then executed before the delivered standard ruleset.
The ruleset has only one rule `RL_BOM_GET_NEWSTATUS` which determines the status via decision table `DT_EAM_WF_BOM_GET_NEWSTATUS`.

The decision table has the following attributes:

<table>
<thead>
<tr>
<th>Column name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>STLST_IMPORT</td>
<td>Status Imported</td>
<td>Input</td>
</tr>
<tr>
<td>EVENT</td>
<td>Event</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJTYPE</td>
<td>Source Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>TO_OBJKEY</td>
<td>Source Object Key</td>
<td>Input</td>
</tr>
<tr>
<td>EQART</td>
<td>Equipment Type</td>
<td>Input</td>
</tr>
<tr>
<td>ACTIVITY</td>
<td>Activity</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATOROBJECTTYPE</td>
<td>Initiator object type (US)</td>
<td>Input</td>
</tr>
<tr>
<td>INITIATORAGENTID</td>
<td>Initiator object ID (User Name)</td>
<td>Input</td>
</tr>
<tr>
<td>TARGET_OBJECT_TYPE</td>
<td>Target Object Type</td>
<td>Input</td>
</tr>
<tr>
<td>STLST</td>
<td>Status</td>
<td>Result</td>
</tr>
</tbody>
</table>

If customers need different attributes, they can create their own rulesets and rules with the corresponding decision tables.

### 5.2.5 Adjusting BRFplus Settings

Business Rule Framework plus (BRFplus) provides a comprehensive application programming interface (API) and user interface (UI) for defining and processing business rules. It allows you to model rules in an intuitive way.

The BRFplus function is the entry point of the workflow and has rulesets assigned. These rulesets have priorities to control the sequence of processing. Some of the delivered rulesets are executable, others only serve as templates for customer-specific rulesets.
The delivered BRFplus application as well as its components should not be changed. However, parts of the BRFplus application can be used as templates.

How to adjust the workflow to your business needs?

1. In a first step, create an own BRFplus application that serves as a container for all customer-specific rules and settings. We recommend to only create one application even if it is also possible to create several applications with several objects.
2. In a next step, create own rulesets or copy rulesets that are delivered as templates. You can then change the copies.
3. Finally, assign the customer-specific rulesets to the BRFplus function, set the priority and enable your rulesets.

5.2.5.1 Expert Mode

To have advanced tool support, open the Personalization (1), switch on the User Mode Expert (2) and save your settings (3).

5.2.5.2 Create a BRFplus Application for Customer-Specific Settings

In a first step, you create a new BRFplus application that serves as a container for all customer-specific rulesets. Carry out the following steps:

- Open the BRFplus Workbench via transaction BRF+
- Create a new BRFplus application that contains your customer-specific rulesets
  - Click the Workbench button and select Create Application.
o Specify the general data and the application data for your customer-specific application according to the screenshot below.

o Choose a name in the customer namespace.

o Select the application type. For test purposes, you can create a local application of Storage Type Customizing or Master Data. When your settings need to be transported, select a different storage type, such as System:
  o Storage Type: Master Data – settings are only valid in this system
  o Storage Type: Customizing – client-dependent settings that are only valid in specific clients
  o Storage Type: System – client-independent settings that are valid in all clients

o Save your application (1).
In the Details screen, enter the Application Component (1) and activate the application (2). Enter a transport request if requested.

You can use this application in the customer namespace as a container for your customer-specific rulesets. For more detailed information and examples, see the use cases described in chapter 6.

5.2.5.3 Create a BRFplus Application by Copying Templates

If you need to adapt the workflow logic to your business needs, do not change the delivered BRFplus application but instead, copy relevant parts of the delivered application and make your changes to the copied rulesets. This chapter describes in general how to create a single ruleset. Certainly, you can also copy more rulesets if necessary. For more detailed information and examples, see the use cases described in chapter 6.

All the delivered components are part of the BRFplus application EAM_WF_SYST.
• Open the BRFplus Workbench via transaction BRF+ and click on the **Search** button (1):

![BRFplus Workbench](image)

• In the popup, enter the **Application Name** EAM_WF_SYST, select the **Object Type** Application and choose **Search** (1):

![Search Criteria](image)

• Within the application, expand the navigation tree for the rulesets (1), (2). In the context menu of the ruleset RS_GET_INACTIVE_MPLAN, select **Copy** (3).
• On the popup, choose your customer-specific application that you have created (as described in chapter 5.2.5.2) as the target application. To copy the ruleset to your application, choose Apply (1):

![Copy Object](image)

• Enter a name for your copied ruleset by changing the name of the original ruleset (add the prefix "Z", for example) and confirm your entry with Ok (1):
Now the ruleset with its specific name is copied to your customer-specific BRFplus application and you can change the ruleset according to your business needs.

If you copy several depending objects which still reference objects of the original BRFplus application, you have to do some corrections and adapt these objects in your customer-specific application as described in the Use Cases in chapter 6.
6 Typical Use Cases

Chapters 4 and 5 described how to set up the solution to make it run in SAP standard and how to adjust the solution to your business needs. This chapter describes use cases as concrete examples that show in detail how to adjust the workflow solution.

6.1 How to Set Up Multiple Inactive Plans (Garbage Collectors) for Different Maintenance Strategies

6.1.1 Scenario

You use the Workflow: Deactivation of Technical Objects to execute activities on maintenance plans and maintenance items after the corresponding technical objects have been deactivated.

You want to create multiple inactive maintenance plans as garbage collectors for maintenance items that are deactivated by the workflow automatically. You want to determine the following inactive maintenance plans depending on the maintenance strategy:

Development system DEVCLNT001:
- Strategy A → 12340
- Strategy B → 12341
- Strategy C → 12342
- Else (if not Strategy A, B or C) → 12343

Quality system QALCLNT001:
- Strategy A → 34560
- Strategy B → 34561
- Strategy C → 34562
- Else (if not Strategy A, B or C) → 34563

Productive system PRDCLNT001:
- Strategy A → 56780
- Strategy B → 56781
- Strategy C → 56782
- Else (if not strategy A, B or C) → 56783
6.1.2 Setup

Template rulesets support you in creating inactive maintenance plans as garbage collectors. You can determine inactive maintenance plans depending on details of the workflow, the technical object or the maintenance item via decision table.

The following template rulesets are assigned to the following BRF functions and are not enabled:

- Ruleset RS_GET_INACTIVE_MPLAN is assigned to BRF function EAM_WF_GET_INACT_MPLAN.
- Ruleset RS_GET_INACTIVE_MPLANS is assigned to BRF function EAM_WF_GET_INACT_MPLANS.

You copy these template rulesets (and the depending objects), adjust the copied rulesets to your business needs and finally enable them.

As a first step, create your customer-specific BRFplus application (as described in chapter 5.2.5.2) with storage type Customizing.

- Copy the following template objects to your application (as described in chapter 5.2.5.3):
<table>
<thead>
<tr>
<th>Path</th>
<th>Object</th>
<th>Target Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAM_WF_SYST  Ruleset</td>
<td>RS_GET_INACTIVE_MPLAN</td>
<td>ZRS_GET_INACTIVE_MPLAN</td>
</tr>
<tr>
<td>EAM_WF_SYST  Ruleset</td>
<td>RS_GET_INACTIVE_MPLANS</td>
<td>ZRS_GET_INACTIVE_MPLANS</td>
</tr>
<tr>
<td>EAM_WF_SYST  Rule</td>
<td>RL_GET_INACTIVE_MPLAN</td>
<td>ZRL_GET_INACTIVE_MPLAN_DT</td>
</tr>
<tr>
<td>EAM_WF_SYST  Rule</td>
<td>RL_GET_INACTIVE_MPLANS</td>
<td>ZRL_GET_INACTIVE_MPLANS_D</td>
</tr>
<tr>
<td>EAM_WF_SYST  Expression</td>
<td>DT_GET_INACTIVE_MPLAN</td>
<td>ZDT_GET_INACTIVE_MPLAN</td>
</tr>
<tr>
<td>EAM_WF_SYST  Expression</td>
<td>DT_GET_INACTIVE_MPLANS</td>
<td>ZDT_GET_INACTIVE_MPLANS</td>
</tr>
</tbody>
</table>

- Open your customer-specific application in the navigation panel (it is displayed automatically if you choose My Applications in the drop-down list of Show), expand it and ensure that all copied objects are displayed in the tree structure.

- Choose decision table ZDT_GET_INACTIVE_MPLAN in the tree structure, add a new line to the table (1) and enter your values for the logical system and the inactive maintenance plan (2). You find the corresponding values to be entered in the table column Logical System in View V_TBDLS.
• Add further lines to the decision table, one for each inactive maintenance plan you want to create (1).

• Since you want to create garbage collectors for deactivated maintenance items depending on the maintenance strategy, enter the values as in the picture below:
  o Define different inactive maintenance plans for each logical system, one for each maintenance strategy (in this example, the strategies A, B and C) and one additional garbage collector for maintenance plans that have a different maintenance strategy.
  o Enter the values for the maintenance strategy in table column WSTRA.
    Note: You can also define inactive maintenance plans for deallocated maintenance items depending on various attributes listed in chapter 5.2.4.3.2, such as the work center (ARBPL) or the order type (AQUART).

• Finally, activate your settings (2).
• Choose decision table ZDT_GET_INACTIVE_MPLANS in the tree structure, add new lines to the table (1), enter the values for your logical systems and the inactive maintenance plans (2) and activate your settings (3).
• Choose the rule `ZRL_GET_INACTIVE_MPLAN` in the structure tree, select your decision table `ZDT_GET_INACTIVE_MPLAN (1), (2)` and activate your rule (3).
• Choose the rule `ZRL_GET_INACTIVE_MPLANS` in the tree structure, select your decision table `ZDT_GET_INACTIVE_MPLANS` (1), (2) and activate your rule (3).
• Choose ruleset `ZRS_GET_INACTIVE_MPLAN` in the tree structure, open the context menu (1) and choose *Select Existing Rule* (2).

![Diagram](image)

• Select your rule `ZRL_GET_INACTIVE_MPLAN` (1) and confirm it with *Ok* (2).

![Diagram](image)
• Display the ruleset header (1), enable the ruleset (2) and activate your settings (3).

• Choose the ruleset ZRS_GET_INACTIVE_MPLANS in the tree structure, open the context menu (1) and choose Select Existing Rule (2).
1. Select your rule `ZRL_GET_INACTIVE_MPLANS` (1) and confirm it with `Ok` (2).

2. Display the ruleset header (1), enable the ruleset (2) and activate your settings (3).
6.2 How to Create Decision Tasks vs. Background Tasks for Plan Deactivation Depending on the Plant

6.2.1 Scenario

In the SAP standard process automation for Plant Maintenance, follow-up activities on maintenance plans and maintenance items are automatically performed when a relevant technical object is deactivated. However, in BRFplus you can define checks for individual activities and determine how the workflow proceeds based on specific attributes. In this use case, you want a decision work item for the agents responsible to be created in their inbox for all workflow activities on maintenance plans in the plant Berlin. Whereas in the maintenance planning plant Berlin activities on maintenance plans and maintenance items must be decided individually by specific users, these activities shall be performed automatically in other plants.

In the SAP standard process automation, follow-up activities for maintenance plans and maintenance items are automatically performed. If you want to implement a different workflow behavior depending on the maintenance planning plant, you have to do some configuration in BRFplus.

6.2.2 Setup

A template ruleset is provided to define check results for individual activities and determine how the workflow proceeds based on details of the workflow, the technical object or the maintenance item via decision table.

This template ruleset is assigned to the BRF function EAM_WF_CHECK_FOR_ACTIVITY_TO and is not enabled.
To adjust the workflow behavior, you copy this template ruleset (and the depending objects), adjust the copied ruleset to your business needs and finally enable it.

As a first step, create your customer-specific BRFplus application (as described in chapter 5.2.5.2) with storage type Customizing.

- Copy the following template objects to your application as described in chapter 5.2.5.3.

<table>
<thead>
<tr>
<th>Path</th>
<th>Object</th>
<th>Target Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAM_WF_SYST-&gt;Ruleset</td>
<td>RS_CHECK_FOR_ACTIVITY_MTI</td>
<td>ZRS_CHECK_FOR_ACTIVITY_MTI</td>
</tr>
<tr>
<td>EAM_WF_SYST-&gt;Rule</td>
<td>RL_CHECK_FOR_ACTIVITY_MTI_D</td>
<td>ZRL_CHECK_FOR_ACTIVITY_MTI_D</td>
</tr>
<tr>
<td>EAM_WF_SYST-&gt;Expression</td>
<td>DT_CHECK_FOR_ACTIVITY_MTI</td>
<td>ZDT_CHECK_FOR_ACTIVITY_MTI</td>
</tr>
</tbody>
</table>

- Open your customer-specific application in the navigation panel (it is displayed automatically if you choose My Applications in the drop-down list of Show), expand it and ensure that all copied objects are displayed in the tree structure.
• Choose the decision table ZDT_CHECK_FOR_ACTIVITY_MTI in the tree structure, add a new line to the table (1), add the values as shown in the picture below (2) and activate your settings (3).

In your decision table, you determine that maintenance plans in your plant Berlin are not to be deactivated automatically by the workflow but only by user decision.

**Note:** Since the plant is specified on maintenance item level, your customer-specific configuration is only considered by the workflow in the following two cases:

- You have only specified **one single item** for the maintenance plan and this item has the plant Berlin assigned.
- There are several items belonging to the maintenance plan and **all items** have the plant Berlin assigned.

If the items of the maintenance plan have different values for a specific field (for example, one item is assigned to planner group 010 and another item to planner group 020), the system evaluates the decision table only for field values that are identical in all maintenance items. As an example, we consider a maintenance plan with the following 3 items:

- Item A: Plant 001, Planner Group 010, Order Type PM02
- Item B: Plant 001, Planner Group 010, Order Type PM01
- Item C: Plant 001, Planner Group 020, Order Type PM02

In that case, the system evaluates the decision table with plant 001, whereas the other two fields are initial.

We recommend to define your customer-specific workflow behavior but also determine that the workflow is executed as predefined in the SAP standard delivery for all the other use cases. To determine the standard workflow behavior as a fallback for all use cases that are not defined differently, you need to maintain and activate a second entry as shown in the picture below.
### Typical Use Cases

#### Example 1:

1. **Decision Table:** ZSTIB_DT_CHECK_FOR_ACTIVITY_MTI, Check for activity on target...

   **General**
   - **Source:** Free text input
   - **Dependent:** Independent of language and version
   - **Input:** Check for activity
   - **Text:** Check for activity on target object

   **Detail**
   - **Table Contents**
     - **Activity:** PLAN_SORT
     - **Result:** <ZUGU>

2. **Context:**
   - **Event:** INSTD
   - **Direct Value Input:** LOG_SYSTEM
   - **Select Expression:** PLAN_TYPE
   - **Result:** TARGET_OBJECT_KEY
   - **To Delimit:** TO_OBJECT

#### Example 2:

2. **Decision Table:** ZSTIB_DT_CHECK_FOR_ACTIVITY_MTI, Check for activity on target...

   **General**
   - **Source:** Free text input
   - **Dependent:** Independent of language and version
   - **Input:** Check for activity
   - **Text:** Check for activity on target object

   **Detail**
   - **Table Contents**
     - **Activity:** PLAN_SORT
     - **Result:** <ZUGU>

   **Context:**
   - **Event:** INSTD
   - **Direct Value Input:** LOG_SYSTEM
   - **Select Expression:** PLAN_TYPE
   - **Result:** TARGET_OBJECT_KEY
   - **To Delimit:** TO_OBJECT
If you proceed as recommended above, the system takes the default settings delivered by SAP if no other entry is provided.

- Choose rule `ZRL_CHECK_FOR_ACTIVITY_MTI_DT` in the tree structure, select your decision table `ZDT_CHECK_FOR_ACTIVITY_MTI (1,2)` in the Details and activate your rule (3).

- To assign your rule to the ruleset, choose ruleset `ZRS_CHECK_FOR_ACTIVITY_MTI` in the tree structure, open the context menu (1) and choose Select Existing Rule (2).
• Select your rule **ZRL_CHECK_FOR_ACTIVITY_MTI_DT** (1) and confirm it with **Ok** (2).

Before an activity is performed, several checks are processed which can be configured in BRFplus. The system evaluates some rules to decide whether the object is relevant for this activity. If it is relevant, the result of this check is stored in the field **CHECKRESULT**. For more information about which checks are processed for which activity, see chapter 3. In BRF+ you find the rules that are defined for the individual activities in function **EAM_WF_GEN_CHK_FOR_ACTIVITY**.
In this example, we choose **INCP Set Inactive Flag for Maintenance Plan** (see chapter 3.1.2). The following picture shows which checks are executed:
In the check details, the field CHECKRESULT-RESULT shows whether the activity is to be executed or not:

- **1 - Start activity**
- **2 - Don't start activity**
- **0 - User decision**

As an example, the following picture shows the result for the check: *Are there maintenance items with technical objects that are still active?* If the answer is Yes, the value of the CHECKRESULT-RESULT field is set to **2 - Don't start activity**. In the SAP standard delivery, the activity to deactivate the maintenance plan (INCP) is not executed if the maintenance plan has still maintenance items with active technical objects assigned.

Nevertheless, although the result of the standard check is **2 - Don't start activity**, the ruleset ZRS_CHECK_FOR_ACTIVITY_MTI which has been created before, will be processed. If you do not want the ruleset to be executed in this case, you have to perform the following steps to define a precondition:

- Open the ruleset and choose **Options** (1).
Choose Assign Precondition → Select Expression.

- Select the expression **CHECKRESULT-RESULT** from **EAM_WF_SYST** (1) and confirm your selection (2):
- Specify that the condition evaluation is only executed if the task outcome is **not equal to** 2 - *Don’t start activity.*
- Save and activate the ruleset.

- Display the ruleset header, enable the ruleset and activate it.
  - Make sure the ruleset header is enabled (1).
  - Make sure that no precondition is assigned for the ruleset header. The value in the `Precondition` field must be `Not assigned` (2). Remove the precondition if it has been copied.
  - Make sure that the rule `Check for activity via DT` has a precondition assigned (3 +4)
6.3 How to Set a Customer-Specific Status for Task Lists with Deactivated Technical Objects Assigned

6.3.1 Scenario

You can specify a different status for task lists assigned to deactivated technical objects. The preconfigured workflow settings determine that task lists that are assigned to a deactivated technical object are set back to the status 1 (Created).
In this use case, you want the workflow to set task lists with a deactivated technical object back to status 99 instead. To achieve this, you must do some configuration in BRFplus. The corresponding activity is URTL.

6.3.2 Setup

An enabled ruleset is provided in which the status of the task list can be defined based on the details of the workflow. You can replace the default task list status 1 (Created) by the customer-specific task list status 99 via decision table. This ruleset is assigned to the BRF function EAM_WF_TASK_LIST_GET_NEWSTATUS and has priority 99.

![Ruleset Details](image)

The enabled ruleset RS_EAM_WF_TASKLIST_GET_NEWSTAT with all its depending objects must be copied, adjusted and assigned to the mentioned function with a higher priority than the delivered enabled rulesets. Thus, you ensure that the adjusted ruleset is executed first.

As a prerequisite, create your own application with storage type Customizing as described in chapter 5.2.5.2.

- Copy the following template objects to your application as described in chapter 5.2.5.3.

<table>
<thead>
<tr>
<th>Path</th>
<th>Object</th>
<th>Target Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAM_WF_SYST→Ruleset</td>
<td>RS_EAM_WF_TASKLIST_GET_NEWSTAT</td>
<td>ZRS_EAM_WF_TASKLIST_GET_NEWSTAT</td>
</tr>
<tr>
<td>EAM_WF_SYST→Rule</td>
<td>RL_TASKLIST_GET_NEWSTATUS</td>
<td>ZRL_TASKLIST_GET_NEWSTATUS</td>
</tr>
<tr>
<td>EAM_WF_SYST→Expression→Decision Table</td>
<td>DT_EAM_WF_TASKLIST_GET_NEWSTAT</td>
<td>ZDT_EAM_WF_TASKLIST_GET_NEWSTAT</td>
</tr>
</tbody>
</table>
• Open your customer-specific application in the navigation panel (it is displayed automatically if you choose My Applications in the drop-down list of Show), expand it and ensure that all copied objects are displayed in the tree structure.

Choose decision table ZDT_EAM_WF_TASKLIST_GET_NEWSTA in the tree structure, add a new line to the table (1), add the values as shown in the picture below (2) and activate your settings (3).

You enter the default value that has been defined for the standard workflow behavior in the table column PLNST_IMPORT (in case of the task list status: 1 (Created)) and the customer-specific value in the table column PLNST (in this use case: 99).

Note: There are no checks implemented that prevent you from entering values for the PLNST_IMPORT parameter that are not defined in Customizing, e.g. 01 instead of 1 (Created). Be very accurate when entering the default value.

Choose rule ZRL_TASKLIST_GET_NEWSTATUS in the tree structure, select your decision table ZDT_EAM_WF_TASKLIST_GET_NEWSTA (1) - (6), change the operator back to is not initial (7) and activate your rule (8).
To add your rule to the corresponding ruleset, choose the ruleset ZRS_EAM_WF_TASKLIST_GET_NEWSTA in the tree structure, open the context menu (1) and choose Select Existing Rule (2).
• Select your rule ZRL_TASKLIST_GET_NEWSTATUS (1) and confirm it with Ok (2).

• Display the ruleset header (1) and remove the precondition that has been copied (2), (3).
- Display the ruleset header (1), set priority to e.g. 20 and activate your settings (3).
6.4 How to Set a Customer-Specific Status for Bills of Material Assigned to Deactivated Technical Objects

6.4.1 Scenario

You can specify a different status for bills of material (BOMs) assigned to deactivated technical objects. The preconfigured workflow settings determine that bills of material that are assigned to a deactivated technical object are set to the status 02 (Inactive).

In this use case, you want the workflow to set bills of material assigned to a deactivated technical object to status 99 instead. To achieve this, you must do some configuration in BRFplus. The corresponding activity for equipment BOMs and functional location BOMs is DEEB.

6.4.2 Setup

An enabled ruleset is provided in which the status of the BOM can be defined based on the details of the workflow. You can replace the default BOM status 02 (Inactive) by the customer-specific BOM status 99 via decision table.

This ruleset is assigned to BRF function EAM_WF_BOM_GET_NEWSTATUS and has priority 99.

The enabled ruleset RS_EAM_WF_BOM_GET_NEWSTATUS with all its depending objects must be copied, adjusted and assigned to the mentioned function with a higher priority than the delivered enabled rulesets. Thus, you ensure that the adjusted ruleset is executed first.

As a prerequisite, create your own application with storage type Customizing as described in chapter 5.2.5.2.

- Copy the following template objects to your application as described in chapter 5.2.5.3.

<table>
<thead>
<tr>
<th>Path</th>
<th>Object</th>
<th>Target Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAM_WF_SYST→Ruleset</td>
<td>RS_EAM_WF_BOM_GET_NEWSTATUS</td>
<td>ZRS_EAM_WF_BOM_GET_NEWSTATUS</td>
</tr>
</tbody>
</table>
Open your customer-specific application in the navigation panel (it is displayed automatically if you choose My Applications in the drop-down list of Show), expand it and ensure that all copied objects are displayed in the tree structure.

Choose decision table ZDT_EAM_WF_BOM_GET_NEWSTATUS in the tree structure, add a new line to the table (1), add the values as shown in the picture below (2) and activate your settings (3). You enter the default value that has been defined for the standard workflow behavior in the table column STLST_IMPORT (in case of the task list status: 02 (Inactive)) and the customer-specific value in the table column STLST (in the use case of this example: 99).

Note: There are no checks implemented that prevent you from entering values for the PLNST_IMPORT parameter that are not defined in Customizing, e.g., 2 instead of 02 (Inactive). Be very accurate when entering the default value.
• Choose rule `ZRL_BOM_GET_NEWSTATUS` in the tree structure, select your decision table `ZDT_EAM_WF_BOM_GET_NEWSTATUS` (1) - (6), change the operator back to `is not initial` (7) and activate your rule (8).
**Object Query**

**Search Criteria**

<table>
<thead>
<tr>
<th>Application Name</th>
<th>is equal to</th>
<th>ZSTB_EAM_WF_HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expression Type</td>
<td>is equal to</td>
<td>Any</td>
</tr>
<tr>
<td>Name</td>
<td>is equal to</td>
<td>*</td>
</tr>
<tr>
<td>Text</td>
<td>is equal to</td>
<td>*</td>
</tr>
</tbody>
</table>

Also include objects from default BRFplus application: [ ]

Maximum Number of Results: 200

| Search | Clear | Reset |

Result list: 4 objects found

<table>
<thead>
<tr>
<th>Object</th>
<th>Status</th>
<th>Type</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZSTB_EAM_WF_BOM_GET_NEWSTATUS</td>
<td>![Icon]</td>
<td>Decision Table</td>
<td>ZSTB_EAM_WF_HOWTO</td>
</tr>
<tr>
<td>ZSTB_EAM_WF_BOM_BOM_GET_NEWSTATUS</td>
<td>![Icon]</td>
<td>Decision Table</td>
<td>ZSTB_EAM_WF_HOWTO</td>
</tr>
<tr>
<td>ZSTB_EAM_WF_BOM_BOM_GET_INACTIVE_MPLANS</td>
<td>![Icon]</td>
<td>Decision Table</td>
<td>ZSTB_EAM_WF_HOWTO</td>
</tr>
<tr>
<td>ZSTB_EAM_WF_BOM_BOM_GET_INACTIVE_MPLAN</td>
<td>![Icon]</td>
<td>Decision Table</td>
<td>ZSTB_EAM_WF_HOWTO</td>
</tr>
</tbody>
</table>

3. Select the object for which you want to get the new status.

4. Click **Ok** to proceed.
• To add your customer-specific rule to the corresponding ruleset, choose the ruleset ZRS_EAM_WF_BOM_GET_NEWSTATUS in the tree structure, open the context menu (1) and choose Select Existing Rule (2).

• Select your rule ZRL_BOM_GET_NEWSTATUS (1) and confirm it with Ok (2).
Display the ruleset header (1) and remove the precondition that has been copied (2), (3).
**Typical Use Cases**

- Display the ruleset header (1), set priority to e.g. 20 and activate your settings (3).
6.5 How to Set Up Agent Determination Based on the Type of Technical Object

6.5.1 Scenario

In the SAP standard process automation for Plant Maintenance, follow-up activities on maintenance plans and maintenance items are automatically performed when a relevant technical object is deactivated or flagged for deletion. However, you have configured the workflow and determined that in the plant Berlin agents responsible decide whether a maintenance plan with deactivated technical objects is deactivated or not (chapter 6.2). In this use case, you need to determine how the workflow is to identify the agents responsible who get the corresponding decision work items in their inbox and trigger follow-up activities manually.

The standard behavior of the workflow is to always determine the employee who deactivated the technical object as the default agent responsible. In this use case, you want to determine the agents responsible differently based on the type of technical object. To achieve this, you must do some configuration in BRFplus.

Depending on the technical object type the following agents responsible shall be determined:

- technical object type Compressor → organizational unit 50063763
- technical object type Rotary Pump → organizational unit 50063764
- all other technical object types (decision whether to deactivate the maintenance plan) → organizational unit 50063765
- else (other user decisions) → default behavior: employee who deactivated the technical object

6.5.2 Setup

An enabled ruleset is provided in which the agents responsible can be defined based on the details of the workflow and the technical object via decision table. This ruleset is assigned to BRF function EAM_WF_DETERMINE_AGENTS_TO and has priority 99.
The enabled ruleset `RS_DET_AGNT_TO` with all its depending objects must be copied, adjusted and assigned to the mentioned function with a higher priority than the delivered enabled rulesets. Thus, you ensure that the adjusted ruleset is executed first.

As a prerequisite create your own application with storage type `Customizing` as described in chapter 5.2.5.2.

- Copy the following template objects to your application as described in chapter 5.2.5.3.

<table>
<thead>
<tr>
<th>Path</th>
<th>Object</th>
<th>Target Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAM_WF_SYST→Ruleset</td>
<td>RS_DET_AGNT_TO</td>
<td>ZRS_DET_AGNT_TO</td>
</tr>
<tr>
<td>EAM_WF_SYST→Rule</td>
<td>RL_GET_AGENTS_TO_DT</td>
<td>ZRL_GET_AGENTS_TO_DT</td>
</tr>
<tr>
<td>EAM_WF_SYST→Expression→Decision Table</td>
<td>DT_GET_AGENTS</td>
<td>ZDT_GET_AGENTS</td>
</tr>
</tbody>
</table>

- Open your customer-specific application in the navigation panel (it is displayed automatically if you choose `My Applications` in the drop-down list of `Show`), expand it and ensure that all copied objects are displayed in the tree structure.
• Choose decision table ZDT_GET_AGENTS in the tree structure, add new lines to the table (1), add the values as shown in the picture below (2) and activate your settings (3). In the picture below, the first two lines determine specific organizational units as agents responsible based on specific technical object types. In the third line an organizational unit is determined for the decision whether to deactivate a maintenance plan if a technical object of any other type is deactivated. In the fourth line the standard workflow behavior is added for any other user decision.

• Choose rule ZRL_GET_AGENTS_TO_DT in the tree structure, select your decision table ZDT_GET_AGENTS (1), (2) and activate your rule (3).
To add your customer-specific rule to the corresponding ruleset, choose the ruleset `ZRS_GETAGENT_TO` in the tree structure, open the context menu in the `Rules` area (1) and choose `Select Existing Rule` (2).
Select your rule ZRL_GET_AGENTS_TO_DT (1) and confirm it with Ok (2).

- Display the ruleset header (1), set priority to e.g. 20 and activate your settings (3).
6.6 How to Set Up Agent Determination Based on the Planner Group of the Technical Object

6.6.1 Scenario

In the SAP standard process automation for Plant Maintenance, follow-up activities on maintenance plans and maintenance items are automatically performed when a relevant technical object is deactivated or flagged for deletion. However, you have configured the workflow and determined that in the plant Berlin agents responsible decide whether a maintenance plan with deactivated technical objects is deactivated or not (chapter 6.2). In this use case, you need to determine how the workflow is to identify the agents responsible who get the corresponding decision work items in their inbox and trigger follow-up activities manually.

The standard behavior of the workflow is to always determine the employee who deactivated the technical object as the default agent responsible. In this use case, you want to determine the agents responsible differently based on the planner group of the technical object. Therefore, you must do some configuration in BRFplus.

Depending on the planner group of the technical object the following agents responsible shall be determined:

- planner group DR1 → organizational unit 50063763
- planner group DR2 → organizational unit 50063764
- all other planner groups (decision whether to deactivate the maintenance plan) → organizational unit 50063765
- else (other user decisions) → default behavior: employee who deactivated the technical object

⚠️ Caution

The challenge is, that the planner group is not imported as a property of the technical object in the delivered configuration. Therefore, the required implementation and configuration is more complex than in the use case before.

6.6.2 Setup

An enabled ruleset is provided in which the agents responsible can be defined based on the details of the workflow and the technical object via decision table. This ruleset is assigned to BRF function EAM_WF_DETERMINE_AGENTS_TO and has priority 99.
The enabled ruleset RS_DET_AGNT_TO with all its depending objects must be copied, adjusted and assigned to the mentioned function with higher priority than the delivered enabled rulesets. Thus, you ensure that the adjusted ruleset is executed first.

⚠️ Caution

You must create a new procedure call to fetch additional properties of the technical object such as the planner group.

As a prerequisite create your own application with storage type Customizing as described in chapter 5.2.5.2.

- Copy the following template objects to your application as described in chapter 5.2.5.3.

<table>
<thead>
<tr>
<th>Path</th>
<th>Object</th>
<th>Target Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAM_WF_SYST→Ruleset</td>
<td>RS_DET_AGNT_TO</td>
<td>ZRS_DET_AGNT_TO</td>
</tr>
<tr>
<td>EAM_WF_SYST→Rule</td>
<td>RL_GET_AGENTS_TO_DT</td>
<td>ZRL_GET_AGENTS_TO_DT</td>
</tr>
<tr>
<td>EAM_WF_SYST→Expression→Decision Table</td>
<td>DT_GET_AGENTS</td>
<td>ZDT_GET_AGENTS</td>
</tr>
</tbody>
</table>

- Open your customer-specific application in the navigation panel (it is displayed automatically if you choose My Applications in the drop-down list of Show), expand it and ensure that all copied objects are displayed in the tree structure.
• Choose *Expression* (1), open the context menu and choose *Create Expression → Procedure Call* (2), (3).

• Enter the name `ZGET_MORE_TO_Details` (1) and create the object (2).
- Choose the call type *Function Module* (1) and enter **BAPI_EQUI_DETDETAIL** (2) as function module name. Confirm your entries with **ENTER**.

- Function module **BAPI_EQUI_GETDETAIL** has the export structure **DATA_GENERAL_EXP** of type **BAPI_ITOB** which contains the planner group. You must create a corresponding structure in BRFplus. Open the context menu of your customer-specific application (1) and choose **Create → Data Object → Structure** (2).

- Enter **ZTO_DETAILS** (1) as a structure name and choose **Bind to Structure Type (DDIC)** (2) as the binding type.
• Enter the DDIC structure **BAPI_ITOB** (1) and confirm your entry with **Ok** (2).

• Choose **Create And Navigate to Object** (1) to create the structure.
• Activate the new structure (1) that you have just created.

• Choose the newly created procedure call ZGET_MORE_TODETAILS in the navigation tree and add EQUIPMENT as a new parameter.
• Select the parameter that you have just added (1), open the corresponding context menu in the table column Assigned Value (2) and choose Select Context Parameter (3).

![Diagram of Mapped Parameters]

• Enter the application name **EAM_WF_SYST** as a search criterion (1), search for objects (2), select the sub object **TO_OBJKEY** (3) of structure **WF_DETAILS** and confirm your entries with **Ok** (4).

![Diagram of Context Query]

• Add **DATA_GENERAL_EXP** (1), (2) as a new parameter.
- Select the parameter that you have just added (1), open the corresponding context menu in the table column Assigned Value (2) and choose Select Context Parameter (3).

- Select the structure ZTO_DETAILS that you have just created and confirm it with Ok.

- Specify ZTO_DETAILS (1), (2) as the result data object and activate the procedure call (3).
• Open the ruleset `ZRS_DET_AGNT_TO` in the tree structure, display the ruleset header (1) and add the structure `ZTO_DETAILS` in the context menu of `Variables` (1), (2).

• Add `ZGET_MORE_TO_DETAILS` in the context menu of `Expressions Which Initialize the Variables` (1), (2).

• To add your rule to the ruleset, open the context menu in the `Rules` area (1) and choose `Select Existing Rule` (2).
Select your rule `ZRL_GET_AGENTS_TO_DT` (1) and confirm your entry with `Ok` (2).
- Display the ruleset header, set priority to e.g. **20** (1) and activate the ruleset (2).

- Open the rule **ZRL_GET_AGENTS_TO_DT** in the tree structure, select your decision table **ZDT_GET_AGENTS** (1), (2) and activate your rule (3).

- Select the decision table in the tree structure and choose **Table Settings** (1) to add columns.
• Choose **Insert Column** (1) and then **From Context Data Objects** (2).

• Select the sub-object **PLANGROUP** (1) of the structure **ZTO_DETAILS** and confirm it with **Ok** (2).

• Press **Ok** (1) on the **Table Settings** popup.
Choose decision table **ZDT_GET_AGENTS** in the tree structure, add new lines to the table (1), add the values as shown in the picture below (2) and activate your settings (3). In the picture below, the first two lines determine specific organizational units as agents responsible based on specific planner groups. In the third line an organizational unit is determined for the decision whether to deactivate a maintenance plan if a technical object with any other planner group is deactivated. In the fourth line the standard workflow behavior is added for any other user decision.
6.7 How to Restrict the Solution to Deactivate Only Maintenance Plans

6.7.1 Scenario

In the SAP standard process automation for Plant Maintenance, follow-up activities on maintenance plans and maintenance items are automatically performed when a relevant technical object is deactivated. In this use case, you want maintenance plans with deactivated technical objects to be deactivated automatically. However, you want to switch off the following standard workflow behavior for maintenance items:

- If the deactivated technical object is assigned as a reference object to the maintenance item and there are no other technical objects assigned in the object list, the corresponding maintenance item is deactivated.
- If the deactivated technical object is assigned to the object list of the maintenance item, it is deleted from the object list.

6.7.2 Setup

In the SAP standard workflow solution, the following activities are switched on by default:

4. deletion of technical object in object list (DELT)
5. deactivation of maintenance item (INCI)
6. deactivation of maintenance plan (INCP)

You do not want maintenance items to be deactivated or technical objects to be deleted from the object list. Thus, you deactivate the first two activities.

You can adjust the workflow behavior in Customizing of Plant Maintenance and Customer Service under Master Data in Plant Maintenance and Customer Service → Technical Objects → General Data → Set Workflow for Deactivation/Deletion of Technical (transaction EAMWF_CUST).

- Choose Process types (1) and select process type TO_INACT_PROC_MPLAN_ITEM (2). This process type contains all relevant activities to automatically be performed on maintenance plans and items when a technical object is deactivated.

  ![Change View "Process types": Overview](image)

- Display the activities by double-clicking on Assign Activities to Process Type (1) and deselect the Active checkbox for the activities DELT and INCI (2).
• Save your changes (1).

6.8 How to Inform Users About Starting Follow-up Activities

6.8.1 Scenario

You are using the Process Automation workflow to execute automatic activities on target objects. You want the responsible agents to get an information message whenever a workflow starts. The information displayed looks like this:

⚠️ Caution

If you decided in the workflow Customizing that users are enabled to stop concurrent workflows (see chapter 6.9), they will only get the information about concurrent workflows and not this information in addition.
6.8.2 Setup

- Define the global workflow properties in the Customizing for Plant Maintenance and Customer Service under Master Data in Plant Maintenance and Customer Service → Technical Objects → General Data → Set Workflow for Deactivation/Deletion of Technical Objects (transaction EAMWFCUST).

- Open the Global properties (1) and set the property CREATE_INFO_MESSAGE_ON_WFSTART to X (2) if not done yet.

- Save your changes (1).

6.9 How to Enable Users to Stop Concurrent Workflows

6.9.1 Scenario

You are using the Process Automation workflow to execute automatic activities on target objects.

You want to enable the user who deactivated the technical object to stop other workflows that already run for this source object.

The user receives an information message that looks like this:
Additionally, the responsible agents receive a work item in their inbox and can decide how to proceed:

- They can decide to stop this workflow.
- They can decide to stop any of the workflows that run in parallel for the respective source object.
- They can decide to continue this workflow as well as the other workflows that run in parallel.
- They can cancel the action and keep the work item in their inbox.

### 6.9.2 Setup

- Define the global workflow properties in the Customizing for *Plant Maintenance and Customer Service* under *Master Data in Plant Maintenance and Customer Service* → *Technical Objects* → *General Data* → *Set Workflow for Deactivation/Deletion of Technical Objects* (transaction EAMWFCUST).
- Open the view *Global properties* (1) and set the property `ALLOW_OPTION_TO_STOP_WF` to ✓ (2) if not done yet.
6.10 How to Resolve Workflow Errors

6.10.1 Scenario

You are using the Process Automation workflow which executes activities on target objects in background. An error occurred because the maintenance plan was locked too long by another user, so the workflow stopped trying to execute the activity. You want to resolve that error.

Note

To set up a number of retries for erroneous work items and the time between the retries, go to the system entry page and choose in the SAP Menu Tools → Business Workflow → Development → Administration → Workflow Runtime → Work Item Error Monitoring → Configure and Schedule Background Job (transaction SWWD).

6.10.2 Action

If an error occurred, you get an information message notifying you that a work item was created to solve the issue (agents responsible will be determined like for other work items via BRFplus rules). You can navigate into your inbox choosing the Inbox (1) pushbutton or you can open the inbox of your choice separately (e.g. the My Inbox-app in the Fiori Launchpad or the Workplace in the SAP Menu under Office (transaction SBWP)).
In the inbox, process the work item (1) to see the decision options. The system also displays a detailed description including the reason for the error.

The following four options are available:

- **Repeat execution in background**
- Workflow starts the execution again in background.

- **Repeat execution with dialog**
  - Workflow creates a dialog work item that will appear separately in your inbox after a few seconds.

- **Process task manually and skip processing via workflow**
  - Workflow stops processing this activity. It is assumed that the task will be done manually without workflow.

- **Cancel and keep work item in inbox**
  - Work item stays in the inbox.