WORK CYCLE

Configuration Guide

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About WORK CYCLE

WORK CYCLE is the workflow component for PROCESS DIRECTOR Accounts Payable, for approving invoices. SAP users can perform these tasks inside the SAP environment. For non-SAP users, a Web Application is available.

About this guide

This guide describes how to configure WORK CYCLE to suit the requirements of your organization.

Note: This guide explains how to configure WORK CYCLE for PROCESS DIRECTOR Accounts Payable only. For information on configuring workflows for other process types, refer to the *PROCESS DIRECTOR SAP Configuration Guide*.

The guide contains the following chapters:

- Creating workflows

  Explains how to create and configure workflows.
- Other configuration tasks

  Describes user management, creating email templates, and other tasks.
- Programs and functions

  Details about some programs and functions to perform routine tasks, such as sending emails for overdue invoices.
- IMG

  A complete reference for the WORK CYCLE IMG.
- User Exits

  Descriptions for the User Exit interfaces/templates that come packaged with WORK CYCLE.
- Other tasks

  Information about copying forms between clients in SAP.

For further information, see the following guides.

- *PROCESS DIRECTOR Web Application Configuration Guide*
- *PROCESS DIRECTOR Accounts Payable Configuration Guide*

Creating workflows

There are four steps two create a workflow:

1. Create a workflow "shell."
2. Create one or more workflow steps.
3. Assign workflow steps to the workflow shell.
4. Activate the workflow.

The above four steps are the minimum that is required to get a workflow up and running.

Other configuration options

- Assigning default recipients
- Determining recipients
- Optional settings for workflow steps

Creating workflow shells

Workflow shells are the framework for workflows. To create a shell:

1. Go to `/COCKPIT/WC_WCID`.
2. Specify a **Workflow ID** and a **Workflow description**.

   The workflow description is displayed to workflow recipients, so enter a helpful description.
3. Enter a **Maximum processing time, in days**, **Selection list order**, **Workflow type**.
4. Specify values for remaining settings, which are all optional.
5. Save your entry.

Creating workflow steps

Workflow steps are the building blocks that are combined to form workflows. To create a workflow step, go to `/COCKPIT/WI3` and complete all relevant fields.

Assigning workflow steps to workflow shells

After you have created both workflow shells and workflow steps, you must assign the steps to the shells, thereby building a workflow. To do so:

1. Go to `/COCKPIT/WI4`.
2. Create a new entry.
3. Specify a workflow.
4. Specify the workflow step that will be the first step in the workflow.
5. Specify **1** as the position of the workflow step in the workflow.
6. Repeat steps 4-5 for each subsequent step in the workflow, using position, 2, 3, 4, etc.
7. Save your entry.

Note: A workflow step can be assigned to more than one workflow shell. For example, if you create a general approval workflow step intended for a manager, you can use this step in multiple workflows, without having to recreate the same workflow step for each workflow.

Activating workflows

Activating workflows is the last step in creating workflows. You must activate your workflow in order for it to be used.

1. Go to `/COCKPIT/WI7`.
2. Optional: Select a **Company Code** and/or a **PD document type**.

   Do this only if you wish to restrict a workflow to one or both of these parameters.
3. Select the workflow to activate.
4. Select either **MM** or **FI**.

   If you want to make the workflow available for both types of documents, create a new entry and specify the other document type.
5. Save your entry.

Assigning default recipients

Users can be assigned as recipients of workflow steps in the following ways:

- Manually, either in PROCESS DIRECTOR or WORK CYCLE, when starting or continuing a workflow.
- Automatically and statically, via a pre-defined recipient allocation to a workflow step.
- Automatically and dynamically, via recipient determination.
- Automatically and dynamically, via a User Exit.

Note: Invalid users are automatically removed from the step for assigning workflow recipients (not displayed).

Processor pre-allocation and assignment matrix

The result of the processor assignment settings is influenced by the **Pre-assign processors** setting for the workflow step and any user exits that may pre-assign users to workflow steps. The following table shows the results of using the processor assignment and pre-assign processors settings together.

/COCKPIT/WI3	**/COCKPIT/WUM2**		**Result**		
Pre-assign processors	Non-default processors assigned	Default processors assigned	Non-default processors pre-assigned to step	Default processors pre-assigned to step	Possible processor allocation to step
() Default assigned processors only	No	No	N/A	N/A	Email and User Groups only
	Yes	No	None	N/A	/COCKPIT/WUM2 users, Email

/COCKPIT/WI3	/COCKPIT/WUM2		Result		
					users, and User Groups only
	Yes	Yes	None	Default processor	/COCKPIT/WUM2 users, Email users, and User Groups only
(X) All assigned processors	No	No	N/A	N/A	Email and User Groups only
	Yes	No	Yes	N/A	/COCKPIT/WUM2 users, Email users, and User Groups only
	Yes	Yes	Yes	Default processor	/COCKPIT/WUM2 users, Email users, and User Groups only
(A) Default assigned, any other processor	No	No	N/A	N/A	All users
	Yes	No	None	N/A	All users
	Yes	Yes	None	Default processor	All users
(B) All assigned, any other processor	No	No	N/A	N/A	All users
	Yes	No	Yes	N/A	All users
	Yes	Yes	Yes	Default processor	All users

Determining recipients

PROCESS DIRECTOR can automatically determine workflow recipients from the purchase order, purchase requisition, purchasing group or SAP HR.

1. Go to `/COCKPIT/WUM2`.
2. Select the workflow step for which you want to automatically determine recipients.
3. Double-click **Recipient Determination functions**.
4. Create a new entry.

5. Select one or more **Function Modules** from which to determine the recipients. The **Sequence** determines the order in which the defined **Function Modules** should be used for recipient determination.

   Each subsequent function is called only if the previous function does not return one or more recipients.

6. Save your entries.

Line-item approval

Line and accounting items for MM and FI invoices can be approved individually, including by different processors. This feature is intended for documents where different persons are responsible for different items on invoices. Workflow steps are completed when all processors have either approved or rejected their items.

Process description

The following describes the basic features of line-item approval:

1. A workflow is started for a document with multiple line or accounting items.
2. Recipients are either entered manually by the PROCESS DIRECTOR user, or determined by a User Exit.
3. Workflow processors open the document and can view and approve all items assigned to them as well as unassigned items.
4. After all items have been approved or rejected, the workflow step is completed.

Activating line-item approval

1. Go to `/COCKPIT/WI3`.
2. Activate **Line item/account approval** and **All recipients must process**.

Note: You should only activate line-item approval for one step per workflow.

Assigning users to items

When a user is assigned to an item, no other workflow recipients can view the item.

There are three ways users can be assigned to an item:

- **Manual assignment post-workflow start**

  As no items are pre-assigned to anyone, the workflow recipients can initially view all the items in the document, and then approve one or more items. Whenever a user selects the **Approve** check box for an item and clicks the **Approve** button, that item is cleared, and the other workflow recipients can then no longer view or approve it.

- **Automatic assignment**

  The recipients are determined via Step User Exit 2: Determine processor of step.

  Note: This method is recommended as the best practice.

- **Manual assignment pre-workflow start**

  Before starting a workflow, recipients can be manually assigned to each line item in PROCESS DIRECTOR Accounts Payable.

  Note: Manual assignments override the automatic assignments done via the User Exit.

Workflow step conditions

Workflow step conditions are rules that determine whether a step is started or not. For example, in a typical two-step FI approval workflow, you may only want to have the second approval step performed if the value for an invoice is above a certain amount. You create conditions based on the values of certain fields, and can have more than one condition for a step.

Creating workflow step conditions

1. Go to `/COCKPIT/WI4`.
2. Select a workflow step and double-click **Step conditions**.
3. Enter **1** for **Sequence**.

   This will be the first condition executed. Subsequent steps will be 2, 3, and so on.
4. Specify the **Structure** and **Internal field** that the condition is based on.

   Note: If using the `COSTCENTER` field in the **Account assignments** table, the **From value** and **To value** must be 10 digits long. For example, for cost center 2500, enter 0000002500. Otherwise, the step condition will not activate.
5. Set **Inclusion/exclusion** to **Including** if you want the **From/To values** included in the step condition.
6. Set the **Comparative options** as appropriate.

   For example, use **GE – Greater than or equal to from-value** to create a condition based on an amount exceeding the value in the **From value** field.
7. Enter values for **From value** and **To value**.

   You only need a To value if using BT – Between from-value and to-value.

   Note: Enter the values in SAP internal format. For example, for cost center 1000 enter 0000001000, for vendor 2500 enter 0000002500.
8. Select an **Opening bracket** or **Closing bracket**, if there are multiple steps conditions and you want to perform two or more conditions together before performing another.
9. If more than one condition is created, use **AND** or **OR** for the **Boolean operator**, as appropriate.

Example

To create a step condition for a gross amount exceeding 1000EUR or 1400USD, you need the following four items:

Setting	Value
Item/Sequence	1
Structure	HEADER (header data)
Internal field	GROSS_AMOUNT
Inclusion/exclusion	Including
Comparative options	GT – Greater than from-value
From value	1000
Opening bracket/Closing bracket	Opening bracket
Boolean operator	AND
Setting	**Value**
Item/Sequence	2
Structure	HEADER (header data)
Internal field	CURRENCY
Inclusion/exclusion	Including
Comparative options	EQ – Same as from-value
From value	EUR
Opening bracket/Closing bracket	Closing bracket
Boolean operator	OR
Setting	**Value**
Item/Sequence	3
Structure	HEADER (header data)
Internal field	GROSS_AMOUNT
Inclusion/exclusion	Including

Setting	Value
Comparative options	GT – Greater than from-value
From value	1400
Opening bracket	Active
Boolean operator	AND
Setting	**Value**
Item/Sequence	4
Structure	HEADER (header data)
Internal field	CURRENCY
Inclusion/exclusion	Including
Comparative options	EQ – Same as from-value
From value	USD
Opening bracket/Closing bracket	Closing bracket
Boolean operator	[Blank]

Deleting workflows

Before deleting any workflows or workflow steps, ensure that no documents are currently active in them. You must either wait for the workflows for these documents to finish, or recall the documents from the workflow.

You can use `/COCKPIT/1` to view which documents are currently active for specified workflows and workflow steps, by using the **Workflow ID** and **Workflow step ID** fields.

Automatic posting after workflow approval

You can activate automatic posting for documents that have been approved. To configure this:

1. Go to `/COCKPIT/WI2`.
2. For the desired workflow, in the **Posting settings** section, select the **Posting attempt after WF** check box.
3. Optionally, set a follow-up flag in the **Follow-up flag ID for failed auto posting** field for easy identification of failed posting attempts. You can define follow-up flags in `/COCKPIT/C50`. See the *PROCESS DIRECTOR Accounts Payable Configuration Guide* for more information.
4. Save your entry.

Other configuration tasks

- User management
- Email templates
- One-time vendor fields in the Web Application
- Viewing PROCESS DIRECTOR documents
- Integrating with SAP Business Workflow

For all other configuration topics, refer to the IMG reference in Appendix A.

User management

SAP users, provided they have the appropriate authorization, can access WORK CYCLE in both SAP and the Web Application using the regular username and password. In addition, you can create WORK CYCLE users who can access the Web Application. This is an easy way for non-SAP users to access and participate in workflows.

- Creating users
- Importing users
- Creating user groups
- Using a substitute profile
- Define search help for workflow processors (`/COCKPIT/WI5`)

Creating users

You can create WORK CYCLE users who can access the Web Application.

1. Go to `/COCKPIT/WUM`.
2. In the **Workflow processor** field:
   - Enter a username if you want to specify one yourself.
   - Leave it blank if you want the system to generate one automatically (see the **User generation** setting in `/COCKPIT/WI6` for the methods of creating a username).
3. Click the **Create user** icon.
4. Complete the details for the user and click the **Continue** icon.

   A password for the user is displayed. You can specify a default initial password in `/COCKPIT/WI6`. If no default password is set, a random password is generated.

Tip: Activate the sending of emails to newly-created users. You can do this by enabling the **Create or delete** setting in `/COCKPIT/WI6`.

Importing users from a file

You can import users into WORK CYCLE from a file (for example, CSV).

1. Write a function module to perform the import.

   The function module must map and save the data to the `/COCKPIT/TWC_UMP` table (which contains the WORK CYCLE users).

   You can copy `/COCKPIT/WC_MAP_IMP_EXAMPLE`, an example function, and modify it to your requirements. This example function works with CSV files.

2. Go to `/COCKPIT/WI6`.
3. Enter the name of the function module you created in **Mapping module**.
4. Go to `/COCKPIT/WUM`.
5. Click the **Import user** icon.
6. Enter the filename to import and click .

Importing users from an LDAP directory

You can import users into WORK CYCLE from an LDAP directory.

1. Go to `/COCKPIT/WI27`.
2. Map the fields you want to import between the LDAP directory (**Attribute name**) and WORK CYCLE (**Internal field name**).

   If you want to modify any imported values, you can write your own function module and specify it here as well.

3. Go to SE38 and run `/COCKPIT/WC_USER_UPDATE`. This program imports the user data using the mapping table in `/COCKPIT/WI27`.

Creating user groups

User groups can be created that can consist of:

- WORK CYCLE users
- SAP users
- Other user groups

1. Go to `/COCKPIT/WUM1`.
2. Specify a **Work group** ID and a **Description**.
3. Select the group and double-click **Assigned processors**.
4. Specify the users and user groups that belong to this user group.

Managing substitutes

You can assign new substitutes and edit the existing ones for WORK CYCLE and SAP users.

1. Go to `/COCKPIT/WC_SUBS_MGR`.
2. Select the **User type** and **User ID**.
3. Click the **Execute** button.
4. In the **Substitute Maintenance for Workflows** table, manage the substitutes for the selected WORK CYCLE user by adding new ones and modifying or deleting the existing ones.
5. Save your changes.

Using a substitute profile

When processors create substitutes, they can specify a substitution **Profile** to assign:

When documents are sent to workflow recipients, the substitutes who can view them can be filtered:

1. Go to `/COCKPIT/WI33`.
2. Enter a substitute profile and save (you can only specify one).

Result

- Substitutes with the defined profile in `/COCKPIT/WI33` are the *preferred* substitutes for the document (see **Rules**, below).
- Substitutes created in the Web Application are assigned to this profile automatically (there is no **Profile** field in the Web Application).

Rules

- If no profile is specified in `/COCKPIT/WI33`, the substitute **Profile** setting is ignored and documents are available for all substitutes.
- If a profile is specified in `/COCKPIT/WI33`, documents are available only to substitutes with this profile. If no substitutes have this profile, documents are available to substitutes with no profile specified.

Example

Settings

User 1: Jones

Substitute	Profile
Muller	PD
Schmidt	ALL

User 2: Smith

Substitute	Profile
Muller	[None]

`/COCKPIT/WI33`

Profile
PD

Action

Two separate documents are sent to Jones (100) and Smith (200).

Result

Substitute	Available documents
Muller	100, 200
Schmidt	[None]

Email templates

Templates are used for workflow emails, which are sent at various times, such as when a workflow is started, is overdue, and so on. WORK CYCLE comes with its own templates, and you can also create your own.

- Creating custom email templates
- Creating custom HTML email templates
- Built-in email templates
- Email text variables

Creating email templates

Plain text or HTML?

Before creating email templates, you must first decide whether the emails will be plain text or HTML (you cannot use both).

With HTML emails, URLs can be displayed as more user-friendly hyperlinks rather than as long URLs. Header, line-item, and account assignment data can also be displayed in HTML emails (and not in plain text emails).

1. Go to `/COCKPIT/WI30`.
2. Under **Format**, select either **Plain text** or **HTML**.

Creating templates

There are two steps to creating email templates:

1. Create the text to use in `SE61`.

   Use plain text. Even if you have activated HTML emails, the text will be formatted as HTML before being sent. You specify the styles in the HTML start template.

   There are built-in templates that you can use or copy to your own templates and modify.

   There are variables that you can use in the text (for example, `&WEB_CYCLE_USER_NAME&` to insert the recipient's name).

   Note: The **Document class** in `SE61` must be set to **General text**.
2. Activate the use of the text in either the workflow step configuration (for workflow starts, forward and queries) or the general workflow text configuration.

For plain text emails, no further configuration is required. For HTML emails, please refer to Creating HTML email templates.

Built-in email templates

PROCESS DIRECTOR Accounts Payable comes packaged with the following email templates that you can use or copy to your own templates and modify.

Note: Queries and forwarding templates are activated in `/COCKPIT/WI9` for general texts and `/COCKPIT/WI3` for step-specific texts.

Action	Built-in template	Activated in*
Starting a workflow	/COCKPIT/WEB_CYCLE_START (for plain text emails) /COCKPIT/WEB_CYCLE_TEMPL_HTM (for HTML emails)	`/COCKPIT/WI3`
Recalling a document	/COCKPIT/WEB_CYCLE_STOP	`/COCKPIT/WI9`
Reminders for overdue workflows	/COCKPIT/WEB_CYCLE_REMINDER	
Substitute taking over processing	/COCKPIT/WEB_CYCLE_TAKEOVER	
Collective email	/COCKPIT/WEB_CYCLE_COLLECT	
Starting a workflow – email to active substitutes	/COCKPIT/WEB_CYCLE_SUBST	
Answering a query	/COCKPIT/WEB_CYCLE_ANSWER	
Sending a query	/COCKPIT/WEB_CYCLE_QUERY	
Forwarding a workflow	/COCKPIT/WEB_CYCLE_FORWARD	

* The subjects of the emails are specified in the same transactions.

Email text variables

There are various variables (aliases) that you can use in the text (for example, `&WEB_CYCLE_USER_NAME&` to insert the recipient's name). The following variables are available:

Variable	Description
&SENDER_EMAIL&	The email address of the person who starts the workflow, as saved in the `/SU01`.
&SENDER_PHONE&	The phone number of the person who starts the workflow, as saved in the `/SU01`.

Variable	Description
&SENDER_FAX&	The fax number of the person who starts the workflow, as saved in the `/SU01`.
&SENDER_NAME&	The full name of the person who starts the workflow, as saved in the `/SU01`.
&SENDER_DEPARTMENT&	The department of the person who starts the workflow, as saved in the `/SU01`.
&SENDER_FUNCTION&	The function of the person who starts the workflow, as saved in the `/SU01`.
&SENDER_COMPANY&	The company of the person who starts the workflow, as saved in the `/SU01`.
&WEB_CYCLE_DESCRIPTION&	The description of the workflow, as saved in `/COCKPIT/WI2`.
&WEB_CYCLE_STEP_DESCRIPTION&	The description of the workflow step, as saved in `/COCKPIT/WI3`.
&HEADER-*x*	The name of the PROCESS DIRECTOR Accounts Payable header field, where *x* is the field ID in the `/COCKPIT/THDR` table.
&VENDOR-*x*	The name of the vendor, where *x* is a field ID from the `BAPI1008_4` table.
&SY-*x*	The name of a system variable, where x is a field ID of the SYST structure.
&WEB_CYCLE_SINGLE_DOCUMENT_LINK&	The URL of the Web Application to a single document.
&WEB_CYCLE_SINGLE_SIGN_ON_LINK&	The URL of the Web Application logon page.
&WEB_CYCLE_DOCUMENT_LIST_LINK& &WEB_CYCLE_DIRECT_DOCUMENT_LINK&	The URL of the Web Application to the list of documents to approve. **Note:** Two aliases/variables exist to provide backward compatibility with previous versions.
&WEB_CYCLE_SUBST_DOC_LIST_LINK&	The URL of the list of documents from a person of whom another person is a substitute.
&WEB_CYCLE_USER&	The ID of the workflow processor.
&WEB_CYCLE_USER_NAME&	The full name of the workflow processor.
&WEB_CYCLE_SUBST_NAME&	The full name of a substitute.
&DUE_DAYS&	The number of days remaining for the document to be approved.

Variable	Description
&MOBILE_APPROVE&	The mailto URL to approve the document.*
&MOBILE_REJECT&	The mailto URL to reject the document.*
&MOBILE_NOTE&	The mailto URL to add a note the document.*

* MOBILE APPROVAL must be active for the link to appear in the email.

Variables for HTML emails

The following variables can only be used in HTML emails, not in plain text emails.

If no document data exists in the line item, account and multi-account assignment tables, these tables are not displayed in emails.

Variable	Description
&HEADER_DATA&	Displays the document header data, as a table.
&ITEM_DATA&	Displays the document line-item data, as a table.
&ACCOUNT_DATA&	Displays the document account assignment data, as a table.
&MULTI_ACC_ASS_DATA&	Displays the (MM) document account assignment data, as a table. **Note**: If **Add multi acc. ass. to items** is active in `/COCKPIT/WI30`, the account-assignment data is included in the line-item table (&ITEM_DATA&).
&WORKFLOW_HISTORY&	Displays the current log of the workflow (basically the same information that is presented in the workflow status in the SAP GUI and in the Web Application). It also includes any notes that have been created in WORK CYCLE. **Note:** The workflow history table is not included in emails sent for the first step of workflows.
&MOBILE_BUTTONS&	Displays the **Approve**, **Reject** and **Note** buttons for MOBILE APPROVE. **Note**: MOBILE APPROVAL must first be active for the workflow step (`/COCKPIT/MAI2`).

- To specify which fields appear in each of these tables, see `/COCKPIT/WI32`.
- To specify how many fields per row are displayed, see the **Fields number per row** setting in `/COCKPIT/WI30`.

Creating HTML email templates

To create an email template in HTML format:

1. Go to `/COCKPIT/WI30`.
2. Under **WORK CYCLE email type**, select **HTML**.
3. Specify the HTML code to use for the **HTML Start**, **HTML End** and **MOBILE APPROVAL links**.
4. Specify the display names for the links to the Web Application.
5. Under **Fields number per row**, enter the number of fields to appear in each table row.

   Example showing four fields per row:

Items							
Item 1							
Gross	0,00	Item	1	Net amount	0,00	Purch.doc.	4500000016
Quantity	0,000						
Item 2							
Gross	0,00	Item	2	Net amount	0,00	Purch.doc.	4500000016
Quantity	9,456						

6. Select **Add Multi acc. ass. to items** to include multi-account assignment fields (for MM documents) in the line-item table. If not selected, multi-account assignment fields are displayed as a separate table.
7. If MOBILE APPROVAL is active for a workflow step, only one field is displayed per table row and the **Field numbers per row** setting *is not* used. By selecting **Ignore MOBILE APPROVAL**, the **Field numbers per row** setting *is* used.

   Default table display for MOBILE APPROVAL, with only one field per row:

Items	
Item 1	
Gross	0,00
Item	1
Net amount	0,00
Purch.doc.	4500000016
Quantity	0,000
Item 2	
Gross	0,00
Item	2
Net amount	0,00
Purch.doc.	4500000016
Quantity	9,456

8. Specify the fields that are displayed in HTML emails.
9. Specify the email **Background** image.

HTML emails - Start and end code

When creating HTML email templates, you must specify the start and end of the HTML code (**HTML start** and **HTML end** settings).

PROCESS DIRECTOR Accounts Payable comes with templates you can use for both of these: `/COCKPIT/HTML_START` and `/COCKPIT/HTML_END`.

If you want to create your own templates, you should copy the code from these default templates to your own files. The main thing to change is the styles, to change the appearance of the HTML emails.

Background image filename

The background image filename that appears in the `/COCKPIT/HTML_START` template cannot be changed: *backgrnd.gif*. However, the image file you upload and use from the SAP repository can be any filename. It does not have to be *backgrnd.gif*. PROCESS DIRECTOR Accounts Payable links your image with this filename automatically.

HTML emails – Background images

You can add a background image to your HTML emails. For example, the image could be a bar extending across the top of the email, a company logo, or an image/color as a background to the entire email.

If no background image is specified, the default (*backgrnd.gif*) is used: 

To set a background image:

1. Upload the image you want to use to the SAP Web Repository.
2. Go to `/COCKPIT/WI30`.
3. In **Background**, enter the ID of the image you uploaded.

   Enter the image ID in the repository, not the original filename.

   There is no requirement for the image filename. It does not have to be *backgrnd.gif*, as it appears in the HTML start template. PROCESS DIRECTOR links your image with this filename automatically.

Note: Not all email programs (including some versions of Microsoft Office) support background images for HTML emails. In this case, the background image appears as an email attachment.

Disabling background images

To disable the use of background images, check the **Disable email background** option in /COCKPIT/WI30.

Adding an image to the SAP Web Repository

To add an image to the SAP Web Repository, for use as a background image to an HTML email:

1. Go to `/SMW0`.
2. Select **Binary data for WebRFC applications** and click the **Find** button.
3. Click the **Execute** button.
4. Click the **Create** button.
5. Enter an **Obj. name** and **description**.
6. Click **Import**.
7. Select the image file and click **Transfer**.

   Note: There is no requirement for the image filename. It does not have to be *backgrnd.gif*, as it appears in the HTML start template. PROCESS DIRECTOR Accounts Payable links your image with this filename automatically.
8. Specify the **Development class** and click **Save**.

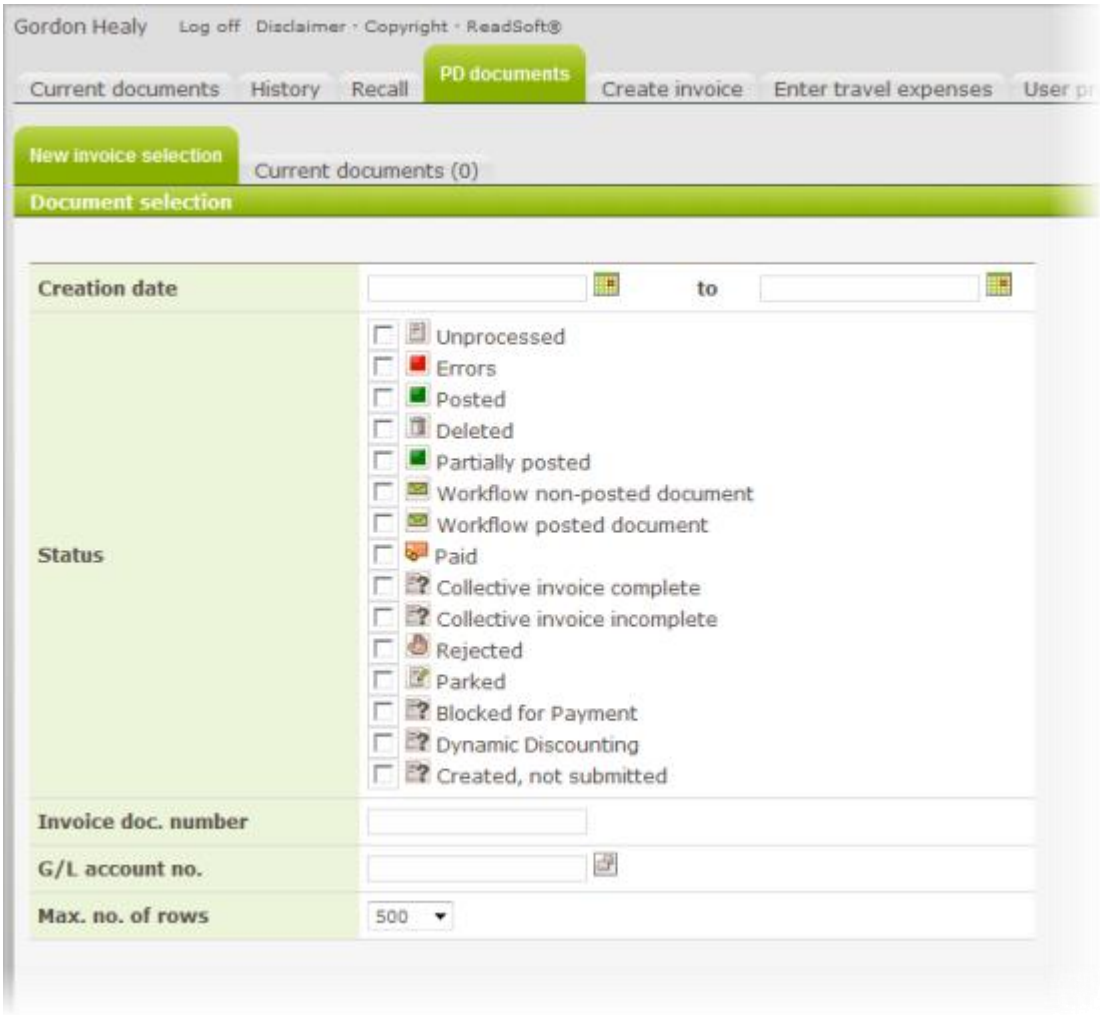
One-time vendor fields in the Web Application

Workflow processors can enter and save information about one-time vendors, for which there is no master record. For WORK CYCLE users in the SAP GUI, users can add this information on the Vendor tab. For WORK CYCLE users in the Web Application, you must specify which fields are displayed. However, the Name (`NAME1`) and City (`ORT01`) fields always appear—you do not need to add them here.

1. Go to `/COCKPIT/WI29`.
2. Click the **Display/Change** button and click **New entries**.
3. Specify a **Vendor** number only if the field should be displayed for that vendor only.
4. Enter the PROCESS DIRECTOR **Field name**.
5. Under **Display**, specify whether the field is displayed (**Normal field**), if a value must be entered (**Mandatory field**), is read-only (**Only display**), or hidden (**Hide**).
6. Specify the **Priority** number. This determines the row order in which the fields are displayed (lowest to highest value).
7. Save your changes.

Viewing PROCESS DIRECTOR documents

In the WORK CYCLE Web Application, an additional tab called **PD documents** can be displayed for members of a specific user group. In this tab, users can select and view any PROCESS DIRECTOR document, that is, not just ones sent to these users in a workflow.



To display the **PD documents** tab:

1. Go to `/COCKPIT/WI25` and specify the user group for whom this tab is displayed.
2. Go to `/COCKPIT/WI26` and specify which fields to have as the selection criteria.

Creating field statuses

1. Go to `/COCKPIT/C23`.
2. Add a new entry.
3. Enter a name/ID in **Field status**.
4. Under **Field status identification**, specify if header fields, line-item fields, and/or account assignment fields should be made read-only.

   Checking **No account assignment line with MM invoices** hides the account assignment fields section for FI items in MM documents.
5. Double-click **Characteristic value of status**.
6. Specify the individual fields that will be hidden, read-only, mandatory, or normal.

   Note: Mandatory fields here prevent the document from being saved if the field has no value.
7. Save the new field status
8. Go to `/COCKPIT/WI3`.
9. Open the desired workflow step and enter the name of the **Field status** you created.

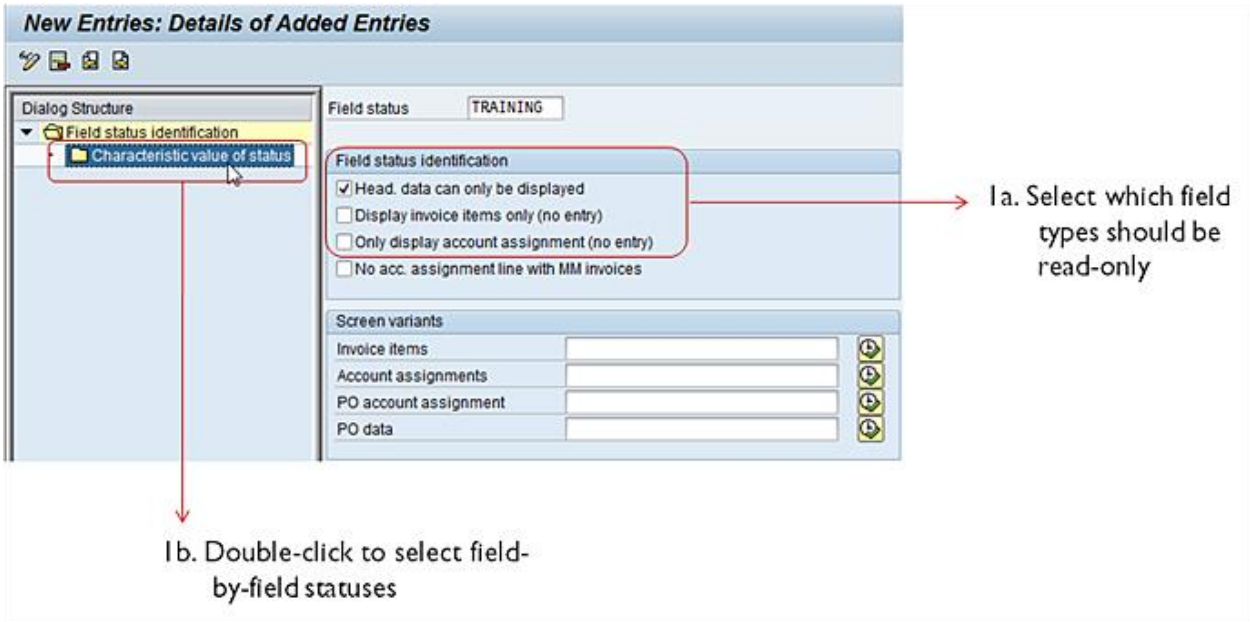
   Note: The field status is only activated for the selected workflow step, and not for PROCESS DIRECTOR. Field statuses for PROCESS DIRECTOR are activated in `/COCKPIT/C24`.
10. Save the change.

Example

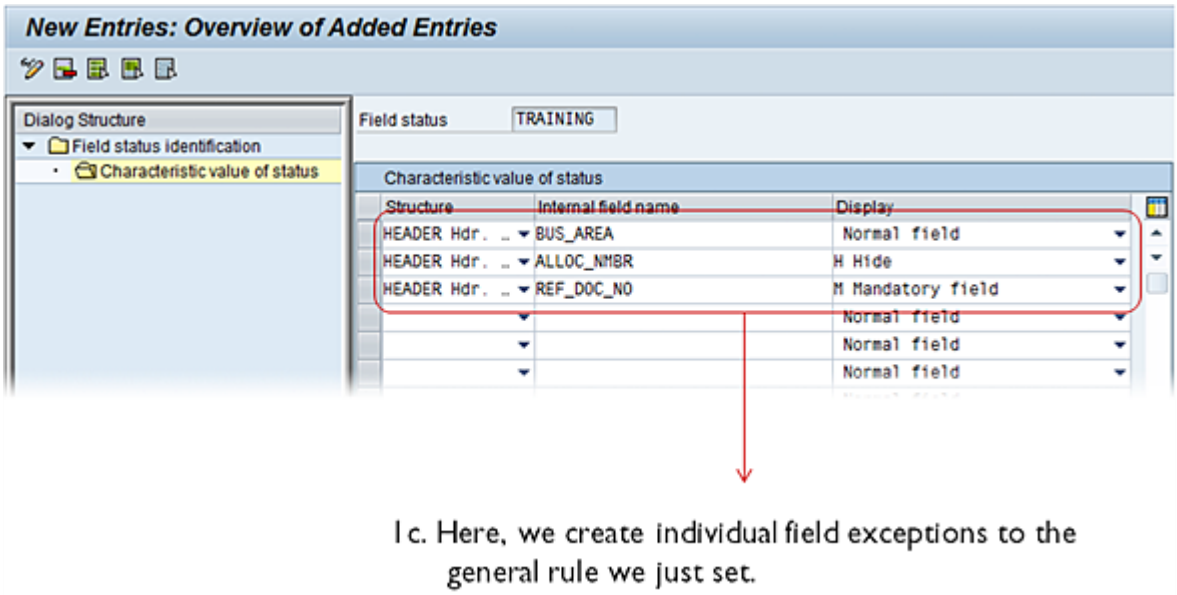
Objective: To make all header fields read-only, except for:

Header field	Display setting
Business area	Normal field (a field whose value can be changed)
Assignment	Hidden
Reference document	Mandatory

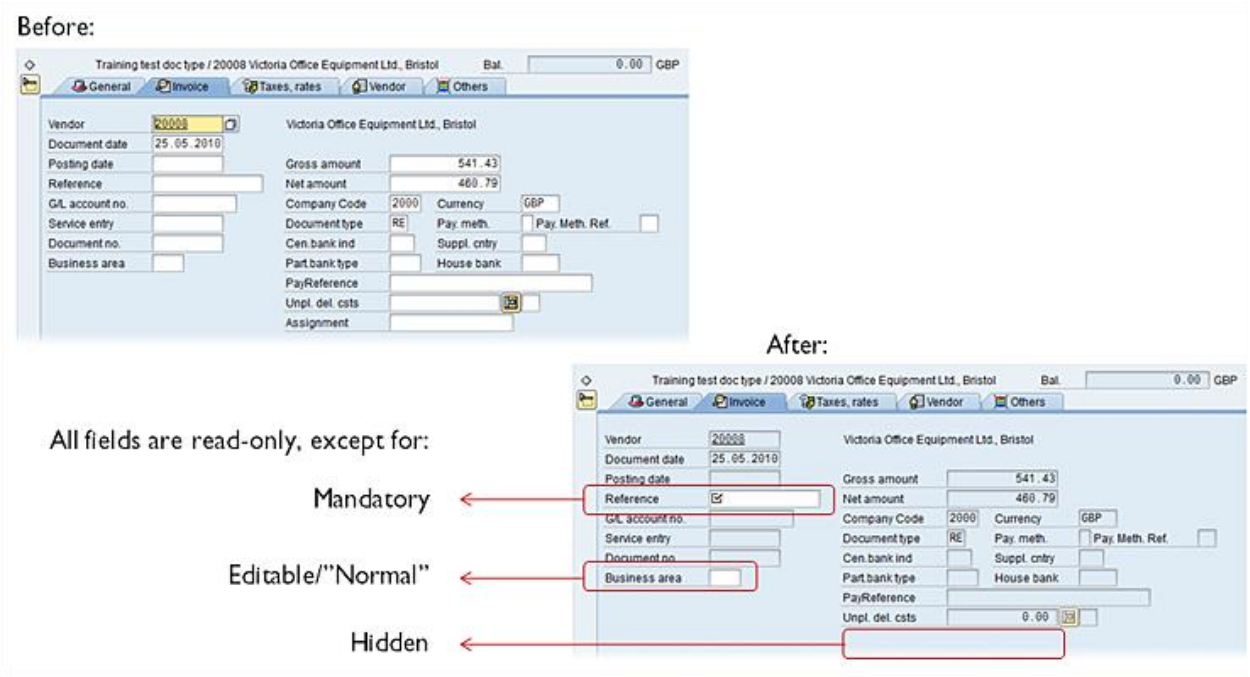
Step 1: Make all header fields read-only.



Step 2: Specify the three fields that will not be read-only.



Result:



Integrating with SAP Business Workflow

This tutorial shows you how set up SAP Business Workflow integration for WORK CYCLE. This means that if a WORK CYCLE workflow step is sent to an SAP user, it also appears as a new work item in the **Workflows** category of the receiver's SAP Business Workplace Inbox (SAP transaction SBWP). With a little extra configuration, the WORK CYCLE step can also be accessed from the Universal Worklist (UWL).

Overview

1. Go to SAP transaction SWDD.
2. Create a new workflow definition—initial setup.
3. Create a Container element—this is what is responsible for mapping a WORK CYCLE workflow step to an SAP Business Workflow step.
4. Set up the workflow start event—this lets WORK CYCLE trigger an SAP Business Workflow when a WORK CYCLE workflow step is started.
5. Add a Container operation to delete superfluous attachments—since any actual step processing occurs in WORK CYCLE, we want to display only the work item itself and remove any extraneous attachments that might be confusing. By selecting the work item, the user will click through to WORK CYCLE.
6. Add an activity for the WORK CYCLE workflow step.
7. Activate your workflow definition—this finalizes the configuration and takes it into production.

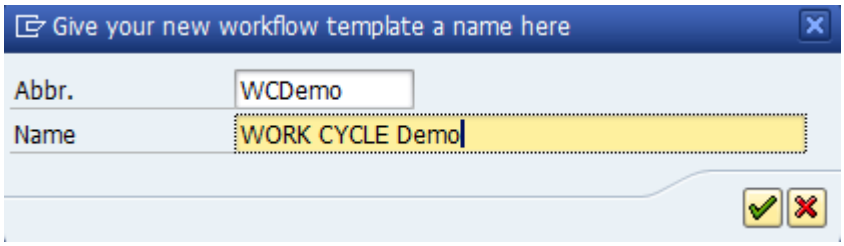
Additional information

As a supplement to the information in this topic, Ginger Gatling's SDN eLearning session "Building a Workflow from Scratch" (requires SDN login) provides a tutorial-style introduction to developing SAP Business Workflows.

Creating a new workflow definition

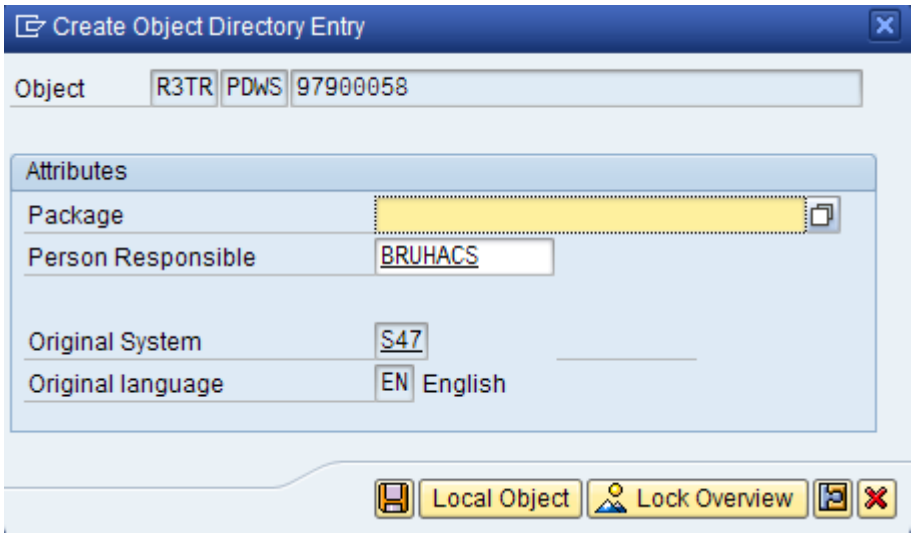
1. In SWDD, select the menu path **Workflow > New**, then save.

   A popup appears, prompting you to enter an abbreviation and name for the workflow definition:



2. Confirm.

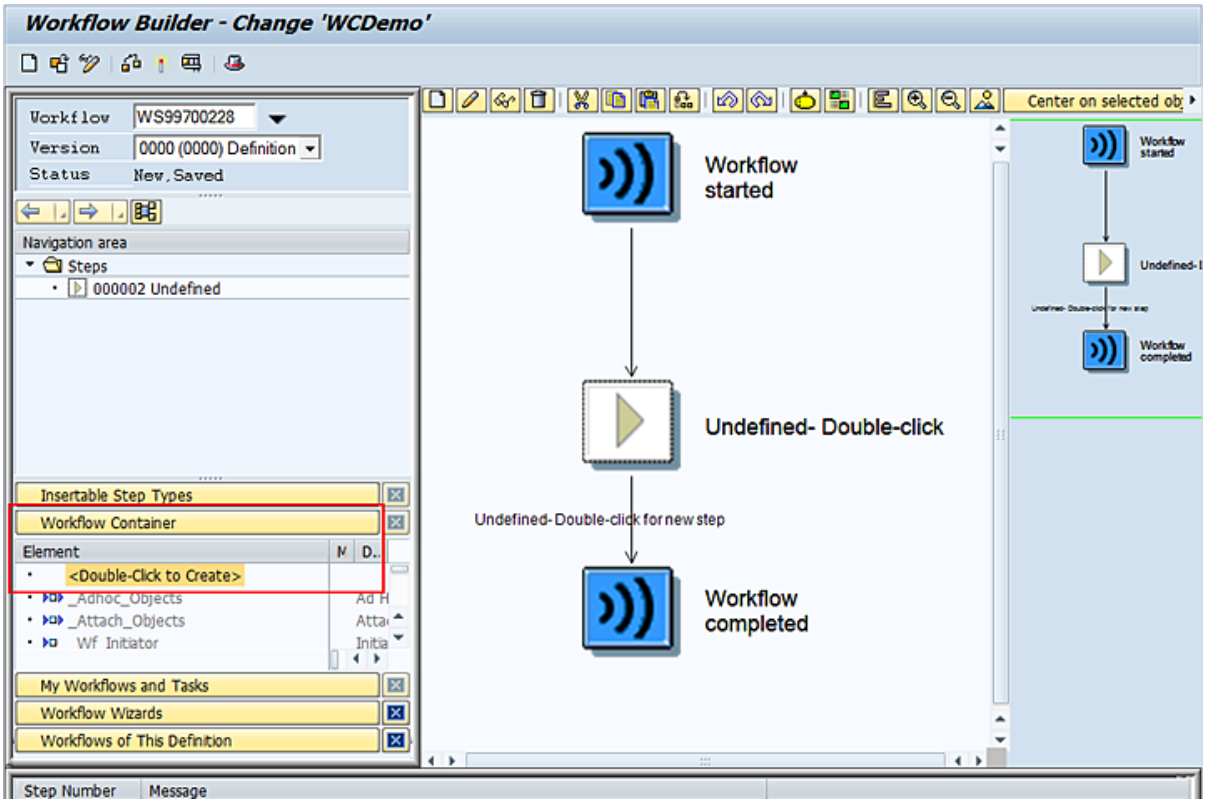
   Another popup appears, asking you to create an Object Directory entry for the workflow definition:



3. Use search help to pick a package name, then save.

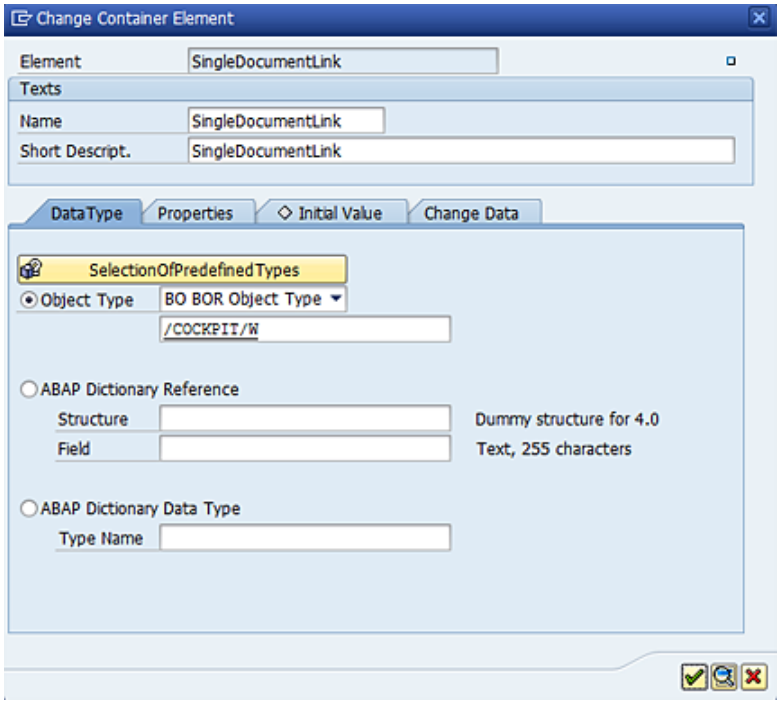
Creating a container element

1. Select the **Workflow Container** tab and double-click the item **<Double-Click to Create>**:

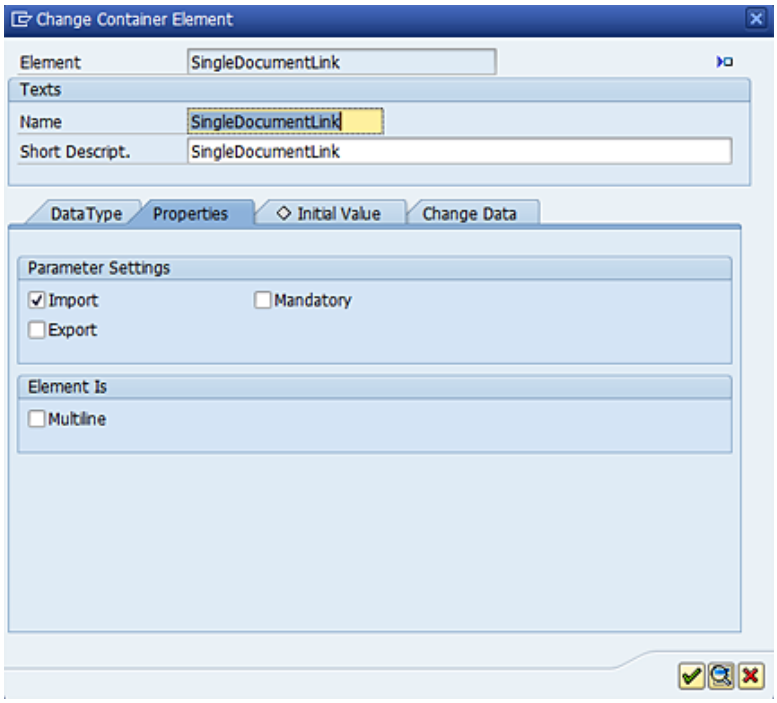


The **Change Container Element** popup appears.

2. Enter an element, name and description and the object type */COCKPIT/W*. Your screen should look like this:



3. Click the tab **Properties** and check the checkbox **Parameter settings > Import**.



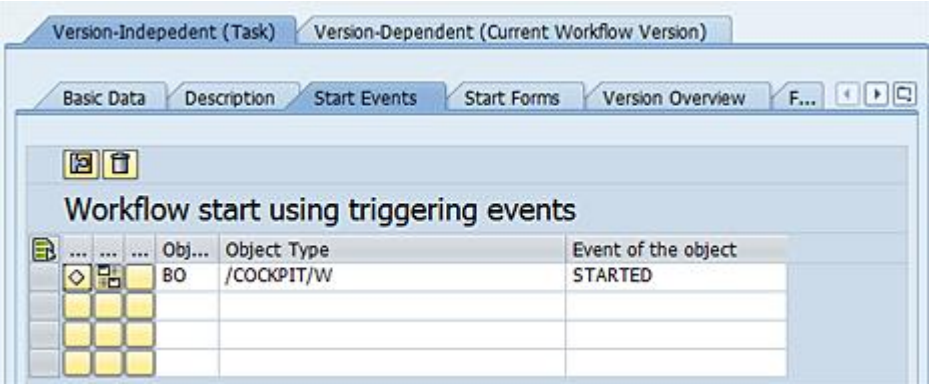
4. Confirm.

Setting up the workflow start event

1. Click the toolbar button .
2. Select the tab **Version-Independent (Task) > Start Events** and add these settings:

Required settings	
Object Category	*BO BOR Object Type*
Object Type	*/COCKPIT/W*
Event of the object	*STARTED*

3. Your screen should look like this:

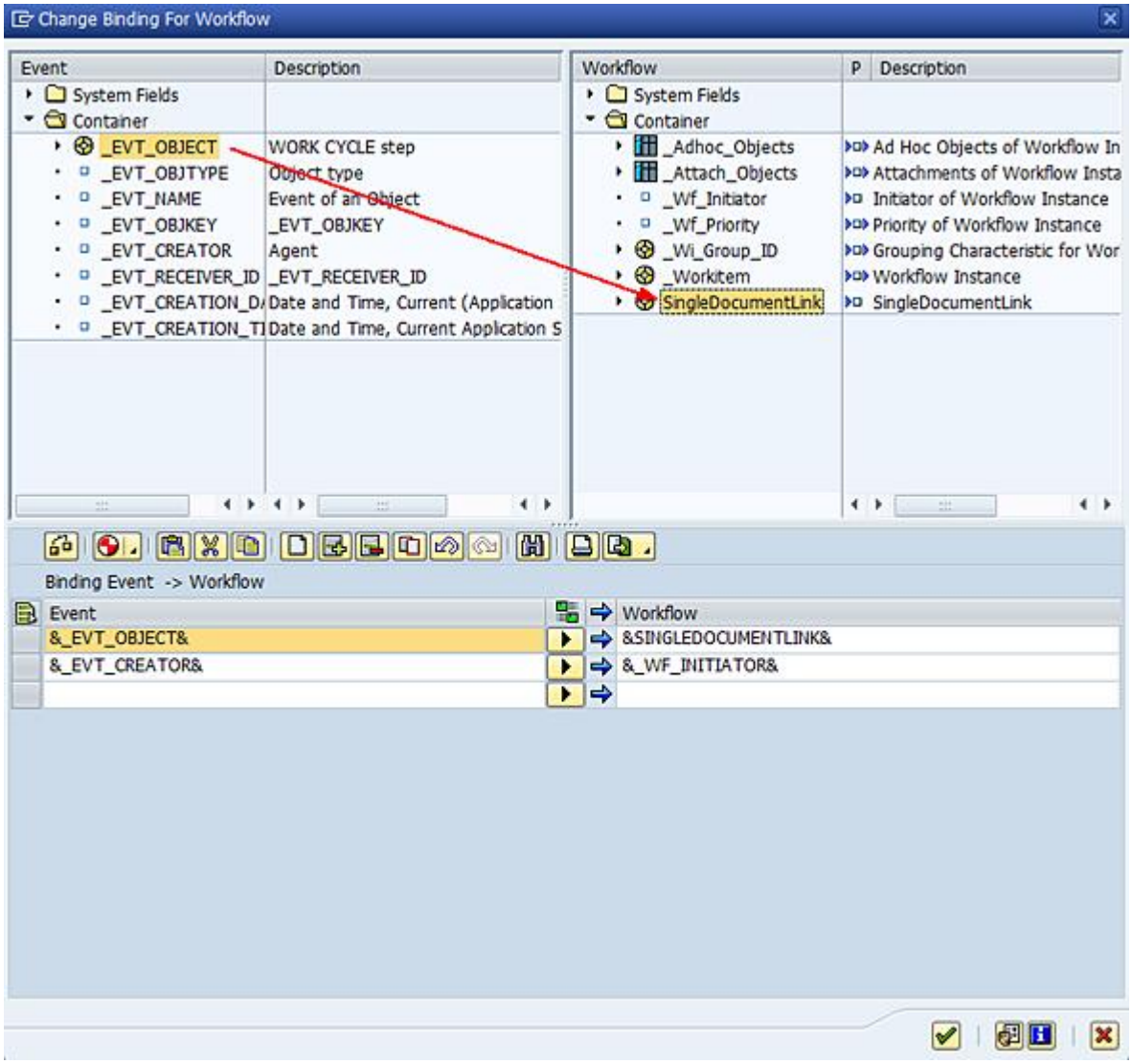


4. Then activate the event linkage by clicking the button . You will be prompted for a customizing request.

   Note: In some customer implementations, the activation may need to be executed manually in every client and system.

5. Next, configure the event binding by clicking the button . The **Change Binding for Workflow popup** appears.

6. Drag and drop the Event container field *_EVT_OBJECT* onto your new workflow container *SingleDocumentLink*, as shown here:



If an event is raised, the instance of the object which raised the event is available in the Event container field *_EVT_OBJECT*. This field must be copied into the corresponding field in the Workflow Container. This is the field *SingleDocumentLink*, which was created in the workflow step. And it is the only available field for event binding, since it is the only field marked as an Input field.

7. Confirm.

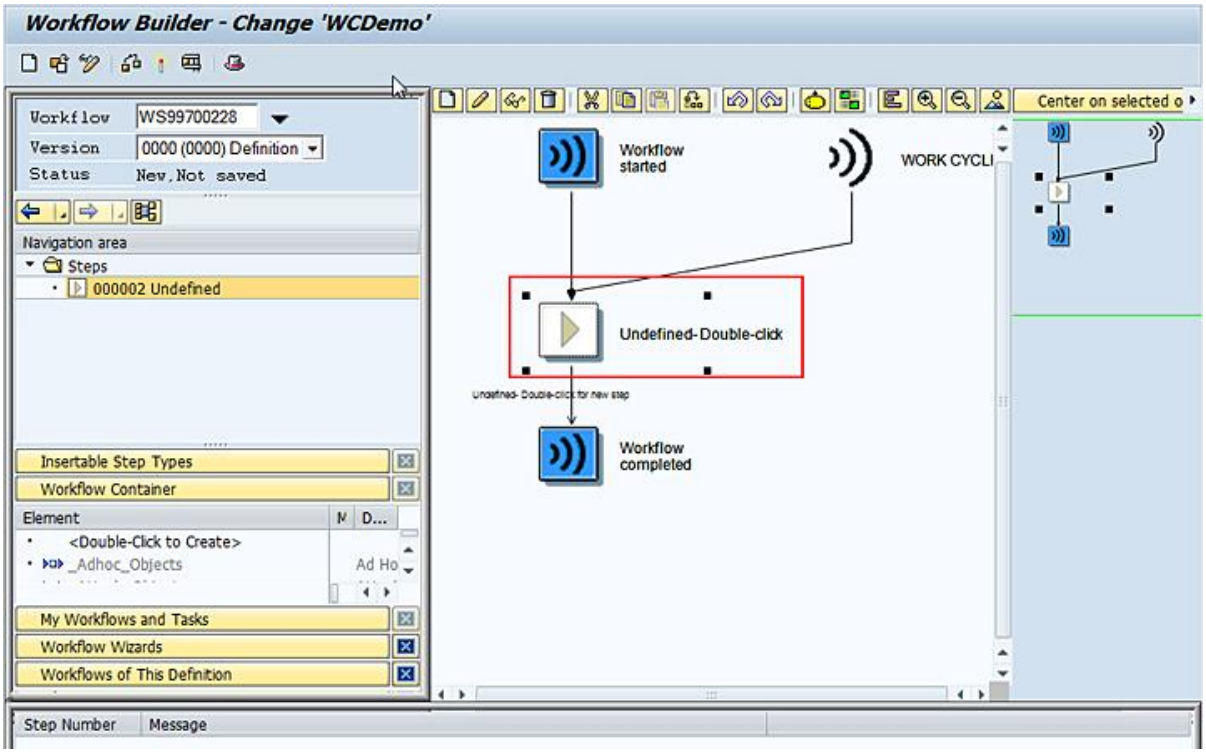
Now you can specify how the work item recipients will be determined.

1. Click the toolbar button . The **Maintain Agent Assignment** dialog appears.
2. Click the toolbar button Attributes...
3. Select the radio button **General task** and confirm. This setting allows all SAP users as possible work item recipients.
4. Finally, activate the assignment by clicking the toolbar button .

Adding a container operation

Since you do not need to transport any attachments from PROCESS DIRECTOR into SBWP, you can simply delete them from the workflow.

1. Click the toolbar button to return to the overview.
2. Double-click on **Undefined- Double-click** as shown here:



The **Step Selection** popup appears.

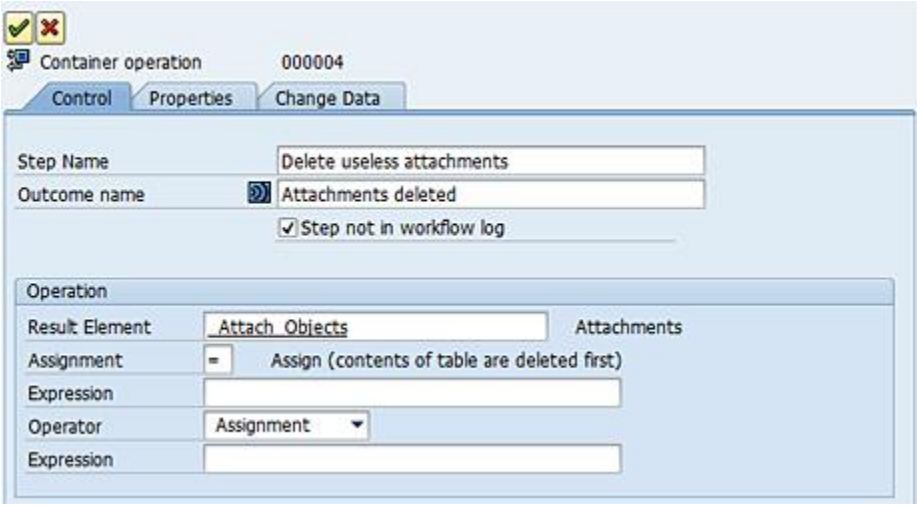
3. Double-click the step type **Container Operation**.

4. Enter these settings in the **Control** tab:

Required settings	
Step name	Enter *Delete useless attachments*.
Outcome name	Enter *Attachments deleted*.
Step not in workflow log	Check this checkbox.
Result element	Use search help to pick *_Attach_Objects.*

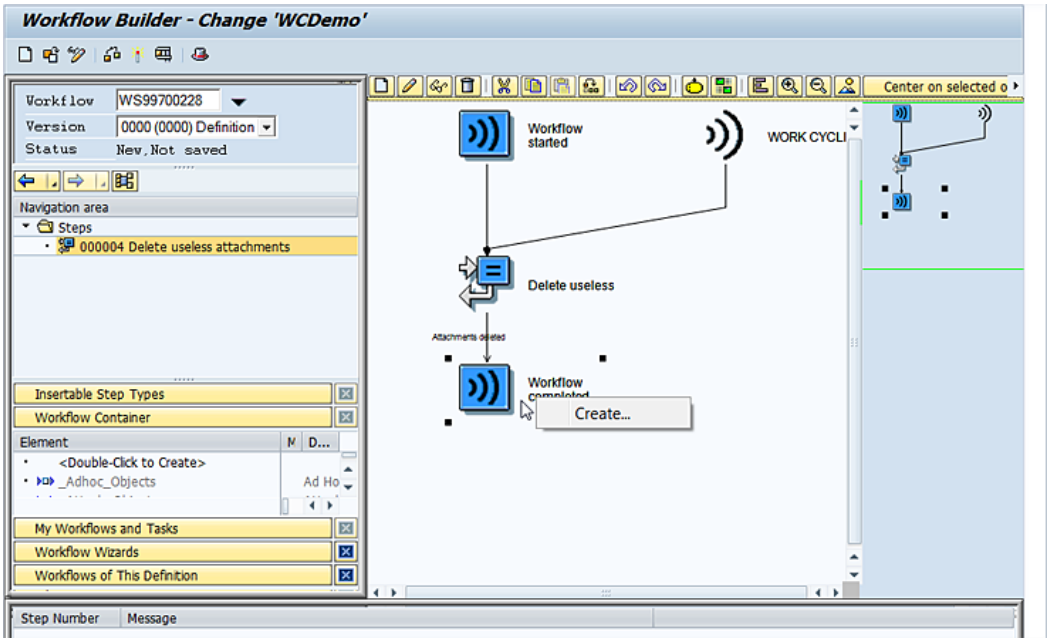
5. Confirm.

   Your screen should look like this:



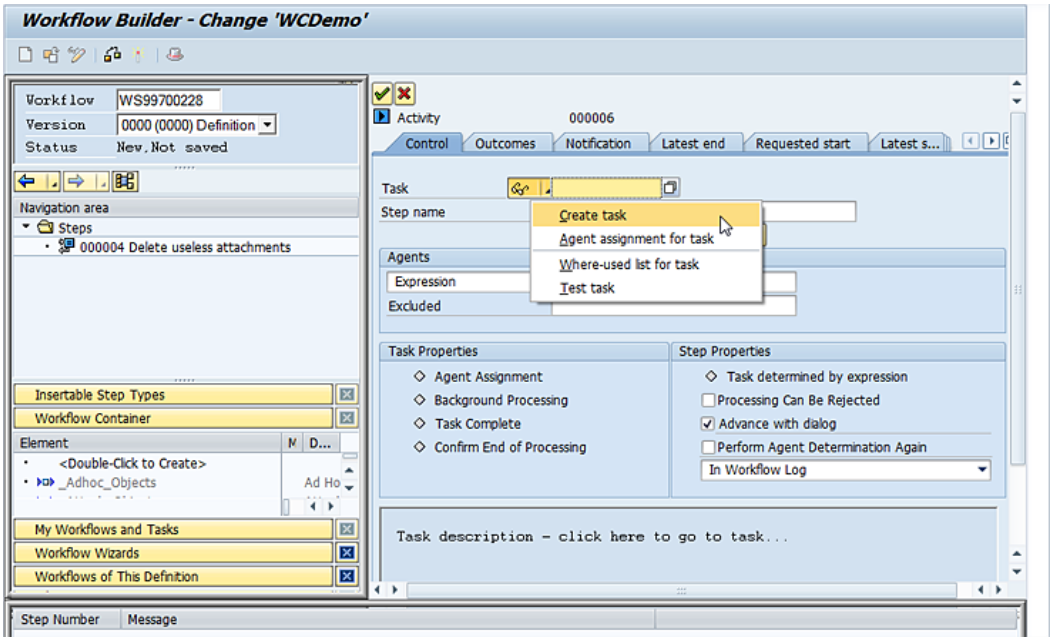
Adding an activity for the WORK CYCLE workflow step

1. Right-click **Workflow completed**, then select the context menu item **Create...** :



   The **Step Selection** popup appears.

2. Double-click the step type **Activity**.
3. In the **Control** tab, open the **Task** dropdown menu and then select **Create task**:

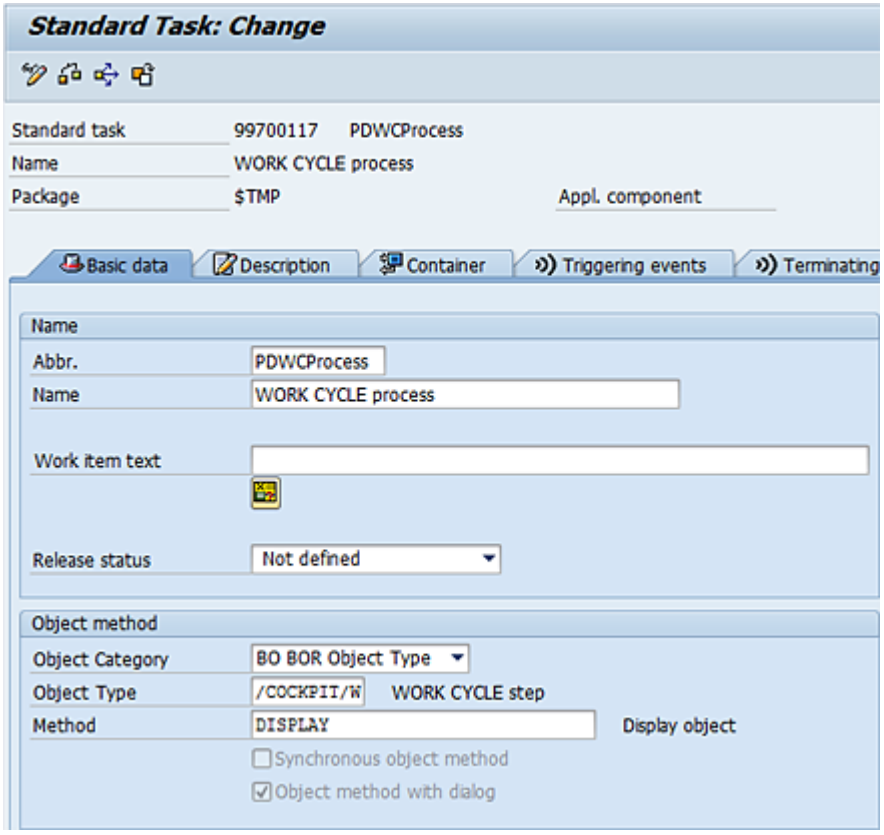


   The task creation dialog appears.

4. In the **Basic Data** tab, enter these settings:

Required settings	
Abbr	*PDWCProcess*
Name	*WORK CYCLE process*
Object Category	*BO BOR Object Type*
Object Type	*/COCKPIT/W*
Method	*DISPLAY*

Your screen should now look like this:



You can also add some documentation for the task in the **Description** tab (optional).

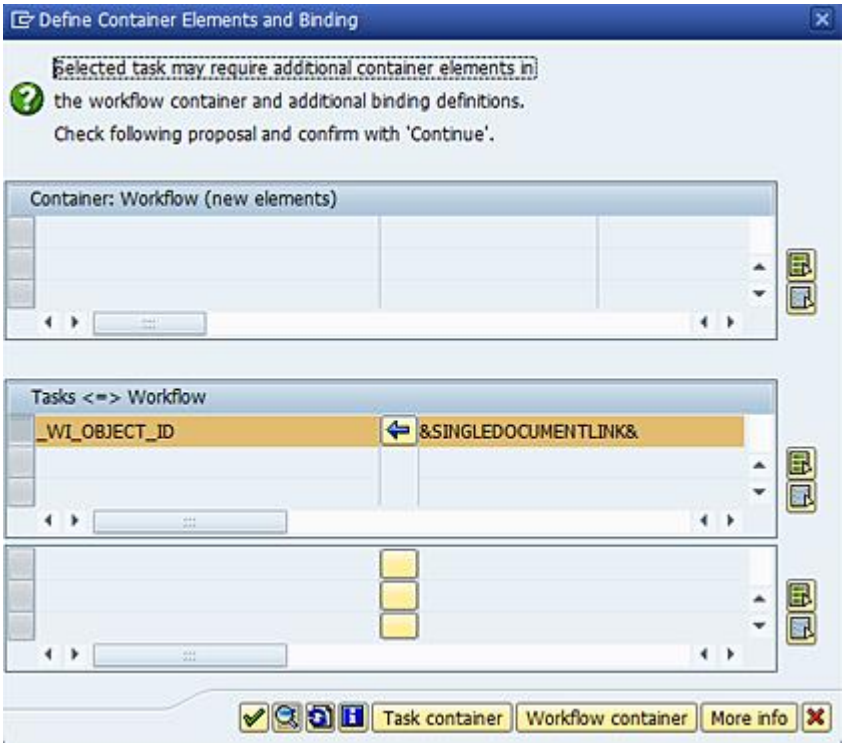
5. Next, you need to ensure that the work item will disappear from the Workplace if it has been canceled, retracted or finished from within PROCESS DIRECTOR Accounts Payable or WORK CYCLE. To configure this, select the **Terminating events** tab and define a terminating event:

Required settings	
Element	*_WI_OBJECT_ID*
Object Category	*BO BOR Object Type*
Object Type	*/COCKPIT/W*
Event	*FINISHED*

6. Save your settings.
7. The **Create Object Directory Entry** popup appears and prompts you to assign a package. Enter an appropriate Z package.

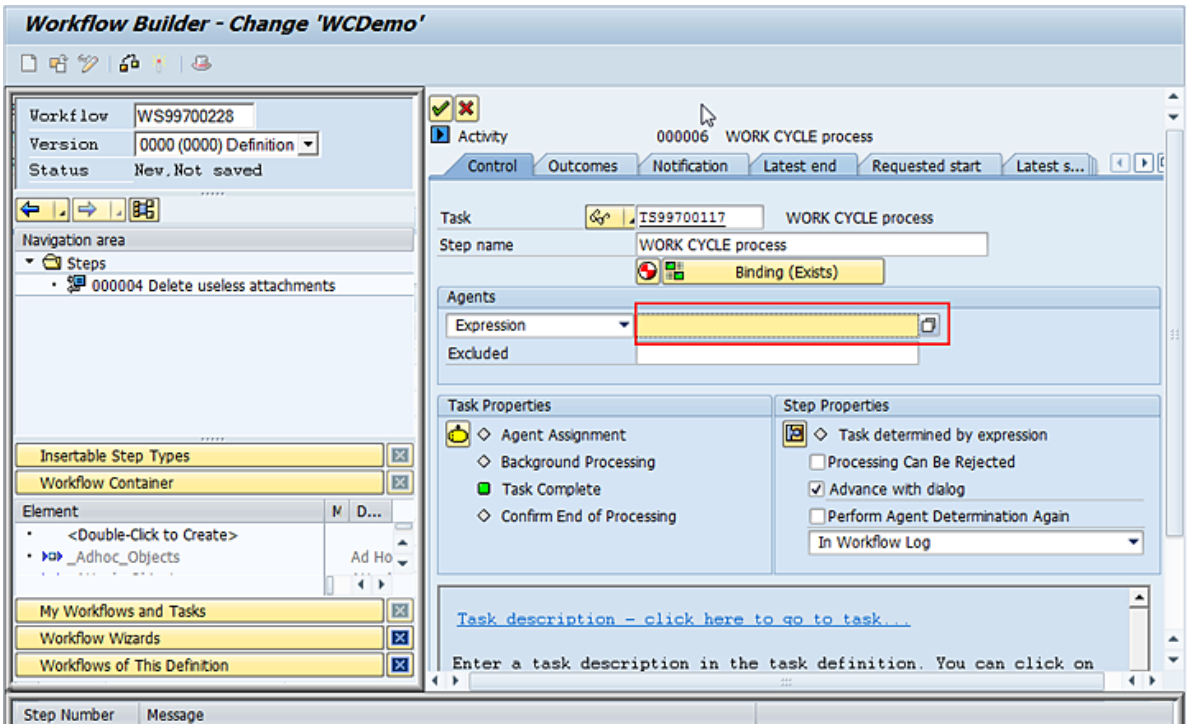
   Warning: Be sure to double-check your work before returning to the activity definition, as then, you will no longer be able to edit the task.

8. Click the SAP GUI toolbar button to return to the activity definition dialog.
9. You will receive a proposal for a binding:



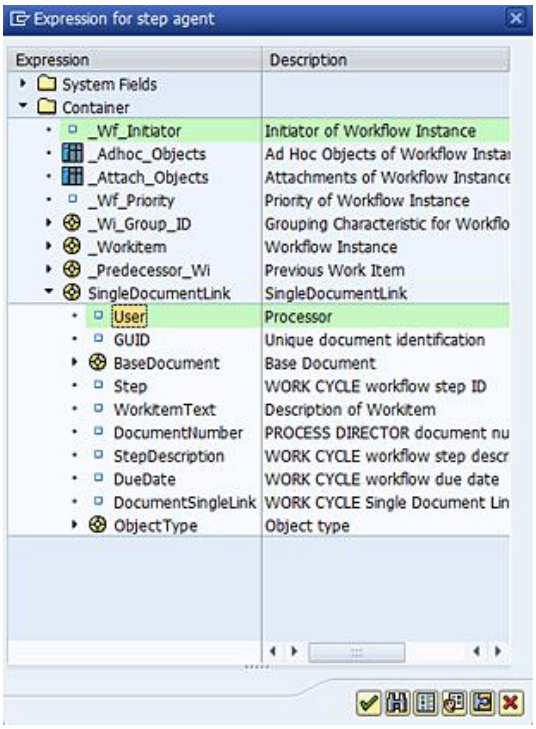
10. Confirm.

11. Now use the search help to select an expression for the **Agents** assignment:



The Expression for step agent popup appears.

12. Select the expression **Container > SingleDocumentLink > User**, as shown here:



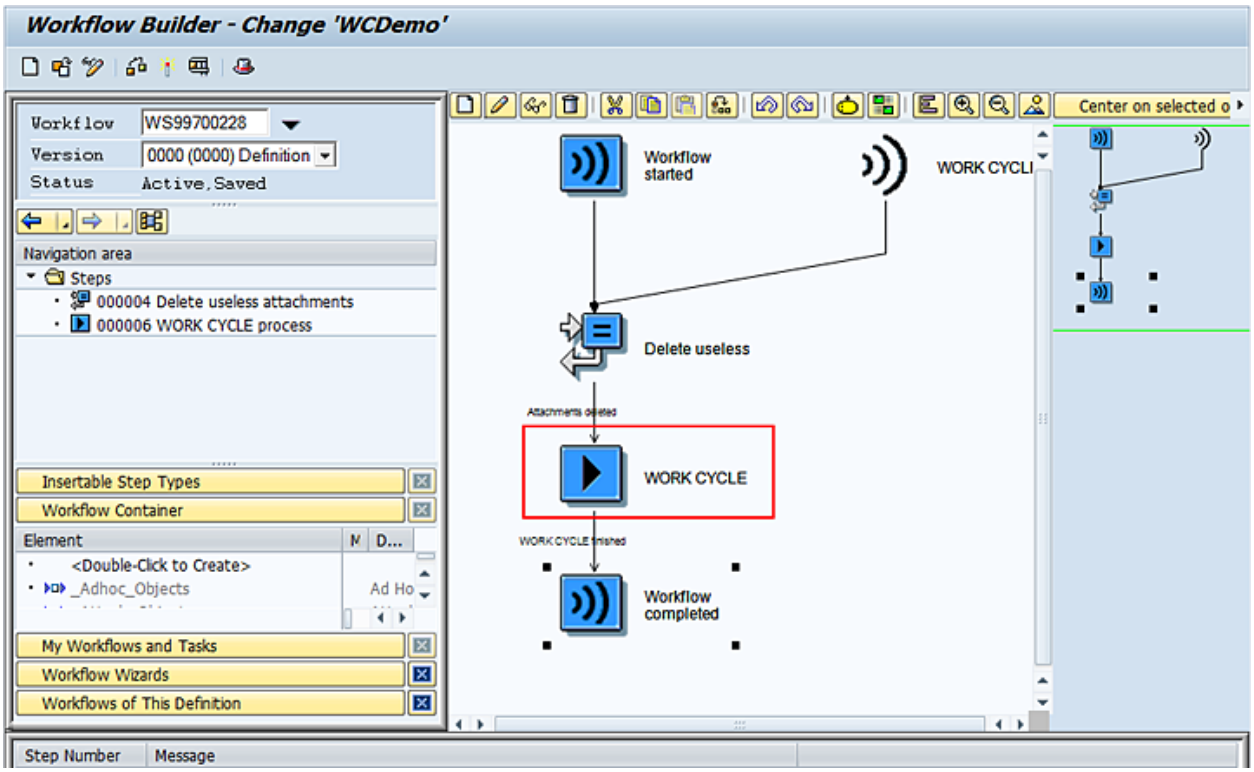
13. Confirm.
14. Specify the agent assignment by clicking the button in **Task Properties**. The **Maintain Agent Assignment** dialog appears.
15. Click the toolbar button Attributes...

    The **Task** popup appears.
16. Select the radio button **General Task** and confirm.
17. Return to the Workflow Builder by clicking the SAP GUI toolbar button twice.

Activating the workflow definition

Click the toolbar button to generate and activate the runtime version of the workflow.

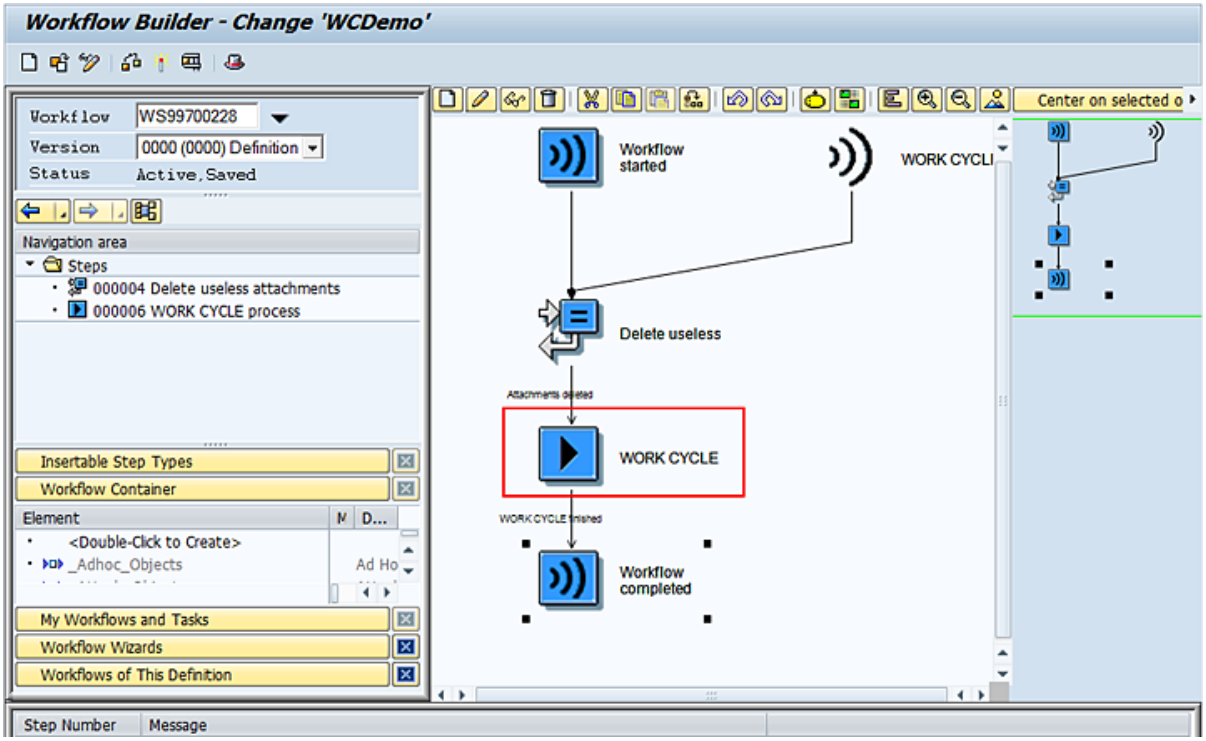
Your screen should now look like this:



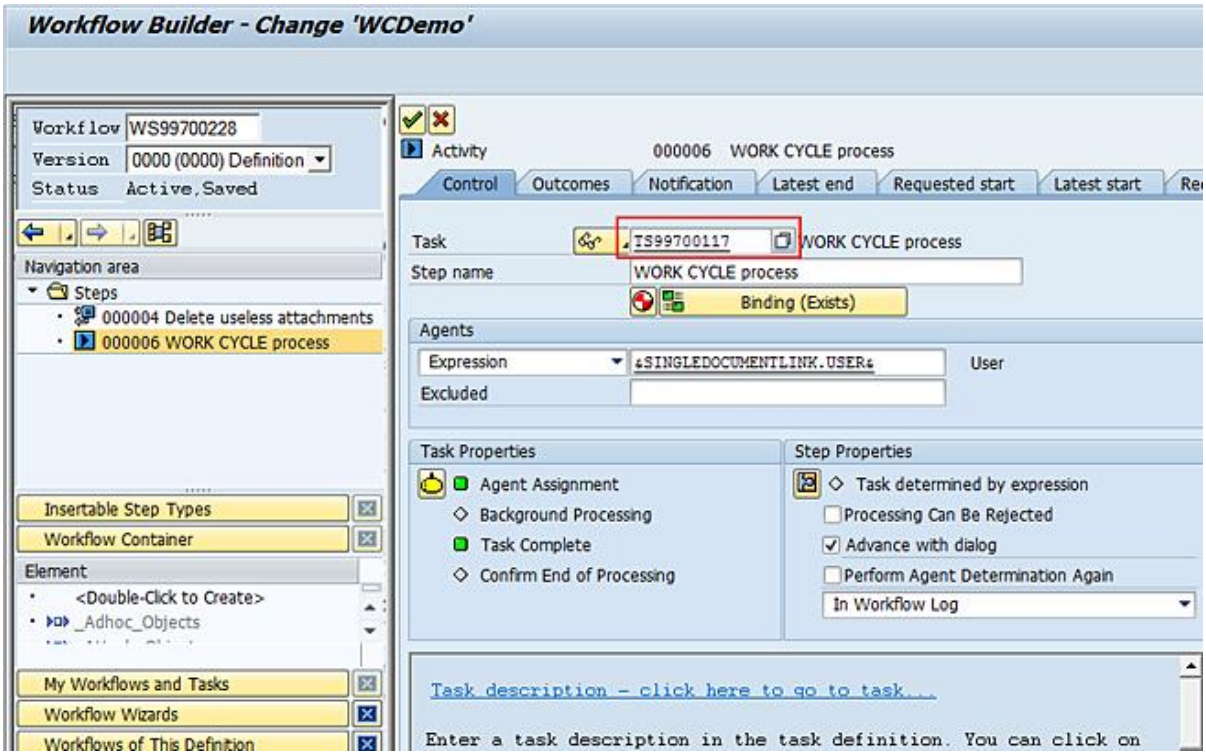
Prerequisites for UWL

SAP Business Workflow tasks can also be accessed via the SAP Universal Worklist (UWL). To access WORK CYCLE workflows from UWL, in addition to the steps described for integrating WORK CYCLE with SAP Business Workflow, you must also create a binding from the workflow container to the task container in order that the WORK CYCLE URL can be accessed from UWL. For information on configuring UWL, refer to the SAP documentation.

1. Go to SWDD.
2. Double-click the WORK CYCLE activity that you created previously.

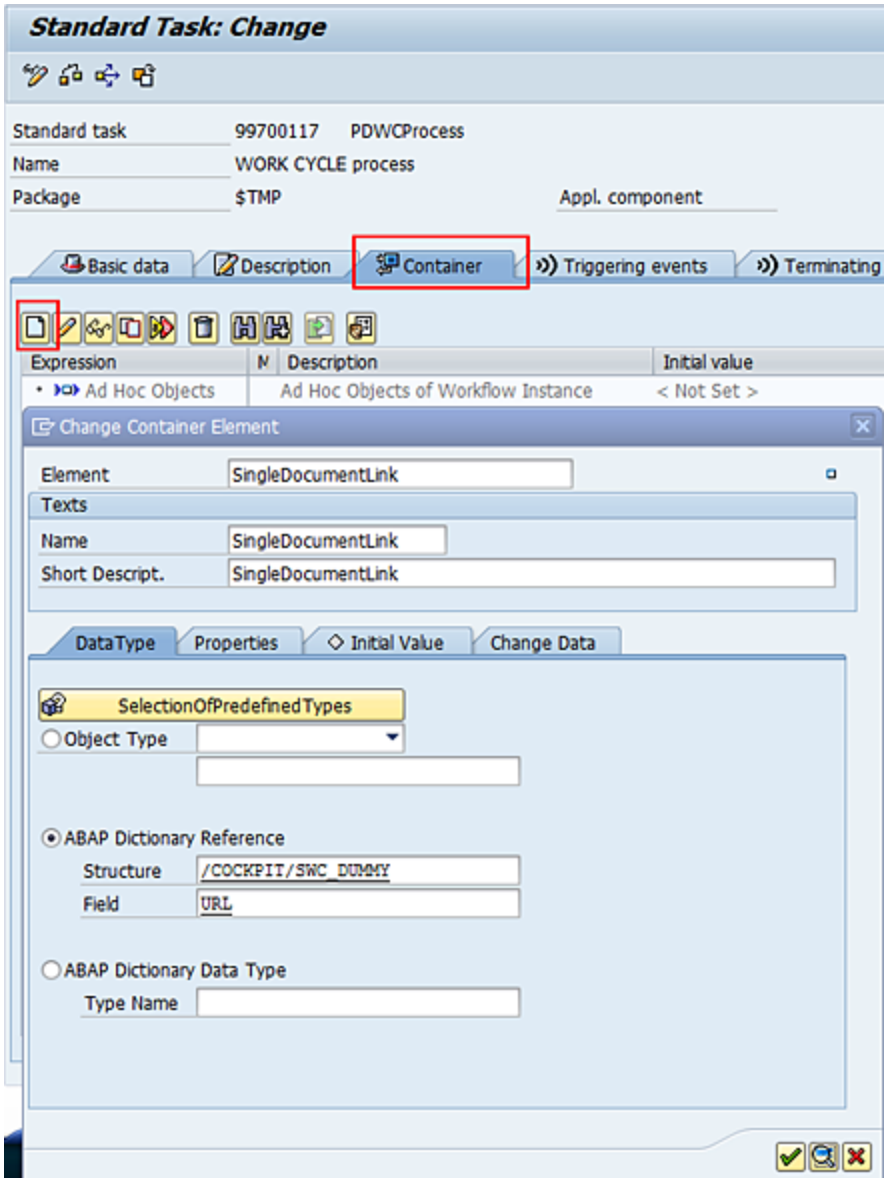


3. In the **Task** field, double-click the task number to open the task details.



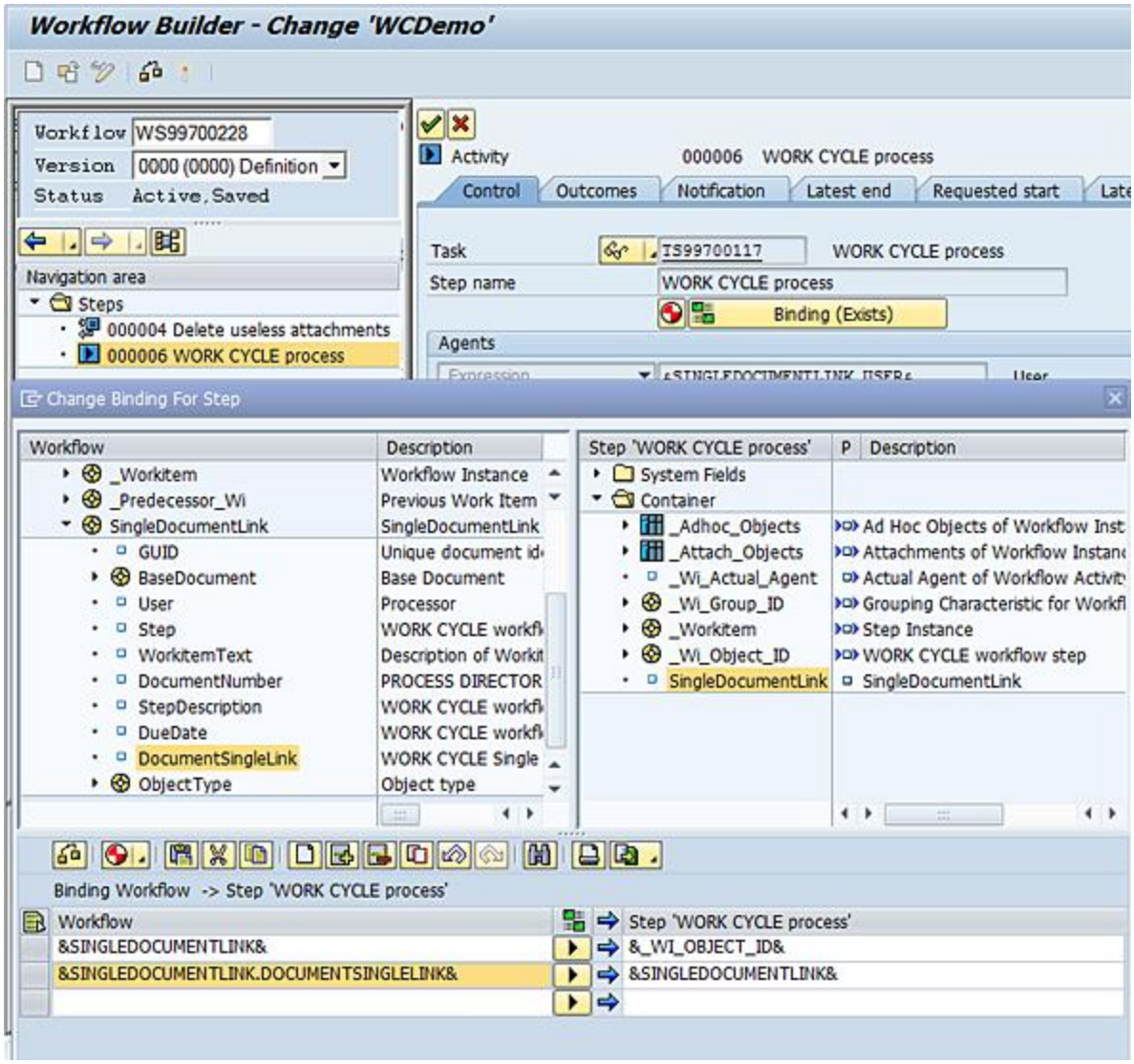
4. Select the **Container** tab or the **Container** button on the toolbar (depending on your SAP version).
5. In change mode, click the **New** button on the tab toolbar.

6. Select **ABAP Dictionary Reference** and enter the structure */COCKPIT/SWC_DUMMY* and the field *URL*. Your screen should look like this:



7. Save and go back.
8. In the Activity screen, click the **Binding (Exists)** button.

9. Expand the **SingleDocumentLink** workflow container on the left-hand side and drag and drop the **DocumentSingleLink** field to the **SingleDocumentLink** task container on the right-hand side.



A new entry is added in the table **Binding Workflow -> Step 'WORK CYCLE process'**.

10. Confirm and save.

Programs and functions

WORK CYCLE comes with a series of programs and functions that you can use.

Name*	Description
ARCHIV_NOTE_LATE	Archives notes that have not been archived normally.
ARCHIV_WCLOG_REPAIR	Archives workflows that have not yet been archived.
DUE_DATE_CHECK	Send reminder emails for overdue workflows, as well as collective emails.
WC_CHK_DEL_USRS	Checks whether a user who no longer exists, is still assigned to user groups or workflow steps, or as a substitute.
WC_DEBUG	Enables the creation of log entries for PROCESS DIRECTOR and WORK CYCLE RFC calls, including those by the Web Application and User Exits.
WC_RFC_LOG	Displays all the RFC log entries (a record of RFC calls made by the Web Application).
WC_SET_NOT_ARCHIVED	Resets the **ARCHIVED** flag so that the workflow can be archived again.
WC_UMA_PASSWD_INIT	Resets passwords for multiple users.
WC_USER_UPDATE	Import users from an LDAP directory.
WC_WEB_LOGGING	Records all RFC calls made by the Web Application. Used in conjunction with `WC_DEBUG`.
XPRA_V720_SP0	Required to enable searching for WUM users by email address after upgrading to PROCESS DIRECTOR 7.2 from a previous version. Also required in order that the user-type independent search help on workflow start functions correctly after upgrade.

* All programs and functions are contained within the `/COCKPIT/` namespace.

ARCHIV_NOTE_LATE

Archives notes that have not been archived normally.

The program archives internal notes and all other notes that have not yet been archived with workflow. All notes relevant to the workflow are already automatically archived when terminating the workflow. Notes that have been entered after the termination of the workflow and internal notes (are not displayed in the workflow) can be archived with this program.

Workflow notes can be created by workflow recipients in WORK CYCLE and the Web Application and are visible there, while internal notes can be created only in `/COCKPIT/1` and are not visible in WORK CYCLE or the Web Application.

ARCHIV_WCLOG_REPAIR

Archives workflows that have not yet been archived. Sometimes the archiving can fail (for example, a wrong configuration could result in the archive being offline).

If this program also fails to archive your workflow, follow this procedure:

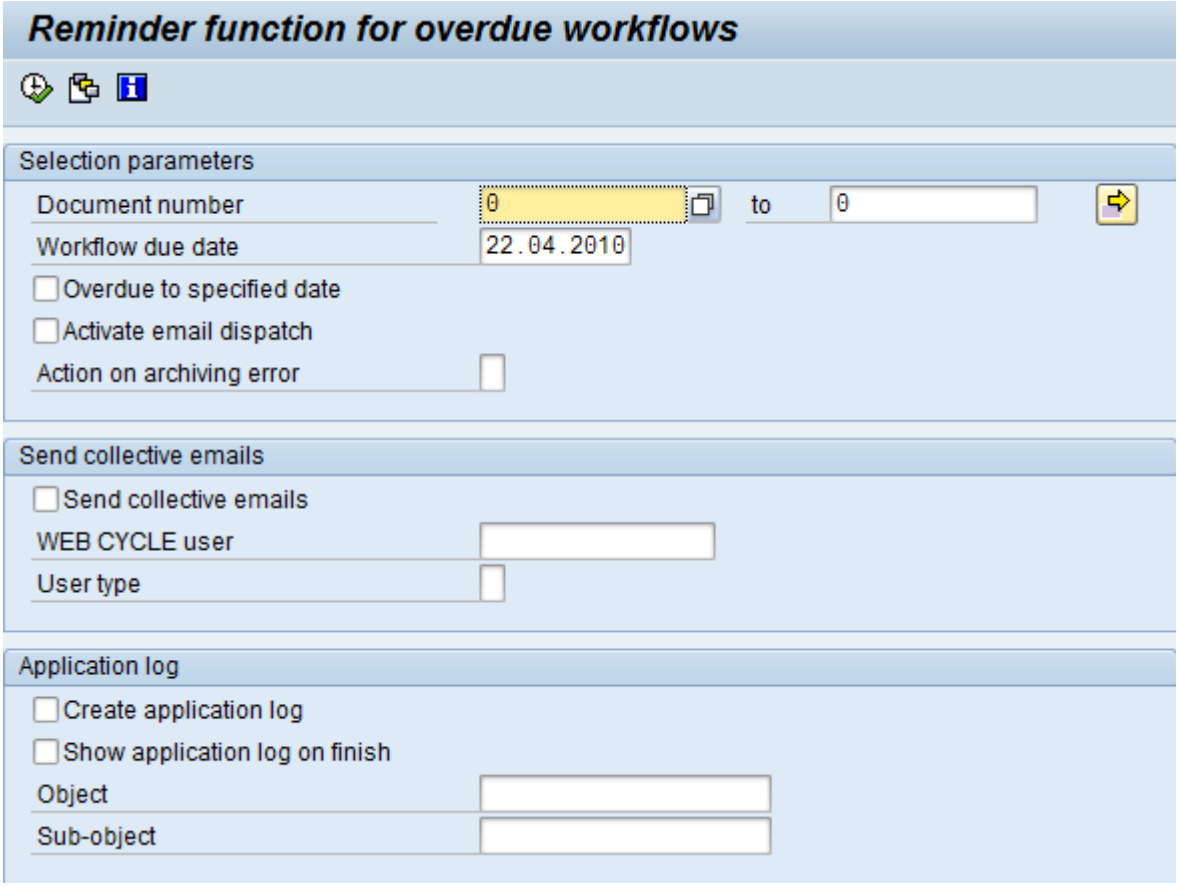
1. Run `/COCKPIT/WC_SET_NOT_ARCHIVED`.

   This program resets the **ARCHIVED** flag so that the workflow can be archived again.

2. Run `/COCKPIT/ARCHIV_WCLOG_REPAIR` again.

DUE_DATE_CHECK

You can use the `DUE_DATE_CHECK` program to send reminder emails for overdue workflows. Individual emails are sent to both the step processors and their substitutes. Use the standard SAP transaction `/SE38` to run the program once, or `/SM36` to schedule it as a background job.



Setting	Description
Document number	The range of INVOICE COCKPIT documents to be processed.
Workflow due date	Specify if the program should only run for workflows whose due date is past this date.

Setting	Description
Overdue to specified date	Select if you have specified a due date above.
Activate email dispatch	Select to send reminder emails.
Send collective emails	In the workflow step settings, you can specify that WORK CYCLE sends a collective email, instead of one email for each workflow step. This option can be used to send the following information. • New documents for processing • Documents that have been recalled The `DUE_DATE_CHECK` program checks for processors who have received a workflow step and sends a collective email to these processors and their substitutes. **Note**: For overdue workflow steps, only single emails are sent.
WEB CYCLE user	The user specified here is used as the sender of collective emails.
User type	I – WEB CYCLE user S – SAP user G – User group
Create application log	Creates messages in the SAP application log.
Show application log on finish	Displays the SAP application log after the program has been executed.
Object & Sub-object	The object and sub-object that are included in the messages in the SAP application log.

/COCKPIT/WC_CHK_DEL_USRS

Checks whether a user who no longer exists, is still assigned:

- To user groups
- To workflow steps
- As a substitute

WC_DEBUG

Enables the creation of log entries for PROCESS DIRECTOR and WORK CYCLE RFC calls, including those by the Web Application and User Exits. It can be used for debugging purposes. You can record log entries for calls made by specific users.

WC_DELETE

The `/COCKPIT/WC_DELETE` program deletes workflow data for selected documents. You can use this program to remove a document from workflow, for example, if users cannot recall the document because the workflow is no longer valid due to changes in the workflow customizing.

WC_RFC_LOG

Displays all the RFC log entries (a record of RFC calls made by the Web Application) stored in the `/COCKPIT/TWC_LOG` table. That is, it displays all log entries created by the `WC_WEB_LOGGING` function.

Setting	Description
Show RFC log	Displays the RFC log file saved in the `/COCKPIT/TWC_LOG` table.
Put separator after seconds	Displays a horizontal line between entries after each specified period.
Delete all RFC log entries	Deletes all RFC log entries saved in the `/COCKPIT/TWC_LOG` table.

WC_SET_NOT_ARCHIVED

This program resets the archive flag so that the workflow can be archived again with `/COCKPIT/ARCHIV_WCLOG_REPAIR`.

`/COCKPIT/WC_SET_NOT_ARCHIVED` can be used for workflows that have been marked as archived, but actually have the archive missing.

WC_SUBST_MANAGER

This program is used to globally manage substitutes for WORK CYCLE users and SAP users.

WC_UMA_PASSWD_INIT

This program is used to reset passwords for WORK CYCLE users, or force them to change their passwords when they next log on.

Setting	Description
Workflow processor	The WORK CYCLE user(s).
Email (in uppercase letters)	The email address(es) of the WORK CYCLE user(s).
Language key	The language setting for the WORK CYCLE user(s).
Complete name	The WORK CYCLE user(s) full name.
Telephone	The telephone number of the WORK CYCLE user(s).
Department	The department of the WORK CYCLE user(s).
Test run	Displays a log of users whose passwords will be reset, without actually performing the reset operation (where reset is either generating a new password or forcing the user to change their password, see below).
Password is being regenerated	Generate a new password for the WORK CYCLE user(s).
User must change password	Force WORK CYCLE user(s) to change their password(s) the next time they log on.

WC_USER_UPDATE

This program is used to import users from an LDAP directory.

Setting	Description
LDAP server	The LDAP server ID configured in the SAP system. (They can be viewed and managed using the LDAP transaction.)
Search filter	Allows you to import only selected users based on search criteria. The default search filter is (&(objectclass=user)(mail=*)), which selects all users. **Example:** To select only users from a specific user group, you might use (&(objectCategory=group)(description=Sales)).
System user active	Uses the current SAP system user to logon to the LDAP server. If this setting is *not* selected, you must specify the username and password for an LDAP domain account to use instead (see below).
User ID for logon	Username for the LDAP domain account to logon to the LDAP server.
Password for logon	Password for the LDAP domain account to logon to the LDAP server.
Send email	Existing users whose data is updated are notified via email.
Retrieve WORK CYCLE	Recalls (cancels) all workflows that are currently being processed by a user whose data is updated.
No duplicate user check	Checks whether a duplicate email address exists (for example, if an LDAP user is already an SAP user, with the same email address).
Exclude from update	Specify users whose data will not be updated by the import (even if updated data exists).
Attribute name	Name of the LDAP attribute/field. **Note:** This field must be mapped to a WORK CYCLE field in `/COCKPIT/WI27`.
Attribute value	The value for the above field. If this value is found in any of the existing users, they are deleted. **Note:** The `WC_USER_UPDATE` program searches for the value in the WORK CYCLE field that the above LDAP **Attribute name** has been mapped to in `/COCKPIT/WI27`.
Delete all others	Deletes any existing user whose data is not updated by the import.
Exclude from delete	Specify existing users who are not deleted (only valid if **Delete all others** is active).
Commit database changes	Saves the imported data. If unselected, `WC_USER_UPDATE` performs a test run only and no data is imported or changed.
Create application log	Creates a log of the import

Setting	Description
Show application log on finish	Displays the log after the import has finished.
Object	The name of the object to use to classify the log. In order to create an application log (which is based on standard SAP functionality), you must specify an **Object** and **Subobject** (see below). The Object and Subobject classify the log, so it is best to use custom (Z*) ones.
Sub object	The name of the sub-object to use to classify the log.

WC_WEB_LOGGING

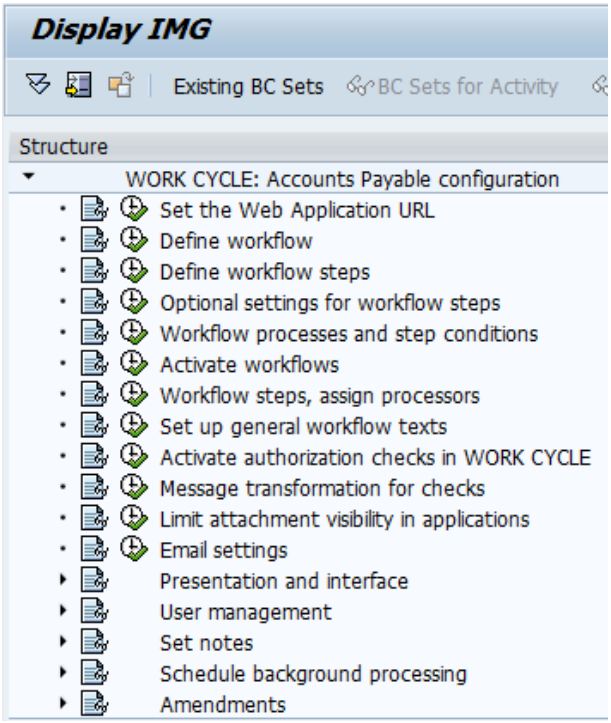
This function module records all RFC calls made by the Web Application. You should activate it in the `WC_DEBUG` program. The resulting log messages can be viewed using the `WC_RFC_LOG` program.

XPRA_V720_SP0

This program is only required if you have upgraded to PROCESS DIRECTOR 7.2 from a previous version and created Web Application (WUM) users in that previous version. This program ensures that it is possible to search for WUM users by email address.

Appendix A – IMG

To open the WORK CYCLE IMG, call the transaction /COCKPIT/WI.



Setting the Web Application URL

/COCKPIT/WI1

Setting	Description
Activate WORK CYCLE	Turns on/off WORK CYCLE.
URL of WORK CYCLE Web Application	The URL that is used in email templates for workflow starts, reminders, and so on. **Note:** This URL does not affect the setup or configuration of the Web Application.

Define workflow

/COCKPIT/WI2

Setting	Description
Workflow ID	The name of the workflow.
Workflow description	The description of the workflow that appears in PROCESS DIRECTOR Accounts Payable.
Maximum processing time, in days	The period in which the workflow must be completed, after which daily reminder emails are sent.
Selection list order	An integer that determines the position of the workflow in the workflow selection list in PROCESS DIRECTOR Accounts Payable. 0 places the workflow at the top of the list. The values for this field for each workflow do not have to be in sequential order. For example, you could have 0 = Workflow1, 5 = Workflow2, 20 = Workflow3.
Workflow type	• Unposted or unparked documents – Only unposted or unparked documents can be sent to the workflow. • Posted or parked documents – Only posted or parked documents can be sent to the workflow. • All documents – All documents except rejected documents can be sent to the workflow.
Save notes in archive	Notes created in WORK CYCLE are saved in the archive.
Omit Friday/Saturday/Sunday	Determines whether Fridays, Saturdays and Sundays are used in the calculation of the **Maximum processing time** (above).
Factory or Holiday calendar ID	Determines if a specified factory or holiday calendar is used in the calculation of the **Maximum processing time** (above). In other words, non-working days in these calendars are not included in the **Maximum processing time** calculation.

Setting	Description
	You can only select a factory calendar *or* a holiday calendar, not both. If a calendar for both is selected, the factory calendar is used. If you want to use both a factory and a holiday calendar, assign a holiday calendar to a factory calendar in `/OY05`, and then select a factory calendar here for the workflow.
PD document type for document creation	The PD document type used when creating documents using WORK CYCLE.
Mandatory note	Before the workflow can be started, a WORK CYCLE note must be created.
Posting attempt after WF	Activates automatic posting on workflow approval.
Follow-up flag ID for failed auto posting	Sets a follow-up flag for a failed automatic posting attempt. You can define follow-up flags in `/COCKPIT/C50`. See the *PROCESS DIRECTOR Accounts Payable Configuration Guide* for more information.

Define workflow steps

`/COCKPIT/WI3`

Setting	Description
Workflow step	The workflow step ID.

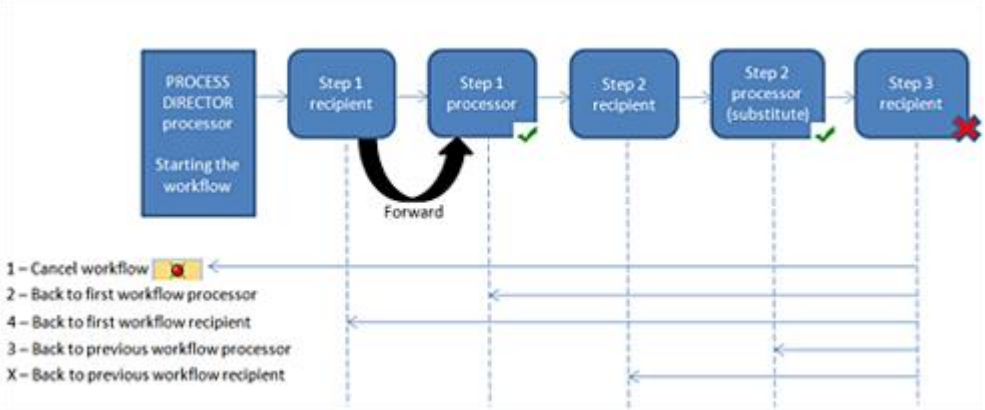
Necessary settings

Setting	Description
Step description	The description of the workflow step that appears in PROCESS DIRECTOR Accounts Payable and WORK CYCLE.
Workflow type	• **1 - Release**: Document cannot be edited, only approved or rejected. Notes can be added. Document cannot be edited in PROCESS DIRECTOR Accounts Payable while in workflow. • **2 - Correction**: Document can be edited and approved or rejected. Document cannot be edited in PROCESS DIRECTOR Accounts Payable while in a workflow. • **3 - Release and correction**: Document can be edited and approved or rejected. Document cannot be edited in PROCESS DIRECTOR Accounts Payable while in a workflow. • **4 - For information purposes**: Document can be edited, but a field status disallowing edits is recommended, as the document can be edited in PROCESS DIRECTOR Accounts Payable while in a workflow. No approval or reject functions, just a button to acknowledge receipt/viewing of document. A workflow step of this type can only be the last step of the entire workflow (thus, the only step in the workflow or the last step in a multi-step workflow).

Setting	Description
Text of release function	The text label of the **Approve/Release** button in the Web Application. **Note:** In the SAP GUI, the tooltip text is always **Approve document**.
Subject of email message	The subject of the email sent to the recipient(s) of the workflow step.
Text for the confirmation email	The content of the email sent to the recipient(s) of the workflow step. There are pre-installed templates you can use or copy and edit. For example: `/COCKPIT/WEB_CYCLE_START`.
Field status	The field status to apply to the document when it is opened in WORK CYCLE. **Note:** If you leave the **Field status** blank, then no document edits are permitted.
Validity period	The period in which the workflow step must be completed, after which reminder emails are sent. Note that the sum total of the validity periods for all workflow steps assigned to a workflow must equal the **Maximum processing** time in the workflow configuration.
Interval for reminder emails	For overdue workflow steps, the interval of sending reminder emails (in days).

Optional settings

Setting	Description
Forward	Determines is documents can be forwarded to other users, and if queries can be sent. • **Not allowed** Document cannot be forwarded. Queries cannot be sent. • **X - Forward** Document can be forwarded. Queries cannot be sent. • **1 - Queries without document handover** Queries are allowed. After a query is sent, the document remains in the sender's Worklist. Forwarding is not allowed. • **2 - Queries with document handover** Queries are allowed. After a query is sent, the document disappears from the sender's Worklist until the query is answered. Forwarding is not allowed. • **3 - Forwards, and queries without document handover** Forwarding and queries are allowed. After a query is sent, the document disappears from the sender's Worklist until the query is answered. • **4 - Forwards, and queries with document handover** Forwarding and queries are allowed. After a query is sent, the document remains in the sender's Worklist.
All recipients must process	If activated, all recipients of the workflow step must approve/release the document in order for the document to move to the next workflow step, or for the workflow to be completed (when the workflow step is the last in the workflow). If deactivated, after one recipient has approved/released the document, the document moves to the next workflow step/the workflow is completed.
Line item/ account approval	Permits each line item (MM invoices) and accounting lines (FI invoices) to be approved by separate processors. For example, when each processor is responsible for a different cost center. **Note:** To use this feature, you must also select **All recipients must process**, above. See Line item approval.
Send emails	Determines if recipients of the workflow step receive an email notification, and if so, what kind of email (single or collective, and if the document image is included as an attachment. • **Individual email without image attachment** A single email is sent to each recipient of the workflow step. The document image is not included. • **A - Individual email with image attachment** A single email is sent to each recipient of the workflow step. The document image is included as an attachment. • **X - No email** No email is sent. Recipients must manually check their WORK CYCLE Worklists for new documents.

Setting	Description
	• **S - Collective email** A collective email is sent to each recipient of the workflow step. Collective emails are scheduled and sent using the `DUE_DATE_CHECK` program.
Reject	Specifies what happens when the workflow is rejected. The workflow can be canceled completely, or the document can be returned to the first or previous workflow step recipient or processor. A recipient is the person to whom the workflow step is sent. A processor is the person who actually approves or rejects the workflow step. In most cases, this will be the same person. However, if the recipient forwards the document to another person, or the recipient's substitute processes the document, the processor is not the same person as the recipient. Thus, it is possible to specify whether the document should be returned to the person who received the workflow step or to the person who actually processed it. This diagram illustrates the process.  **Important**: If it is possible for this step to be a start step of a workflow, you **must** set this to: *1 Cancel the workflow*.
	• **Back to PROCESS DIRECTOR processor**. Document remains in the workflow, but a PROCESS DIRECTOR Accounts Payable user must determine what action to take (cancel workflow, send document to another recipient, etc.) • **X - Back to previous workflow recipient** Document is sent to the recipient of the previous step in the workflow. • **1 - Cancel workflow** Entire workflow is canceled. • **2 - Back to first workflow processor** Document is sent to the processor of the first step in the workflow (default behavior). • **3 - Back to first workflow recipient** Document is sent to the recipient of the first step in the workflow. • **4 - Back to previous workflow processor** Document is sent to the processor of the previous step in the workflow. **Note**: For invoice documents created in the Web Application, the following rules apply:

Setting	Description
	• If the **Reject** setting for the first workflow step is set to **Cancel workflow**, the document is deleted from the system if the first workflow processor rejects it and it has not been processed by other users. • However, if the document has undergone processing by other users (for example, it was forwarded, queried, processed by a substitute or returned to the first workflow processor through the rejection of the subsequent steps), the document is not deleted when the first workflow processor rejects it.
Email archive	Determines if notification emails are archived or not and if these emails can be edited before sending in WORK CYCLE. • **Do not archive as a note** Notification emails are not recorded as notes. Emails cannot be changed in WORK CYCLE. • **X - Archive as a note** Notification emails are recorded as notes. Emails cannot be changed in WORK CYCLE. • **A - Do not archive as a note, changeable in WORK CYCLE** Notification emails are not recorded as notes. Emails can be changed in WORK CYCLE. • **B - Archive as a note, changeable in WORK CYCLE** Notification emails are recorded as notes. Emails can be changed in WORK CYCLE.
Executability	Determines whether a workflow step must be competed (Mandatory) or not (Optional). **Note**: This option cannot be used for the first step in a workflow.
Doc. upload	Determines if processors can attach additional files to the document in the Web Application.
Recall documents in Web Application	Determines if processors can recall documents in the Web Application.

Agent

Setting	Description
Any email address	Email users can be recipients of the workflow step.
SAP users	SAP users can be recipients of the workflow step.
Internet users	WORK CYCLE users can be recipients of the workflow step.
User groups	User groups can be recipients of the workflow step.
Pre-assign processors	Determines which users can be recipients and if any are pre-allocated. For a full matrix of how this setting works, see... • **Default assigned processors only** Only processors listed in `/COCKPIT/WUM2` (or specified in a User Exit) can be recipients. Default processor(s) are pre-assigned to the workflow step.

	• **X - All assigned processors** Only processors listed in `/COCKPIT/WUM2` (or specified in a User Exit) can be recipients. Default and non-default processor(s) are pre-assigned to the workflow step. • **A -Default assigned, any other processor** Processors listed in `/COCKPIT/WUM2` (or specified in a User Exit) and any other users can be recipients. Default processor(s) are pre-assigned to the workflow step. • **B - All assigned, any other processor** Processors listed in `/COCKPIT/WUM2` (or specified in a User Exit) and any other users can be recipients. Default and non-default processor(s) are pre-assigned to the workflow step.
Assignment of processors	• **In PROCESS DIRECTOR Accounts Payable** The processor can only be assigned manually in PROCESS DIRECTOR Accounts Payable. • **1 - In WORK CYCLE*** The processor can only be assigned manually in WORK CYCLE. • **2 - In PROCESS DIRECTOR Accounts Payable or WORK CYCLE** The processor can only be assigned manually in PROCESS DIRECTOR Accounts Payable or WORK CYCLE. • **3 - In background*** (automatic, without manual intervention) The processor is assigned automatically. Use for automatic workflow starts and for workflow steps in the 2nd or subsequent position where the previous workflow step processor must not select the recipient(s) of the next step. * Workflow step recalls are not possible when this option is active.

User Exits

You can activate User Exits at the following points to perform some action(s):

- Check if the WORK CYCLE step can be started
- Define possible processors and parallel steps
- Logic after the step action has been performed
- Logic after the step has been released
- Check recipients of the step

Email texts and subjects

Setting	Description
Sending queries	
Subject	The subject of the notification email when a query is sent.
Text	The template for the content of the query.
Answering queries	
Subject	The subject of the notification email when a query is answered.
Text	The template for the content of the answer.
Forwarding workflow	
Subject	The subject of the notification email sent when a user forwards a workflow to another user for processing.
Text	The template for the content of the workflow forwarding email.

Note: If no email texts are specified, the general email texts are used.

Optional settings for workflow steps

`/COCKPIT/WI17`

Setting	Description
Workflow step	The workflow step ID.

Note settings

Setting	Description
Note required	Specifies when a note must be created before performing the following steps: • Before replying to workflow step • Before querying workflow step • Before forwarding workflow step • Before releasing workflow step (approving step) • Before rejecting workflow step **Note:** Mandatory notes cannot be applied to workflow steps of type **4 - For information purposes**.

Cover sheet settings

Setting	Description
Print cover sheet?	This setting displays a **Print cover sheet** button when the document is opened in the Web Application. When clicked, a PDF is opened in a popup window that displays a cover sheet for the document. Cover sheets can be used to attach subsequent documents to a document using the ReadSoft DOCUMENTS Rescan function. Cover sheets contain the PROCESS DIRECTOR document number, as well as a barcode, which are used to identify documents.
Form name	The name of the PDF form to use for the cover sheet.

Recipient settings

Setting	Description
Single recipient of workflow step	Only one user can be the recipient of the document. Other processors cannot be added.
Permitted recipient check	Restrictions on which users can be recipients of a document in the workflow step: • **S – New recipient (not the current processor)** • **X – Principle of dual control (recipient not previous processor)** • **– None** • **F – None, forwarding permitted to oneself** • **I – Sender/initiator cannot be processor of the workflow**
Any user for forwarding	The document can be forwarded to users not listed in `/COCKPIT/WUM2` (non-default users).

Setting	Description
	Only applicable if the **Pre-assign processors** setting in `/COCKPIT/WI3` is set to **All assigned processors or Default assigned processors only**.
Any user for queries	The document can be forwarded to users not listed in `/COCKPIT/WUM2` (non-default users). Only applicable if the **Pre-assign processors** setting in `/COCKPIT/WI3` is set to All assigned processors or Default assigned processors only.
PD message type start/continue	Determines whether unassigned steps are checked when a workflow is started or continued in PROCESS DIRECTOR. When a workflow is started or continued, if no recipient has been assigned to certain steps and step customizing only allows a PROCESS DIRECTOR user to assign steps, the user can be informed of these missing step recipients by a pop-up: If a warning pop-up appears, the user can decide whether he/she wants to send the workflow anyway or correct the assignment. If an error pop-up appears, he/she must correct the assignment. The first character of this flag refers to the workflow start, the second line refers to the workflow continuation. If the line is empty or it contains an "S", no check is carried out. If "W" is entered, a warning pop-up will appear. If "E" is entered, an error pop-up will appear. **Note**: Recipients must be entered in the first item when a workflow is started, and in the next item when a workflow is continued. If this is not done, an error message will appear, which cannot be overruled by any of the settings described here
No processor takeover for substitution	As a result of setting this flag, automatic processing does not take place if the step of a workflow goes to two processors, and one of the processors is also the substitute of the other processor and takes over processing. Use It makes sense to set this flag if all processors must process the workflow step and, in the case of substitutes, manual take over of processing by the substitute should be enforced, even though the substitute is also a recipient of the workflow step. Dependencies The prerequisite for this is that the workflow step must be processed by all recipients (All recipients must process). Example A workflow step that must be processed by all processors is sent to user A and user B. A is also the active substitute of B. The step is normally automatically processed by A as well, if this flag is not set. Setting the flag has the effect that, after A has processed the workflow step, B must still process the workflow step and thus it could be processed again by A in the capacity of substitute.

Line item/account approval

Setting	Description
Default recipient type	This setting determines the default recipient type. If only one user type is defined in the workflow step settings, this user type is defaulted. If several user types are defined in the step settings, it is possible to define the default user type here.
Show all lines	By default, workflow processors see only those lines that are assigned to them, or the lines that are not assigned to anyone. Via this **Show all lines** configuration option, it is possible to display the items (in read-only mode) assigned to the other processors, rather than hiding them.

Workflow steps, assign processors

`/COCKPIT/WUM2`

Workflow processor

In this table, you pre-allocate recipients to workflow steps. To display the table, select a **Workflow ID/Workflow step** combination and double-click **Workflow processors**.

Setting	Description
Workflow ID	The name of the workflow.
Workflow step	The workflow step ID.
Workflow processor	The ID of the user who is a pre-allocated recipient of the workflow step.
User type	• **I – WORK CYCLE user** • **S – SAP user** • **G – User group**
Set default	Indicates the user is a default processor (there can be more than one) for the workflow step. The **Pre-assign processors** setting in the workflow step configuration determines if non-default and/or default users are pre-allocated to the step when the step is started. See the Processor pre-allocation and assignment matrix for details.

Recipient determination functions

In this table, you automatically determine workflow recipients from the purchase order, purchase requisition, purchasing group or SAP HR. To display the table, select a **Workflow ID/Workflow step** combination and double-click **Recipient Determination functions**.

Setting	Description
Workflow ID	The name of the workflow.

Workflow step	The workflow step ID.
Function Module	The name of the **Function Module** you want to use to determine the recipients. The following are available: • **001 DETERMINATION FROM PO** • **002 DETERMINATION FROM PURCHASE REQUISITION** • **003 DETERMINATION FROM PURCHASING GROUP** • **004 DETERMINATION FROM HR**
Sequence	The order in which the defined **Function Modules** should be used for recipient determination. Each subsequent function is called only if the previous function does not return one or more recipients.

Workflow processes and step conditions

`/COCKPIT/WI4`

There are two tables in this transaction. The first is to allocate workflow steps to workflow shells. The next, accessed by double-clicking **Define step conditions**, is to specify conditions that the workflow step must meet for it to be executed.

Workflow processes

Setting	Description
Workflow ID	The name of the workflow.
Workflow step ID	The workflow step ID.
Position	The position of the workflow step in the workflow, where **1** is the first step in a workflow, **2** is the second step, and so on. **Note:** A workflow step can be used in/assigned to more than one workflow.

Step conditions

Setting	Description
Item/Sequence	Multiple conditions can be created. The **Item** number is the sequence or order the condition is calculated.
Structure	The type of field: • CHECKDATA (used to identify the vendor) • HEADER (header data) • ITEM (line item data) • TAX (tax data) • ACCOUNT (account assignment data) • ACCASS (multi-account assignment data) • SORDER (purchase order data) • CPD (one-time vendor)
Internal field	The name of the PROCESS DIRECTOR field that the condition calculation is based on.
Inclusion/exclusion	Indicates whether the **From** and **To** values (below) are included in the calculation or not.
Comparative options	The function to compare the **From** and **To** values (below). • BT – Between from-value and to-value • EQ – Same as from-value

Setting	Description
	• NE – Different to from-value • CP – Same pattern as from-value • GE – Greater than or equal to from-value • GT – Greater than from-value • LE – Less than or equal to from-value • LT – Less than from-value
From value/To value	The values used in the calculation of the condition. **Note**: To avoid errors, enter the values in SAP internal format. For example, for cost center 1000 enter 0000001000, for vendor 2500 enter 0000002500.
Opening bracket/Closing bracket	If more than two conditions are specified, opening and closing brackets can be used to perform a calculation block of two or more conditions before the next condition is calculated.
Boolean operator	Used to join conditions. Select from **AND** or **OR**.

Activate workflows

`/COCKPIT/WI7`

This table is used to activate workflows.

Setting	Description
Company code	The buying organizational unit.
FI/MM	**FI** or **MM** documents.
PD document type	The PROCESS DIRECTOR document type. **Note**: Workflows to which a document type has been assigned will be available in the **Invoice type** selection list when users create a new invoice.
Workflow ID	The name of the workflow.

Set up general workflow texts

`/COCKPIT/WI9`

In this table you specify the **Subject**s and **Text**s of workflow emails for the following uses:

Use	Description
Recalling a workflow	Sent when a workflow step is recalled, or the entire workflow is canceled.
Reminders for overdue workflows	Sent when a workflow step, or an entire workflow, is overdue.
Processing by a different user	Sent to the original recipient of a workflow when a substitute takes over processing of a document.
Collective emails	Collective emails are emails that contain links to more than one document, which are sent using the `/COCKPIT/DUE_DATE_CHECK` program. Collective emails are activated in the workflow step configuration and are a replacement for sending individual emails for every workflow a user receives. In addition, you also specify the **Sender** of the email, which can be any SAP user.
Active substitutes at workflow start	Sent to active substitutes when a document is sent.
Answering queries	Sent when a user answers a query about a document.
Sending queries	Sent when a user sends a query about a document to another user.
Forwarding a workflow	Sent when a user forwards a workflow to another user for processing.

There are built-in templates that you can use or modify for the email texts.

The text used for sending emails to workflow recipients is specified in the workflow step configuration (**Text for the confirmation email**).

For forwards and queries, you can define step-specific email texts in the workflow step configuration.

Activate authorization checks in WORK CYCLE

`/COCKPIT/WI13`

Setting	Description
Authorization object	The name of the SAP authorization object employed to permit access to WORK CYCLE. If no authorization object is specified, all SAP users can access WORK CYCLE.

Message transformation for checks

`/COCKPIT/WI22`

You have the ability change the *type* of messages that are presented for different checks, as well as suppress them completely. This applies to both PROCESS DIRECTOR and SAP messages. It could be useful, for example, if you do not wish to have coding block (COBL) error messages appear for documents where no cost center has been assigned. You can apply such rules for all workflow steps, or restrict them for specific workflow steps.

Setting	Description
Message check time	The time when the check occurs that you wish to change.
Workflow step ID	The workflow step ID.
Type	The type of check that you wish to change.
Message ID	The message class. See `/SE91`. The message class contains a collection of messages (see **Message No.**, below). All PROCESS DIRECTOR message classes are saved in `/COCKPIT/*`.
Message No.	The message ID. The actual message you wish to change or suppress. See `/SE91` for a list of message numbers and the message text.
Any message	If active, the rule applies to all messages for the **Message ID** and the **Message No.** is ignored.
Action	The change to the *type* of message or error that is generated. Or, whether the message is suppressed/ignored.

Limit attachment visibility in applications

`/COCKPIT/WI28`

Here you can restrict which types of attachments to PROCESS DIRECTOR can be viewed in the Web Application.

Setting	Description
Web application	The part of the Web Application where the attachment is to be hidden: • **WORK CYCLE (history)** When viewing documents that have already been processed. • **WORK CYCLE (document selection)** When viewing the document detail screen. • **WORK CYCLE (Worklist selection)** When viewing the document list.
Workflow step ID	The workflow step ID.
Document type	A PROCESS DIRECTOR archive document type, which is to be hidden.

Email settings

Email settings

`/COCKPIT/WI30`

Setting	Description
Format	**P - Plain text**: Emails are sent in plain text format. The remaining settings in this table are ignored. **H - HTML**: Emails are sent in HTML. The remaining settings in this table are applied to configure the structure and format or the HTML emails. If no value is specified here (the case if no change is made to this table), plain text is used.
HTML start	The start of the HTML email, from the <HTML> tag to the <BODY> tag. Default: `/COCKPIT/HTML_START`
HTML end	The end of the HTML email, from the </BODY> tag to the </HTML> tag. Default: `/COCKPIT/HTML_END`
MOBILE APPROVAL links	The formatting of the MOBILE APPROVAL links for approving, rejecting and adding notes to documents. Default: `/COCKPIT/HTML_MOBILE_BUTTONS`
Link names	See `/COCKPIT/WI31`.
Number of fields per row	The number of fields to appear in each table row. A field consists of the field name and the field value. That is, two cells are displayed. **Note:** This setting is not used if MOBILE APPROVAL is active for a workflow step. In this case, only one field/row is displayed.
Add multi acc. ass. to items	Determines if multi-account assignment fields (for MM documents) are included as part of the line-item table, or is displayed as a separate table.
Ignore MOBILE APPROVAL	If MOBILE APPROVAL is active for a workflow step, only one field is displayed per table row and the **Field numbers per row** setting *is not* used. By selecting **Ignore MOBILE APPROVAL**, the **Number of fields per row** setting *is* used.
Field selection	See `/COCKPIT/WI32`.
Disable email background	If you do not want to use a background image in the email, check this check box.
Background	The ID of the image to use for the background of the email. If no background image is specified, the default (*backgrnd.gif*) is used:

HTML email link names

`/COCKPIT/WI31`

Use this table to specify the display names for the document URLs. That is, instead of displaying the URL, a display name is used for the hyperlink.

Setting	Description
Alias	• **&WEB_CYCLE_DIRECT_DOCUMENT_LINK&** The URL of the Web Application to the list of documents to approve. • **&WEB_CYCLE_DOCUMENT_LIST_LINK&** Same as above: The URL of the Web Application to the list of documents to approve. (Two aliases/variables exist to provide backward compatibility with previous versions of PROCESS DIRECTOR Accounts Payable.) • **&WEB_CYCLE_SINGLE_DOCUMENT_LINK&** The URL of the Web Application to a single document. • **&WEB_CYCLE_SINGLE_SIGN_ON_LINK&** The URL of the Web Application logon page. • **&WEB_CYCLE_SUBST_DOC_LIST_LINK&** The URL of the list of documents from a person of whom another person is a substitute.
Value	The display name for the hyperlink.

Email field selection

`/COCKPIT/WI32`

Use this table to specify which fields are displayed in HTML workflow emails.

Setting	Description
Structure	The type of field/the table in which a field is located: • HEADER - Header data • ITEM - Line item data • ACCOUNT - Account assignments for FI items • ACCASS - Account assignments for MM items
Internal field name	The name of the field in PROCESS DIRECTOR Accounts Payable.

Presentation and interface

Maximum number of fields in the Web Application

`/COCKPIT/WI11`

This table lists the fields that can be displayed in the Web Application. If a field is not listed here, it cannot be displayed in the Web Application.

Setting	Description
Structure	The type of field/the table in which a field is located: • HEADER - Header data • ITEM - Line item data • ACCOUNT - Account assignments for FI items • ACCASS - Account assignments for MM items • TAX - Tax fields • CHECKDATA - Bank and other data fields. • SORDER - Purchase order fields* • CPD - One-time vendor fields
Internal field name	The name of the field in PROCESS DIRECTOR.

* You can extend the `/COCKPIT/SORDER` table using fields from the `BAPIEKPO` (purchase order) and `BAPIEKBES` (purchase order history) tables using the `CI_COCKPIT_ORDER` include.

Creating field status and assigning field characteristics

`/COCKPIT/C23`

Field status identification

Setting	Description
Field status	The name/ID of the field status.
Header data can only be displayed	Display all header fields as read-only.
Display invoice items only	Display all line-item fields as read-only.
Only display account assignment	Display all account assignment fields as read-only.
No account assignment line with MM invoices	The account assignment fields for FI items in MM documents are hidden.
Display withholding tax only	Display withholding tax fields as read-only.

Setting	Description
Display tax only (no entry)	Display tax fields as read-only.

Screen variants

Here you can assign screen variants for the **Invoice items**, **Account Assignments**, **PO Account Assignments** and **PO Data** grids. See the SAP documentation for information on creating screen variants.

Characteristic value of status

Setting	Description
Structure	The type of field: • CHECKDATA (used to identify the vendor) • HEADER (header data) • ITEM (line item data) • TAX (tax data) • ACCOUNT (account assignment data) • ACCASS (multi-account assignment data) • SORDER (purchase order data)
Internal field name	The name of the field in PROCESS DIRECTOR.
Display	• **D Only display**. Display the field as read-only. • **H Hide**. Do not display the field • **M Mandatory field**. Force a value to be entered for the field before the document can be saved. • **Normal fiel**d. A field whose value can be changed.

Maintain default layouts for the WORK CYCLE transaction overview screen

`/COCKPIT/WI12`

Here you can specify the default layout, using variants, of the following sections in the WORK CYCLE document list:

- Layout of heading list
- Layout of MM invoice items
- Layout of FI coding items

Activate WORK CYCLE customer-specific functions

`/COCKPIT/WI14`

Displays menu items to execute custom functions. Use the PROCESS DIRECTOR User Exit 12 (`/COCKPIT/USEX_CUSTFCT_PROCESS`) to link menu items to functions.

Setting	Description
Workflow step	The workflow step ID.
Activate customer functions	Enables the additional menu in `/COCKPIT/WC`.
Menu description	The name of the menu.
Setting	**Description**
Description	The name of the menu item.
Icon	An icon to use for the menu item. (Optional)
Op. mode	Specifies whether the function should lock the document (no other changes permitted while locked) or not. • **_ - Lock and update document** • **1 - Lock but do not update document** • **2 - No lock and no update of document**
Process several documents	Specifies whether the function can be executed on more than one document simultaneously.

Archive document types for document upload in the Web Application

`/COCKPIT/WI15`

In this table you can specify the permitted document types that can be uploaded in the Web Application. The document types are the ones created for PROCESS DIRECTOR during installation, in `/0AC2`. Document types must be listed here in order for Web Application users to upload files of that type in the Web Application.

Define forms for workflow steps for the Web Application

`/COCKPIT/WI16`

In this table you list the archive document types to use when Web Application users fill in and submit forms. If this table is empty, the first matching entry in `/COCKPIT/C15` is used.

Setting	Description
Workflow step ID	The workflow step ID.
Language	The language of the form.
File name of form	The filename (as it appears in the Web Application) of the form.
Name of form	The name of the form.
Document type	The archive document type to use for the form. The document types are the ones created for PROCESS DIRECTOR during installation, in `/0AC2`.

Extend selection criteria for workflow history

`/COCKPIT/WI24`

This table contains additional fields displayed on the **History** > **New invoice selection** tab, when searching for processed documents. These selection fields are also displayed in the SAP GUI **Workflow > Display releases (history)** popup. The default fields are:

- Workflow name
- Last approval/action from/to
- Display approvals only
- Maximum number of rows

Setting	Description
Table name	The type of field: • HEADER – Header fields • WEB_CYCLE – WORK CYCLE workflow fields (workflow step ID, due date, read/unread status).
Field name	The name of the field.
Selection type	The type of selection for the field: • 1 – **Single parameter** provides one field for entry of a single value. • 2 – **From/To parameter** provides two fields for entry of a range, for example, between document number 1000 to 2000. • 3 – **Checkbox** allows multiple selection of the available options. • 4 – **Radio button** allows selection of only one of the available options.

Setting	Description
	Warning: Use the **Radio button** selection type only with fields with an applicable type. Using it with fields whose types are CHARACTER or INTEGER will result in incorrect search results.
Status description	The display text for the field in the Web Application. If no text is entered, the standard field name from the data dictionary is used.
Sequence	The order in which the fields are displayed (lowest to highest value).

Note: The remaining configured fields are available via the **Other selection fields** button. Only simple From-To selections are allowed; it is not possible to define ranges or single values.

Web Application search help

Insert or adapt search helps

`/COCKPIT/WI19`

In these tables you can override and add additional search helps provided by the system. This however only applies to the Web Application.

Setting	Description
Structure	The type of field: • CHECKDATA (used to identify the vendor) • HEADER (header data) • ITEM (line item data) • TAX (tax data) • ACCOUNT (account assignment data) • ACCASS (multi-account assignment data) • SORDER (purchase order data) • CPD (one-time vendor)
Internal field name	The name of the field in PROCESS DIRECTOR
Function module	The function module that provides the search help for the specified field. To suppress a search help provided by default, leave this field blank.

Search help fields

For each field you add above, you must specify the fields that can be used to search and are displayed in the search results.

Setting	Description

Field name in search help	The name of the field to display in the search results. You must include the field that you added in the above table. It may be the same (PROCESS DIRECTOR) field or the corresponding SAP field. **Example:** If TAX_CODE (a PROCESS DIRECTOR field) was in the above table, you must add MWSKZ (an SAP field) to this table. If you added FOLLOW_UP (a PROCESS DIRECTOR table) to the above table, you can also add FOLLOW_UP to this table.
Priority	The order of the fields, starting on the left with **1**, then **2**, **3**, and so on. **Note:** The search field must be assigned to **1**. For example, if you added TAX_CODE to the above table, the MWSKZ field must be added to this table and assigned **1** as the **Priority**.
ABAP type	The data type (for example, Character string, Date, Time, etc.)
No. of characters	The length of the field to display the field values.
Search/display	Determines whether the field can used as input for searching and/or displayed in the search results. • **S – Search** • **D – Display** • **B – Both**
Label	The label of the field in the search form and the header of the result list column. **Warning:** If the label is not available in the language in which the user is currently logged on, the entire field will not be displayed in the search help.

Optional: SAP search helps

If `/COCKPIT/WC_SHLP_GENERAL` has been used in the first table, you must define an SAP search help to use here.

Setting	Description
Table name	Any table or structure which contains the field name and where a search help has been provided for that field. Typically this would be either: • /COCKPIT/SHDR_DISP • /COCKPIT/SITEM_DISP • /COCKPIT/SACCT_DISP • /COCKPIT/TACCAS
Search help name	An elementary search help with the search help provided in the table/structure above.

Default search helps

`/COCKPIT/WI18`

This table contains the default search helps for the Web Application. If you want to add/edit/suppress any search help, do not edit this table, use `/COCKPIT/WI19` instead.

Setting	Description
Structure	The type of field: • CHECKDATA (used to identify the vendor) • HEADER (header data) • ITEM (line item data) • TAX (tax data) • ACCOUNT (account assignment data) • ACCASS (multi-account assignment data) • SORDER (purchase order data) • CPD (one-time vendor)
Internal field name	The name of the field in PROCESS DIRECTOR
Function module	The function module that provides the search help for the specified field.

Search help fields

Setting	Description
Field name in search help	The name of the field to display in the search results.
Priority	The order of the fields, starting on the left with **1**, then **2**, **3**, and so on.
ABAP type	The data type (for example, Character string, Date, Time, etc.)
No. of characters	The length of the field to display the field values.
Search/display	Determines whether the field can used as input for searching and/or displayed in the search results. • **S – Search** • **D – Display** • **B – Both**
Label	The label of the field in the search form and the header of the result list column.

Optional: SAP search helps

Setting	Description
Table name	Any table or structure which contains the field name and where a search help has been provided for that field.

Search help name	An elementary search help with the search help provided in the table/structure above.

Web Application: Document selection

Web Application: User group for document selection

`/COCKPIT/WI25`

Here you specify the user group that is able to view PROCESS DIRECTOR documents in the Web Application (that is, any PROCESS DIRECTOR document, not just ones sent to these users in a workflow). You can only specify one user group.

Setting	Description
Work group	Any WORK CYCLE user group.

Web Application: Criteria for document selection

`/COCKPIT/WI26`

This table contains the document selection criteria for the **PD documents** tab.

Setting	Description
Table name	The type of field: • HEADER – Header fields • WEB_CYCLE – WORK CYCLE workflow fields (workflow step ID, due date, read/unread status).
Field name	The name of the field.
Selection type	The type of selection for the field: • **1 – Single parameter** provides one field for entry of a single value. • **2 – From/To parameter** provides two fields for entry of a range, for example, between document number 1000 to 2000. • **3 – Checkbox** allows multiple selection of the available options. • **4 – Radio button** allows selection of only one of the available options. **Warning:** Use the Radio button selection type only with fields with an applicable type. Using it with fields whose types are CHARACTER or INTEGER will results in incorrect search results.
Alternative assignment	The display text for the field in the Web Application. If no text is entered, the standard field name from the data dictionary is used.
Sequence	The order in which the fields are displayed (lowest to highest value).

Maintain default values for document creation

`/COCKPIT/WBI7`

When the ability to create invoices in the WORK CYCLE Web Application has been given (by activating the **wb_create** parameter in *webcycle-app.properties*), you can list default values for header fields.

Setting	Description
PD document type	The PROCESS DIRECTOR document type. A blank entry here will make a value the default for all documents unless an entry exists with a specific document type.
Internal field name	The name of the PROCESS DIRECTOR header field.
Field value	The value that is displayed for the field when creating a new invoice.

Web Application: Configuring fields for one-time vendors

`/COCKPIT/WI29`

This table lists the one-time vendor fields that are displayed for the vendor record in the Web Application.

Setting	Description
Vendor	The name of the vendor. Can be used to apply different field settings to different vendors. If left blank, the field setting is applied to all vendors.
Field name	The name of the field in PROCESS DIRECTOR.
Display	• **D - Only display** Display the field as read-only. • **H - Hide** Do not display the field. • **M - Mandatory field** Force a value to be entered for the field before the document can be saved. • **Normal field** A field whose value can be changed. **Note:** The `NAME1` (Name) and `OTRO1` (City) fields are displayed as mandatory fields in the Web Application and do not need to be entered here.
Priority	The row position of the field, with **0** being the highest row. If more than one field has the same row number, the fields are sorted alphabetically.

User management

Mapping of LDAP attributes to user master data

`/COCKPIT/WI27`

This is the mapping table used by `/COCKPIT/WC_USER_UPDATE` to import users from an LDAP directory to WORK CYCLE.

Setting	Description
Attribute name	The name of the field in the LDAP directory.
Internal field name	A WORK CYCLE user field. Use the Search Help for possible fields (from the `/COCKPIT/TWC_UMP` table).
Function module	Optional. Use a function module to modify the import data before it is saved in `/COCKPIT/TWC_UMP`. No standard function module exists—you must write your own to modify the data as you wish.

Set WORK CYCLE user management

`/COCKPIT/WI6`

This table contains various settings regarding the creation of new WORK CYCLE users.

Setting	Description
User Management Customizing	
User generation	The method used to create WORK CYCLE usernames (if one is not specified). • **– Random name** Random characters are used to compose usernames. • **1 – Generate name from email** The first part of email address are used to compose usernames.
Mapping module	The function module used to import user data from a file. `/COCKPIT/WC_MAP_IMP_EXAMPLE` is a built-in example that can be used to import users from CSV files.
Initial password	The initial password for all users. Each user must change this initial password when they first log on. If no initial password is specified here, the system automatically generates a random password. **Note**: This password is stored in encrypted form on the database.
Use eMails	
Create or delete	Sends an email to newly created or deleted users.
Create Mail Txt	The email text to send to newly created users.
Delete Mail Text	The email text to send to deleted users.
Mail Text to Subs	The email text to send to substitutes for newly created or deleted users.
Lock or unlock	Sends an email to users who have been locked or unlocked.
Mailtext	The email text to send to users who have been locked or unlocked.
Change password	Sends an email to users when their password changes.
Mailtext	The email text to send to users when their password changes.
Duplicate check	
Check user ID	Validates whether an SAP user with the same user ID already exists.
Check mail address	Validates whether an SAP user with the same mail address already exists.

Setting	Description
Check name (first name/last name)	Validates whether an SAP user and/or a WORK CYCLE user with the same first name and last name already exists (for example: John Smith).
Check name (last name/first name)	Validates whether an SAP user and/or a WORK CYCLE user with the same last name and first name already exists (for example: Smith John).

WORK CYCLE user management

`/COCKPIT/WUM`

You can create, edit and delete users, as well as perform other tasks described below.

To perform most of these actions, you must first enter the username in the **Workflow processor** field.

Icon	Action	Description
	Create	Opens the **User data** dialog to enter details of the new user.
	Change	Opens the **User data** dialog to change the details of an existing user.
	Display	Opens the **User data** dialog to display details of an existing user.
	Lock	Locks the user. If the user is logged on when you apply the lock, they can continue to work in the current session. **Warning:** Locking or deleting users may result in unfinished workflows. For example, if the locked or deleted user is the sole user assigned to the last workflow step, the workflow cannot be completed. In this case, the workflow must be recalled.
	Unlock	Unlocks the user.
	Delete	Deletes the user. **Warning:** Locking or deleting users may result in unfinished workflows. For example, if the locked or deleted user is the sole user assigned to the last workflow step, the workflow cannot be completed. In this case, the workflow must be recalled.
	Initialize password	Generates a new password for the user. The user must change this initial password when they log on. You can define this initial password in `/COCKPIT/WI6`. Use the `WC_UMA_PASSWD_INIT` program to initialize passwords for more than one user at the same time.
	Change password	Manually specify a new password for the user.

Icon	Action	Description
	Import	Opens the **Import user** dialog, where you can specify the file to import users from. The function module for performing the import is specified in `/COCKPIT/WI6`.
	User group	Opens `/COCKPIT/WUM1` to manage user groups.
	Assign users	Opens `/COCKPIT/WUM2` to assign users to workflow steps.
	PROCESS DIRECTOR authorization roles	Opens `/EBY/ICWC_UM3` to assign authorization roles. This option only appears if you have PROCESS DIRECTOR installed (not just PROCESS DIRECTOR Accounts Payable). See the *PROCESS DIRECTOR SAP Configuration Guide* for details.

User group management

`/COCKPIT/WUM1`

You can create and manage user groups in this table.

Setting	Description
Workgroup	The unique ID of the user group.
Description	A descriptive text of the user group.
Assigned processors	
User type	There are three kinds of users that can be included in user groups: • **I – WORK CYCLE user** • **S – SAP user** • **G – User group** Email users/addresses cannot be included in user groups.
Workflow processor	The user name.

Define search help for workflow processor

`/COCKPIT/WI5`

When search help is used inside SAP to select users for a workflow (for example, when a PROCESS DIRECTOR user starts a workflow), the search help for finding users looks at all users of the specified user type (SAP, WEB CYCLE, and User Group). However, you can restrict which users are searched by:

1. Writing a function for the specific user search you wish to implement.
2. Specifying the **User type** for which this search will be used in the above table.

Note: This configuration only affects user search helps for WEB CYCLE in the SAP GUI. It does not affect user search helps in the Web Application.

Setting	Description
User type	The type of user for which the search help function will be used. • **I – WORK CYCLE user** • **S – SAP user** • **G – User group**
Search help name	The search help function to find users.

Define substitute profile

`/COCKPIT/WI33`

Here you specify the substitute profile in SAP that takes precedence when allocating substitutes. The profile is also assigned to new substitutes created using the Web Application.

See Using a substitute profile for a full explanation.

Set notes

Use WORK CYCLE notes

`/COCKPIT/WI8`

Here you can restrict which types of attachments to PROCESS DIRECTOR can be viewed in the Web Application.

Setting	Description
Use notes	Enables the creation of WORK CYCLE notes.
Document type WORK CYCLE notes	The document type to use for archiving WORK CYCLE notes. The document type must be listed in `/OAC2`. If PDF is used, a form must be entered for the creation of the PDF (see **Form for creating PDFs**, below). The `/COCKPIT/TEXT` form is available but can be changed if a new form is to be used.
Archive as text document	Archives notes in TXT format.
Archive as PDF document	Archive notes in PDF format.
Form for creating PDFs	The form to use to create PDFs from WORK CYCLE notes. Mandatory if archiving as PDFs.
Archive as HTML	Archive notes in HTML format.
Document type internal notes	The document type to use for archiving internal notes
Notes in list	Enables notes to be displayed in the document Worklist.

Setting	Description
Notes in detail	Enables notes to be displayed when viewing documents. A separate tab appears in the document header.
Comment symbol for not title	The character to use to denote comments in the note's title (which displays the note's metadata, such as Subject, Creator, etc.). For example, using * will result in: *** 24 / 24 ********** * Note type : Email for workflow start * Subject : Please approve * Creator : John SMITH (SAP User: SMITH) * Date / Time : 16.06.2011 / 15:01:14 (CET) **********

Maintain WORK CYCLE note types

`/COCKPIT/WI10`

These settings are system based and may not be changed. They are supplied as default WORK CYCLE settings. However, further note types can be defined for individual extensions, which must exist in the customer's own SAP area, meaning they begin with Z* or Y*.

Schedule background processing

Schedule reminder emails

`/SM36`

A shortcut to `/SM36` to define a background job for the `DUE_DATE_CHECK` program.

Schedule archiving of other notes

`/SM36`

A shortcut to `/SM36` to define a background job for the `ARCHIV_NOTE_LATE` program.

Amendments

Activate User Exits

`/COCKPIT/WI23`

Setting	Description
User Exits	The ID of the PROCESS DIRECTOR template the User Exit is based on. It is necessary for the correct connection of the User Exit to the processes to be adjusted.
Function module	The name of the User Exit.
No standard	Indicates the User Exit replaces standard functionality in PROCESS DIRECTOR. It means that all code after this User Exit is called is not executed.
	Shortcut to view and edit the User Exit.

Appendix B – User Exits

WORK CYCLE comes with over 60 User Exit interfaces that you can use to customize the application to suit business requirements.

Function module templates for the User Exits can be found in the `/COCKPIT/WC_EXIT_SAMPLE` function group.

These function modules can be copied and subsequently modified in order to guarantee a stable interface.

Interface structure

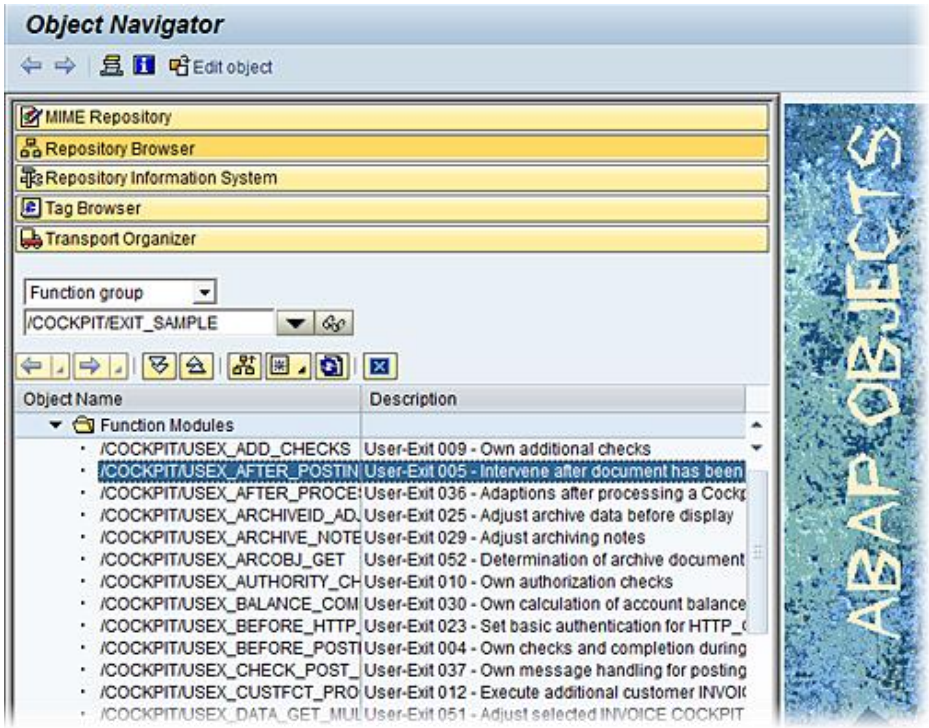
The interface structures and the tables in the local interface of the User Exit function templates start with I, E, and C.

Prefix	Description
E	Data is exported only. Changes are possible.
I	Data is imported only. Changes are not incorporated.
C	Data can be changed. Changes are possible.

Developing User Exits

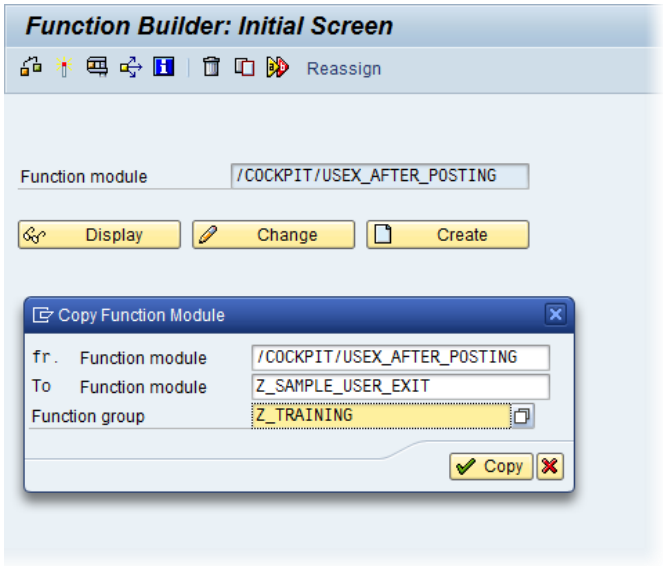
1. Select a User Exit template to use.

   The User Exit templates are saved in various `/COCKPIT/*` function groups.



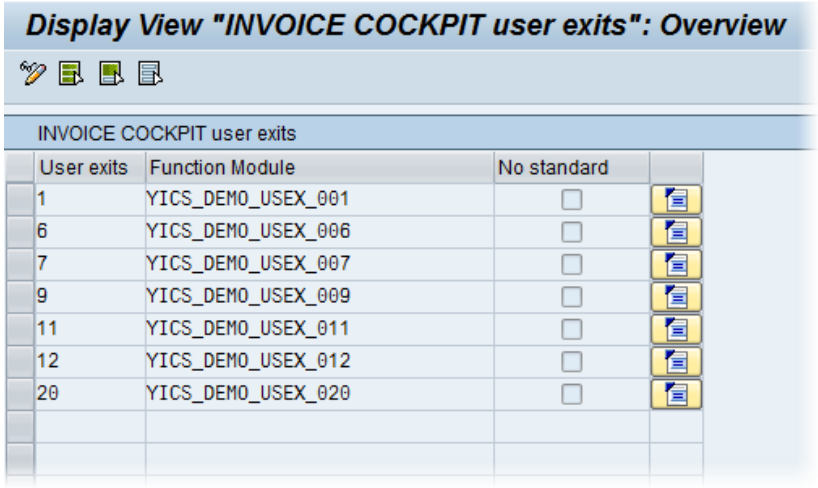
2. Copy template to your own function module.

   Use `/SE37` to copy and create a new function module.



Note: Be sure to copy the function module to your own custom function group.

3. Develop your User Exit code.
4. Activate the User Exit in `/COCKPIT/WI23`.



List of User Exits

Note: This list only includes User Exit interfaces available in the standard transport. Other transports, such as the Business Solution Package (BSP), contain their own fully-developed User Exits. For details on these, refer to the BSP documentation.

User Exit	Name
900	Before starting/continuing a workflow
901	Change WORK CYCLE message texts
902	Determine all WORK CYCLE workflows for one processor
903	Change WORK CYCLE notes and releases to be archived
904	Change subjects of WORK CYCLE messages
905	Own reminder function in WORK CYCLE
906	After starting/continuing a workflow and before saving
907	Custom behavior after workflow reminder
908	Own logic for email at workflow start
909	Define further or different substitutions
910	Own logic for determining user type and email
911	Define further or other substitutes

User Exit	Name
912	Own or additional logic when sending an email
913	When finishing a workflow
914	Adjust call of SAP API for sending emails
915	Adjust/Replace general account assignment block check
916	Adjust/Replace account assignment block check for vendor Ps
917	Data check in the Web Application
918	File upload via the Web Application
919	Calculate workflow validity period (due date)
920	Amend work item creation for SAP Business Workflow
921	Adapt what data the Web Application gets
922	Read the overview data in WORK CYCLE
923	User check during logon to the Web Application
924	Set substitutes for the workflow
925	Set substitutes for SAP users
926	Adapt search help determination for check tables
927	After saving the logon timestamp
928	CPD data get
929	CPD data set
930	Reset WORK CYCLE user password
931	Get user data
932	Get user data
933	Get approved documents
934	Manipulate WORK CYCLE flow definition
935	Note check
936	List of possible substitutes

User Exit	Name
937	Adjust WF recipients search
938	Reduce list of documents before WF recall
LDAP User Exit 1	Assign LDAP attribute to WORK CYCLE user field
Search help User Exit	Search help for a field in the Web Application
Step User Exit 1	Check step conditions
Step User Exit 2	Determine processor of step
Step User Exit 3	After performing an action
Step User Exit 4	After full release
Step User Exit 5	Check step recipient

User Exit 900 – Before starting/continuing a workflow

This User Exit is called before a workflow is started or continued from PROCESS DIRECTOR in the SAP GUI, and is called twice:

- After a user has started the **Send** to workflow action and before the **Start Workflow in WORK CYCLE** dialog appears.

  In this case, the User Exit is used to adjust the list of workflows available in the popup window.
- After a user clicks the **Start** button to start a workflow.

  In this case, the User Exit is used to prevent a workflow from being started.

Template
FUNCTION /COCKPIT/WC_USEX_BEFORE_START. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IB_ONLINE) LIKE BOOLE-BOOLE DEFAULT 'X' *" EXPORTING *" REFERENCE(EC_PROC_WC) LIKE /COCKPIT/THIST-PROCESS *" TABLES *" IT_ITEM STRUCTURE /COCKPIT/SITEM_IF *" IT_ACCOUNT STRUCTURE /COCKPIT/SACCT_IF *" IT_TAX STRUCTURE /COCKPIT/STAX_IF *" ET_WEBCYCLE STRUCTURE /COCKPIT/SWC_WEBCYCLE

Template
*" ET_MESSAGE STRUCTURE BAPIRET2 *" CHANGING *" REFERENCE(EC_WEBCYCLE_ID) LIKE /COCKPIT/SWC_WEBCYCLE-WC_ID *" REFERENCE(ES_HEADER) LIKE /COCKPIT/SHDR_IF *" STRUCTURE /COCKPIT/SHDR_IF *" EXCEPTIONS *" ERROR_OCCURED ENDFUNCTION.

Example

The following example prevents the workflow **TestWorkflow** from being started:

```
FUNCTION Z_BL872_WC_USEX_BEFORE_START.
*"----------------------------------------------------------------------
*"*"Local interface:
*"       IMPORTING
*"             REFERENCE(IB_ONLINE) LIKE  BOOLE-BOOLE DEFAULT 'X'
*"       EXPORTING
*"             REFERENCE(EC_PROC_WC) LIKE  /COCKPIT/THIST-PROCESS
*"       TABLES
*"              IT_ITEM STRUCTURE  /COCKPIT/SITEM_IF
*"              IT_ACCOUNT STRUCTURE  /COCKPIT/SACCT_IF
*"              IT_TAX STRUCTURE  /COCKPIT/STAX_IF
*"              ET_WEBCYCLE STRUCTURE  /COCKPIT/SWC_WEBCYCLE
*"              ET_MESSAGE STRUCTURE  BAPIRET2
*"       CHANGING
*"             REFERENCE(EC_WEBCYCLE_ID)
*"  LIKE  /COCKPIT/SWC_WEBCYCLE-WC_ID
*"             REFERENCE(ES_HEADER) LIKE  /COCKPIT/SHDR_IF
*"  STRUCTURE  /COCKPIT/SHDR_IF
*"       EXCEPTIONS
*"              ERROR_OCCURED
*"----------------------------------------------------------------------
* Dummy entry for user exit cross reference check
  IF con_wc_usex_before_start IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
  DATA: ls_message TYPE bapiret2.
  IF ec_webcycle_id EQ 'TestWorkflow'.
    ls_message-message = 'Error !'.
    ls_message-type = 'E'.
    ls_message-id = 'Error'.
    ls_message-number = '002'.
    APPEND ls_message TO et_message.
    RAISE error_occured.
  ELSE.
    ls_message-message = 'Some message'.
    ls_message-type = 'W'.
    ls_message-id = 'Warning'.
    ls_message-number = '001'.
    APPEND ls_message TO et_message.
  ENDIF.
```

```
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

User Exit 901 – Change WORK CYCLE message texts

This User Exit is called at the end of all functions which read a text module (for example an email text template) from WORK CYCLE configuration. The User Exit can change the text in any way, with the exception of placeholders, which are replaced with real values before this User Exit is called.

Template
FUNCTION /COCKPIT/WC_USEX_TEXT_ADAPT. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF OPTIONAL *" REFERENCE(IS_WEBCYCLE) LIKE /COCKPIT/SWC_WEBCYCLE STRUCTURE *" /COCKPIT/SWC_WEBCYCLE OPTIONAL *" REFERENCE(IS_TWC) LIKE /COCKPIT/TWC STRUCTURE /COCKPIT/TWC *" OPTIONAL *" REFERENCE(IS_WC_STEP) LIKE /COCKPIT/SWC_STEP STRUCTURE *" /COCKPIT/SWC_STEP OPTIONAL *" REFERENCE(IS_WC_FLOW) LIKE /COCKPIT/TWCF STRUCTURE *" /COCKPIT/TWCF OPTIONAL *" REFERENCE(IC_SENDER) LIKE /COCKPIT/SWC_IF-WC_USER OPTIONAL *" REFERENCE(IC_SENDER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE *" OPTIONAL *" REFERENCE(IC_DOCU_OBJECT) LIKE DOKHL-OBJECT OPTIONAL *" REFERENCE(IC_FUNCTION) LIKE TFDIR-FUNCNAME OPTIONAL *" REFERENCE(IC_ACTION) LIKE /COCKPIT/SWC_DUMMY-ACTION_TYPE *" OPTIONAL *" EXPORTING *" REFERENCE(EB_EXIT) LIKE BOOLE-BOOLE *" TABLES *" ET_NOTE STRUCTURE /COCKPIT/SWC_NOTE ENDFUNCTION.

User Exit 902 – Determine all WORK CYCLE workflows for one processor

This User Exit is called at the end of the API function that determines the list of documents that are in WORK CYCLE for a specific user.

Template

```
FUNCTION /cockpit/wc_usex_docs_for_user.
*"----------------------------------------------------------------------
*"*"* Local interface:
*"  IMPORTING
*"     REFERENCE(IC_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE
*"     REFERENCE(IC_USER) LIKE  /COCKPIT/SWC_IF-WC_USER
*"     REFERENCE(IC_NO_SUBSTITUTION) LIKE  BOOLE-BOOLE
*"  TABLES
*"      CT_WEBCYCLE STRUCTURE  /COCKPIT/SWC_IF
*"      CT_HEADER STRUCTURE  /COCKPIT/SHDR_IF
ENDFUNCTION.
```

User Exit 903 – Change WORK CYCLE notes and releases to be archived

This User Exit is called immediately before the WORK CYCLE workflow log is written to the archive. If the **No standard** flag is set, the standard print functionality that creates an archive document from the actual lines of text is skipped.

Template

```
FUNCTION /cockpit/wc_usex_docs_for_user.
*"----------------------------------------------------------------------
*"  IMPORTING
*"     REFERENCE(IS_HEADER) LIKE  /COCKPIT/THDR STRUCTURE
*"       /COCKPIT/THDR
*"     REFERENCE(IB_UPDATETASK) LIKE  BOOLE-BOOLE
*"     REFERENCE(IB_CONNECT_FURTHER) LIKE  BOOLE-BOOLE
*"     REFERENCE(IS_NOTES_CUST) LIKE  /COCKPIT/CNOTES STRUCTURE
*"       /COCKPIT/CNOTES
*"  EXPORTING
*"     REFERENCE(EC_ARC_DOC_TYPE) LIKE  TOADD-DOC_TYPE
*"     REFERENCE(EN_LENGTH) LIKE  SAPB-LENGTH
*"     REFERENCE(EB_NO_STANDARD) LIKE  BOOLE-BOOLE
*"  TABLES
```

Template
*" CT_TEXT STRUCTURE /COCKPIT/SWC_NOTE *" ET_CONTENT STRUCTURE TBL1024 *" ET_MESSAGES STRUCTURE BAPIRET2 *" EXCEPTIONS *" ERROR_OCCURED ENDFUNCTION.

User Exit 904 – Change subjects of WORK CYCLE messages

This User Exit is called during the process of email generation in order to change the email subject. It is called before placeholders in the email subject are replaced.

Template
FUNCTION /COCKPIT/WC_USEX_SUBJ_ADAPT. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF OPTIONAL *" REFERENCE(IC_SENDER) LIKE /COCKPIT/SWC_IF-WC_USER OPTIONAL *" REFERENCE(IC_SENDER_TYPE) LIKE /COCKPIT/SWC_IF-WC_USERTYPE *" OPTIONAL *" REFERENCE(IC_WC_NAME) LIKE /COCKPIT/SWC_WEBCYCLE-WC_NAME *" OPTIONAL *" REFERENCE(IC_WC_STEP_NAME) LIKE /COCKPIT/SWC_STEP-WC_STEP_NAME *" OPTIONAL *" REFERENCE(IC_RECEIVER) LIKE /COCKPIT/SWC_IF-WC_USER OPTIONAL *" REFERENCE(IC_RECEIVER_TYPE) LIKE /COCKPIT/SWC_IF-WC_USERTYPE *" OPTIONAL *" REFERENCE(IS_WC_FLOW) LIKE /COCKPIT/TWCF STRUCTURE *" /COCKPIT/TWCF OPTIONAL *" REFERENCE(IN_DUE_DAYS) LIKE /COCKPIT/SWC_STEP-WC_DUE_DAYS *" OPTIONAL *" EXPORTING *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" CHANGING *" REFERENCE(EC_EMAIL_SUBJ) LIKE /COCKPIT/CWC_STT-WC_EMAIL_SUBJ ENDFUNCTION.

User Exit 905 – Own reminder function in WORK CYCLE

This User Exit makes it possible to implement a specific due date check on a workflow step. If the **No standard** flag is set, the standard send email functionality is skipped.

Template
FUNCTION /COCKPIT/WC_USEX_REMINDER. *"---------- *"*" Local interface: *" IMPORTING *" REFERENCE(IS_WC_STEP) LIKE /COCKPIT/TWCS STRUCTURE *" /COCKPIT/TWCS *" REFERENCE(IS_HEADER) LIKE /COCKPIT/THDR STRUCTURE *" /COCKPIT/THDR *" REFERENCE(IS_WEBCYCLE) LIKE /COCKPIT/SWC_WEBCYCLE STRUCTURE *" /COCKPIT/SWC_WEBCYCLE *" REFERENCE(IS_WC_STEP_CUST) LIKE /COCKPIT/SWC_STEP STRUCTURE *" /COCKPIT/SWC_STEP *" REFERENCE(IS_WC_DATE_SEL) LIKE /COCKPIT/SWC_DATE_SELECTION *" STRUCTURE /COCKPIT/SWC_DATE_SELECTION OPTIONAL *" REFERENCE(IB_COLL_MAIL_SEL) LIKE BOOLE-BOOLE OPTIONAL *" REFERENCE(IC_REC_USER_SEL) LIKE /COCKPIT/TWC_CML-WC_REC_USR *" OPTIONAL *" REFERENCE(IC_REC_USERTYPE_SEL) LIKE *" /COCKPIT/TWC_CML-WC_REC_USR_TYPE OPTIONAL *" REFERENCE(IC_SUBMIT) LIKE BOOLE-BOOLE DEFAULT SPACE *" EXPORTING *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" TABLES *" ET_MESSAGES STRUCTURE BAPIRET2 ENDFUNCTION.

User Exit 906 – After starting/continuing a workflow and before saving

This User Exit is called after a workflow step has been started but before the workflow information changed by the start procedure has been written to the database. If the **No standard** flag is set, the standard database update is skipped.

Template

```
FUNCTION /COCKPIT/WC_USEX_AFTER_START.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IB_ONLINE) LIKE  BOOLE-BOOLE DEFAULT CON_TRUE
*"  TABLES
*"      ET_WC_FLOW STRUCTURE  /COCKPIT/TWCF OPTIONAL
*"      ET_WC_FLOW_NOTE STRUCTURE  /COCKPIT/TWCFN OPTIONAL
*"      IT_WC_STEP_DEF STRUCTURE  /COCKPIT/SWC_STEP OPTIONAL
*"      ET_MESSAGE STRUCTURE  BAPIRET2 OPTIONAL
*"  CHANGING
*"     REFERENCE(ES_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"        /COCKPIT/SHDR_IF OPTIONAL
*"     REFERENCE(ES_WEBCYCLE) LIKE  /COCKPIT/TWC STRUCTURE
*"        /COCKPIT/TWC OPTIONAL
*"  EXCEPTIONS
*"      ERROR_OCCURED
ENDFUNCTION.
```

User Exit 907 – Custom behavior after workflow reminder

This User Exit allows the implementation of customer-specific logic for a workflow reminder email. It is possible to define rules to control the message dispatch.

Template

```
FUNCTION /COCKPIT/WC_USEX_AFTER_REMIND.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IC_SUBMIT) LIKE  BOOLE-BOOLE DEFAULT SPACE
*"  TABLES
*"      ET_MESSAGES STRUCTURE  BAPIRET2 OPTIONAL
ENDFUNCTION.
```

User Exit 908 – Own logic for email at workflow start

This User Exit is called before a workflow email is sent out when a workflow step is started. If the **No standard** flag is set, the standard send email function is skipped.

Template
FUNCTION /COCKPIT/WC_USEX_START_MAIL. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IB_ONLINE) LIKE BOOLE-BOOLE DEFAULT CON_TRUE *" EXPORTING *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" TABLES *" IT_ITEM STRUCTURE /COCKPIT/SITEM_IF OPTIONAL *" IT_ACCOUNT STRUCTURE /COCKPIT/SACCT_IF OPTIONAL *" IT_TAX STRUCTURE /COCKPIT/STAX_IF OPTIONAL *" ET_NOTE STRUCTURE /COCKPIT/SWC_NOTE OPTIONAL *" ET_MESSAGE STRUCTURE BAPIRET2 OPTIONAL *" CHANGING *" REFERENCE(ES_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF OPTIONAL *" REFERENCE(ES_WEBCYCLE) LIKE /COCKPIT/TWC STRUCTURE *" /COCKPIT/TWC OPTIONAL *" REFERENCE(ES_WC_FLOW) LIKE /COCKPIT/TWCF STRUCTURE *" /COCKPIT/TWCF OPTIONAL *" REFERENCE(ES_WC_STEP_DEF) LIKE /COCKPIT/SWC_STEP STRUCTURE *" /COCKPIT/SWC_STEP OPTIONAL *" EXCEPTIONS *" ERROR_OCCURED ENDFUNCTION.

User Exit 909 – Define further or different substitutions

This User Exit is called at the beginning of the function that determines the substitution definitions of a workflow processor. If the **No standard** flag is set, the standard substitution determination procedure is skipped.

Template

```
FUNCTION /COCKPIT/WC_USEX_SUBST_GET.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(I_USER) LIKE  /COCKPIT/TWCS-WC_USER
*"     REFERENCE(I_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE
*"     REFERENCE(I_DATE) LIKE  SY-DATUM OPTIONAL
*"     REFERENCE(IB_INACTIVE) LIKE  BOOLE-BOOLE OPTIONAL
*"  EXPORTING
*"     REFERENCE(EB_NO_STANDARD) LIKE  BOOLE-BOOLE
*"     REFERENCE(ES_MESSAGE) LIKE  BAPIRET2 STRUCTURE  BAPIRET2
*"  TABLES
*"      ET_SUBSTITUTION STRUCTURE  /COCKPIT/S_SUBSTITUTION
*"  EXCEPTIONS
*"      NOT_FOUND
ENDFUNCTION.
```

User Exit 910 – Own logic for determining user type and email

This User Exit is called at the beginning of the function that determines the user type from a user ID or the user type and the user ID from an email address. If the **No standard** flag is set, the standard procedure for user (type) determination is skipped.

Template

```
FUNCTION /COCKPIT/WC_USEX_USRTYPE_GET.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(I_USER_EMAIL) LIKE  /COCKPIT/TWC_UMP-EMAIL
*"     REFERENCE(I_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE OPTIONAL
*"  EXPORTING
*"     REFERENCE(ES_MESSAGE) LIKE  BAPIRET2 STRUCTURE  BAPIRET2
*"     REFERENCE(EC_USER_TYPE) LIKE  /COCKPIT/SIF-US_TYPE
```

Template
*" REFERENCE(EC_WC_USER) LIKE /COCKPIT/TWC_UMP-WC_USER *" REFERENCE(EC_SAP_USER) LIKE USR02-BNAME *" REFERENCE(EC_EMAIL) LIKE /COCKPIT/TWC_UMP-EMAIL *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" EXCEPTIONS *" USER_DOESNT_EXIST *" NO_EMAIL_ADDRESS ENDFUNCTION.

User Exit 911 – Define further or other substitutes

This User Exit is called at the beginning of the function that determines the substitutes of a workflow processor. If the **No standard** flag is set, the standard procedure for substitute determination is skipped.

Template
FUNCTION /COCKPIT/WC_USEX_SUBTE_GET. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(I_USER) LIKE /COCKPIT/TWCS-WC_USER *" REFERENCE(I_USER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE *" REFERENCE(I_DATE) LIKE SY-DATUM OPTIONAL *" REFERENCE(IC_READ_ACTIVE) LIKE /COCKPIT/S_SUBSTITUTION-ACTIVE *" DEFAULT CON_WC_SUBST_ACTIVE *" EXPORTING *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" REFERENCE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *" TABLES *" ET_SUBSTITUTION STRUCTURE /COCKPIT/S_SUBSTITUTION *" EXCEPTIONS *" NOT_FOUND ENDFUNCTION.

User Exit 912 – Own or additional logic when sending an email

This User Exit is called at the beginning of the function that sends emails during workflow processing. If the **No standard** flag is set, the standard procedure for sending emails is skipped.

Template
FUNCTION /COCKPIT/WC_USEX_SEND_MAIL. *"---------- *"*"Local interface: *" EXPORTING *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" TABLES *" CT_NOTE STRUCTURE /COCKPIT/SWC_NOTE OPTIONAL *" CT_MAILTEXT STRUCTURE SOLISTI1 OPTIONAL *" CT_MESSAGES STRUCTURE BAPIRET2 *" CHANGING *" REFERENCE(CC_SENDER) LIKE SOXDA-ADDRESS *" REFERENCE(CC_SENDER_TYPE) LIKE SOEXTRECI1-ADR_TYP *" REFERENCE(CC_RECEIVER) LIKE BAPIADDR1-E_MAIL *" REFERENCE(CC_RECEIVER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE *" REFERENCE(CC_WC_REC_USR) LIKE /COCKPIT/TWC_CML-WC_REC_USR *" REFERENCE(CC_WC_REC_USR_TYPE) LIKE *" /COCKPIT/TWC_CML-WC_REC_USR_TYPE *" REFERENCE(CC_MAILOBJECT) LIKE MCMAILOBJ-OBJNAM *" REFERENCE(CC_MAILDESCRIPTION) LIKE MCMAILOBJ-OBJDES *" REFERENCE(CC_ATTACHMENT_GUID) LIKE /COCKPIT/THDR-INVOICE_GUID *" REFERENCE(CC_WC_STEP_ID) LIKE /COCKPIT/CWC_STP-WC_STEP_ID *" REFERENCE(CC_TEXT_TYPE) LIKE /COCKPIT/CTXTYP-TEXT_TYPE *" REFERENCE(CC_USER) LIKE /COCKPIT/TTXTHDR-CR_USER *" REFERENCE(CC_USERTYPE) LIKE /COCKPIT/TTXTHDR-CR_USERTYPE *" REFERENCE(CB_ATTACHMENT) LIKE BOOLE-BOOLE *" REFERENCE(CB_CREATE_NOTE) LIKE BOOLE-BOOLE *" REFERENCE(CB_SUBSTITUTE) LIKE BOOLE-BOOLE ENDFUNCTION.

User Exit 913 – When finishing a workflow

This User Exit is called after a workflow is completed, that is, when the document is released (or rejected) and is no longer in the **In workflow** status.

Template

```
FUNCTION /COCKPIT/WC_USEX_FINISHED.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IS_WC_DATA) LIKE  /COCKPIT/SWC_IF STRUCTURE
*"       /COCKPIT/SWC_IF
*"     REFERENCE(IS_WEBCYCLE) LIKE  /COCKPIT/SWC_WEBCYCLE STRUCTURE
*"       /COCKPIT/SWC_WEBCYCLE
*"     REFERENCE(IS_WC_STEP) LIKE  /COCKPIT/SWC_STEP STRUCTURE
*"       /COCKPIT/SWC_STEP
*"     REFERENCE(IB_ONLINE) LIKE  BOOLE-BOOLE OPTIONAL
*"  TABLES
*"      ET_MESSAGE STRUCTURE  BAPIRET2
*"  CHANGING
*"     REFERENCE(ES_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"       /COCKPIT/SHDR_IF
*"     REFERENCE(ES_WEBCYCLE) LIKE  /COCKPIT/TWC STRUCTURE
*"       /COCKPIT/TWC
*"  EXCEPTIONS
*"      ERROR_OCCURED
ENDFUNCTION.
```

User Exit 914 – Adjust call of SAP API for sending emails

With this user exit it is possible to adjust almost every parameter of the email (for example, the subject and sender).

Template

```
FUNCTION /COCKPIT/WC_USEX_API_MAIL.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  TABLES
*"      CT_PACKING_LIST STRUCTURE  SOPCKLSTI1 OPTIONAL
```

Template

```
*"     CT_OBJECT_HEADER STRUCTURE  SOLISTI1 OPTIONAL
*"     CT_CONTENTS_BIN STRUCTURE  SOLIX OPTIONAL
*"     CT_CONTENTS_TXT STRUCTURE  SOLISTI1 OPTIONAL
*"     CT_RECEIVERS STRUCTURE  SOMLRECI1 OPTIONAL
*"     CT_MESSAGES STRUCTURE  BAPIRET2
*"  CHANGING
*"    REFERENCE(CS_DOCUMENT_DATA) LIKE  SODOCCHGI1 STRUCTURE
*"       SODOCCHGI1
*"    REFERENCE(CC_PUT_IN_OUTBOX) LIKE  SONV-FLAG DEFAULT SPACE
*"    REFERENCE(CC_SENDER_ADDRESS) LIKE  SOEXTRECI1-RECEIVER OPTIONAL
*"    REFERENCE(CC_SENDER_ADDRESS_TYPE) LIKE  SOEXTRECI1-ADR_TYP
*"      DEFAULT 'B'
ENDFUNCTION.
*"----------------------------------------------------------------------
* !! IMPORTANT !!
* For TABLES parameter CT_CONTENTS_BIN you can use
* - on systems lower than 4.7 - STRUCTURE SOLISTI1 or STRUCTURE SOLIX
* - on systems 4.7 and higher - STRUCTURE SOLIX
```

User Exit 915 – Adjust/Replace general account assignment block check

This User Exit provides an interface to disable or adjust the General Account Assignment Block check (COBL check). The main purpose for this user exit is to disable the COBL check under certain circumstances. For example, in the case when posted and unposted documents are sent into the same workflow but only unposted documents must be checked according to COBL rules. In addition, this user exit can be used to adjust COBL checks and also created messages.

Template

```
FUNCTION /COCKPIT/WC_USEX_CHECK_COBL.
*"----------------------------------------------------------------------
*"*" Local interface:
*"  IMPORTING
*"    REFERENCE(IS_ACCOUNT) LIKE  /COCKPIT/SACCT_IF STRUCTURE
*"       /COCKPIT/SACCT_IF
*"    REFERENCE(IS_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"       /COCKPIT/SHDR_IF
*"  EXPORTING
*"    REFERENCE(EC_NO_STANDARD) LIKE  BOOLE-BOOLE
```

Template
*" TABLES *" CT_MESSAGES STRUCTURE BAPIRET2 *" CT_COBL_MSEG STRUCTURE MESG *" CHANGING *" REFERENCE(CS_COBL) LIKE COBL STRUCTURE COBL ENDFUNCTION.

User Exit 916 – Adjust/Replace account assignment block check for vendor Ps

This User Exit provides an interface to disable or adjust the Accounts Payable Coding Block check (COBL_INT check). The main purpose for this user exit is to disable this check under certain circumstances or to modify the data before the checking is performed. If the **No standard** flag is set, the standard check is replace. If the flag is not set, the User Exit is executed in addition to (and before) the standard check.

Template
FUNCTION /COCKPIT/WC_USEX_CHECK_APCOBL. *"---------- *"*" Local interface: *" IMPORTING *" REFERENCE(IS_ACCOUNT) LIKE /COCKPIT/SACCT_IF STRUCTURE *" /COCKPIT/SACCT_IF *" REFERENCE(IS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF *" EXPORTING *" REFERENCE(EC_NO_STANDARD) LIKE BOOLE-BOOLE *" TABLES *" CT_COBL_AP STRUCTURE ACIDLPAYCK *" CT_MESSAGES STRUCTURE BAPIRET2 *" CT_COBL_MSEG STRUCTURE MESG ENDFUNCTION. *"---------- *>>> START OF IMPLEMENTATION >>* * This example implementation removes the message 'Transaction CO * Through-postings from FI has been locked' ('Der Vorgang * CO-Durchbuchung aus FiBu wurde gesperrt') from ct_cobl_mseg   DATA:

Template

```
    ls_txt   LIKE tj01t-txt,
    ls_index LIKE sy-tabix.
  IF 1 EQ 2. MESSAGE e806(ki) WITH space space space space. ENDIF.
  READ TABLE ct_cobl_mseg
            WITH KEY msgty = 'E' arbgb = 'KI' txtnr = '806'
            TRANSPORTING msgv1.
  CHECK sy-subrc EQ 0.
  ls_index = sy-tabix.
* Look for correct translation of 'CO-Durchbuchung aus FiBu'
  SELECT SINGLE txt FROM tj01t INTO ls_txt WHERE vrgng = 'COIN' AND
                                        spras = sy-langu.
  CHECK sy-subrc EQ 0.
  CHECK ct_cobl_mseg-msgv1 EQ ls_txt.
  DELETE ct_cobl_mseg INDEX ls_index.
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
```

User Exit 917 – Data check in the Web Application

This User Exit provides an interface to disable, modify or replace the standard data checks which are performed when a user saves a document in the Web Application. If the **No standard** flag is set, the User Exit replaces the standard checks. If the flag is not set, it is executed in addition to and after the standard checks.

Template

```
FUNCTION /cockpit/wc_usex_data_check.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IS_WEBCYCLE) LIKE  /COCKPIT/SWC_IF STRUCTURE
*"        /COCKPIT/SWC_IF
*"     REFERENCE(IS_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"        /COCKPIT/SHDR_IF
*"  TABLES
*"      IT_ITEM STRUCTURE  /COCKPIT/SITEM_IF
*"      IT_TAX STRUCTURE  /COCKPIT/STAX_IF
*"      IT_ACCOUNT STRUCTURE  /COCKPIT/SACCT_IF
*"      IT_ACCOUNT_ASSIGN STRUCTURE  /COCKPIT/TACCAS
```

Template

```
*'      ET_MESSAGES STRUCTURE  BAPIRET2
ENDFUNCTION.
*'------------------------------------------------------------------
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
* Fill ET_MESSAGES with messages of type 'E' to indicate any errors to
* the WebApp.
  LOOP AT it_item WHERE quantity EQ space.
    CALL FUNCTION '/COCKPIT/OBJ_MESSAGE_APPEND'
        EXPORTING
            i_type         = 'E'
            i_id           = '/COCKPIT/CHK'
            i_number       = '005'
            i_message_v1   = it_item-invoice_item
        TABLES
            c_tab_messages = et_messages.
    IF 1 EQ 2. MESSAGE e005(/cockpit/chk) WITH space. ENDIF.
  ENDLOOP.
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
  CHECK ct_cobl_mseg-msgv1 EQ ls_txt.
  DELETE ct_cobl_mseg INDEX ls_index.
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
```

User Exit 918 – File upload via the Web Application

This User Exit is called when a user uploads an attachment from the detail view of a document in the Web Application. In the user exit it is possible to perform some action on the attachment data, for example, evaluating the attachment data to update the document. If the **No standard** flag is set, the upload is cancelled. If it is not set, the uploaded attachment is archived and connected to the current document.

Template

```
FUNCTION /COCKPIT/WC_USEX_FILE_UPLOAD .
*'------------------------------------------------------------------
*'*'Local interface:
*'  IMPORTING
*'     REFERENCE(IC_AR_OBJECT) LIKE  /COCKPIT/SWC_UPLOADS-AR_OBJECT
*'     REFERENCE(IC_GUID) LIKE  /COCKPIT/SIF-INVOICE_GUID
```

Template

```
*"    REFERENCE(IC_DOCNO) LIKE  /COCKPIT/SIF-DOCNO
*"    REFERENCE(IN_CONTENT_LENGTH) LIKE  SAPB-LENGTH
*"    REFERENCE(IB_INVOICE_IMAGE) LIKE  BOOLE-BOOLE OPTIONAL
*"  EXPORTING
*"    REFERENCE(EB_NO_STANDARD) LIKE  BOOLE-BOOLE
*"    REFERENCE(EB_COMMIT_WORK) LIKE  BOOLE-BOOLE
*"  TABLES
*"     IT_CONTENT STRUCTURE  TBL1024
*"     IT_TEXT STRUCTURE  DOCS OPTIONAL
*"     ET_MESSAGES STRUCTURE  BAPIRET2 OPTIONAL
*"  EXCEPTIONS
*"     ERROR_OCCURED
ENDFUNCTION.
```

User Exit 919 – Calculate workflow validity period (due date)

This User Exit provides an interface to calculate the validity period (due date) of a workflow step. The purpose of the validity date is to check it against the configuration of the workflow in order to declare a workflow step overdue or not. The User Exit is called before the standard calculations are done, so it can either modify the values used for calculation or it can do the calculation completely. In the latter case you must check the **No standard** flag to skip the standard processing.

Template

```
FUNCTION /cockpit/wc_usex_get_due_date.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"    REFERENCE(IS_WEBCYCLE) LIKE  /COCKPIT/SWC_WEBCYCLE STRUCTURE
*"       /COCKPIT/SWC_WEBCYCLE
*"    REFERENCE(IS_WEBCYCLE_STEP) LIKE  /COCKPIT/SWC_STEP STRUCTURE
*"       /COCKPIT/SWC_STEP
*"    REFERENCE(IS_FLOW) LIKE  /COCKPIT/TWCF STRUCTURE  /COCKPIT/TWCF
*"    REFERENCE(IS_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"       /COCKPIT/SHDR_IF
*"    VALUE(IB_CONTINUE) LIKE  BOOLE-BOOLE
*"  EXPORTING
*"    VALUE(ED_DUE_DATE) LIKE  /COCKPIT/TWCS-WC_DUEDATE
*"    VALUE(EB_NO_STANDARD) LIKE  BOOLE-BOOLE
```

Template
*" VALUE(ED_STEP_DUE_DATE) LIKE /COCKPIT/TWCS-WC_DUEDATE *" TABLES *" ET_MESSAGES STRUCTURE BAPIRET2 *" CHANGING *" VALUE(CD_DATE) LIKE SY-DATLO DEFAULT SY-DATLO *" VALUE(CN_DUE_DAYS) LIKE /COCKPIT/CWC_ID-WC_DUE_DAYS *" VALUE(CN_STEP_DUE_DAYS) LIKE /COCKPIT/CWC_STP-WC_DUE_DAYS *" VALUE(CD_PROPOSAL) LIKE /COCKPIT/TWCS-WC_DUEDATE *" VALUE(CD_STEP_PROPOSAL) LIKE /COCKPIT/TWCS-WC_DUEDATE *" EXCEPTIONS *" DUE_DATE_UNREACHABLE ENDFUNCTION.

User Exit 920 – Amend work item creation for SAP Business Workflow

When a workflow is started, a work item for the SAP Business Workplace is created. This User Exit provides the possibility to modify the data that is used to create this work item. If the **No standard** flag is set, the standard function to create the work item is not called.

Template
FUNCTION /COCKPIT/WC_USEX_WORKITEM. *"---------- *"*" Local interface: *" IMPORTING *" REFERENCE(IB_ONLINE) LIKE BOOLE-BOOLE DEFAULT CON_TRUE *" EXPORTING *" REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *" TABLES *" IT_ITEM STRUCTURE /COCKPIT/SITEM_IF OPTIONAL *" IT_ACCOUNT STRUCTURE /COCKPIT/SACCT_IF OPTIONAL *" IT_TAX STRUCTURE /COCKPIT/STAX_IF OPTIONAL *" ET_NOTE STRUCTURE /COCKPIT/SWC_NOTE OPTIONAL *" ET_MESSAGE STRUCTURE BAPIRET2 OPTIONAL *" CHANGING *" REFERENCE(ES_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF OPTIONAL *" REFERENCE(ES_WEBCYCLE) LIKE /COCKPIT/TWC STRUCTURE

Template

```
*'       /COCKPIT/TWC OPTIONAL
*'    REFERENCE(ES_WC_FLOW) LIKE  /COCKPIT/TWCF STRUCTURE
*'       /COCKPIT/TWCF OPTIONAL
*'    REFERENCE(ES_WC_STEP_DEF) LIKE  /COCKPIT/SWC_STEP STRUCTURE
*'       /COCKPIT/SWC_STEP OPTIONAL
*'  EXCEPTIONS
*'     ERROR_OCCURED
ENDFUNCTION.
```

User Exit 921 – Adapt what data the Web Application gets

This User Exit is called after the complete document data is read upon a “data get” call from the Web Application. All document data is available and can be modified in any way. The User Exit call is the last statement in the “data get” RFC. Therefore, ensure that the messages table is properly filled. And do not raise an exception.

Template

```
FUNCTION /cockpit/wc_usex_rfc_data_get.
*'------------------------------------------------------------------
*'*'Local interface:
*'  IMPORTING
*'    REFERENCE(IC_GUID) LIKE  /COCKPIT/SIF-INVOICE_GUID OPTIONAL
*'    REFERENCE(IC_WC_ID) LIKE  /COCKPIT/SWC_IF-WC_ID OPTIONAL
*'    REFERENCE(IC_WC_STEP_ID) LIKE  /COCKPIT/SWC_IF-WC_STEP_ID
*'      OPTIONAL
*'    REFERENCE(IN_WC_SUBPOS) LIKE  /COCKPIT/SWC_IF-WC_SUBPOS DEFAULT
*'      999
*'    REFERENCE(IC_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE OPTIONAL
*'    REFERENCE(IC_USER) LIKE  /COCKPIT/SWC_IF-WC_USER OPTIONAL
*'    REFERENCE(IC_GET_CONTENT) LIKE  COMMS-COMMIT_SW DEFAULT
*'      CON_FALSE
*'    REFERENCE(IC_ENQUEUE) LIKE  COMMS-COMMIT_SW DEFAULT CON_FALSE
*'    REFERENCE(IB_ALL_NOTES) LIKE  BOOLE-BOOLE DEFAULT CON_FALSE
*'    REFERENCE(IB_HISTORY) LIKE  BOOLE-BOOLE DEFAULT CON_FALSE
*'    REFERENCE(IC_LANGUAGE) LIKE  SY-LANGU DEFAULT SY-LANGU
*'    REFERENCE(IB_CONVERT) LIKE  BOOLE-BOOLE DEFAULT CON_FALSE
*'    REFERENCE(IC_WC_APPL) LIKE  /COCKPIT/CWC_ID-WC_APPL DEFAULT
```

Template
*" SPACE
*" REFERENCE(IC_ACTION) LIKE /COCKPIT/SWC_DUMMY-ACTION_TYPE
*" OPTIONAL
*" REFERENCE(IC_CALLER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE
*" OPTIONAL
*" REFERENCE(IC_CALLER) LIKE /COCKPIT/SWC_IF-WC_USER OPTIONAL
*" REFERENCE(IB_IMAGE_DATA) LIKE BOOLE-BOOLE DEFAULT CON_FALSE
*" TABLES
*" ET_ITEM STRUCTURE /COCKPIT/SITEM_IF OPTIONAL
*" ET_TAX STRUCTURE /COCKPIT/STAX_IF OPTIONAL
*" ET_ACCOUNT STRUCTURE /COCKPIT/SACCT_IF OPTIONAL
*" ET_NOTICE STRUCTURE /COCKPIT/SWEBCYCLE_NOTE OPTIONAL
*" ET_CONTENT STRUCTURE TBL1024 OPTIONAL
*" ET_MESSAGES STRUCTURE BAPIRET2 OPTIONAL
*" ET_EMAIL STRUCTURE /COCKPIT/SWC_NOTE OPTIONAL
*" ET_FORMS STRUCTURE /COCKPIT/CWC_STF OPTIONAL
*" ET_ARC_DOCS STRUCTURE /COCKPIT/SWC_ARC_DOCS OPTIONAL
*" ET_ACCAS STRUCTURE /COCKPIT/TACCAS OPTIONAL
*" ET_NOTE_HDA STRUCTURE /COCKPIT/SWC_NOTE_HDA OPTIONAL
*" ET_NOTE_BOD STRUCTURE /COCKPIT/SWC_NOTE_BOD OPTIONAL
*" ET_ACCAS_PO STRUCTURE /COCKPIT/TACCAS OPTIONAL
*" ET_COPADATA STRUCTURE /COCKPIT/SWC_COPA_VALUES OPTIONAL
*" ET_WB_PMTRMS STRUCTURE /COCKPIT/CWB_PT OPTIONAL
*" ET_FLAG STRUCTURE /COCKPIT/TFLAG OPTIONAL
*" ET_WHTAX STRUCTURE /COCKPIT/SWHTAX OPTIONAL
*" ET_WHTAXE STRUCTURE /COCKPIT/SWHTAXE OPTIONAL
*" CHANGING
*" REFERENCE(CS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE
*" /COCKPIT/SHDR_IF OPTIONAL
*" REFERENCE(CS_WEBCYCLE) LIKE /COCKPIT/SWC_IF STRUCTURE
*" /COCKPIT/SWC_IF OPTIONAL
*" REFERENCE(CI_CONTENT_LENGTH) LIKE SY-TABIX OPTIONAL
*" REFERENCE(CB_USER_ASSIGN) LIKE BOOLE-BOOLE OPTIONAL
*" REFERENCE(CC_URL) LIKE SAPB-URI OPTIONAL
*" REFERENCE(CC_MIME) LIKE /COCKPIT/TMIME-MIME_TYPE OPTIONAL

Template

```
*"     REFERENCE(CB_WB_CHANGE) LIKE  BOOLE-BOOLE OPTIONAL
*"     REFERENCE(CB_USE_COPA) LIKE  BOOLE-BOOLE OPTIONAL
*"     REFERENCE(CB_XCPDK) LIKE  BOOLE-BOOLE OPTIONAL
*"     REFERENCE(CS_DYNDSCNT) LIKE  /COCKPIT/SDD_PAYMENT_TERMS
*"       STRUCTURE  /COCKPIT/SDD_PAYMENT_TERMS OPTIONAL
*"----------------------------------------------------------------------
*@US@aa         => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa...     => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit cross reference check
  IF con_wc_usex_rfc_data_get IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

User Exit 922 – Read the overview data in WORK CYCLE

After the user has logged on to the Web Application, an RFC is called to get the list of documents available for the current user. If document GUIDs are passed here, only the documents matching the GUID exactly appear in the list. This User Exit is called at the beginning of the RFC. If the **No standard** flag is set, the User Exit replaces this standard call. If the flag is not set, the User Exit can be used to modify some changeable parameters

Template

```
FUNCTION /cockpit/wc_usex_get_multi.
*"----------------------------------------------------------------------
*"*" Local interface:
*"  TABLES
*"      ET_HEADER STRUCTURE  /COCKPIT/SHDR_IF
*"      ET_WEBCYCLE STRUCTURE  /COCKPIT/SWC_IF
*"      ET_MESSAGES STRUCTURE  BAPIRET2
*"  CHANGING
*"     REFERENCE(CC_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE OPTIONAL
*"     REFERENCE(CC_USER) LIKE  /COCKPIT/SWC_IF-WC_USER OPTIONAL
*"     REFERENCE(CC_GUID) LIKE  /COCKPIT/SIF-INVOICE_GUID OPTIONAL
*"     REFERENCE(CC_LANGUAGE) LIKE  SY-LANGU OPTIONAL
*"     REFERENCE(CB_CONVERT) LIKE  BOOLE-BOOLE DEFAULT CON_FALSE
*"     REFERENCE(CB_SUBSTITUTE) LIKE  BOOLE-BOOLE DEFAULT CON_FALSE
```

Template
*'' REFERENCE(CB_NO_STANDARD) LIKE BOOLE-BOOLE OPTIONAL *'' EXCEPTIONS *'' ERROR_OCCURED ENDFUNCTION.

User Exit 923 – User check during logon to the Web Application

This User Exit provides the possibility to authenticate a user when logging on to the Web Application using the user ID and password. The user ID is passed as `IC_USER_EMAIL` and the password as `IC_PASSWORD`. If the **No standard** flag is set, the User Exit replaces the standard authentication. If so, the User Exit must not only verify the existence of the user and the correctness of the password, but also must determine the user ID, the user type and the user language.

The User Exit is also called when a user changes the password in the Web Application. In this case, user ID and type are already known, so they are passed instead of `IC_USER_EMAIL`. `IC_NEWPASSWORD` is filled with the new password specified by the user.

If you are using the PROCESS DIRECTOR (blue) Web Application, you must also activate the **User logon** BAdI implementation */EBY/ICWC_USER_LOGON*. See the *PROCESS DIRECTOR Advanced Configuration Guide* for information on this BAdI.

Template
FUNCTION /COCKPIT/WC_USEX_RFC_USER_CHK. *''---------- *''*'' Local interface: *'' IMPORTING *'' VALUE(IC_USER_EMAIL) LIKE /COCKPIT/TWC_UMP-EMAIL *'' VALUE(IC_USER) LIKE /COCKPIT/TWCS-WC_USER OPTIONAL *'' VALUE(IC_USER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE OPTIONAL *'' VALUE(IC_PASSWORD) LIKE /COCKPIT/SWC_DUMMY-PWD *'' VALUE(IC_NEWPASSWORD) LIKE /COCKPIT/SWC_DUMMY-PWD OPTIONAL *'' EXPORTING *'' VALUE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *'' VALUE(EC_USER) LIKE /COCKPIT/TWCS-WC_USER *'' VALUE(EC_USER_TYPE) LIKE /COCKPIT/SIF-US_TYPE *'' VALUE(EC_USER_LANGUAGE) LIKE T002-LAISO *'' VALUE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *'' VALUE(ED_LDATE) LIKE BAPIUSW01-LDATE *'' VALUE(ED_LTIME) LIKE BAPIUSW01-LTIME ENDFUNCTION. *''----------

Template
* IC_NEWPASSWORD is the flag to check whether the user exit is called * from /COCKPIT/WC_RFC_USER_CHECK or /COCKPIT/WC_USER_PW_CHANGE

User Exit 924 – Set substitutes for the workflow

This User Exit is called when a user creates/changes/deletes a substitution setting using the Web Application. A substitution setting consists of User ID, User Type, From data, To data, and a flag to indicate if the substitution type is passive or active. If the **No standard** flag is set, the standard processing for setting substitutes is skipped.

Template

```
FUNCTION /COCKPIT/WC_USEX_WEB_SUB_SET.
*"----------------------------------------------------------------------
*"*" Local interface:
*"  IMPORTING
*"     REFERENCE(I_USER) LIKE  /COCKPIT/TWCS-WC_USER
*"     REFERENCE(I_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE
*"     REFERENCE(I_SUBS_USER_EMAIL) LIKE  /COCKPIT/TWC_UMP-EMAIL
*"     REFERENCE(I_SUBS_USER) LIKE  /COCKPIT/TWCS-WC_USER OPTIONAL
*"     REFERENCE(I_SUBS_USER_TYPE) LIKE  /COCKPIT/TWCS-WC_USERTYPE
*"       OPTIONAL
*"     REFERENCE(I_VALID_FROM) LIKE  /COCKPIT/TWC_UMS-VALID_TO
*"     REFERENCE(I_VALID_TO) LIKE  /COCKPIT/TWC_UMS-VALID_TO
*"     REFERENCE(I_ACTIVE) LIKE  /COCKPIT/TWC_UMS-ACTIVE
*"     REFERENCE(I_DELETE) LIKE  BOOLE-BOOLE DEFAULT SPACE
*"     REFERENCE(IB_CURRENT_ONLY) LIKE  BOOLE-BOOLE DEFAULT CON_TRUE
*"     REFERENCE(LB_NO_STANDARD) LIKE  BOOLE-BOOLE
*"  TABLES
*"      ET_MESSAGES STRUCTURE  BAPIRET2 OPTIONAL
*"  EXCEPTIONS
*"      OTHERS
ENDFUNCTION.
```

User Exit 925 – Set substitutes for SAP users

This User Exit is called when an SAP user creates/changes/deletes a substitution setting using WORK CYCLE in the SAP GUI. If the **No standard** flag is set, the standard procedure for setting substitutes is skipped.

Template

```
FUNCTION /COCKPIT/WC_USEX_SAP_SUB_SET.
*"----------------------------------------------------------------------
*"*"Local interface:
*"----------------------------------------------------------------------
*@US@aa        => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa...     => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit cross reference check
  IF con_wc_usex_sap_sub_set IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

User Exit 926 – Adapt search help determination for check tables

This User Exit is called when a “check table”-based value search is called from the Web Application. The User Exit can override settings from the search help configuration in order to influence the search behavior.

Template

```
FUNCTION /COCKPIT/WC_USEX_SHLP_BYTABLE.
*"----------------------------------------------------------------------
*"*" Local interface:
*"  IMPORTING
*"     REFERENCE(IC_STRUCTURE) LIKE  /COCKPIT/SFIELDS-STRUCTURE
*"     REFERENCE(IC_FIELD_NAME) LIKE  /COCKPIT/SFIELDS-FIELD_SAP
*"     REFERENCE(IC_INVOICE_GUID) LIKE  /COCKPIT/THDR-INVOICE_GUID
*"       OPTIONAL
*"     REFERENCE(IC_COMP_CODE) LIKE  /COCKPIT/SHDR_IF-COMP_CODE
*"       OPTIONAL
*"  EXPORTING
*"     REFERENCE(EC_TABNAME) LIKE  DFIES-TABNAME
*"     REFERENCE(ES_SHLP_TAB) LIKE  /COCKPIT/CWCSHSH STRUCTURE
```

Template
*" /COCKPIT/CWCSHSH ENDFUNCTION.

User Exit 927 – After saving the logon timestamp

This User Exit is called after the logon date/time for a Web Application user has been saved.

Template
FUNCTION /COCKPIT/WC_USEX_LOGON_SET. *"---------- *"*" Local interface: *" IMPORTING *" REFERENCE(IC_USER) LIKE /COCKPIT/TWCS-WC_USER *" REFERENCE(IC_USER_TYPE) LIKE /COCKPIT/SIF-US_TYPE *" REFERENCE(ID_LDATE) LIKE BAPIUSW01-LDATE *" REFERENCE(ID_LTIME) LIKE BAPIUSW01-LTIME *" CHANGING *" REFERENCE(CS_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *" OPTIONAL *" REFERENCE(CD_LDATE) LIKE BAPIUSW01-LDATE OPTIONAL *" REFERENCE(CD_LTIME) LIKE BAPIUSW01-LTIME OPTIONAL *"---------- ENDFUNCTION.

User Exit 928 – CPD data get

This User Exit is executed at the end of the RFC that is called by the Web Application to get the data of a CPD (one-time) vendor. You can use it to modify all relevant vendor data.

Template
FUNCTION /cockpit/wc_usex_cpd_get. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IS_HEADER) LIKE /COCKPIT/THDR STRUCTURE *" /COCKPIT/THDR *" TABLES *" ET_VENDOR_FIELDS STRUCTURE /COCKPIT/CWC_CPD

Template
*'' ET_MESSAGES STRUCTURE BAPIRET2 *'' CHANGING *'' REFERENCE(CS_CPD_DATA) LIKE /COCKPIT/TCPDK STRUCTURE *'' /COCKPIT/TCPDK ENDFUNCTION.

User Exit 929 – CPD data set

This User Exit is executed at the beginning of the RFC that is called by the Web Application when a CPD (one-time) vendor data is saved. The User Exit can be used to modify and save the vendor data.

Template
FUNCTION /COCKPIT/WC_USEX_CPD_SET. *''---------- *''*''Local interface: *'' IMPORTING *'' REFERENCE(IS_HEADER) LIKE /COCKPIT/THDR STRUCTURE *'' /COCKPIT/THDR *'' REFERENCE(IS_CPD_DATA) LIKE /COCKPIT/TCPDK STRUCTURE *'' /COCKPIT/TCPDK *'' EXPORTING *'' REFERENCE(EB_NO_STANDARD) LIKE BOOLE-BOOLE *'' TABLES *'' ET_MESSAGES STRUCTURE BAPIRET2 ENDFUNCTION.

User Exit 930 – Reset WEB CYCLE user password

This User Exit is executed at the beginning of the RFC that is called by the Web Application when a user resets his/her password. For this User Exit you must set the **No standard** flag, as the values returned by the User Exit are not used in standard processing.

Template
FUNCTION /COCKPIT/WC_USEX_USER_PW_RESET. *''---------- *''*''Local interface: *'' IMPORTING *'' REFERENCE(IC_USER) LIKE /COCKPIT/TWB_UMA-WB_USER

Template
*" EXPORTING *" REFERENCE(EC_PASSWORD) LIKE BAPIUID-PASSWORD *" REFERENCE(ES_USER) LIKE /COCKPIT/TWB_UMP STRUCTURE *" /COCKPIT/TWB_UMP *" REFERENCE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *" CHANGING *" REFERENCE(CB_NO_STANDARD) LIKE BOOLE-BOOLE OPTIONAL ENDFUNCTION.

User Exit 931 – Get user data

Template
FUNCTION /COCKPIT/WC_USEX_USER_GET. *"---------- *"*"Local interface: *" IMPORTING *" VALUE(I_USER) LIKE /COCKPIT/TWCS-WC_USER OPTIONAL *" VALUE(I_PLATFORM_USER) LIKE /COCKPIT/TWC_UMP-EMAIL OPTIONAL *" VALUE(I_USER_TYPE) LIKE /COCKPIT/SIF-US_TYPE *" VALUE(IS_USER_DATA) LIKE /COCKPIT/TWC_UMP STRUCTURE *" /COCKPIT/TWC_UMP OPTIONAL *" VALUE(IC_USER_FIELD) LIKE /COCKPIT/SCHK5-XCHECK1 OPTIONAL *" VALUE(IB_CHECK_FOR_LOCK) LIKE BOOLE-BOOLE DEFAULT CON_FALSE *" EXPORTING *" VALUE(EC_EMAIL) LIKE /COCKPIT/TWC_UMP-EMAIL *" VALUE(EC_NAME) LIKE /COCKPIT/TWC_UMP-NAME *" VALUE(EC_PHONE) LIKE /COCKPIT/TWC_UMP-PHONE *" VALUE(EC_LANGUAGE) LIKE T002-LAISO *" VALUE(EC_USER) LIKE /COCKPIT/TWCS-WC_USER *" VALUE(EC_DEPARTMENT) LIKE /COCKPIT/SDUMMY-DPRTMNT *" VALUE(EB_DOC_SEL) LIKE BOOLE-BOOLE *" VALUE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *" VALUE(ED_LDATE) LIKE BAPIUSW01-LDATE *" VALUE(ED_LTIME) LIKE BAPIUSW01-LTIME *" VALUE(ES_WC_USER) LIKE /COCKPIT/TWC_UMP STRUCTURE

Template

```
*"       /COCKPIT/TWC_UMP
*"----------------------------------------------------------------------
*@US@aa         => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa...     => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit cross reference check
  IF con_wc_usex_user_get IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
**SAMPLE CODING
*IF i_platform_user eq 'ALEXANDER.SCHMIDT@READSOFT.COM'.
*ec_user = 'SCHMIDT'.
*ENDIF.
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

User Exit 932 – Get user data

This User Exit is called before a document is forwarded or sent to another processor using the Web Application, when the Search Help for user lookups is used. The User Exit modifies the display format of the names that are returned by the search, to *Firstname Lastname*, from *Lastname, Firstname* (default).

When creating new users in `/COCKPIT/WUM`, only one name field exists (**Complete name**) and no format specification is enforced. So the format may be different from SAP users. This User Exit is a way in which you can present all users' names the same way.

Note: To have names displayed the same way without using this User Exit, enter names in `/COCKPIT/WUM2` as *Lastname, Firstname*.

Template

```
FUNCTION /cockpit/wc_usex_user_get2.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IC_USER) LIKE  /COCKPIT/TWCS-WC_USER
*"     REFERENCE(IC_USERTYPE) LIKE  /COCKPIT/SIF-US_TYPE
*"     VALUE(IS_SAP_ADDRESS) LIKE  ADDR3_DATA STRUCTURE  ADDR3_DATA
*"       OPTIONAL
*"     VALUE(IC_SAP_EMAIL) LIKE  ADSMTP-SMTP_ADDR OPTIONAL
*"     VALUE(IC_SAP_PHONE) LIKE  ADTEL STRUCTURE  ADTEL OPTIONAL
*"     VALUE(IS_WC_USERDATA) LIKE  /COCKPIT/TWC_UMP STRUCTURE
```

Template

```
*"       /COCKPIT/TWC_UMP OPTIONAL
*"     VALUE(IS_WB_USERDATA) LIKE  /COCKPIT/TWB_UMP STRUCTURE
*"       /COCKPIT/TWB_UMP OPTIONAL
*"  CHANGING
*"     REFERENCE(CC_EMAIL) LIKE  /COCKPIT/TWC_UMP-EMAIL
*"     REFERENCE(CC_NAME) LIKE  /COCKPIT/TWC_UMP-NAME
*"     REFERENCE(CC_PHONE) LIKE  /COCKPIT/TWC_UMP-PHONE
*"     REFERENCE(CC_DEPARTMENT) LIKE  /COCKPIT/SDUMMY-DPRTMNT
*"----------------------------------------------------------------------
*@US@aa         => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa...     => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit cross reference check
  IF con_wc_usex_user_get2 IS INITIAL. ENDIF.
* >>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
  DATA:
    lt_split LIKE TABLE OF /cockpit/twc_ump-name WITH HEADER LINE,
    lc_firstname LIKE /cockpit/twc_ump-name,
    lc_lastname LIKE /cockpit/twc_ump-name.
* Format 'Lastname, Firstname'
  CASE ic_usertype.
    WHEN con_sap_user.
      CONCATENATE is_sap_address-name_last ',' INTO cc_name.
      CONDENSE cc_name NO-GAPS.
      CONCATENATE cc_name is_sap_address-name_first INTO cc_name
                                  SEPARATED BY space.
    WHEN con_internet_user.
      SEARCH is_wc_userdata-name FOR ','.
      IF sy-subrc NE 0.
*       Convert format from 'Firstname Lastname'
*                      to 'Lastname, Firstname'
*       For example: 'Name1 Name2 Name3 Name4' is converted to
*                  'Name4, Name1 Name2 Name3'
        SPLIT is_wc_userdata-name AT ' ' INTO TABLE lt_split.
        IF sy-subrc EQ 0.
```

Template

```
        CLEAR cc_name.
        LOOP AT lt_split.
          lc_lastname = lt_split.
          AT LAST.
            CONCATENATE lc_lastname ',' INTO lc_lastname.
            CONDENSE lc_lastname NO-GAPS.
            CONCATENATE lc_lastname cc_name INTO cc_name
                                SEPARATED BY space.
            EXIT.
          ENDAT.
          CONCATENATE cc_name lt_split
                INTO cc_name SEPARATED BY space.
        ENDLOOP.
      ENDIF.
      CONDENSE cc_name.
    ENDIF.
  WHEN con_partner_user.
*    nothing todo
  WHEN OTHERS.
*    nothing todo
 ENDCASE.
** Format 'Firstname Lastname'
*  CASE ic_usertype.
*    WHEN con_sap_user.
**     nothing todo
*    WHEN con_internet_user.
*      SPLIT is_wc_userdata-name AT ',' INTO lc_lastname lc_firstname.
*      IF sy-subrc EQ 0.
*        CONCATENATE lc_firstname lc_lastname INTO cc_name
*                                    SEPARATED BY space.
*      ENDIF.
*    WHEN con_partner_user.
**     nothing todo
*    WHEN OTHERS.
**     nothing todo
```

Template
* ENDCASE. ** SORT et_user_list BY name. *<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<* ENDFUNCTION.

User Exit 933 – Get approved documents

This User Exit lists the approved and rejected documents from another user. This is helpful if someone has more than one user account in SAP. With this User Exit active, clicking Workflow > Display releases (History) lists documents from the currently logged-in user plus any additional accounts configured with this User Exit (and complementary user mapping table).

Template
FUNCTION /cockpit/wc_usex_approved_get. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IC_WC_USERTYPE) LIKE /COCKPIT/SWC_IF-WC_USERTYPE *" VALUE(IC_WC_USER) LIKE /COCKPIT/SWC_IF-WC_USER *" REFERENCE(IC_LANGUAGE) LIKE SY-LANGU DEFAULT SY-LANGU *" REFERENCE(IB_ALL_WCS) LIKE BOOLE-BOOLE OPTIONAL *" TABLES *" IR_WC_ID STRUCTURE /COCKPIT/RWC_ID *" IR_TIMESTAMP STRUCTURE /COCKPIT/RTSTMP *" IT_INPUT_SEL STRUCTURE /COCKPIT/SWB_SELTAB *" CT_HEADER STRUCTURE /COCKPIT/SHDR_IF *" CT_WEBCYCLE STRUCTURE /COCKPIT/SWC_IF *" CT_APPROVED STRUCTURE /COCKPIT/SWC_APPROVED *" CT_APPROVER STRUCTURE /COCKPIT/SWC_APPROVER *" CT_FLAG STRUCTURE /COCKPIT/TFLAG *" CT_MESSAGES STRUCTURE BAPIRET2 *" EXCEPTIONS *" NOT_FOUND *"---------- *@US@aa => Signature of Creator, e.g. HH for Harry Hirsch *@CU@aaa... => Customer Name *@K1@ ... *@K9@ => Keywords for Implemented Functionality

Template

```
* ICS1435 New User-Exit 933 in /COCKPIT/WC_APPROVED_GET
* Dummy entry for user exit cross reference check
  IF con_wc_usex_approved_get IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
  TYPES:
    BEGIN OF ys_user_map,
      new_wc_usertype LIKE /cockpit/swc_if-wc_usertype,
      new_wc_user     LIKE /cockpit/swc_if-wc_user,
      old_wc_usertype LIKE /cockpit/swc_if-wc_usertype,
      old_wc_user     LIKE /cockpit/swc_if-wc_user,
    END OF ys_user_map.
  STATICS:
    sb_old_user LIKE boole-boole.
  DATA:
    lt_user_map TYPE TABLE OF ys_user_map,
    ls_user_map TYPE ys_user_map,
    lt_header   LIKE TABLE OF /cockpit/shdr_if,
    lt_webcycle LIKE TABLE OF /cockpit/swc_if,
 lt_approved LIKE TABLE OF /cockpit/swc_approved,
    lt_approver LIKE TABLE OF /cockpit/swc_approver,
    lt_flag     LIKE TABLE OF /cockpit/tflag,
    lt_messages LIKE TABLE OF bapiret2.
  CHECK sb_old_user IS INITIAL.
  sb_old_user = con_true.
* >>> User mapping
  ls_user_map-new_wc_usertype = con_sap_user.
  ls_user_map-new_wc_user = 'GERKE'.
  ls_user_map-old_wc_usertype = con_sap_user.
  ls_user_map-old_wc_user = 'GERKE2'.
  APPEND ls_user_map TO lt_user_map.
  READ TABLE lt_user_map INTO ls_user_map
                 WITH KEY new_wc_usertype = ic_wc_usertype
                          new_wc_user     = ic_wc_user.
* <<< User mapping
  IF sy-subrc EQ 0.
```

Template

```
    CALL FUNCTION '/COCKPIT/WC_APPROVED_GET'
        EXPORTING
            ic_wc_usertype = ls_user_map-old_wc_usertype
            ic_wc_user     = ls_user_map-old_wc_user
            ic_language    = ic_language
            ib_all_wcs     = ib_all_wcs
TABLES
            ir_wc_id       = ir_wc_id
            ir_timestamp   = ir_timestamp
            it_input_sel   = it_input_sel
            et_header      = lt_header
            et_webcycle    = lt_webcycle
            et_approved    = lt_approved
            et_approver    = lt_approver
            et_flag        = lt_flag
            et_messages    = lt_messages
        EXCEPTIONS
            not_found      = 1
            OTHERS         = 2.
    APPEND LINES OF lt_header   TO ct_header.
    APPEND LINES OF lt_webcycle TO ct_webcycle.
    APPEND LINES OF lt_approved TO ct_approved.
    APPEND LINES OF lt_approver TO ct_approver.
    APPEND LINES OF lt_flag     TO ct_flag.
    APPEND LINES OF lt_messages TO ct_messages.
  ENDIF.
  CLEAR sb_old_user.
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

User Exit 934 – Manipulate WORK CYCLE flow definition

This User Exit provides the possibility to dynamically add a parallel step to a workflow.

Template

```
FUNCTION /COCKPIT/WC_USEX_GET_FLOW.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IC_INVOICE_GUID) LIKE  /COCKPIT/THDR-INVOICE_GUID
*"     REFERENCE(IC_WC_ID) LIKE  /COCKPIT/CWC_FLA-WC_ID
*"  TABLES
*"      CT_WC_FLOW STRUCTURE  /COCKPIT/SWC_FLOW
*"----------------------------------------------------------------------
*@US@aa        => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa...     => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit cross reference check
  IF con_wc_usex_flow_modify IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

User Exit 935 – Note check

Template

```
FUNCTION /COCKPIT/WC_USEX_NOTE_CHECK.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IS_WC_STEP) LIKE  /COCKPIT/SWC_IF STRUCTURE
*"        /COCKPIT/SWC_IF
*"     REFERENCE(IC_WC_STATUS) LIKE  /COCKPIT/SWC_IF-WC_STATUS
*"  TABLES
*"      ET_MESSAGES STRUCTURE  BAPIRET2 OPTIONAL
*"  EXCEPTIONS
*"      ERROR_OCCURED
*"----------------------------------------------------------------------
```

Template
*@US@aa => Signature of Creator, e.g. HH for Harry Hirsch *@CU@aaa... => Customer Name *@K1@ ... *@K9@ => Keywords for Implemented Functionality * Dummy entry for user exit cross reference check IF con_wc_usex_note_check IS INITIAL. ENDIF. *>>> START OF IMPLEMENTATION >>* *<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<* ENDFUNCTION.

User Exit 936: List of possible substitutes

This User Exit provides the possibility to limit the list of users that can be selected as a substitute.

Template
FUNCTION /COCKPIT/WC_USEX_SUBS_LIST. *"---------- *"*"Local interface: *" IMPORTING *" VALUE(I_USER) LIKE /COCKPIT/TWCS-WC_USER *" VALUE(I_USER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE *" VALUE(I_EMAIL_SEARCH) LIKE /COCKPIT/TWC_UMP-EMAIL OPTIONAL *" VALUE(I_NAME_SEARCH) LIKE /COCKPIT/TWC_UMP-NAME OPTIONAL *" VALUE(I_USER_SEARCH) LIKE /COCKPIT/TWC_UMP-WC_USER OPTIONAL *" VALUE(I_MAXRECORDS) LIKE DDSHF4CTRL-MAXRECORDS DEFAULT 200 *" EXPORTING *" VALUE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *" VALUE(EB_ALLOW_ANY_USERS) LIKE BOOLE-BOOLE *" TABLES *" ET_USER_LIST STRUCTURE /COCKPIT/SWC_USERLIST *" CHANGING *" REFERENCE(CB_NO_STANDARD) LIKE BOOLE-BOOLE *" EXCEPTIONS *" ERROR_OCCURED *"---------- *@US@aa => Signature of Creator, e.g. HH for Harry Hirsch *@CU@aaa... => Customer Name

Template
*@K1@ ... *@K9@ => Keywords for Implemented Functionality * Dummy entry for user exit cross reference check   IF con_wc_usex_web_sub_list IS INITIAL. ENDIF. *>>> START OF IMPLEMENTATION >>>* *<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<* ENDFUNCTION.

User Exit 937 – Adjust WF recipients search

This User Exit provides the possibility to add custom logic when searching for workflow recipients (for example, to enable a wild card search).

Template
FUNCTION /COCKPIT/WC_USEX_WEB_USER_LIST . *"---------- *"*"Local Interface: *" IMPORTING *" VALUE(I_USER) LIKE /COCKPIT/TWCS-WC_USER *" VALUE(I_USER_TYPE) LIKE /COCKPIT/TWCS-WC_USERTYPE *" REFERENCE(I_MAXRECORDS) LIKE DDSHF4CTRL-MAXRECORDS DEFAULT 200 *" EXPORTING *" VALUE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 *" VALUE(EB_ALLOW_ANY_USERS) LIKE BOOLE-BOOLE *" TABLES *" ET_USER_LIST STRUCTURE /COCKPIT/SWC_USERLIST *" CHANGING *" REFERENCE(CC_EMAIL_SEARCH) TYPE /COCKPIT/TWC_UMP-EMAIL OPTIONAL *" REFERENCE(CC_NAME_SEARCH) TYPE /COCKPIT/TWC_UMP-NAME OPTIONAL *" REFERENCE(CC_USER_SEARCH) TYPE /COCKPIT/TWC_UMP OPTIONAL *" REFERENCE(CB_NO_STANDARD) LIKE BOOLE-BOOLE OPTIONAL *"---------- *@US@aa => Signature of Creator, e.g. HH for Harry Hirsch *@CU@aaa... => Customer Name *@K1@ ... *@K9@ => Keywords for Implemented Functionality * Dummy entry for user exit cross reference check   IF con_wc_usex_web_user_list IS INITIAL. ENDIF. *>>> START OF IMPLEMENTATION >>>*

Template
<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
ENDFUNCTION.

User Exit 938 – Reduce list of documents before WF recall

This User Exit provides the possibility to limit the documents that can be recalled from workflow.

Template
FUNCTION /COCKPIT/WC_USEX_BEFORE_RECALL.
*"----------
""Local Interface:
*" IMPORTING
*" REFERENCE(IS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE
*" /COCKPIT/SHDR_IF
*" REFERENCE(IS_TWC) LIKE /COCKPIT/TWC STRUCTURE /COCKPIT/TWC
*" TABLES
*" IT_WEBCYCLE STRUCTURE /COCKPIT/SWC_IF
*" IT_WC_STEP STRUCTURE /COCKPIT/TWCS
*" IT_TWCS STRUCTURE /COCKPIT/TWCS
*" IT_TWCF STRUCTURE /COCKPIT/TWCF
*" IT_TWCSF STRUCTURE /COCKPIT/TWCSF
*" ET_MESSAGES STRUCTURE BAPIRET2
*" CHANGING
*" REFERENCE(CB_NO_STANDARD) LIKE BOOLE-BOOLE OPTIONAL
*"----------
*@US@aa => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa... => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit before recall
IF con_wc_usex_before_recall IS INITIAL. ENDIF.
>>> START OF IMPLEMENTATION >>>
<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
ENDFUNCTION.

LDAP User Exit 1 - Assign LDAP attribute to WORK CYCLE user field

Template

```
FUNCTION /cockpit/wc_usex_ldapsimplemap.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(INPUT) TYPE  C
*"  EXPORTING
*"     REFERENCE(OUTPUT) TYPE  C
ENDFUNCTION.
```

Search help User Exit – Search help for a field in the Web Application

This User Exit is called when a value is searched (using search help) in the Web Application. The User Exit can override settings from the search help configuration in order to influence the search behavior.

Template

```
FUNCTION /cockpit/wc_usex_shlp.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IC_STRUCTURE) LIKE  /COCKPIT/SFIELDS-STRUCTURE
*"     REFERENCE(IC_FIELD_NAME) LIKE  /COCKPIT/SFIELDS-FIELD_SAP
*"     REFERENCE(IC_INVOICE_GUID) LIKE  /COCKPIT/SINV_GUID-INVOICE_GUID
*"       OPTIONAL
*"     REFERENCE(II_MAX_ROWS) LIKE  BAPIF4A-MAX_ROWS DEFAULT 500
*"  TABLES
*"      IT_INPUT_FIELDS STRUCTURE  /COCKPIT/SWC_SHLP_NAMEVAL
*"      ET_RESULTS STRUCTURE  /COCKPIT/SWC_SHLP_GRPDNMVL
*"  EXCEPTIONS
*"      NO_SHLP_FOUND
*"      INVALID_GUID
ENDFUNCTION.
*"----------------------------------------------------------------------
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
* Evaluate it_input_fields to see whether you should return a restricted
* set of results. The table may contain
```

Template

* it_input_fields-name eq 'COMP_CODE'
* it_input_fields-value eq '1*'
* only company codes which start with the digit one are requested
* Make two result lines with two fields for each
  et_results-num = '0'.
  et_results-name = 'COMP_CODE'.
  et_results-value = '0001'.
  APPEND et_results.
  et_results-num = '0'.
  et_results-name = 'NAME'.
  et_results-value = 'My test company code'.
  APPEND et_results.
* Increment et_results-num for next result row
  et_results-num = '1'.
  et_results-name = 'COMP_CODE'.
  et_results-value = '1000'.
  APPEND et_results.
  et_results-num = '1'.
  et_results-name = 'NAME'.
  et_results-value = 'The one and only company'.
  APPEND et_results.
<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Step User Exit 1 – Check step conditions

With this User Exit it is possible to control whether a workflow step should be triggered or not (by raising the `NOT_VALID` exception). This User Exit is activated per workflow step, and must be specified in **Check if the WORK CYCLE sep can be started** in the workflow step definition (`/COCKPIT/WI3`).

Template
FUNCTION /cockpit/wc_usex_conditions. *"---------- *"*" Local interface: *" IMPORTING *" REFERENCE(IS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF *" REFERENCE(IS_WEBCYCLE) LIKE /COCKPIT/SWC_WEBCYCLE STRUCTURE

Template

```
*"       /COCKPIT/SWC_WEBCYCLE
*"    REFERENCE(IS_WC_STEP) LIKE  /COCKPIT/SWC_STEP STRUCTURE
*"       /COCKPIT/SWC_STEP
*"    REFERENCE(IS_WC_FLOW) LIKE  /COCKPIT/SWC_FLOW STRUCTURE
*"       /COCKPIT/SWC_FLOW OPTIONAL
*"  TABLES
*"     IT_ITEM STRUCTURE  /COCKPIT/SITEM_IF
*"     IT_ACCOUNT STRUCTURE  /COCKPIT/SACCT_IF
*"     IT_TAX STRUCTURE  /COCKPIT/STAX_IF
*"     ET_MESSAGES STRUCTURE  BAPIRET2
*"  EXCEPTIONS
*"     NOT_VALID
ENDFUNCTION.
```

Step User Exit 2 – Determine processor of step

Use this User Exit to determine the receivers of a workflow step. Receivers are transferred to the `ET_RECEIVER` table. This User Exit is activated per workflow step, and must be specified in **Define possible processors and parallel steps** in the workflow step definition (`/COCKPIT/WI3`).

In addition to determining the recipient of a document, you can also use this User Exit to assign line and accounting items to processors. Use the `ET_ITM_RCVR` structure for this purpose.

The function module `/COCKPIT/WC_SET_GLOBALS_SET` is called before this User Exit. You can therefore use global workflow data by calling `/COCKPIT/WC_GET_GLOBALS`. This makes it possible, for example, to determine the recipient of a step from the approver of the previous step.

Template

```
FUNCTION /cockpit/wc_usex_receivers.
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"    REFERENCE(IB_CONTINUE) LIKE  BOOLE-BOOLE
*"    REFERENCE(IS_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"       /COCKPIT/SHDR_IF
*"    REFERENCE(IS_WEBCYCLE) LIKE  /COCKPIT/SWC_WEBCYCLE STRUCTURE
*"       /COCKPIT/SWC_WEBCYCLE
*"    REFERENCE(IS_WC_STEP) LIKE  /COCKPIT/SWC_STEP STRUCTURE
*"       /COCKPIT/SWC_STEP
*"    REFERENCE(IS_WC_FLOW) LIKE  /COCKPIT/SWC_FLOW STRUCTURE
```

Template

```
*"       /COCKPIT/SWC_FLOW
*"  TABLES
*"      IT_ITEM STRUCTURE  /COCKPIT/SITEM_IF
*"      IT_ACCOUNT STRUCTURE  /COCKPIT/SACCT_IF
*"      IT_TAX STRUCTURE  /COCKPIT/STAX_IF
*"      ET_RECEIVER STRUCTURE  /COCKPIT/SWC_RECEIVER
*"      ET_ITM_RCVR STRUCTURE  /COCKPIT/SWC_LIA_RECEIVER OPTIONAL
*"      ET_MESSAGES STRUCTURE  BAPIRET2
*"  EXCEPTIONS
*"      NOT_FOUND
*"----------------------------------------------------------------------
*@US@aa         => Signature of Creator, e.g. HH for Harry Hirsch
*@CU@aaa...     => Customer Name
*@K1@ ... *@K9@ => Keywords for Implemented Functionality
* Dummy entry for user exit cross reference check
  IF con_wc_usex_receivers IS INITIAL. ENDIF.
*>>> START OF IMPLEMENTATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>*
* IB_CONTINUE is space on start
*            is 'X' on continue, approval, etc.
*            is 'F' on forward
*            is 'Q' on query
* Sample implementation for fixed user assignment
  MOVE-CORRESPONDING is_wc_flow TO et_receiver.
  et_receiver-wc_usertype = 'S'.
  et_receiver-wc_user     = 'WCTEST1'.
  APPEND et_receiver.
  et_receiver-wc_user     = 'WCTEST2'.
  APPEND et_receiver.
  et_receiver-wc_user     = 'WCTEST3'.
  et_receiver-wc_def_user = 'X'.
  APPEND et_receiver.
  et_receiver-wc_user     = 'WCTEST4'.
  APPEND et_receiver.
*<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<*
ENDFUNCTION.
```

Step User Exit 3 – After performing an action

This User Exit is called after all process-related actions (for example, save and approve) from within the SAP GUI or the Web Application. If the current process is interrupted the ERROR_OCCURED exception should be raised.

This User Exit is activated per workflow step, and must be specified in **Logic after the step action has been performed** in the workflow step definition (`/COCKPIT/WI3`).

Template

```
FUNCTION /COCKPIT/WC_USEX_CHECK_ACTION .
*"----------------------------------------------------------------------
*"*"Local interface:
*"  IMPORTING
*"     REFERENCE(IS_WC_DATA) LIKE  /COCKPIT/SWC_IF STRUCTURE
*"       /COCKPIT/SWC_IF
*"     REFERENCE(IS_WEBCYCLE) LIKE  /COCKPIT/SWC_WEBCYCLE STRUCTURE
*"       /COCKPIT/SWC_WEBCYCLE
*"     REFERENCE(IS_WC_STEP) LIKE  /COCKPIT/SWC_STEP STRUCTURE
*"       /COCKPIT/SWC_STEP
*"     VALUE(IC_WC_DYNPRO) LIKE  /COCKPIT/SDUMMY-CHAR1 OPTIONAL
*"     REFERENCE(IS_SUBSTITUTE) LIKE  /COCKPIT/SWC_USER STRUCTURE
*"       /COCKPIT/SWC_USER OPTIONAL
*"     VALUE(IC_ACTION) LIKE  /COCKPIT/SWC_DUMMY-RUN_TYPE OPTIONAL
*"     REFERENCE(IB_UPDATE) LIKE  BOOLE-BOOLE OPTIONAL
*"  TABLES
*"      CT_ITEM STRUCTURE  /COCKPIT/SITEM_IF
*"      CT_ACCOUNT STRUCTURE  /COCKPIT/SACCT_IF
*"      CT_TAX STRUCTURE  /COCKPIT/STAX_IF
*"      CT_ACCOUNT_ASSIGN STRUCTURE  /COCKPIT/TACCAS OPTIONAL
*"      CT_NOTE STRUCTURE  /COCKPIT/SWC_NOTE OPTIONAL
*"      ET_MESSAGES STRUCTURE  BAPIRET2
*"  CHANGING
*"     REFERENCE(CS_HEADER) LIKE  /COCKPIT/SHDR_IF STRUCTURE
*"       /COCKPIT/SHDR_IF
*"     REFERENCE(CC_OK_CODE) LIKE  SY-UCOMM OPTIONAL
*"  EXCEPTIONS
*"      ERROR_OCCURED
*"----------------------------------------------------------------------
```

Template
*@US@aa => Signature of Creator, e.g. HH for Harry Hirsch *@CU@aaa... => Customer Name *@K1@ ... *@K9@ => Keywords for Implemented Functionality * Dummy entry for user exit cross reference check IF con_wc_usex_check_action IS INITIAL. ENDIF. *>>> START OF IMPLEMENTATION >>* *<<< END OF IMPLEMENTATION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<* ENDFUNCTION.

Step User Exit 4 – After full release

This User Exit is called after a workflow step is approved. It can be used to do some post processing. Simply raising an exception here will not change the fact that the step is approved.

This User Exit is activated per workflow step, and must be specified in **Logic after the step has been released** in the workflow step definition (`/COCKPIT/WI3`).

Template
FUNCTION /COCKPIT/WC_USEX_AFTER_EXEC. *"---------- *"*" Local interface: *" IMPORTING *" REFERENCE(IS_WC_DATA) LIKE /COCKPIT/SWC_IF STRUCTURE *" /COCKPIT/SWC_IF *" REFERENCE(IS_WEBCYCLE) LIKE /COCKPIT/SWC_WEBCYCLE STRUCTURE *" /COCKPIT/SWC_WEBCYCLE *" REFERENCE(IS_WC_STEP) LIKE /COCKPIT/SWC_STEP STRUCTURE *" /COCKPIT/SWC_STEP *" REFERENCE(IB_ONLINE) LIKE BOOLE-BOOLE OPTIONAL *" TABLES *" CT_ITEM STRUCTURE /COCKPIT/SITEM_IF *" CT_ACCOUNT STRUCTURE /COCKPIT/SACCT_IF *" CT_TAX STRUCTURE /COCKPIT/STAX_IF *" ET_MESSAGES STRUCTURE BAPIRET2 *" CHANGING *" REFERENCE(CS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF *" EXCEPTIONS

Template
*" ERROR_OCCURED ENDFUNCTION.

Step User Exit 5 – Check step recipient

This User Exit checks recipients of a workflow step. This User Exit is activated per workflow step, and must be specified in **Check recipients of the step** in the workflow step definition (`/COCKPIT/WI3`).

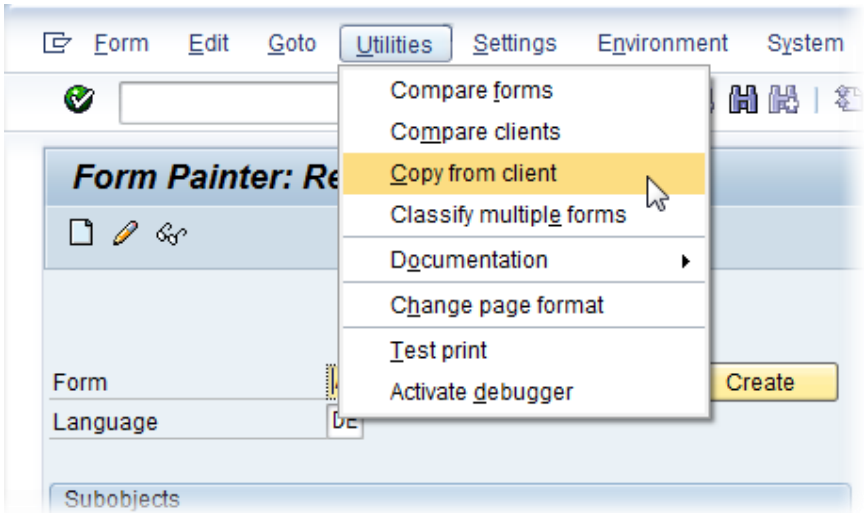
Template
FUNCTION /COCKPIT/WC_USEX_USER_CHECK. *"---------- *"*"Local interface: *" IMPORTING *" REFERENCE(IC_WC_ID) LIKE /COCKPIT/TWC-WC_ID *" REFERENCE(IC_WC_STEP_ID) LIKE /COCKPIT/TWCS-WC_STEP_ID *" REFERENCE(IS_HEADER) LIKE /COCKPIT/SHDR_IF STRUCTURE *" /COCKPIT/SHDR_IF *" REFERENCE(IC_USER_EMAIL) LIKE /COCKPIT/TWC_UMP-EMAIL *" REFERENCE(IC_USER_TYPE) LIKE /COCKPIT/SWC_USERS-WC_USERTYPE_GRP *" REFERENCE(IC_ACTION) LIKE /COCKPIT/SWC_DUMMY-ACTION_TYPE *" OPTIONAL *" EXPORTING *" REFERENCE(EC_USER) LIKE /COCKPIT/TWCS-WC_USER *" REFERENCE(EC_USER_TYPE) LIKE /COCKPIT/SIF-US_TYPE *" REFERENCE(ES_MESSAGE) LIKE BAPIRET2 STRUCTURE BAPIRET2 ENDFUNCTION.

Appendix C – Other tasks

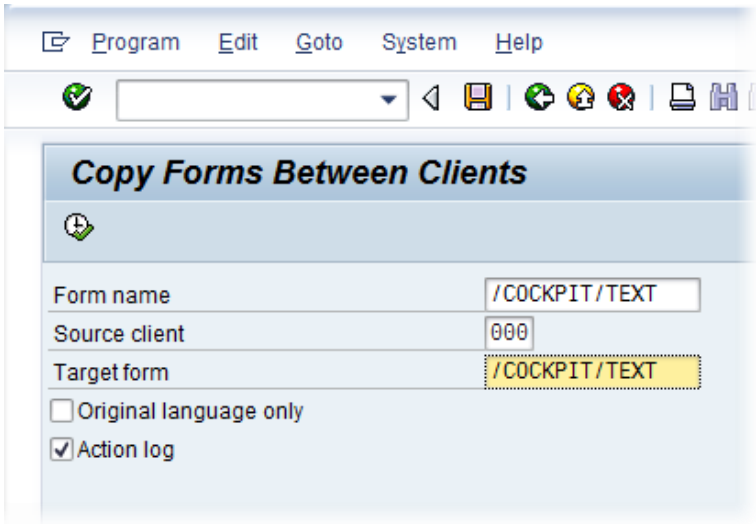
Copying forms to another client

Forms are imported as separate transports. They can only be imported into client 000. After import, you must copy them to the target client. The following procedure shows how to copy the `/COCKPIT/TEXT` form from client 000:

1. Log on to the client you wish to copy the form to.
2. Go to `/SE71`.
3. Go to **Utilities** > **Copy from Client**.



4. Enter the **Form name**, **Source client** and **Target form** (name).



5. Select **Execute**.

Support for other languages

WORK CYCLE is available in many languages. In order to support the creation of workflow notes in Russian and Polish, the following SAP notes must be installed:

- SAP note 322998 (for Russian)
- SAP note 141343 (for Polish)