Implementation Guide EAM
Enterprise Asset Management Web UI
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CUSTOMER

EAM Web UI Implementation Guide

Adapting EAM Web UI

Document History

Version	Date	Change
2.0	20th Aug 2014	First Released version
2.5	4th Feb 2015	New: 4 Object-based Navigation, 8 Asset Viewer 3.10 Assigning Different Search Helps Minor Changes: Links to documentation and SCN, Switch of Screenshot, Wiring in 3.4, 5.2.1 BAdI Implementation for Side Panels
2.6	27th May 2015	New: 3.11 Creating Quick Help 8.4 New View in Asset Viewer, 6.4 Unplanned Confirmation, 6.5 Cross-system MOC request, 9 Working with POWLs, 15.9 Port Numbers Minor Changes: Links to SAP Library and SCN added, order of chapters rearranged, small format changes
Remark		Up to Version 2.5 the screen shots were done with SAP-Theme SAP_CORBU, from version 2.6 screen shots are done with SAP-Theme SAP_BLUECRYSTAL
2.7	11th August 2015	New: 2.6 ICF, 6.6 URL Parameters, 7 Adding Customer Fields, 9.3 Configuration and Performance of POWLs Minor Changes: Note number and blog information for After Event Recording, links to notes.
2.8	25th January 2018	Reworked links to documentation, new: 2.1 Quick start; enhanced: 2.6 (ICF services), new: 2.6.1, 2.7 (WD applications), 2.8 (WD UIBBs), new structure in 2.9, new 3.2.2 (customizing for List UIBBs), enhanced: 6.6.3 URL parameters Measuring Point, Measurement Document, Maintenance Item; new 8.5 AV Inactive objects; new 12 (doc attachment, thumbnail), enhanced 13.1.2 warranty check in BAdI, new 13.3.6 replaced user exits

Table of Contents

Abbreviations

BF	Business Function
NWBC	NetWeaver Business Client
SP	Support Package
EAM	Enterprise Asset Management
PM	Plant Maintenance
PFCG	Profile Generator
UIBB	User Interface Building Block
IDR	Identification Region
FPM	Floorplan Manager
BAdI	Business Add-In
ATS	Advanced Table Service
QV	Quick View
WDA	Web Dynpro Application
CHIP	Collaborative Human Interface Part
API	ABAP Programming Interface
POWL	Personal Object Work List
OBN	Object-based Navigation
DDIC	Data Dictionary (ABAP)
SCN	SAP Community Network (scn.sap.com)
ICF	Internet Communication Framework
UI	User Interface

1 Introduction

The goal of this document is to describe how you can adapt and enhance the SAP EAM Web UI. It provides a good overview of the many options the EAM Web UI has to offer for your daily business and explains how you can easily tailor it to your company's specific requirements.

This document does not, however, attempt to provide a complete and detailed description of all the various possibilities and enhancements that are available, but rather uses basic examples to illustrate how to use the available enhancement technologies. The examples chosen are meant to be representative for similar enhancements in multiple areas of the application. In several cases, links to more detailed descriptions are provided.

The document is closely related to the EAM functions in the SAP ERP release starting from EHP7 based on SAP NetWeaver 7.40. However, most of the content and concepts described here are independent of the EAM release. A follow-on version of this document will contain adjusted screen shots as well as revised descriptions where required.

2 Getting Started with SAP Web User Interface for Plant Maintenance (PM)

This chapter provides some basic information concerning EAM Web UI.

2.1 EAM Web UI Quick Start

Assuming you already have got an installation of at least SAP Business Suite EHP7 and you want to try out to create and manage data on the SAP Web UI for Plant Maintenance, you need to perform the following steps:

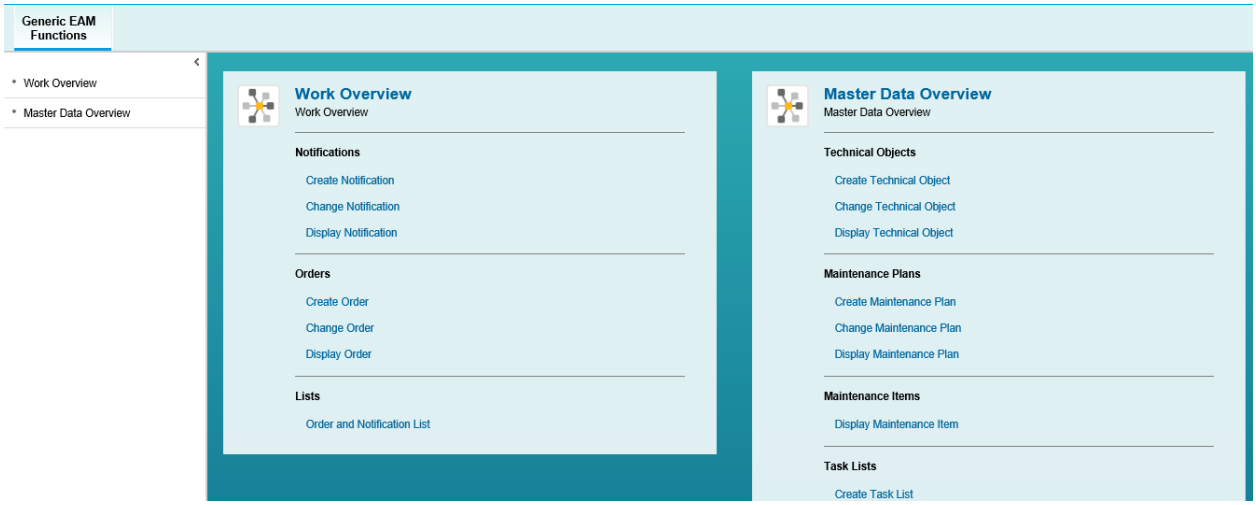
Step 1: Make sure that the business functions *Simplified Management of EAM Functions* ... (at least number 1 to 5) are activated. You can check this in transaction `SFW_BROWSER`.

Step 2: Check if the services for EAM Web Dynpro are activated (transaction `SICF`, path */sap/bc/webdynpro/sap/*)

Step 3: Assign the PFCG role `SAP_COCKPIT_GENERIC_FUNC2` to your user (transaction `PFCG`)

Step 4: Start transaction `NWBC` from SAPGUI and check if the roles assigned to you are displayed in the browser window

Step 5: Select the PFCG role `SAP_COCKPIT_GENERIC_FUNC2`. You can now access the EAM functions for a maintenance planner on the launchpad:



Step 6: Check if the enterprise search connectors for EAM objects are in place (transaction `ESH_COCKPIT`)

This guide provides more detailed information and links to further documentation for each of the steps.

2.2 Release

The functionality described in this guide is available in Software Component EA-APPL 617 as of SAP enhancement package 7 for SAP ERP 6.0 SP05. Nevertheless, most of the configuration settings described in this document are possible in lower releases as well.

When your system is on SAP enhancement package 8 for SAP ERP 6.0 the functionality is taken over into Software Component SAP_APPL.

For more information about how to find out the release and SP level of your system, see chapter 15.5.

2.3 SAP NetWeaver Business Client and SAP Logon

All applications described in this guide are running on NWBC 4.0 PL10 (or higher) and require SAP Logon 730 Final Release Patch Level 6.

For more information about NWBC, see

- SAP NetWeaver Business Client (Content in SAP Community Network)
- SAP NetWeaver Business Client (SAP Library documentation)
- FAQ document (Content in SAP Community Network)
- SAP Note 900000 - Netweaver Business Client - FAQ

2.4 Required Business Functions (BF)

If you want to create and manage data in the Plant Maintenance (PM) component on the SAP Web UI for Plant Maintenance, you at least have to activate business function *Simplified Management of EAM Functions 2* (`LOG_EAM_SIMPLICITY_2`). The business function *Simplified Management of EAM Functions 3* (`LOG_EAM_SIMPLICITY_3`) provides you with enhanced functions for planning and performing maintenance tasks and enables you to use several functions in maintenance orders, notifications, task lists, and maintenance plans on the Web UI that up to now were only available in the respective SAP GUI transactions. In addition, you can use quickviews and side panels to get further information about maintenance objects and create personalized list views to select and process maintenance documents efficiently.

For more information about the Simplicity Business Functions in EAM, see:

- *Simplified Management of EAM Functions 2*
- *Simplified Management of EAM Functions 3*
- *Simplified Management of EAM Functions 4*
- *Simplified Management of EAM Functions 5*
- *Simplified Management of EAM Functions 6*
- *Simplified Management of EAM Functions 7*

For more information about checking your business function status, see chapter 15.3.

2.5 PFCG Roles

You can use the features provided with the business functions in the *SAP NetWeaver Business Client* (NWBC) with the PFCG roles *Maintenance Worker* (`SAP_COCKPIT_EAMS_MAINT_WORKER2`) and *Generic EAM Functions* (`SAP_COCKPIT_EAMS_GENERIC_FUNC2`).

- The PFCG role *Maintenance Worker* enables the maintenance worker to access all the information relevant to his or her work, and to confirm work completed.
- The PFCG role *Generic EAM Functions* enables the maintenance planner to create and change PM master data as well as to plan and execute all relevant maintenance activities.

You can also use the features provided with the business functions in SAP NetWeaver Portal with the business packages *Business Package for Maintenance Worker 1.61* and *Business Package for Generic EAM Functions 1.61*.

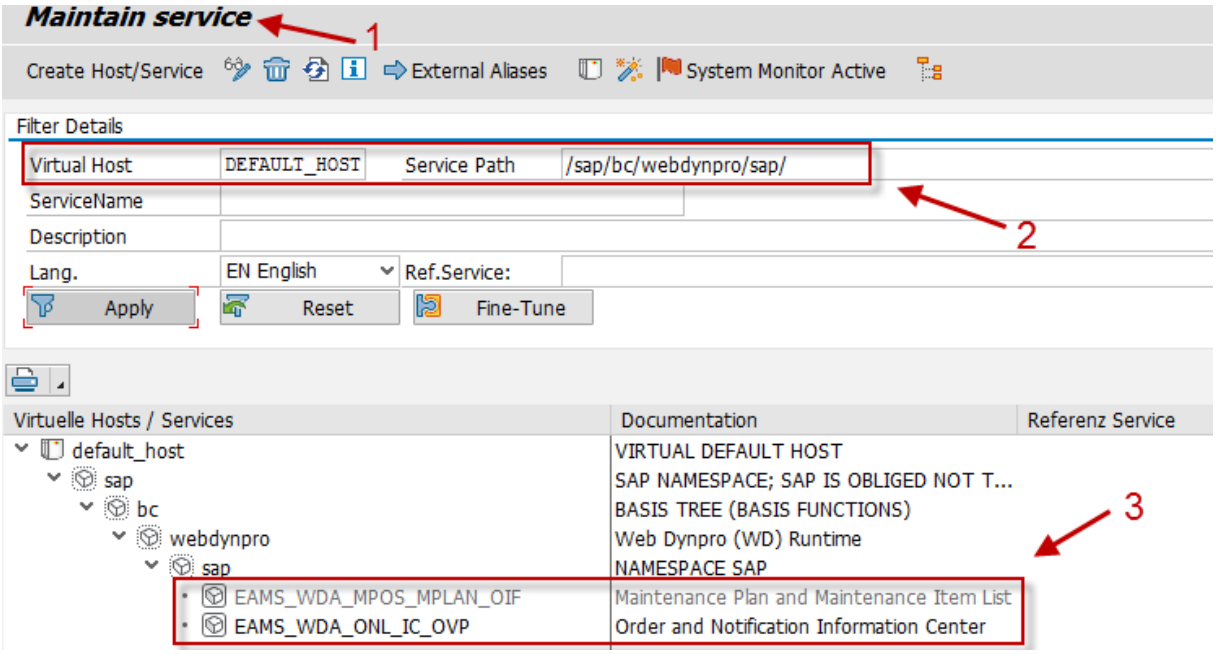
To log on to the system with SAP NetWeaver Business Client using these roles, see 15.1.

For more information, see SAP NetWeaver Business Client.

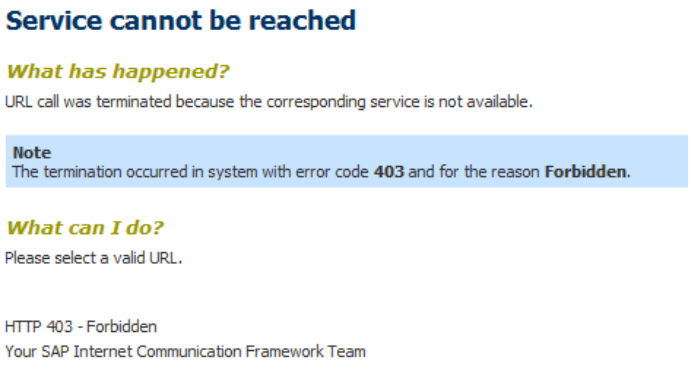
2.6 Internet Communication Framework (ICF)

The HTTP-requests for the EAMS Web Dynpro applications are handled by the Internet Communication Framework (ICF). Refer to the program documentation or to the SAP Library for detailed information about the Internet Communication Framework.

To check whether the respective EAMS services are active, call transaction `SICF` (*Maintain Service*) (1). You find all active services in the DEFAULT_HOST folder under path */sap/bc/webdynpro/sap/* (2). In this example, the service for *Maintenance Plan and Maintenance Item List* is not active (gray), whereas the *Order and Notification Information Center* service is active (black) (3). To activate a service, open the context menu of the service by positioning the cursor on the respective line and clicking the right mouse button. Then choose *Activate Service* in the context menu. You also find the menu entry in the menu under *Service/Host -> Activate (Shift + F11)*.



If you start an EAMS Web Dynpro application and the system raises the following error message, the corresponding service has not been activated yet.



If you create your own Web Dynpro application, the service is created automatically.

The following table provides the most important ICF-services that have to be activated when using the EAM Web UI functionality:

Application Name	ICF Service
Maintenance Planner:	
Order and Notification Information Center	EAMS_WDA_ONL_IC_OVP
Master Data Information Center	EAMS_WDA_MD_IC_OVP
Maintenance Notification	EAMS_WDA_ORDNTF_OIF
Maintenance Order	EAMS_WDA_ORDNTF_OIF
Technical Object	EAMS_WDA_TECHOBJ_OIF
Maintenance Plan	EAMS_WDA_MPLAN_OIF_V2
Maintenance Item	EAMS_WDA_MPOS_OIF
Task List	EAMS_WDA_TL_OIF_V2
Measuring Point	EAMS_WDA_MP_OIF
Measurement Document	EAMS_WDA_MD_OIF
Object Networks	PLMN_WDA_LINK_OIF
Linear Reference Pattern	EAML_WDA_LRP_OIF
Work Permit	WCM_WDA_WP
Safety Certificate	WCM_WDA_SCT
Lists:	
Order and Notification List	EAMS_WDA_ONL_OIF
Order Operation List	EAMS_WDA_OOL_OIF
Technical Object List	EAMS_WDA_TECHOBJ_POWL
Maintenance Plan and Item List	EAMS_WDA_MPOS_MPLAN_OIF
Maintenance Worker :	
Information Center	EAMS_WDA_INFOCENTER
Job List	EAMS_WDA_JOBLIST_OIF
Job Confirmation (List)	EAMS_WDA_CONF_OIF
Confirm Job	EAMS_WDA_JOBPC_OIF
Confirm Unplanned Job	EAMS_WDA_JOBUC_OIF
Display Jobcard	EAMS_WDA_JOB_PREVIEW_OIF
Display Job	EAMS_WDA_JOB_OIF

However, you might need to activate other ICF services in addition, such as `EAMS_WDA_SEARCH` and `EAMS_WDA_SEARCH_QS` for Search, `EAMS_WDA_SERVICE` for the EAMS Service, `EAMS_WDA_THUMBNAIL` for using Thumbnails, `ABP_LAUNCHPAD` for Launchpad functionality and `EAMWS_WDA_SML_OIF` for worker safety. See also

note 1433187. For adapting the Web Dynpro applications additional services need to be active which are listed in the following section 2.6.1.

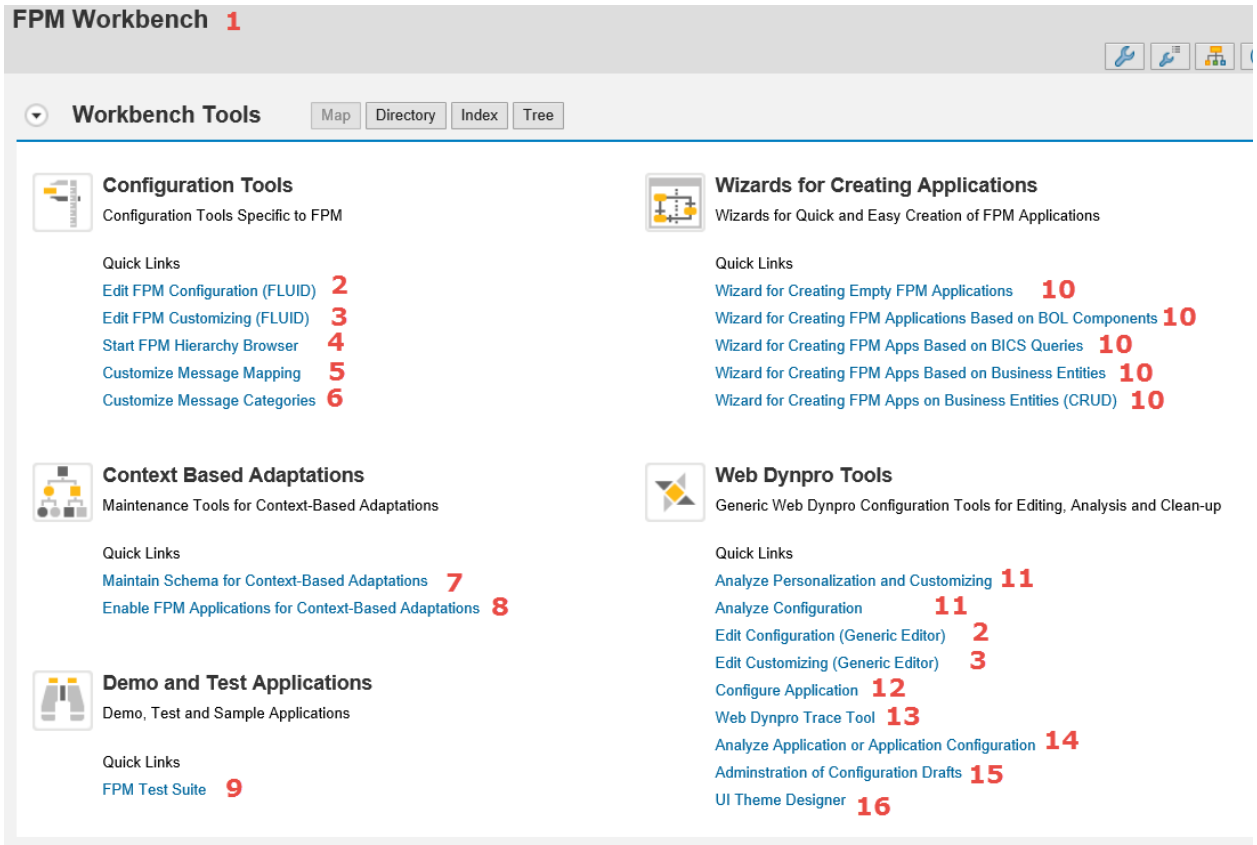
2.6.1 Working with the Floorplan Manager Workbench

The Floorplan Manager Workbench (FPM Workbench) provides you with a set of tools that you commonly need when working with FPM applications. It brings these tools together on one web page so you don't have to spend time searching for them in the FPM framework. To start the FPM workbench, you enter `FPM_WB` in the transaction field of the SAPGUI.

For more information about the FPM Workbench, see FPM Workbench: Useful Tools in One Place in the SAP Library.

Before you can work with the FPM Workbench, you have to activate the ICF service `FPM_WB` in the *DEFAULT_HOST* folder under path */sap/bc/webdynpro/sap/*.

The following picture shows the workbench with its link sections.



The links allow you to navigate to the corresponding applications. The ICF-services you need for the Web Dynpro applications are listed in the following table. The number behind the link corresponds with the number in the table for the service names. All services listed below are located in the `DEFAULT_HOST` folder under path */sap/bc/webdynpro/sap/* except for the last one.

Number	Service Name
1	FPM_WB
2	CONFIGURE_COMPONENT
3	CUSTOMIZE_COMPONENT
4	FPM_CFG_HIERARCHY_BROWSER
5	SAP GUI for HTML – no service needed
6	SAP GUI for HTML – no service needed
7	SAP GUI for HTML – no service needed
8	FPM_CFG_CBA_ENABLER
9	FPM_TESTSUITE -> all necessary services for the suite start with FPM_TEST_*
10	FPM_CFG_BO_MODEL_ACT
11	WD_ADMIN_CONFIGURATION
12	CONFIGURE_APPLICATION
13	WD_TRACETOOL
14	WD_ANALYZE_CONFIG_APPL
15	WD_ADMIN_CONFIG_DRAFT
16	THEMING in path /default_host/sap/bc/

2.7 Overview of EAM Web Dynpro Applications and Configurations

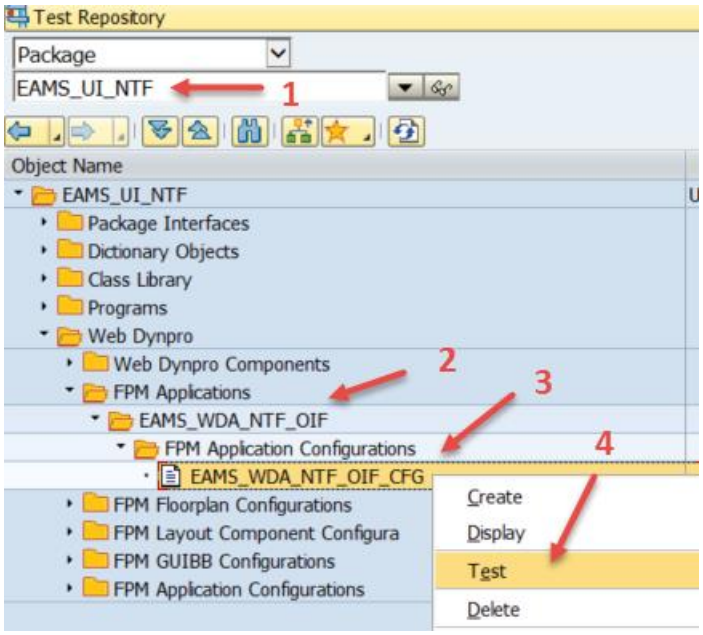
This chapter provides you with an overview about applications on the SAP Web user interface for Plant Maintenance, based on the Floorplan Manager Framework.

For detailed information about the architecture of the FPM and the additionally used PLM Framework, see Floorplan Manager for Web Dynpro ABAP 7.4 SP08 SAP_UI SP10 and the SAP Wiki Service Provider Infrastructure (SPI) .

Most of the EAM Web Dynpro applications are built in a similar way based on the Web Dynpro component called *Floorplan for Object Instances* (`FPM_OIF_COMPONENT`) which defines the layout and processing of the data. The *Master Data Information Center* and the *Order and Notification Center* are built on the Floorplan for Overview Pages (`FPM_OVP_COMPONENT`).

Each application consists of an application and a configuration part. Without the corresponding configuration the application cannot be started.

The following example shows the Web Dynpro application for creating, changing and displaying notifications in package `EAMS_UI_NTF` (1) with its application name `EAMS_WDA_NTF_OIF` (2) and the corresponding application configuration name `EAMS_WDA_NTF_OIF_CFG` (3). To start the application, choose the *Test* entry in the context menu of the configuration name.



The following table lists the EAM applications with the corresponding configurations depending on the `PFCG` role. For more information on roles see chapter 2.5.

Role for Maintenance Planner (`SAP_COCKPIT_EAMS_GENERIC_FUNC2`)

Launchpad Link Name	Application Name	Configuration Name
Order and Notification Information Center	EAMS_WDA_ONL_IC_OVP	EAMS_WDA_ONL_IC_OVP_CFG
Create/Change/Display Notification	EAMS_WDA_ORDNTF_OIF	EAMS_WDA_ORDNTF_OIF_CFG
Create/Change/Display Order	EAMS_WDA_ORDNTF_OIF	EAMS_WDA_ORDNTF_OIF_CFG
Order and Notification List	EAMS_WDA_ONL_OIF	EAMS_WDA_ONL_OIF_CFG
Master Data Information Center	EAMS_WDA_MD_IC_OVP	EAMS_WDA_MD_IC_OVP_CFG
Create/Change/Display Technical Object	EAMS_WDA_TECHOBJ_OIF	EAMS_WDA_TECHOBJ_OIF_CFG_V2
Create/Change/Display Maintenance Plan	EAMS_WDA_MPLAN_OIF_V2	EAMS_WDA_MPLAN_OIF_CFG_V2
Display Maintenance Item	EAMS_WDA_MPOS_OIF	EAMS_WDA_MPOS_OIF_CFG_V2
Create/Change/Display Task List	EAMS_WDA_TL_OIF_V2	EAMS_WDA_TL_OIF_CFG_V2
Create/Change/Display Measuring Point	EAMS_WDA_MP_OIF	EAMS_WDA_MP_OIF_CFG
Create/Display Measurement Document	EAMS_WDA_MD_OIF	EAMS_WDA_MD_OIF_CFG
Create/Change/Display Object Network	PLMN_WDA_LINK_OIF	PLMN_WDA_NW_OIF_CFG

Create/Change/Display Linear Reference Pattern	EAML_WDA_LRP_OIF	EAML_WDA_LRP_OIF_CFG
Change Safety Measure List	EAMWS_WDA_SML_OIF	EAMWS_WDA_SML_OIF_CFG
Technical Object List	EAMS_WDA_TECHOBJ_POWL	EAMS_WDA_TECHOBJ_POWL_CFG
Maintenance Plan and Maintenance Item List	EAMS_WDA_MPOS_MPLAN_OIF	EAMS_WDA_MPLAN_MPOS_OIF_CFG

Role for Maintenance Worker (`SAP_COCKPIT_EAMS_MAINT_WORKER2`)

Launchpad Link Name	Application Name	Configuration Name
Job List	EAMS_WDA_JOBLIST_OIF	EAMS_WDA_JOBLIST_TAB_OIF_CF2
Job Confirmation	EAMS_WDA_CONF_OIF	EAMS_WDA_CONF_OIF_CFG
Information Center	EAMS_WDA_INFOCENTER	EAMS_WDA_INFOCENTER_CFG
Create/Change/Display Notification	EAMS_WDA_ORDNTF_OIF	EAMS_WDA_ORDNTF_OIF_MW_CFG
Display Measurement Document	EAMS_WDA_MD_OIF	EAMS_WDA_MD_OIF_CFG
Display Technical Object	EAMS_WDA_TECHOBJ_OIF	EAMS_WDA_TECHOBJ_OIF_MW_CFG_V2
Display Measuring Point	EAMS_WDA_MP_OIF	EAMS_WDA_MP_OIF_MW_CFG
Display Task List	EAMS_WDA_TL_OIF_V2	EAMS_WDA_TL_OIF_MW_CFG_V2
Display Maintenance Plan	EAMS_WDA_MPLAN_OIF	EAMS_WDA_MPLAN_OIF_MW_CFG
Display Maintenance Item	EAMS_WDA_MPOS_OIF	EAMS_WDA_MPOS_OIF_MW_CFG

2.8 FPM Screen Layout and User Interface Building Blocks (UIBBs)

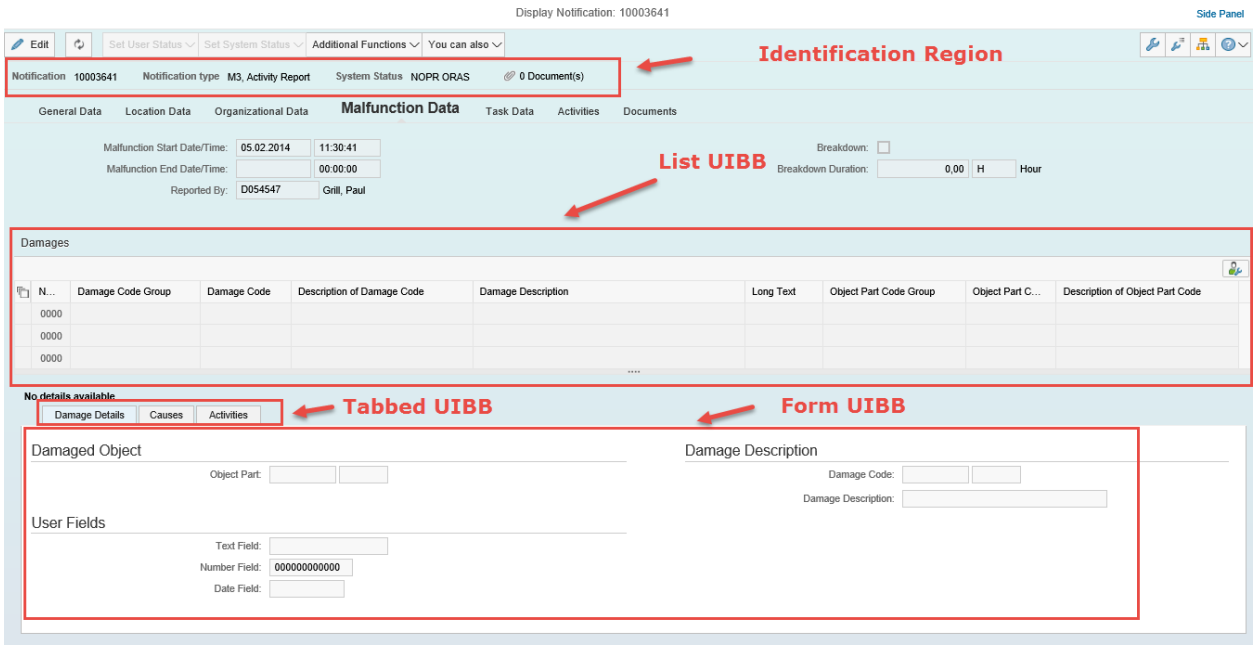
When you start an application on the SAP Web user interface for Plant Maintenance you enter the number of the maintenance document you want to display or change or you create a new object. The following example of the *Display Notification* application shows how the screen of Web Dynpro applications is laid out:

The *Identification Region* (`IDR`) on the top of the screen shows general information on the current object, such as the object type or the status. The IDR is always visible at the top of the page even if you change the tabs below. Above the IDR you can access several menu buttons for changing from display to editing mode or vice versa, for refreshing the screen, setting the status, selecting *Additional Functions* or functions from the *You-can-also* menu.

You can arrange the elements beneath the IDR corresponding to your business needs. There are three different types of the so-called *User Interface Building Blocks* (UIBBs) which are located on the different tab pages of the Web Dynpro applications:

- List UIBBs display data as a list. In personalization mode, you can rearrange the table columns via drag and drop or allow horizontal scrolling.
- Tabbed UIBBs typically display detail data for a specific entry of the list UIBB selected by the user.

- Form UIBBs show data in a one or two column layout. Group titles indicate the affiliation of the field data.



2.9 Additional Documentation

For fast access to SAP Notes via an internet browser use URL address http://service.sap.com/sap/support/notes/<notenumber>. Add the respective note number in placeholder <notenumber>.

2.9.1 EAM Functionality and Business Function Documentation

- For more information about carrying out plant maintenance tasks on the SAP Web UI, see Web User Interface for SAP Plant Maintenance (PM).
- To get an overview about the released features in EAM Simplicity have a look at the Innovation Discovery tool.
- The Business Function documentation for the Simplified Management of EAM can be found in the SAP Library: Simplified Management of EAM Functions, Simplified Management of EAM Functions 2, Simplified Management of EAM Functions 3, Simplified Management of EAM Functions 4, Simplified Management of EAM Functions 5, Simplified Management of EAM Functions 6, Simplified Management of EAM Functions 7.

2.9.2 SAP Community Network (SCN)

- A useful source of information around Web Dynpro ABAP is the Web Dynpro ABAP and Floorplan Manager Community.
- The entrance page for the Enterprise Asset Management Community in the SCN leads to blogs, guides and answers around EAM.
- Questions and answers around the SAP Business Client (SAP BC) formerly known as SAP NetWeaver Business Client (NWBC) are collected in the SAP Business Client (SAP BC) Community.

2.9.3 Adapting Web Dynpro ABAP

- For general information about Web Dynpro, see SAP Help Portal documentation about Web Dynpro ABAP, where several topics are covered like FPM Developer Tools, Quickviews and Context Menus.
- Two important documents for developing Web Dynpro ABAP can be downloaded here: Floorplan Manager for Web Dynpro ABAP 7.4 SP08 SAP_UI SP10 and Floorplan Manager Cookbook (also known as FPM Developer's Guide 7.4 SP2).
- For developing in EAM applications the Service Provider Infrastructure (SPI) - SAP Wiki is an important source of knowledge, especially the following chapters of the WIKI
    - Enhancing the Generic Feeder Classes
    - Launchpad and Navigation Wiki - FPM SPI Integration
    - SPI Services and Tools - learn to use the Metadata Browser and the Service Provider Browser
- In SAP Note 1619534 - How to Create, Enhance and Adapt FPM Applications you are guided to current documentation about the background of FPM Adaptation depending on SAP NetWeaver releases.
- See also document in SCN: How to Create, Enhance, and Adapt Floorplan Manager Applications (FPM).

2.9.4 Miscellaneous

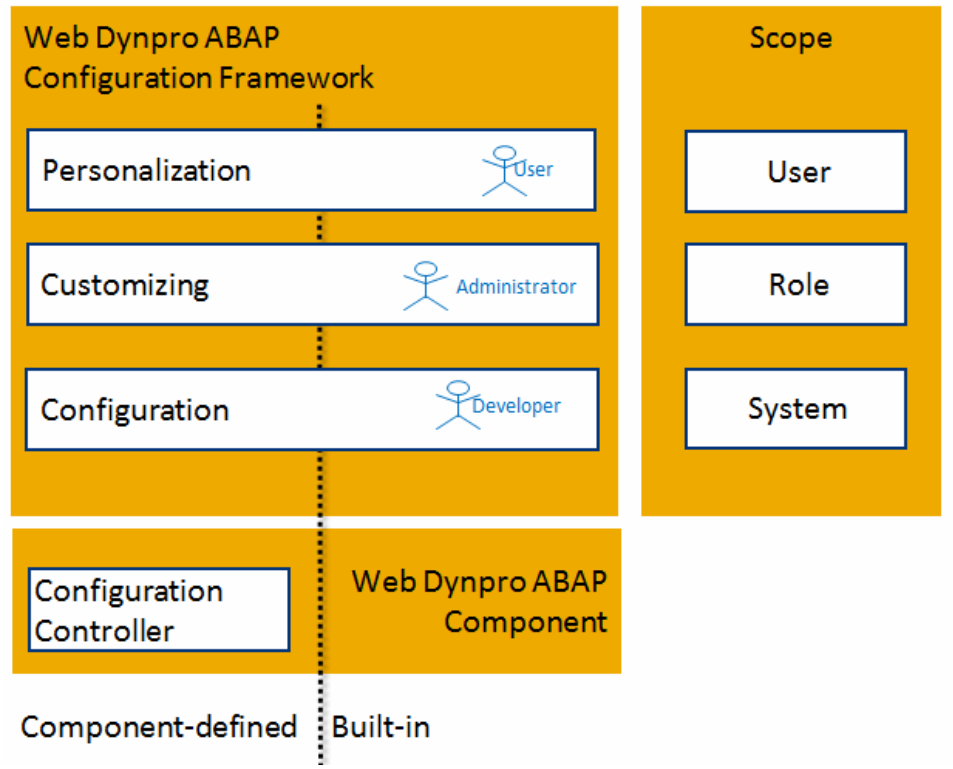
If you want to create your own theme for the user interface, refer to UI Theme Designer in the SAP Library and read the SCN Blog UI Theme Designer for Web Dynpro ABAP.

3 Changing the Web Dynpro Configuration

Depending on your business requirements, the requirements of the application user interface can vary greatly. Applications that are created with the help of Web Dynpro ABAP can be adapted in different ways and by different target groups.

For more information about adapting FPM applications, see Adapting FPM Applications.

The following figure shows the layers of the Web Dynpro ABAP Configuration Framework.



- The **expert** (developer) models the Web Dynpro application. This includes the programming and basis configuration. Changes to the configurations that are made in the expert mode are stored directly in the Web Dynpro ABAP development layer.
  For more information about expert mode, see chapter 5.
- The **administrator** configures the settings in customizing on client level or for a defined group of users. This includes hiding or swapping table columns, changing label texts, setting default values, and much more. An administrator can also add further UI elements that require no programming. This includes showing the company logo or adding explanatory text.
  All changes in administrator mode are modification-free changes, so no coding is changed. The changes are saved as an independent delta of the configuration and are transported in the system landscape via a transport link.
- The **individual user** then adjusts some settings of the application to suit his or her own specific needs (personalization). If not explicitly deactivated by the administrator, users can show and hide UI elements and

swap table columns.

For more information about personalization mode, see chapter 4.

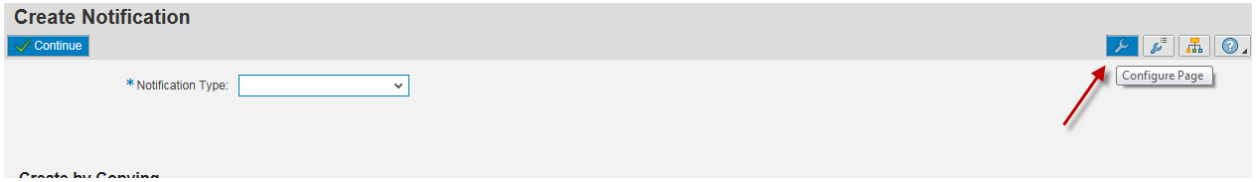
For more information about the different modes, see Fitting Web Dynpro Applications to Your Needs.

3.1 Creating and Changing the Customizing of Applications and UIBBs

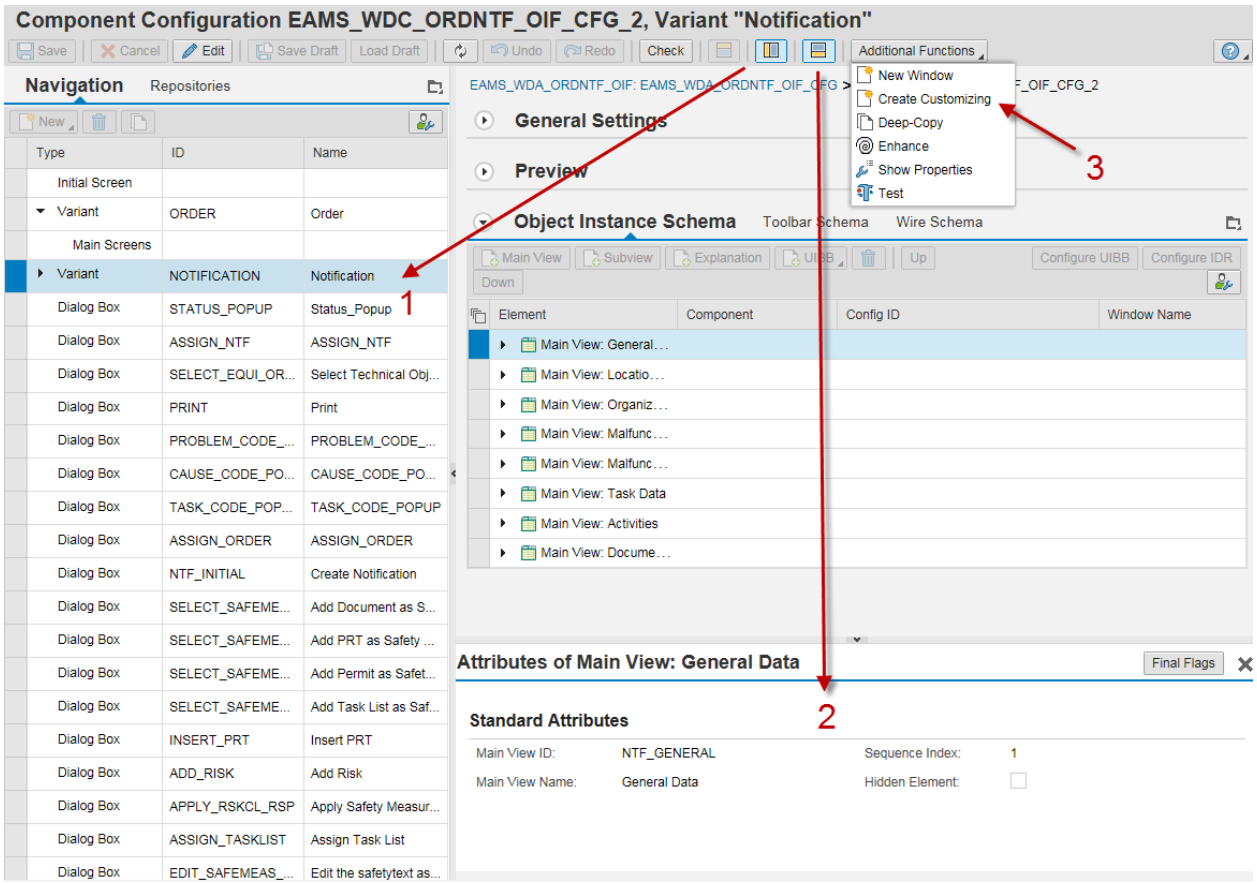
The changes to the UIBB described in this chapter are performed on client-level in administration mode. All changes are saved as an independent delta of the configuration in the customizing layer. The authorization objects `S_DEVELOP` or `S_WDR_P13N` are necessary.

Before you can work in administration or expert mode you have to set the user parameter `FPM_CONFIG_EXPERT` to ‘A’ (administration mode) or 'X' (expert mode) in your own user data (transaction `SU3`). If this user parameter is set, some new icons are shown in the upper right corner of the Web Dynpro application. By choosing these pushbuttons, you can start the configuration directly in the respective Web Dynpro application.

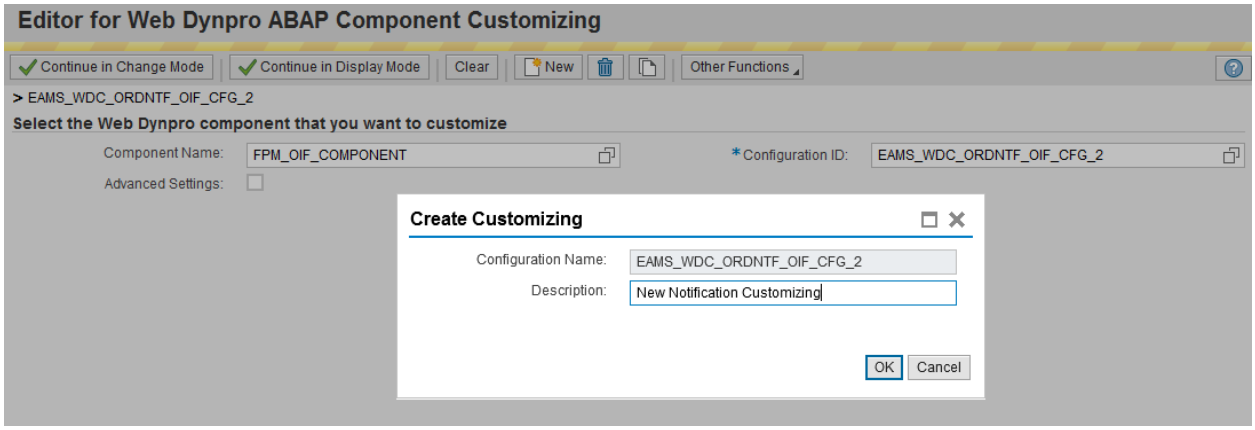
If you want to make changes to the UI of the **whole application**, e.g. hide tabs, you can access the configuration by choosing the pushbutton *Configure Page* on the entry screen of the application:



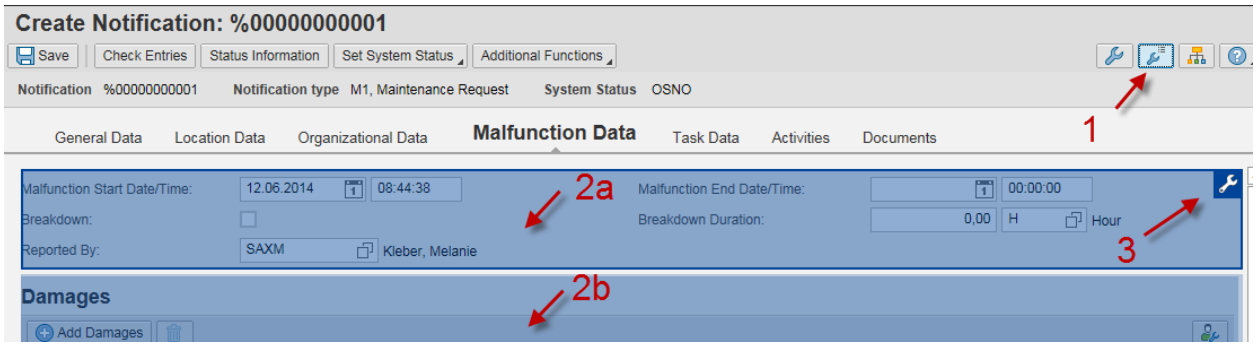
In the configurator you can open a navigation and repository screen area on the left-hand side, where all screens and dialog boxes of the application are listed (1). To work on individual screen elements, such as tabs or UIBBs, you mark the respective line in the *Object Instance Schema*. By choosing the pushbutton *Attributes* you open the corresponding attributes screen area at the bottom (2). In the attributes you can select the checkbox for hiding elements, for example. To create a new customizing for the whole application, you choose *Create Customizing* in the dropdown menu of the pushbutton *Additional Functions* (3).



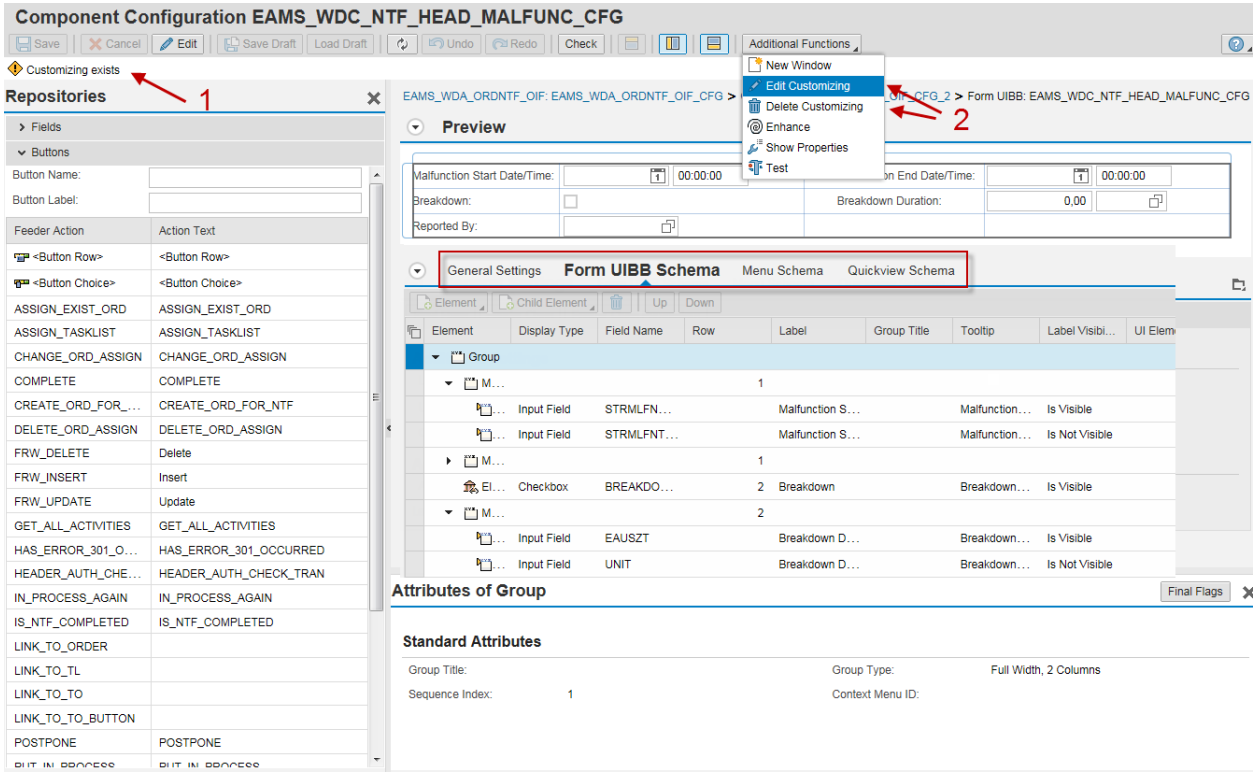
You are now in customizing mode of the configuration, which is indicated by a yellow line at the top of the screen. The changes you make are on client-level and affect all users. You can enter a description in the popup for creating a new customizing for the application. When you have confirmed the popup with the *OK* button, a transport request popup appears, where you can select a transport request for the new customizing.



If you want to make changes to **specific UIBBs**, such as add new fields to a specific screen area, you start your UIBB configuration by choosing the pushbutton *Show Configurable Areas* (1). The system highlights every UIBB in blue (2a, 2b). If you put the cursor in one of the highlighted areas, a new icon is shown in the upper right corner (3).



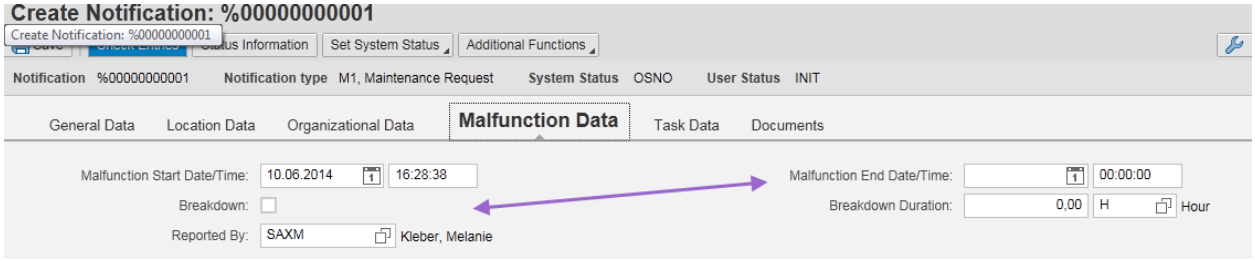
You directly access the configuration of the respective UIBB by clicking on this icon. In this example you open the UIBB configuration for `EAMS_WDF_NTF_HEAD_MALFUNC_CFG`. When you enter the UIBB again after having already created an individual customizing for the respective screen, the system issues a warning message that customizing already exists for that UIBB (1).The component configuration is displayed without the customizing changes. To delete or change the component customizing, select the pushbutton *Additional Functions* and choose *Edit Customizing* or *Delete Customizing* (2) from the dropdown menu.



3.2 Swapping Fields and Adding New Fields

3.2.1 Customizing for Form UIBBs

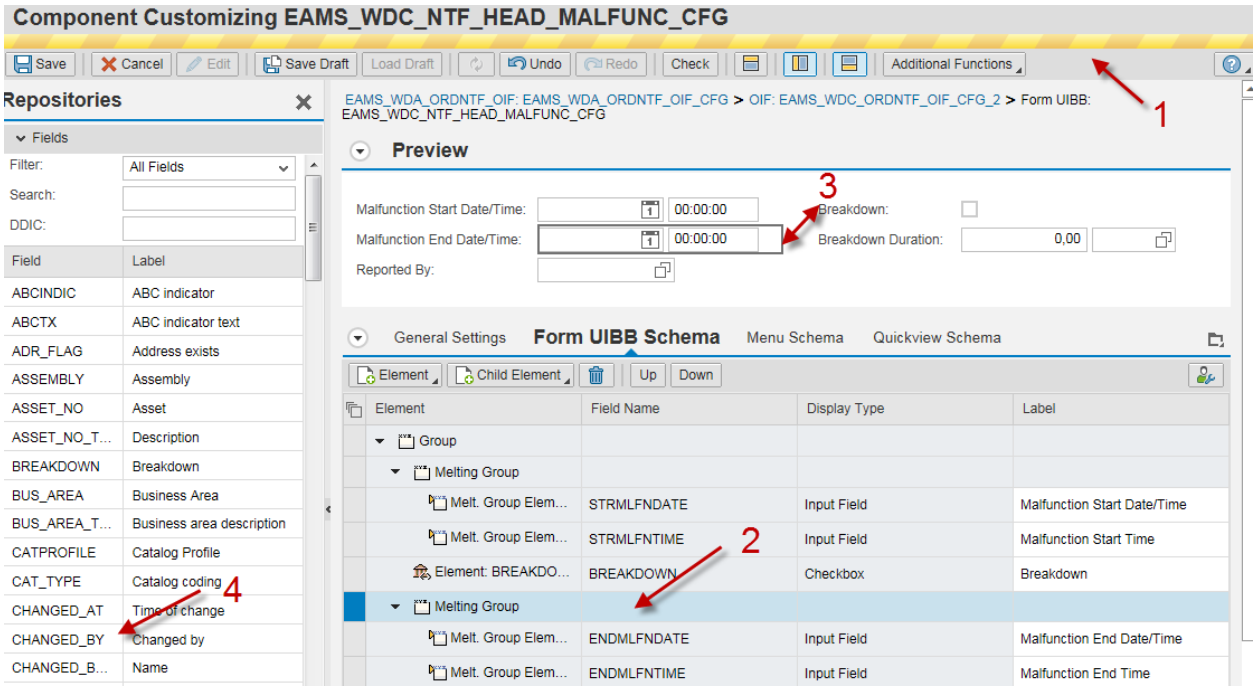
On the SAP Web UI you can easily change the position of fields on the screen. The following example shows how to proceed: On the *Malfunction Data* tab in the notification you want to swap the positions of the field *Malfunction End Date/Time* and the checkbox *Breakdown* on the screen:



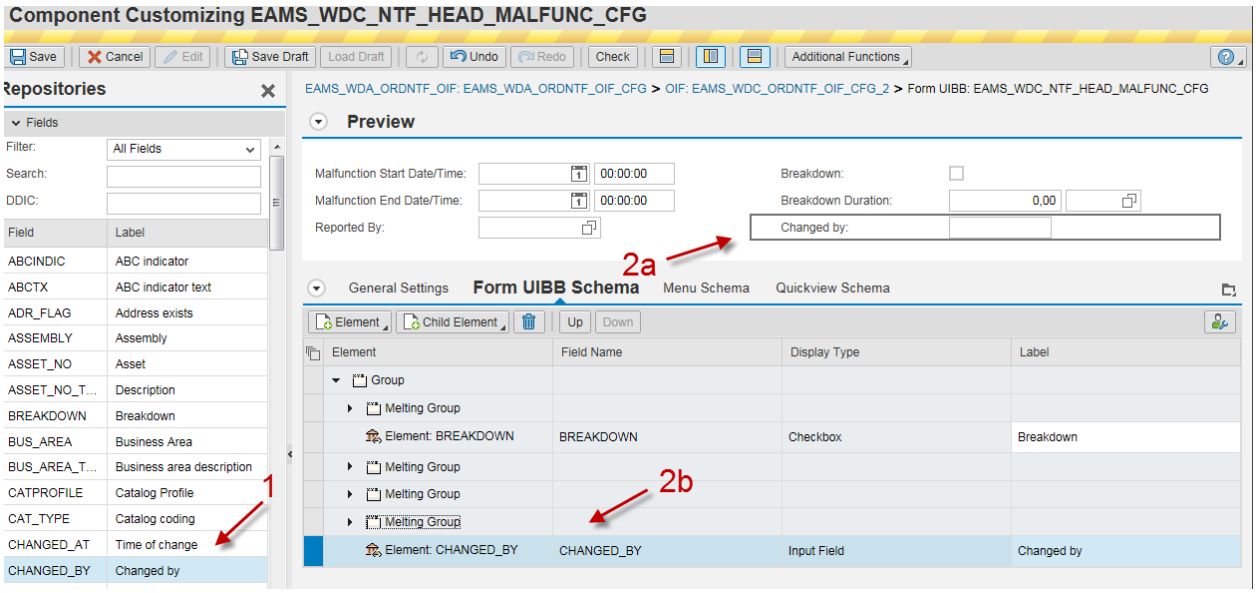
In order to change the position of the fields, you have to create a new customizing or change the existing one. The customizing mode of the configuration is indicated by the yellow line at the top of the screen (1).
For more information about creating and changing the customizing for UIBBs, see chapter 3.1.

When you click on a field in the preview, the corresponding line in the *Form UIBB Schema* is marked (2) and you can move the respective element with the pushbuttons *Up* and *Down* to the new position. Alternatively you can move the fields directly in the *Preview* and swap their positions via drag and drop (3). The system adjusts the list in the *Form UIBB Schema* accordingly.

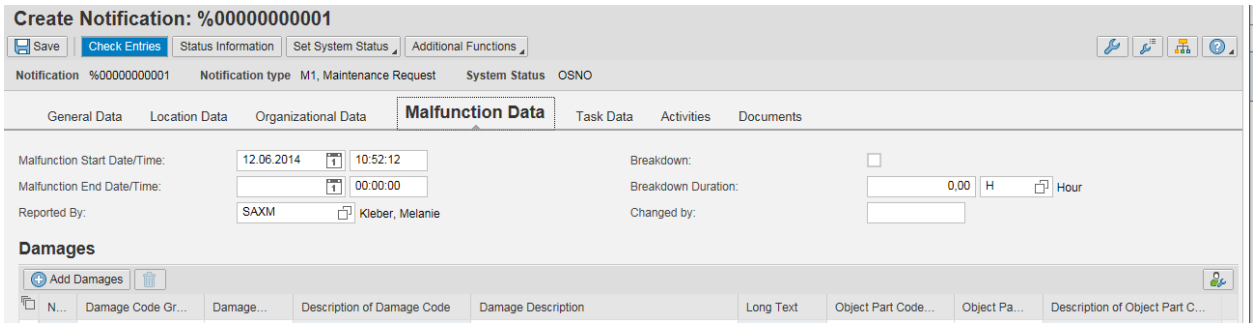
It is not only possible to change the positions of fields that are already displayed on the screen, but you can also add fields to the screen. All available fields are listed in the repository (4) and you can easily add them to the screen by copying them directly to the *Preview* via drag and drop. The system then adds the new fields to the *UIBB Schema* as well.



In this example the field `CHANGED_BY` is added to the preview (2a) and also to the list of the *UIBB Schema* (2b).



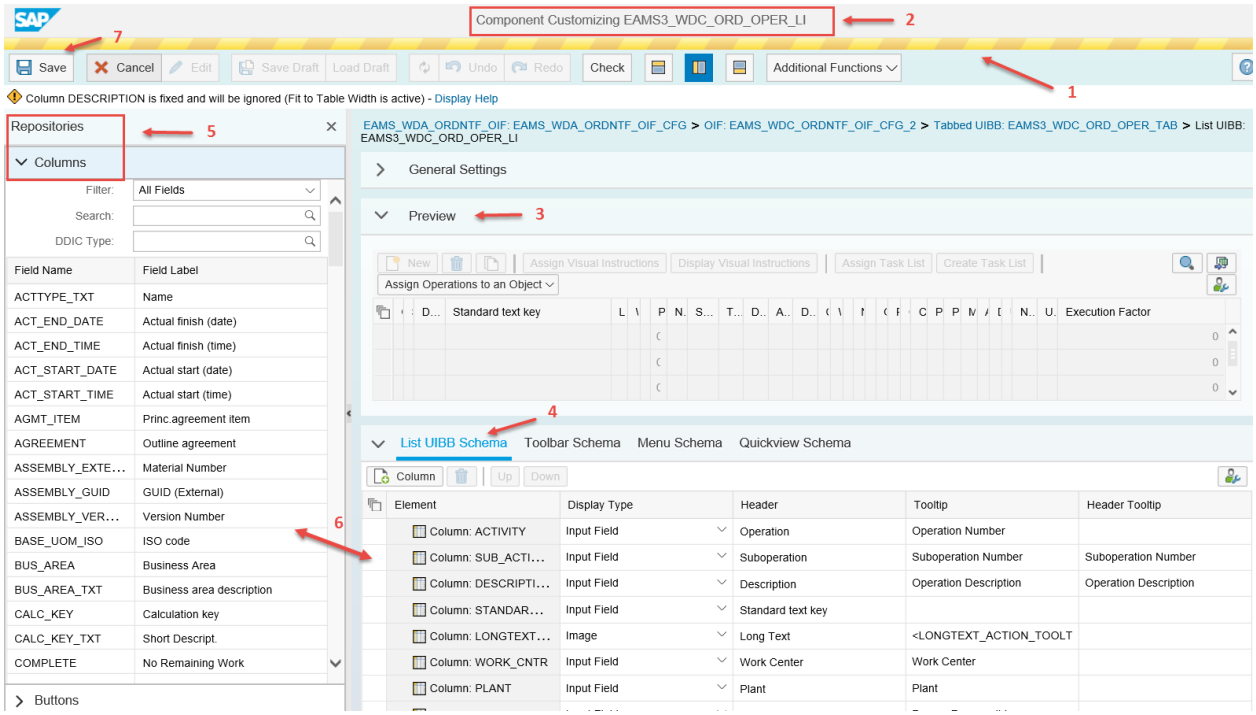
When you make customizing changes in administrator mode, these changes are on client-level and affect all users. When the users choose the *Malfunction Data* tab in the notification, they now know who last changed the data.



3.2.2 Customizing for List UIBBs

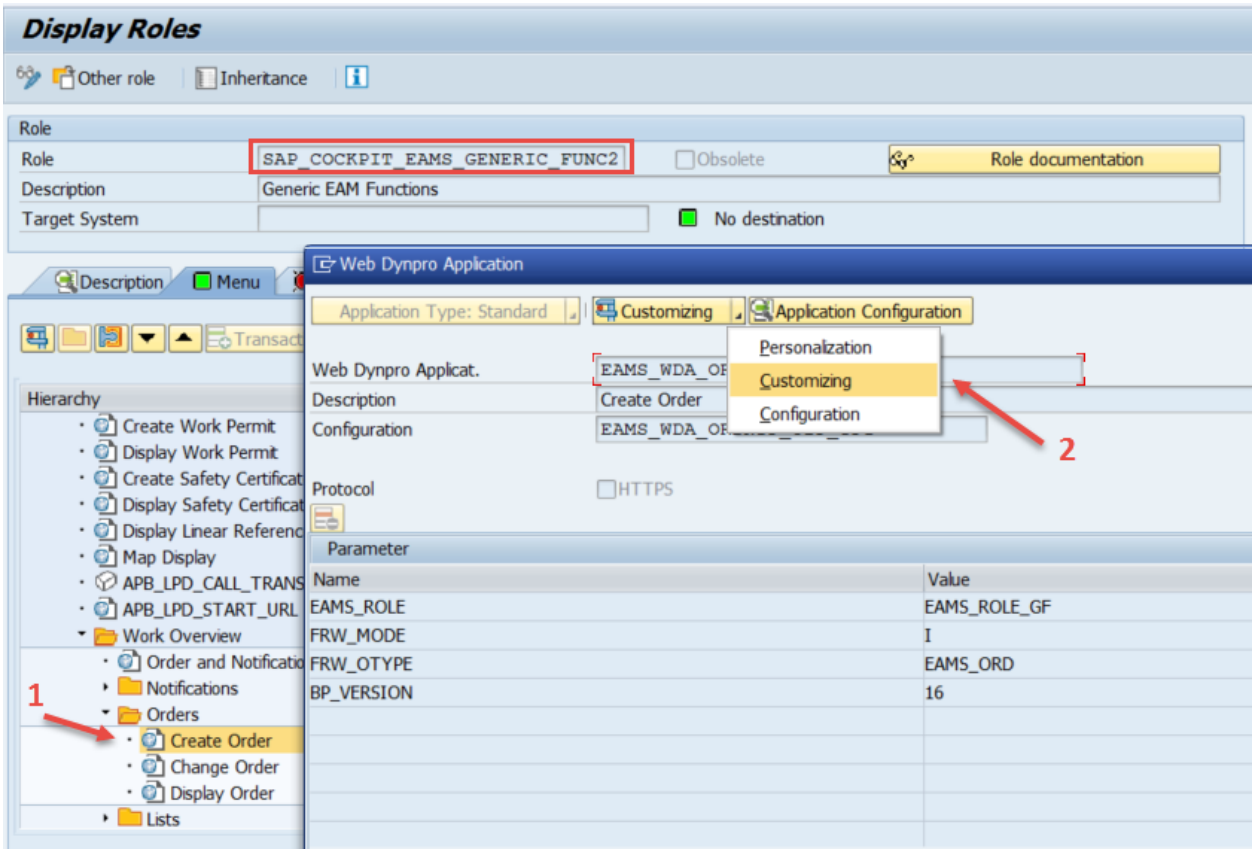
List UIBBs display data in list format. You can hide or rearrange table columns for all users working in the same client. As an example, you want to create a new default view for the *Operation Data* list UIBB of the *Maintenance Order* application. Therefore you enter the customizing mode (1) of the list UIBB `EAMS3_WDC_ORD_OPER_LI` (2). On the right hand you see a *Preview* (3) and further down the *List UIBB Schema* (4) with all columns listed. You can change their order by dragging them to the right place in the *Preview* or by using the *Up* and *Down* button in the List *UIBB Schema*.

If you need additional columns in the *List UIBB Schema* you can get them from the left side (*Repositories, Columns*) (5) with drag and drop. You can also remove columns that you do not need by taking them back from the *List UIBB Schema* to the Repository via drag and drop (6). When you press *Save* (7) you are asked for a transport request.

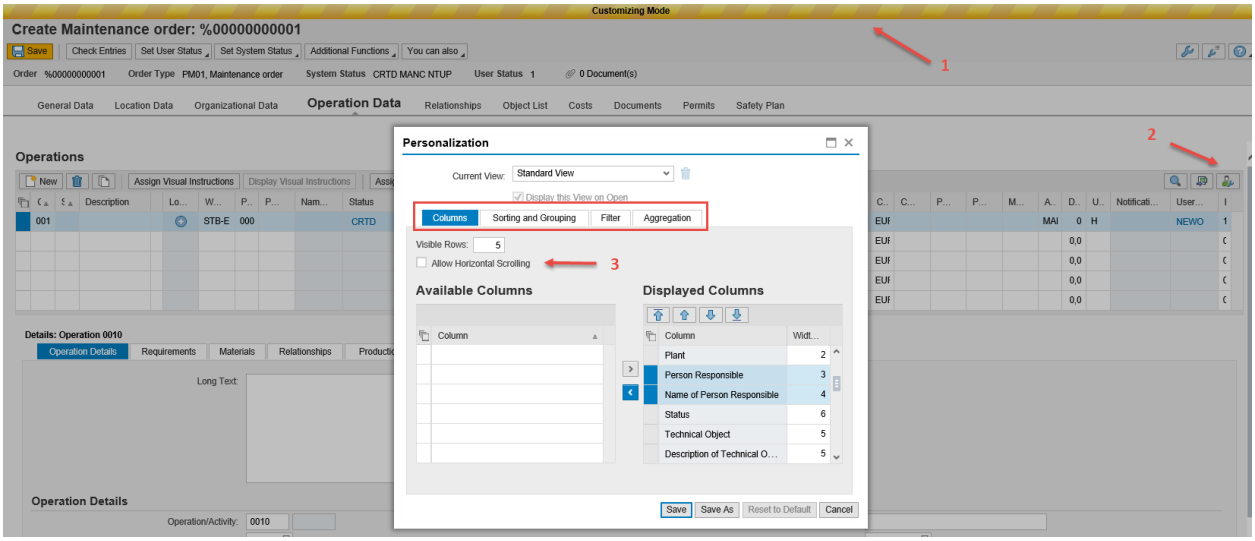


A second way to make personalized view variants available for all users is starting the application in customizing mode out of the PFCG-role. This is done by choosing role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` in transaction

PFCG. On the tab page *Menu* select the folder *Work Overview* -> *Orders -> Create Order* (1) and open the *Details* context menu. The popup shows a dropdown menu on the second menu button where you select *Customizing* (2).



This opens the *Create Order* application in customizing mode (1). Enter the mandatory field values until you reach the tab page *Operation Data*. Choose the button *Personalize* in the *Operations* List UIBB to customize the layout for the current view or to save it as a new view. Additionally you can group and sort columns, or filter and aggregate values. You can also *Allow Horizontal Scrolling* (3) in the list UIBB which is off by default. When you press *Save* or *Save As* you are asked for a transport request.

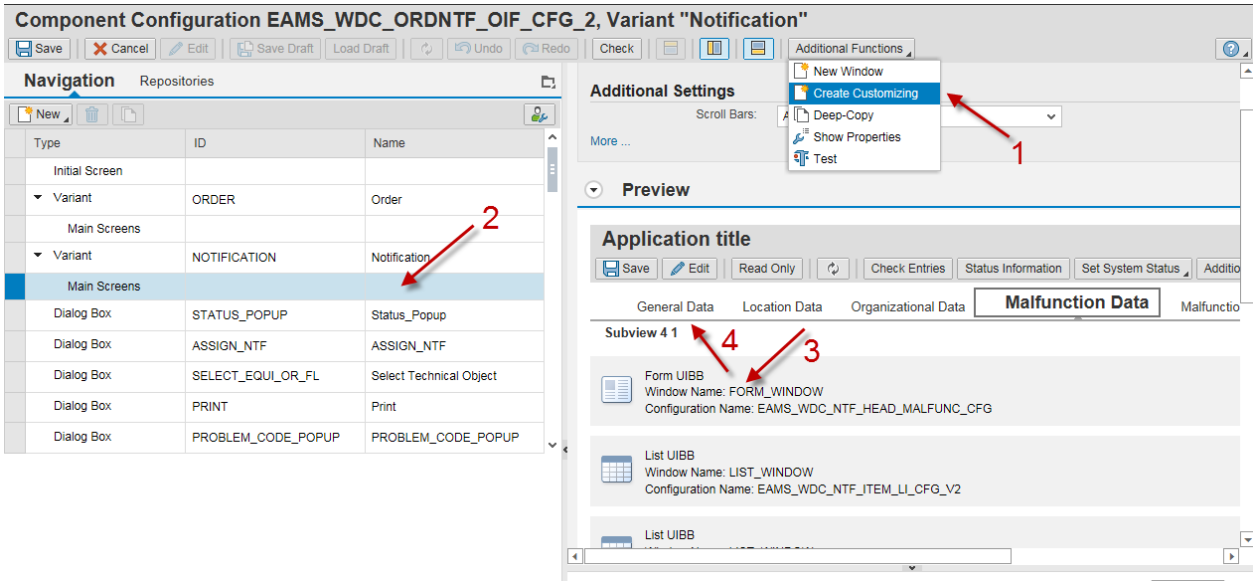


3.3 Adding an Existing UIBB to a Tab

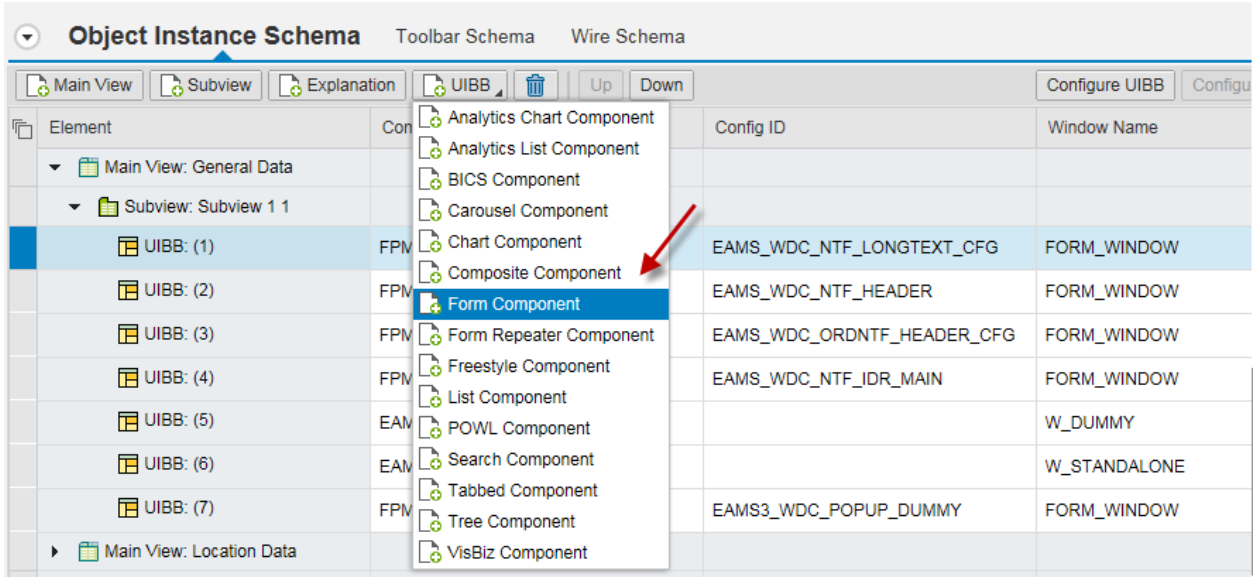
For detailed documentation, see Adding an Existing UIBB to an Application on SAP Help Portal.

To add an existing UIBB to a tab, you directly access the configuration of the respective UIBB by choosing the pushbutton *Configure Page* on the entry screen of the application.
For more information about creating and changing the customizing for UIBBs, see chapter 3.1.

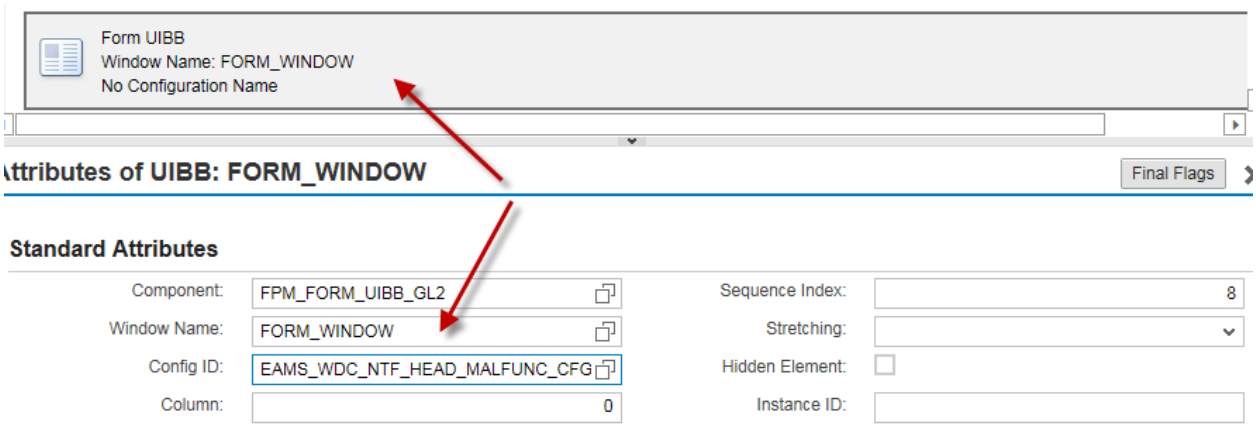
In this example, the malfunction header data UIBB (3) (`EAMS_WDC_NTF_HEAD_MALFUNC_CFG`) will be moved from the *Malfunction Data* tab to the *General Data* tab (4) of the notification (2). This is done also via customizing (1):



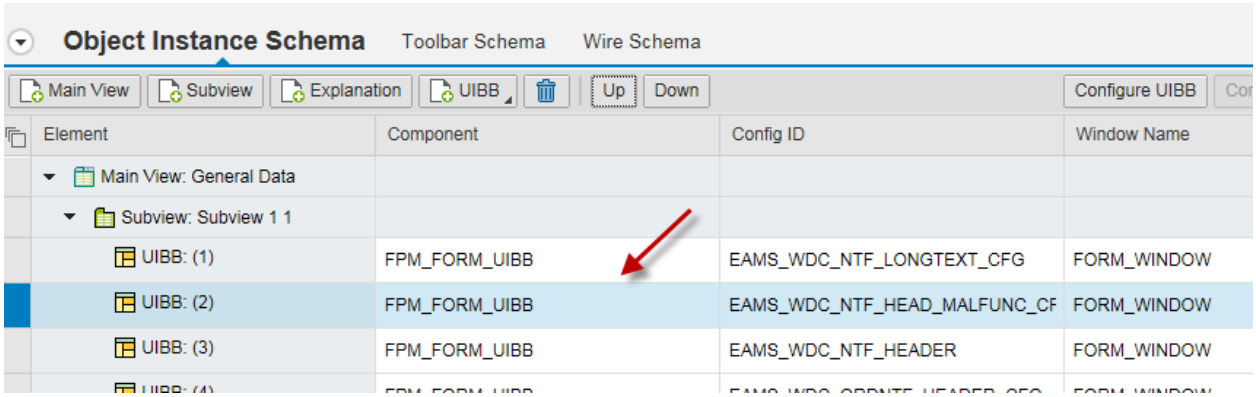
Create a new customizing and open the *Object Instance Schema* and select the *Main View: General Data*, where the existing UIBB will be copied. Open the *UIBB* dropdown menu and choose *Form Component*, since the *Malfunction Data* UIBB is a Form UIBB.



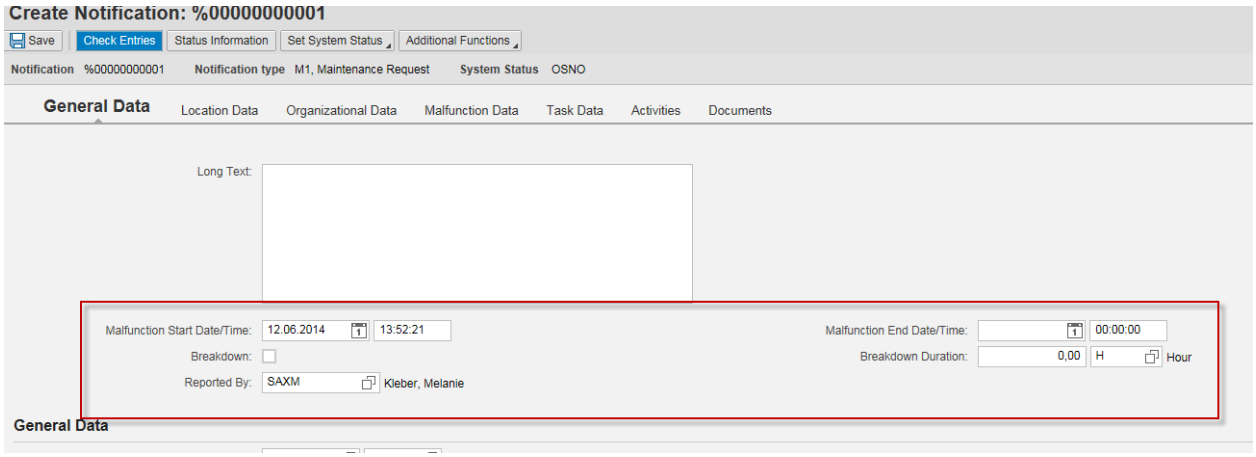
A new Form UIBB is added to the *Subview* List of the *Main View: General Data* and can be seen in the preview. Enter the configuration name of the malfunction header data UIBB in the attributes of the new UIBB:



Determine where the new UIBB is displayed on the screen. In this example, the malfunction header data will be displayed beneath the UIBB *Longtext*.



Save your customizing settings and restart the application: The malfunction header data has been moved to the tab *General Data*.



3.4 Rearranging and Hiding UIBBs

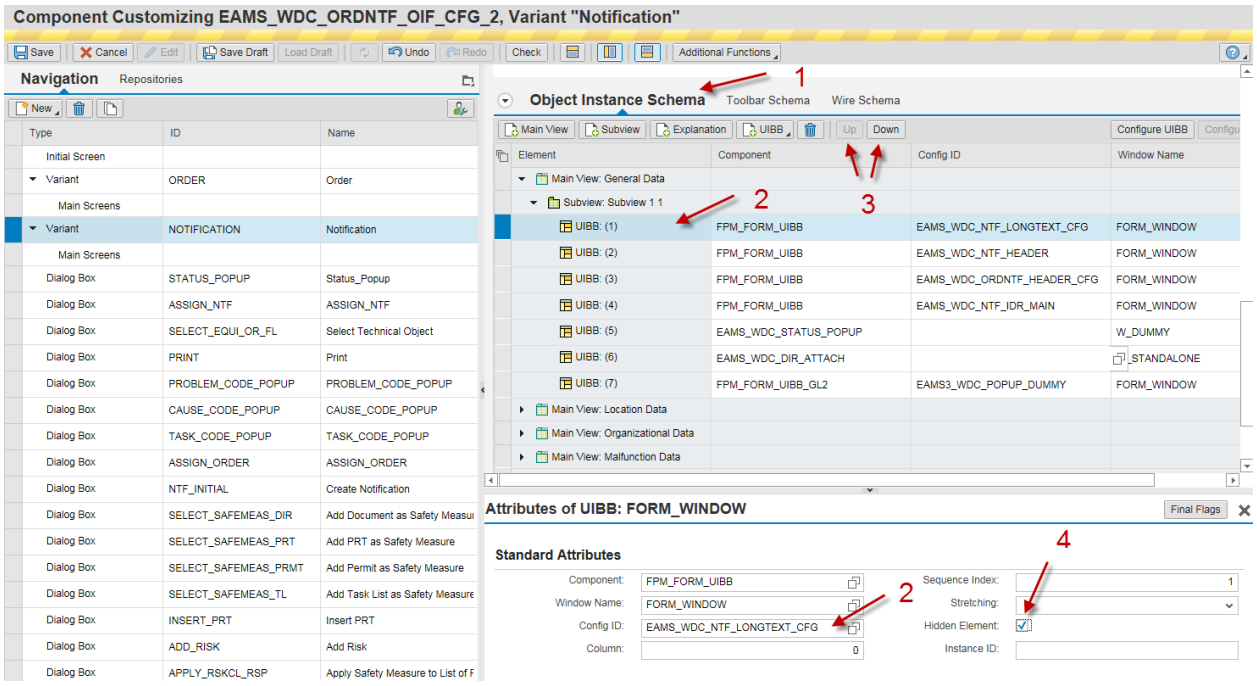
If you want to rearrange or hide UIBBs, access the configuration by choosing the pushbutton *Configure Page* on the entry screen of the respective application. Create a new customizing for the application or change the existing customizing and work in customizing mode.

For more information about creating and changing the customizing of applications, see chapter 3.1

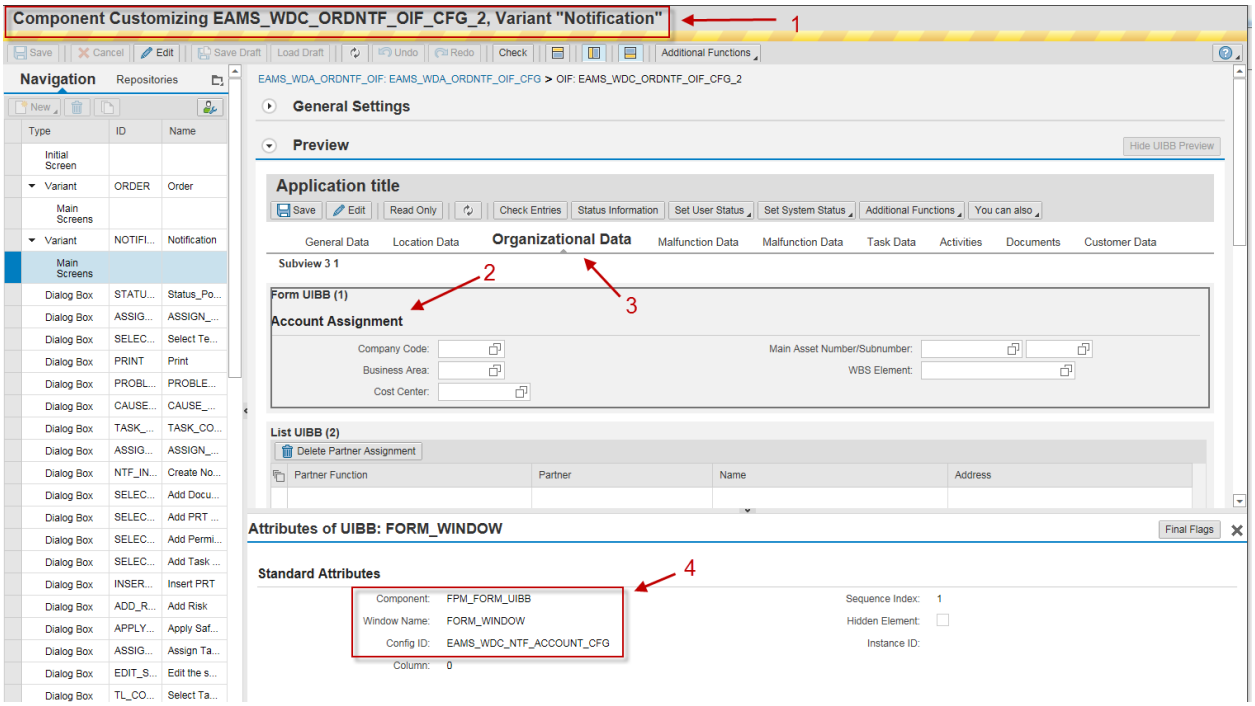
Determine which UIBB you want to change and mark the respective line (2) in the *Object Instance Schema* (1).

If you want to **move the UIBB** to another position, you can do this by clicking on the *Up* and *Down* pushbuttons (3). In our example, we will move the Long Text UIBB.

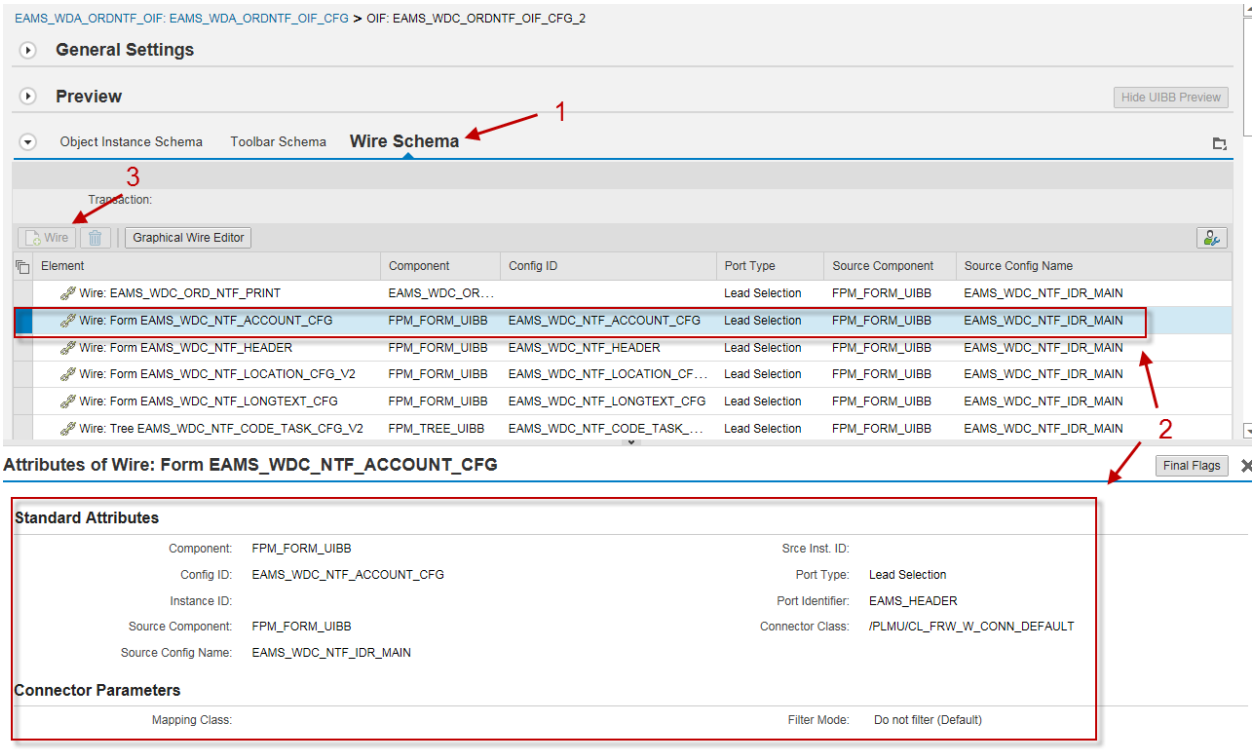
If you want to **hide the UIBB** choose the pushbutton *Attributes* and open the corresponding attributes screen area. Select the checkbox *Hidden Element* (4) in the attributes of the UIBB.



If you have moved a UIBB from one tab to another, the wiring of the UIBB might not be set properly. This can result in fields not opening when the edit or create mode of the application is set. Here we shall take a look at UIBB *Account Assignment* (2) located on tab *Organizational Data* (3) in the *Component Customizing* for the notification (1). The attributes show `Component`, `Window Name` and `Config ID` (4).



To check or enhance the wiring of this UIBB, switch to tab *Wire Schema* (1) in the customizing mode of the configuration. Look for the `Config ID` of the UIBB and make sure that all fields of this line are filled according to the screen shot (2). If the line does not exist, create it using button *Add Wire* (3). You must always enter the standard connector class as `/PLMU/CL_FRW_W_CONN_DEFAULT`. The identification region UIBB (`EAMS_WDC_NTF_IDR_MAIN`) is often reliable as a source configuration because it delivers the header data of the application and is available for every tab.

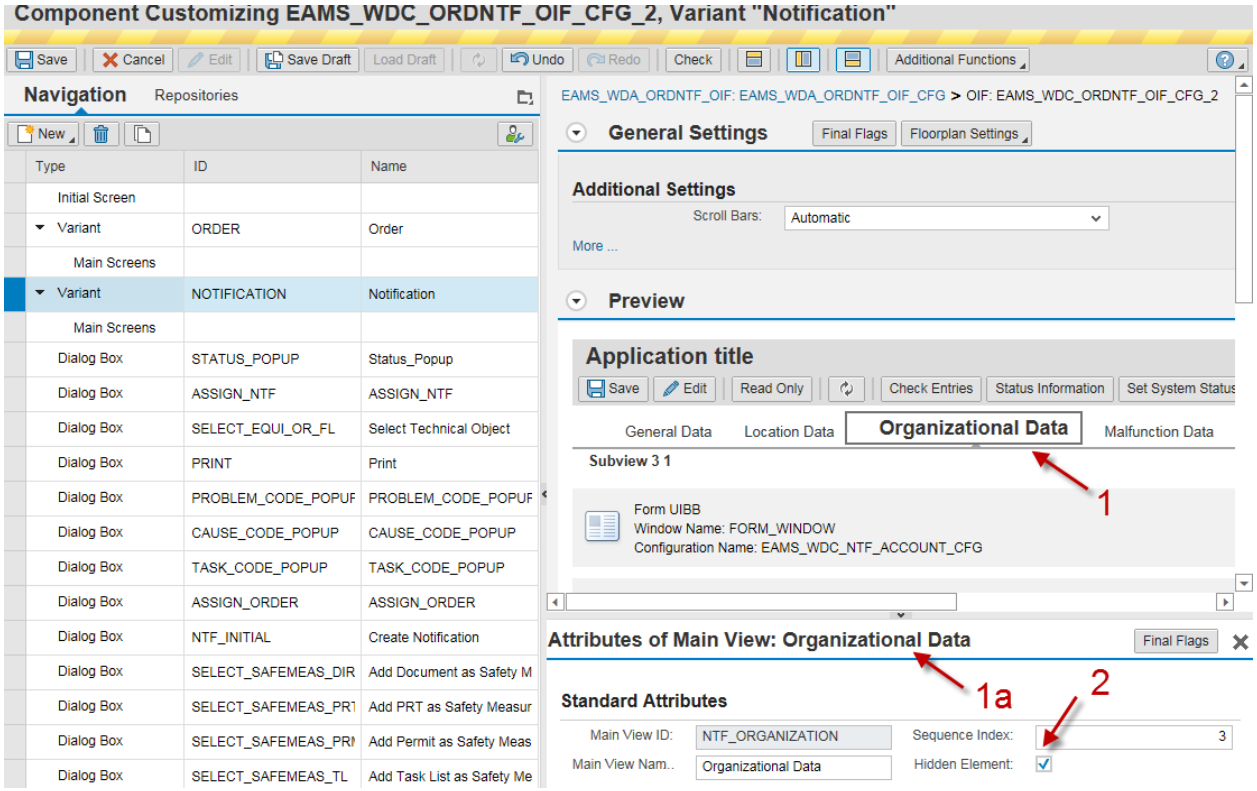


3.5 Rearranging and Hiding Tabs

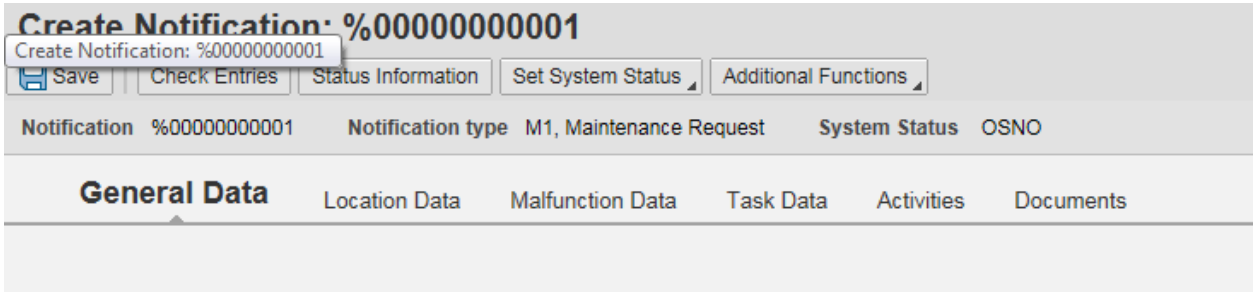
If you want to rearrange or hide tabs, access the configuration by choosing the pushbutton *Configure Page* on the entry screen of the respective application. Create a new customizing for the application or change the existing customizing and work in customizing mode.

For more information about creating and changing the customizing of applications, see chapter 3.1

Select the tab you want to hide in the *Navigation* screen area. In this example, the tab *Organizational Data* (1) will be hidden. Open the *Attributes* screen area and select the checkbox *Hidden Element* (2) in the attributes (1a) of the view for *Organizational data*.

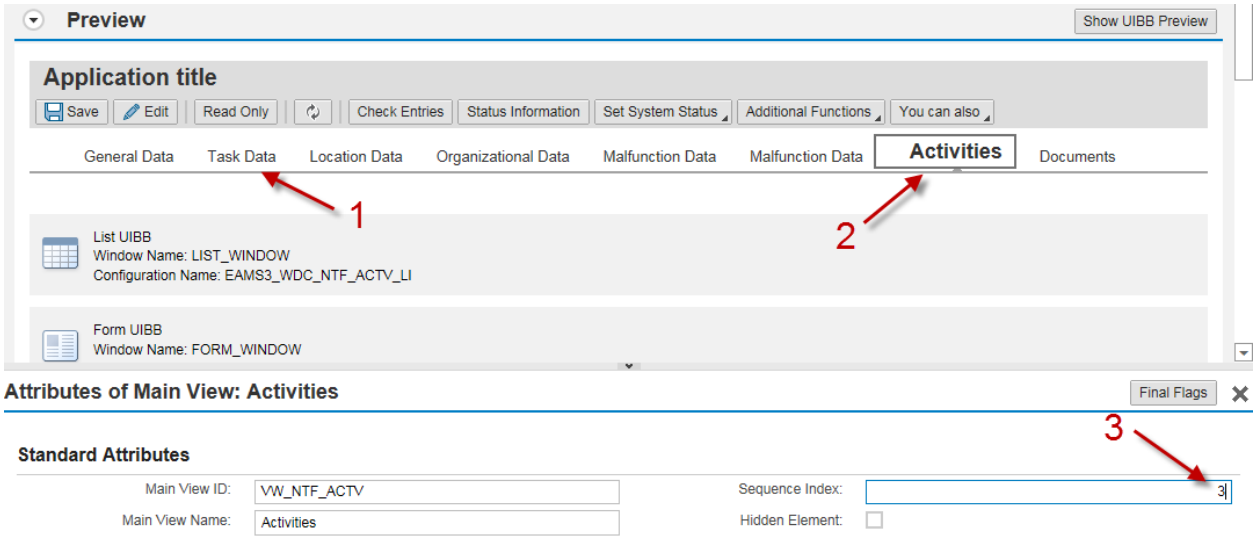


Save your customizing settings and restart the application. In the notification, the tab *Organizational Data* is hidden, so that the tab *Malfunction Data* now immediately follows the tab *Location Data*:

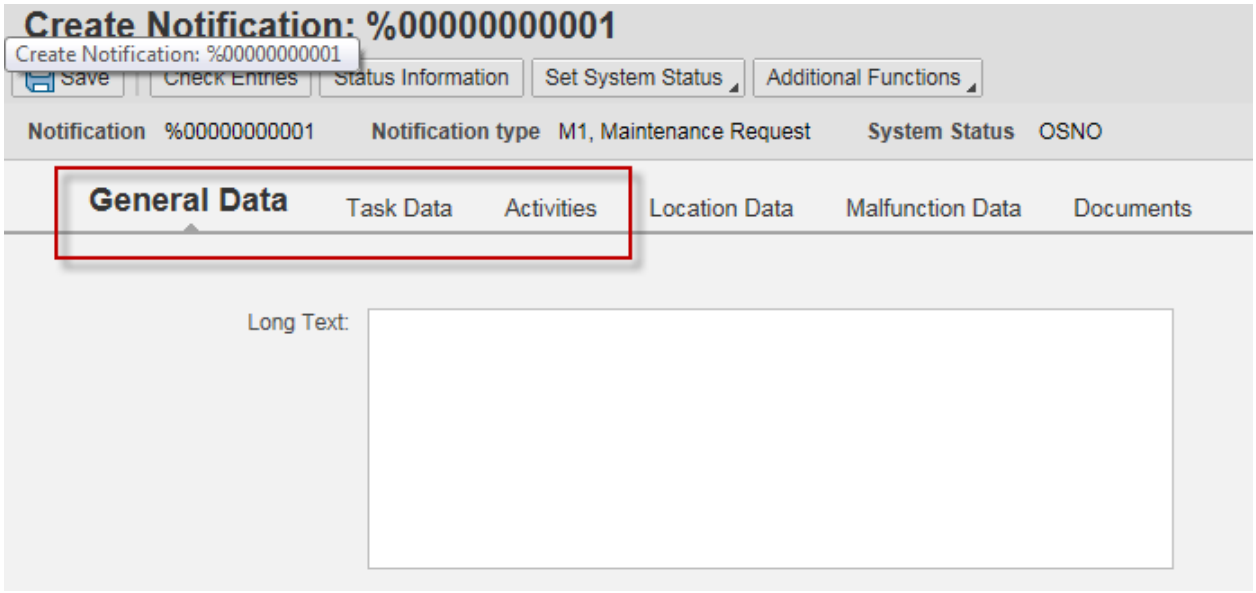


To change the sequence of tabs in an application, use the sequence index in the *Attributes* screen area (1). In this example, the tabs *Task Data* and *Activities* will be positioned directly after the tab *General Data*. Mark the tab that

you want to move in the *Preview* screen area and change the sequence index in the *Attributes* accordingly. In our example, the *Task Data* sequence index has already been changed to *2* and the system shows the tab right after the *General Data* tab (1). The sequence index for *Activities* (2) is currently changed to *3* (3):



Save your customizing settings and restart the application. Since the tab *Organizational Data* is hidden and the tab sequence is changed, the tabs in the notification look like this:

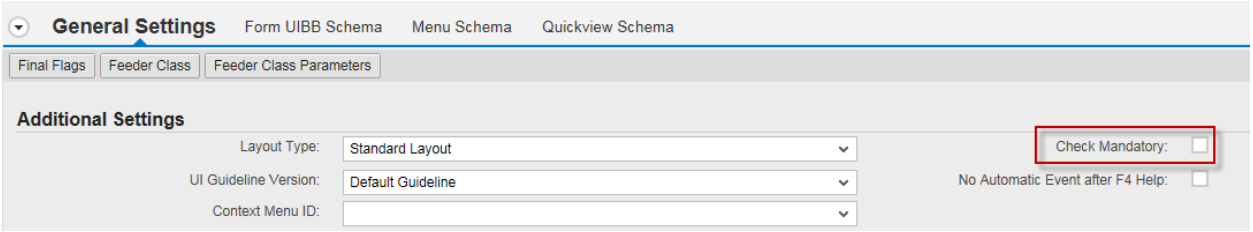


3.6 Defining a Field as a Required Entry Field

If you want to define a specific Web UI field as a required entry field, you have to change the properties of this field. To do so, you need to implement two Business Add-Ins (BAdIs) in enhancement spot /PLMB/ES_SPI:

- In the BAdI /PLMB/EX_SPI_PROPERTIES_ACCESS (*Adjustment of Properties for Service Provider Access Methods*) you define the field properties and define the field as a required entry field.
- In the BAdI /PLMB/EX_SPI_APPL_ACCESS (*Adjustment of Data for Service Provider Access Methods*) you can implement the checks and error messages for the required entry field.

If you do not need to define your own error messages, you can select the *Check Mandatory* checkbox in the *General Settings* of the UIBB configuration.



If you select this checkbox, the system checks on Web Dynpro level if user entries exist for all required entry fields. If user entries are missing, the system issues standard error messages.

3.7 Rearranging, Hiding, and Adding Actions

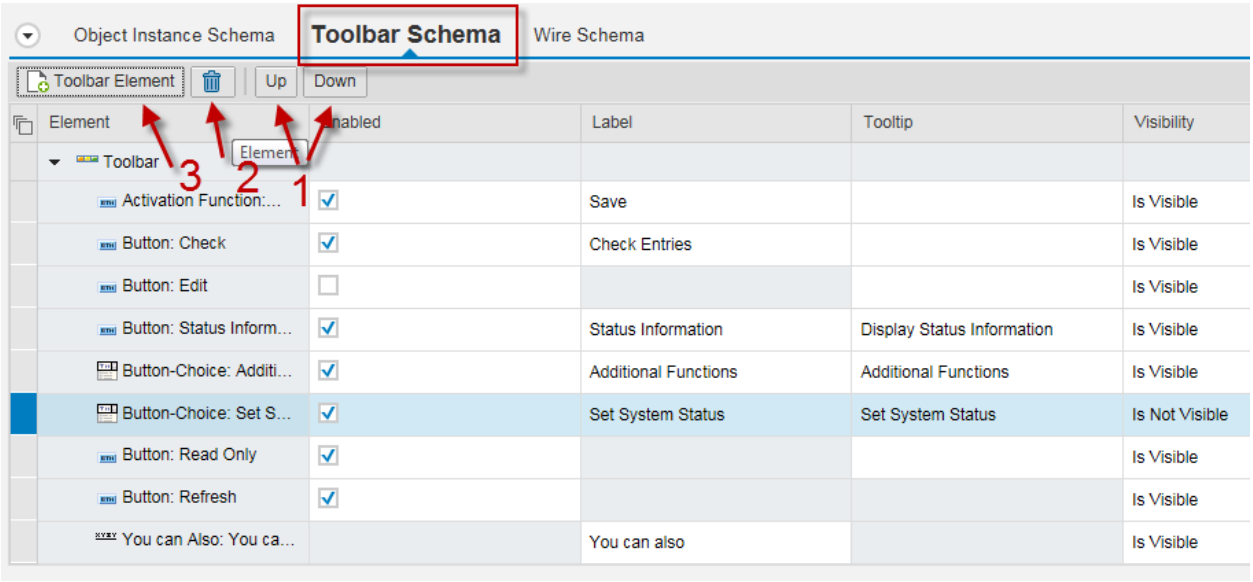
3.7.1 Rearranging and Hiding Actions

You can easily rearrange buttons on the Web UI in the customizing of an application. To do so, access the configuration by choosing the pushbutton *Configure Page* on the entry screen of the application.

For more information about creating and changing the customizing of the whole application, see chapter 3.1

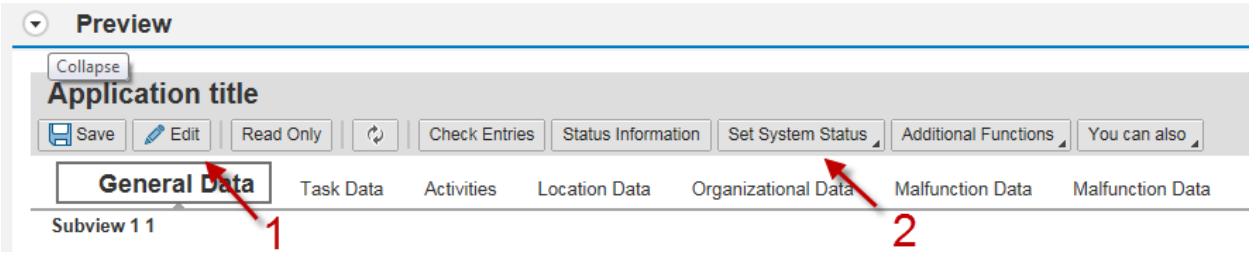
In the third section of the component configuration, choose the tab *Toolbar Schema*. In the *Toolbar Schema* you get an overview of all toolbar elements of a specific application with their labels and tooltips. You can change the sequence and specify whether specific toolbar elements should be visible or enabled.

To **change the sequence of the buttons** in the toolbar, you mark the line with the corresponding toolbar element and move it with the pushbuttons *Up* and *Down* (1) to the new position. The trash can (2) deletes the line completely and deactivates the respective toolbar element on the Web UI screen. If you want to add preconfigured actions or your own buttons, choose the pushbutton *Add Toolbar Element* (3).

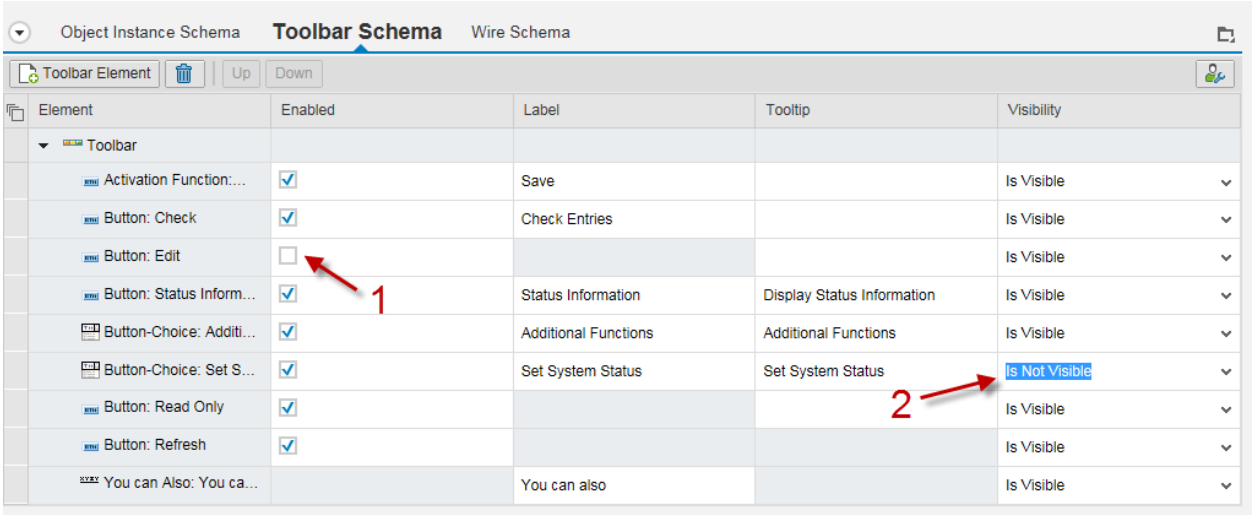


To **hide or deactivate a toolbar element** you make the following settings: To hide an element, you set the *Visibility* to *Is Not Visible*. To deactivate the element, you deselect the checkbox in the table column *Enabled*.

In this example you want to deactivate the button for *Edit* (1) and hide the button (and dropdown menu) *Set System Status* (2):



You therefore deselect the checkbox *Enabled* (1) for the *Edit* button and set the *Visibility* of the toolbar element *Button-Choice: Set System Status* to *Is Not Visible* (2):



3.7.2 Creating and Adding Actions

If you want to create or add **actions that affect the UI**, you have to define these actions in the feeder class of the UI. You implement UI-specific actions in method `AFTER_GET_DATA` and execute the modification in the feeder class as an *Enhancement Implementation*. To find out the feeder class, see chapter 3.8

If you want to create or add **actions that affect back-end data**, you need to implement two Business Add-Ins (BAdIs) in enhancement spot `/PLMB/ES_SPI`:

- In the BAdI `/PLMB/EX_SPI_METADATA` (*Enrichment of Node Definition*) you can create additional nodes or enhance a standard node with your own actions or queries. In the BAdI method `ENRICH_NODE_DEFINITION` you can define a new action and specify a unique name for it in the changing parameter `CT_METADATA_NODE`.
- In the BAdI `/PLMB/EX_SPI_APPL_ACCESS` (*Adjustment of Data for Service Provider Access Methods*) you implement the new action. You implement the new logic in BAdI method `BEFORE_ACTION`. You have to set the changing parameter `CV_SKIP_STANDARD` to 'X' to avoid dumps in the SPI-framework.

After you have defined the actions in the feeder class or BAdI, the action is displayed as a toolbar element in the actions list of the *Toolbar Schema* and can be added to the Web UI screen in the *Component Customizing*.

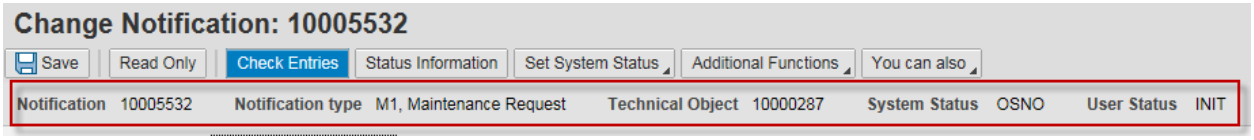
For more information about the UI configuration, see Adding a New Button to the Toolbar in an Application.

For more information about the SPI BAdIs, see SPI Enhancements.

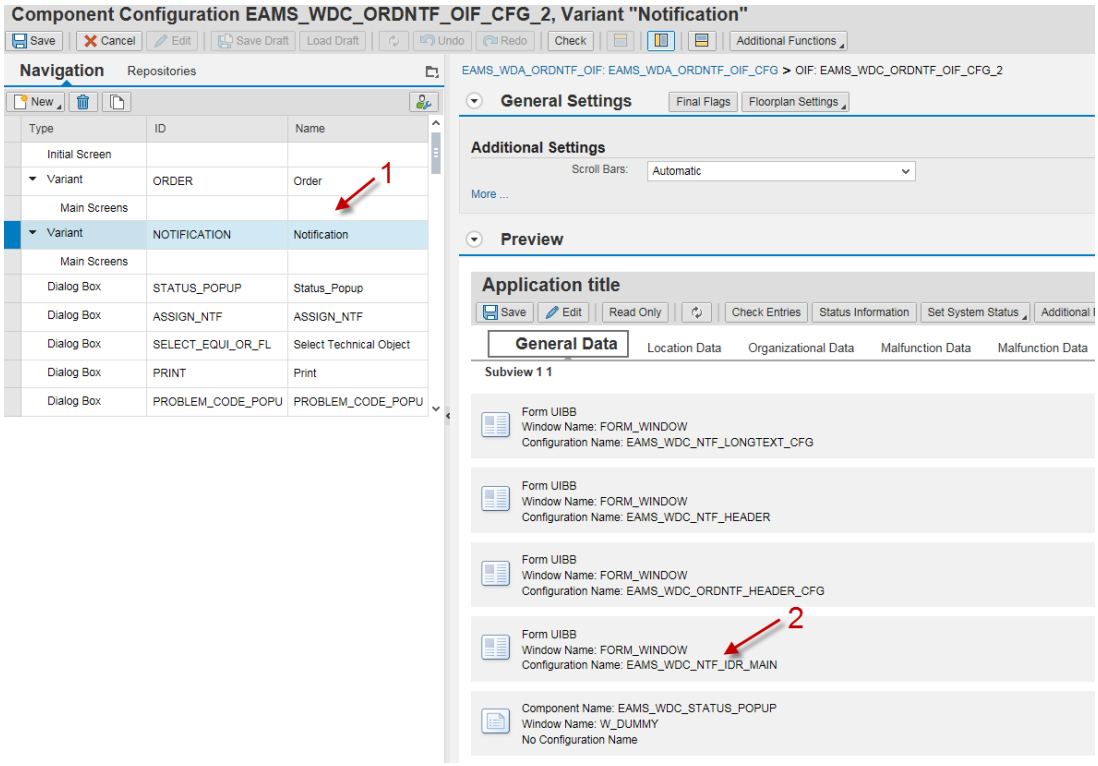
3.8 Changing the Identification Region (IDR)

On the Web UI, the system usually shows important application information, such as technical names of assigned objects and statuses, in an identification region. The information shown is not dependent on the tab you are currently working on.

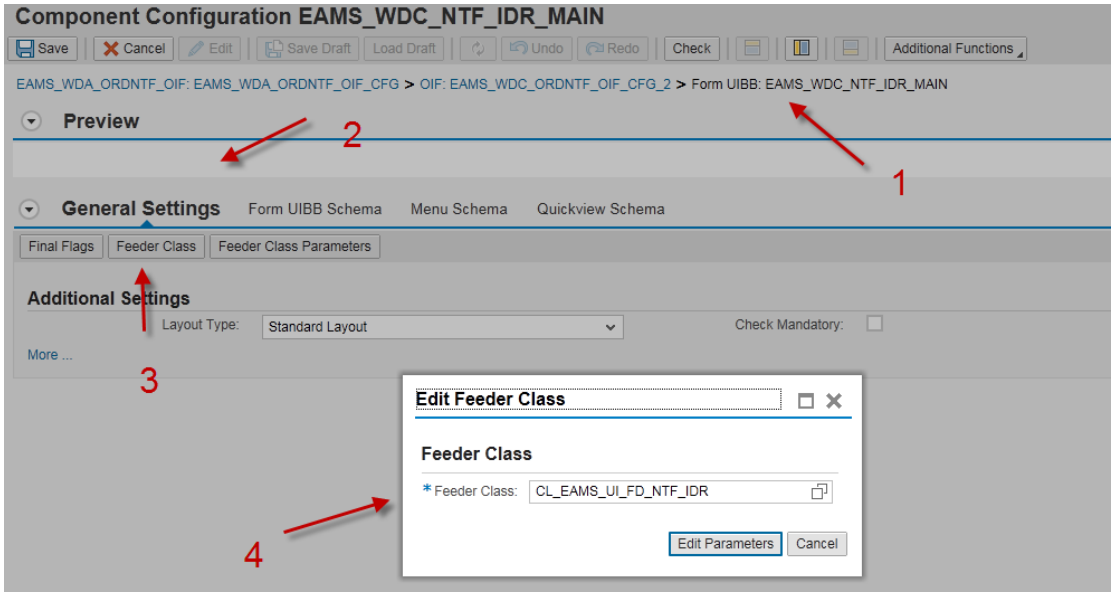
For more information about the identification region, see Identification Region (IDR) of GAF and OIF Applications in the SAP Library.



You cannot enhance or change the information shown in the identification region in customizing, but rather have to do modifications in method `/PLMU/IF_FRW_G_AFTER_GET_DATA~AFTER_GET_DATA` in the feeder class of the corresponding application. You can find out the name of the respective feeder class by clicking on the *Configure Page* and accessing the component configuration of the application. In this example you select the notification variant (1). In the *Preview* section you find all UIBBs that are part of the *General Data* tab on the Web UI screen. Select the UIBB that has *IDR* in the configuration name (2) und open the configuration with *Configure UIBB*.



When you open the configuration `EAMS_WDC_NTF_IDR_MAIN` (1) the *Preview* section is empty (2). On the tab *General Settings* you can click on the *Feeder Class* button (3) to see the feeder class name (4). In transaction `SE24` (*Class Builder*), you can open the feeder class in change mode and do the respective changes.



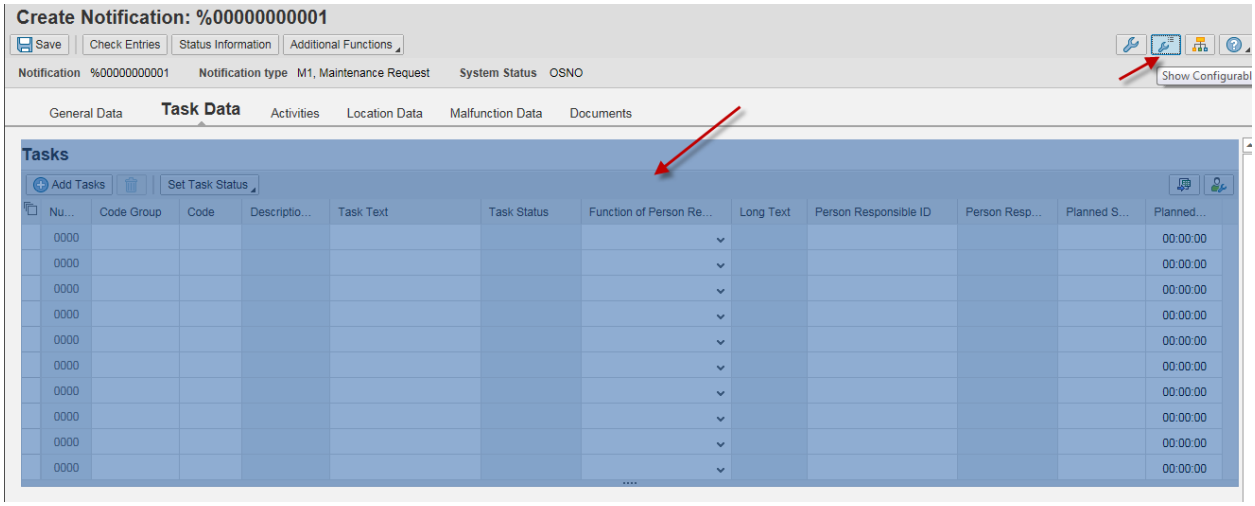
If you know the name of the corresponding feeder class, you can also modify the information shown in the identification region with Business Add-In (BAdI) `/PLMU/EX_FRW_CONSUMER_APPCC` (*OIF Application Controller*). For more information about BAdIs, see chapter 13.1.

You can also define your own IDR feeder class, which changes the reference to the IDR instance.

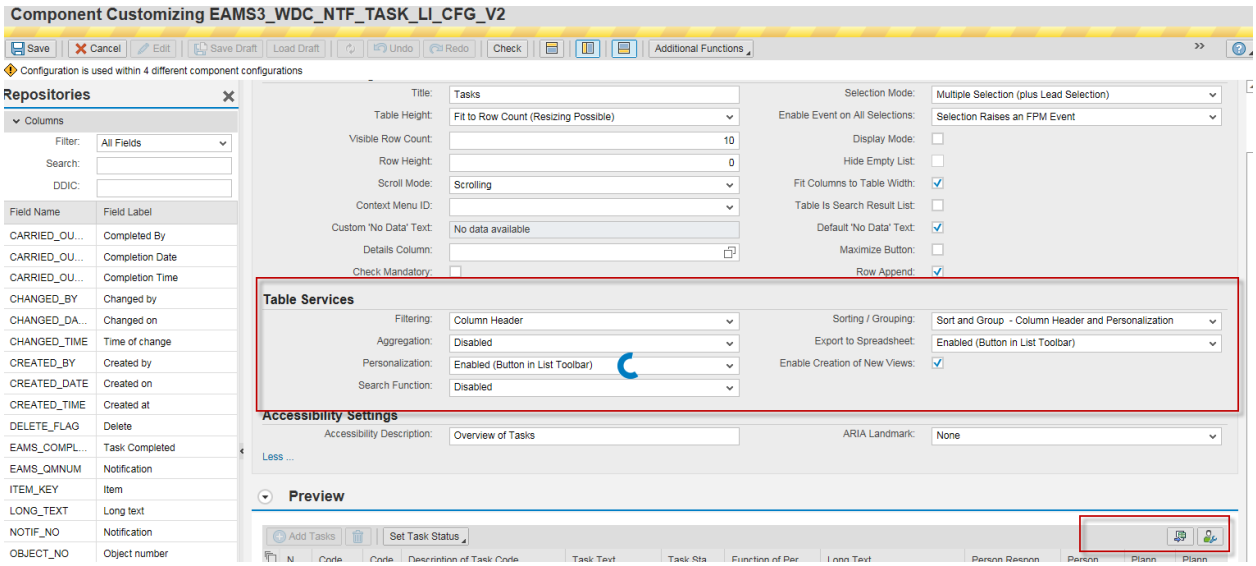
3.9 General Settings for LIST UIBBs (powered by ATS)

In the Business Function *Simplified Management of EAM Functions 3* (`LOG_EAM_SIMPLICITY_3`) the system uses the generic design template *List ATS* (advanced table service) *component* to display data in lists. The List ATS component offers enhanced functions for personalizing lists and sorting, grouping, filtering, and aggregating data. Furthermore, you can see your search results highlighted in the table, export tables to spreadsheets, and save your personal table settings as your own personal view.

As an administrator you can hide or disable functions in each tabular list, such as the functions for adding up table entries or exporting tables to a spreadsheet. To access the general settings of a list UIBB, select the *Show Configurable Areas* pushbutton, then put the cursor in one of the highlighted areas and select the icon in the upper right corner.

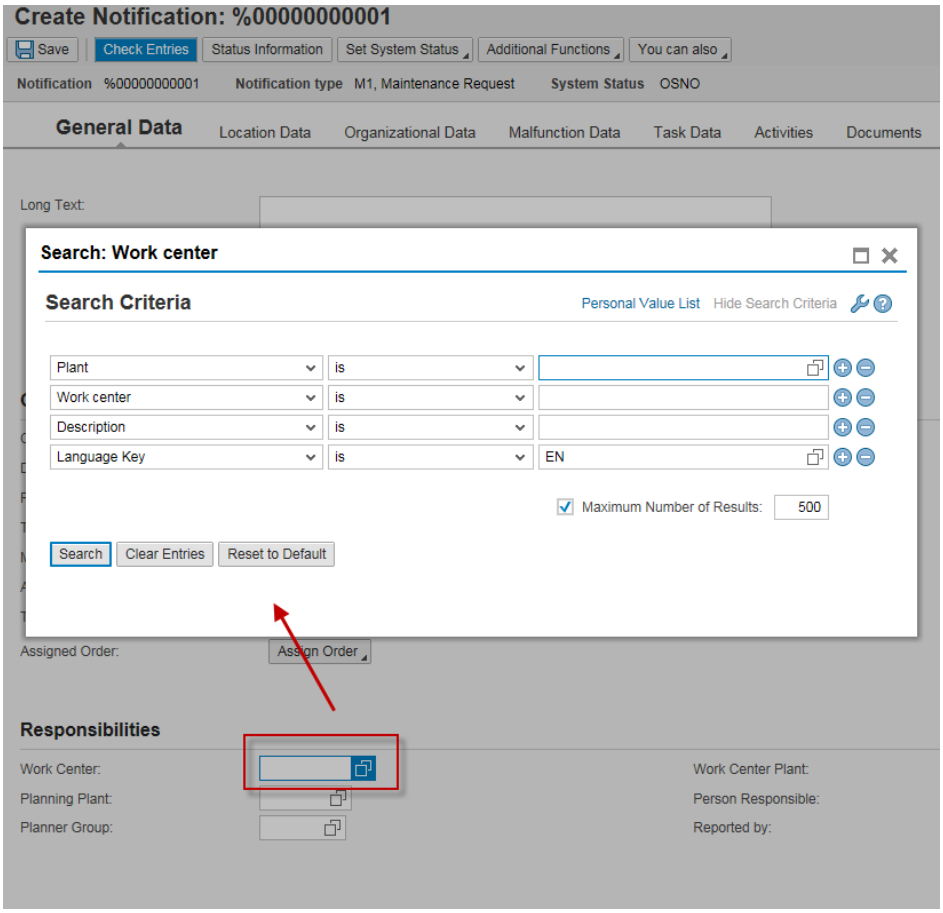


In this example you create or edit the customizing for the list UIBB `EAMS3_NTF_TASK_LI_CFG_V2` on the tab *Task Data* in the notification. In the section *Table Services* you can modify the settings. In our example the search functionality and the data aggregation are currently disabled, whereas exporting data to a spreadsheet and creating personalized views are enabled for the users.

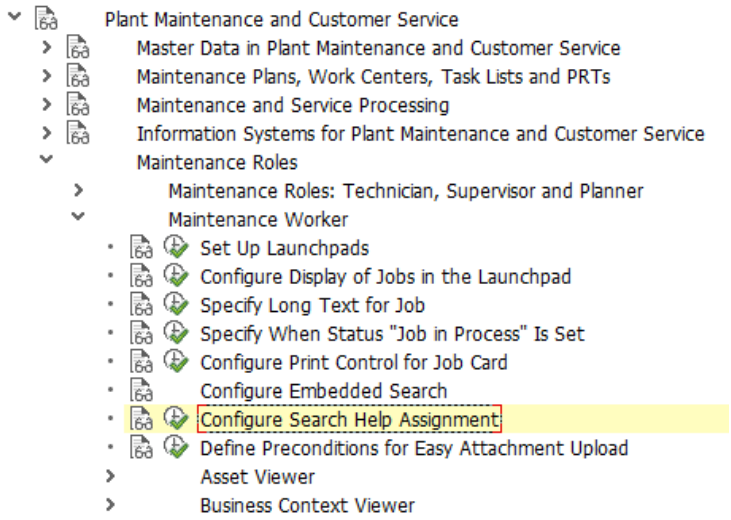


3.10 Assigning a Different Search Help to a Web Dynpro Field

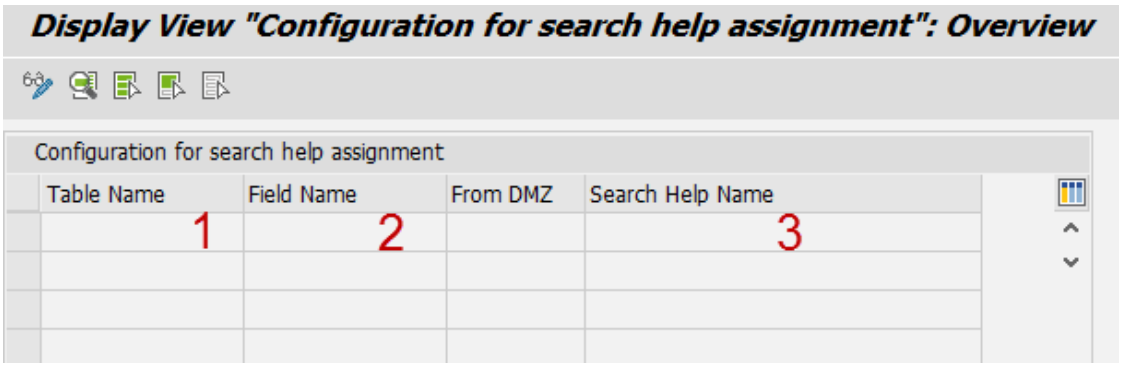
On the SAP Web UI for Plant Maintenance you can replace the SAP standard search help for every single field with an individual search help. In our example you want to change the SAP standard search criteria for the responsible work center on the *General Data* tab page in the notification. The SAP standard search criteria are the fields *Plant, Work Center, Description* and *Language Key*. You want to additionally provide the search criterion *Work Center Category*.



To change the search help criteria for a field you have to assign a new search help object to the respective field in customizing for *Plant Maintenance and Customer Service* under *Maintenance Roles → Maintenance Worker → Configure Search Help Assignment* (view `V_EAMSC_UI_SHLP` in transaction `SM30`).



Since a field can be used in several structures you always assign the new search help (3) to a combination of the technical name of the field (2) and the data structure that contains this field (1).

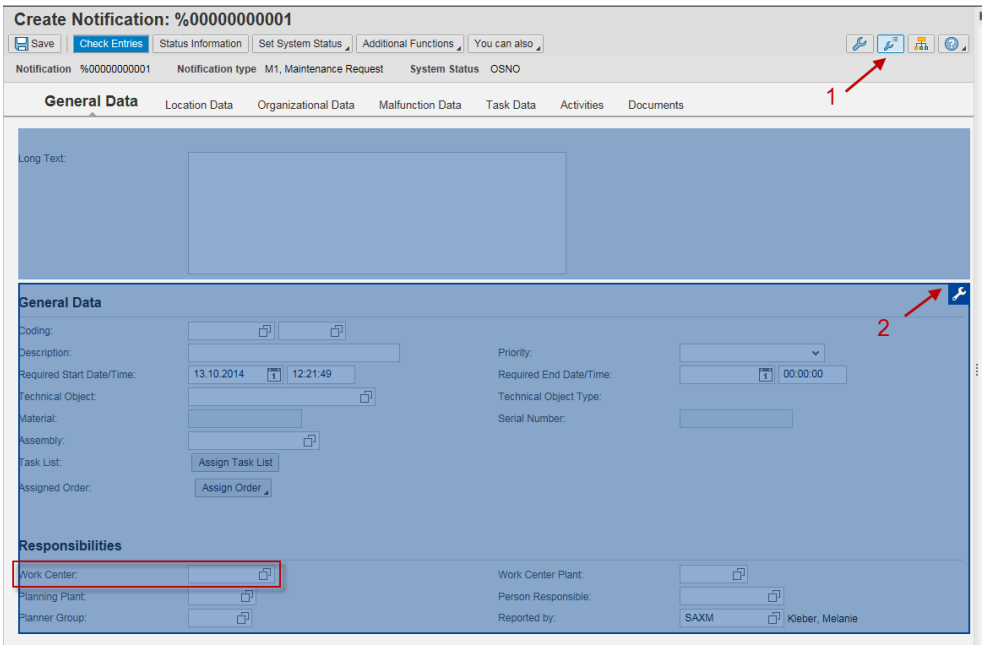


To assign a new search help to a UI field you have to determine the following data:

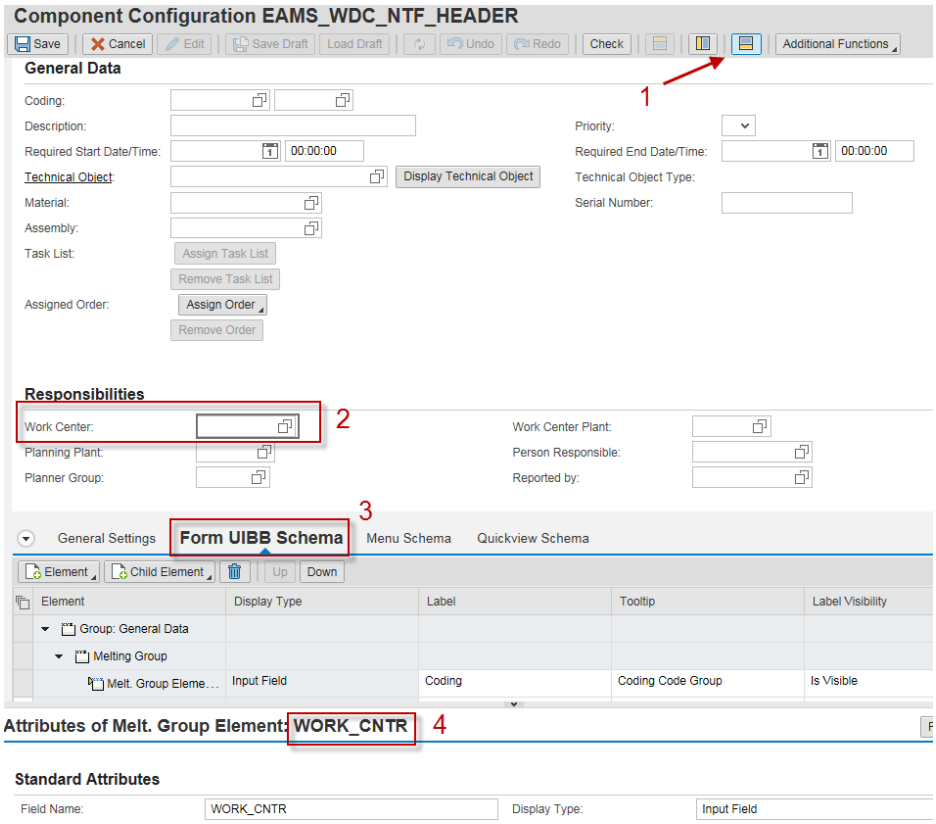
- the technical name of the field
- the data structure that contains the field
- the new search help (you can either assign an existing one or create a new one)

Specifying the Technical Name of the Field

In a first step you have to find out the technical name of the field to which you want to assign a new search help. In this example you open the *Create Notification* Application in NWBC and choose the *Show Configurable Areas* button (1). Then you start the configuration of the UIBB in which the field *Work Center* is located (2).



Enter the component configuration screen of the UIBB. In the section *Attributes* (1) you can identify the technical name of the field *Work Center* (2) as `WORK_CNTR` (4).



Specifying the Data Structure that Contains the Field

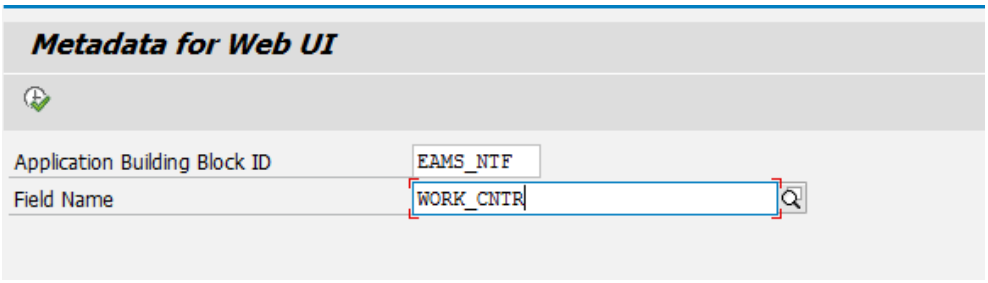
To find out the technical name of the structure, start the Z-report as described in Appendix 15.10. On the entry screen of the report you have to enter the **Field Name** and the **Application Building Block ID** (ABBID).

For EAM maintenance notifications the application building block ID is `EAMS_NTF`. The following table lists the most important application building block IDs, which are the IDs for so-called 'nodes' in WEB UI.

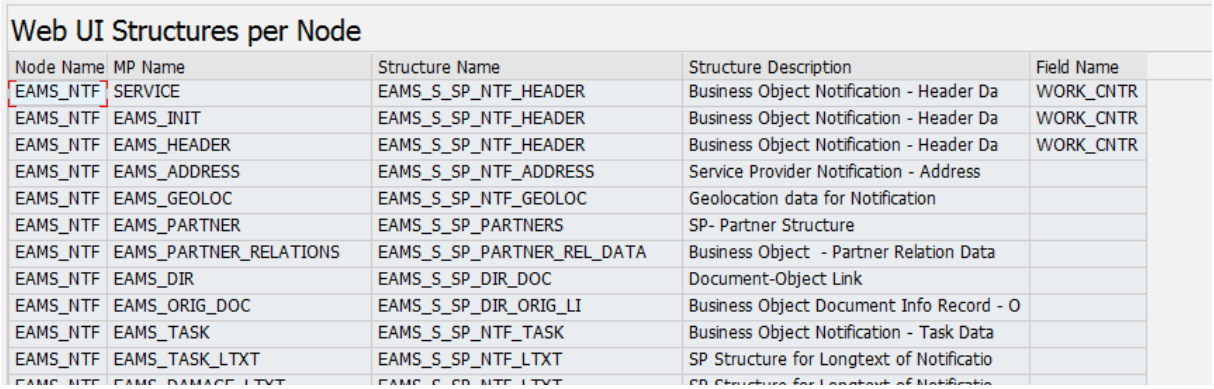
ABBID	Description
EAMS_DIR	EAMS: Document Information Repository
EAMS_EQUI	EAMS: Equipment
EAMS_FL	EAMS: Functional Location
EAMS_JOB	EAMS: Job List
EAMS_MAT	Material
EAMS_MD	Measurement Document
EAMS_MP	Measuring Point
EAMS_MPLAN	Maintenance Plan
EAMS_MPOS	Maintenance Plan Items
EAMS_MP_MI	Maintenance Plan and Item List
EAMS_NTF	EAMS: Notification
EAMS_OBJK	Object Lists
EAM_ORDNTF	EAMS: Order Notification
EAMS_ORD	EAMS: Order
EAMS_ORDCO	EAMS: Order Confirmation
EAMS_TL	Task List
EAMS_TLOP	Task List Operation

You can look up the whole list of EAM application building blocks in customizing *for Plant Maintenance and Customer Service* under *Maintenance Roles → Maintenance Worker → Asset Viewer → Settings for BO Framework and Navigation → BO Framework → Define Application Building Blocks* (or in view `/PLMB/V_SPI_ABB` in transaction `SM30`).

To figure out the data structure that contains the field *Work Center* you enter the application building block `EAMS_NTF` and the technical name of the field `WORK_CNTR` on the entry page of the report.



In the result list you can see all structures used in node `EAMS_NTF`. The last column *Field Name* indicates where the specified field is used. In this example `WORK_CNTR` is only used in structure `EAMS_S_SP_HEADER`.



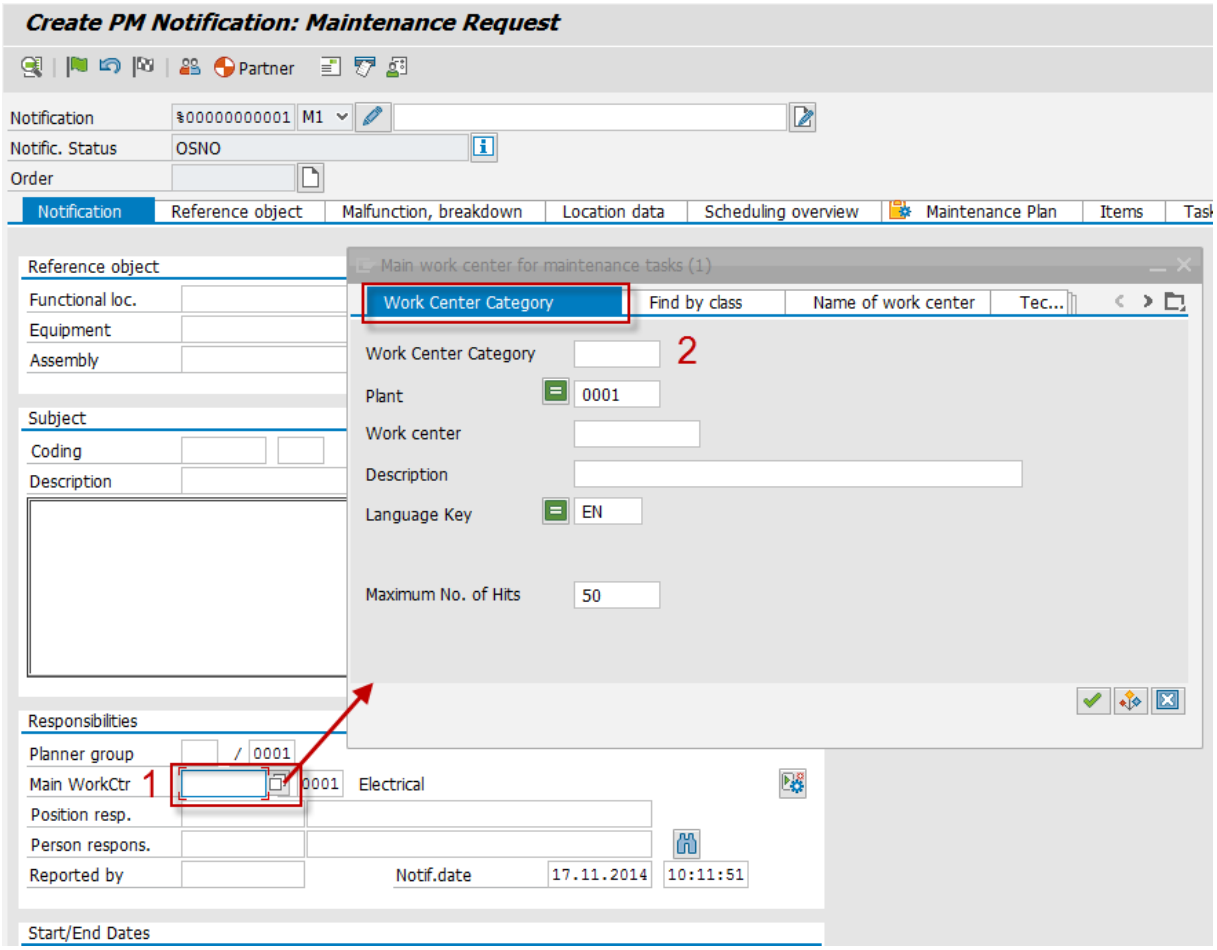
Web UI Structures per Node

Node Name	MP Name	Structure Name	Structure Description	Field Name
EAMS_NTF	SERVICE	EAMS_S_SP_NTF_HEADER	Business Object Notification - Header Da	WORK_CNTR
EAMS_NTF	EAMS_INIT	EAMS_S_SP_NTF_HEADER	Business Object Notification - Header Da	WORK_CNTR
EAMS_NTF	EAMS_HEADER	EAMS_S_SP_NTF_HEADER	Business Object Notification - Header Da	WORK_CNTR
EAMS_NTF	EAMS_ADDRESS	EAMS_S_SP_NTF_ADDRESS	Service Provider Notification - Address	
EAMS_NTF	EAMS_GEOLOC	EAMS_S_SP_NTF_GEOLOC	Geolocation data for Notification	
EAMS_NTF	EAMS_PARTNER	EAMS_S_SP_PARTNERS	SP- Partner Structure	
EAMS_NTF	EAMS_PARTNER_RELATIONS	EAMS_S_SP_PARTNER_REL_DATA	Business Object - Partner Relation Data	
EAMS_NTF	EAMS_DIR	EAMS_S_SP_DIR_DOC	Document-Object Link	
EAMS_NTF	EAMS_ORIG_DOC	EAMS_S_SP_DIR_ORIG_LI	Business Object Document Info Record - O	
EAMS_NTF	EAMS_TASK	EAMS_S_SP_NTF_TASK	Business Object Notification - Task Data	
EAMS_NTF	EAMS_TASK_LTXT	EAMS_S_SP_NTF_LTXT	SP Structure for Longtext of Notificatio	

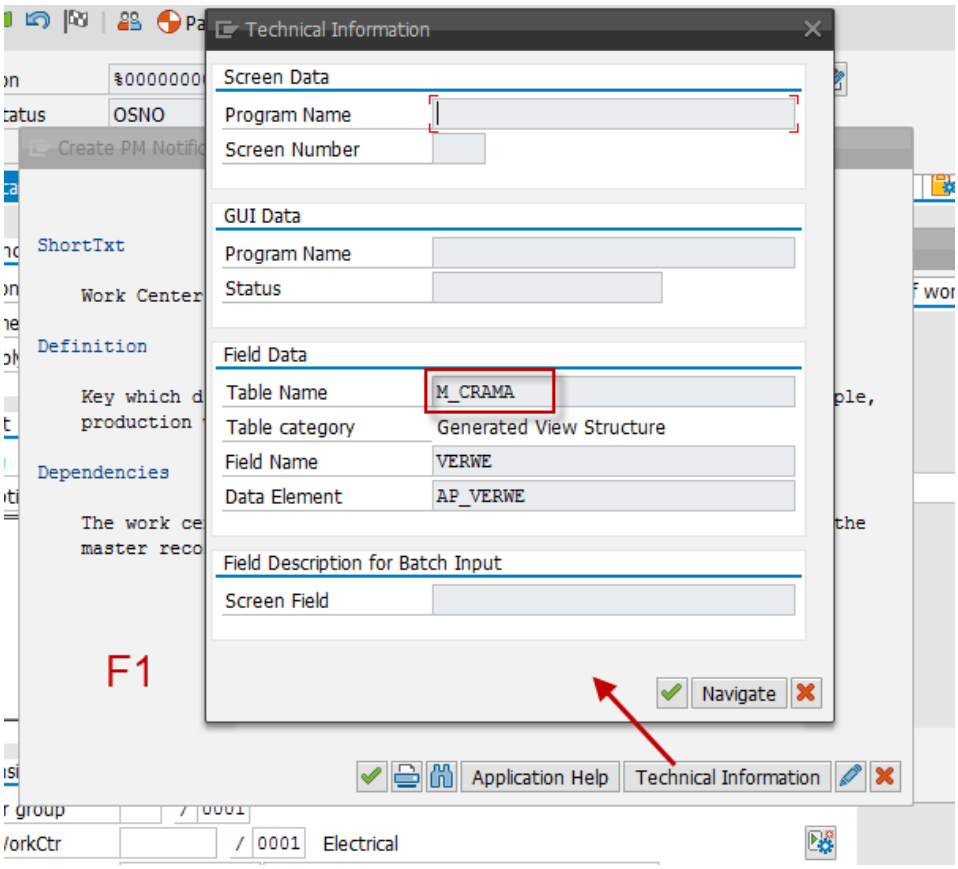
Now you have already specified the technical name of the field (`WORK_CNTR`) and the data structure (`EAMS_S_SP_HEADER`).

Specifying the New Search Help

In this example you want to assign a search help object that contains the work center category as a search criterion. You find out that in the corresponding SAP GUI transaction for creating maintenance notifications (`IW21`) an applicable search help already exists. First you open the search help for the field *Main WorkCtr* by pressing F4 (1). To find out the search object, choose the tab page *Work Center Category* on the popup and open the field help (F1) for any of the fields (2).

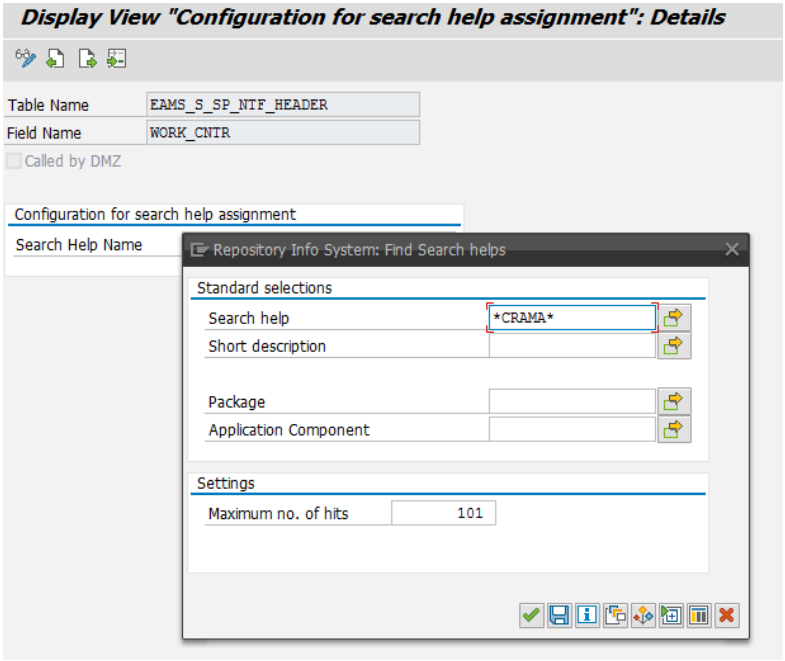


Choose the *Technical Information* button in the field help. You find the technical name of the search help object in the field *Table Name*. In this example the search help is `M_CRAMA`.

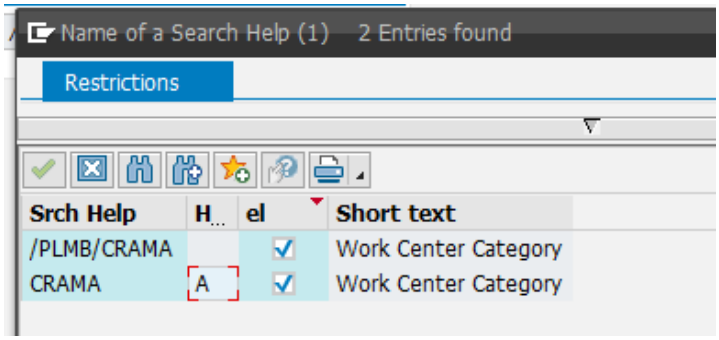


After you have worked out the technical name of the field, the data structure that contains the field and the search help object you can assign the new search help to the respective field in customizing (view `V_EAMSC_UI_SHLP` in transaction `SM30`).

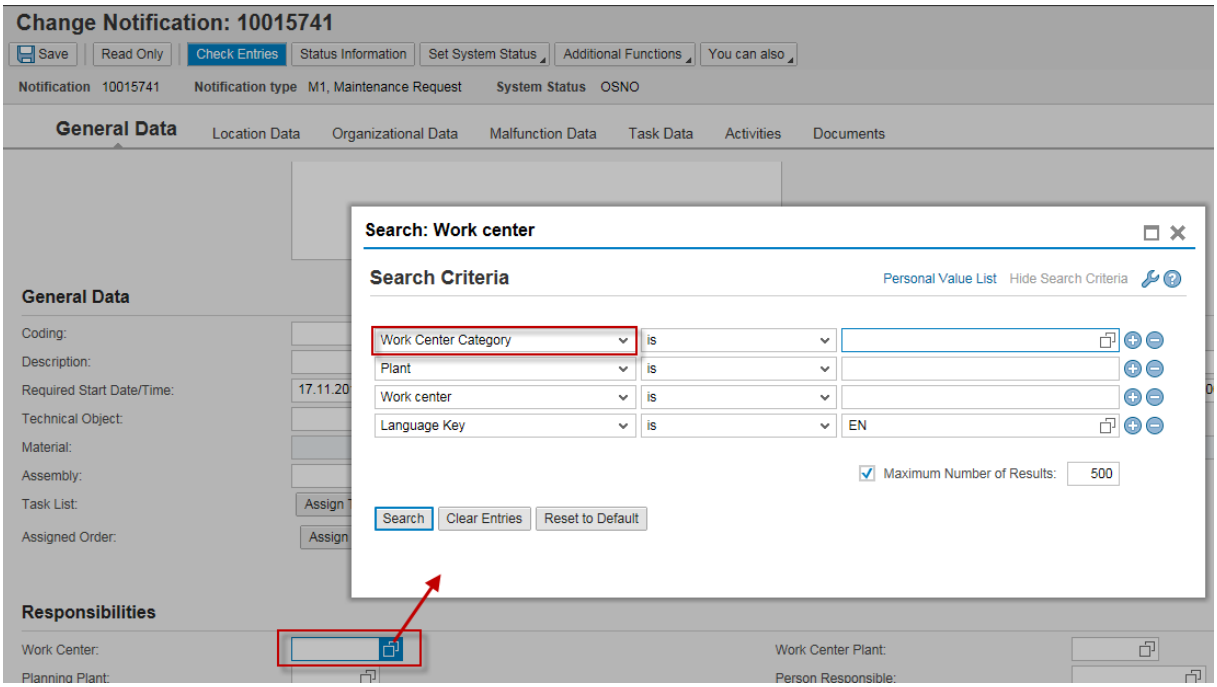
In this example you enter the field name `WORK_CNTR` and the data structure `EAMS_S_SP_HEADER`. As the search help `M_CRAMA` cannot be assigned, we look for a similar one by using the generic search.



You can choose one of the two valid search helps that show the same search popup in Web Dynpro.



After you have saved your customizing settings, the new search help including the search criterion *Work Center Category* is displayed in the search help for the *Work Center* field.

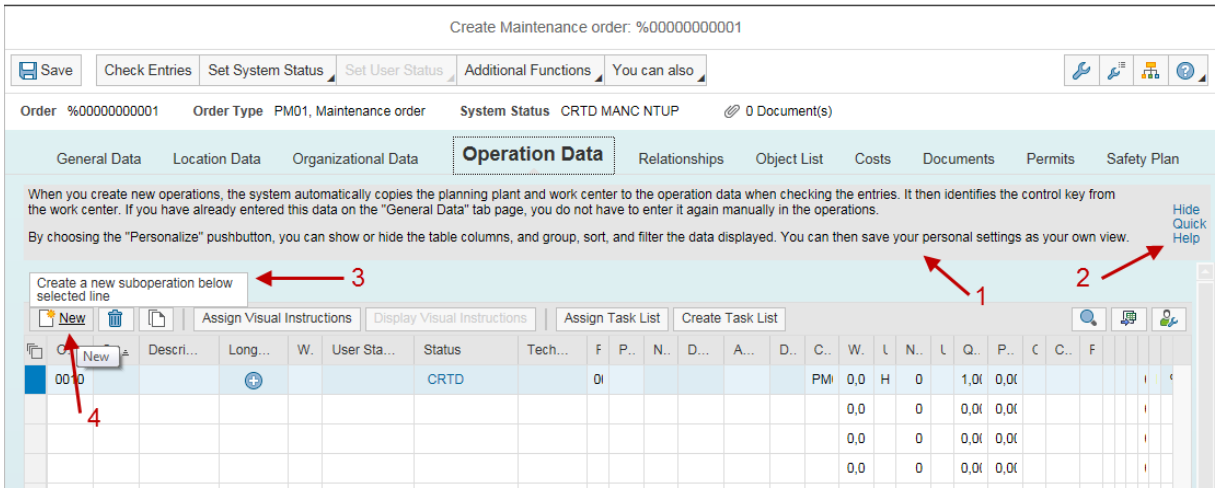


For more information about Search Helps, see ABAP Dictionary Search Help.

For more information about how to integrate different types of search helps in Web UI, see the example component DEMO_VALUE_HELP.

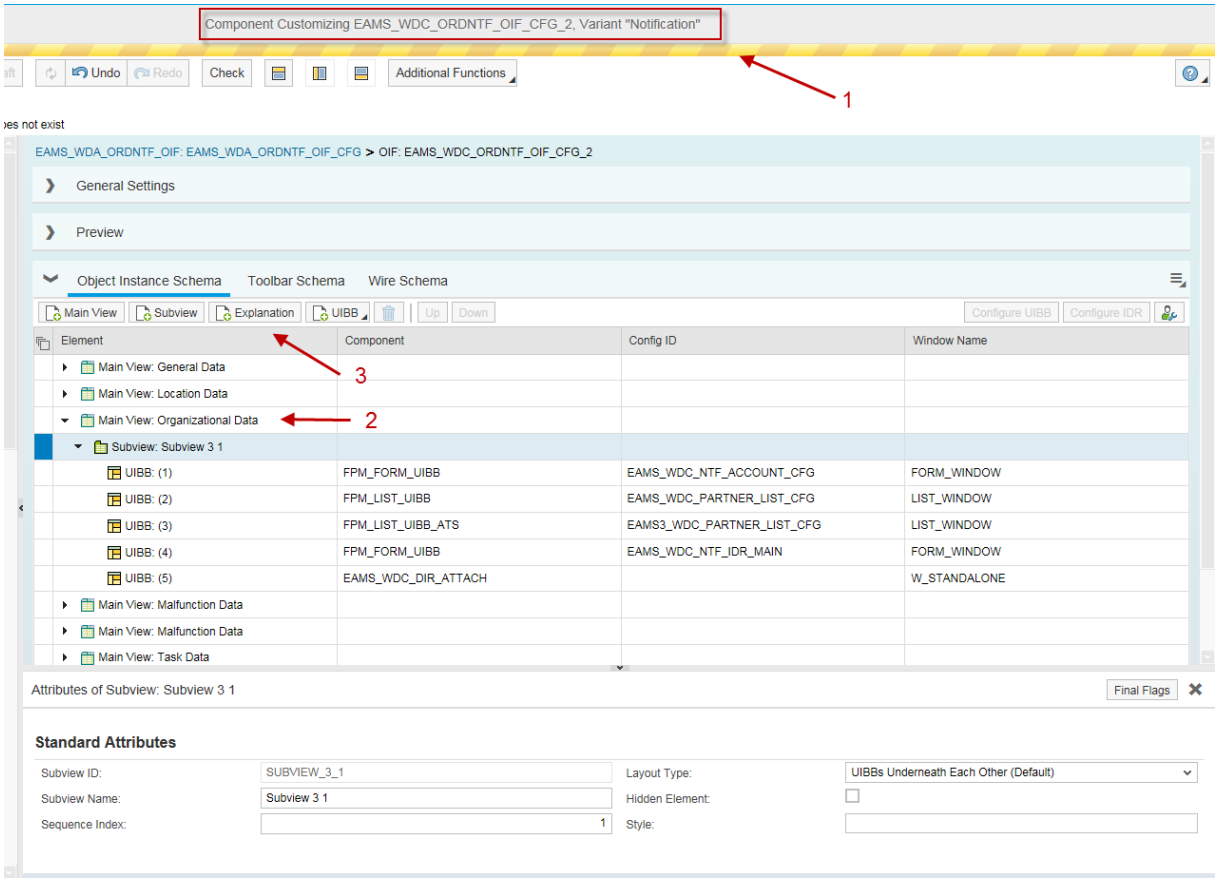
3.11 Creating Quick Help

You can provide individual help texts for the users of an EAM WEB UI application. The example shows standard quick help for the *Operation Data* tab page delivered by SAP. The quick help can be displayed above the corresponding application (1) and be hidden by choosing *Hide Quick Help* (2). You can create your own quick help for a whole application, for a specific tab page, and even for individual pushbuttons. Quick help for pushbuttons can have up to 255 characters and appears as a separate small window when you hover over an object (3), similar to a tooltip. Button texts and field labels are underlined if quick help is available (4).

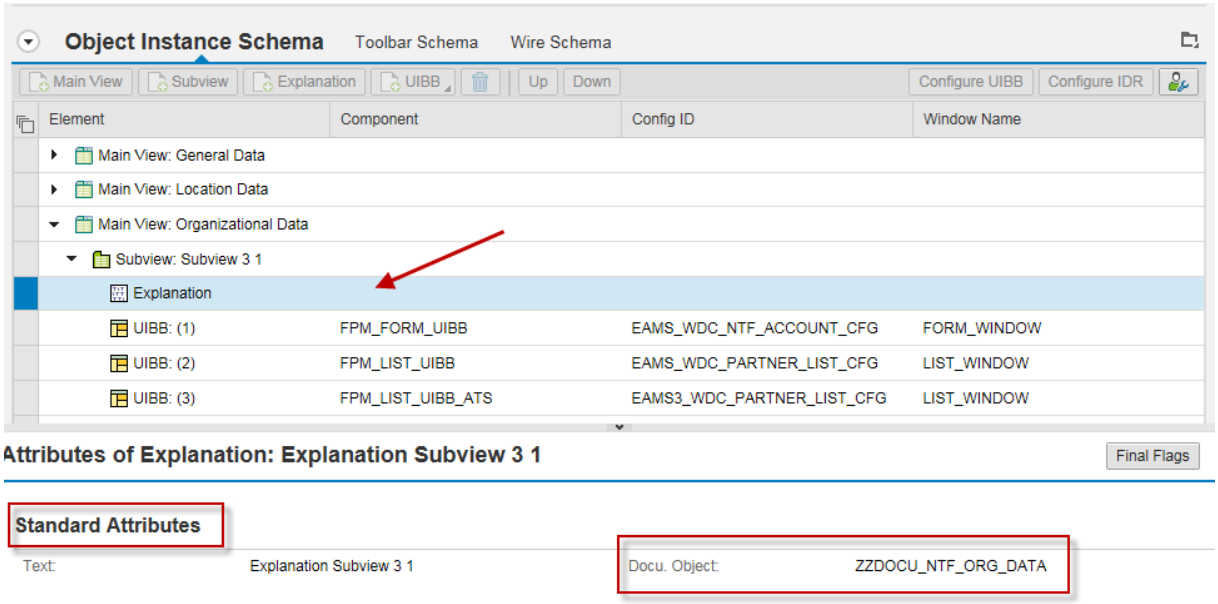


3.11.1 Adding Quick Help for a Tab Page

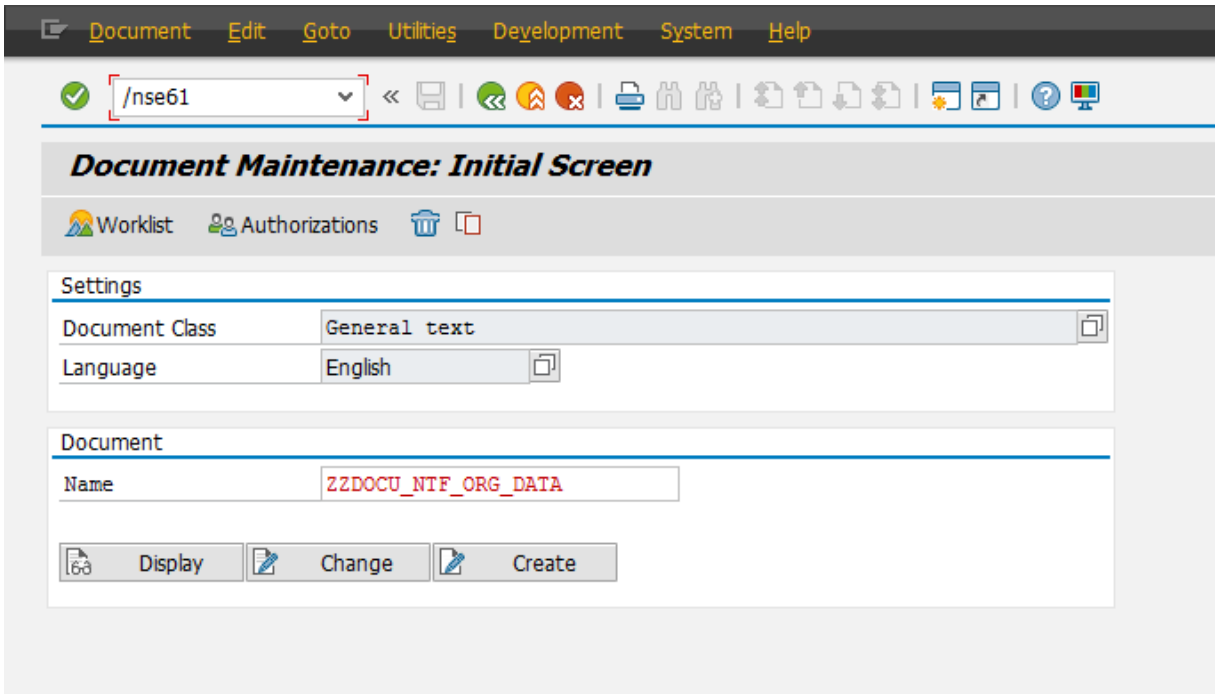
To add quick help for the *Organizational Data* tab of a notification, for example, you open the customizing of the respective application (1) in change mode. In the *Object Instance Schema* you select the respective view; in this example the line with *Main View: Organizational Data* (2) is selected. Choose *Add Explanation* (3) and a new table row for the explanation is inserted in the *Subview* folder.



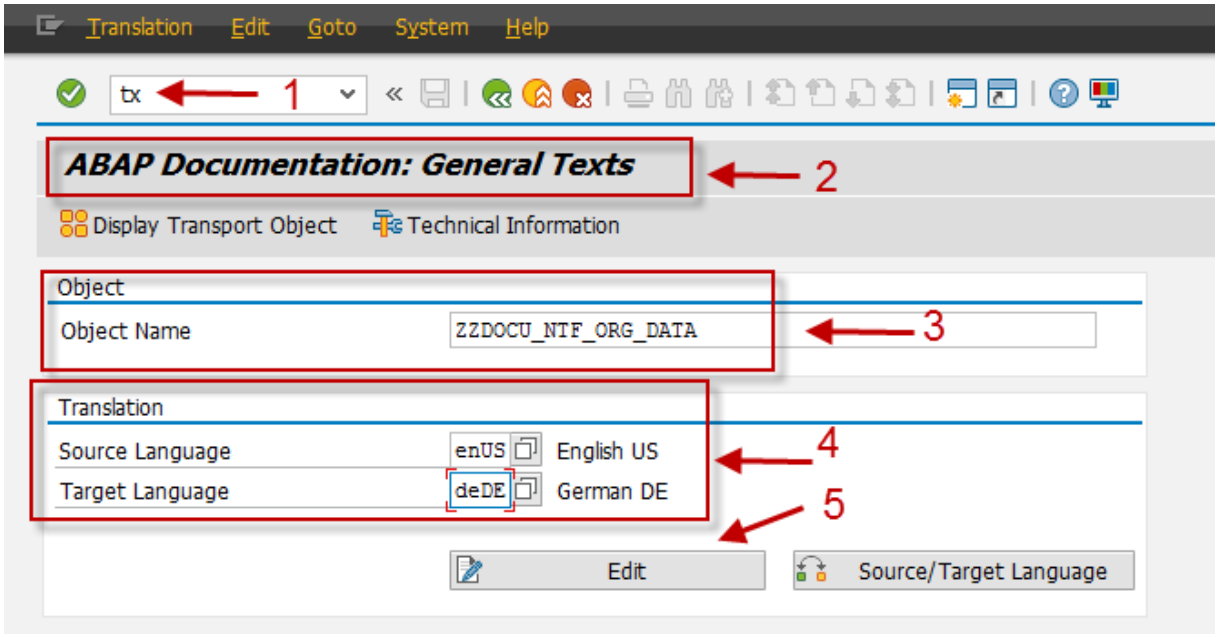
Now you select the new table row *Explanation* and provide a name for the documentation object in the *Explanation* attributes (here `ZZDOCU_NTF_ORG_DATA`). Then you save your customizing and include it in a transport request.



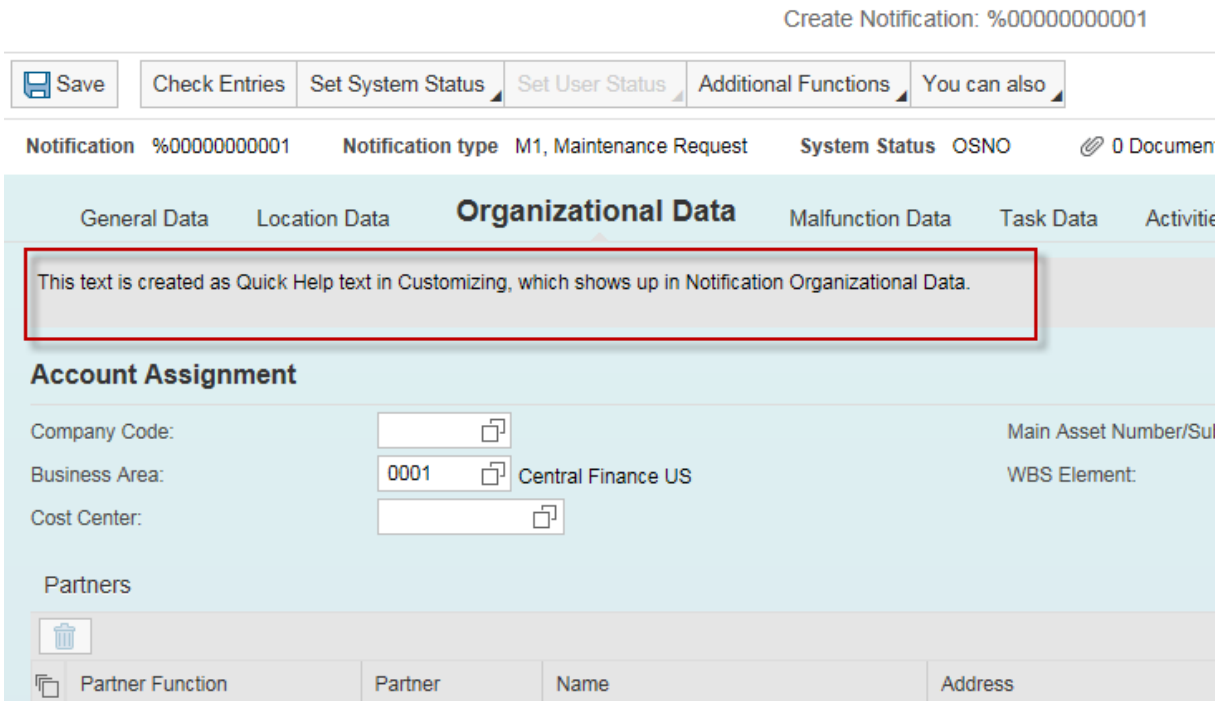
The documentation object `ZZDOCU_NTF_ORG_DATA` with your quick help text is automatically created in *Document Maintenance* (transaction `SE61`) as a *General Text*. You select *General text* as the respective document class, enter the object name, and choose *Change*. Now you can write your own quick help text, either with the *SAPscript* text editor or with a Graphical PC editor. Finally you save your document in a package and activate it for translation.



Now the document can be translated into any language in the *Translation Editor* (transaction `SE63`). In the command field, enter `TX` (1) (the abbreviation for the object type) and choose *Enter*. Or choose *Translation -> ABAP Objects -> Long Texts (Documentation) -> C6 F1 Help -> TX General Texts* from the menu. The initial screen changes to *ABAP Documentation: General Texts* (2). Enter the object name (3) and choose the appropriate language direction (4). Then choose *Edit* (5).



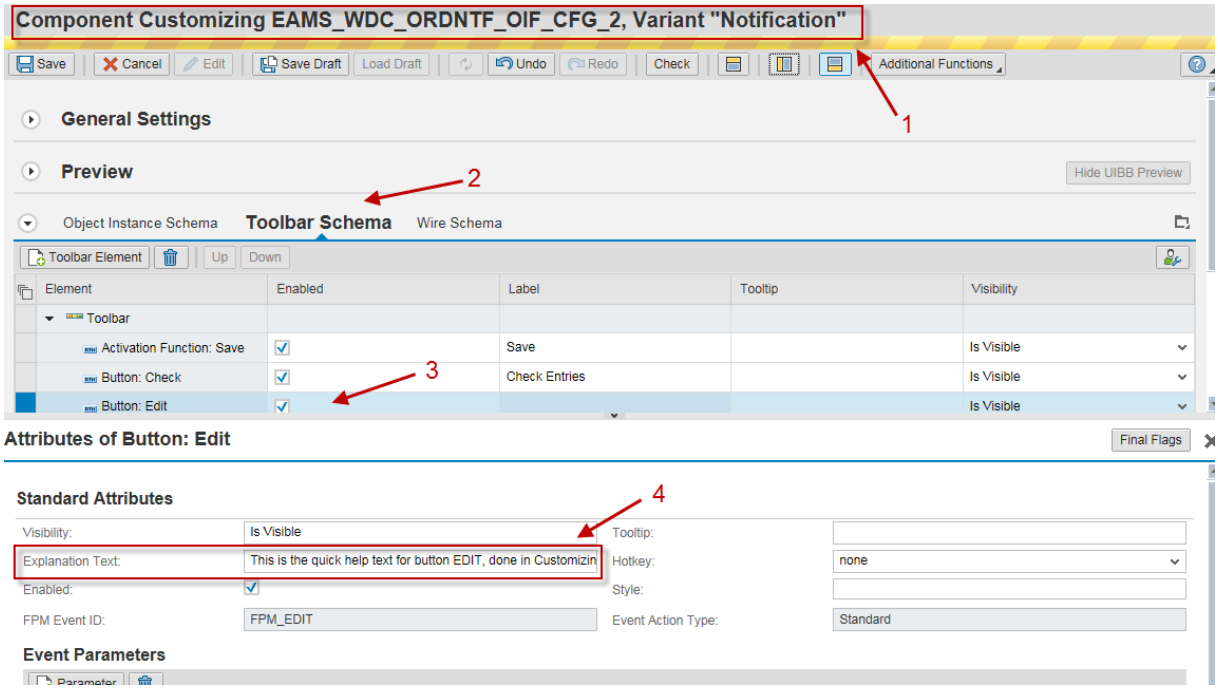
When you now open a notification, the Quick Help appears above the *Organizational Data* tab.



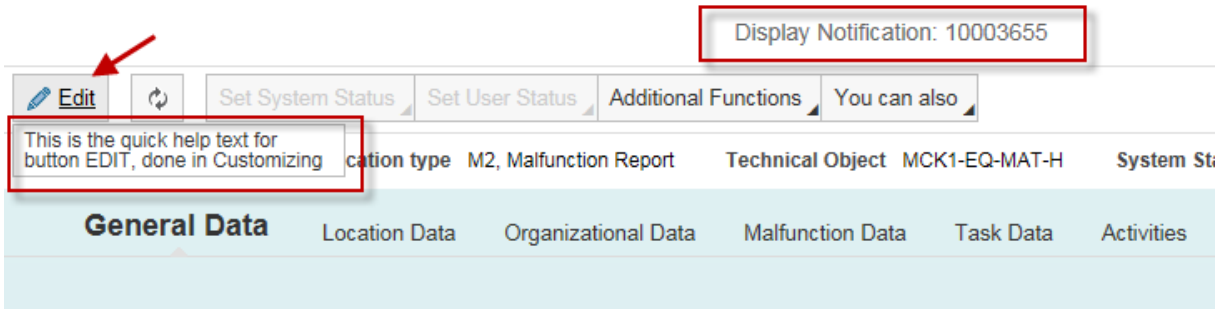
For more information on this type of quick help, see Explanation UI Element.

3.11.2 Adding Quick Help for a Menu Button

In this example, you want to provide an explanation text for the *Edit* pushbutton in the toolbar above the application. To provide quick help texts for individual pushbuttons, you have to change the component customizing. Since you want to create quick help for a pushbutton in the toolbar of the notification, you access the *Notification* customizing in change mode (1) and choose the *Toolbar Schema* (2). Then you select the table row *Button: Edit* (3) and by doing so, you open the attributes of this button. In the attribute *Explanation Text* you can enter a text containing up to 255 characters directly in the input field (4). Save the customizing.



When you display a notification in the customized client, you see the underlined *Edit* button text, indicating that quick help for this pushbutton exists. If you hover over the button, your individual quick help text is displayed.



For more information about this type of quick help, see Explanation Property.

For more information about help texts in general, see Help Texts for Web Dynpro Applications.

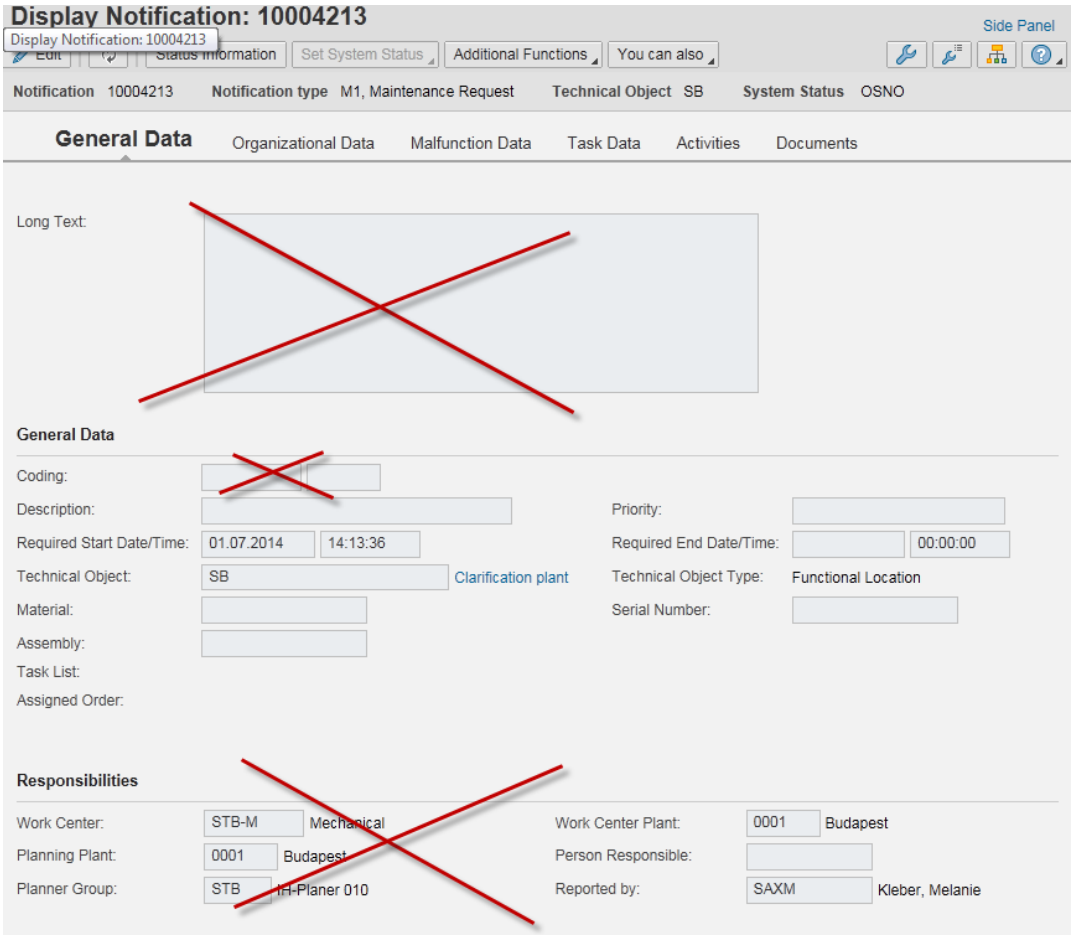
For more information about how to create Quick Help texts, see Quick Help.

For explanations about translating texts in Web Dynpro applications, see blog ** TEAM FPM ** - All about Translation and Texts of FPM applications in SCN.

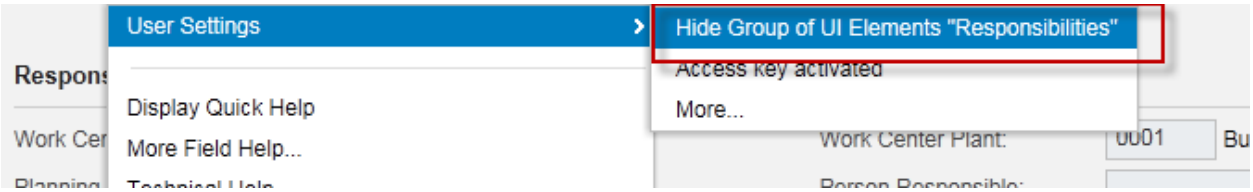
4 Personalization on User Level

On the SAP Web UI for Plant Maintenance you can personalize the applications you are working with according to your needs. Your personalized settings are only valid for the respective user in the current system and therefore are not transported to other systems.

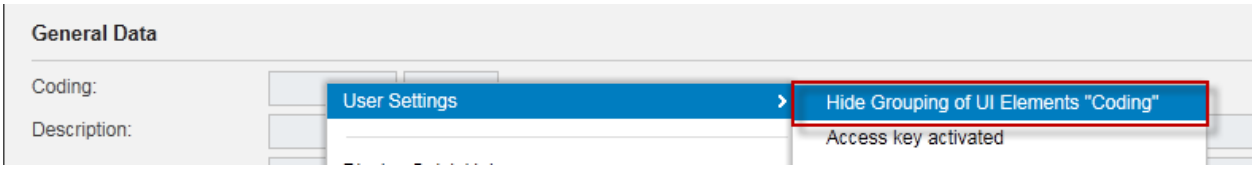
In this example you want to personalize the notification screen. You do not want the screen areas *Long Text* and *Responsibilities* to be displayed and you also want to hide the two *Coding* fields:



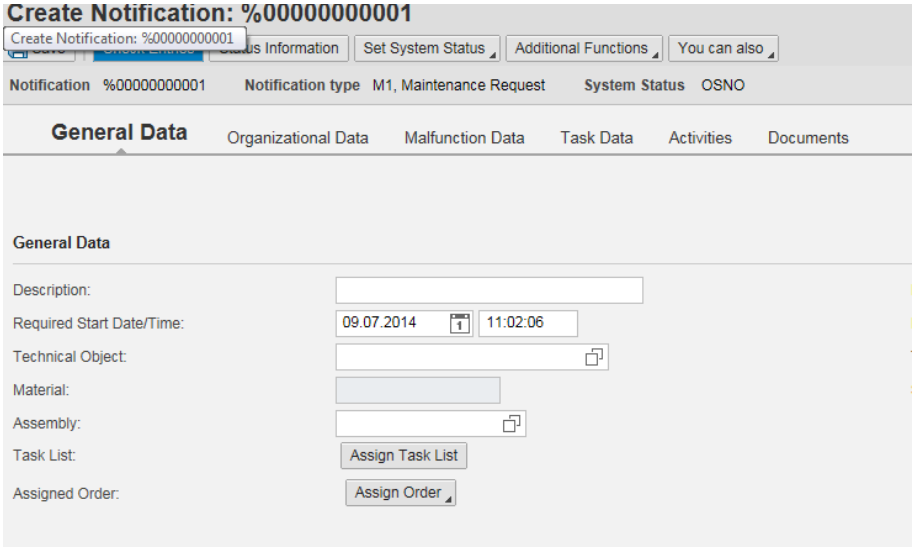
To hide screen areas or specific fields, you open the respective application in any mode (*Create* / *Change* / *Display*). In this example you access the notification and open the context menu of the *Responsibilities* screen area by positioning the cursor in this screen area and clicking the right mouse button. Now you choose *Hide Group of UI Elements "Responsibilities"* in the *User Settings* menu.



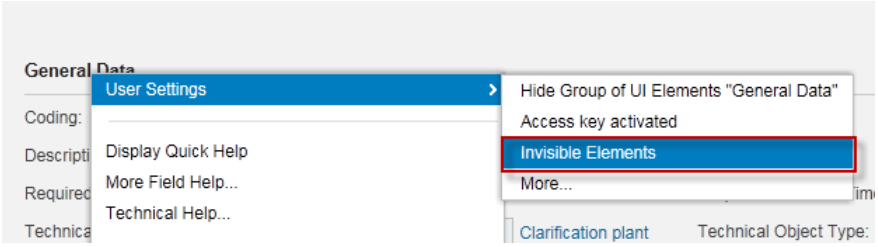
To hide the *Coding* fields, you open the context menu of this specific field group and choose the respective entry in the *User Settings* menu:



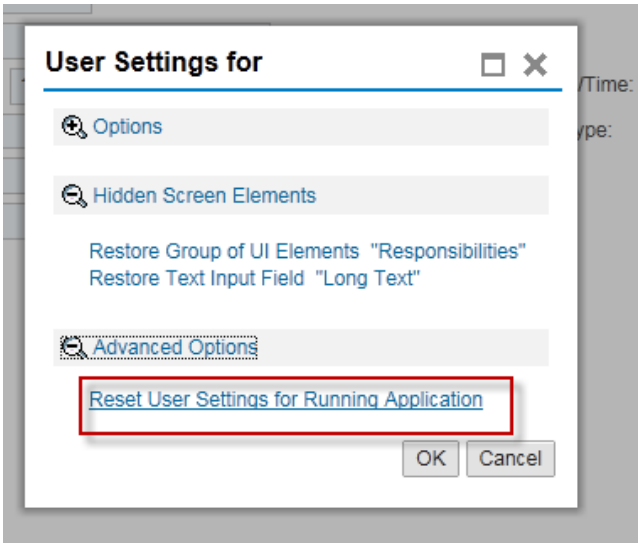
After having personalized the *General Data* tab as described above, the system only shows the screen areas and fields you want to work with:



If you want to revoke your personalized settings, open the context menu again and choose *User Settings* → *Invisible Elements*.



On the popup you can either select a single hidden screen element or reset your personalized user settings for the whole application in *Advanced Options*.



For more information on personalization, see Personalizing Web Dynpro Applications in the SAP Library for Netweaver 7.4.

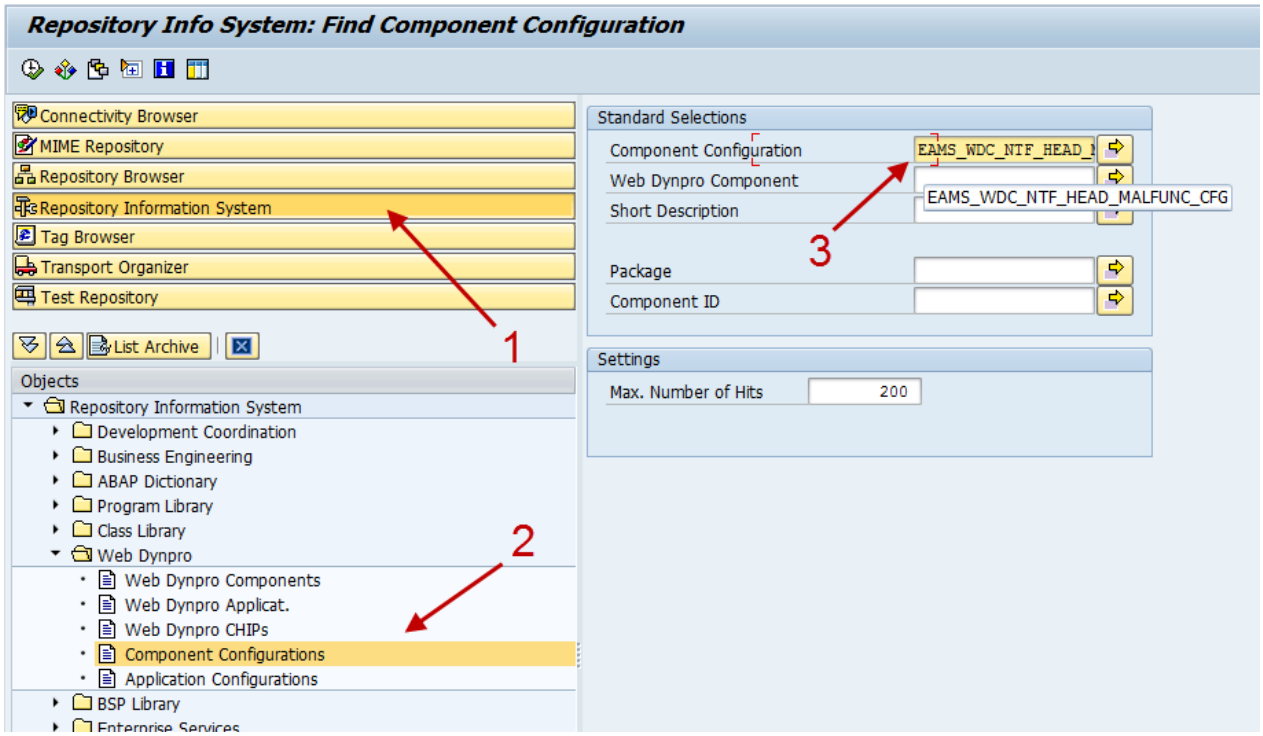
5 Adapting Applications in Expert Mode

Working in expert mode allows you to make changes to an application on development or configuration level. These changes are modifications if the corresponding configuration has been delivered by SAP. Changes to the configurations that are made in expert mode are stored directly in the Web Dynpro ABAP development layer and are therefore overwritten when a new release or enhancement package is imported.

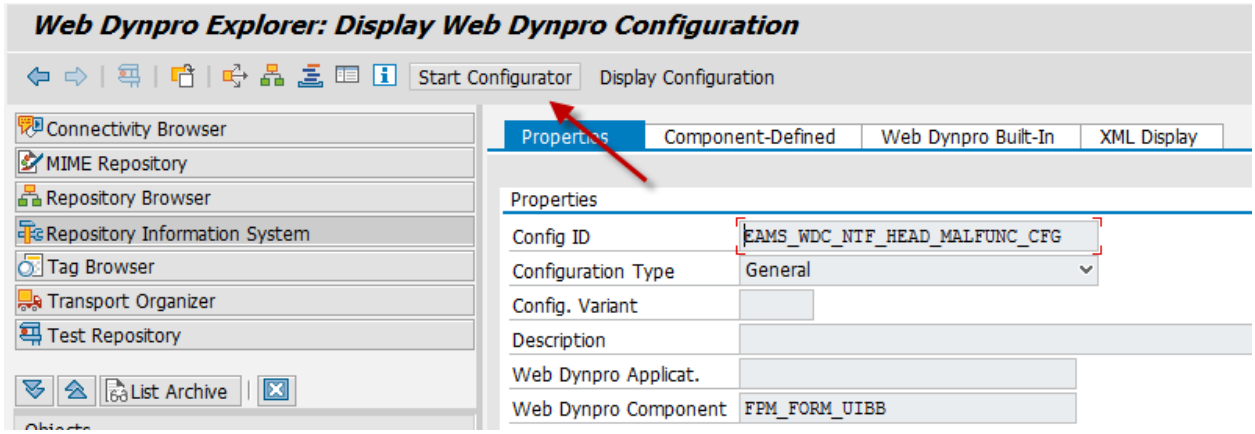
In expert mode you can create several ‘versions’ of the same application. Different user groups or countries can work with different versions of an application. This enables you to model a very simple version of the notification for a specific user group, while a different user group works with a more complex version.

5.1 Copying a UIBB

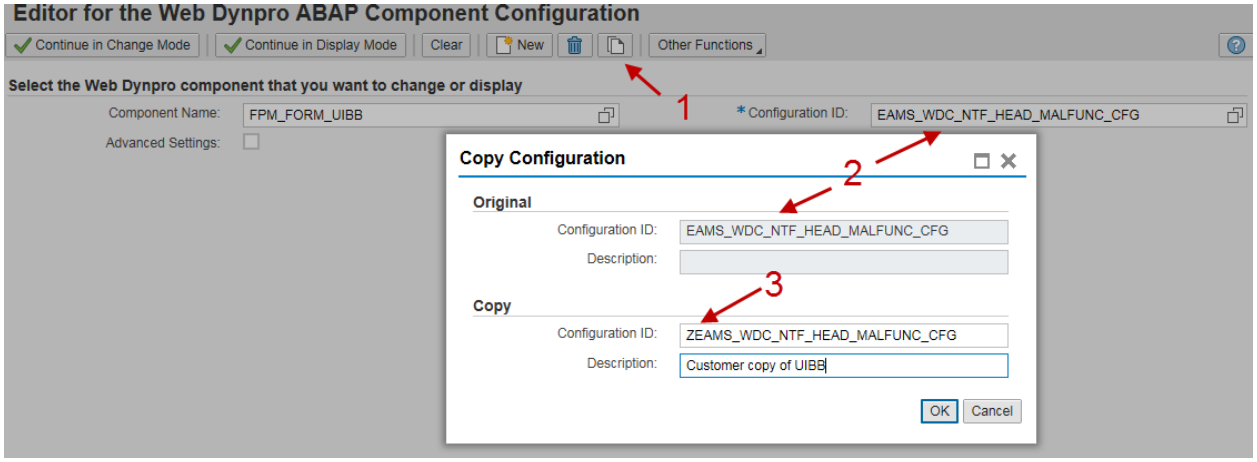
In expert mode you can copy a UIBB and thus create several ‘versions’ of that specific UIBB. You start the UIBB configuration by calling the transaction `SE80` (*Object Navigator*). Here select *Repository Information System* (1), then select *Component Configurations* in folder *Web Dynpro* (2) and enter the configuration name you want to copy (3), e.g. `EAMS_WDC_NTF_HEAD_MALFUNC_CFG`. Execute the search with F8 or button *Execute*.



To display or change the configuration, double-click on the result and press the button *Start Configurator*.

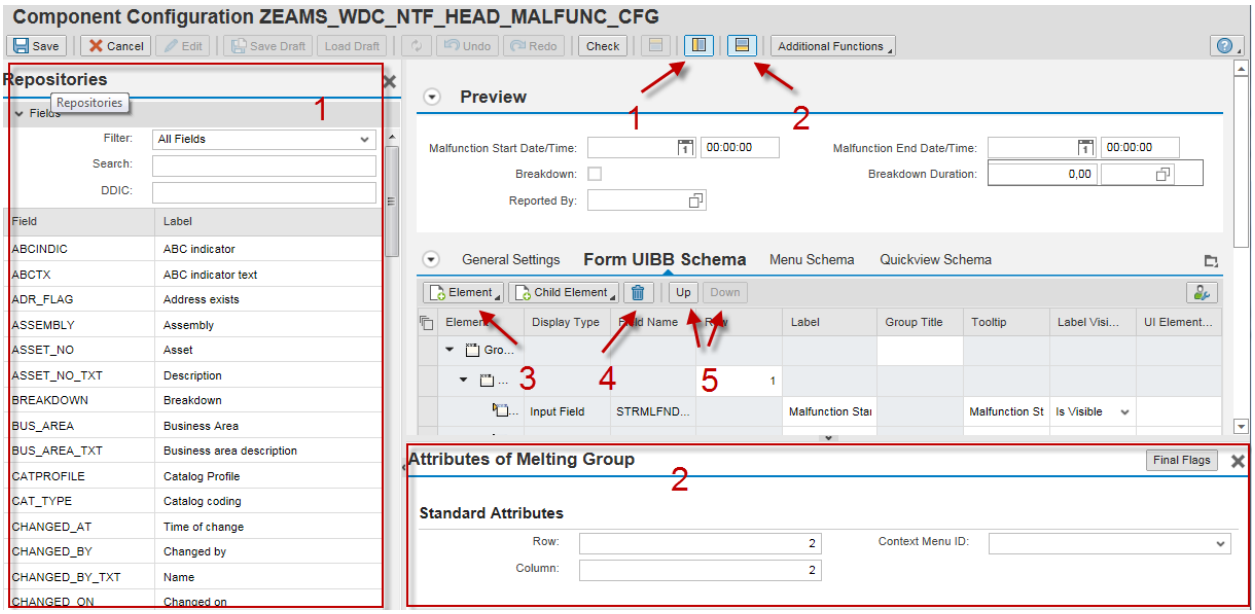


To create your own configuration, copy the existing configuration in the customer namespace. The fields *Component Name* and *Configuration ID* are filled automatically. When you press the copy button (1) a popup opens and asks for the name and description for the new configuration in the customer namespace (3).



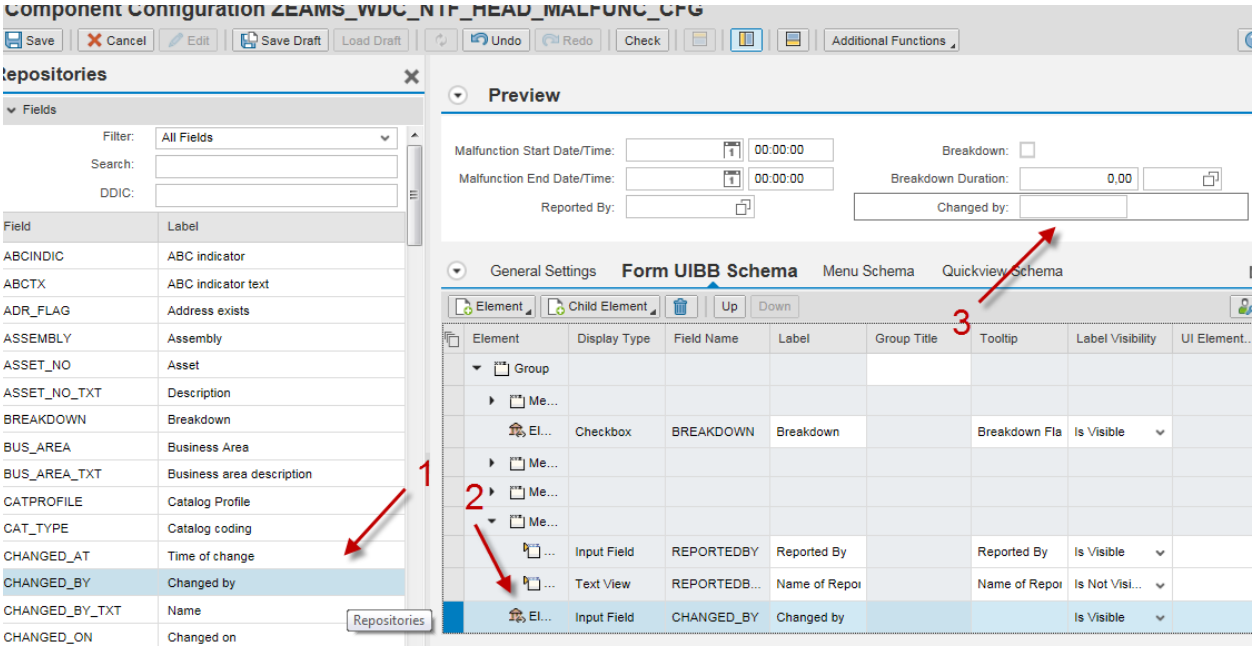
When you confirm the new configuration in the popup by choosing *OK*, you start the component configuration of the copied UIBB. The component configuration tool works similarly to the component customizing tool as described in chapter 3.1

In the configurator you can open a repository screen area on the left-hand side (1), open the corresponding *Attributes* screen area, add (3) and delete (4) individual screen elements, as well as change the position of screen elements by using the *Up* and *Down* buttons (5).



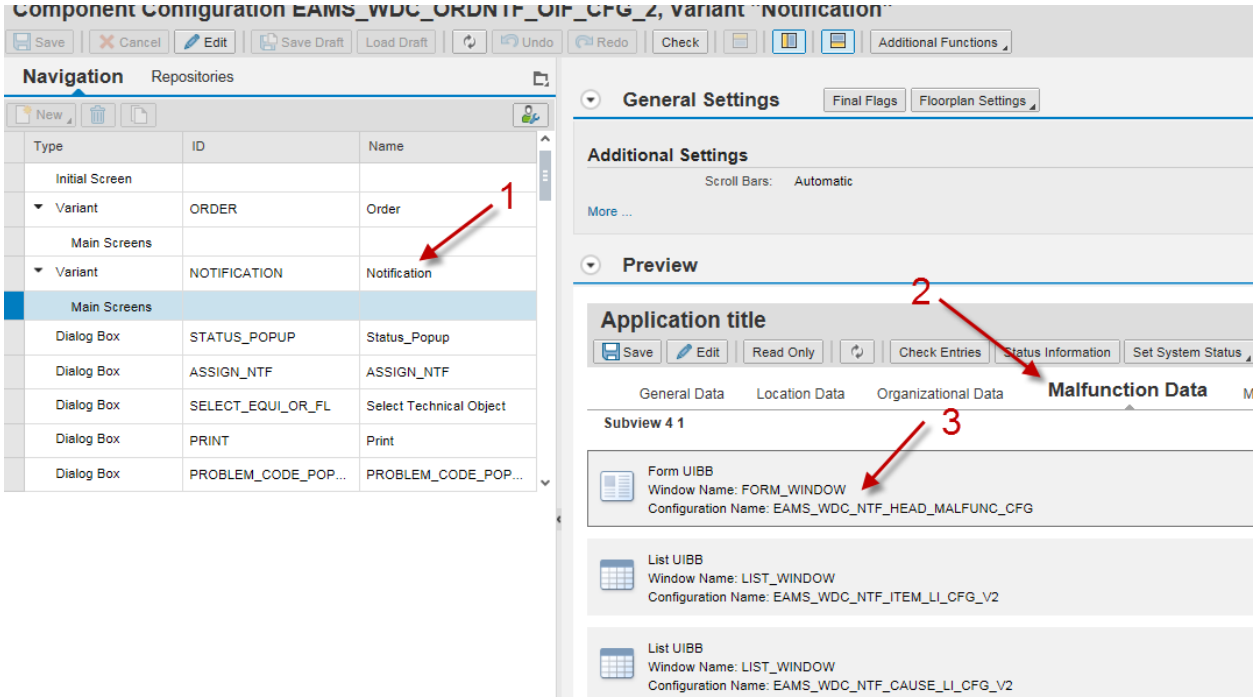
In the *Preview* you see how the fields are displayed on the Web UI screen. When you click on a field, the corresponding line in the *Form UIBB Schema* is marked.

If you want to add a field to the screen, choose the respective element in the repository (1) and copy it directly to the *Preview* or to the element list in the *Form UIBB Schema* (2). The new screen element is displayed in the *Preview* and the element list while the position of the element still can be adjusted (3). In this example the field `CHANGED_BY` is added to the *Malfunction Data* tab in the notification and the users now see who last changed the data.



You can now decide in which application you want to replace the existing UIBB with your new version. To find out where this UIBB is used, display the UIBB in transaction `SE80` and choose *Utilities* → *Where-Used List.*

Select one configuration and open it in the Component Configurator and replace the configuration. In this example, open the Component Configurator for `EAMS_WDC_ORDNTF_OIF_CFG_2`. In the *Navigation* screen area select the screens of the Notification (1). Then select the *Malfunction Data* tab in the *Preview* (2). Now you see the configuration that you want to replace with your own configuration (3).



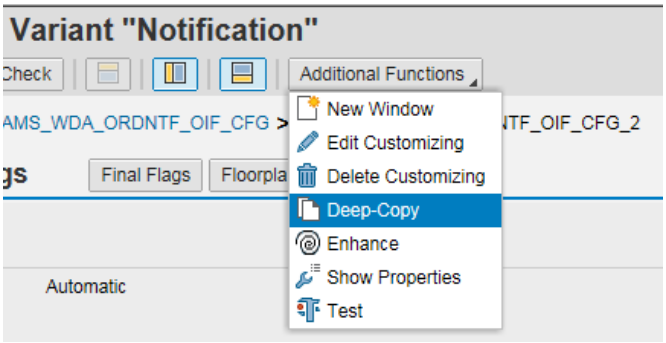
5.2 Copying and Simplifying an Application (Notification)

It is also possible to copy an entire application (such as for notifications) in the customer namespace.

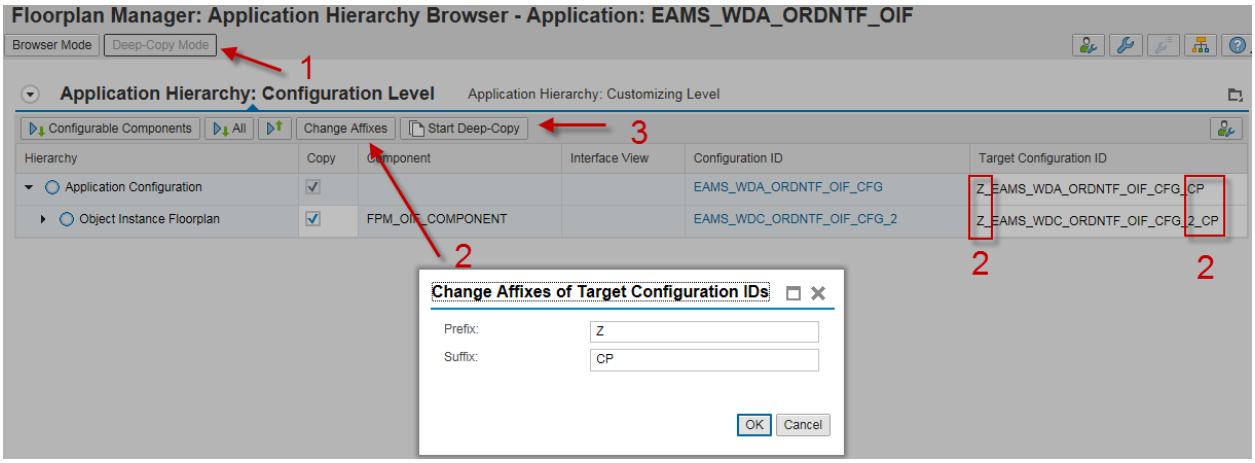
For more information about the Deep-Copy mode, see Application Hierarchy Browser for Floorplan Manager.

In this example you want to copy the notification application in EAM Web UI into the customer namespace to create a more simplified version. You then want to make this simplified version available in the context-menu of the Asset Viewer.

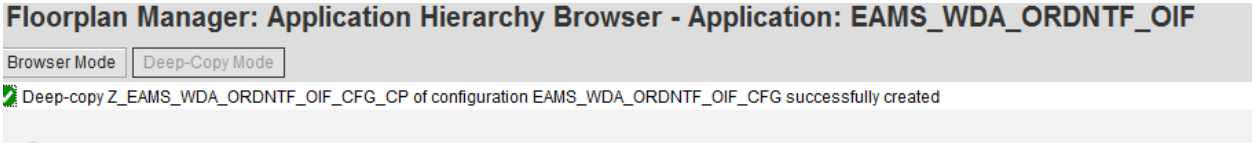
Start the application that you want to copy - in this example *Display Notification* - and choose the pushbutton *Configure Page* on the entry screen. In the Component Configurator choose *Deep-Copy* from the *Additional Functions* dropdown menu.



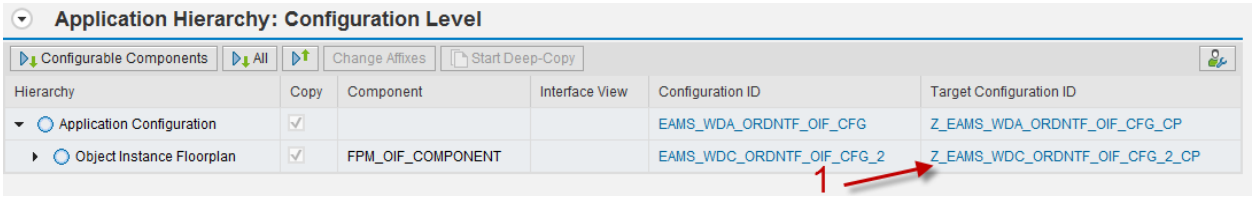
The application opens in deep-copy mode (1). After you have selected a prefix and suffix (2) for the target configuration ID and have entered a package assignment, you can start copying (3).



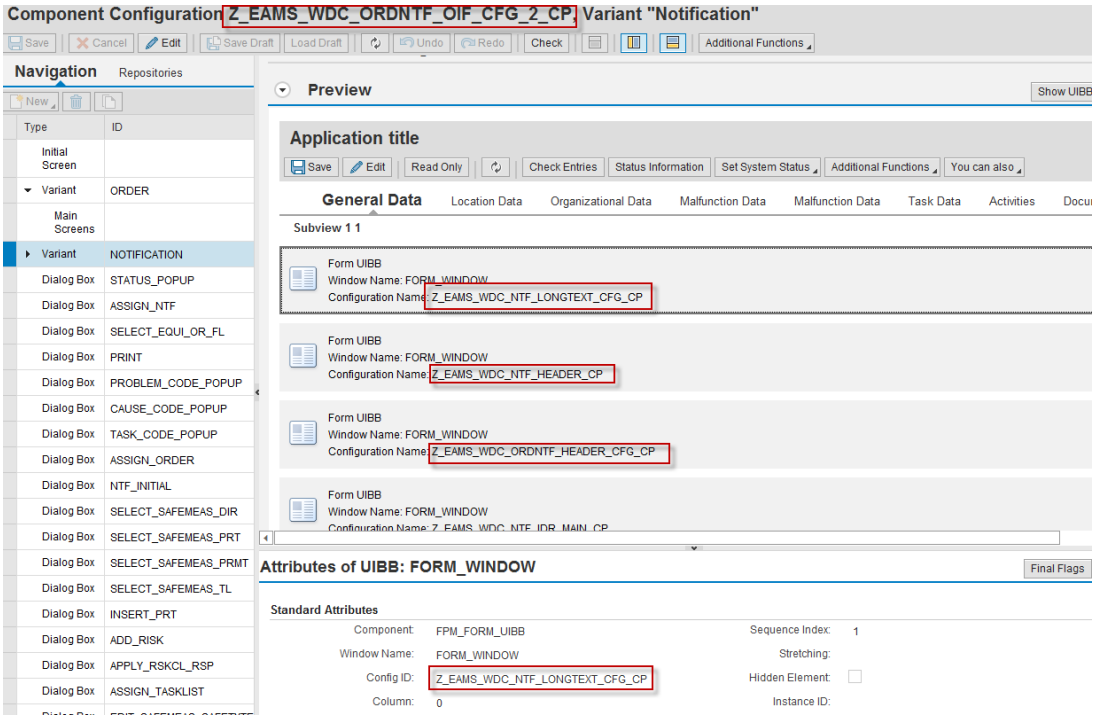
Once the application has been copied successfully, the system issues a confirmation message.



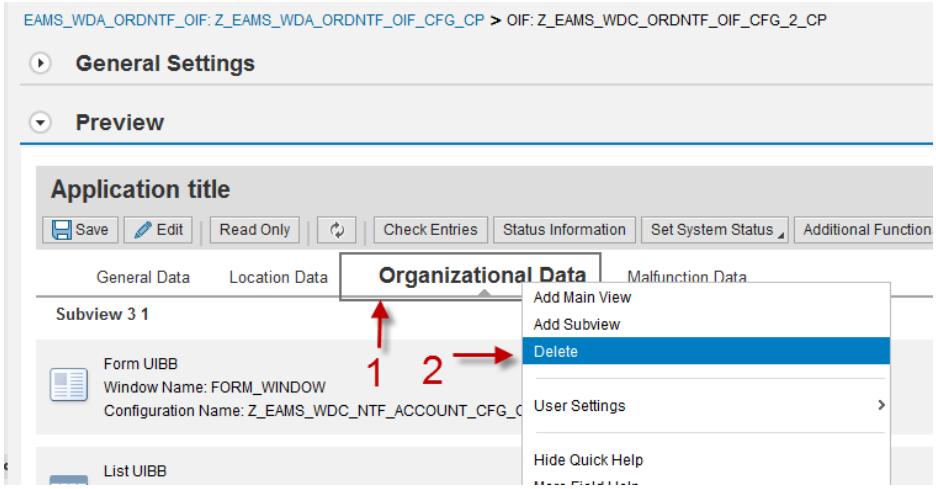
For adapting the copied application to your needs, enter the component configuration (1). It is also possible to select the component configuration in transaction `SE80` as shown in 5.1.



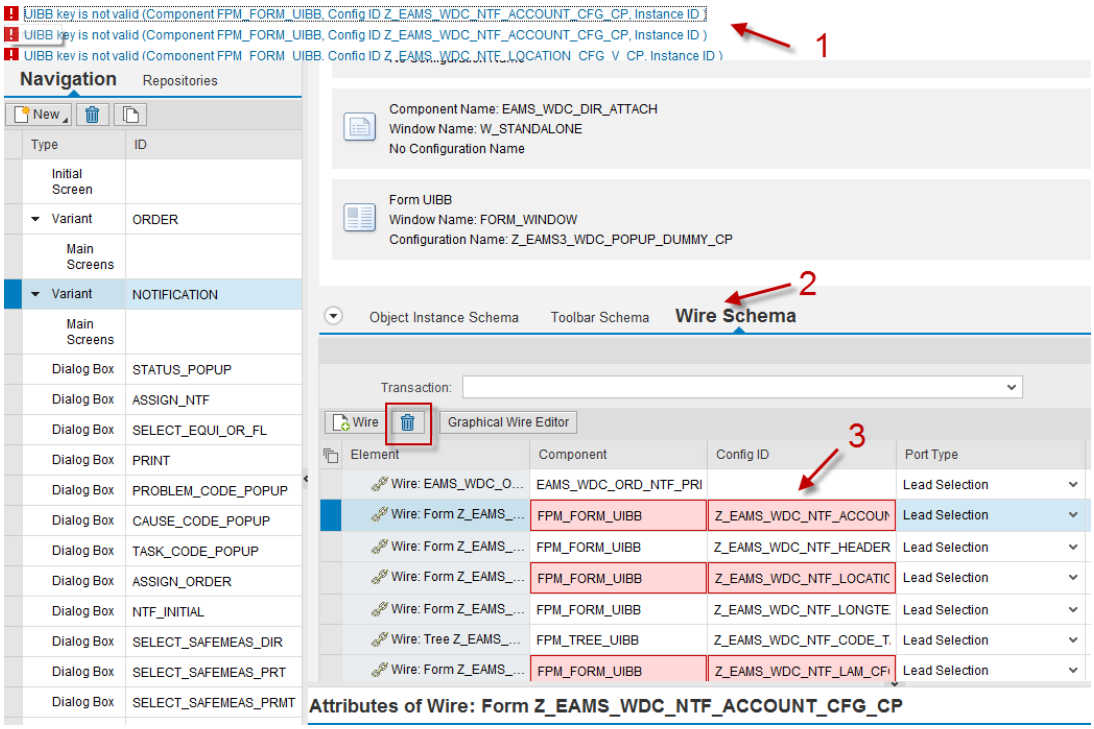
Now all UIBB configurations of that specific application have been copied to the Z-namespace and you can adapt each UIBB individually. In this example we want to configure a very simplified notification variant, so we delete or hide all UIBBs that the user should not be able to work with. Our simplified notification will only contain the main tab *General Data* with the long text and the *General Data* UIBB.



By choosing *Delete* in the context menu (2) of the tab titles (1), all tabs except for the *General Data* tab are deleted in the *Preview*.



If you get error messages concerning deleted UIBBs (1), go to the *Wire Schema* (2) and delete the superfluous wiring (3).



Hint: For this configuration, the configuration ID of side panel `/BCV/SIDEPANEL` in *General Settings* (see chapter 15.7) was removed.

For information about enhancing the wiring of an application, refer to chapter 3.4.

For more information about wiring in general, see Wiring - Transferring Information between UIBBs.

5.2.1 Side Panel Tags in Copied Applications

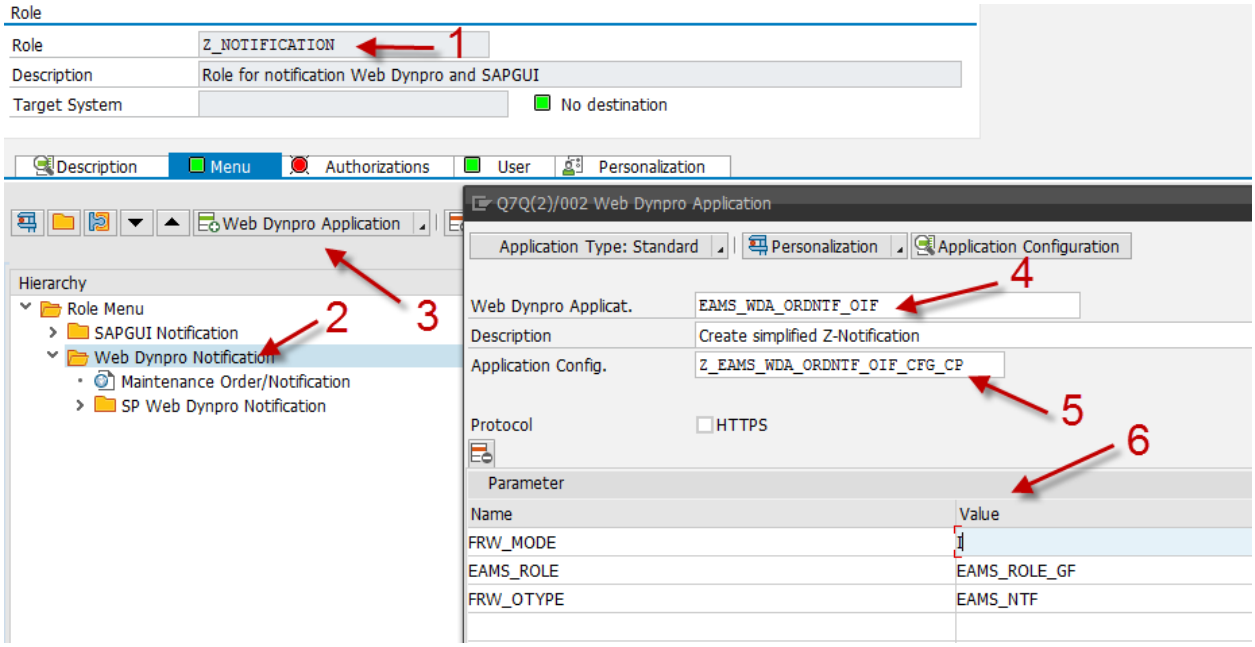
Side panel tags are created for the Web UI applications delivered by SAP in BAdI `/PLMU/EX_FRW_SIDEPANEL` in enhancement spot `/PLMU/ES_FRW_SIDEPANEL`. Implementations of this BAdI react on filter values for the combination of Web Dynpro application name (`WD_APPLICATION_NAME`) and component configuration name (`WDAPPLICATIONCONFIGURATIONID`), as long as SAP Note 2099004 has not yet been implemented. After applying this note, only the Web Dynpro application name is relevant for calling the BAdI implementation. The filter parameter value for the notification is, for example, `EAMS_WDA_NTF_OIF`, and the side panel tags are created for all component configurations of the notification. If you have created your own Web Dynpro application, add the application name to the filter values to avoid dumps.

For more information on side panel integration in SPI Framework, see chapter Side-Panel Integration.

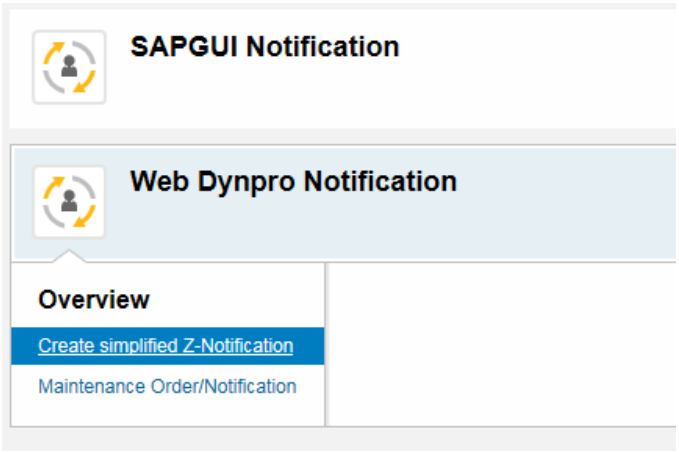
5.2.2 Adding the Simplified Notification to the PFCG Role

After having copied an application, you have to add the new application to the PFCG role. In this example we want to add the simplified notification that was configured in chapter 5.2 to the PFCG role `Z_NOTIFICATION` (from chapter 10.1.1). Open this role in change mode (1), mark the correct folder in the *Role Menu* and then choose the

pushbutton *Web Dynpro Application* on the *Menu* tab (3). On the popup enter the Web Dynpro application name (4) and the Z-configuration name in the field *Application Config.* (5). Then maintain the necessary parameters for creating a notification (6).



Now start NWBC with role `Z_NOTIFICATION`, to see how it looks:

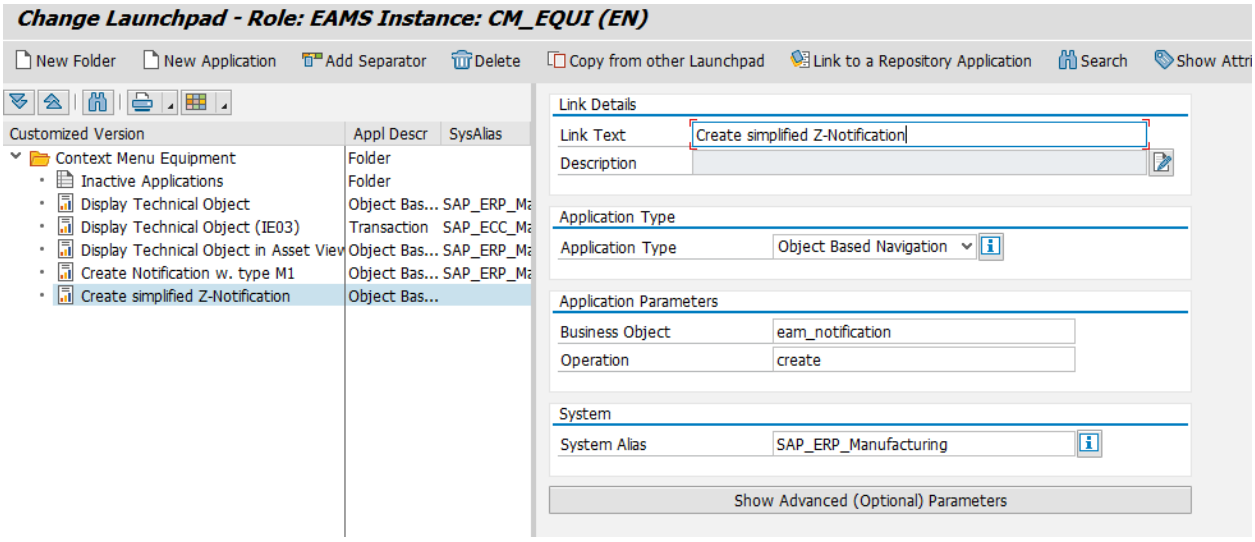


When you now choose this menu entry, the first screen appears for specifying the notification type.

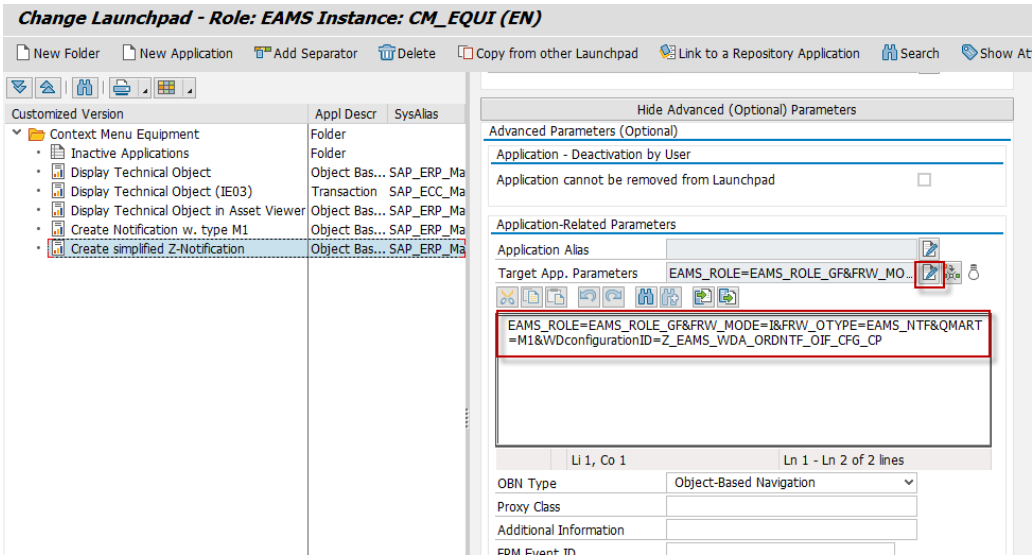
5.2.3 Creating a Simplified Notification from the Context Menu

You can also add your modified application versions to the context menu of technical objects in the Asset Viewer. In this example you want to add an entry to the context menu so that the user can create a notification of type *M1*

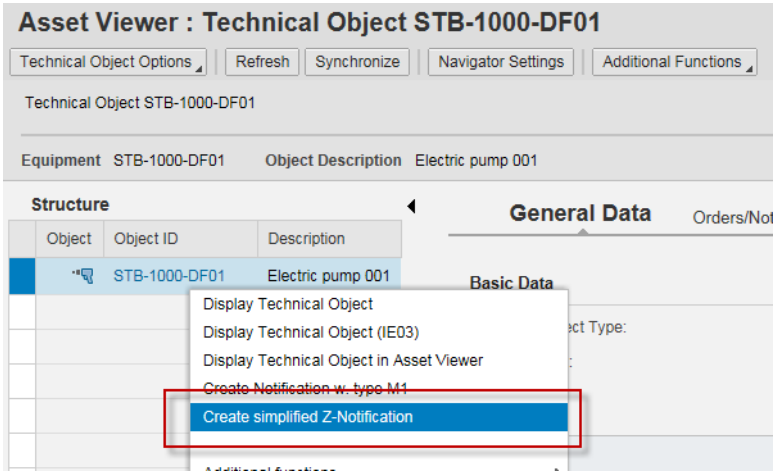
using the simplified version for creating notifications. The steps are similar to the launchpad customizing described in chapter 6.2.3. To do this, add a new application with the following parameters, in instance/role `EAMS/CM_EQUI`:



In the application-related parameters some additional settings are required for the notification type and the Z-configuration.



When you call the technical object of a notification in the Asset Viewer and open the context menu, the system shows the new launchpad entry. A notification then opens in creation mode with type *M1* and the simplified configuration you have created.



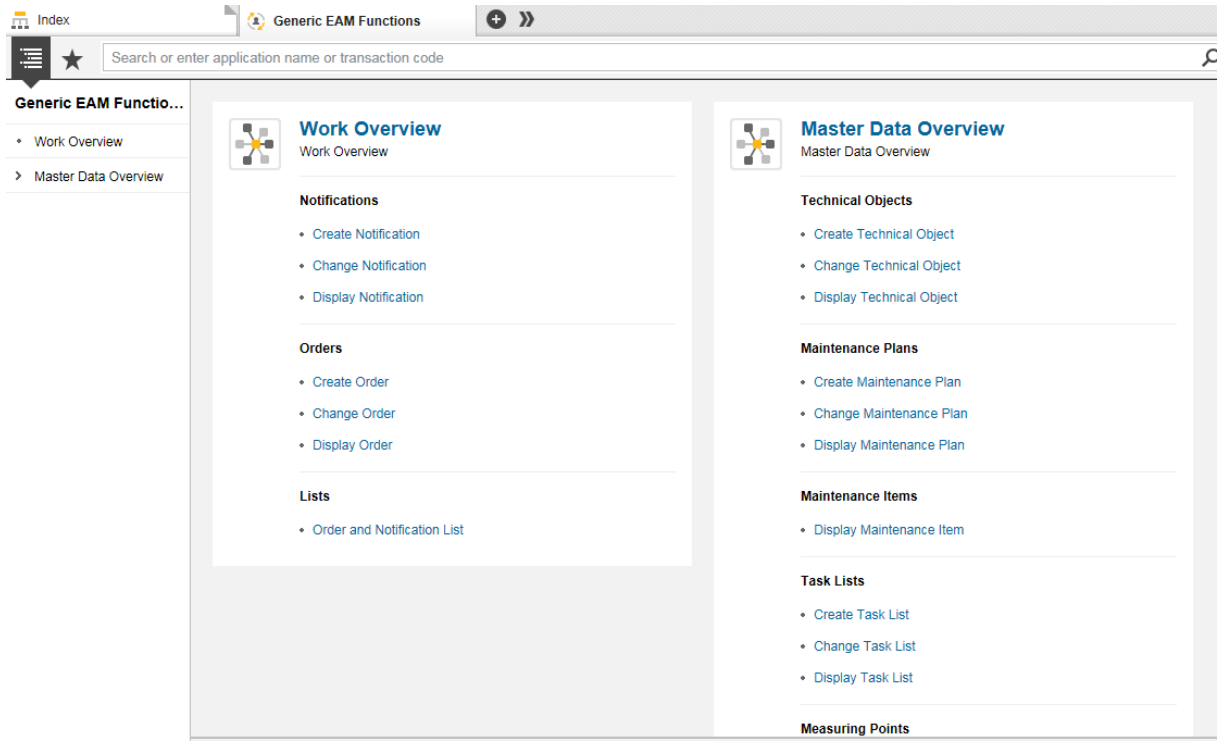
6 Object-Based Navigation and Launchpads

6.1 Object-Based Navigation (OBN) in EAM Web UI

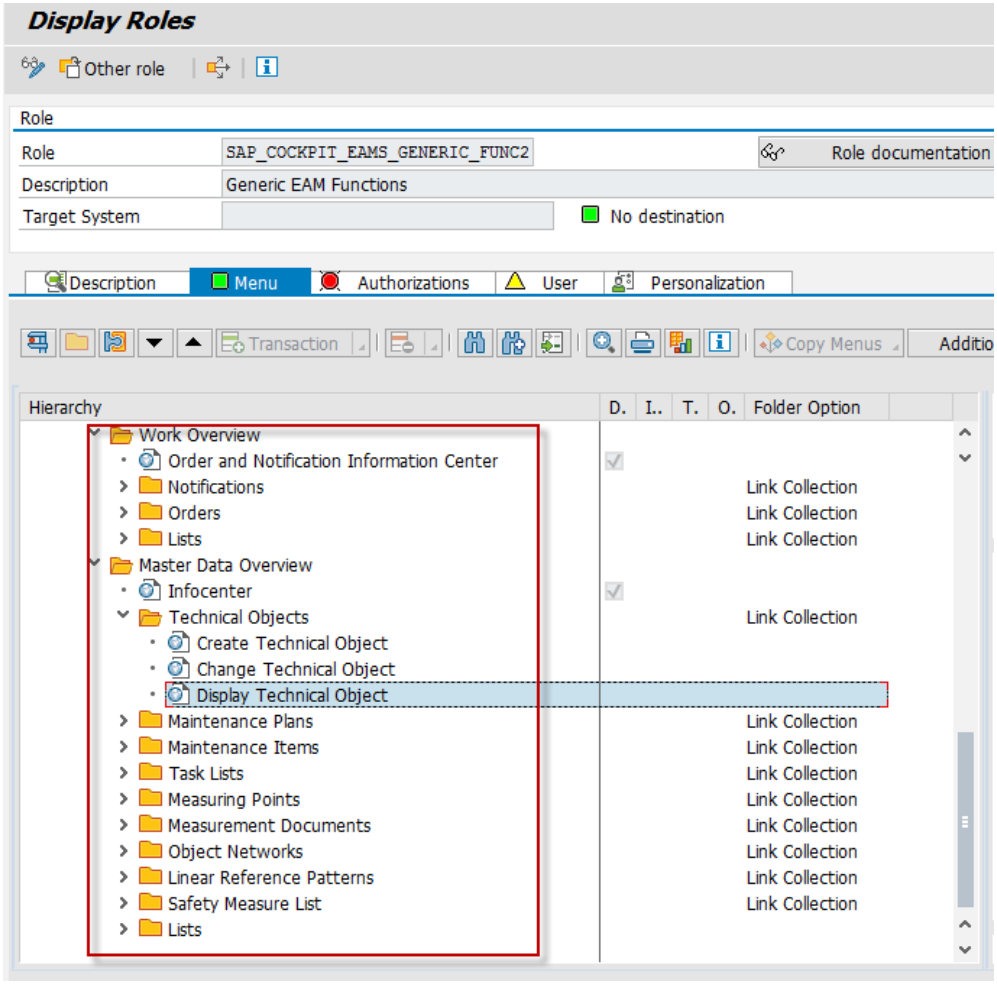
Object-based navigation (OBN) offers Portal and SAP NetWeaver Business Client (NWBC) users an additional method of navigation, which is role-dependent and based on business objects from productive back-end systems.

Object-based navigation is based on business object IDs concatenated with operations or methods to guarantee stable navigation. To ensure correct navigation in the two SAP standard EAM roles for the maintenance planner (`SAP_COCKPIT_EAMS_GENERIC_FUNC2`) and the maintenance worker (`SAP_COCKPIT_EAMS_MAINT_WORKER2`), all EAM applications are listed in the respective role menu twice: Once for accessing the application directly from the role's Launchpad and one for accessing the application by choosing a link or a menu entry in another application.

After launching the NWBC with role `SAP_COCKPIT_EAMS_GENERIC_FUNC2`, the applications you see on the entry screen are grouped under *Work Overview* and *Master Data Overview*.

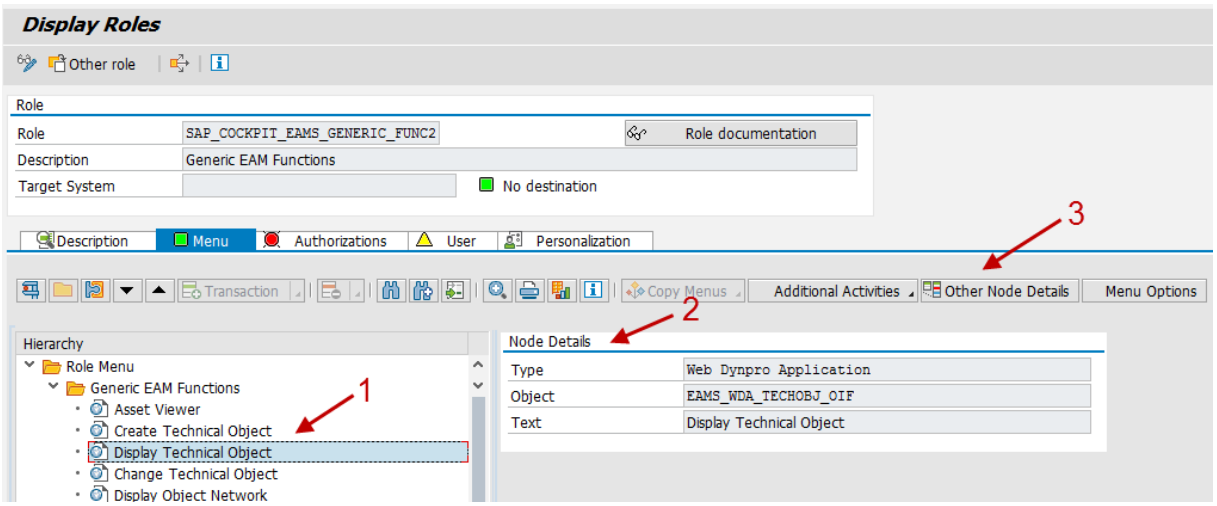


Open the respective role (`SAP_COCKPIT_EAMS_GENERIC_FUNC2`) in transaction `PFCG` and select the *Menu* tab page. You can see these two folders comprising the corresponding applications that can be found on the launchpad.

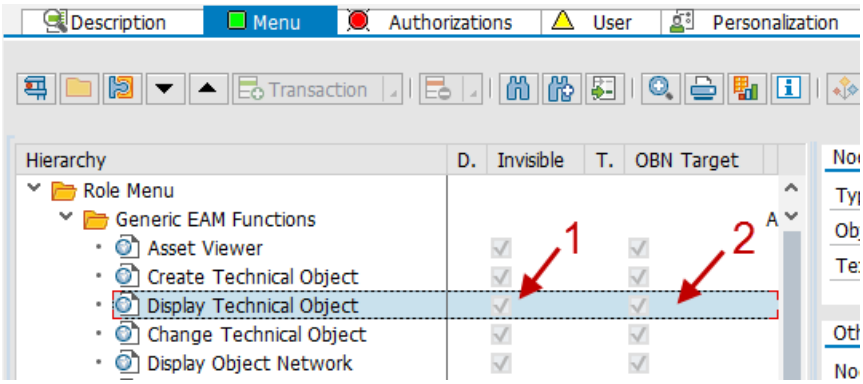


If you scroll up to the top of the hierarchy, you will find in folder *Generic EAM Functions* all applications a second time with different attributes.

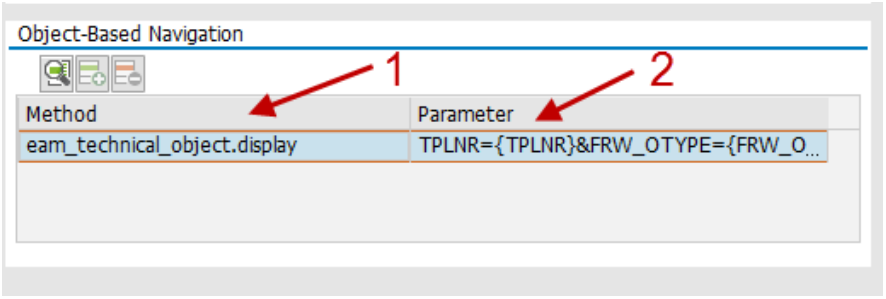
To be able to see the additional attributes, double-click on the respective application (for example *Display Technical Object* (1)) to display the *Node Details* (2) and then choose *Other Node Details* (3).



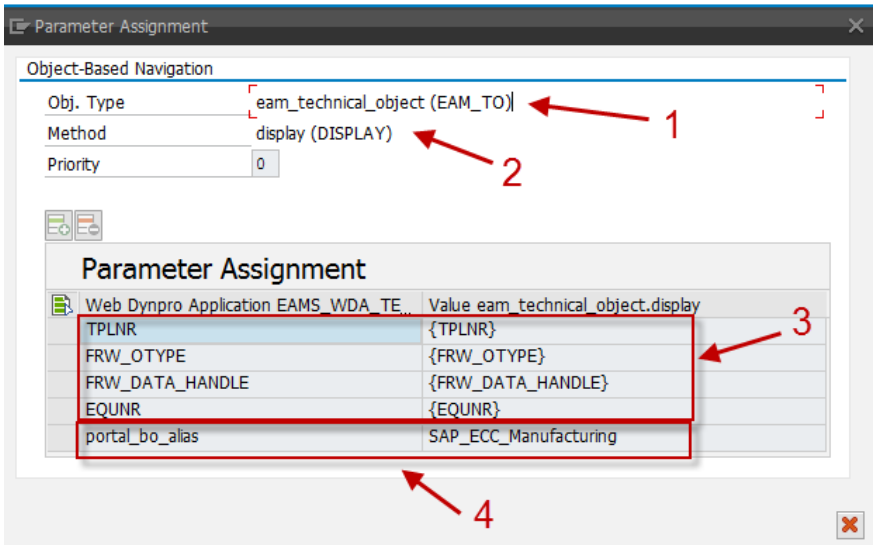
The role entry *Display Technical Object* has the attributes *Invisible* (1) and *OBN Target* (2). This means that although this text cannot be seen within the respective links in other applications, this is the name of the target application to which the links lead.



Additionally the system displays two more group boxes: *Other Node Details* and *Object-Based Navigation*. In the *Method* table column (1) of the *Object-Based Navigation* group-box the system displays a combination of the business object ID (`eam_technical_object`) and the method (`display`), separated by a dot. In the table column *Parameter* (2) you can find all the parameters necessary for calling the navigation target.



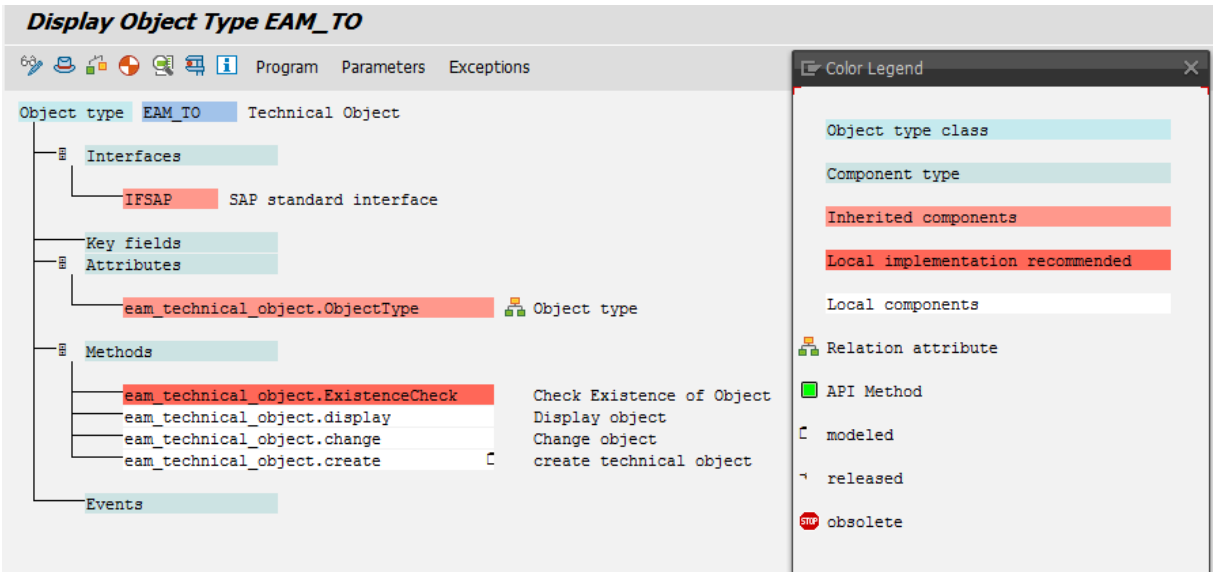
To display further details of the parameter assignment, select the button with the magnifying glass. All the parameters that have to be filled with values when the navigation target is called are displayed on the popup.



The following paragraph describes how to find the parameters in the system. Since the parameter assignment is made for a combination of object type and method, you first need to find out the technical name of object type and method, for example, if you want to create new navigation targets.

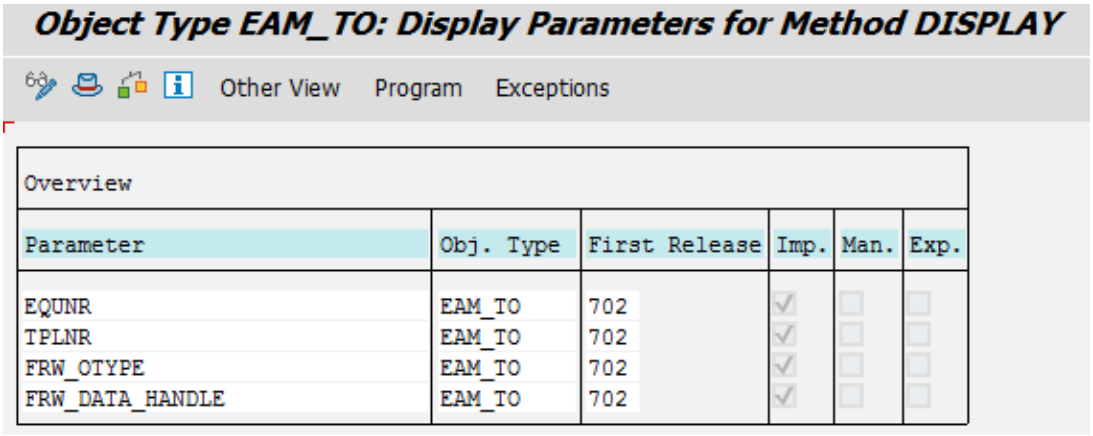
Object Type and Method (1 + 2)

You find the EAM objects with the corresponding methods in the *Business Object Builder* (transaction `SWO1`). All EAM object types start with EAM*, so you can use the input help to find out the name of the relevant object type and display it. Expand the hierarchy node *Methods* to display all methods belonging to the respective object type (in this example, the method `eam_technical_object.display`).



Parameters and their assignment (3)

To find out which parameters are needed for the object based navigation entry in the PFCG-role, select the respective method and choose the *Parameters* button in the toolbar. In the parameter overview for method *Display* you can find the four import parameters that were also displayed in the *Parameter Assignment* popup (3) of transaction `PFCG`.



Parameter	Obj. Type	First Release	Imp.	Man.	Exp.
EQUNR	EAM_TO	702	☑	☐	☐
TPLNR	EAM_TO	702	☑	☐	☐
FRW_OTYPE	EAM_TO	702	☑	☐	☐
FRW_DATA_HANDLE	EAM_TO	702	☑	☐	☐

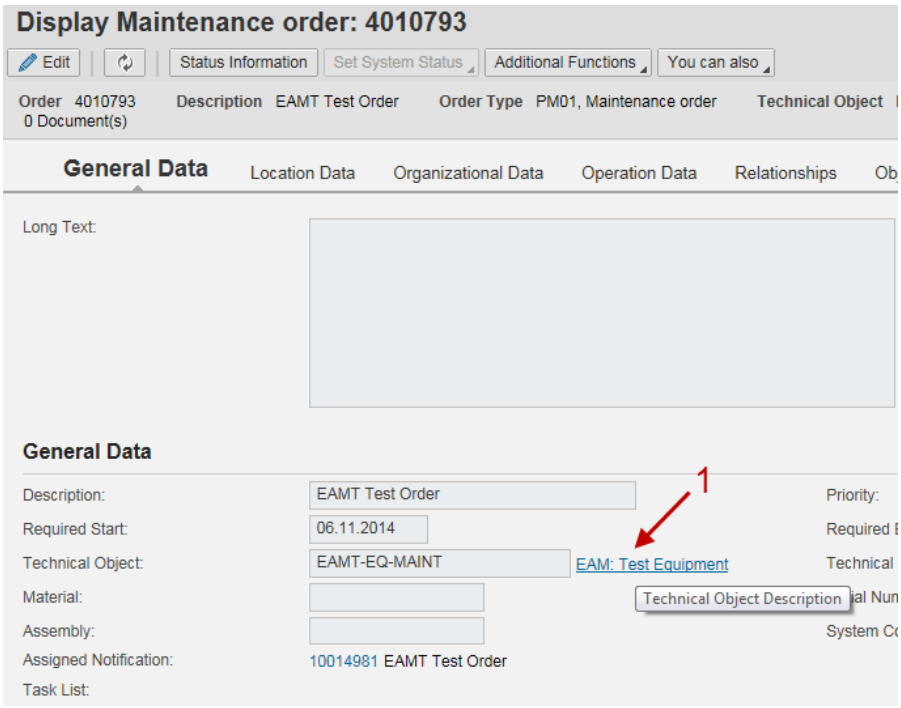
The technical name of the piece of equipment or of the functional location is copied to the application in the parameters `EQUNR` or `TPLNR`. The parameter `FRW_OTYPE` indicates whether the application is opened in *Display*

(D), *Change* (C) or *Create* (I) mode. The parameter `FRW_DATA_HANDLE` indicates whether it is a single or mass transaction.

Portal_bo_alias (4)

The Portal_bo_alias contains an RFC-connection name which points to the local or a remote system. The alias is needed especially for the portal roles (also called PCD-roles).

An essential prerequisite for fully functional object-based navigation is that links to other objects work when they are called from inside a Web UI application. In this example, the OBN entry *Display Technical Object* (`eam_technical_object.display`) is used whenever you open a maintenance order and click on the technical object description (1).



If the respective OBN entry is part of the user's role, the user can click on the link and the WEB UI application for displaying technical objects opens in a new tab of the NWBC.

If you would also like to provide links to non-OBN targets, such as transactions, external URLs, and Web Dynpro applications from other components, you have to copy the following OBN entries from SAP standard roles to the respective roles in your namespace:

6.2 Launchpad Customizing

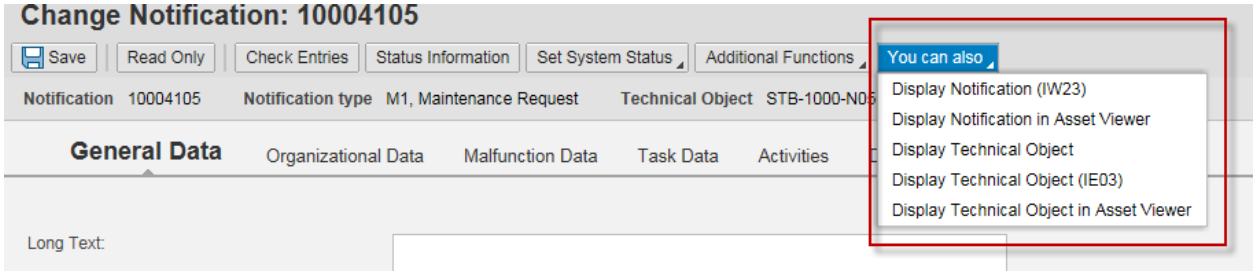
Launchpads are available in each Floor Plan Manager (FPM) application either as *You can also* menu (YCA) maintained in the corresponding component configuration or as related links (RL).

You can define appropriate launchpads for each object type (for example for a technical object or a notification) in customizing for *Plant Maintenance and Customer Service under Maintenance Roles → Maintenance Worker → Asset Viewer → Settings for BO Framework and Navigation → Navigation, Parameter Mapping, and Services →*

- Assign the Navigation Target (view `/PLMU/FRW_NAV`)
  In this customizing activity you specify navigation targets for generic navigation, such as the left-hand mouse click or buttons.
- Define the Context menu (view `/PLMU/FRW_CTXM`)
  In this customizing activity you specify the context menus for each object type.

6.2.1 Adjusting the 'You Can Also' Menu (YCA)

On the Web UI the user usually can access the button *You can also* und can choose additional transactions from a dropdown menu. From the notification, for example, the user can navigate to the technical object assigned to the notification or display the notification and technical object in the Asset Viewer.

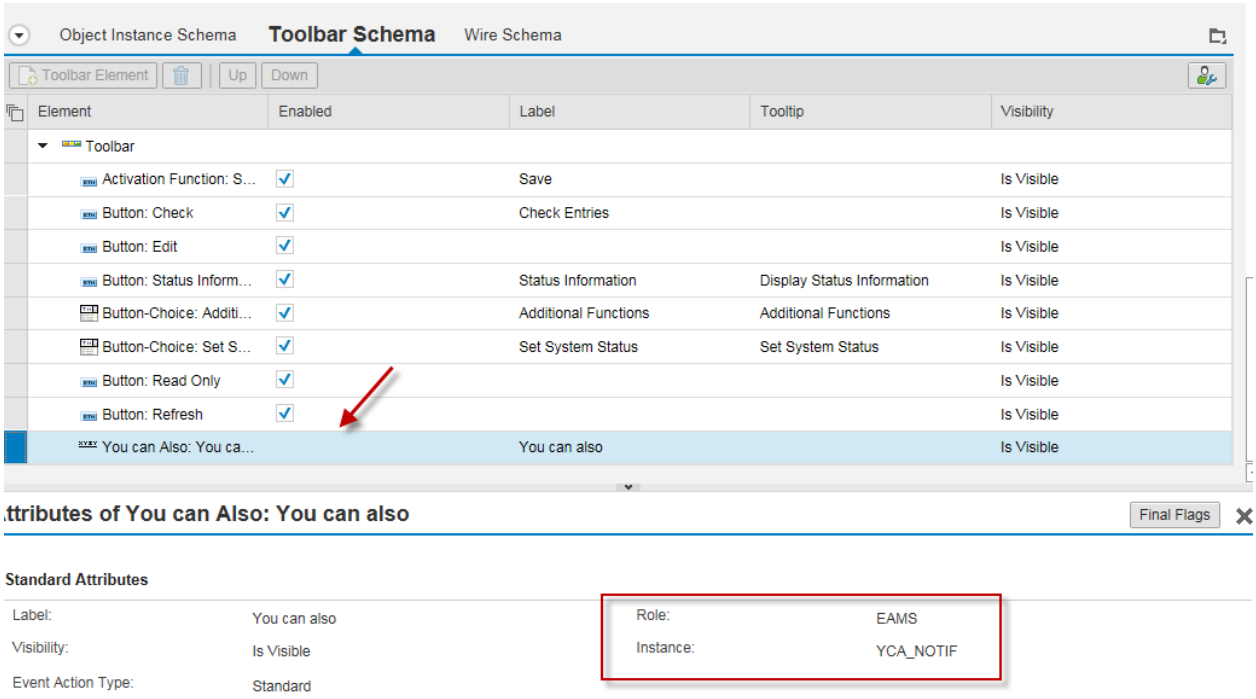


As an administrator you can specify which additional transactions are available in the dropdown menu of the *You can also* button.

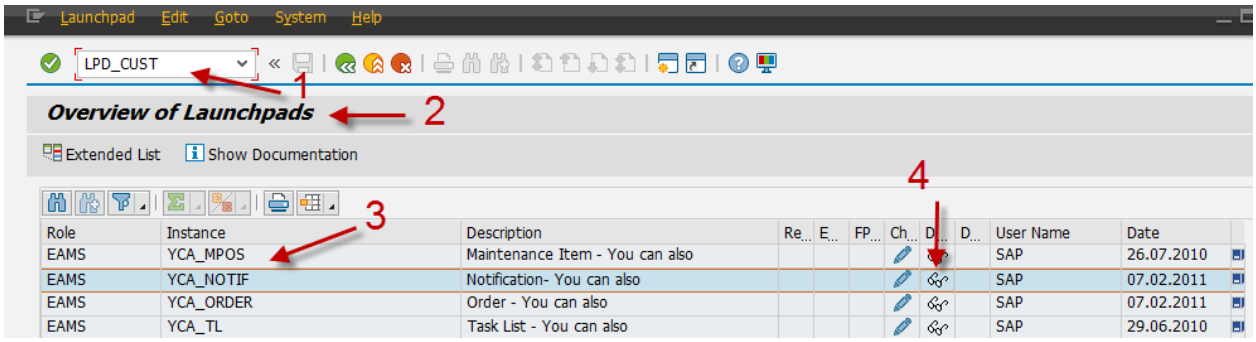
First, you have to find out where these menu entries are defined. To do so, access the component configuration by choosing the pushbutton *Configure Page* on the entry screen of the application. Select the *You can also* button in the navigation and repository screen area and open the *Toolbar Schema*. In the attributes of this toolbar element you find the role name and instance name of the *You can also* button. In this example the role name `EAMS` and the instance of the *You can also* menu `YCA_NOTIF` are displayed.

For more information about creating and changing the customizing of applications, see chapter 3.1.

Hint: In general, all launchpad roles in EAM start with EAMS*. The instances for *You can also* menus begin with `YCA_*` and the context menus begin with `CM_*`.

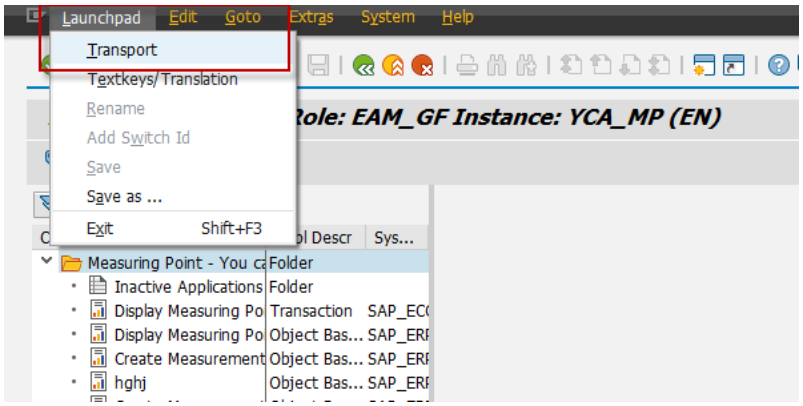


Next you open the transaction *Overview of Launchpads* (2) `LPD_CUST` (1). In the overview list select the line of the respective *You can also* menu, in our example Role `EAMS` and Instance `YCA_NOTIF` (3). Choose the glasses button to see further details (4).



Depending on the application, the corresponding parameters have to be maintained in the launchpad. If you want to create additional menu entries, you have to create your own customizing version. You can reset this individual customizing version back to the SAP standard version at any time.

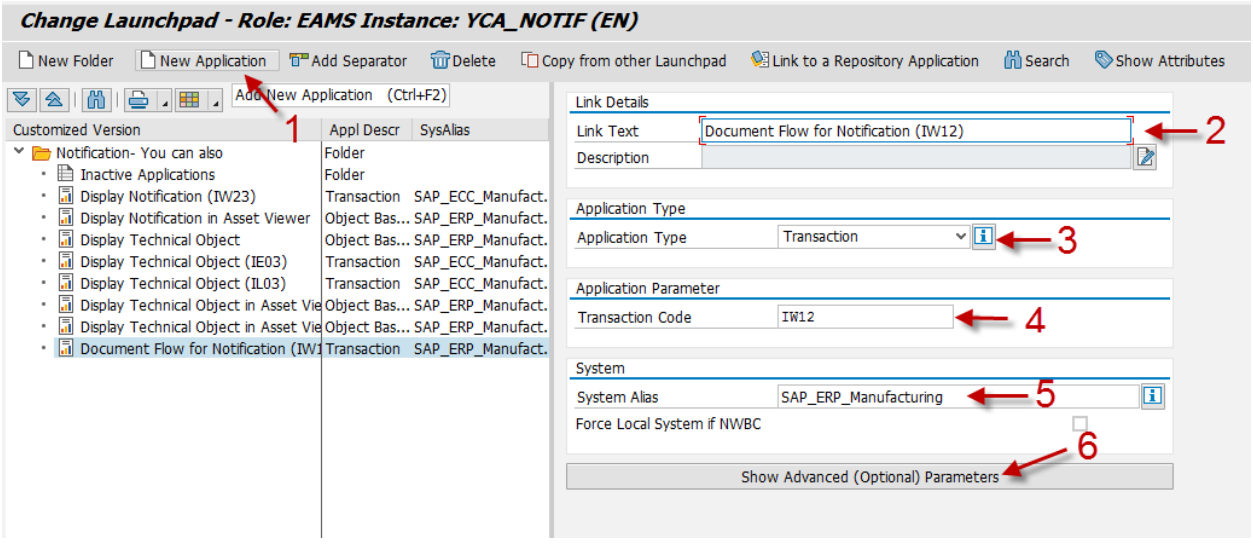
Note that there is not an automatic transport connection for launchpad customizing. The entries have to be copied manually in a transport request by choosing *Launchpad* → *Transport*.



6.2.2 Adding a Transaction to the 'You Can Also' Menu (YCA)

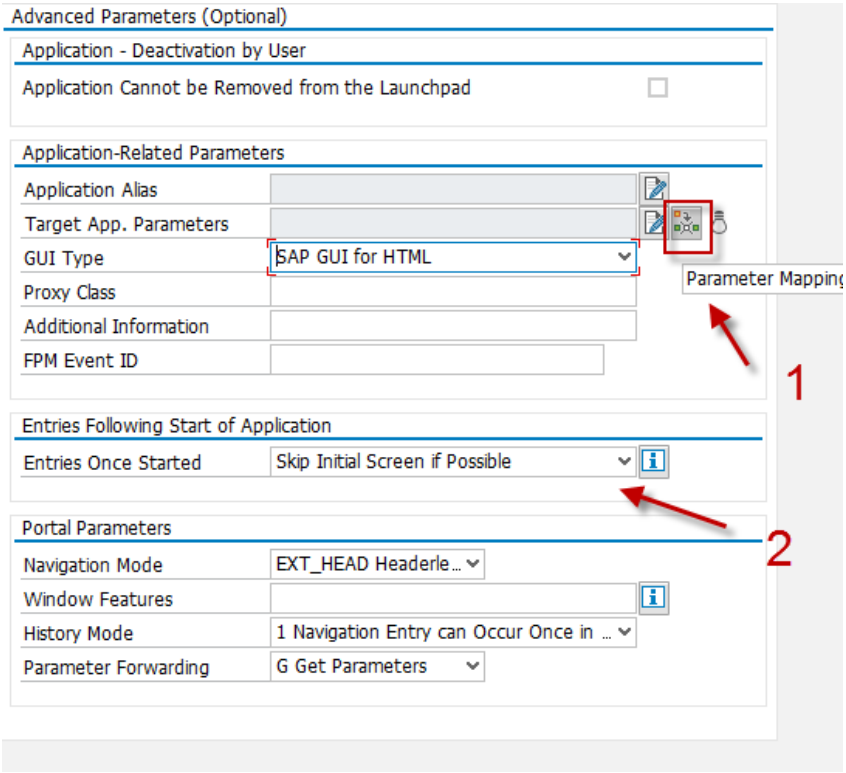
For each application you can enhance the dropdown menu of the *You can also* button with additional transactions. In this example the user will be able to navigate to the document flow of the displayed notification when they open the dropdown menu of the *You can also* button. The respective transaction is `IW12`.

To add this transaction to the *You can also* menu of the notification, call transaction `LPD_CUST` in change mode and change the role/instance `EAMS YCA_NOTIF` by clicking on the *Change* button. In the left screen area, the system displays all menu entries of the *You can also* menu. Choose *New Application* to add a new menu entry (1) and maintain the menu entry name in the field *Link Text* (2). Choose the application type *Transaction* (3) and enter the transaction code `IW12` (4) and the system alias `SAP_ERP_MANUFACTURING` (5). You can maintain further parameters by clicking on the *Show Advanced (Optional) Parameters* pushbutton (6).

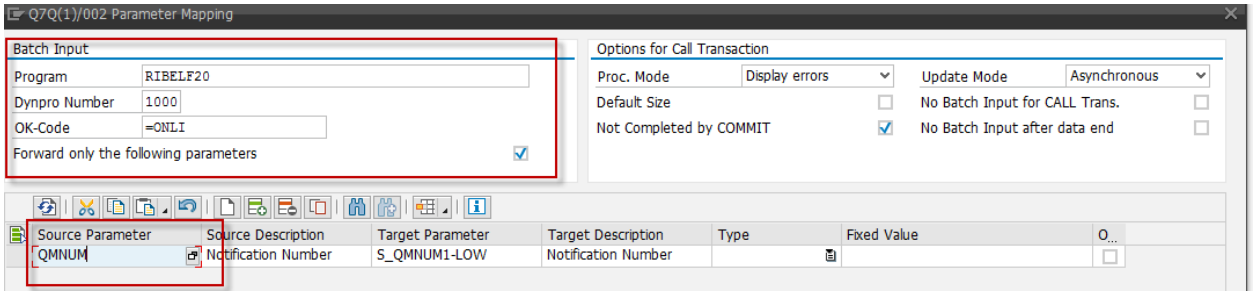


In the advanced parameters you map the application data the user is currently working on to selection input parameters in the transaction you want to link to (1). These input parameters allow the system to skip the entry page of the linked transaction so that the user directly navigates to the information they want to access. In this example the user wants to see the document flow of the notification they are currently working on. The notification number therefore must be recognized by the system as an input parameter when the user calls

transaction IW12 from the *You can also* menu. You make these settings in the parameter mapping. In addition, you have to choose *Skip Initial Screen if Possible* from the dropdown menu of the field *Entries Once Started* (2).



By choosing the button *Parameter Mapping* you access the following entry screen:

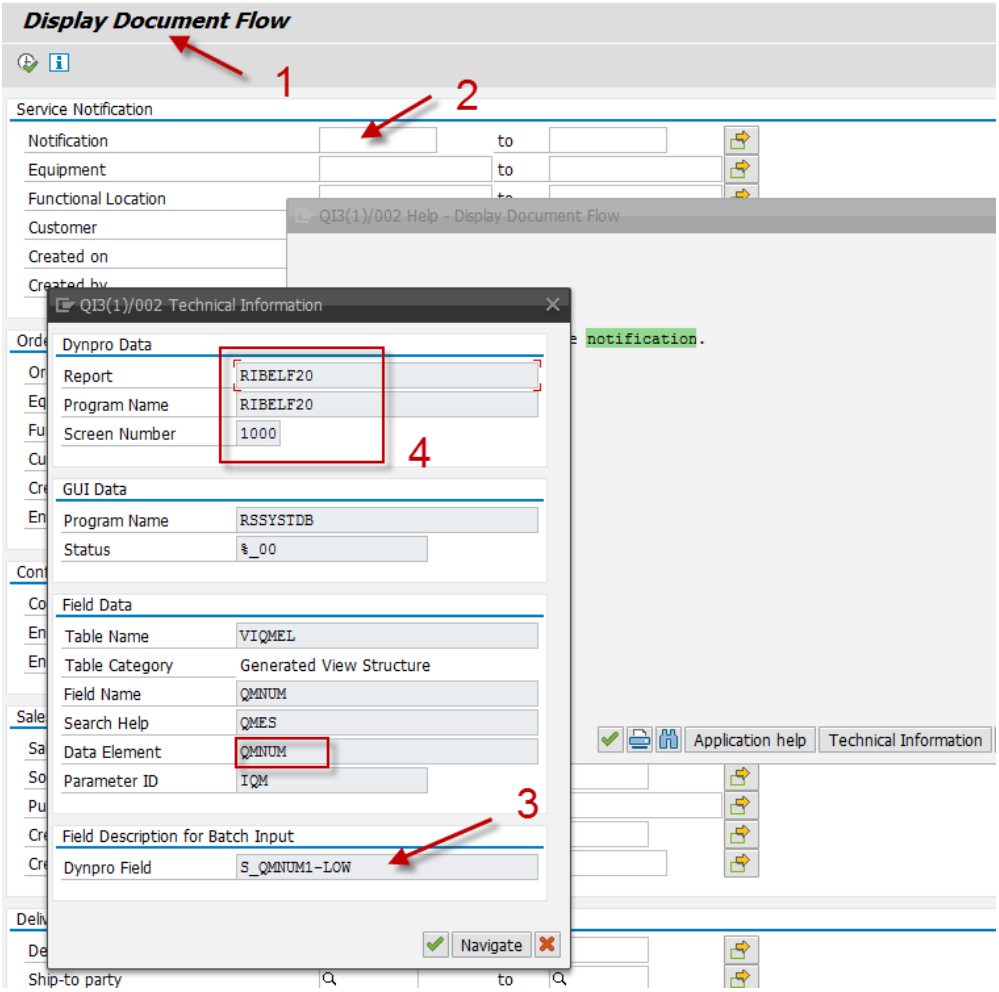


In addition to the program and the dynpro number, you must also maintain the source parameter and the target parameter. In our example the notification number is mapped as the input parameter to the *Document Flow* transaction. To find out the names of the parameters, you call transaction IW12 (1) and place the cursor in the field for which the input parameter is to be provided. In this example you place the cursor in the field *Notification* (2). Then you press *Help* (F1) and then F9 to access the technical information of the field:

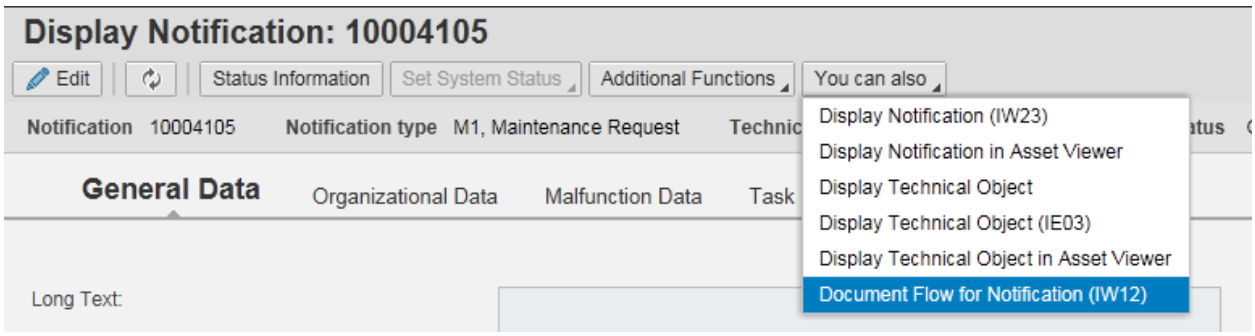
In the group box *Dynpro Data* you find the *Program Name* and the *Screen Number* that you need to maintain the fields *Program* and *Dynpro Number* on the *Parameter Mapping* screen (4).

In the group box *Field Data* you find the technical name of the *Data Element* that you maintain as the *Source Parameter* in the *Parameter Mapping* screen. In our example this data element is QMNUM which as a source parameter provides the system with the current notification number.

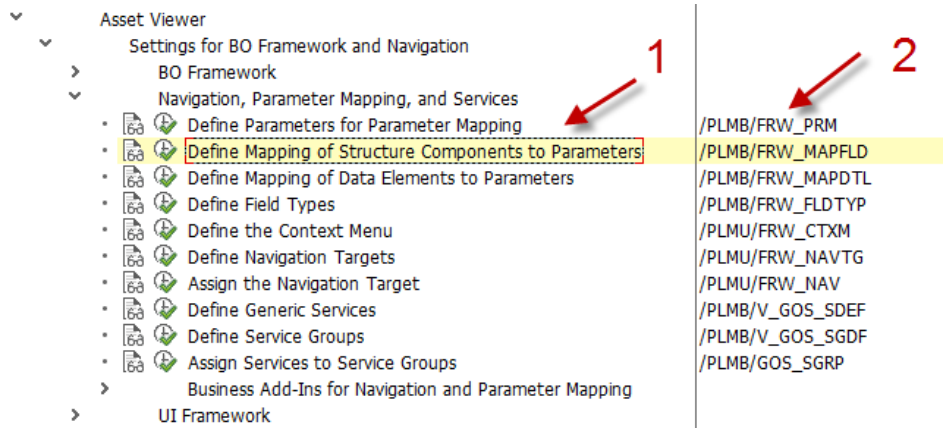
In the group box *Field Description for Batch Input* you find the technical name of the *Dynpro Field* that you maintain as the *Target Parameter* in the *Parameter Mapping* screen (3). In our example this dynpro field is `S_QMNUM-LOW` which as a target parameter provides the system with the current notification number.



When you have finished the parameter mapping and saved your new entry, this entry is shown in the dropdown menu of the *You can also* button. By selecting this entry in the notification, the user navigates directly to the document flow of the notification they are currently working on without seeing the entry page of transaction `IW12`.



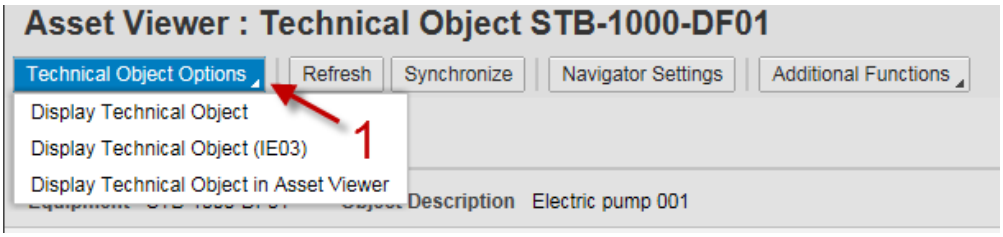
You can find important information about parameters and their mapping in customizing for the *Asset Viewer* under *Settings for BO Framework and Navigation* → *Navigation, Parameter Mapping, and Services*. Here you find the IMG activities (1) and views (2) for creating your own parameter mapping to be used for launchpad navigation.

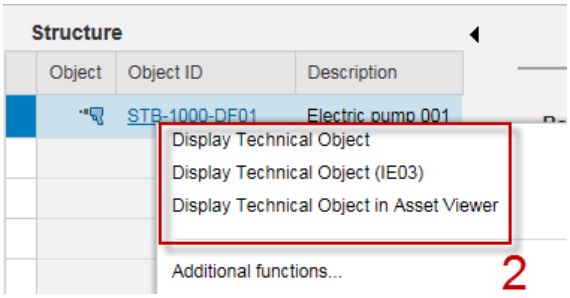


For detailed information about Navigation, see: http://wiki.scn.sap.com/wiki/display/SPI/Navigation.

6.2.3 Adding an Entry to the Context Menu in Asset Viewer

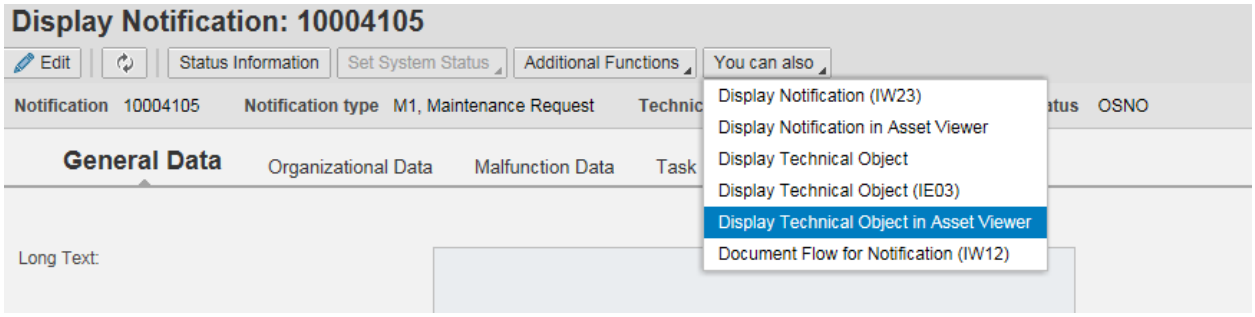
When you display technical objects in the Asset Viewer you can open context menus and access further information, such as the master data of the technical object, by navigating to other transactions or applications. You can open the menu in the header toolbar as a dropdown menu of the *Technical Object Options* button (1) or as a context menu with a right mouse click on the technical object that is displayed in the *Structure* table (2).





For more information, see Context Menus in the Asset Viewer.

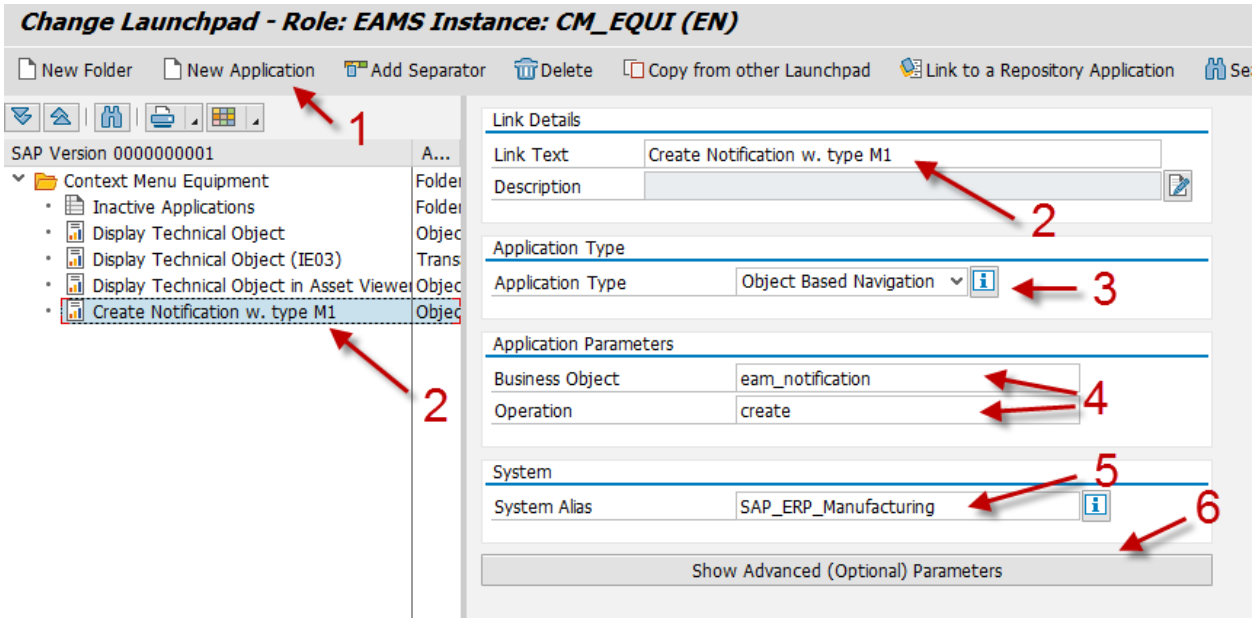
In this example the user will be able to create a notification with type *Maintenance Request* (M1) directly from the context menu for a technical object that is currently displayed in the Asset Viewer. From the notification you can call the affected piece of equipment in the Asset Viewer directly from the *You can also* menu:



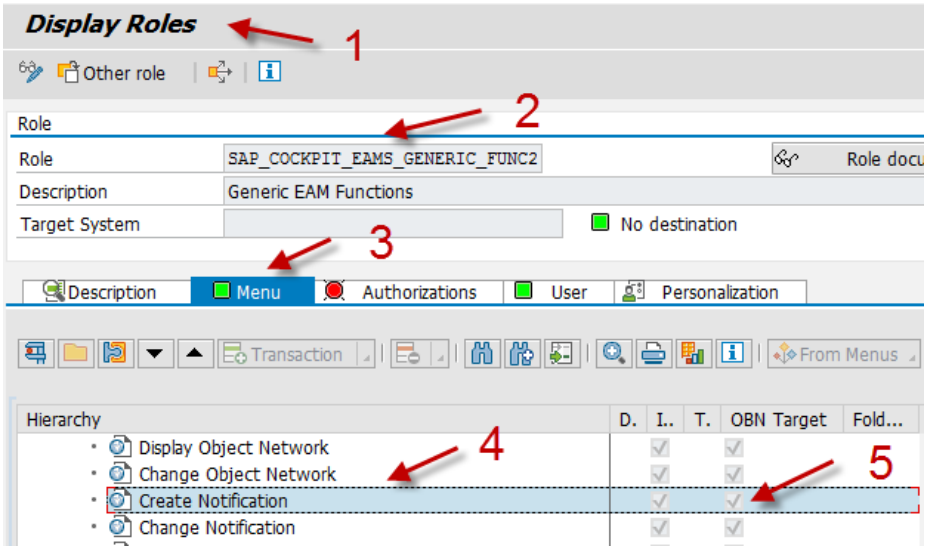
To add new entries to the context menu of a technical object in the Asset viewer, call transaction `LPD_CUST` (*Launchpad Overview*) in change mode and change the role/instance `EAMS/CM_EQUI` by clicking on the *Change* button. In the left screen area the system displays all menu entries of the *Context Menu Equipment*.

Hint: The naming convention for roles that you want to connect to a context menu is to use the prefix `CM` (**c**ontext **m**enu).

Choose *New Application* to add a new menu entry (1) and maintain the menu entry name in the field *Link Text* (2). Choose the application type *Object Based Navigation* (3). To find out the *Application Parameters* (4) and the *System Alias* (5) you have to navigate to transaction `PFCG` for role maintenance, which is described in the next section. Afterwards, you have to maintain further parameters by clicking on the *Show Advanced (Optional) Parameters* pushbutton (6).

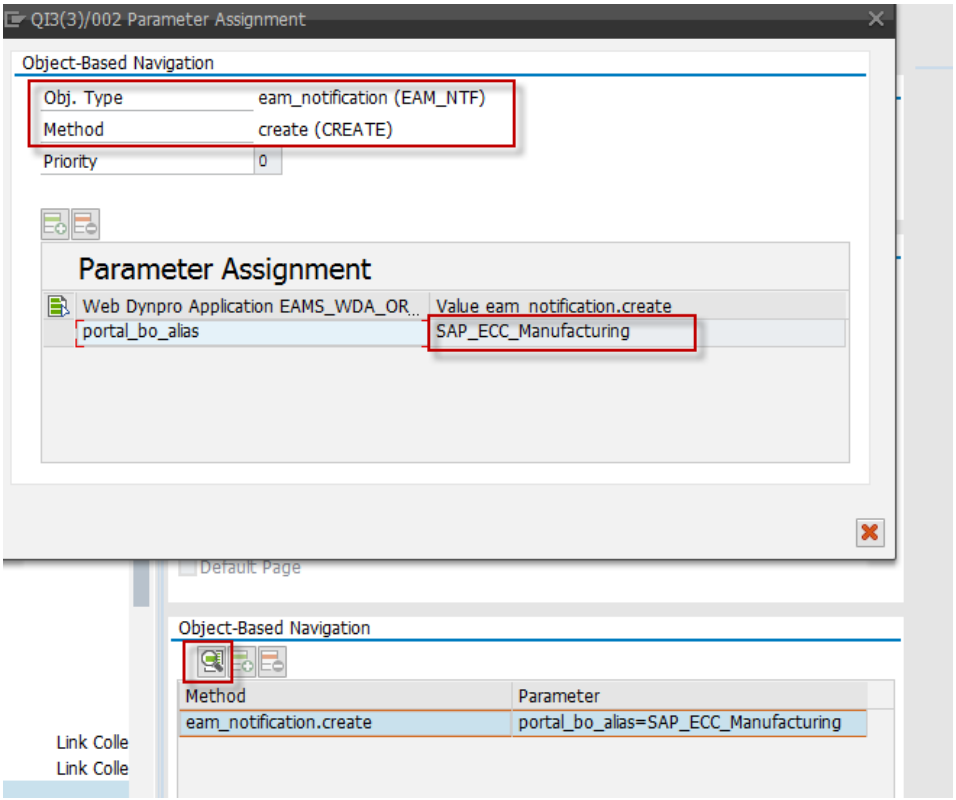


When you call the role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` (2) in transaction `PFCG` (1) you find the application *Create Notification* (4) on the tab *Menu* (3). Choose the *Other Node Details* pushbutton to get further information. Now you see, for example, that the checkbox *OBN Target* is selected for this application (5).

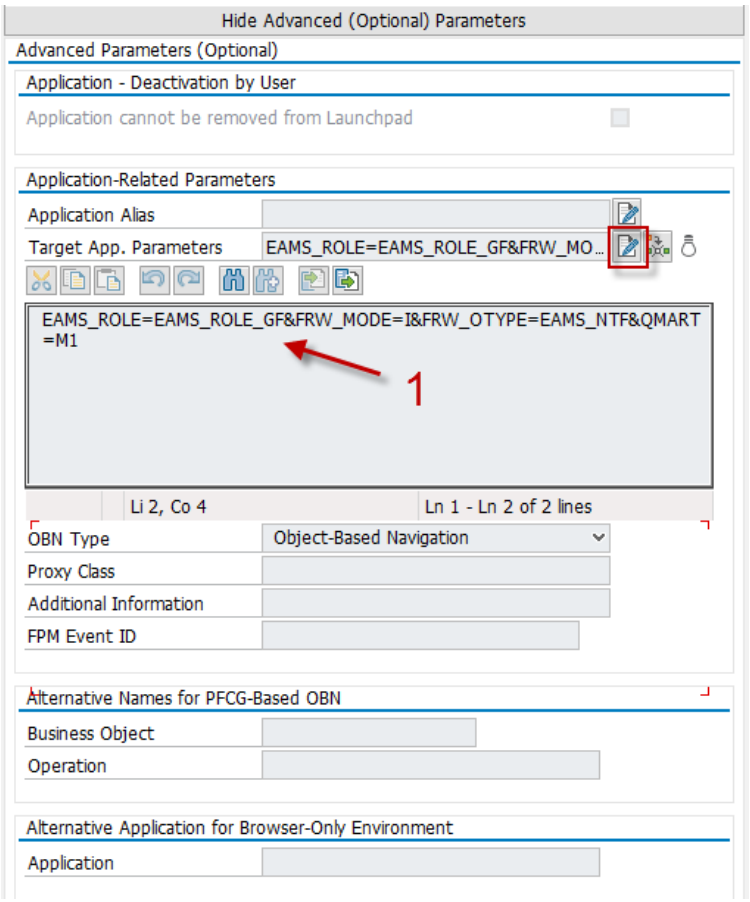


When you choose the button *Select Method* in the group box *Object-Based Navigation*, you find the information about the object type, the method, and the system alias.

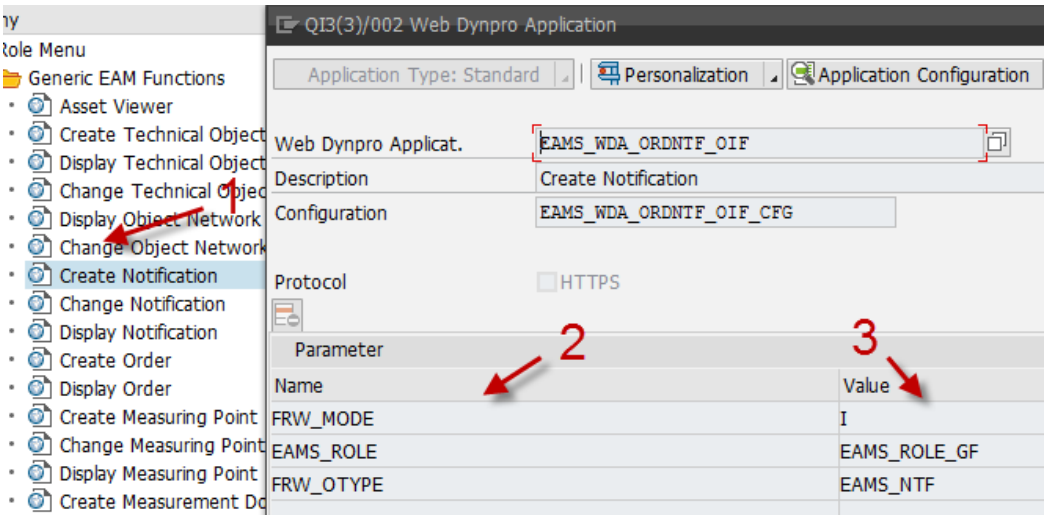
- You find the *Obj. Type* and the *Method* that you need to maintain as the *Business Object* and *Operation* in the *Application Parameters* of the Launchpad Role.
- In the group box *Parameter Assignment* you find the value for the *Web Dynpro Application* that you need to maintain as the *System Alias* in the Launchpad Role.



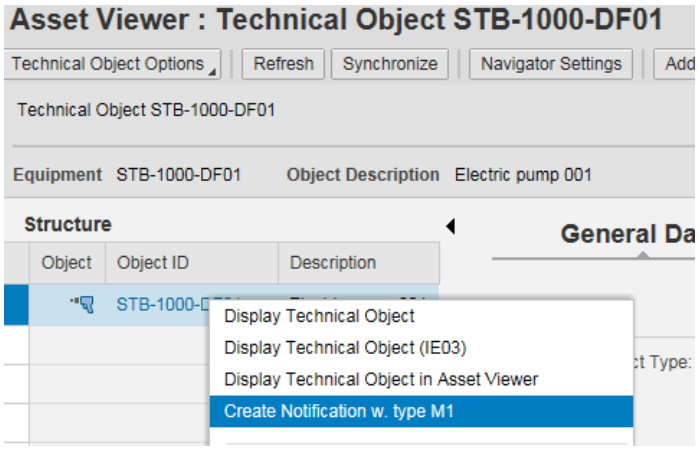
When you have maintained the *Application Parameters* and the *System Alias* in the launchpad, you have to maintain the advanced parameters by clicking on the *Show Advanced (Optional) Parameters* pushbutton. You must maintain the *Target App. Parameters* (the rest is optional). In addition, you can provide the system with fixed parameter values (1), such as *M1* for the notification type (`QMART`).



You can find the information about the target parameters in the role menu of transaction `PFCG`. In this example, call the role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` and choose the *Menu* tab. In the *Role Menu* choose *Details* from the context menu of a selected line (1). The parameters that are listed in the detail view (2, 3) are the target parameters that you need to enter in the *Advanced Parameters* of the launchpad. In the field *Target App. Parameters* of the launchpad, enter the technical name of the parameter and the corresponding value and connect them using the '=' sign (e.g. `EAMS_ROLE=EAMS_ROLE_GF`). If there are several target parameters to maintain, use the '**&**' sign to separate the parameter-value pairs.



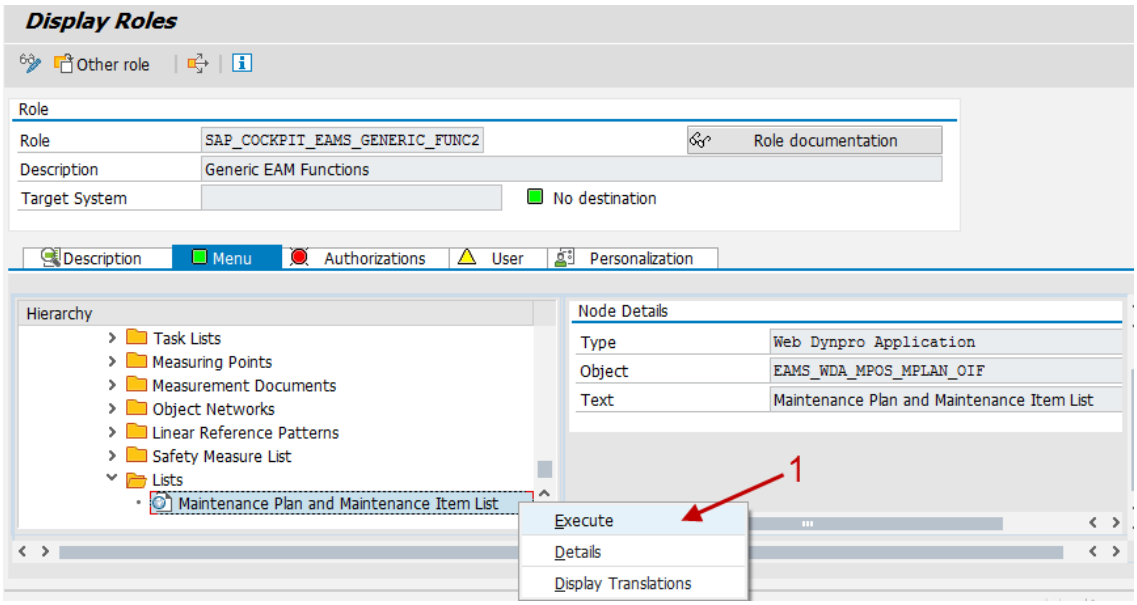
After you have maintained the advanced parameters and saved your changes to the Launchpad Role Definition, the user can see a new entry in the context menu of the technical object in the Asset Viewer. If the user chooses the new option *Create Notification w. type M1*, they open a notification in creation mode with type M1 and the technical object they are currently displaying.



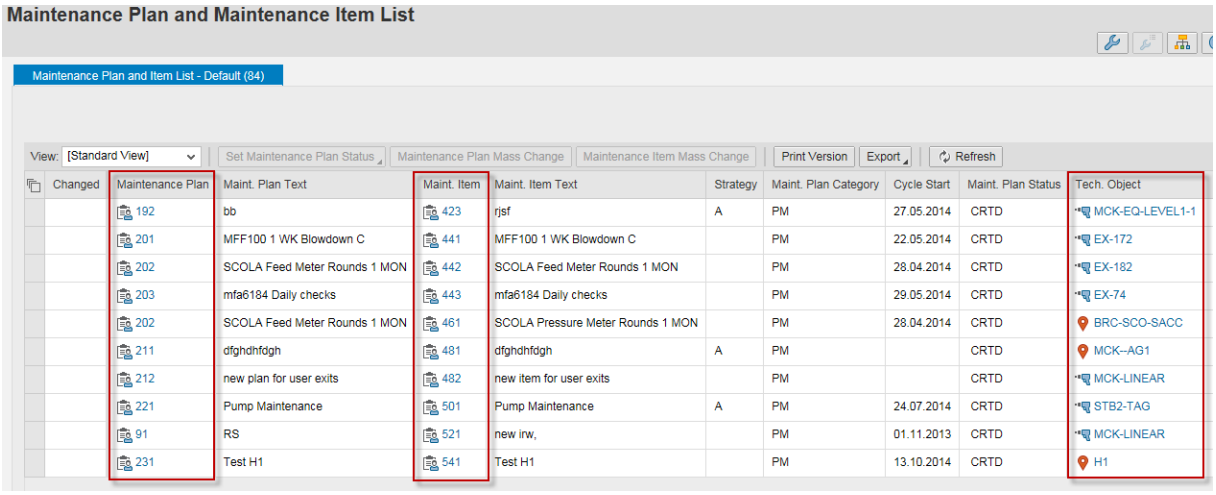
6.3 Alternative Navigation Targets for Browser Environment

Sometimes Web UI applications are called neither in a portal environment nor within a Net Weaver Business Client, but via direct URL links to the application. In this case the system has no direct access to a role with OBN entries and therefore navigation to other applications does not work. To enable navigation, nevertheless, you have to specify alternative navigation targets in customizing for the Launchpad (transaction `LPD_CUST`).

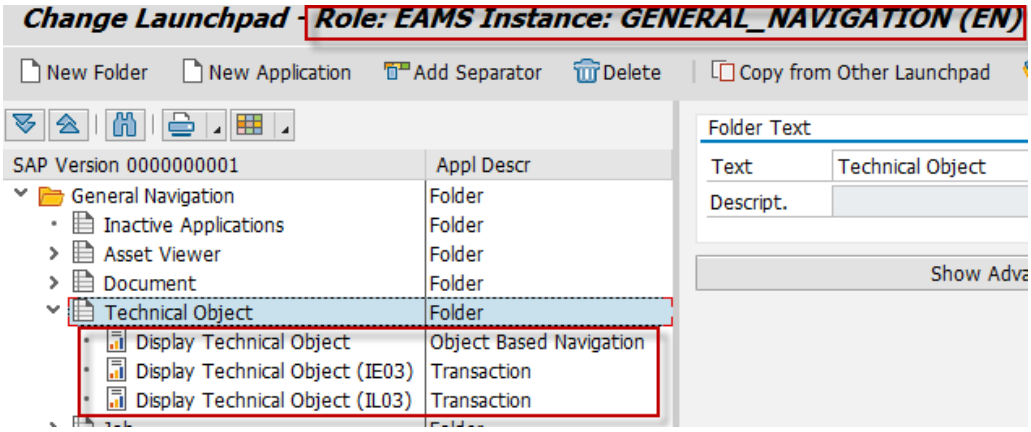
As an example, you want to open the *Maintenance Plan and Item List* in a browser environment. You display the role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` in transaction `PFCG`, choose *Master Data Overview → Lists* in the *Hierarchy*, select the *Maintenance Plan and Maintenance Item List* and choose *Execute* (1) in the context menu.



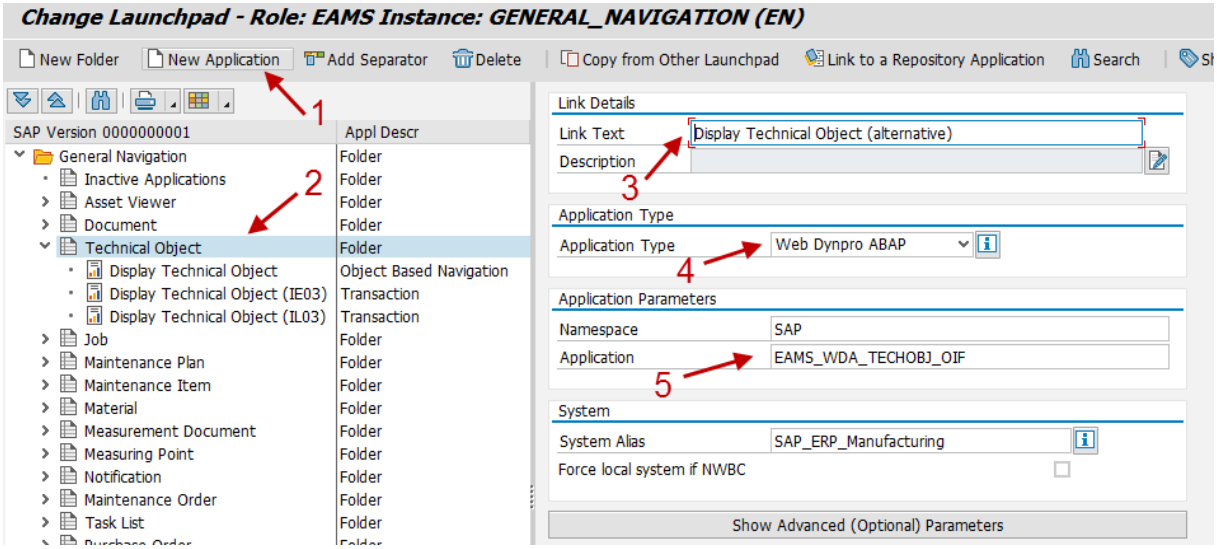
The system displays the *Maintenance Plan and Maintenance Item List*. Even though some list entries (for example, the maintenance plans, the maintenance items and the technical objects) are displayed as links, these links do not work.



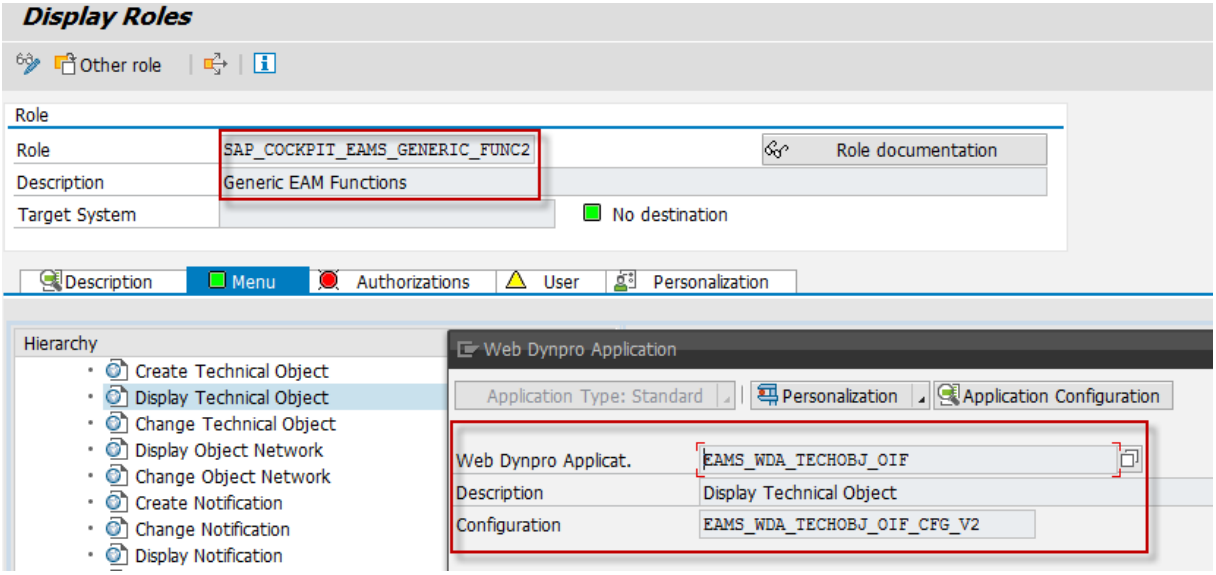
If you want the technical object links to work, you have to specify an alternative navigation target in customizing for the launchpad (transaction `LPD_CUST`). Open the launchpad in change mode for role `EAMS` and instance `GENERAL_NAVIGATION`. Three navigation targets have already been specified in the folder *Technical Object*. The first one opens the Web UI application as described in the OBN section above. The following two are the SAPGUI transactions for displaying a piece of equipment (`IE03`) and a functional location (`IL03`).



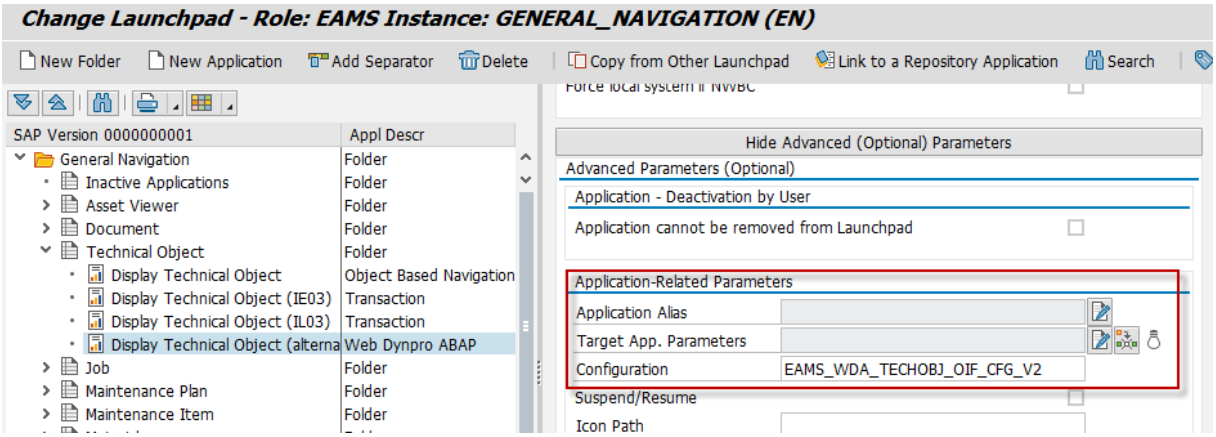
If you want links to the technical object to also work in a browser-only environment, you have to specify an additional entry for this alternative navigation option. Select the folder *Technical Object* (2) and then click on *New Application* (1). Enter the link text (3) and choose *Web Dynpro ABAP* (4) as *Application Type* to open the Web UI application for the technical object.



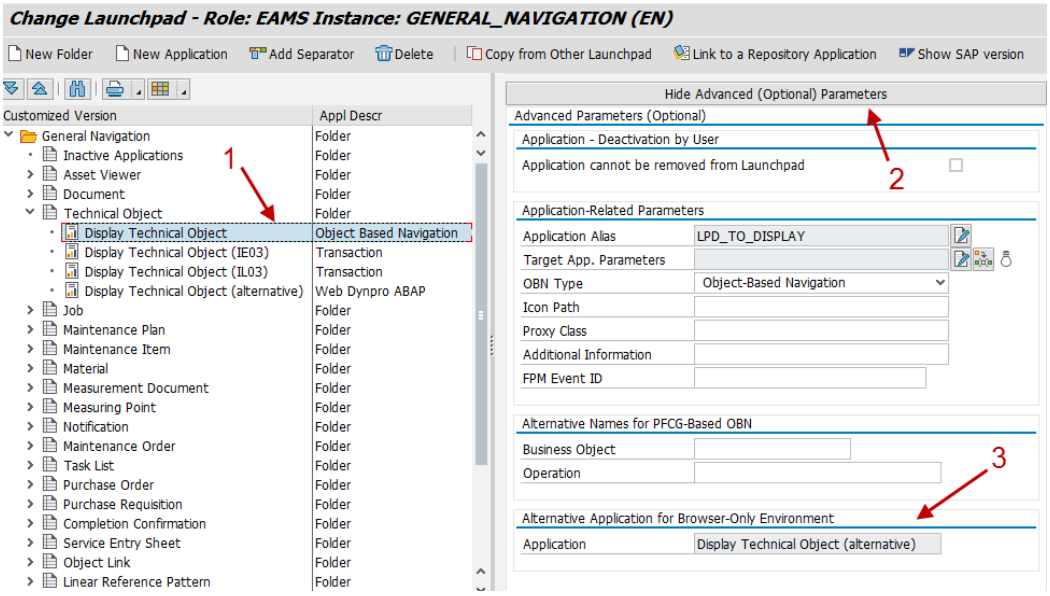
In the next step, you have to assign the application and the corresponding configuration name. You can find out the application and configuration name in the details of the OBN entries of the SAP standard PFCG roles.



Now you enter the Web Dynpro application name `EAMS_WDA_TECHOBJ_OIF` in the *Application Parameters* section (5). To specify the configuration, open the section *Show Advanced (Optional) Parameters* and enter configuration ID `EAMS_WDA_TECHOBJ_OIF_CFG_V2` in the corresponding field.



Now you have created the alternative navigation option *Display Technical Object (alternative)*, you have to add it to the existing OBN entry *Display Technical Object* in the launchpad. To do this, open the OBN entry (1) in change mode and go to the *Advanced Parameters* (2). In the section *Alternative Application for Browser-Only Environment*, enter the Web Dynpro ABAP entry you have just created for displaying technical objects in Web UI (3) and save your changes.



When a technical object is selected in the Web UI application *Maintenance Plan and Maintenance Item List* running in a browser environment, a second browser window opens with the technical object application.

For more information about launchpads, see Launchpads in SAP Library.

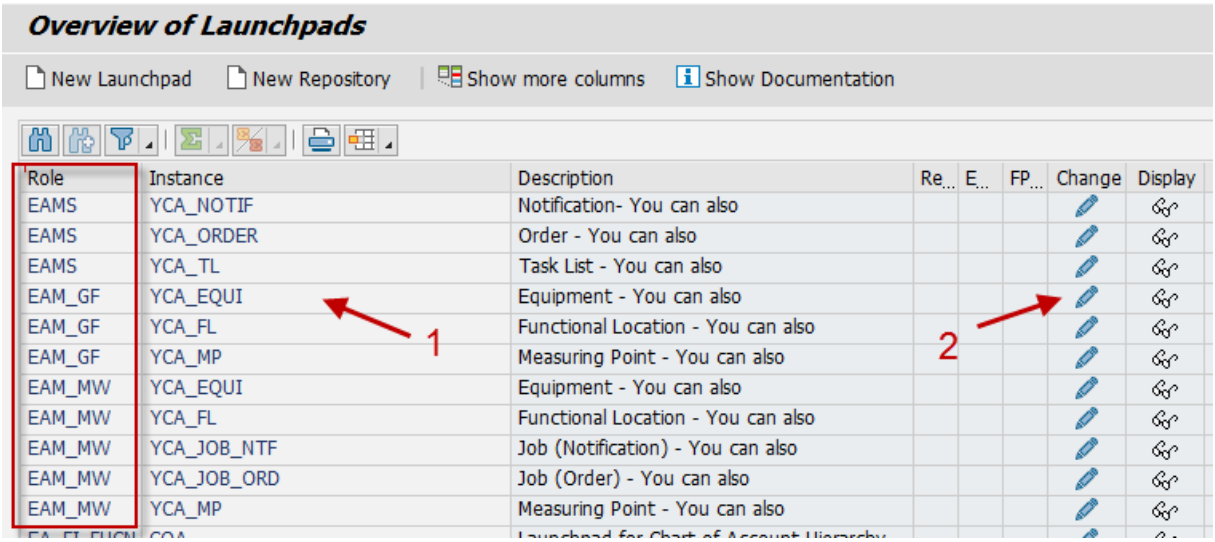
6.4 Example for Enhancing the 'You can Also' Menu (YCA) with Unplanned Confirmation

You want your maintenance planners to be able to confirm unplanned jobs while displaying or editing technical objects. For this reason, you want to add a new entry to the *You can also* menu of the technical object. Unlike the descriptions in chapter 6.2.2 where the *You can also* menu was enhanced by a new SAP GUI transaction, you now have to add object-based navigation. Furthermore, the unplanned confirmation is usually only used by the maintenance worker and therefore included in the `SAP_COCKPIT_EAMS_MAINT_WORKER2` role but not in the planner's role `SAP_COCKPIT_EAMS_GENERIC_FUNC2`. Make sure you have SAP Note 2129222 - Unplanned confirmation for technical object in planning plant applied to your system.

Proceed as follows to integrate the unplanned confirmation in the *You can also* menu of the *Generic Functions* PFCG role:

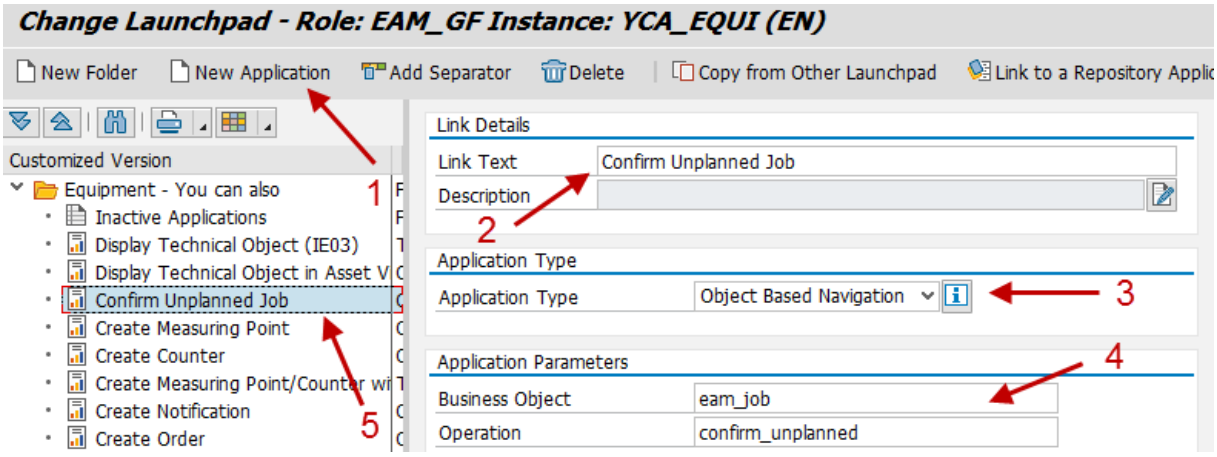
Open customizing for the launchpad (transaction `LPD_CUST`). In table column *Role* you can see which launchpads are included in the **G**eneric **F**unctions PFCG role (`EAM_GF`) and which ones belong to the **M**aintenance **W**orker PFCG role (`EAM_MW`).

As you want to enable the maintenance planner to confirm unplanned jobs, you make your changes to the *You can also* menu of the technical object in the *Generic Functions* role `EAM_GF`. Depending on whether you want to enhance the *You can also* menu in the equipment or in the functional location, choose instance `YCA_EQUI` or `YCA_FLOC`. In this example, you are creating a new launchpad entry for the equipment, so you change (2) instance `YCA_EQUI` (1) of role `EAM_GF`.



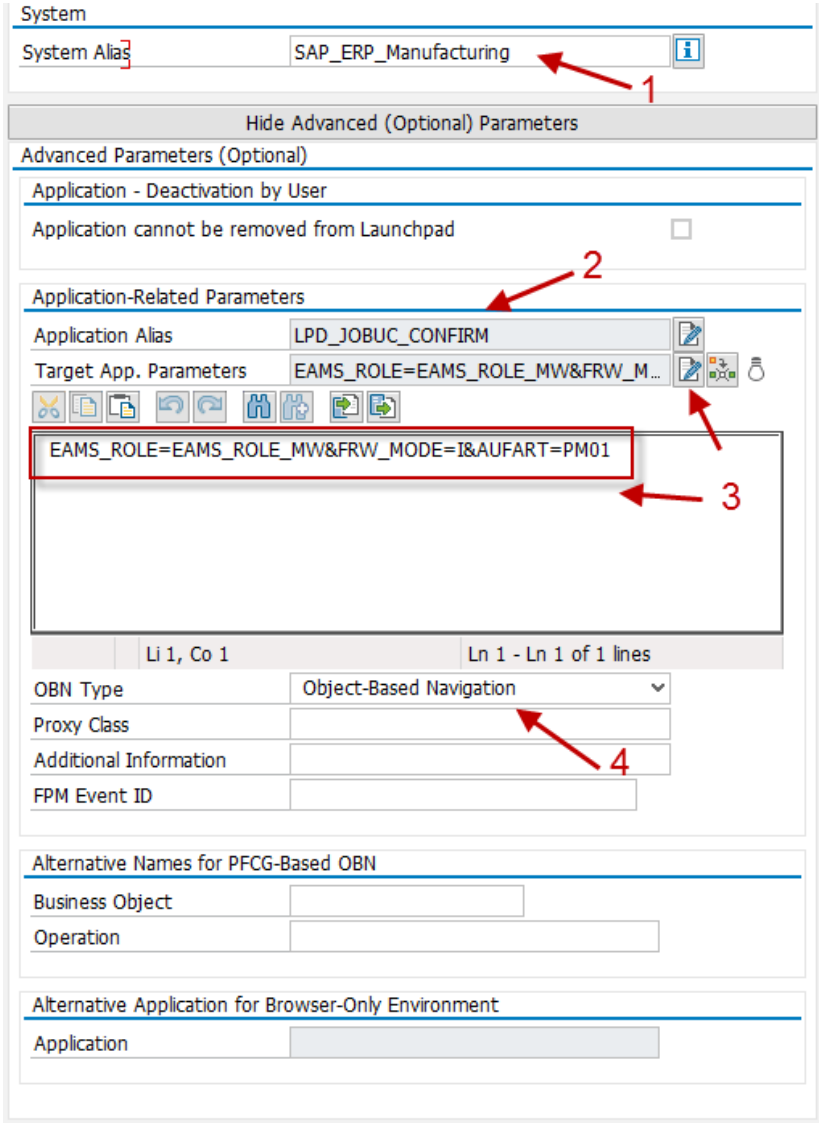
You create a new application (1) and determine the name of the new menu entry in the field *Link Text* (2). In this example, the system will display the new menu entry *Confirm Unplanned Job* in the *You can also* menu of the equipment, so you enter this text as link text. Furthermore, you have to determine the *Application Type* (3) and the *Application Parameters* (4). In this example, the application type is *Object Based Navigation*, the business object is `eam_job` and the operation is `confirm_unplanned`. For more information about how to figure out the appropriate application parameters and the system alias, see chapter 6.1.

After you have made all required entries and chosen *Continue* the new menu entry is displayed in the list of menu entries on the left hand side (5). With drag and drop you can change the position of this new menu entry in the dropdown menu of the *You can also* button.

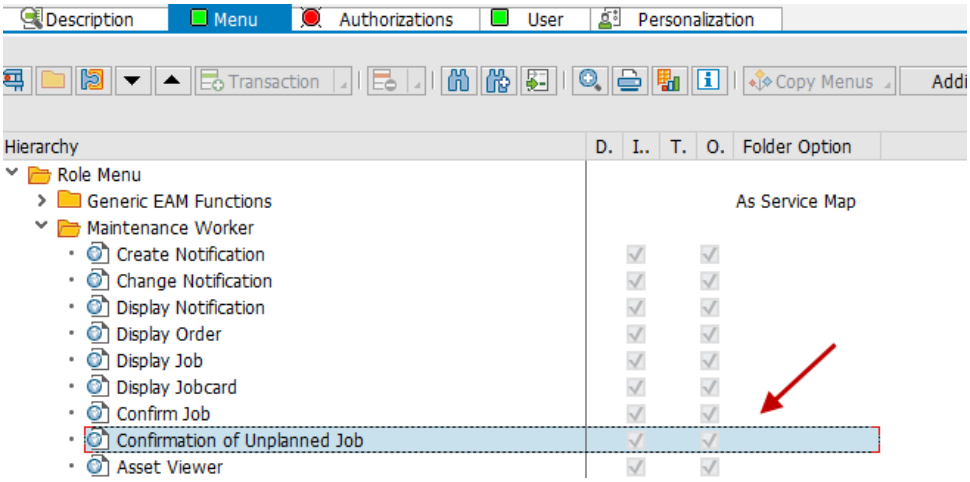


In the next step, you add the corresponding *System Alias* (1) and maintain the *Advanced (Optional) Parameters*. Enter an *Application Alias* (`LPD_JOBUC_CONFIRM`) (2) and open the editor (3) for specifying the *Target Application Parameters*. The parameters `EAMS_ROLE` and `FRW_MODE` and their values correspond to the parameters in the PFCG-role, which is also described in chapter 6.1.

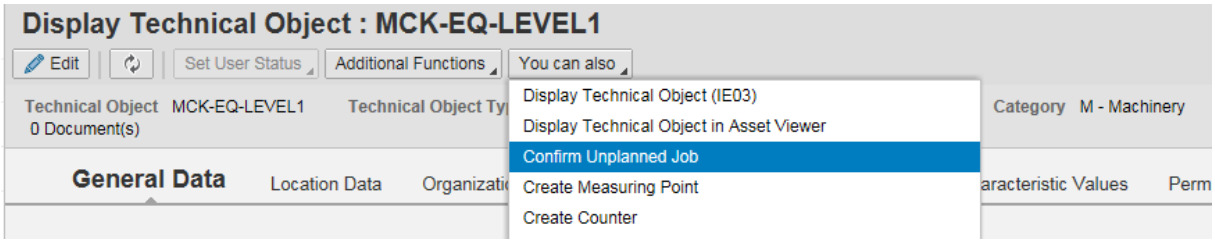
In this example, the parameter for the maintenance order type (`AUFART`) is additionally set to `PM01`. This causes the initial screen to be skipped because the system automatically sets the order type to `PM01` (3). Enter *Object-Based Navigation* in field *OBN Type* (4) and save the launchpad.



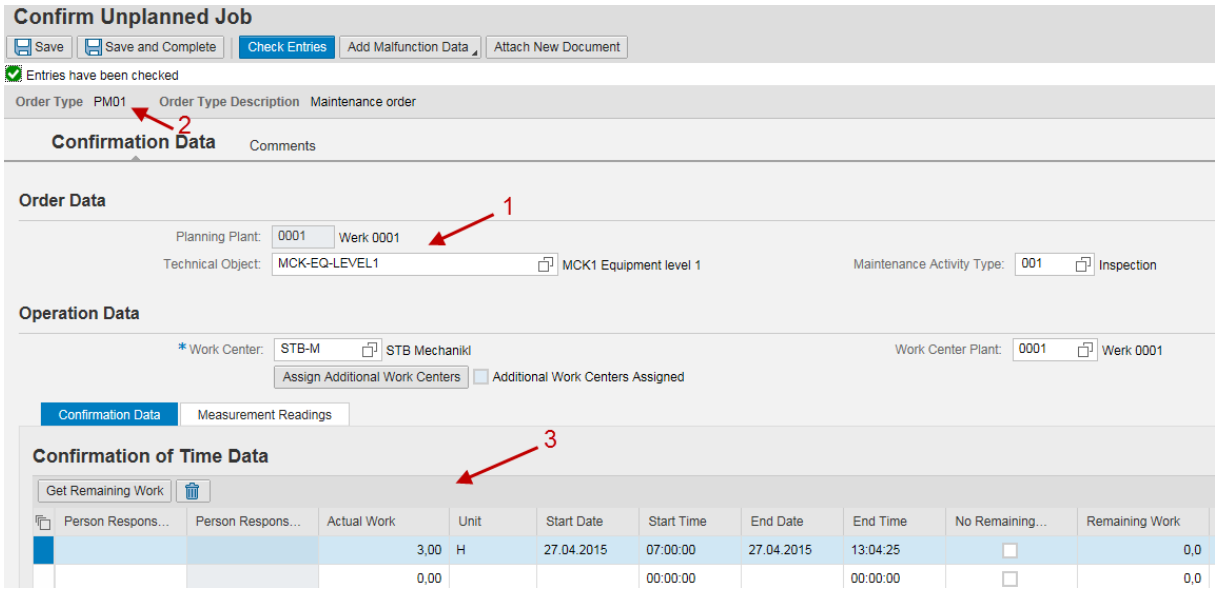
After having added the new menu entry to the *You can also* menu of the generic function launchpad role (`EAM_GF`), you add the object-based navigation entry to the PFCG role for all users who you want to be able to confirm unplanned jobs.



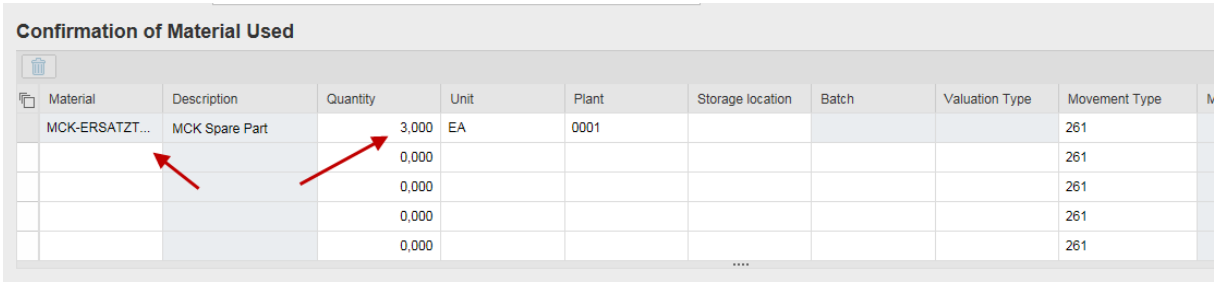
If you now log on with your copy of role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` and display a piece of equipment, you find the additional menu entry *Confirm Unplanned Job* in the dropdown menu of the *You can also* button.



If you select the new menu entry, you navigate to the unplanned job confirmation. As you have set the parameter `AUFART` to `PM01`, the system skips the initial confirmation screen and sets the *Order Type* to `PM01` (2). In the confirmation, the system adopts the technical object (1) and its corresponding data, such as the work center and the maintenance activity type, as default values. You can now enter working hours in the area *Confirmation of Time Data* (3).

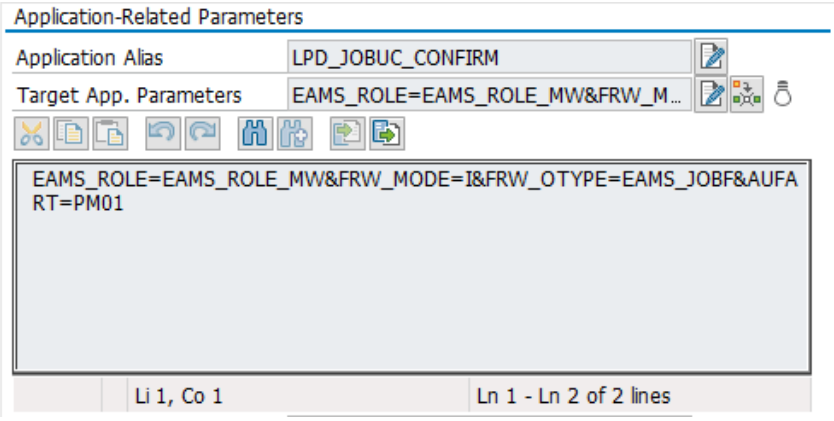


Additionally, you can add all the material that you consumed:

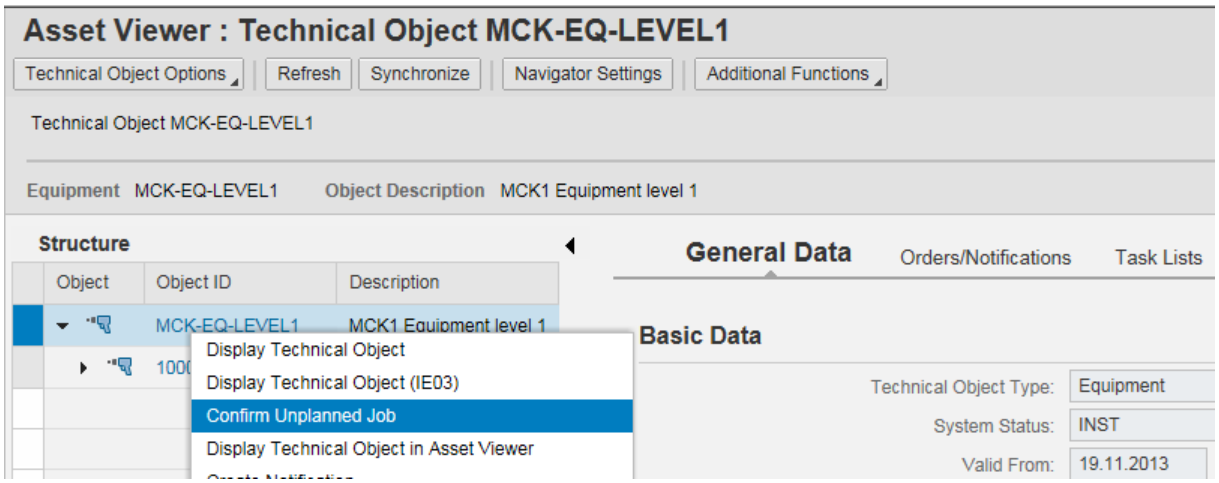


When you save the confirmation, the number of the created order is displayed in the status line. The order and the confirmation are displayed in the document flow of the respective order but there are no goods movement documents yet. You can create goods movement documents in transaction *Predefined Confirmation Processes* (`CO1P`) by selecting the *Backflushing* checkbox. For further information, see also blog in SDN After Event Recording.

Moreover, you can create launchpad customizing for the purpose of integrating the *Unplanned Confirmation* function into the context menu of a technical object. Then your planners can also navigate to the confirmation of an unplanned job when they display the technical object in the Asset Viewer. To add the confirmation to the context menu of a piece of equipment, create launchpad customizing for the role `EAMS`, instance `CM_EQUI`. Proceed as described above and maintain slightly different target application parameters.



After having saved your launchpad, the system displays the new menu entry *Confirm Unplanned Job* if you open the context menu with a right mouse click.



6.5 Example for Cross-System Navigation (Management of Change Requests)

An example for cross-system navigation out of an EAM Web Dynpro application might be the creation of a change request for an EAM object such as a technical object or an order. These change requests are processed with the Management of Change (MOC) add-on in the same or in an external system.

For more information about this add-on, see SAP Management of Change.

For the launchpad customizing described here, we assume that the Management of Change add-on version 1.0 Feature Pack 01 is installed in an external system (MOC). The EAM applications run in a system called EAM.

In our example, you want to enable your planners to create change requests while displaying or editing functional locations. You therefore have to create an additional menu entry in the *You can also* menu and in the context menu. To do this, proceed as follows:

1. Create an ABAP connection and a HTTP-connection to the MOC system in the EAM system (transaction `SM59`). For more information on how to determine the port number for the HTTP connection, see section 15.9 in the appendix.
2. Add the object-based navigation target for creating change requests from the MOC role (for example, `SAP_COCKPIT_MOC_MAIN`) to your EAM role in the EAM system.
3. Enhance the functional location launchpad customizing for the context menu (role `EAMS` / instance `CM_FL`) or for the *You can also* menu (role `EAM_GF` / instance `YCA_FL`).

For a detailed description including screen shots, see the attachment to SAP Note 2140452 - Create Change Request with Reference Object via WDA Parameter.

6.6 Launching EAM Applications Using URL Parameters

You can use URL parameters in EAM Web Dynpro applications to set default values in the PFCG role or to compose URL-addresses that start applications directly in a browser, for example. There are three types of URL parameters you can add to a URL address:

- **SAP URL parameters**, such *as sap-client* or *sap-language*, are applicable for all Web Dynpro applications and always start with prefix *sap-* .
- **Web Dynpro URL parameters**, such as *sap-wd-client* or *sap-wd-configId*, are applicable for all browser-based applications and always start with prefix *sap-wd-* .
- **Application-specific URL parameters**

You can find lists of all SAP URL parameters and Web Dynpro URL parameters in the SAP Library topic URL Parameters and Application Parameters.

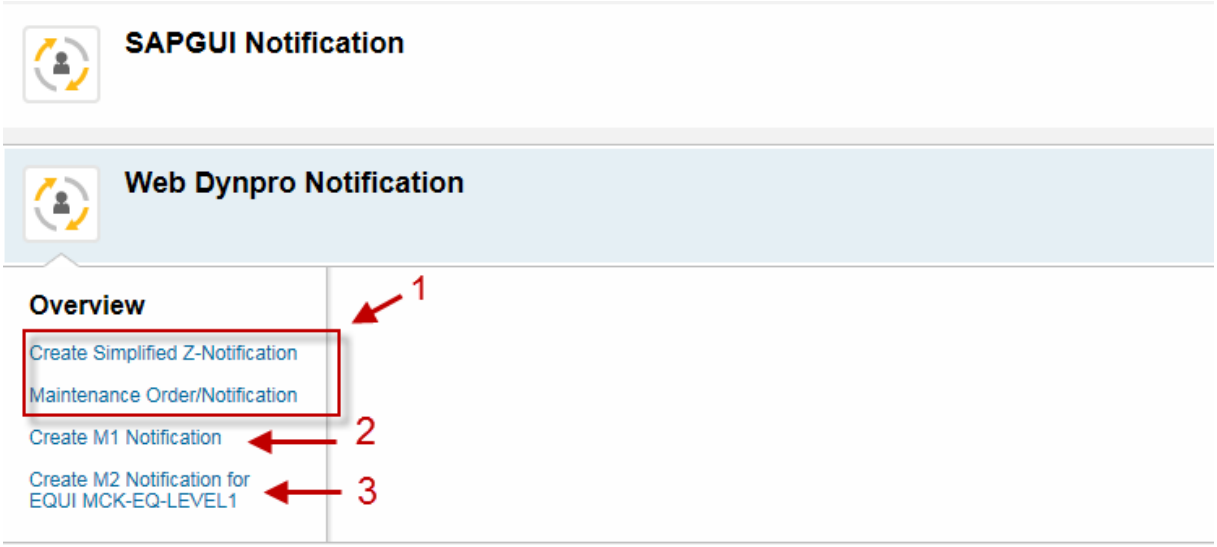
6.6.1 Using Application-Specific URL Parameters for PFCG-Role Entries

With application-specific URL parameters you can provide links in the launchpad menu that directly take the user to Web Dynpro applications with certain preset default values. For example, you can provide several links for creating notifications with different default values. By choosing one of the links, the user might be then directed to the screen for creating a specific type of notification or even to the screen for creating a notification in which notification type and equipment are already preset.

In the following example we use the role `Z_NOTIFICATION`, which we have already created for side panels (chapter 10.1.1) and enhanced with the entry for *Create Simplified Z-Notification* (1) in chapter 5.2.2. We want to provide two additional links on the launchpad:

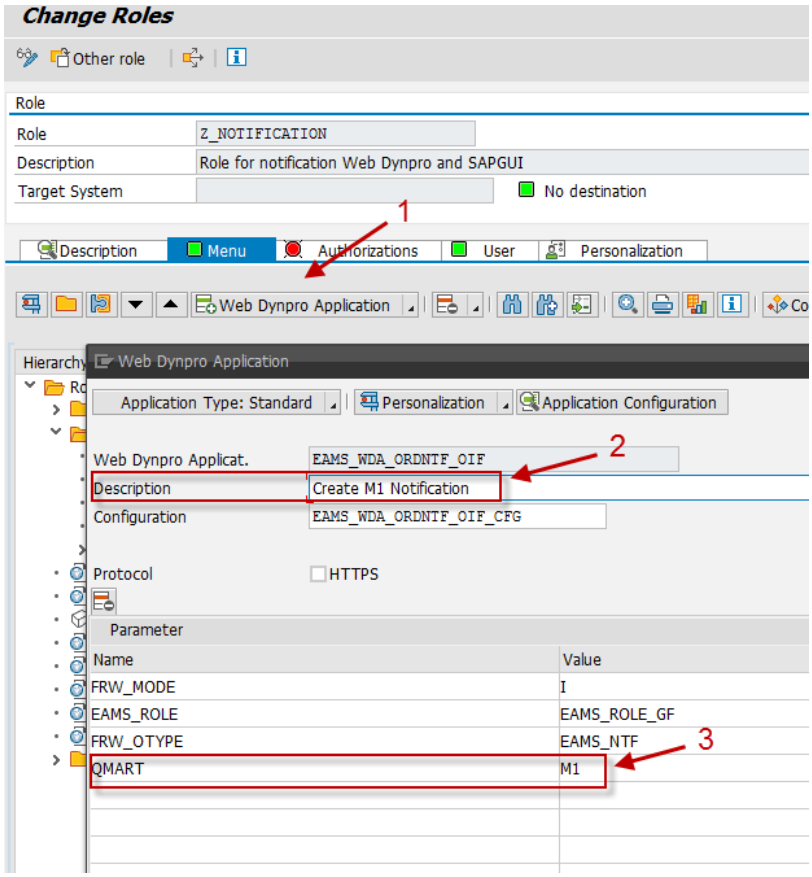
- When the user clicks on *Create M1 Notification* (2), the notification type will be set to *M1* and the first entry screen will be skipped.
- When the user clicks on *Create M2 Notification for EQUI MCK-EQ-LEVEL1* (3), the notification type will be set to *M2* and the piece of equipment will already be entered as the technical header object. The first screen will be skipped.

To create these two additional links we have to enhance the PFCG-role entry with several URL parameters.

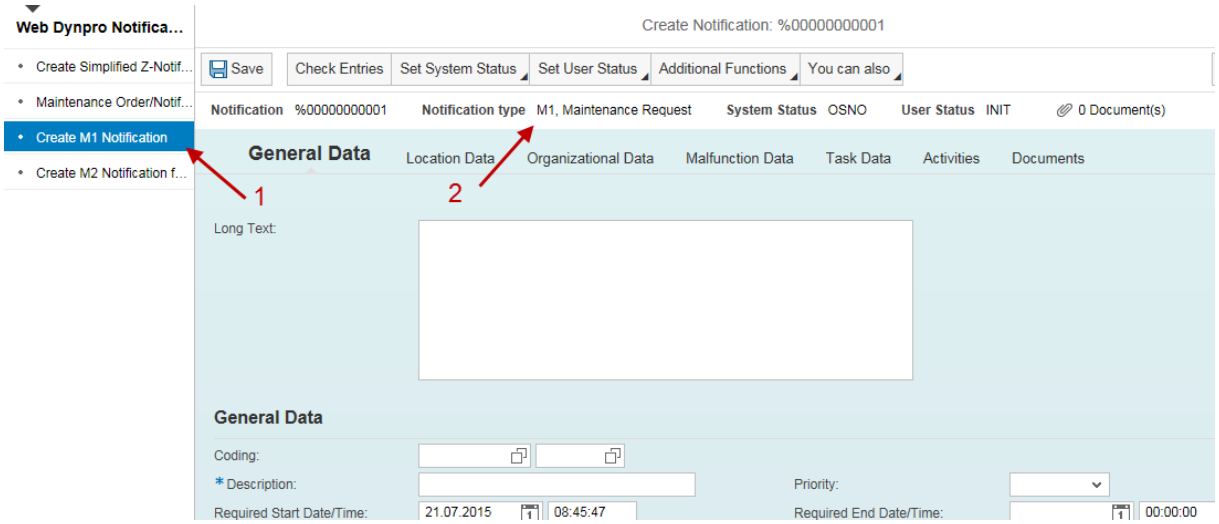


To create the entry *Create M1 Notification*, you open the role `Z_NOTIFICATION` in change mode (transaction `PFCG`) and add the respective Web Dynpro application (1) to the role. The technical name and the configuration

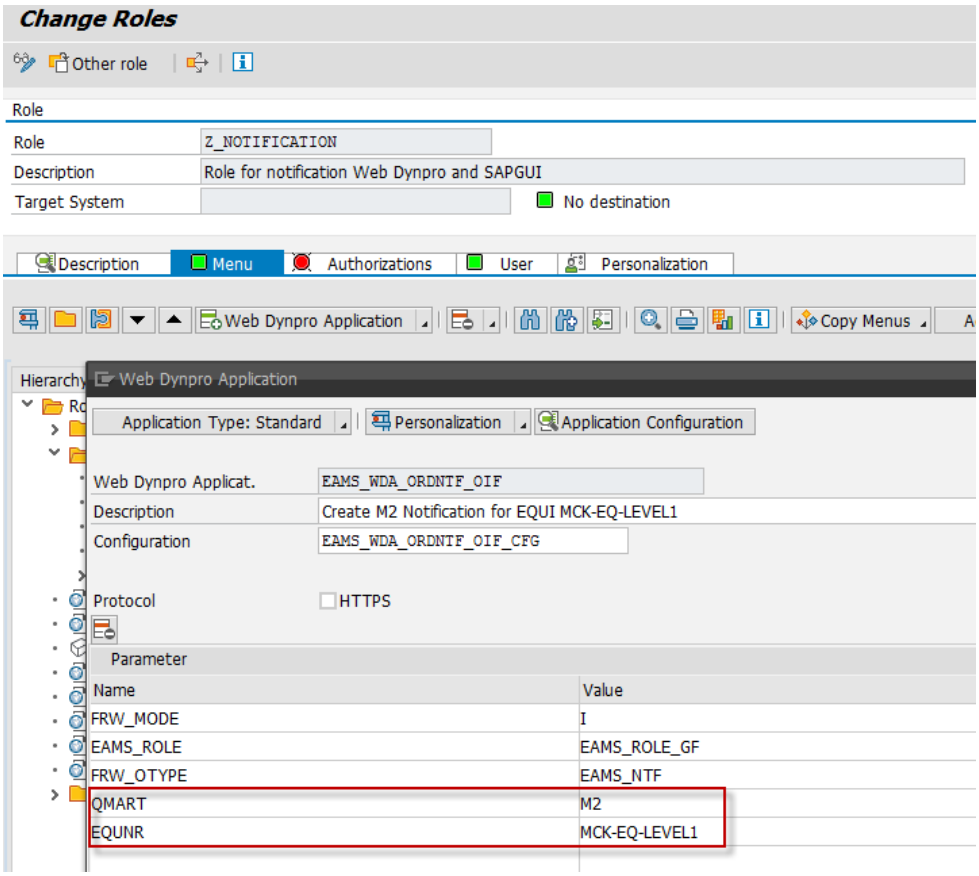
name of the Web Dynpro application for creating notifications is identical to the standard SAP Web Dynpro application. Then you specify the description (2) that is displayed as the link text in the launchpad menu. The first three parameters are copied from the SAP standard entry. Since you want the link to directly open the screen for creating a notification with notification type *M1*, you set the value *M1* (3) as the default for parameter `QMART`.



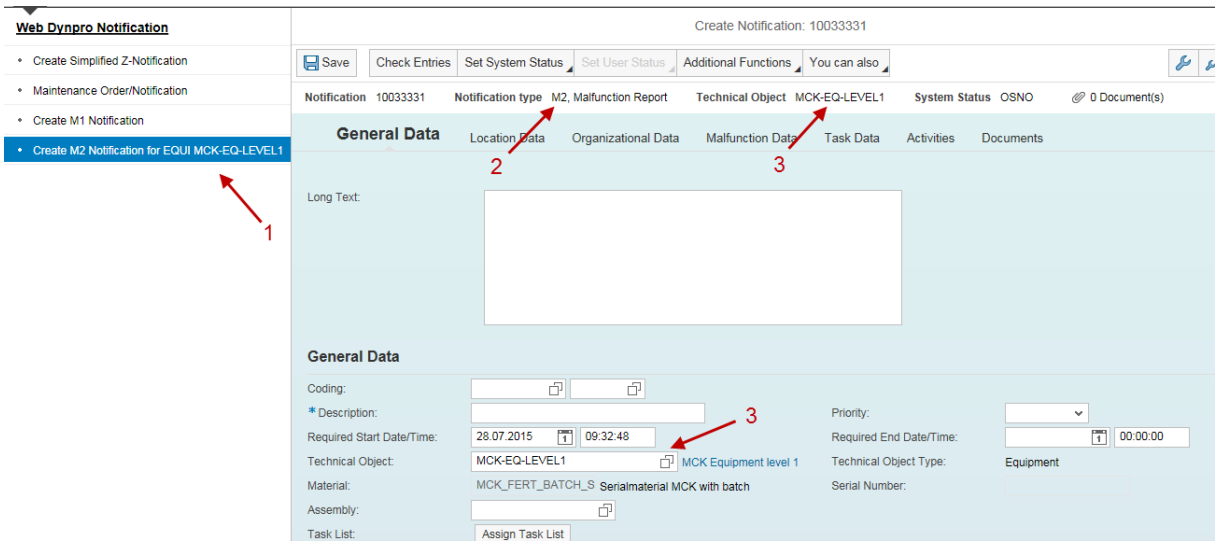
When the user now selects the new launchpad menu entry *Create M1 Notification* (1), the first screen is automatically skipped, because the mandatory field *Notification Type* on the entry screen is already set to *M1* (2). The user is immediately directed to the *General Data* tab page.



For the second launchpad menu entry *Create M2 Notification for EQUI MCK-EQ-LEVEL1* you add the Web Dynpro application for creating notifications to the role a second time. This time you set the notification type (`QMART`) to *M2*. Since you want a specific piece of equipment to be proposed as the technical header object when the user chooses this new launchpad menu entry, you specify the value of the parameter `EQUNR` as *MCK-EQ-LEVEL1*.



By selecting the new menu link (1), a Web Dynpro notification of type M2 (2) opens, in which the technical object (3) is populated with values derived from the role parameters.



For more information about all the EAM Web UI specific parameters, see section 6.6.3 below.

6.6.2 Starting WEB Dynpro Applications in a Browser

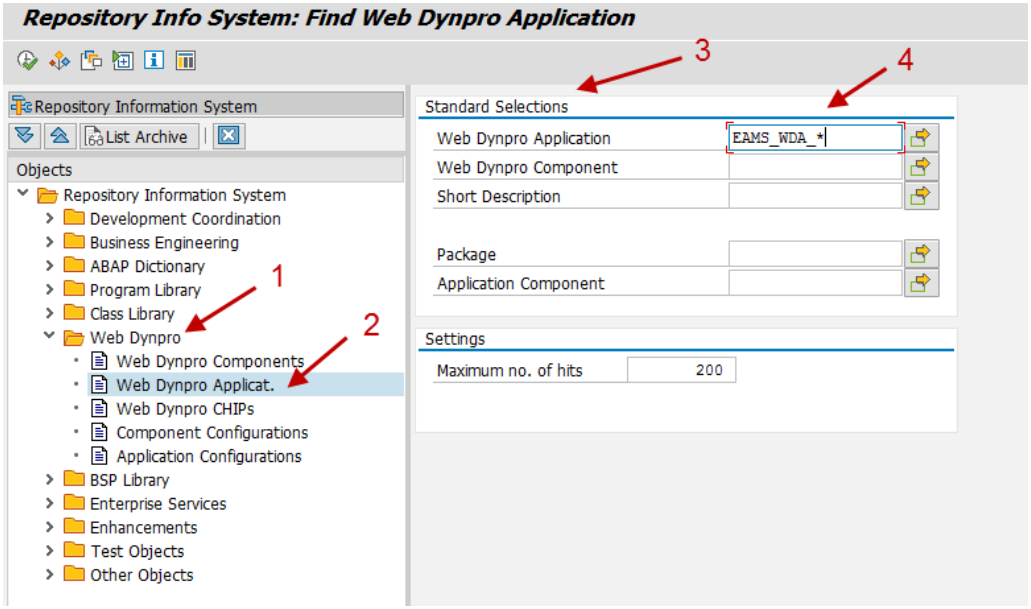
If you want to launch an EAM Web Dynpro application via a URL address, you compose this URL address using two parts: one to start the Web Dynpro application and one that consists of various parameters and parameter values, including the application configuration ID.

The entire URL address therefore follows this scheme:

<schema>://<host>.<domain>.<extension>:<port>/sap/bc/webdynpro/<namespace>/<application name>?<parameter name>=<parameter value>

In the following example, you want to start the EAM application *Display Technical Object* via a URL address.

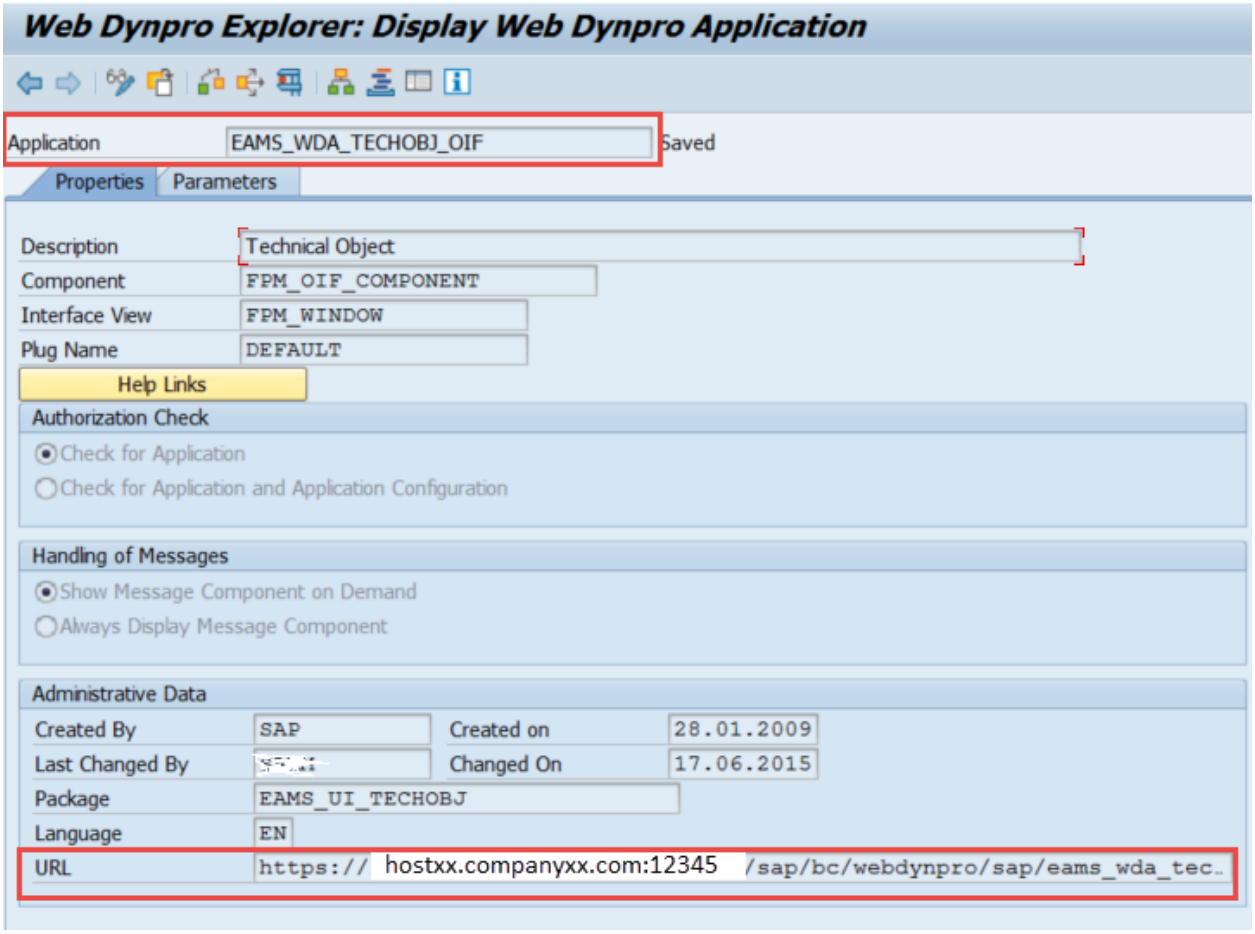
First you have to figure out the URL to start the EAM application. To do so, you start the *Object Navigator* (transaction `SE84`), open the *Web Dynpro* (1) folder, and select *Web Dynpro Applications* (2). By double-clicking on it, you open a search screen (3) where you enter the prefix `EAMS_WDA_*` (4) as the search string. `WDA` is the abbreviation for Web Dynpro Application.



In the results list, you select the Web Dynpro application for technical objects `EAMS_WDA_TECHOBJ_OIF`. In the *Administrative Data* group box the system displays the URL that you need to start the corresponding Web Dynpro application. This URL replaces the first part of the URL scheme up to the part with the parameters:

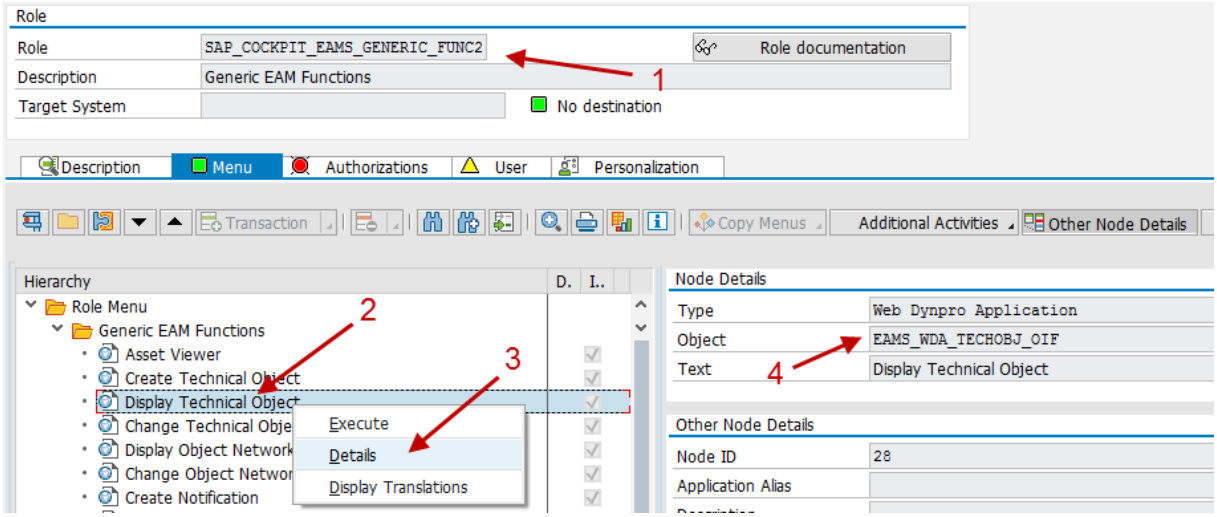
<schema>://<host>.<domain>.<extension>:<port>/sap/bc/webdynpro/<namespace>/<application name>?<parameter name>=<parameter value>

https://hostxx.companyxx.com:12345/sap/bc/webdynpro/sap/eams_wda_techobj_oif?<parameter name>=<parameter value>



For more information about the <port> value, see chapter 15.9.

Next you have to figure out **the respective URL parameters including the application configuration**. To do so, you open the corresponding PFCG role (transaction `PFCG`), which in this example is `SAP_COCKPIT_EAMS_GENERIC_FUNC2` (1), and then select *Display Technical Object* (2). In the *Node Details* group box the system displays the application name of the object (4) so you can double-check if this is the application you want to open via a URL address.



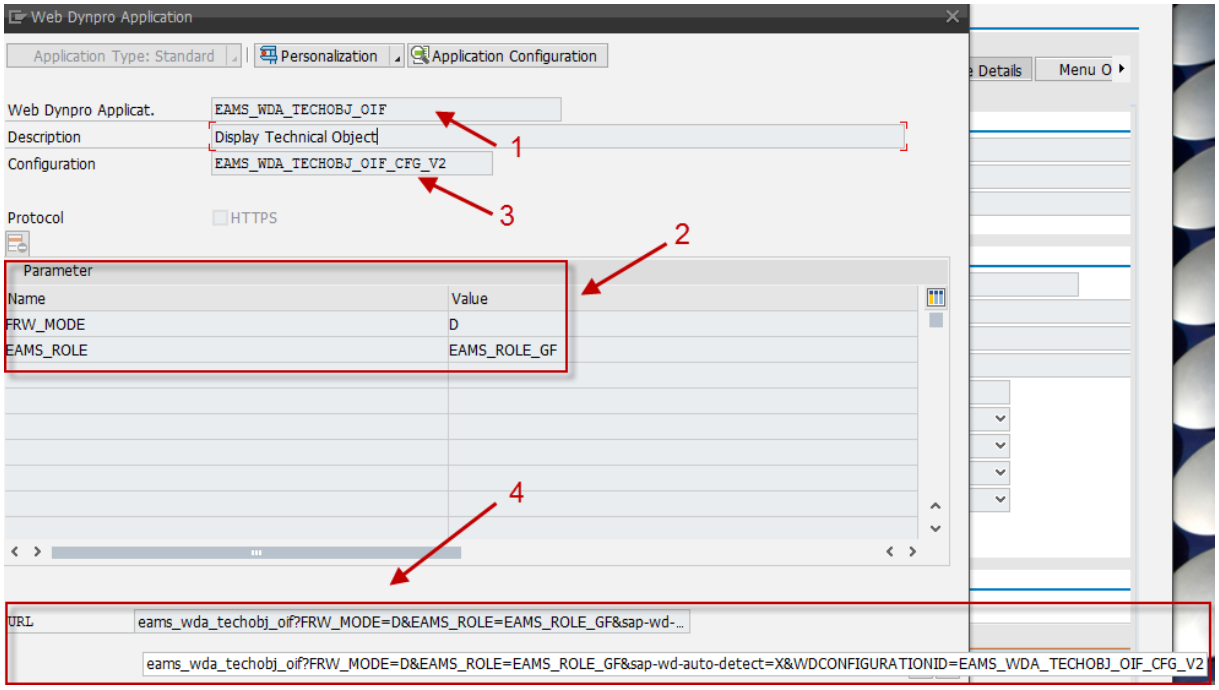
To figure out the second part of the URL you choose *Details* (3) in the context menu of the *Display Technical Object* entry. On the popup, the system displays the application name `EAMS_WDA_TECHOBJ_OIF` (1), the configuration name `EAMS_WDA_TECHOBJ_OIF_CFG_V2` (3), and the following fractional URL address (4):

eams_wda_techobj_oif?FRW_MODE=D&EAMS_ROLE=EAMS_ROLE_GF&sap-wd-auto-detect=X&WDCONFIGURATIONID=EAMS_WDA_TECHOBJ_OIF_CFG_V2

Hint: Usually you can only see part of the URL in the URL field. However, the system displays the whole URL in the tooltip.

This URL consists of the following parts:

- Application name: `EAMS_WDA_TECHOBJ_OIF` (1)
- Application-specific parameters, specified in the Parameter group box (2) with the corresponding parameter values: *FRW_MODE=D&EAMS_ROLE=EAMS_ROLE_GF*
  Parameters and their values are connected by an = .
  Parameter/ -value pairs are connected by an AND sign (&).
- Web Dynpro URL parameter: *sap-wd-auto-detect=X*
- Configuration parameter *WDCONFIGURATIONID* with the configuration ID *EAMS_WDA_TECHOBJ_OIF_CFG_V2* (2) as corresponding parameter value.



Finally, you combine the first part of the URL for starting the application with the second part containing the parameters and the corresponding parameter values including the configuration name. The complete URL address looks like this:

https://hostxx.companyxx.com:12345/sap/bc/webdynpro/sap/eams_wda_techobj_oif?FRW_MODE=D&EAMS_ROLE=EAMS_ROLE_GF&sap-wd-auto-detect=X&WDCONFIGURATIONID=EAMS_WDA_TECHOBJ_OIF_CFG_V2

If you now paste this address in a browser, you will be directed to the logon screen of the corresponding system, if not yet logged on. On the initial screen of the *Display Technical Object* application you have to select a technical object type and enter the name of the technical object that you want to be displayed.

Now you can add further URL parameters to your URL address. For example, if you want to skip the initial screen of the application, you can specify the technical object type (`FRW_OTYPE`) and the equipment number (`EQUNR`) as URL parameters and include them and the corresponding values in the URL address.

FRW_OTYPE=EAMS_EQUI&EQUNR=MCK-EQ-LEVEL1

SAP also provides general URL parameters for all browser-based SAP front-end technologies and general URL parameters for Web Dynpro applications. Besides the application-specific URL parameters, you can also add SAP URL parameters and URL parameters for Web Dynpro to your URL address. If you add further URL parameters to your URL, the sequence of the parameters is not important.

Hint: When an application is started via a URL in a browser, the object-based navigation might not work for all targets (such as the *You can also* menu, context menu, and links). In this case see chapter 6.3 for alternative navigation targets.

6.6.3 List of Application-Specific URL Parameters for EAM

The application-specific URL parameters for the EAM Web Dynpro applications are listed in the following section and sorted by application. The application and configuration IDs are in brackets behind the application name. Some of the valid parameter values are mentioned in brackets behind the parameter description. The prerequisite for being able to use the complete list of EAM-specific URL parameters is SAP Note 2146884 - EAMS Web UI: URL parameters for EAM Web Dynpro applications.

Display / Change Technical Object (EAMS_WDA_TECHOBJ_OIF?WDCONFIGURATIONID=EAMS_WDA_TECHOBJ_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (C: Change / D: Display)
EQUNR	Equipment
TPLNR	Functional Location

Create Equipment (EAMS_WDA_TECHOBJ_OIF?WDCONFIGURATIONID=EAMS_WDA_TECHOBJ_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
FRW_OTYPE	Object Type (EAMS_EQUI: Equipment)
EQTYP	Technical Object Category
Optional:	
EQUNR	Equipment (if unspecified -> automatic numbering)
REF_EQ	Reference Technical Object
REF_MAT	Reference Material
VALID_FROM	Valid From Date (if unspecified -> system date), Date format: YYYYMMDD

Create Functional Location (EAMS_WDA_TECHOBJ_OIF?WDCONFIGURATIONID=EAMS_WDA_TECHOBJ_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
FRW_OTYPE	Object Type (EAMS_FL: Functional Location)
FLTYP	Technical Object Category
STR_IND	Structure Indicator
TPLNR	Functional Location
Optional:	
REF_TECOBJ	Reference Technical Object
REF_FLOC	Reference Location

Display / Change Notification (EAMS_WDA_ORDNTF_OIF?WDCONFIGURATIONID=EAMS_WDA_ORDNTF_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (C: Change / D: Display)
FRW_OTYPE	Object Type (EAMS_NTF: Notification)
QMNUM	Notification Number

Create Notification (EAMS_WDA_ORDNTF_OIF?WDCONFIGURATIONID=EAMS_WDA_ORDNTF_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
FRW_OTYPE	Object Type (EAMS_NTF: Notification)
QMART	Notification Type
Optional:	
EQUNR	Equipment
TPLNR	Functional Location
REF_QMNUM	Notification to be Copied
COPY_DOCL	Copy Document Links, Yes = X

Display / Change Maintenance Order (EAMS_WDA_ORDNTF_OIF?WDCONFIGURATIONID=EAMS_WDA_ORDNTF_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (C: Change / D: Display)

Parameter Name	Parameter Description
FRW_OTYPE	Object Type (EAMS_ORD: Order)
AUFNR	Order Number

Create Maintenance Order (EAMS_WDA_ORDNTF_OIF?WDCONFIGURATIONID=EAMS_WDA_ORDNTF_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
FRW_OTYPE	Object Type (EAMS_ORD: Order)
AUFART	Order Type
PLANPLANT	Planning Plant
Optional:	
EQUNR	Equipment
TPLNR	Functional Location
PRIORITY	Priority
ASSEMBLY	Assembly
BUS_AREA	Business Area
EAMS_REF_AUFNR	Reference Order
EAMS_REF_VORNR	Reference Operation
EAMS_FOLLOW_UP_ORDER	Checkbox for Follow-On Order, Yes = X
EAMS_COPY_OPR	Checkbox for Copy Operations, Yes = X
COPY_MAT	Checkbox for Copy Components, Yes = X
COPY_RELS	Checkbox for Copy Relationships, Yes = X
COPY_DOCL	Checkbox for Copy Document Links, Yes = X
COPY_SRULE	Checkbox for Copy Settlement Rules, Yes = X
COPY_DESCR	Checkbox for Copy Descriptions, Yes = X

When no technical object is specified, the planning plant is mandatory, otherwise the planning plant is derived from the technical object.

Display / Change Task List (EAMS_WDA_TL_OIF_V2? WDCONFIGURATIONID=EAMS_WDA_TL_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (C: Change / D: Display)
Direct Access:	
TL_CC	Task List Direct Access (Format:

Parameter Name	Parameter Description
	Type/Group/Counter, e.g. A/22/3 or E/71/2)
General Task List:	
PLNTY	Task List Type (A: General Task List)
PLNNR	Task List Group
Optional:	
PLNAL	TL Group Counter (if there are several counters a selection popup opens)
Technical Object Task List by Group:	
PLNTY	Task List Type (E: Equipment Task List, T: Functional Location Task List),
PLNNR, PLNAL (optional)	Task List Group, optional: Task List Counter
Technical Object Task List by Technical Object:	
PLNTY	Task List Type (X: Technical Object Task List),
TEC_OBJ_NO	Name of Technical Object
TEC_OBJ_TYPE	Technical Object Type (EAMS_EQUI: Equipment, EAMS_FL: Functional Location)

When no counter (`PLNAL`) is specified in the URL, but more than one exists, a popup for choosing the appropriate counter is shown. You can also specify a key date (`KEY_DATE=YYYYMMDD`), on which the task list is shown or changed. If no date is set, the system date is used.

Create General Task List (EAMS_WDA_TL_OIF_V2? WDCONFIGURATIONID=EAMS_WDA_TL_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
PLNTY	Task List Type (A: General Task List)
PLANPLANT	Planning Plant
STATUS	Status
Optional:	
PLNNR	Task List Group (if unspecified, a new group with counter 1 is created)
PLNAL	Task List Counter
KEY_DATE	Key Date (format: YYYYMMDD)
PROFILE	Profile
TL_DIR_REF	Task List to be Copied

Parameter Name	Parameter Description
COPY_PERMITS	Copy Permits, Yes = X
COPY_REF_DESCR	Copy Task List Descriptions, Yes = X
COPY_REF_DOCS	Copy Document Links, Yes = X
COPY_REF_RELS	Copy Relationships, Yes = X

When a profile with status is specified, the parameter `STATUS` is not mandatory.

Create Technical Object Task List (EAMS_WDA_TL_OIF_V2?WDCONFIGURATIONID=EAMS_WDA_TL_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
PLNTY	Task List Type (X: Technical Object Task List)
TEC_OBJ_NO	Name of Technical Object
TEC_OBJ_TYPE	Technical Object Type (EAMS_EQUI: Equipment, EAMS_FL: Functional Location)
STATUS	Status
Optional:	
PROFILE	Profile
KEY_DATE	Key Date (format: YYYYMMDD)
TL_DIR_REF	Task List to be Copied
COPY_PERMITS	Copy Permits, Yes = X
COPY_REF_DESCR	Copy Task List Descriptions, Yes = X
COPY_REF_DOCS	Copy Document Links, Yes = X
COPY_REF_RELS	Copy Relationships, Yes = X

When a profile with status is specified, the parameter `STATUS` is not mandatory.

Display/ Change Maintenance Plan (EAMS_WDA_MPLAN_OIF_V2?WDCONFIGURATIONID=EAMS_WDA_MPLAN_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (C: Change / D: Display)
WARPL	Maintenance Plan

Create Maintenance Plan (EAMS_WDA_MPLAN_OIF_V2?WDCONFIGURATIONID=EAMS_WDA_MPLAN_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
MPTYP	Maintenance Plan Category (NO: Notification, PM: Maintenance Order)
MPLANTYPE	Maintenance Plan Type (SINGLE TIM: Single Cycle (Time-Based), SINGLE PER: Single Cycle (Performance-Based), MULTI COUN: Multiple Counter, STRATEGY: Strategy
STRATEGY	Strategy (mandatory with Maintenance Plan Type STRATEGY)

Display Maintenance Item (EAMS_WDA_MPOS_OIF?WDCONFIGURATIONID=EAMS_WDA_MPOS_OIF_CFG_V2)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (D: Display)
WAPOS	Maintenance Item

If you want to enable a direct navigation from the maintenance plan to a specific maintenance item, implement note 2414112 - EAMS: URL Parameter for Maintenance Item.

Display/ Change Measuring Point (EAMS_WDA_MP_OIF?WDCONFIGURATIONID=EAMS_WDA_MP_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (C: Change / D: Display)
POINT	Measuring Point

Create Measuring Point (EAMS_WDA_MP_OIF?WDCONFIGURATIONID=EAMS_WDA_MP_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
EAMS_MPTYPE	Measuring Point/ Counter (0: Measuring Point / 1: Counter)
MPOTY	Reference Object Type (IEQ: Equipment, IFL: Functional Location, IME: Rental Unit)
EQUNR or TPLNR	Reference Object (Technical Object ID)
REAL_EST_TYPE	Reference Object is a Real Estate Type (IL: Settlement Unit, IB: Building, IM: Rental Object)
REAL_EST_ID	Real Estate Object ID

If you want to use the URL parameters for creating a measuring point or a measurement document, check if note 2329879 is implemented.

Make the following entries in the URL:

- Reference Object Type (`MPOTY`) is IEQ -> use `EQUNR`
- Reference Object Type (`MPOTY`) is IFL -> use `TPLNR`
- Reference Object Type (`MPOTY`) is IME -> use a combination of `REAL_EST_TYPE` and `REAL_EST_ID`.

Display Measurement Document (EAMS_WDA_MD_OIF?WDCONFIGURATIONID=EAMS_WDA_MD_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (D: Display)
MDOCM	Measurement Document

Create Measurement Document (EAMS_WDA_MD_OIF?WDCONFIGURATIONID=EAMS_WDA_MD_OIF_CFG)

Parameter Name	Parameter Description
FRW_MODE	Framework Mode (I: Insert)
EAMS_BASIS_MREAD	Basis for Measurement Reading (0: Measuring Point / 1: Reference Object)
MPOTY	Reference Object Type (IEQ: Equipment, IFL: Functional Location, IME: Rental Unit)
EQUNR or TPLNR	Reference Object (Technical Object ID)
REAL_EST_TYPE	Reference Object is a Real Estate Type (IL: Settlement Unit, IB: Building, IM: Rental Object)
REAL_EST_ID	Real Estate Object ID

Make the following entries in the URL:

- Reference Object Type (`MPOTY`) is IEQ -> use `EQUNR`
- Reference Object Type (`MPOTY`) is IFL -> use `TPLNR`
- Reference Object Type (`MPOTY`) is IME -> use a combination of `REAL_EST_TYPE` and `REAL_EST_ID`.

In most of the applications, the initial screen is skipped automatically if the data you have to enter on the initial screen is embedded in the URL address. An exception is the *Create Order* application. If you compose a URL address for this application and want to skip the initial screen, you have to explicitly set the `SKIP_INITAL_SCREEN` parameter to X.

The parameter `EAMS_ROLE` with its values `EAMS_ROLE_GF` (for the Generic Functions role) or `EAMS_ROLE_MW` (for the Maintenance Worker role) mainly controls the entries in the *Additional Functions* and *You can also* menus, including the possibility to execute follow-up actions of the respective application.

7 Adding Customer Fields to EAM Applications

In some of your EAM Web Dynpro applications you might need to display additional fields or fields that you have created in your customer namespace in addition to the SAP standard fields. After you have defined additional fields and determined where the system is to display these fields, the user can enter values and save their changes. You can define additional fields on the EAM Web Dynpro in technical objects, maintenance orders, maintenance notifications, and task lists.

There are two different possibilities for adding additional fields:

- You can add fields that you have created in your customer namespace.
  These fields are then available in the field selection of the corresponding Web Dynpro application and can be included in specific user interface building blocks (UIBBs) in Customizing. The system displays your customer fields on the appropriate tab pages of the screen areas you select.
- You can add additional fields that you have defined in Customizing.
  These fields are then available at operation level in maintenance orders and task lists on the tab page called *Additional Fields* in the *Operation Details*.

The following chapters describe how to proceed. First all necessary steps for adding customer-specific fields are described in detail using the maintenance notification as an example. Then some additional information is given for adding customer-specific fields to maintenance orders, task lists, and technical objects. Finally, the last subchapter describes how to add additional fields in orders and task lists on operation level.

7.1 Adding Customer Fields to a Notification

If you work with customer-specific fields in notifications and have therefore already used the customer include `CI_QMEL` of table `QMEL` to add your fields in SAP GUI transactions, you can provide these customer-specific fields on the Web UI as well.

You append your additional customer fields to the relevant SAP tables and structures to make them visible on the WEB UI. Furthermore, you can implement a BAdI to process further checks and modify field values.

Prerequisites

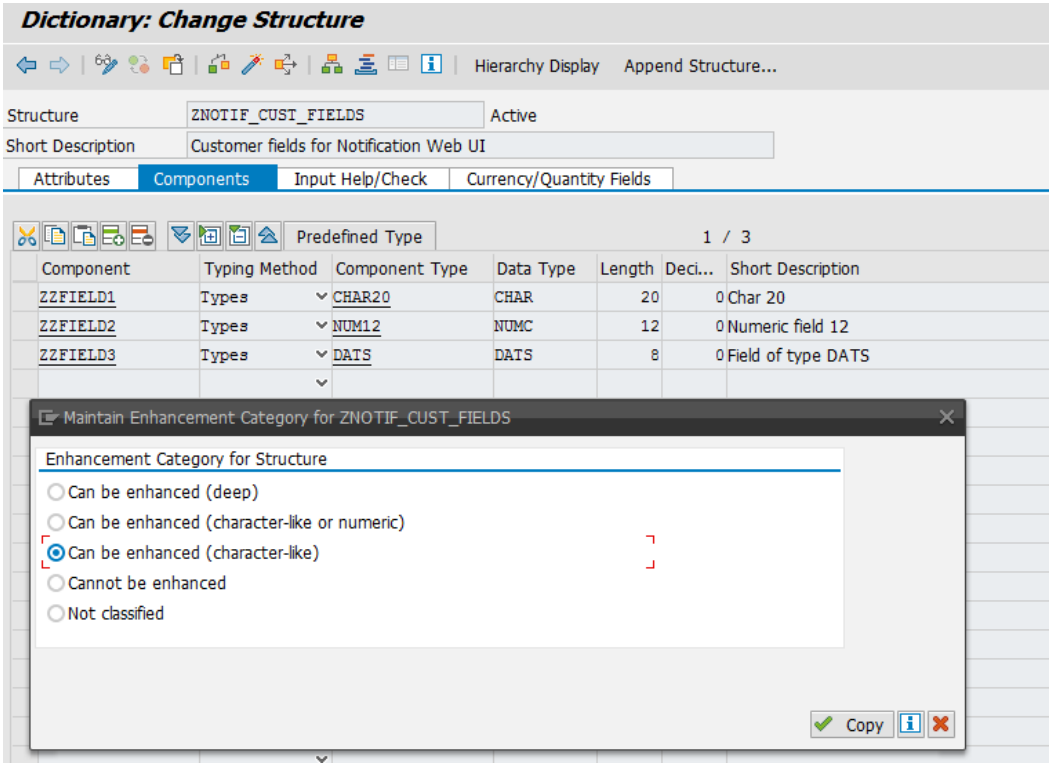
You have implemented the following SAP Notes in your system:

- 2108975 Maintenance of Customer Fields via Notification BAPIs (with preparation SAP Note 2151416)
- 2110216 for preparing the Web UI (with preparation SAP Note 2193536)

Creating a Structure in the Customer Namespace

First you create a structure in the customer namespace and add your customer-specific fields to this structure. In the next step, you add the entire structure to the respective dictionary objects.

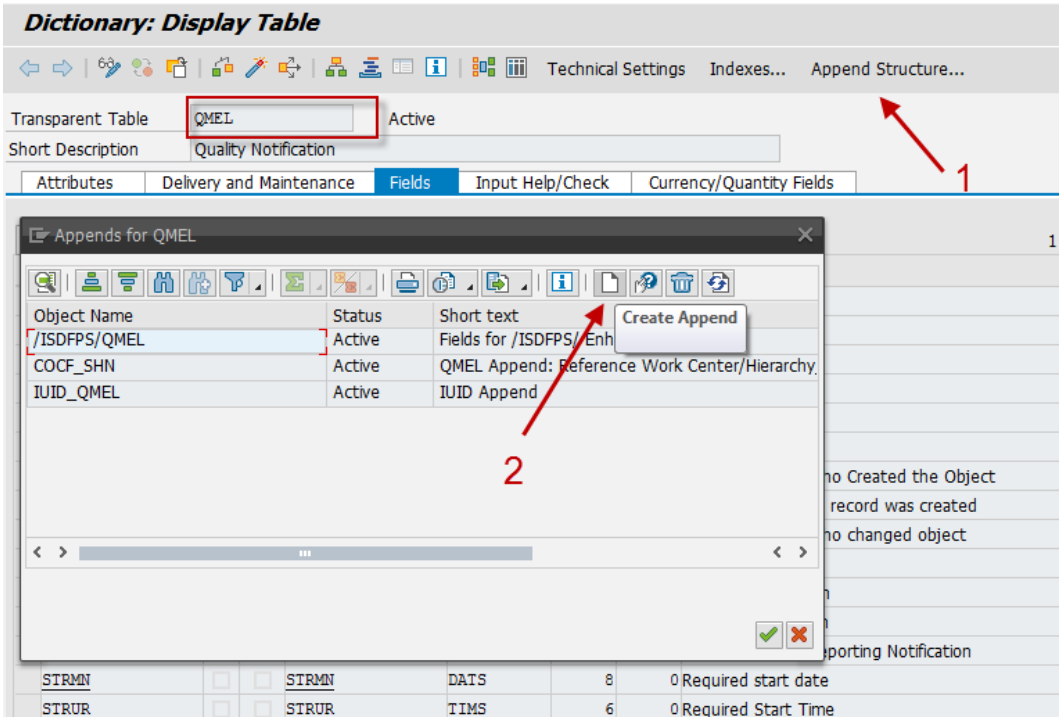
In this example we create the structure `ZNOTIF_CUST_FIELDS` and add three additional fields of different data types. We set the *Enhancement Category* for this structure to *Can Be enhanced (character-like)*.



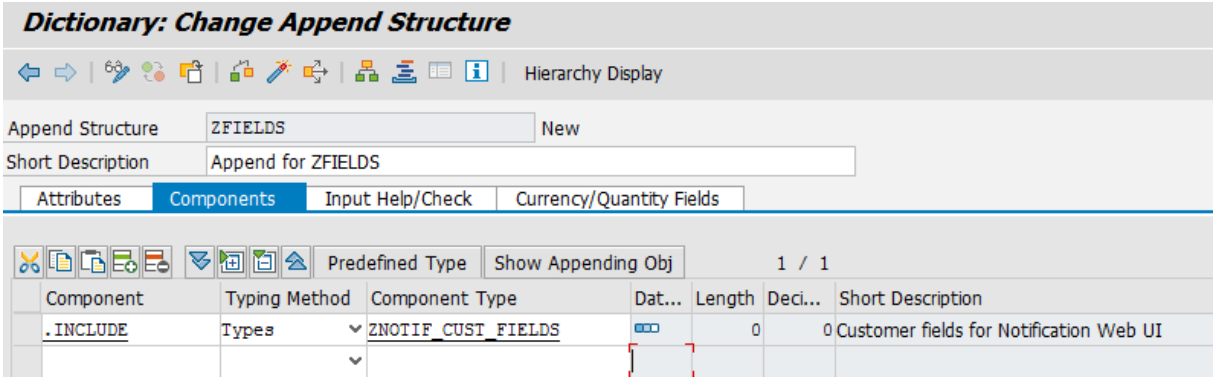
Then we assign the structure to a package and activate it.

Adding the Customer Structure to the Notification Header

If you want to add your fields to the notification header, you have to append the structure containing customer fields (`ZNOTIF_CUST_FIELDS`) to table type `QMEL`. To do so, you display data type `QMEL` in the ABAP Dictionary (transaction `SE11`), click on *Append Structure...* and then click on the *Create Append* pushbutton in the popup (2).



After you have specified the technical name of the append structure (here `ZFIELDS`), you provide a short description and select the *Components* tab page to include your newly created structure `ZNOTIF_CUST_FIELDS` as the include component. Maintain the enhancement category for this append as *Can Be enhanced (character-like)*. Then you save and activate the append structure. Finally you have to check if the main table type (`QMEL`) is also activated.



In the same way, you create append structures including the structure `ZNOTIF_CUST_FIELDS` for all dictionary objects listed in the following table:

Dictionary objects to be enhanced with customer fields for Notification Header

Name	Type	Description
QMEL	Table Type	Quality Notification
BAPI_TE_QMEL	Structure	BAPI Table Extension for QMEL

Name	Type	Description
EAMS_S_SP_NTF_HEADER	Structure	Business Object Notification – Header Data
EAMS_S_BO_NTF_HEADER	Structure	Business Object Notification – Header Data
RIQS5	Structure	PM/SM/QM Notifications: I/O data for creating notification

If you have already added fields to the customer include `CI_QMEL`, do not add them a second time to table `QMEL`. Make sure that the fields have exactly the same technical name in the structures `RIQS5` and `BAPI_TE_QMEL` as well as in the structures `EAMS_S_SP_NTF_HEADER` and `EAMS_S_BO_NTF_HEADER`.

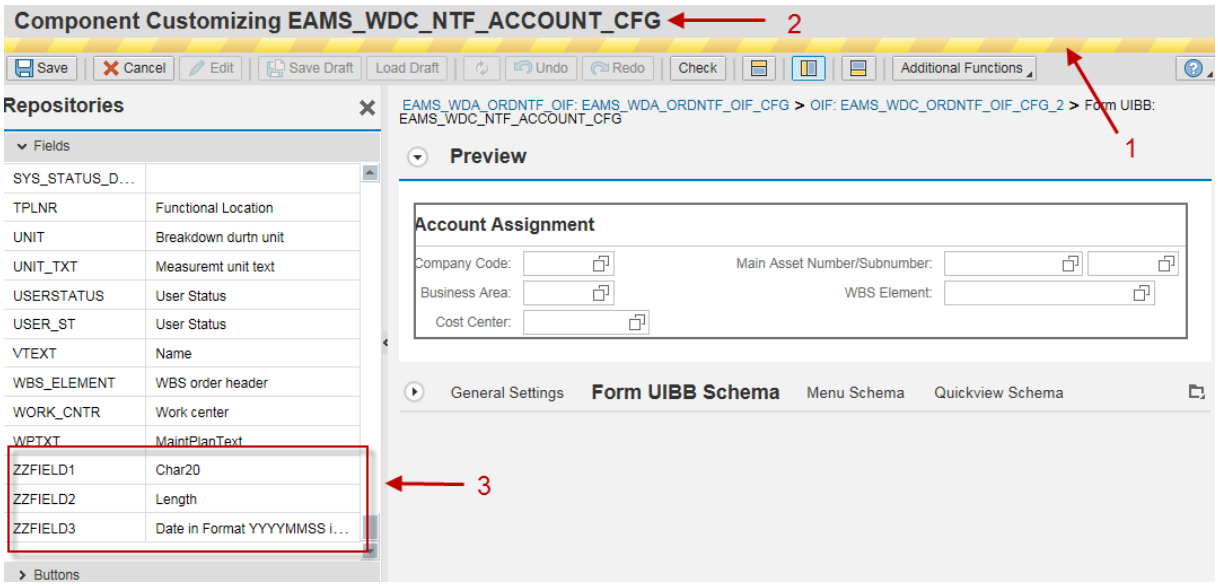
Displaying the Customer Fields on the UI

Once you have appended your customer-specific fields to the header table `QMEL` and the corresponding structures, you specify where the fields are displayed in the maintenance notification. Generally, you can display these fields on the tab pages *General Data*, *Location Data*, *Organizational Data*, or *Malfunction Data*. You can choose the exact position on any of the tab pages by changing the customizing of the respective Web Dynpro component configuration (see chapter 3.1):

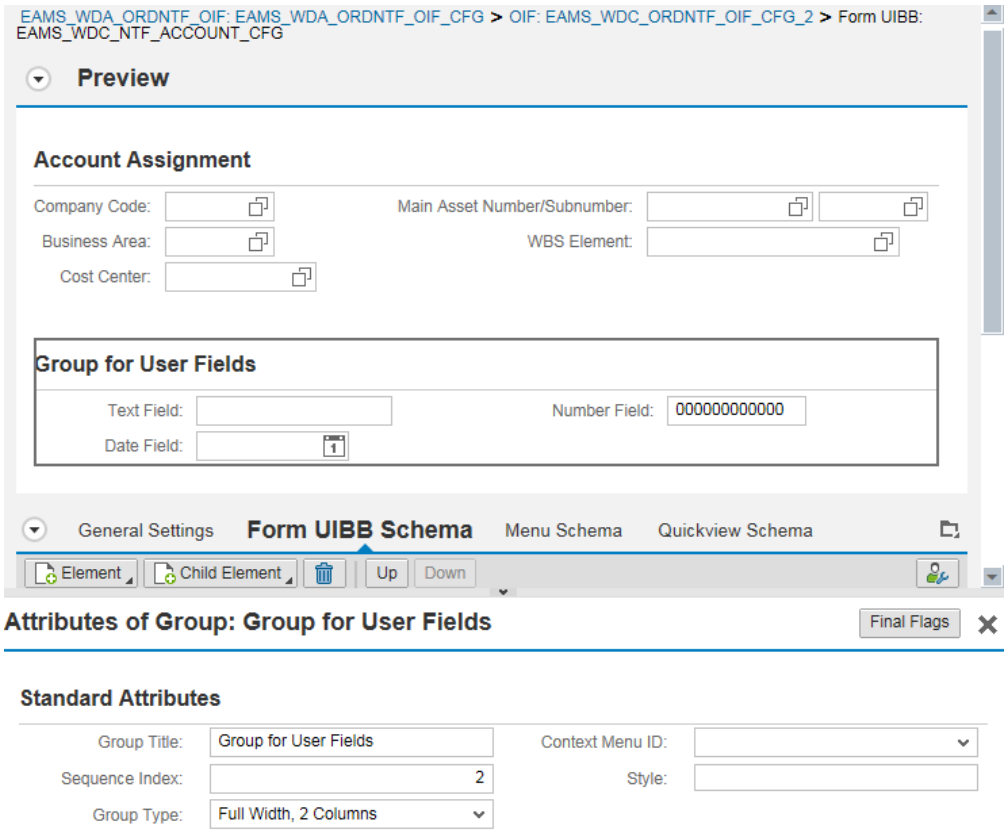
- `EAMS_WDC_NTF_HEADER` (tab *General Data*, group *General Data* or *Responsibilities*)
- `EAMS_WDC_NTF_LOCATION_CFG_V2` (tab *Location Data*, group *Location Data*)
- `EAMS_WDC_NTF_HEAD_MALFUNC_CFG` (tab *Malfunction Data*)
- `EAMS_WDC_NTF_ACCOUNT_CFG` (tab *Organizational Data*, group *Account Assignment*)

In this example, you want to display the three Z-fields on *the Organizational Data* tab page in the group *Account Assignment*. To do so, you create a customizing (1) for the UIBB `EAMS_WDC_NTF_ACCOUNT_CFG` (2). The repository on the left-hand side provides a list of all fields that are available for the maintenance notification header. In addition to the SAP standard fields the list also contains the three new Z-fields of the structure `ZNOTIF_CUST_FIELDS` (3), so that you can select and add them to the UIBB.

For more information about creating and changing a customizing for a UIBB, see chapter 3.1.



On the Form UIBB Schema tab page you create a new group in which the Z-fields are displayed. You can choose the group title, layout, field labels, and other parameters.



Finally, you save your customizing settings in a transport request.

7.2 Adding Fields to Notification Items

Adding the Customer Structure to the Notification Items

If you want to add fields to the notification item data, that is the *Damages*, you create append structures including the structure with your customer-specific fields for all dictionary objects listed in the following table:

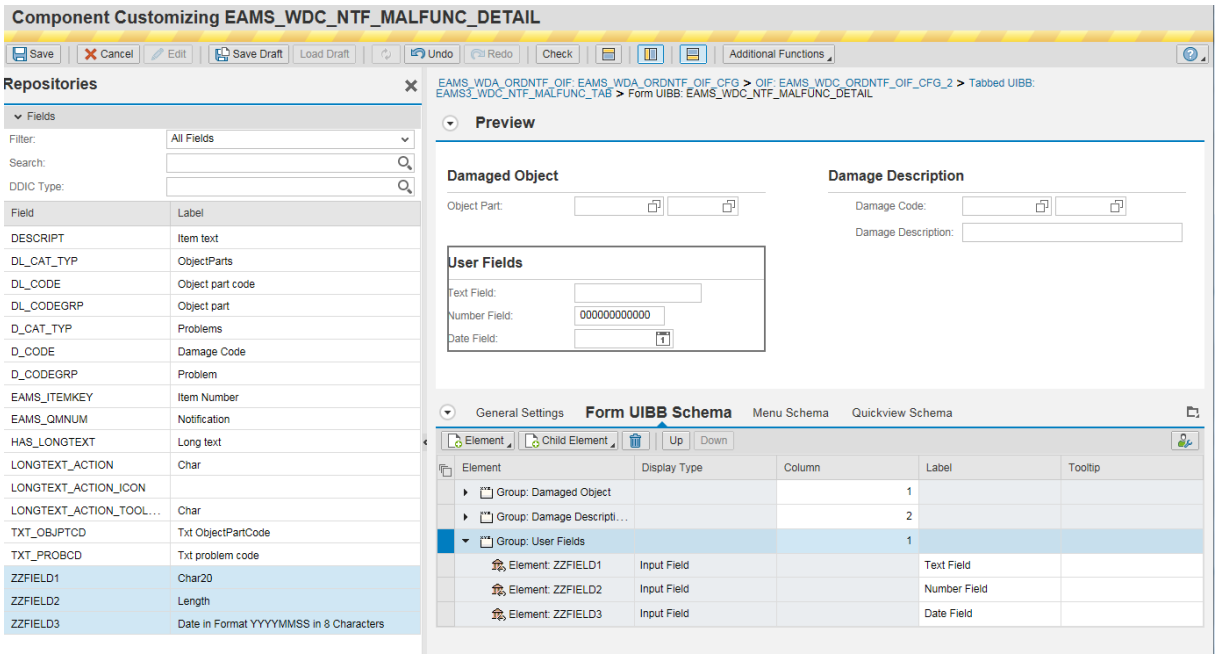
Dictionary objects to be enhanced with customer fields for Notification Items

Name	Type	Description
QMFE	Table Type	Quality notification - items
BAPI_TE_QMFE	Structure	BAPI Table Extension for QMFE
EAMS_S_SP_NTF_ITEM	Structure	Business Object Notification – Items
EAMS_S_BO_NTF_ITEM	Structure	Business Object Notification – Items
RFC_VIQMFE	Structure	PM/SM/QM Notifications: I/O Data for Creating

Name	Type	Description
		Notification

Displaying the Customer Fields on the UI

You can display the fields appended to notification item table QMFE only on the *Malfunction Data* tab page in the details of a selected damage on the *Damage Details* tab (component configuration EAMS_WDC_NTF_MALFUNC_DETAIL).



7.3 BAdI for Checks on Customer Fields in Notification

The validity of the data entered in the customer fields is not proven until you implement checks in *BAdI: Modification of Data in Notification BAPIs* (IWON_NOTIFICATION) in enhancement spot ES_IWON_NOTIFICATION. You can implement this BAdI via the IMG for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer* -> *Business Add-Ins*.

The default implementation ensures the correct mapping of customer-specific header and item fields in the notification BAPIs. We therefore recommend that you create your own implementation and insert a copy of the implementing class CL_IM_IWON_NOTIFICATION with additional checks for the customer-specific fields. To raise error messages, fill the changing parameter CT_RETURN.

7.4 Adding Customer Fields to the Maintenance Order Header

Prerequisite

You have implemented the following SAP Note in your system:

- 2110216 for preparing the Web UI (with preparation SAP Note 2193536)

Adding the customer structure to the maintenance order header

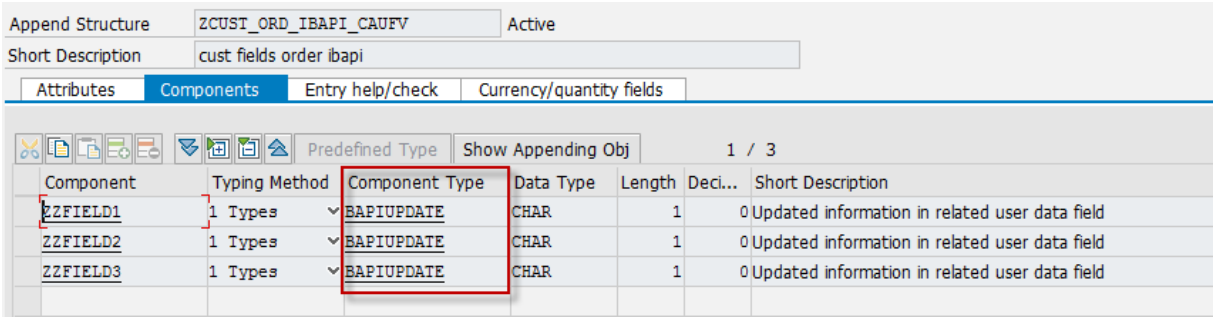
If you want to add fields to the maintenance order header data, you create append structures including the structure with your customer-specific fields for all dictionary objects listed in the following table:

Dictionary objects to be enhanced with customer fields for the Maintenance Order Header

Name	Type	Description
AUFK, AFKO and/or AFIH	Table Type	Order Header Data
CAUFVTAB	Structure	Maps Database View CAUFV as Internal Table
EAMS_TE_CAUFV	Structure	EAMS table extension for order header (AUFK/AFKO/AFIH)
EAMS_S_SP_ORD_HEADER	Structure	Business Object Order - Header Data
EAMS_S_BO_ORD_HEADER	Structure	Business Object Order - Header Data
IBAPI_CAUFVD_UPDATE	Structure	ALM Order BAPIs: Extended Update Structure for Order Header

`AUFK`, `AFKO` or `AFIH`: The fields can be added to one of the tables or be spread over several tables. If you have already used `CI_AUFK`, make sure the fields have exactly the same technical name in the structures for data handling.

CAUTION: Unlike in the other structures, the fields in structure `IBAPI_CAUFVD_UPDATE` must have component type `BAPIUPDATE`.



Displaying the customer fields on the UI

Once you have appended your customer-specific fields to the order header tables, you specify where the fields are displayed in the maintenance order. Generally, you can display these fields on the tab pages *General Data*, *Location Data*, *Organizational Data*, or *Costs*. You can choose the exact position on any of the tab pages by changing the customizing of the respective Web Dynpro component configuration (see chapter 3.1):

- `EAMS_WDC_ORD_HEADER_CFG_V2` (tab *General Data*, group *General Data* or *Responsibilities*)

- EAMS_WDC_ORD_LOCATION_CFG_V2 (tab *Location Data*, group *Location Data*)
- EAMS_WDC_ORD_COSTS_ESTI_CFG (tab *Costs*)
- EAMS_WDC_ORD_ACCOUNT_CFG (tab *Organizational Data*, group *Account Assignment*)

For more information about displaying additional user fields in maintenance order operations, see section 7.10.

7.5 BAdI for Checks on Customer Fields in Maintenance Order

The validity of the data entered in the customer fields is not proven until you implement checks in *BAdI: Adapt Transferred Data to BAPI* (IBAPI_ALM_ORD_MODIFY) in enhancement spot IBAPI_ALM_ORD_MODIFY. You can implement this BAdI via the IMG for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer* -> *Business Add-Ins*.

The EAMS implementation ensures the correct mapping of customer-specific header fields in the maintenance order BAPIs. We therefore recommend that you create your own implementation and insert a copy of the implementing class CL_EAMS_IM_ALM_ORD_MODIFY with additional checks for the customer-specific fields.

7.6 Adding Customer Fields to the Task List Header

Prerequisite

You have implemented the following SAP Note in your system:

- 2110216 for preparing the Web UI (with preparation SAP Note 2193536)

Adding the customer structure to the task list header

If you want to add fields to the task list header, you create append structures including the structure with your customer-specific fields for all dictionary objects listed in the following table:

Dictionary objects to be enhanced with customer fields for the Task List Header

Name	Type	Description
PLKO	Table Type	Task list - header
EAM_S_HDR_INS	Structure	Task List API: Header data insert structure
EAMS_S_SP_TL_HEADER	Structure	Task List Basic Data
EAM_S_PLKOD_UP	Structure	Task List API: Update flags for TL header data change

If you have already added fields to the customer includes CI_PLKO and/or CI_TASKLIST, do not add them a second time to table PLKO. Make sure that the fields have exactly the same technical name in the structures listed above for data handling.

CAUTION: Unlike in the other structures, the fields in structure EAM_S_PLKOD_UP must have component type BAPIUPDATE.

Displaying the customer fields on the UI

You can display the fields appended to the task list header table only on the *General Data* tab page. You can choose the exact position by changing the customizing of the respective Web Dynpro component configuration `EAMS_WDC_TL_HEADER_CFG2` (tab *General Data*).

For more information about displaying additional user fields in task list operations, see section 7.10.

7.7 BAdI for Checks on Customer Fields in Task List Header

The validity of the data entered in the customer fields is not proven until you implement checks in *BAdI: Adjustment of Data for Service Provider Access Methods* (`/PLMB/EX_SPI_APPL_ACCESS`) in enhancement spot `/PLMB/ES_SPI`. You can implement this BAdI via the IMG for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer* -> *Business Add-Ins*.

The filter values for the implementation are `APPLICATION_BUILDING_BLOCK = EAMS_TL` and `NODE_NAME = EAMS_HEADER`.

7.8 Adding Customer Fields to Technical Objects

Prerequisites

You have implemented the following SAP Notes in your system:

- 2146575 for Enhancing Technical Object BAPIs
- 2147458 for Preparing the WEB UI for Technical Objects

Adding the customer structure to pieces of equipment

If you want to add fields to pieces of equipment, you create append structures including the structure with your customer-specific fields for all dictionary objects listed in the following table:

Dictionary objects to be enhanced with customer fields for Pieces of Equipment

Name	Type	Description
EQUI	Table Type	Equipment master data
EAMS_TE_EQUI	Structure	EAMS table extension for equipment
EAMS_S_BO_EQUI_BASIC_DATA	Structure	Business Object Functin Location Basic Data
EAMS_S_SP_EQUI_BASIC_DATA	Structure	Business Object Equipment Basic Data
ITOBAPI_MODIFY_EQ	Structure	PM: Modifiable Equipment Data Through API Interfaces
ITOBAPI_CREATE_EQ	Structure	PM: Createable Equipment Data Using API Interfaces

If you have already added fields to the customer include `CI_EQUI`, do not add them a second time to table `EQUI`. Make sure that the fields have exactly the same technical name in the structures listed above.

If you want to add fields to functional locations, you create append structures including the structure with your customer-specific fields for all dictionary objects listed in the following table:

Dictionary objects to be enhanced with customer fields for Functional Locations

Name	Type	Description
IFLOT	Table Type	Functional Location (Table)
EAMS_TE_IFLOT	Structure	EAMS table extension for functional location
EAMS_S_BO_FL_BASIC_DATA	Structure	Business Object Function Location Basic Data
EAMS_S_SP_FL_BASIC_DATA	Structure	Business Object Function Location Basic Data
ITOBAPI_MODIFY_FL	Structure	PM: Functional Location Data Changeable Using API Interfaces
ITOBAPI_CREATE_FL	Structure	PM: Functional Location Data Creatable Using API Interfaces

If you have already added fields to the customer include `CI_IFLOT`, do not add them a second time to table `IFLOT`. Make sure that the fields have exactly the same technical name in the structures listed above.

Displaying the customer fields on the UI

Once you have appended your customer-specific fields to the equipment table `EQUI` or functional location table `IFLOT` and the corresponding structures, you specify where the fields are displayed in the technical object application. Generally, you can display these fields on the tab pages *General Data*, *Location Data*, *Organizational Data*, or *Structure*. You can choose the exact position on any of the tab pages by changing the customizing of the respective Web Dynpro component configuration (see chapter 3.1).

The following Web Dynpro component configurations are valid for **pieces of equipment**:

- `EAMS_WDC_EQUI_GENDAT_CFG` (tab *General Data*, group *Manufacturer Data* or *Reference Data*)
- `EAMS_WDC_EQUI_GENDAT_LCTN_CFG` (tab *Location Data*, group *Location Data*)
- `EAMS_WDC_EQUI_GENDAT_STRUC_CFG` (tab *Structure*, group *Structuring*)
- `EAMS_WDC_EQUI_GENDAT_ORG_CFG` (tab *Organizational Data*, group *Account Assignment* or *Responsibilities*)

The following Web Dynpro component configurations are valid for **functional locations**:

- `EAMS_WDC_FL_GENDAT_CFG` (tab *General Data*, group *Manufacturer Data* or *Reference Data*)
- `EAMS_WDC_FL_GENDAT_LCTN_CFG` (tab *Location Data*, group *Location Data*)
- `EAMS_WDC_FL_GENDAT_STRUC_CFG` (tab *Structure*, group *Structuring*)
- `EAMS_WDC_FL_GENDAT_ORG_CFG` (tab *Organizational Data*, group *Account Assignment* or *Responsibilities*)

7.9 BAdI for Checks on Customer Fields in Technical Objects

The validity of the data entered in the customer fields is not proven until you implement checks in *BAdI: Customer Fields in BAPIs for Technical Objects* (`BADI_EAM_ITOB_BAPI_CUST_FIELDS`) in enhancement spot `ES_EAM_ITOB_BAPI_CUST_FIELDS`. You can implement this BAdI via the IMG for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer* -> *Business Add-Ins*.

The EAMS implementation ensures the correct mapping of customer-specific fields in the technical object BAPIs. We therefore recommend that you create your own implementation and insert a copy of the implementing class `CL_EAMS_IM_ITOB_CUST_FIELDS` with additional checks for the customer-specific fields.

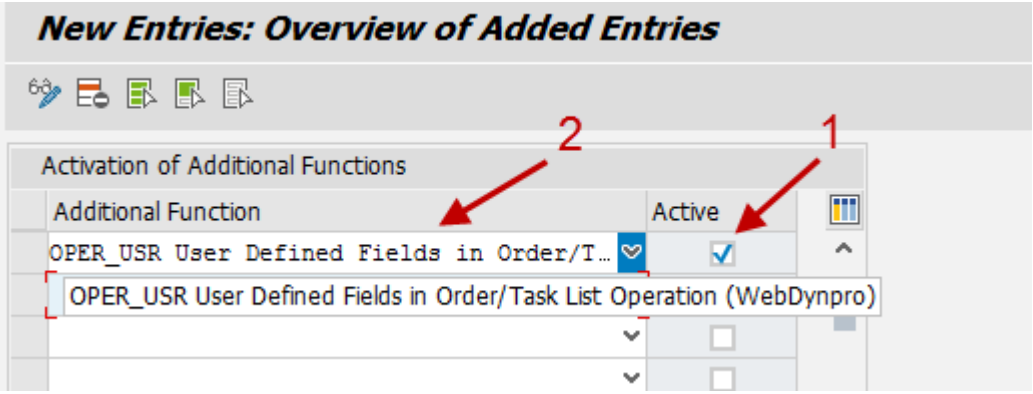
7.10 Displaying Customer Fields in Order Operations and Task List Operations

You can define additional fields for maintenance orders and task lists at operation level that users can choose to display and in which they can enter values. Unlike than the procedure described above for customer fields on order and task list header level, you do not insert Z-fields and display them at operation level by changing the customizing of the respective UIBB. On operation level you use predefined text fields, quantity fields, value fields, date fields, and checkboxes in IMG activity *Define User Fields* and assign your customer-specific field names in all relevant log-on languages.

Prerequisites

You have implemented the following SAP Note in your system:

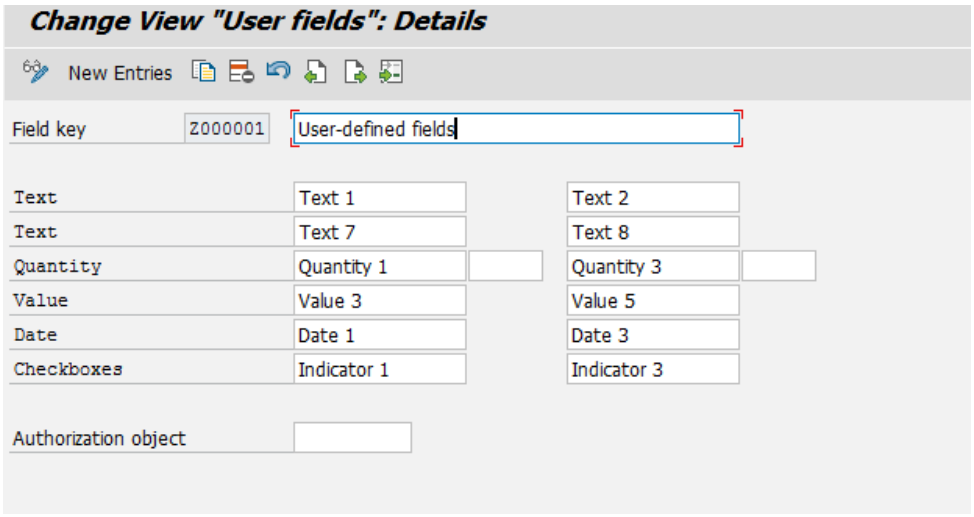
- 2110216 for preparing the Web UI (with preparation SAP Note 2193536)
- You have activated (1) the customizing parameter *User Defined Fields in Order/Task List Operation (Web Dynpro)* (`OPER_USR`) (2) in Customizing for *Plant Maintenance and Customer Service under System Enhancements and Data Transfer → Activate Functions for Enterprise Asset Management* (view `V_EAM_ACT_FUNC` in *View Maintenance* (`SM30`)):



Defining field keys and assigning field names in Customizing

First you **specify field keys** in Customizing for *Plant Maintenance and Customer Service under Maintenance Plans, Work Centers, Task Lists and PRTs -> Task Lists -> Operation Data → Define User Fields*. Assign IDs and names to each field key in all required log-on languages. Every field key you define here is displayed in the *Field Key* input help in the operation detail data of orders **and** task lists.

Then you specify which **fields** you want the system to display when a user chooses a field key. The values entered in the details for a field key represent one user field of a special type (text, quantity, value, date or checkbox). The value entered is used as the label for the user field in the UI, so you have to maintain the field names in all relevant log-on languages. User fields without a value will not be shown in the order and task list operations.

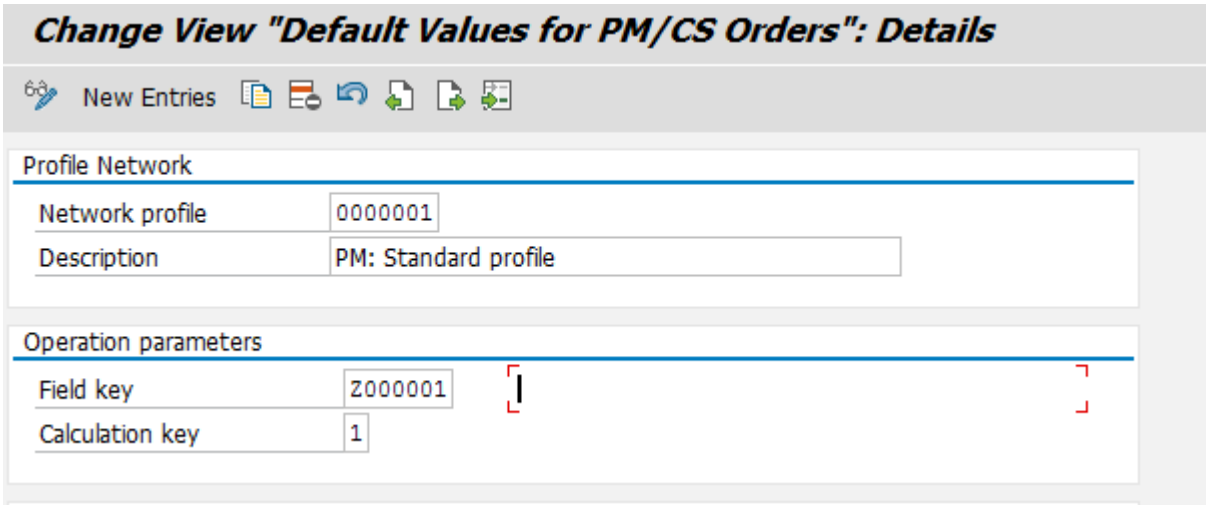


If you have already set up user fields for order and task list operations for the SAPGUI transactions, you don't have to make these Customizing settings a second time.

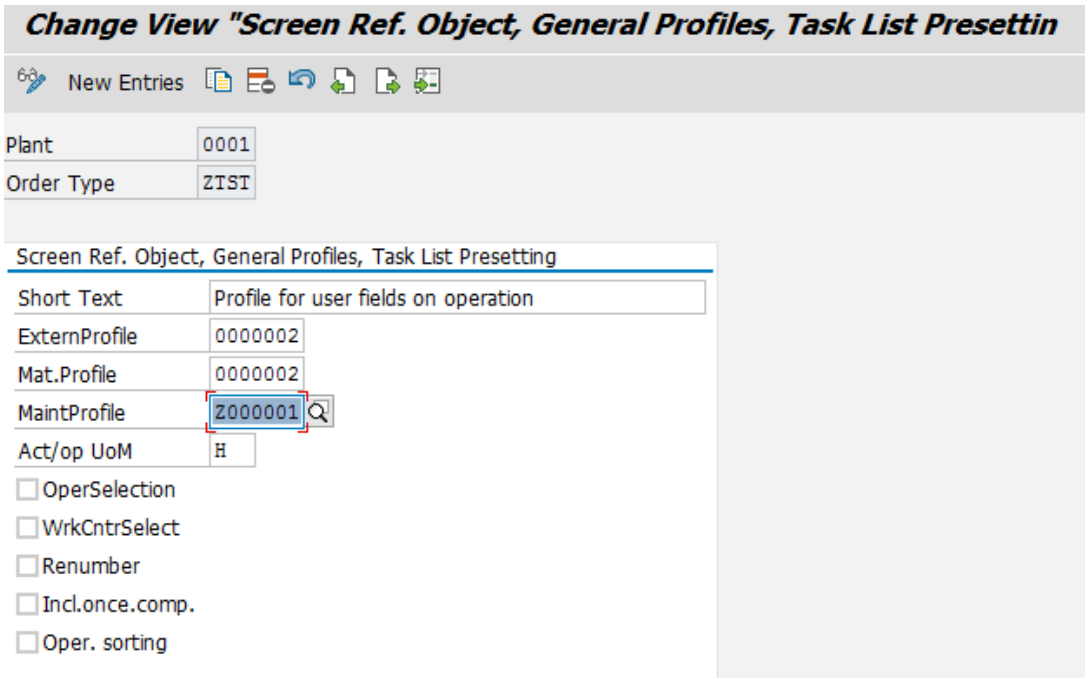
Setting a Default Field Key

If you want the user to have a field key displayed by default for the **maintenance order application**, you can proceed as follows:

Create a profile and enter the respective field key in the maintenance order profile in Customizing for *Plant Maintenance and Customer Service under Maintenance and Service Processing -> Maintenance and Service Orders -> Functions and Settings for Order Types -> Create Default Value Profiles for General Order Data*.

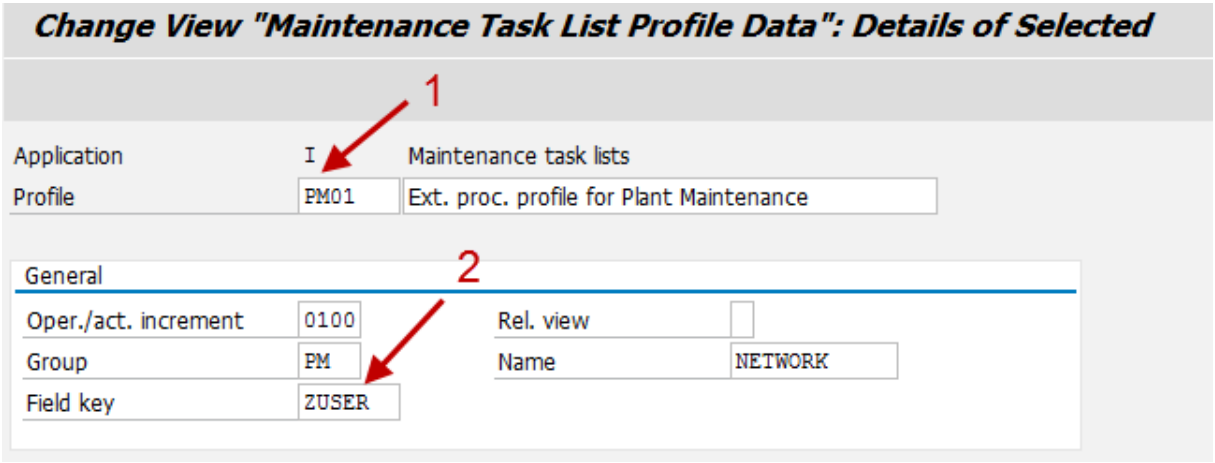


You can also specify different profiles for different order type / plant combinations in Customizing for *Plant Maintenance and Customer Service -> Maintenance and Service Processing -> Maintenance and Service Orders -> Functions and Settings for Order Types -> Default Values for Task List Data and Profile Assignments*. Specify the maintenance order profile for the respective plant / order type combination:



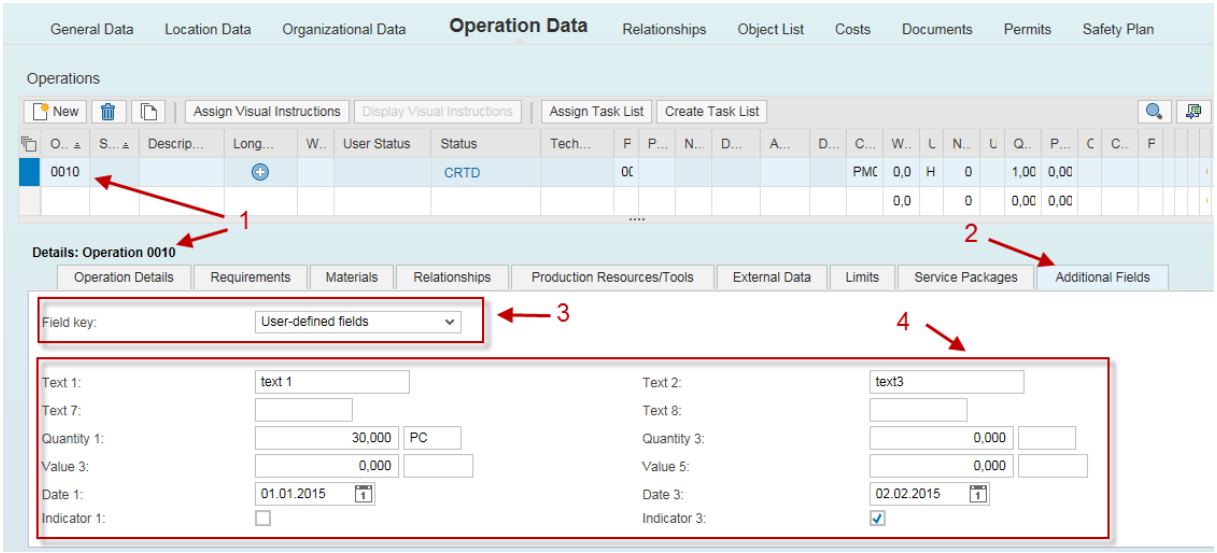
If you want the user to have a field key displayed by default for the **task list application**, you can proceed as follows:

Create a profile and enter the respective field key (2) in the maintenance task list profile (1) in Customizing for *Plant Maintenance and Customer Service under Maintenance Plans, Work Centers, Task Lists and PRTs -> Task Lists -> Control Data -> Define Profiles with Default Values*.



User Fields for Operations on the UI

Once you have made the required Customizing settings, the system displays the new *Additional Fields* tab page (2) in the *Details* (1) area of order operations and task list operations. If you choose the *Additional Fields* tab page, you can select a field key from the respective input help (3). The system then shows all fields that have been maintained in Customizing for the respective field key (4).



It is not necessary to create a customizing of the respective UIBB. The number and type of the additional fields for the operations is the same as in SAPGUI transactions for order and task list.

CAUTION: If the user changes a field key of an operation, any values that have already been entered are deleted.

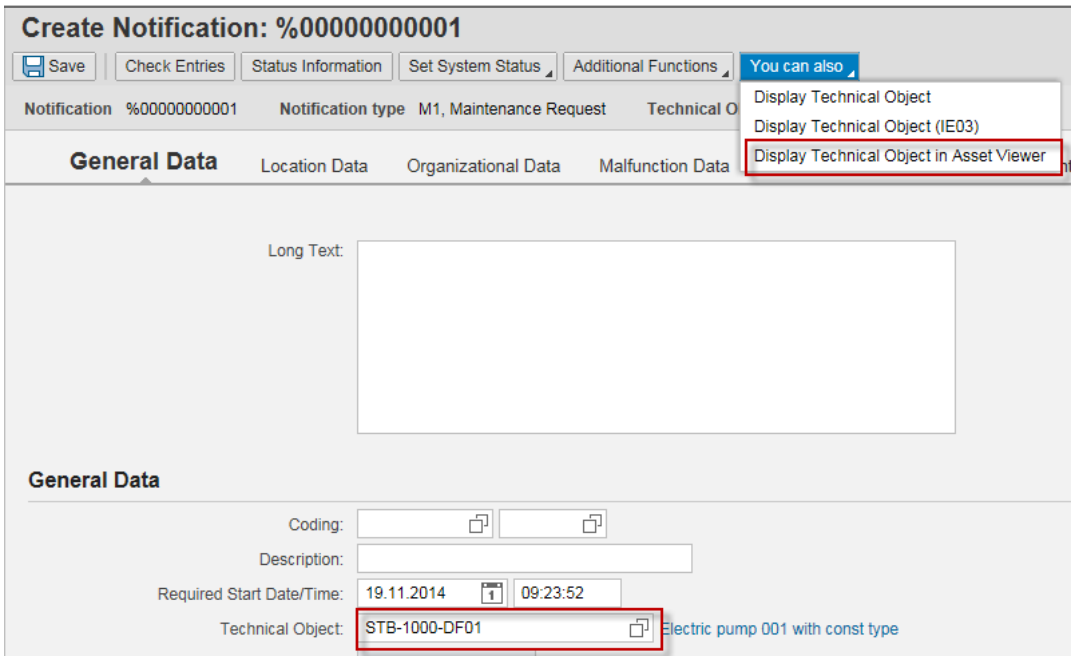
8 Asset Viewer

The Asset Viewer is a display tool in the software component PLMWUI that enables simple navigation through complex object relations on an integrated user interface. You can display the objects and navigate flexibly both within them and in the hierarchical object structure. You can display most of the EAM objects, such as notifications, orders, task lists and technical objects, in the Asset Viewer.

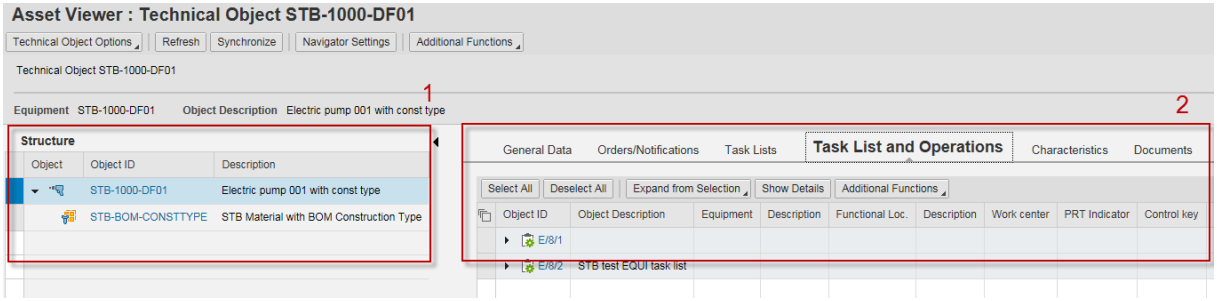
8.1 Working with the Asset Viewer Based on the PLM Object Navigator

As the Asset Viewer is integrated into the EAM application, you can use the Asset Viewer to display EAM objects such as notifications, orders and task lists as well as maintenance-related objects such as technical objects, materials and measurement documents. In applications for displaying, changing and/or creating individual object types, you start the Asset Viewer by choosing the respective option in the *You can also* menu.

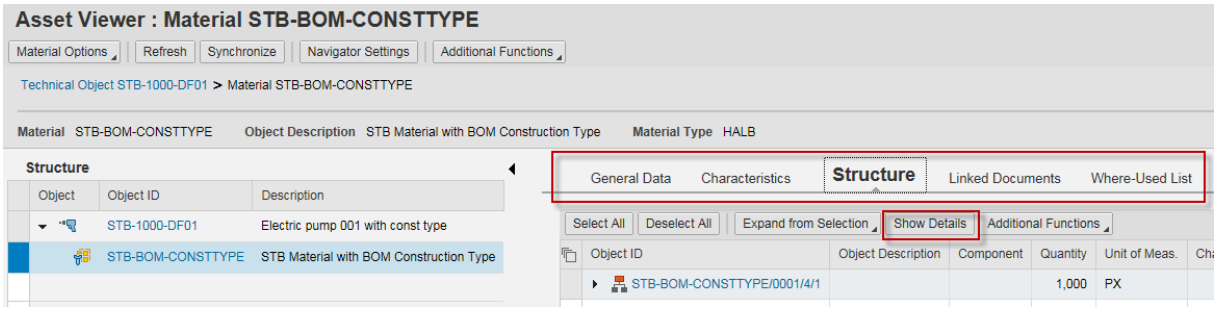
In this example, you want to use the Asset Viewer to display the technical object assigned to the notification.



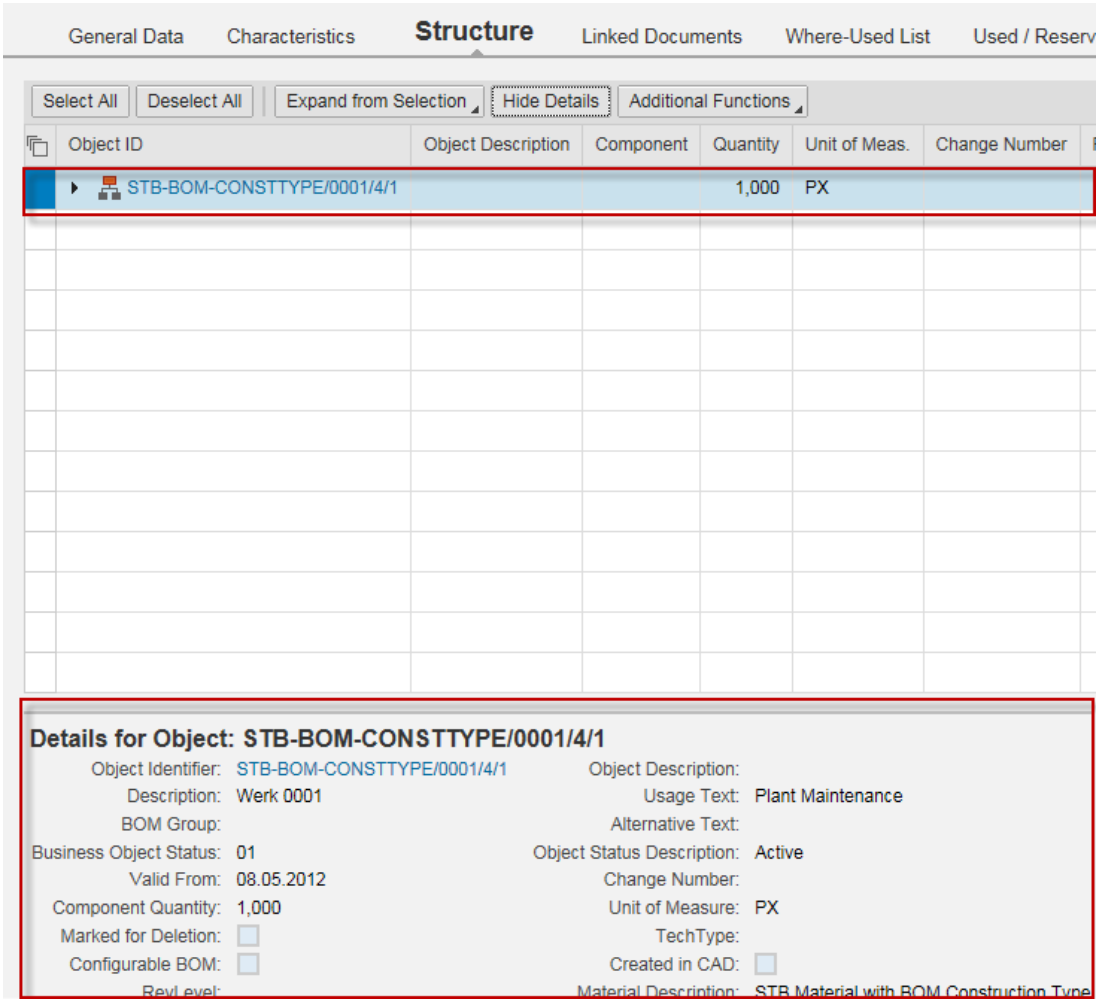
The Asset Viewer provides two areas of information. On the left-hand side, a structure view (1) displays the structure list of the technical object. On the right-hand side, the Object Navigator (2) provides all the data belonging to the object selected in the structure view on several views displayed as tab pages.



Depending on the object type of the object, the Asset Viewer displays different tab pages on the right-hand side. In this example, there is a material beneath the piece of equipment. If the user selects this material in the structure list (1), the Asset Viewer displays tab pages in the Object Navigator (2) that differ from those of the equipment.

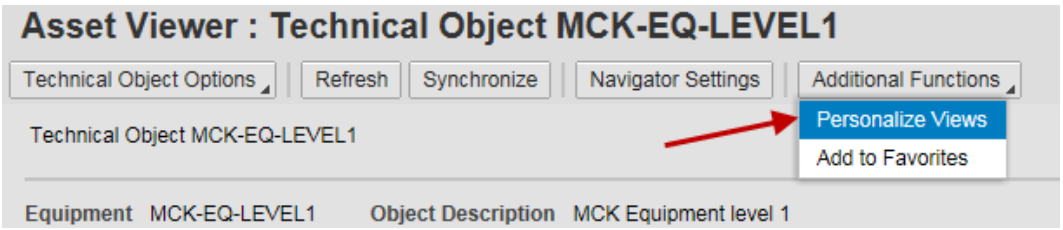


Some of the views are homogenous lists that display one type of information (for example, the task lists for a technical object) others consist of heterogeneous lists with different types of information (for example, orders and notifications). In heterogeneous lists, the table entries can have sub-objects. You can access more detailed information for these objects by selecting the table entry and choosing *Show Details*. The details open on the right-hand lower part of the screen.

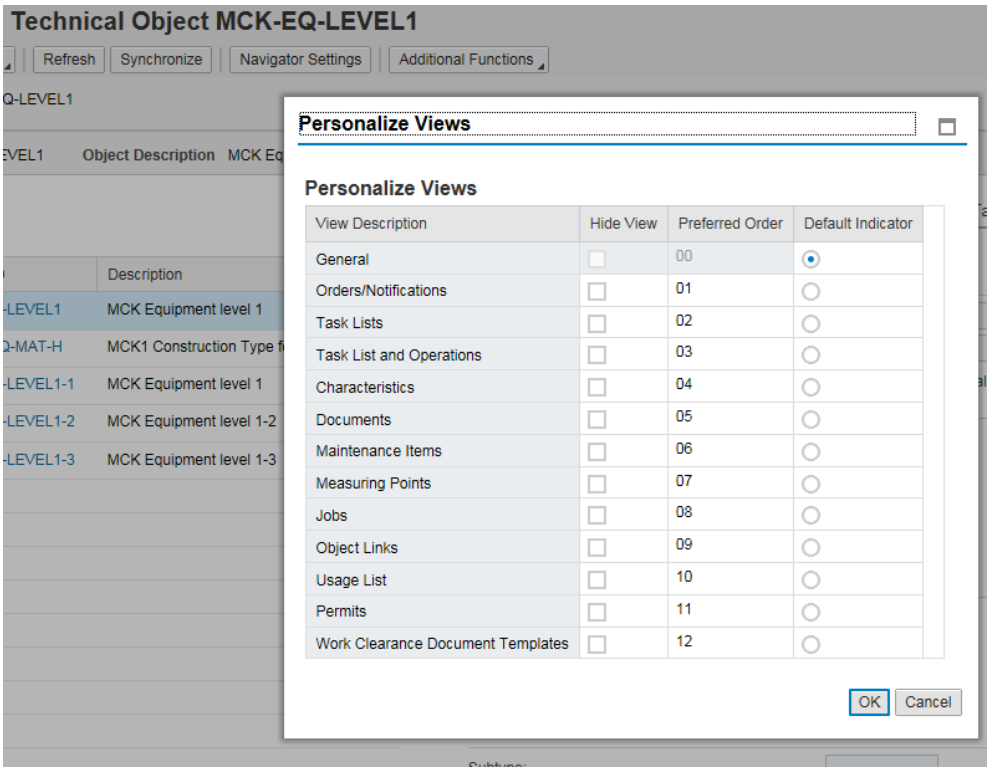


8.1.1 Personalization of the Asset Viewer

You can personalize the views displayed in the Asset Viewer by choosing *Additional Functions → Personalize Views*.



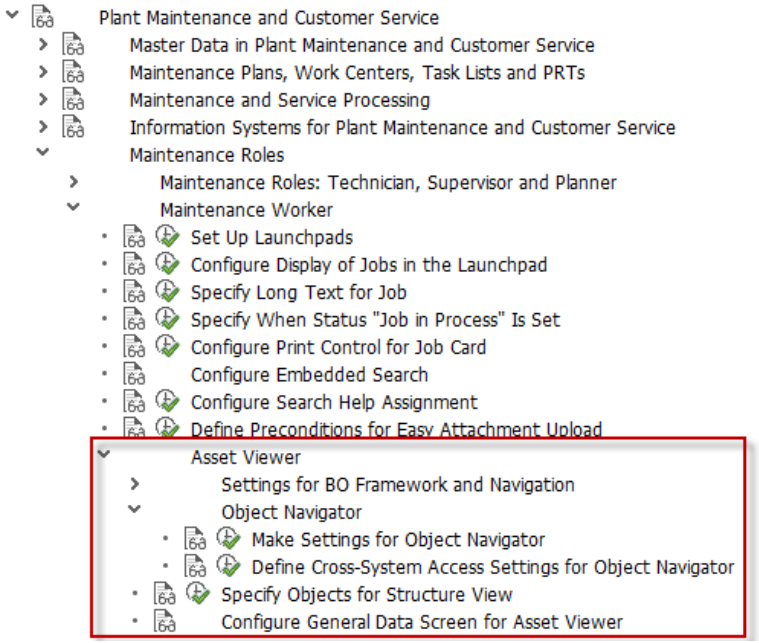
You can hide individual views, for example tab pages that are empty and do not provide any information. You can also determine the sequence of the tab pages and define which tab page is displayed as a default whenever you start the Asset Viewer.



8.2 Customizing Settings for the Asset Viewer

In customizing you can make settings for the object types that you display on the Object Navigator screen, as well as which tab pages are displayed for each object type and how the relations between objects in these views are displayed. You can also make additional settings, such as add or remove fields in lists, change the sequence of views or restrict views in view variants.

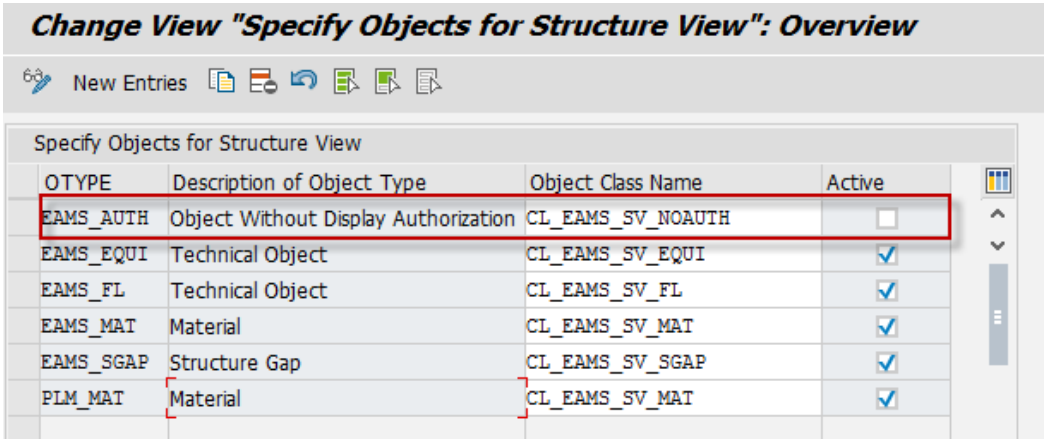
You can change the settings for the Asset Viewer in customizing for *Plant Maintenance and Customer Service under Maintenance Roles -> Maintenance Worker -> Asset Viewer*.



8.2.1 Specifying Objects Displayed in the Structure View

In the IMG activity *Specify Objects for Structure View* (also accessible using transaction `SM30` and view name `EAMS_V_OBJTYPE`), you can define which object types can be displayed in the structure view. Additionally, you can restrict the display of objects by using the authorization object `EAMS_SV`. To do so, assign the authorization object `EAMS_SV` to the user and maintain values for object types not to be displayed.

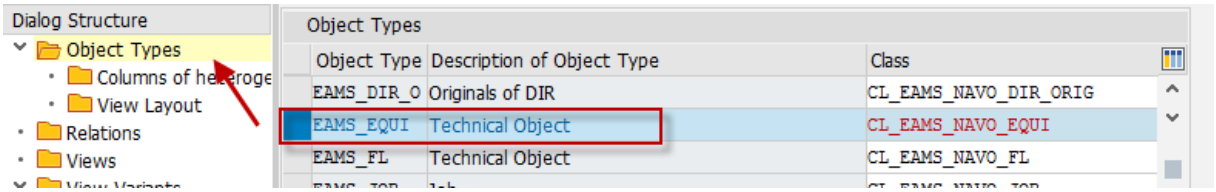
Even if the user is not authorized to display certain objects in the Asset Viewer, you can, nevertheless, specify that the system displays an “unauthorized object” line for each object. In this case, the user will then be informed that there are more objects assigned but not displayed for authorization reasons. The system only displays these “unauthorized object” lines if you select the checkbox *Active* for object type `EAMS_AUTH`.



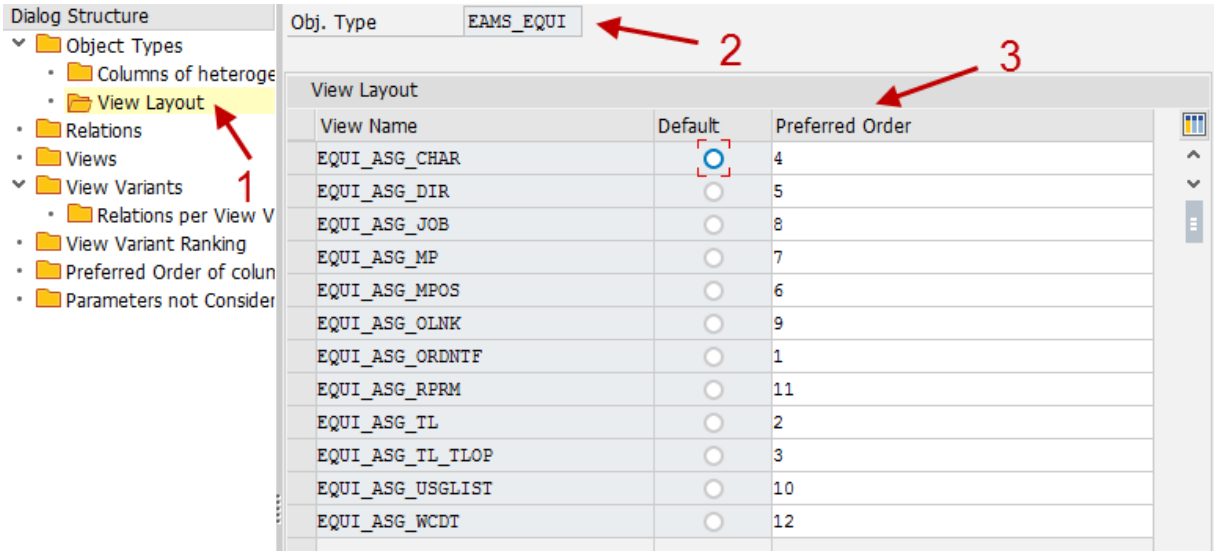
8.2.2 Changing the Order of Views Depending on the Object Type

In the IMG activity *Make Settings for Object Navigator* (also accessible using transaction SM34 and view cluster name /PLMB/VC_NAV), you can adjust the sequence of the tab pages depending on the object type. If you double-click on the menu entry *Object Types*, you open a list of object types with the corresponding classes.

In this example, you want to change the sequence of tab pages shown when the user displays a piece of equipment in the Asset Viewer. You therefore choose the object type EAMS_EQUI from the list and double-click on the menu entry *View Layout*.



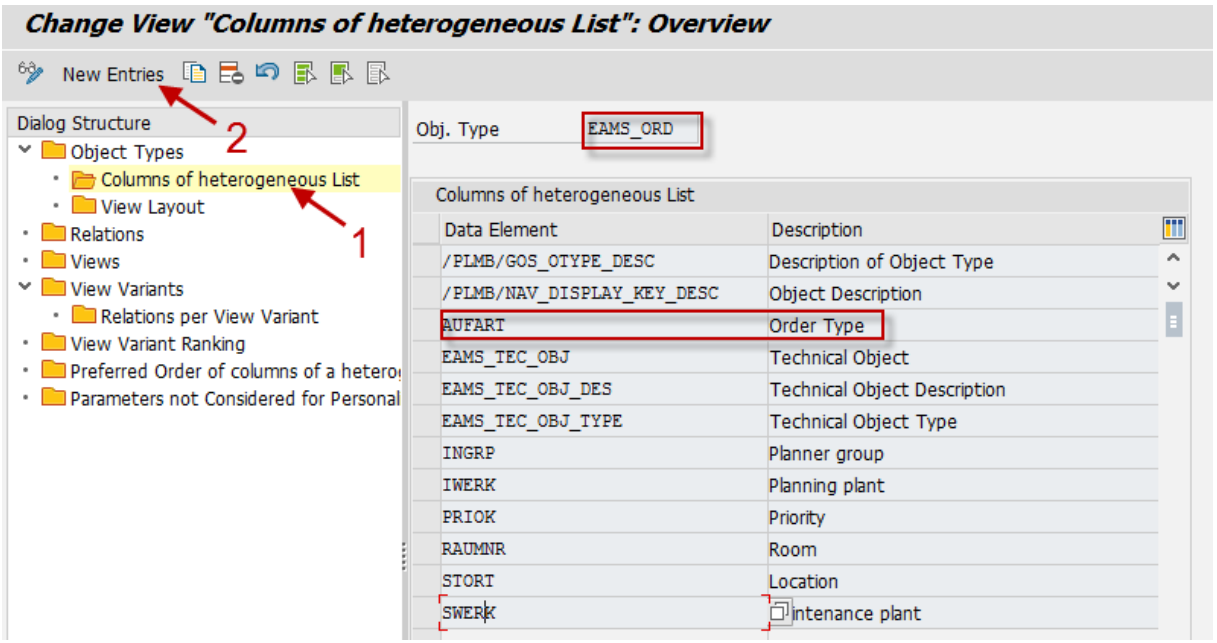
In the *View Layout* (1), all views (displayed as tab pages) belonging to the selected object type are listed. In this example, you can specify the order of views for object type EAMS_EQUI (2). If you define a default view, this view is always displayed as the first tab page. If you do not specify a special default view, the system displays the *General Data* view as default view. The *General Data* view is always available and is customized differently (see section 8.3). In this example, you want the *Orders/Notifications* view to be displayed as a second tab page directly after the *General Data* tab. You therefore assign position number 1 to the tab page EQUI_ASG_ORDNTF.



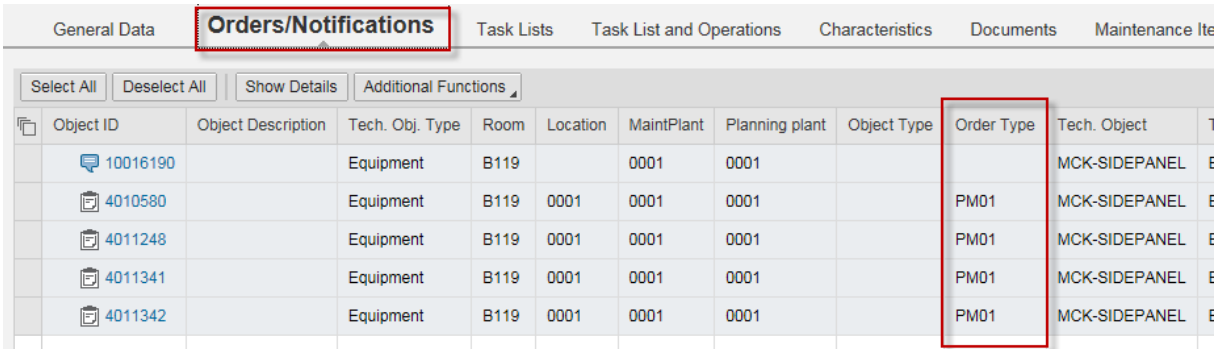
8.2.3 Adding Additional Fields to Heterogeneous Lists

In this example, you want to enhance the number of order-relevant fields displayed as table columns on the tab page *Orders/Notifications*. You therefore select the object type EAMS_ORD (order) and choose the *Columns of heterogeneous List* entry (1) in the *Dialog Structure*. Choose *New Entries* (2) to add new fields and then open the

input help of the *Data Element* column that displays all available fields for the selected order view. In this example, you want to display the order type on the tab page *Orders/Notifications*, so you select the field `AUFART` from the input help list. The system then displays this new table column in the list of columns for the selected view `EAMS_ORD`.

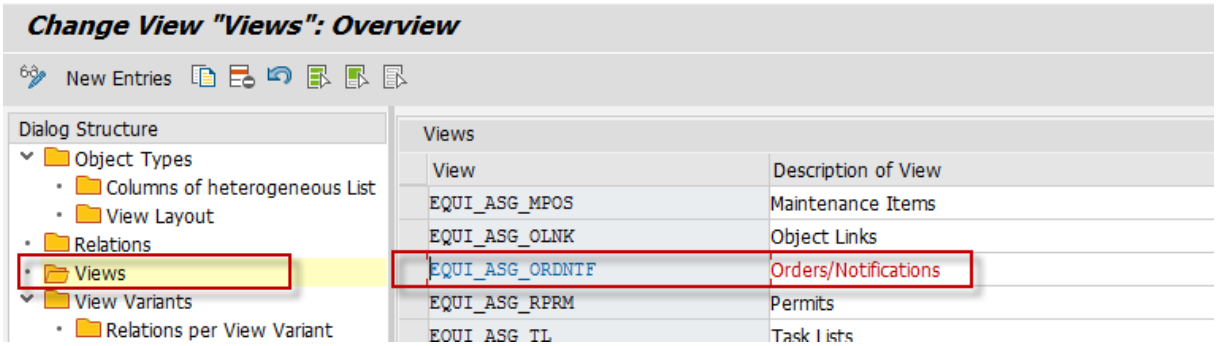


If you now display a piece of equipment in the Asset Viewer and display the assigned orders and notifications, the order type is displayed on the *Orders/Notifications* tab page.

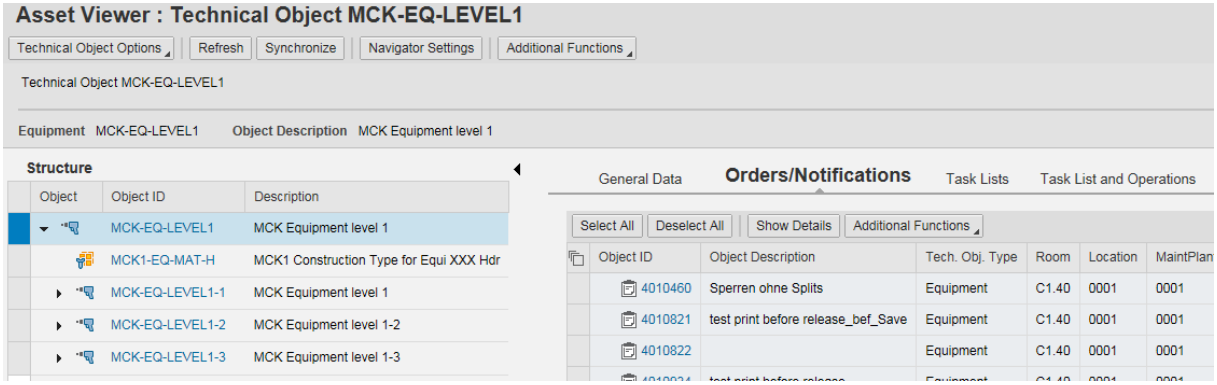


8.2.4 Defining View Variants per Role

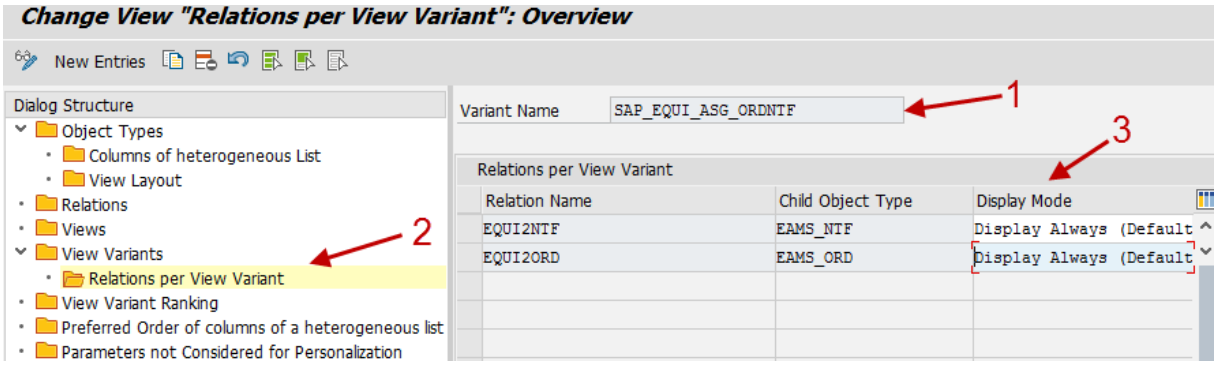
Choose *Views* in the *Dialog Structure* to obtain an overview of all the views available in the Object Navigator.



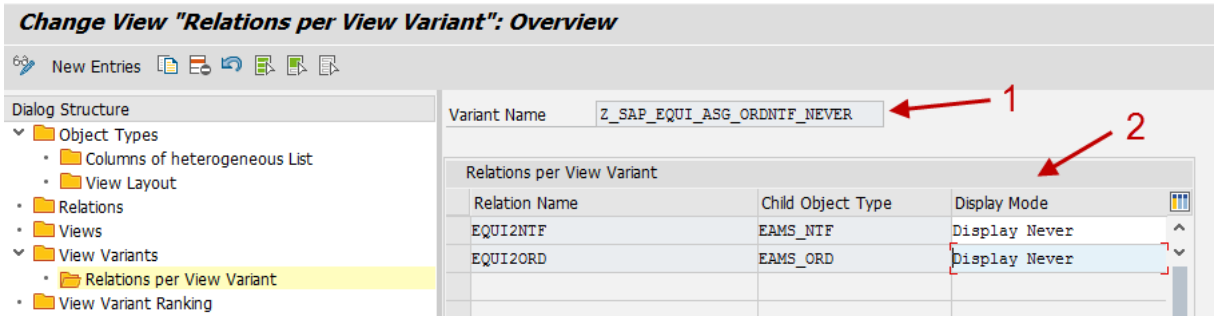
For each view at least one view variant is defined, where its relations and the visibility of data is specified. In this example, we want to change the view `EQUI_ASG_ORDNTF`, which displays all related orders and notifications belonging to a piece of equipment.



To change the visibility of data in this view, choose *View Variants* in the *Dialog Structure* and select the corresponding view variant `SAP_EQUI_ASG_ORDNTF` (1). Then choose *Relations per View Variant* (2). The default setting for this view variant specifies that relations from pieces of equipment to notifications and to orders are always displayed (3) in the Asset Viewer.



To prevent a user from displaying information about notifications and orders when displaying a piece of equipment in the Asset Viewer, create an additional view variant in the customer namespace (1) by copying the SAP standard view variant. In the *Relations* overview you can change the display option in the column *Display Mode* to *Display Never* (2).



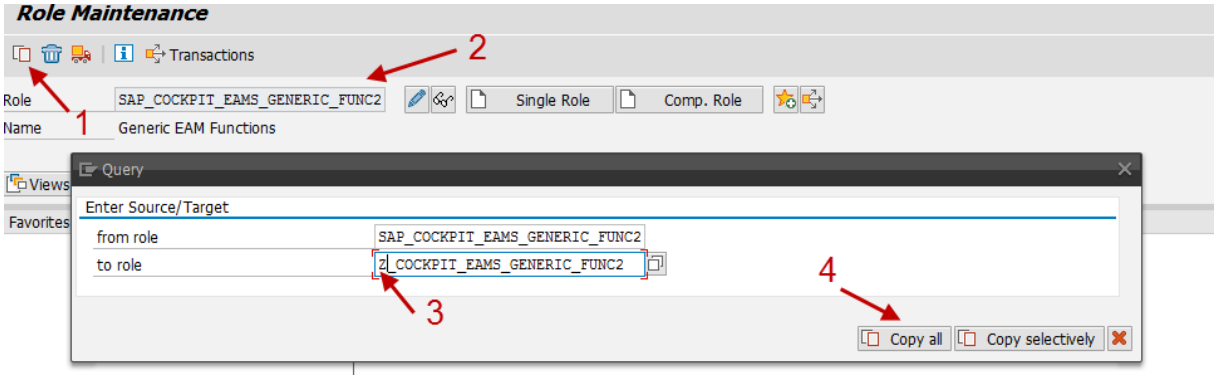
By creating different view variants, you can define which groups of users are authorized to see which information in the Asset Viewer.

In this example the tab page *Orders/Notifications* would be empty, because all relations are set to *Display Never*.

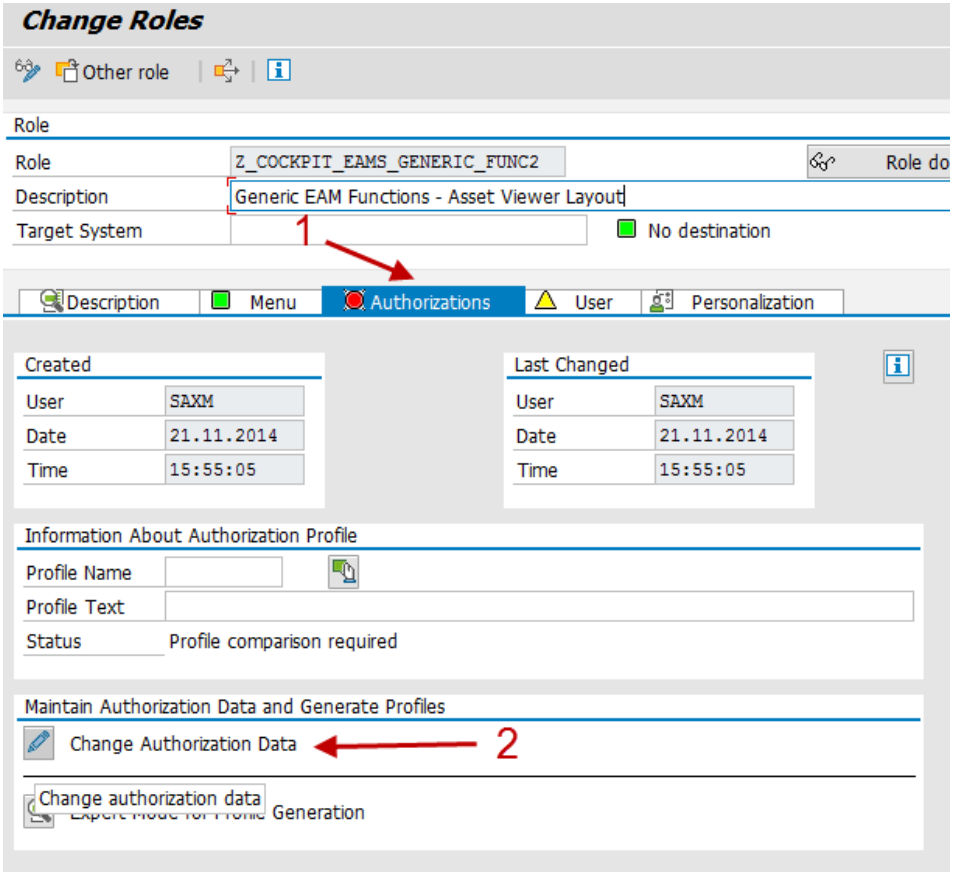
8.2.5 Changing the Authorization for Displaying Views in the Asset Viewer

To assign view variants to a group of users, you need to maintain the authorization object `PLM_LAYOUT` in the user's role in transaction `PFCG`. In this example, we assign the newly created view variant `Z_SAP_EQUI_ASG_ORDNTF_NEVER` to our user's role.

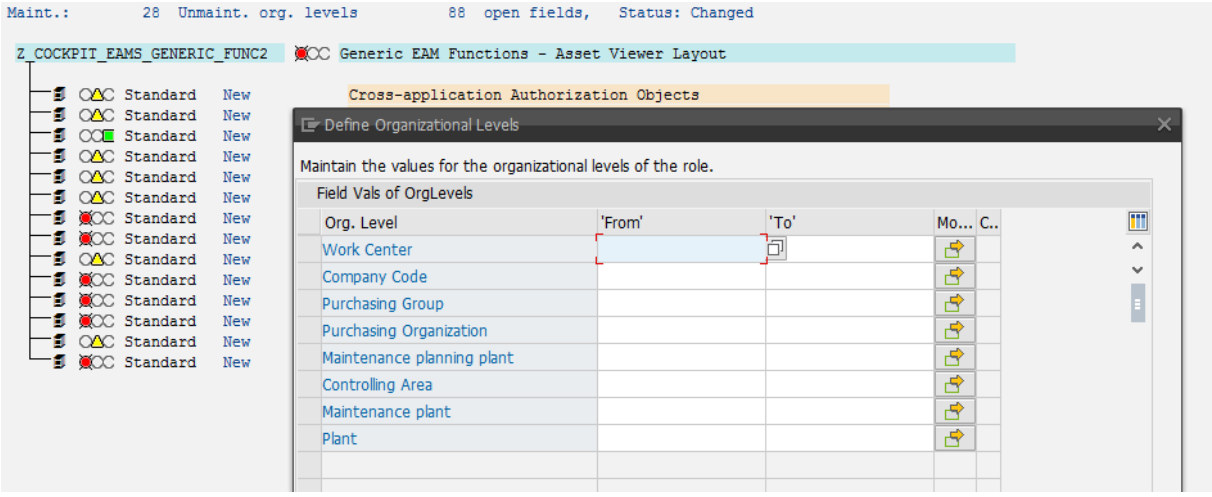
In a first step, you have to create a new user-group specific role by copying (1) the SAP standard role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` (2). You create the new role in the Z-namespace (3) and save your entries (4).



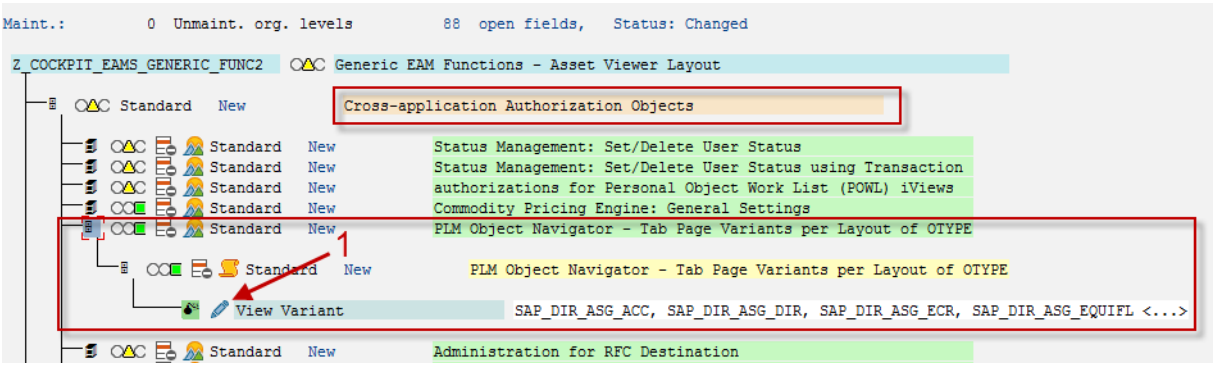
After you have created the new role, you can specify the authorizations. On the tab page *Authorizations* (1) of the role `Z_COCKPIT_EAMS_GENERIC_FUNC2`, you can change the authorization objects (2).



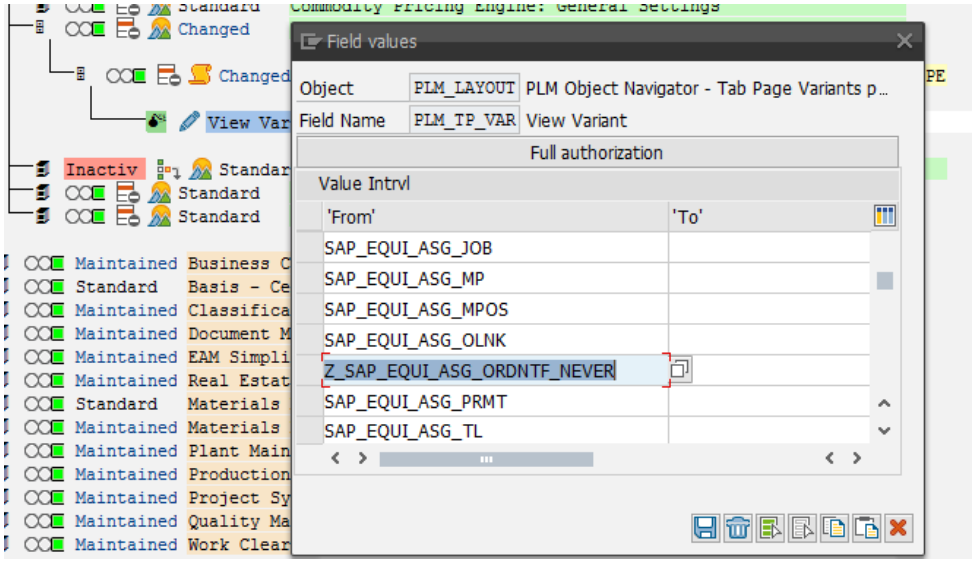
Before you can maintain the authorization objects, you have to specify the organizational levels for the role in a popup.



In the section *Cross-Application Authorization Objects*, find the authorization object *PLM Object Navigator - Tab Page Variants per Layout of OTYPE* (`PLM_LAYOUT`). Choose the pencil icon (1) to make changes to the views variants.

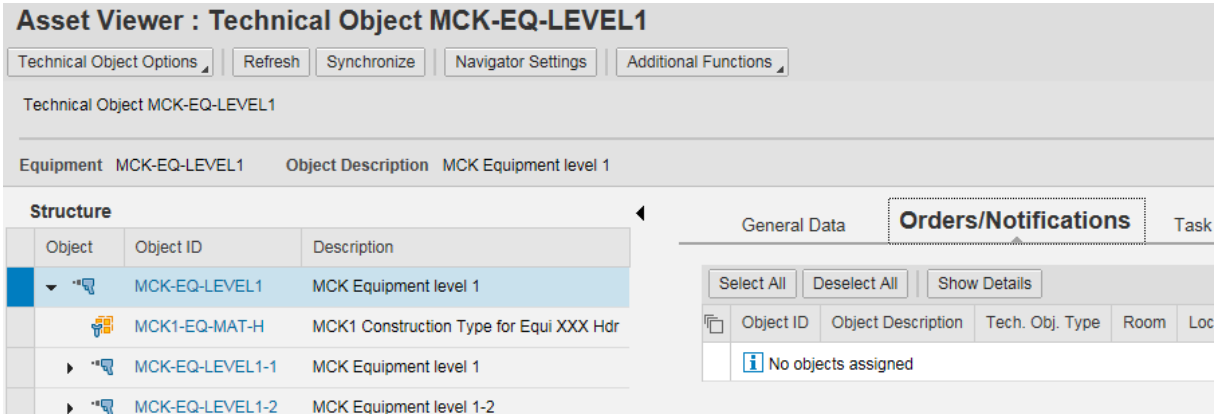


All view variants that are assigned to the selected role are listed in a popup. You have already created the view variant `Z_SAP_EQUI_ASG_ORDNTF_NEVER` to prevent some user groups from displaying information about notifications and orders when displaying a piece of equipment in the Asset Viewer. You now replace the SAP standard view `SAP_EQUI_ASG_ORDNTF` with the new view variant `Z_SAP_EQUI_ASG_ORDNTF_NEVER`.

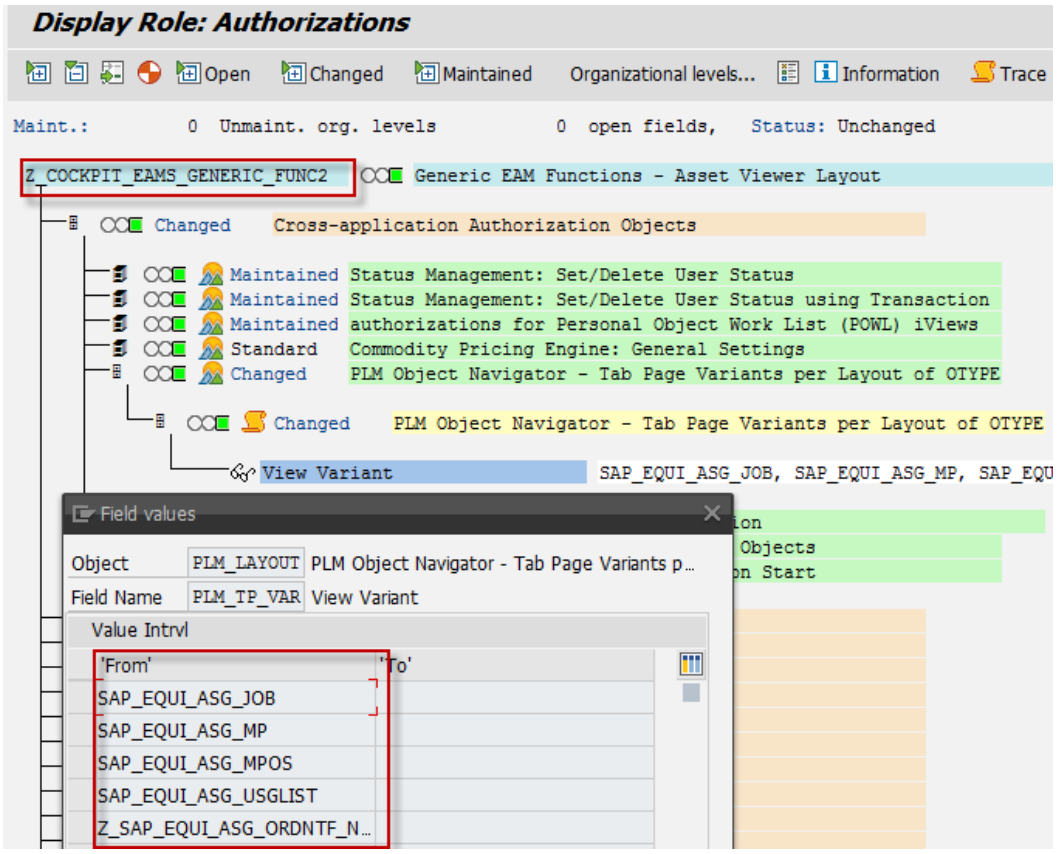


Save your changes and generate the profile for this role. If you have not already done so, you have to assign users who are not allowed to display notification and order data to the role `Z_COCKPIT_EAMS_GENERIC_FUNC2`.

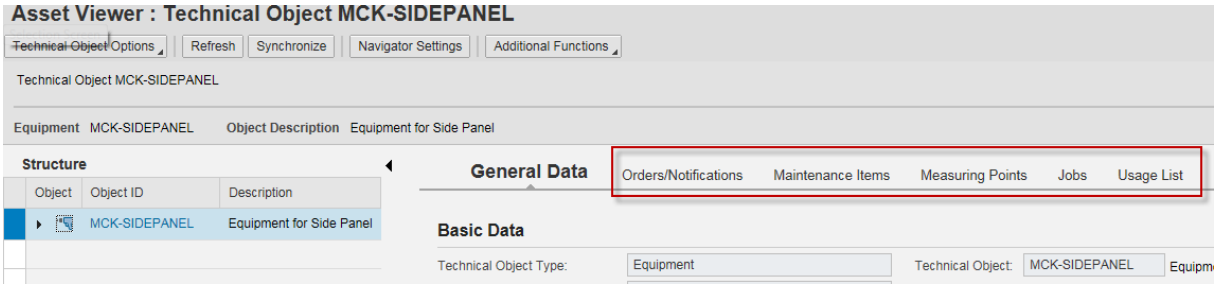
If users now log on with role `Z_COCKPIT_EAMS_GENERIC_FUNC2` and open a piece of equipment in the Asset Viewer, they can still display the tab page Orders/Notifications, but no data is shown.



If you do not want the users to display an empty tab page, you can also hide views for an individual user group. In authorization object `PLM_LAYOUT`, delete all the view variants that should be hidden. View variants that are not contained in the profile are not displayed as tab pages. In this example, you only want five views (tab pages) to be available when the user displays a piece of equipment in the Asset Viewer. You therefore delete all view variants except for these five:



When the user now logs on with role `Z_COCKPIT_EAMS_GENERIC_FUNC2`, these five views are displayed as tab pages in accordance with their order in customizing. Additionally, the *General Data* View is displayed independently from the view variant values in the role.



Hint: To check which values are available in the user's authorization buffer, start transaction `SU56` after the user has executed the Asset Viewer application and navigate to the authorization object `PLM_LAYOUT`.

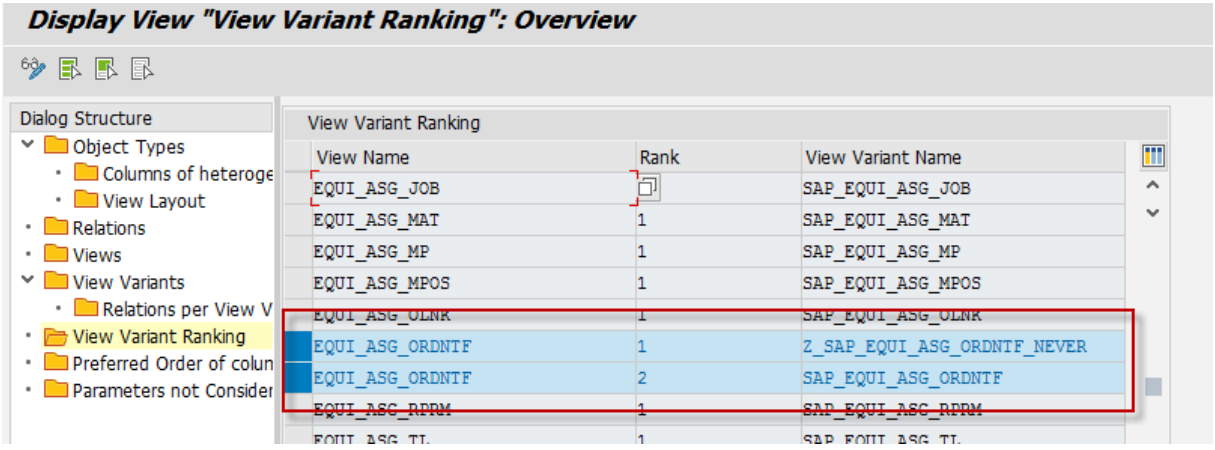
8.2.6 View Variant Ranking

If you have assigned several roles to the same user, and therefore defined different view variants for the same view, you can specify which view variant is displayed as default.

In the IMG activity *Make Settings for Object Navigator* (view cluster `/PLMB/VC_NAV`), choose the menu entry View *Variant Ranking* in the *Dialog Structure*. In this menu entry, all views are listed with their corresponding view variants. You can specify which view variant is the default for a view by using the numbering in table column *Rank*. In this example, you have assigned a user group to the following roles:

- SAP standard role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` displaying all data in all views
- The role in the customer namespace `Z_COCKPIT_EAMS_GENERIC_FUNC2` with the restricted view variant for the *Orders/Notifications* view

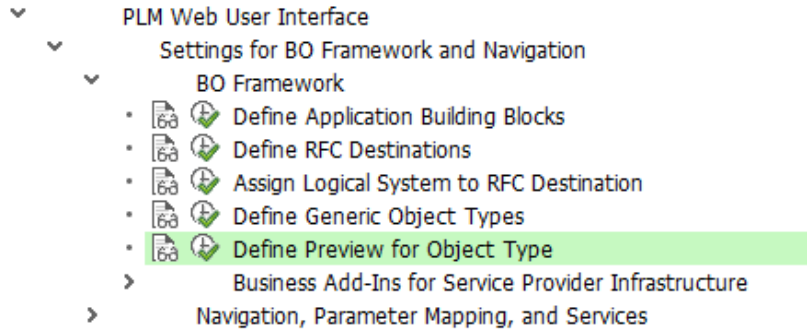
The view variant `Z_SAP_EQUI_ASG_ORDNTF_NEVER` has the lower ranking number and is therefore the preferred one. This means that even users who are additionally authorized to display all order and notification data (because the SAP standard view variant `SAP_EQUI_ASG_ORDNTF` is assigned to their authorization object `PLM_LAYOUT`) cannot display any data on the *Orders/Notifications* view. As long as the restricted view variant `Z_SAP_EQUI_ASG_ORDNTF_NEVER` is specified as the preferred one, the system does not consider any other view variants.



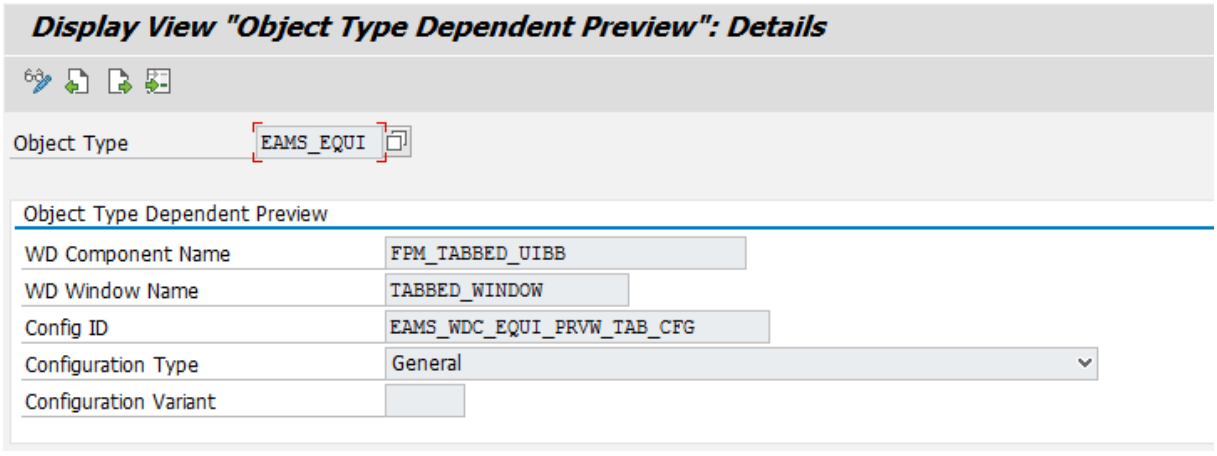
8.3 Customizing of the General Data View

The system always displays the *General Data* view as the default view as long as there is no other view explicitly defined as default. You can configure the *General Data* view to suit your requirements but you cannot hide it.

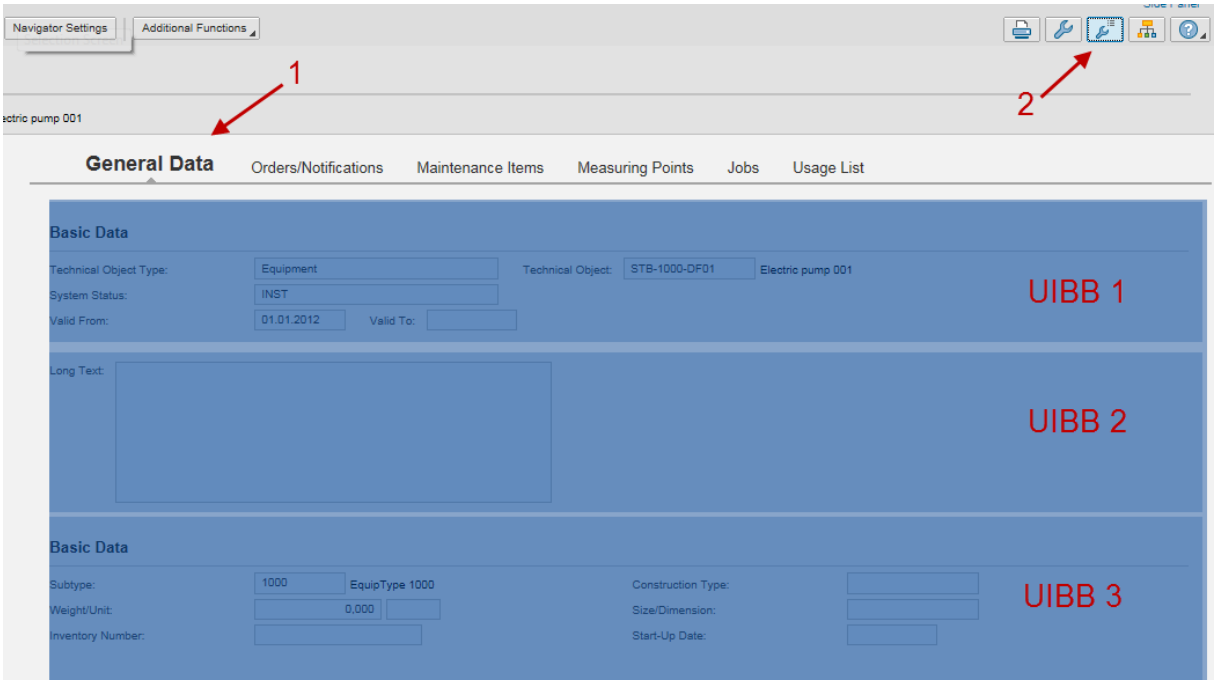
You can find the IMG activity to configure the *General Data* view in customizing for *Product Lifecycle Management (PLM)* under *PLM Web User Interface -> Settings for BO Framework and Navigation -> BO Framework*.



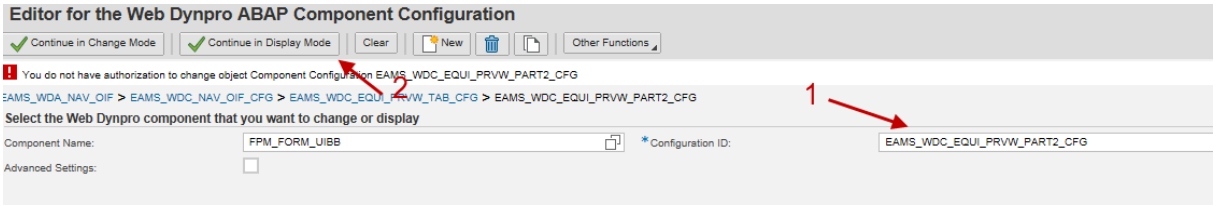
You can also access the customizing view `/PLMU/FRW_PREVW` directly by entering transaction code `SM30`. For object type `EAMS_EQUI`, the following entry exists with configuration ID `EAMS_WDC_EQUI_PRVW_TAB_CFG`. The WD Component Name indicates that the *General Data* view contains several parts because it is a tabbed UIBB.



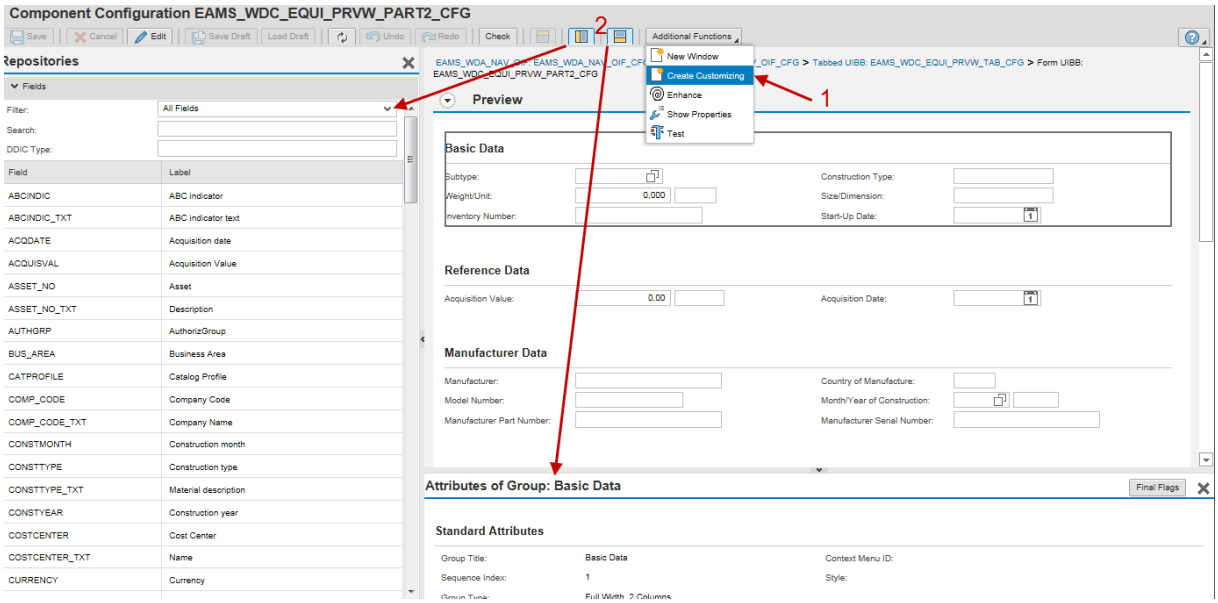
To access the configuration of the *General Data* view for the selected object, open the Asset Viewer and select it (1). When you choose the pushbutton *Show Configurable Areas* (2), you see that the view consists of three separate UIBBs.



You can change any of the UIBBs by double-clicking. In this example, you want to configure UIBB3 and therefore open the component configuration screen of configuration `EAMS_WDC_EQUI_PRVW_PART2_CFG` (1). To create or change customizing for the *General Data* view, choose *Continue in Display Mode* (2).

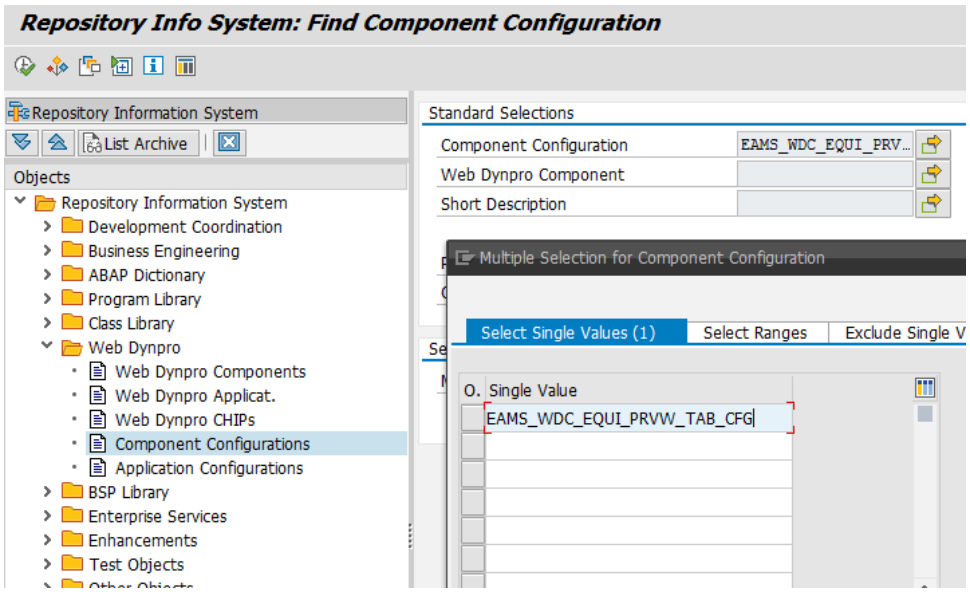


Now you can create or change customizing for the *General Data* view by choosing *Additional Functions* → *Create Customizing* (or *Change Customizing* if customizing settings already exist for this view). You can specify which fields should be displayed and which ones should be hidden by using the icons *Navigation & Repository* and *Attributes* (2).

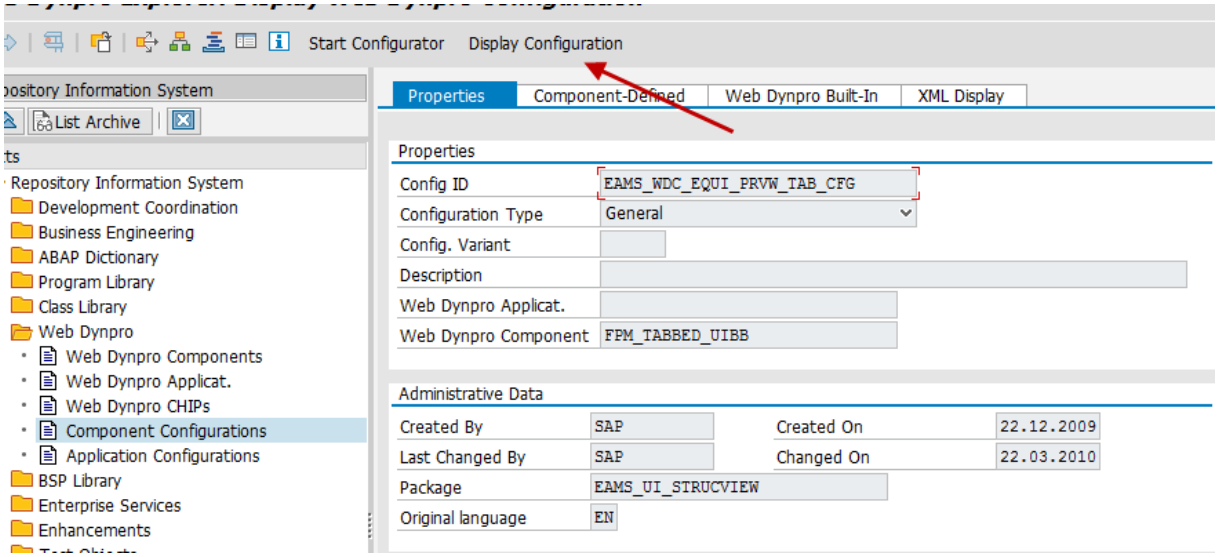


Customizing for UIBBs works in a similar way to customizing for notifications described in chapter 3.1 ff.

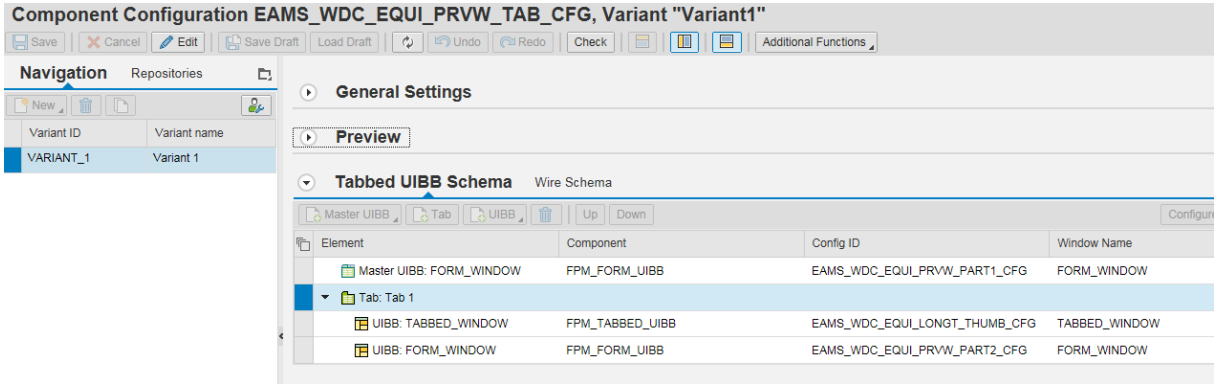
To access the complete configuration `EAMS_WDC_EQUI_PRVW_TAB_CFG`, go to the Object Navigator of the ABAP Workbench (transaction code `SE84`), choose Component Configurations in the folder Web Dynpro and enter the configuration name.



Double-click the configuration and view it by choosing *Display Configuration*.



In the section *Tabbed UIBB Schema* on the right-hand side, three sub-configurations for this component configuration are listed: `EAMS_WDC_EQUI_PRVW_PART1_CFG`, `EAMS_WDC_EQUI_LONGT_THUMB_CFG` and `EAMS_WDC_EQUI_PRVW_PART2_CFG`. You can add other UIBBs or delete existing ones by making customizing settings for this component configuration.



For more information about the Asset Viewer, see Asset Viewer and Object Navigator in the SAP Library. To change the context menu of the structure view, refer to the example in chapter 6.2.3.

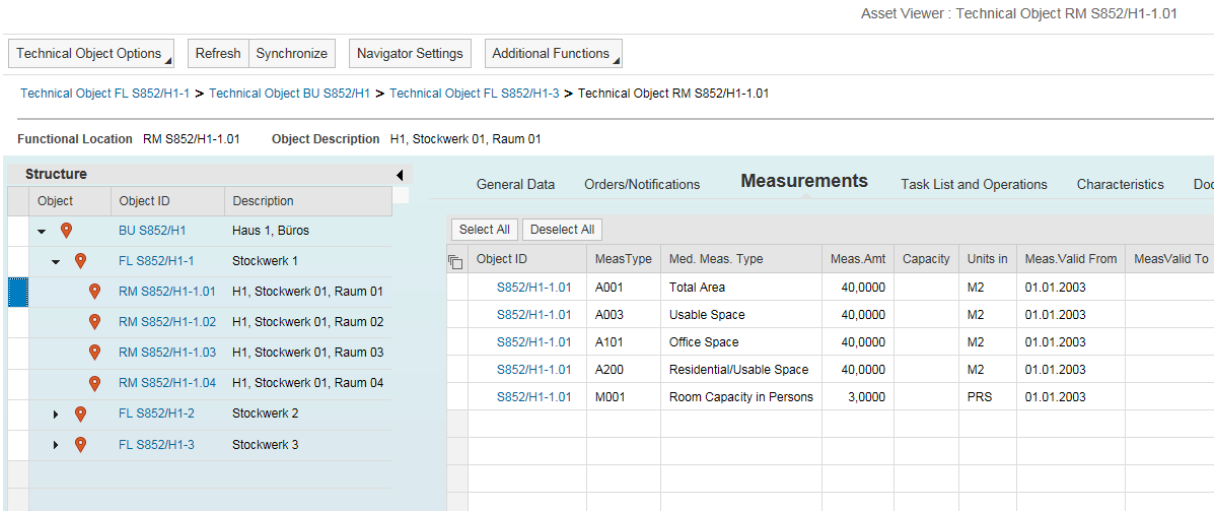
8.4 Adding New Views in Asset Viewer

Adding a New View to an Object in the Object Navigator

You can enhance the Asset Viewer with additional customer-specific or SAP standard objects that are not yet displayed. To create new views, you need basic ABAP development knowledge and must have the authorization to create classes and methods.

In this example, you also want to display real estate measurement data when you select a functional location in the structure view of the Asset Viewer. This measurement data will appear on the right side of the Asset Viewer on a separate tab page with the title *Measurements*.

The *Measurements* view is a homogenous list. This means that the measurement attributes are displayed without a hierarchy:

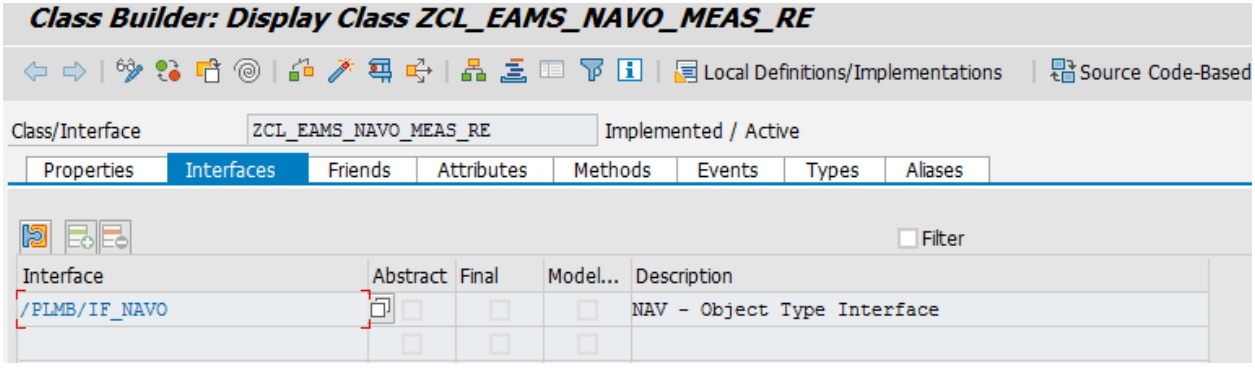


To include this view into the Asset Viewer, proceed as follows:

1. Create a class for the new object type with super class `CL_EAMS_NAVO_SUP`.
2. Create a class for the relationship between functional location and measurements with super class `CL_EAMS_NAVR_SUP`.
3. Create DDIC objects.
4. Redefine the methods.
5. Complete the Customizing for the new tab page.

Create a Class for the New Object Type 'Measurements of Real Estate'

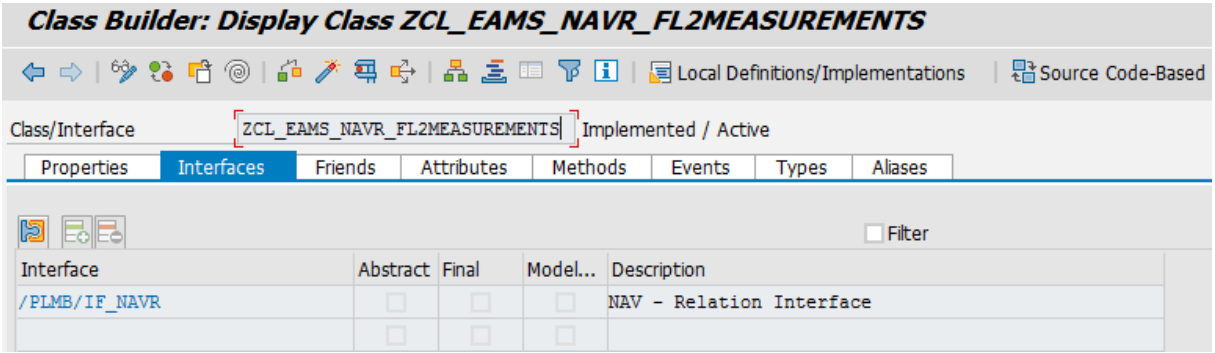
First, create a new class for the new object in the *Class Builder* (transaction `SE24`). This new class should belong to the super class `CL_EAMS_NAVO_SUP` in which the interface class `/PLMB/IF_NAVO` is included. Assign the new class, the name of which starts with a 'Z', to a package and include it in a transport request. Then save and activate the class.



Create a Class for the New Relationship

Secondly, create a new class for the new relationship between functional location and measurements in the *Class Builder* (transaction `SE24`) or copy an existing class. The new class belongs to the super class

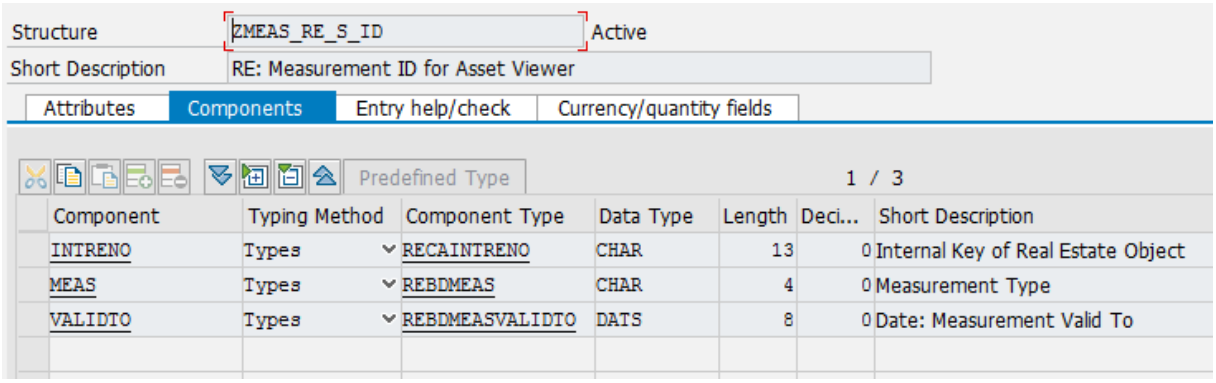
CL_EAMS_NAVR_SUP in which the interface class /PLMB/IF_NAVR is included. Assign the new class, the name of which starts with a 'Z', to a package and include it in a transport request. Then save and activate the class.



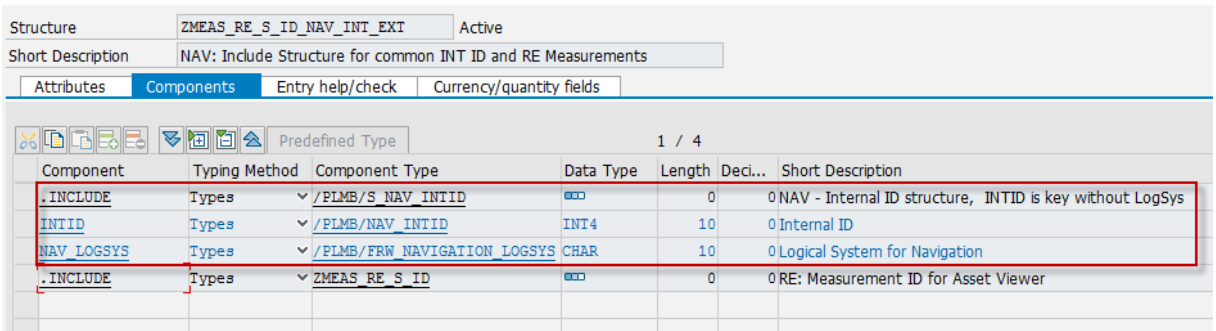
Create Several Data Dictionary Structures and Table Types

Thirdly, create three DDIC structures in the *ABAP Dictionary* (transaction SE11): the Object ID structure, the Navigator ID structure and the Navigator Attributes structure for the new object type *Measurements of Real Estate* (ZRE_MEAS).

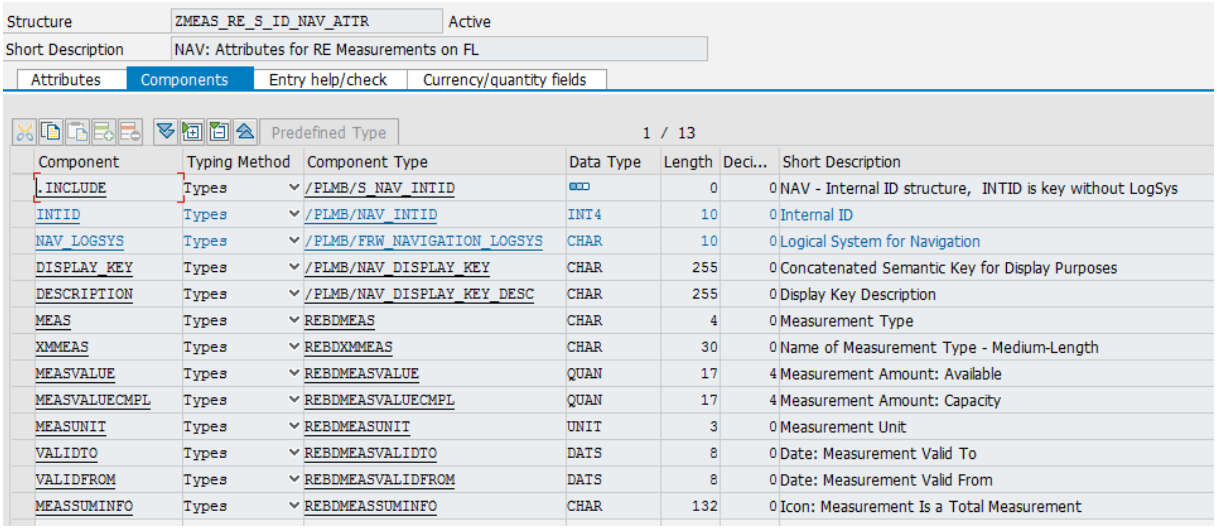
The object ID structure (ZMEAS_RE_S_ID) contains the three key fields for the measurements. Its enhancement category is set to *Can be enhanced (character-type or numeric)*.



The Navigator ID structure (ZMEAS_RE_S_ID_NAV_INT_EXT) is used to map the objects in the navigator to a unique identification number (/PLMB/S_NAV_INTID). The logical system is added and the key that was created in the previous step.



The Navigator Attributes structure (ZMEAS_RE_S_ID_NAV_ATTR) contains all the fields of a measurement line that will be displayed in the view on the right-hand side of the Asset Viewer. In addition, this structure contains the internal ID structure components for the logical system and two further fields, one for a display key and the other for its description.



Structure: ZMEAS_RE_S_ID_NAV_ATTR — Active
Short Description: NAV: Attributes for RE Measurements on FL
Attributes | Components | Entry help/check | Currency/quantity fields
Predefined Type — 1 / 13

Component	Typing Method	Component Type	Data Type	Length	Deci...	Short Description
.INCLUDE	Types	/PLMB/S_NAV_INTID		0	0	NAV - Internal ID structure, INTID is key without LogSys
INTID	Types	/PLMB/NAV_INTID	INT4	10	0	Internal ID
NAV_LOGSYS	Types	/PLMB/FRW_NAVIGATION_LOGSYS	CHAR	10	0	Logical System for Navigation
DISPLAY_KEY	Types	/PLMB/NAV_DISPLAY_KEY	CHAR	255	0	Concatenated Semantic Key for Display Purposes
DESCRIPTION	Types	/PLMB/NAV_DISPLAY_KEY_DESC	CHAR	255	0	Display Key Description
MEAS	Types	REBDMEAS	CHAR	4	0	Measurement Type
XMMEAS	Types	REBDXMMEAS	CHAR	30	0	Name of Measurement Type - Medium-Length
MEASVALUE	Types	REBDMEASVALUE	QUAN	17	4	Measurement Amount: Available
MEASVALUECMPL	Types	REBDMEASVALUECMPL	QUAN	17	4	Measurement Amount: Capacity
MEASUNIT	Types	REBDMEASUNIT	UNIT	3	0	Measurement Unit
VALIDTO	Types	REBDMEASVALIDTO	DATS	8	0	Date: Measurement Valid To
VALIDFROM	Types	REBDMEASVALIDFROM	DATS	8	0	Date: Measurement Valid From
MEASSUMINFO	Types	REBDMEASSUMINFO	CHAR	132	0	Icon: Measurement Is a Total Measurement

Furthermore, you require three **sorted** table types with a primary key definition. The third table type has the fields of structure ZMEAS_RE_S_ID as primary key fields.

Table Type Name	Line Type	Primary key
ZMEAS_RE_T_ID_NAV_ATTR	ZMEAS_RE_S_ID_NAV_ATTR	INTID
ZMEAS_RE_T_NAV_ID_INT_KEY	ZMEAS_RE_S_ID_NAV_INT_EXT	INTID
ZMEAS_RE_T_NAV_ID_EXT_KEY	ZMEAS_RE_S_ID_NAV_INT_EXT	INTRENO, MEAS, VALIDTO

Redefine and Implement Methods of the Super Classes

For this example, the following methods were implemented in the super class:

Method	Description
CONSTRUCTOR	CONSTRUCTOR
SET_DDIC_NAMES	Set DDIC names
MAP_EXT2INT	Map external key to internal key
GET_OBJECT_ATTRIBUTES	Get attributes for a list of objects

You have to redefine these methods to add the object - or relation-specific coding. The methods described here were implemented for this example, for other objects it might be necessary to implement additional methods of the super class.

The following methods are in the class for the navigation object (ZCL_EAMS_NAVO_MEAS_RE):

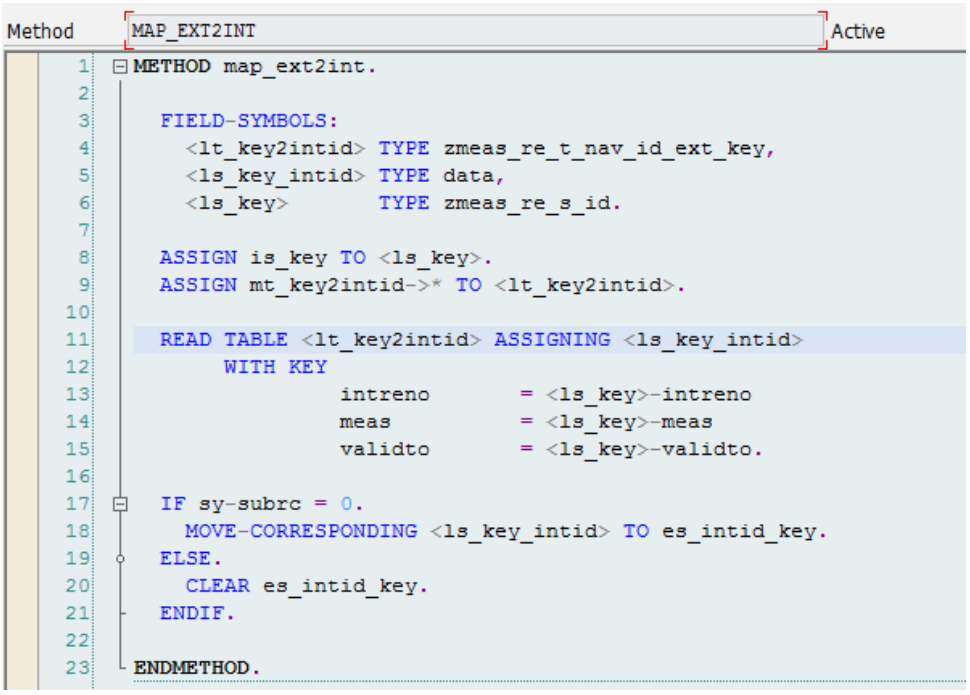
In method SET_DDIC_NAMES you enter the structure and table type names that you created in a previous step.

```
Method   SET_DDIC_NAMES                                   Active
 1  METHOD set_ddic_names.
 2
 3    ms_ddic_names-key_s        = 'ZMEAS_RE_S_ID'.
 4    ms_ddic_names-intid_key_s  = 'ZMEAS_RE_S_ID_NAV_INT_EXT'.
 5    ms_ddic_names-intid_attr_s = 'ZMEAS_RE_S_ID_NAV_ATTR'.
 6    ms_ddic_names-intid_attr_t = 'ZMEAS_RE_T_ID_NAV_ATTR'.
 7
 8    ms_ddic_names-intid2key_t  = 'ZMEAS_RE_T_NAV_ID_INT_KEY'.
 9    ms_ddic_names-key2intid_t  = 'ZMEAS_RE_T_NAV_ID_EXT_KEY'.
10
11    mv_object_type_name        = 'ZRE_MEAS'.
12
13  ENDMETHOD.
```

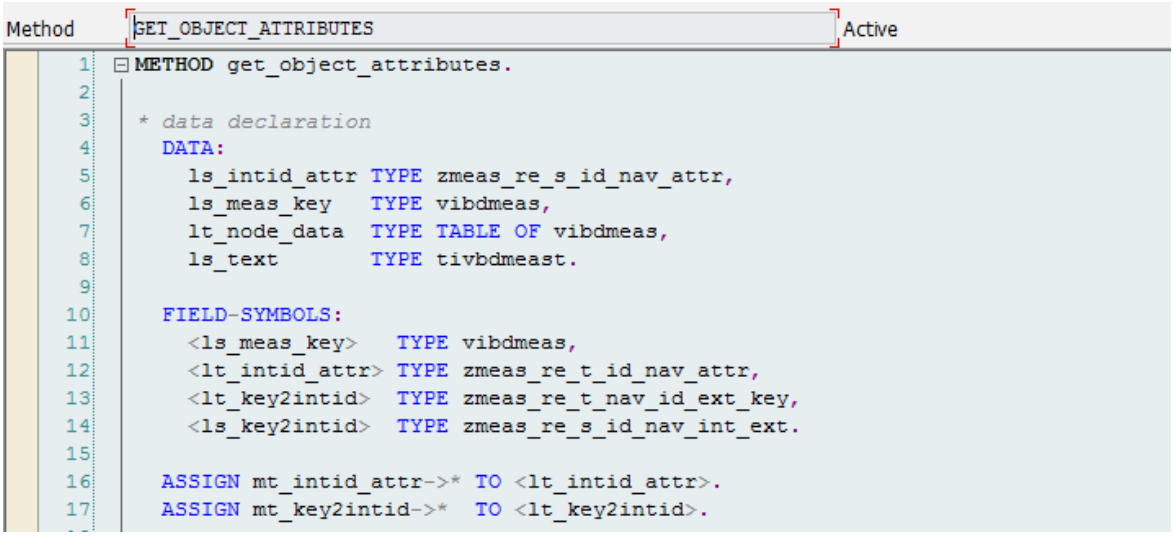
You have to redefine the method `CONSTRUCTOR`. This method contains several method calls and the data creation.

```
Method   CONSTRUCTOR                                      Active
 1  METHOD CONSTRUCTOR.
 2
 3  * call of empty constructor of superclass is required
 4    super->constructor( ).
 5
 6    set_ddic_names( ).
 7
 8    CREATE DATA mt_intid_attr TYPE (ms_ddic_names-intid_attr_t).
 9    CREATE DATA mt_intid2key  TYPE (ms_ddic_names-intid2key_t).
10    CREATE DATA mt_key2intid  TYPE (ms_ddic_names-key2intid_t).
11
12    get_bo_reference( ).
13
14  ENDMETHOD.
```

The method `MAP_EXT2INT` is used for to map the internal and external key of the object. You have to adapt the measurement structures and fields.



If you want to display measurement data on the right-hand side in the Asset Viewer, you have to redefine and implement the method `GET_OBJECT_ATTRIBUTES`. The importing parameter `IT_OBJECT_KEY` contains the key fields of the object (here a functional location) that you have marked in the structure view and for which you want to display the corresponding measurement data on the new tab. The data declaration at the beginning of the method can be implemented in a similar way:



The measurement data for the output, such as measurement data and texts, is collected in internal table `<lt_intid_attr>`. In addition, method `CREATE_IDR_DATA` is called at the end of this method to store IDR data in the buffer.

If a class for reading the added business object already exists, you can create an instance of this class in method `GET_BO_REFERENCE`.

The following methods are in the class for the relationship between the functional location and the measurements (`ZCL_EAMS_NAVR_FL2MEASUREMENTS`):

The method `SET_DDIC_NAMES` has to be supplied with DDIC and relationship names.

```
Method    SET_DDIC_NAMES                                   Active
1  METHOD SET_DDIC_NAMES.
2
3    ms_ddic_names-t_child_key = 'ZMEAS_RE_T_NAV_ID_EXT_KEY'.
4    ms_object_names-parent    = cl_eams_mp_fl=>gc_otype_name.
5    ms_object_names-child     = 'ZRE_MEAS'.
6    mv_relation_name          = 'FL2MEASUREMENTS'.
7
8  ENDMETHOD.
```

A few method calls are performed in the `CONSTRUCTOR` method. The method call `SET_DDIC_NAMES` is a requirement.

```
Method    CONSTRUCTOR                                      Active
1  METHOD CONSTRUCTOR.
2
3    super->constructor( ).
4    set_ddic_names( ).
5    mo_srv = cl_eams_nav_srv=>s_get_instance( ).
6
7  *  CALL METHOD mo_srv->initialize_char_selection
11
12
13 ENDMETHOD.
```

The method `SINGLE_EXPLOSION` reads the relationships between the parent object and the child data. All measurement data for the parent object provided by the importing parameter `IS_PARENT_KEY` is collected in the exporting parameter `ET_CHILD_KEY`. To achieve this for the measurement data, method `cl_redb_vibdmeas=>get_list_by_intreno` is called and it returns a list of measurement data.

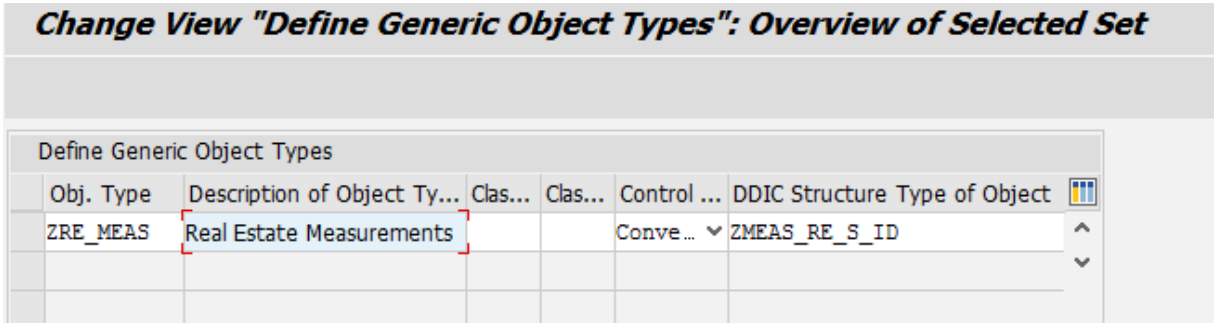
Make the Required Customizing Settings for Displaying the New View

You can specify the names for the following entries in advance. In this example the following names were specified:

Object	Name
Generic Object Type	ZRE_MEAS
Relation	FL2MEAS
View	FL_ASG_MEAS
View Variant	FL_ASG_MEAS_VAR1

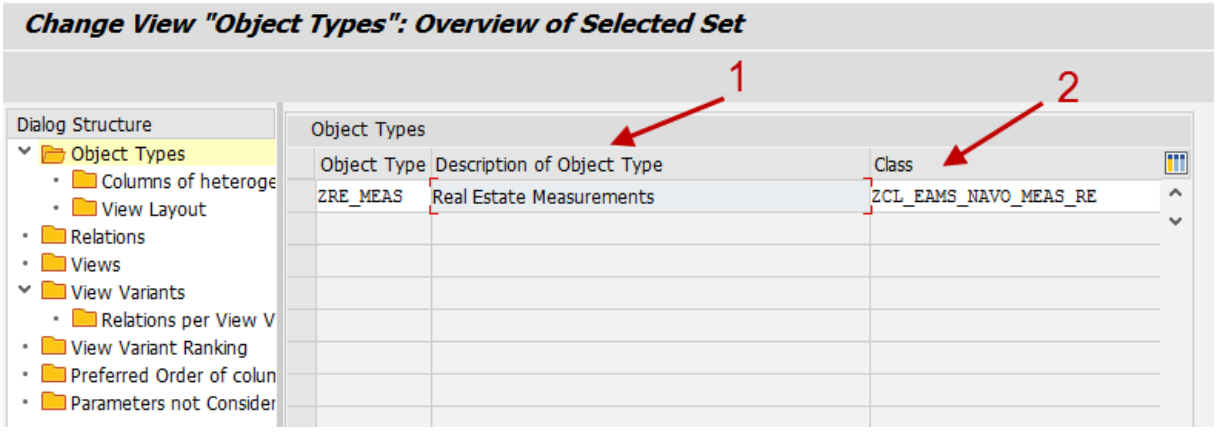
You create a new entry for real estate measurements in customizing for *Logistics-General* under *Product Lifecycle Management (PLM) -> PLM Web User Interface -> Settings for BO Framework and Navigation -> BO Framework ->*

Define Generic Object Types. Changes in the customizing table are effective cross-client. Enter the key structure `ZMEAS_RE_S_ID` with object type `ZRE_MEAS` as *DDIC Structure Type of Object*.

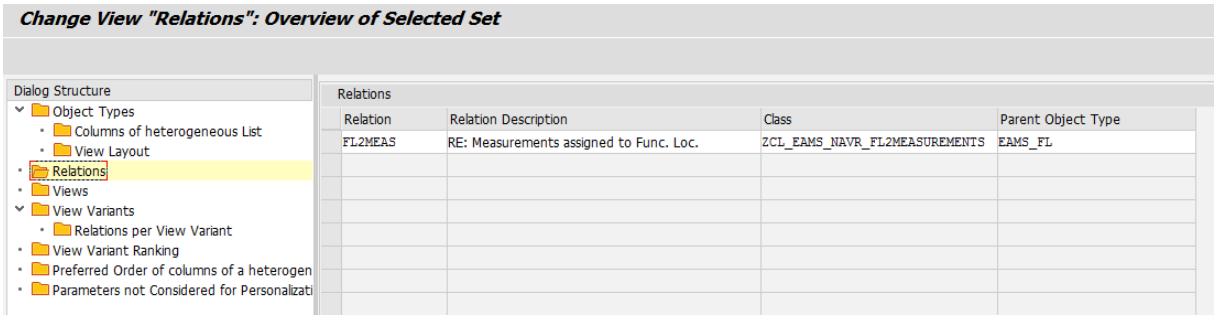


Save your entries and include them in a transport request.

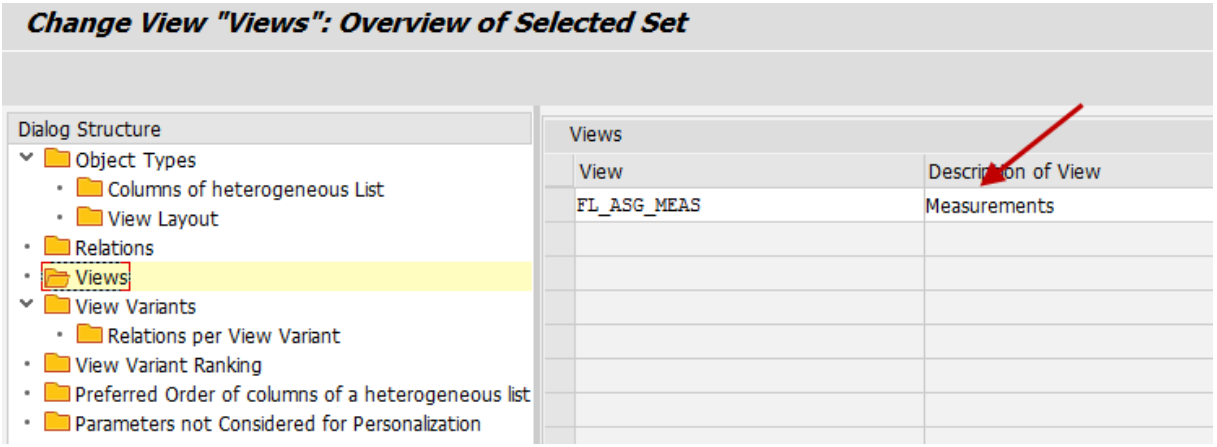
After you have defined the new object type, you have to add it, with a description (1) and an object type class, (2) to the IMG-activity *Make Settings for Object Navigator* (`SM34`, view cluster `/PLMB/VC_NAV`).



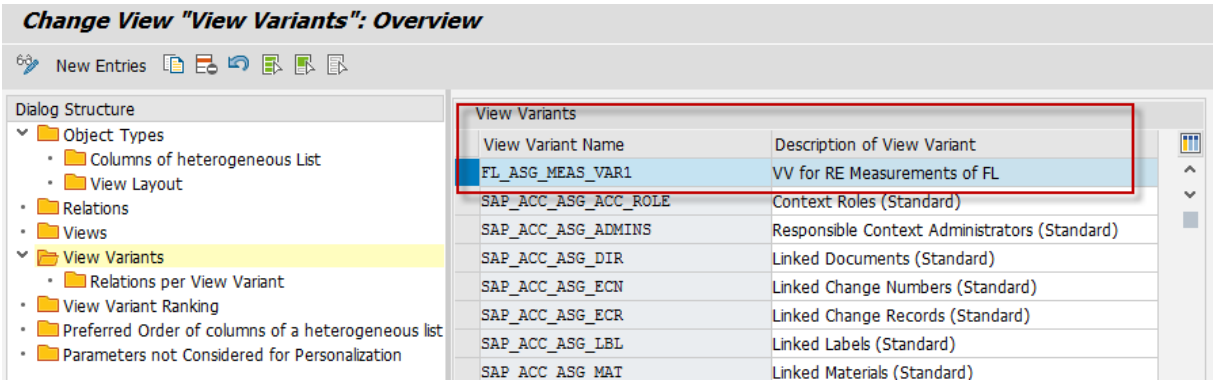
In the menu entry *Relations*, specify the new relationship, its class and the parent object type.



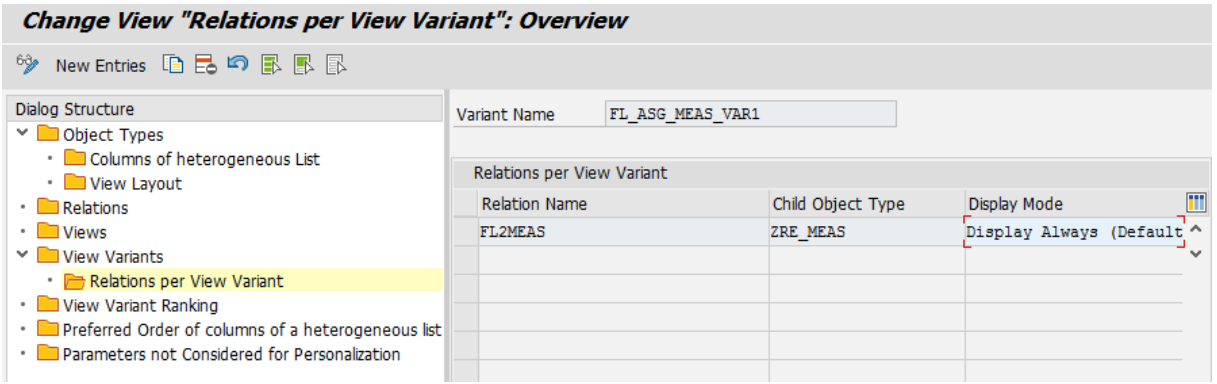
Now specify the new view in the menu entry *Views*. The text that you enter in the table field *Description of View* will appear as tab text in the Asset Viewer.



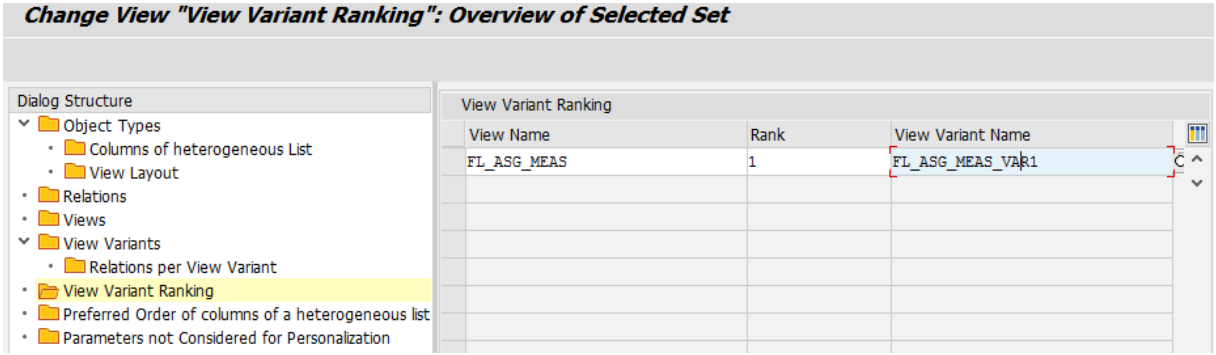
Create a view variant for the new view.



Then create a relationship for this *View Variant*.



Finally, determine the *View Variant Ranking*.

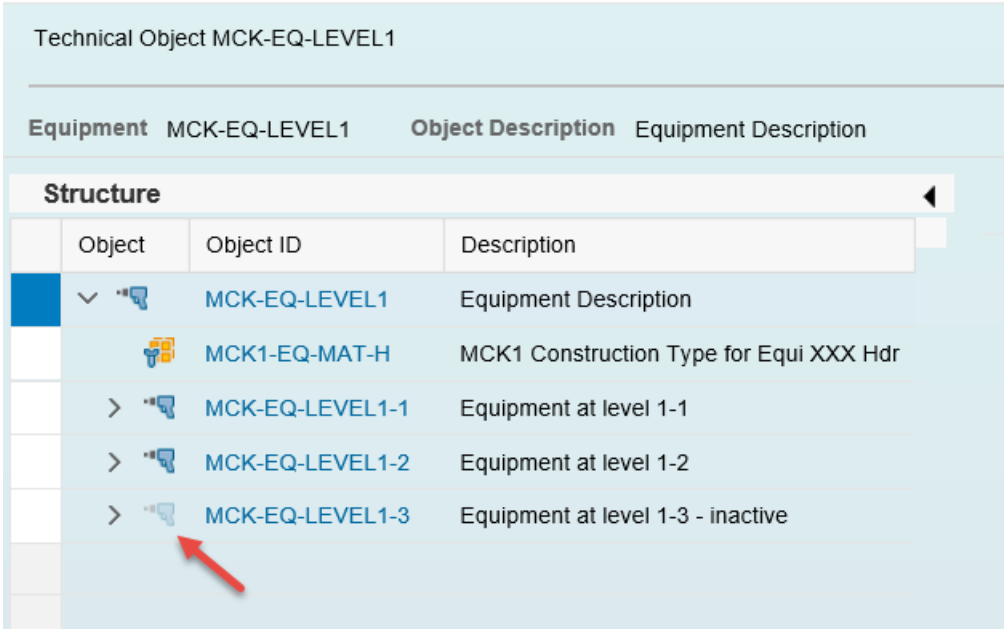


If you wish, you have the option of making settings in the last two menu entries in the dialog structure.

After you have completed these required customizing settings, the system displays the new tab page *Measurements* when you display a technical object in the Asset Viewer.

8.5 Example for Displaying Inactive Pieces of Equipment

In the structure view of the Asset Viewer, you can change the icon displayed in front of the list entry to mark specific technical objects as inactive. A greyed-out icon shows that the affected technical object is inactive, in this example the piece of equipment `MCK-EQ-LEVEL1-3`:



You can use the BAdI method `AFTER_RETRIEVE` of the BAdI `/PLMB/EX_SPI_APPL_ACCESS` (enhancement spot `/PLMB/ES_SPI`) to change the icon, using the filter criteria for the BAdI implementation `Application Building Block = EAMS_SV` and `Node Name = ROOT`. As a changing parameter the table `<lt_node_data>` contains all entries of the structure. In the example the column `ICON_DISABLED` has been set to 'X' for an inactive piece of equipment.

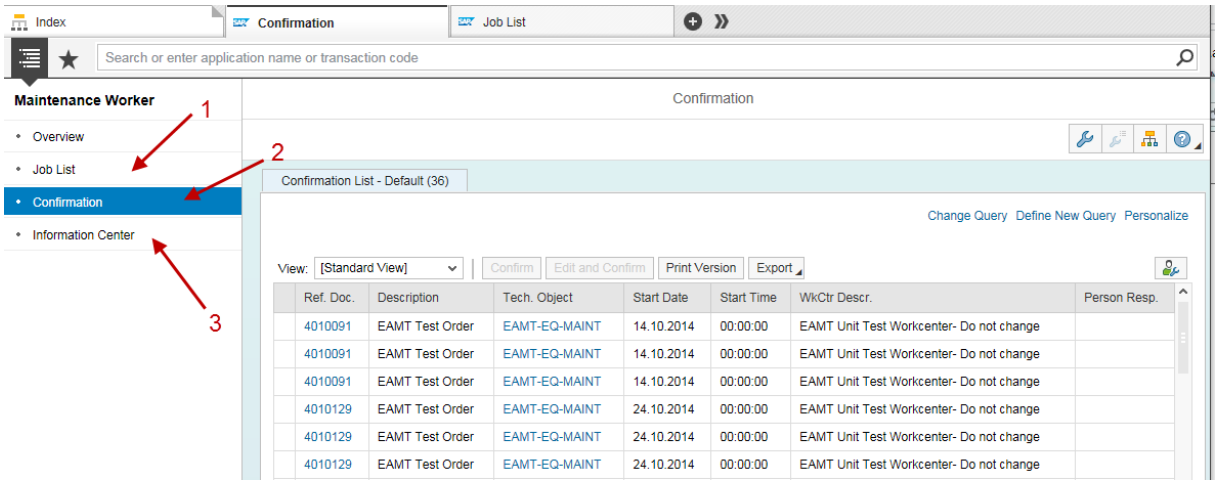
9 Working with Personal Object Worklists (POWL)

On the SAP Web user interface (UI), you have several options for processing maintenance documents and objects from a personal object worklist (POWL).

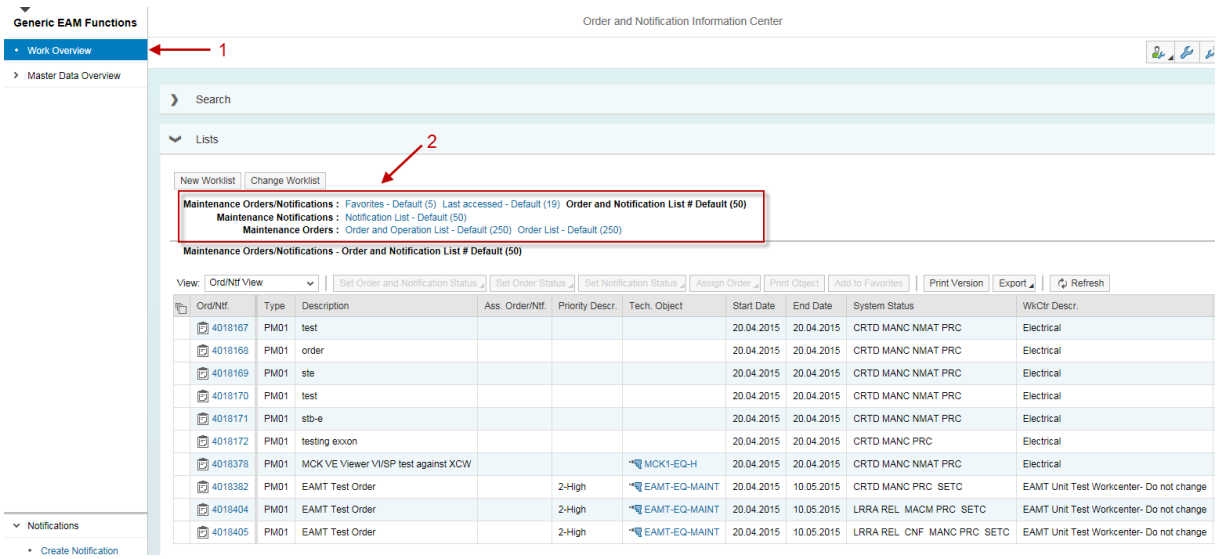
On the EAM Web UI the following worklists are available:

- Maintenance Jobs POWL
- Maintenance Confirmations POWL
- Order and Notification POWL combined with Order Operation POWL
- Maintenance Plan and Item POWL

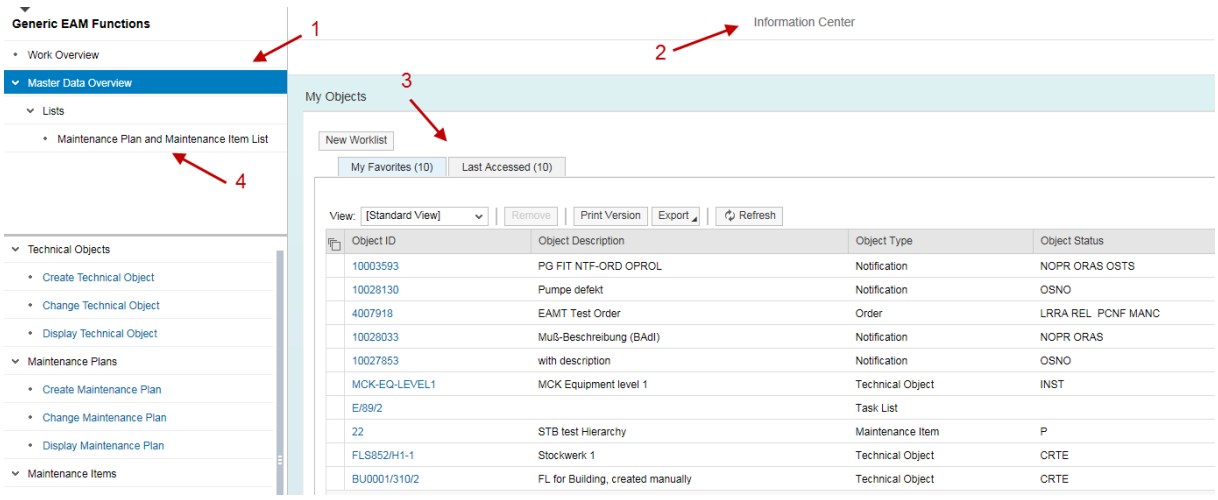
If you start the maintenance worker role in NWBC, you can access the POWL for *Jobs* (1), the POWL for *Confirmations* (2) and in the *Information Center* (3) the POWLs for *Favorite Objects* and *Last Accessed* Objects. Your favorite objects and the objects you recently accessed can be any kind of maintenance objects.



When you access the system with the generic functions role and select *Work Overview* (1) in NWBC, you open the *Order and Notification Information Center*. Here you can select POWLs from several categories shown by default (2). In this example, the *Order and Notification List* in category *Maintenance Orders/Notifications* is selected.



To work with other POWLs, start the *Master Data Overview* (1). Here you open the *Information Center*, where your favorites and last accessed object POWLs (3) are displayed. Additionally you can access the *Maintenance Plan and Maintenance Item List* (4).



For general information about POWLs, see SAP Personal Object Worklist Library.

For more information about POWLs in EAM, see Working with Personal Object Worklists (POWL).

For more detailed information about the Order and Notification POWL, see Order and Notification List

9.1 Administration of EAM POWLs

As an administrator you can specify queries, control the visibility of selection criteria, define layouts, assign users and roles to queries and a lot more in the *POWL Cockpit*. To access the *Cockpit for POWL Administration (as of SAP NetWeaver 7.02)*, choose *Cross-Application Components -> General Application Functions -> Generic SAP Business Suite Functions -> Personal Object Worklist* in the IMG (transaction `POWL_COCKPIT`).

All customizing settings that you adjust as an administrator are client-specific and apply to all users. The relevant transactions for adjusting the EAM POWLs to your needs are the following:

Transaction	Description
FPB_MAINTAIN_HIER	Define Personalization Hierarchy
POWL_CAT	Define Categories
POWL_QUERYU	Define Query Visibility at User Level
POWL_QUERYR	Query visibility at Role Level
POWL_QUERY	Define Default Queries
POWL_TYPE	Configure Worklist Type Repository
POWL_TYPEU	Define Worklist Type Visibility at User Level
POWL_TYPER	Define Worklist Type Visibility at Role Level

For more information about the required customizing settings in the POWL Cockpit, see Settings for Personal Worklists (Standard POWL).

The POWLs that are available for the EAM Web UI are of the type *Standard POWL*. The technical names of the POWLs are listed in the following tables. The POWLs are grouped by the roles to which they are assigned (*Maintenance Worker* or *Maintenance Planner*). You can use the POWL application ID as a basis for several POWL type IDs.

Maintenance Worker Role
Information Center

Description	Application ID	POWL Type ID
My Favorites - Infocenter	EAMS_IC_MYOBJ	EAMS_IC_MYOBJ_FAV
Last Accessed - Infocenter	EAMS_IC_MYOBJ	EAMS_IC_MYOBJ_LACC
Jobs	EAMS_JOBS	EAMS_JOBS
Confirmation	EAMS_CONF	EAMS_CONF

Maintenance Planner Role
Order and Notification Information Center

Description	Application ID	POWL Type ID
Favorites - Orders/ Notifications	EAMS_ONL_IC	EAMS_ORDNTF_FAV
Last Accessed - Orders/ Notifications	EAMS_ONL_IC	EAMS_ORDNTF_LACC
Orders/ Notifications	EAMS_ONL_IC	EAM_ORDNTF
Notifications	EAMS_ONL_IC	EAMS_NTF
Orders/ Operations	EAMS_ONL_IC	EAMS_ORDOP
Orders	EAMS_ONL_IC	EAMS_ORD

Work Overview/ Lists

Description	Application ID	POWL Type ID
Notifications	EAMS_ONL	EAMS_NTF
Orders	EAMS_ONL	EAMS_ORD
Orders/ Notifications	EAMS_ONL	EAM_ORDNTF
Orders/ Operations	EAMS_ONL	EAMS_ORDOP

Master Data Overview/ Information Center

Description	Application ID	POWL Type ID
My Favorites	EAMS_MYOBJ	EAMS_MYOBJ_FAV
Last Accessed	EAMS_MYOBJ	EAMS_MYOBJ_LACC

Master Data Overview/ Lists

Description	Application ID	POWL Type ID
Maintenance Plans/Items	EAMS_MPLAN_MPOS_APPLID	EAMS_MPLAN_MPOS_TYPE

A few reports are available for the administration of POWLs.

For a more detailed description, see the Web Dynpro ABAP Wiki for POWL Reports.

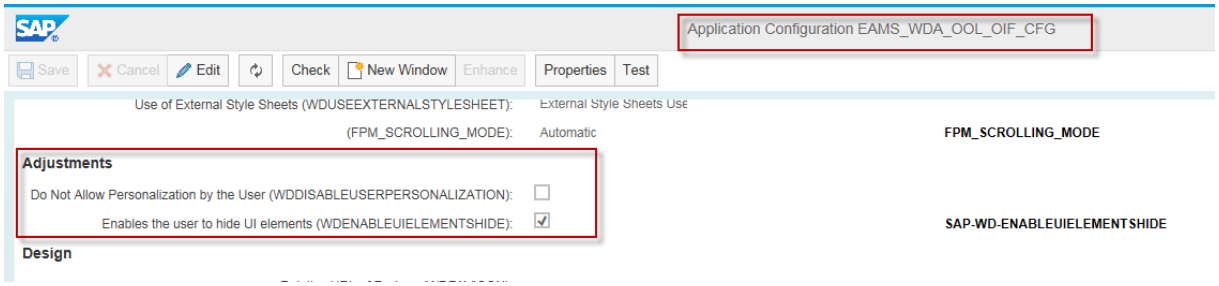
Report Name	Description
POWL_D01	Delete Queries from Database
POWL_D02	Show POWL Design Information
POWL_D03	Check Consistency of POWL Table Entries
POWL_D04	Delete Cached Selection Criteria for Admin Queries
POWL_D05	Delete POWL Check Results
POWL_D06	Activate Derived Queries
POWL_D07	Delete Shadowing Entries
POWL_D08	Delete Admin Layouts
POWL_D09	Delete Default Layout Mapping
POWL_WLOAD	Refresh of Active POWL Queries

For more information about administrating EAM POWLs, see the following documentation:

- Configuration of Order and Notification List POWL
- Frequently Asked Questions: Order and Notification List
- Maintenance Plan and Maintenance Item List

9.2 Personalization of EAM POWLs

In the EAM standard POWLs you can use various options for personalizing the POWL to suit your requirements. If you do not want the users to personalize their POWLs, you have to explicitly suppress the possibility for personalization. You can do so by changing the parameters in the *Adjustments* section of the application configuration and deselecting the appropriate checkbox:

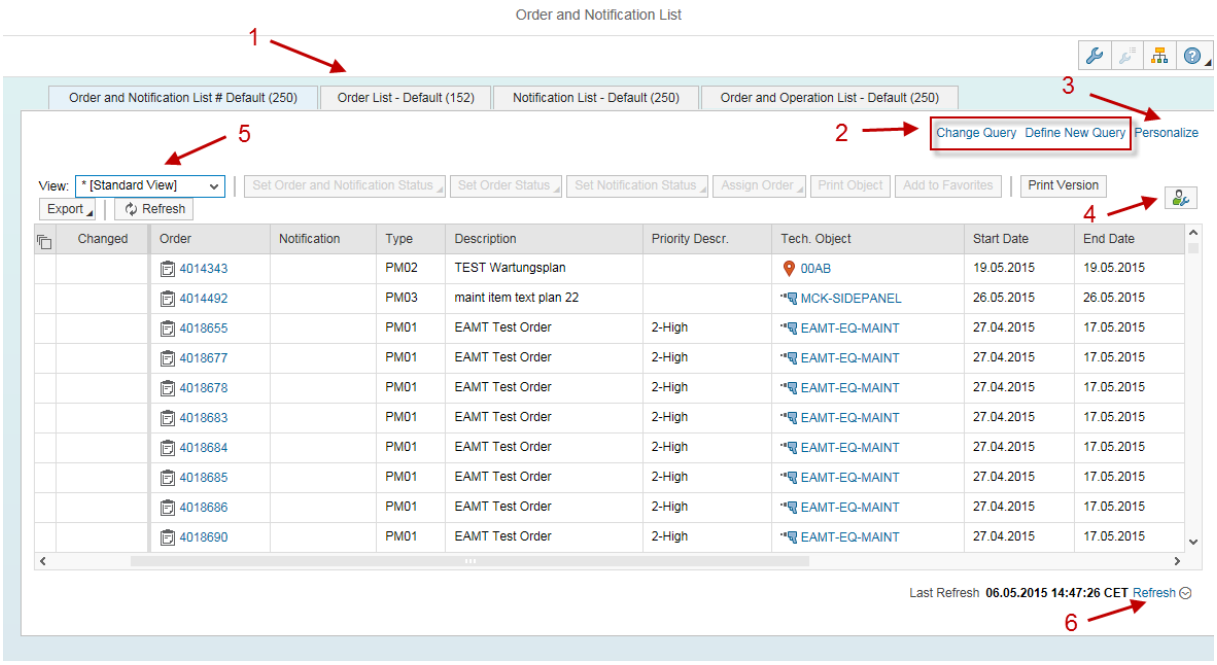


To set these parameters globally, you can proceed as described in the Appendix (15.8).

There are several personalization options available in the EAM POWLs. These options are described in detail based on the example of the *Order/Notification POWL*. The four tab pages show the POWLs currently available for *EAM Orders and Notifications* (1). The numbers in brackets indicate the number of records displayed in the individual lists.

You can use the following options to personalize the *Order/Notification POWL* or any other EAM POWL:

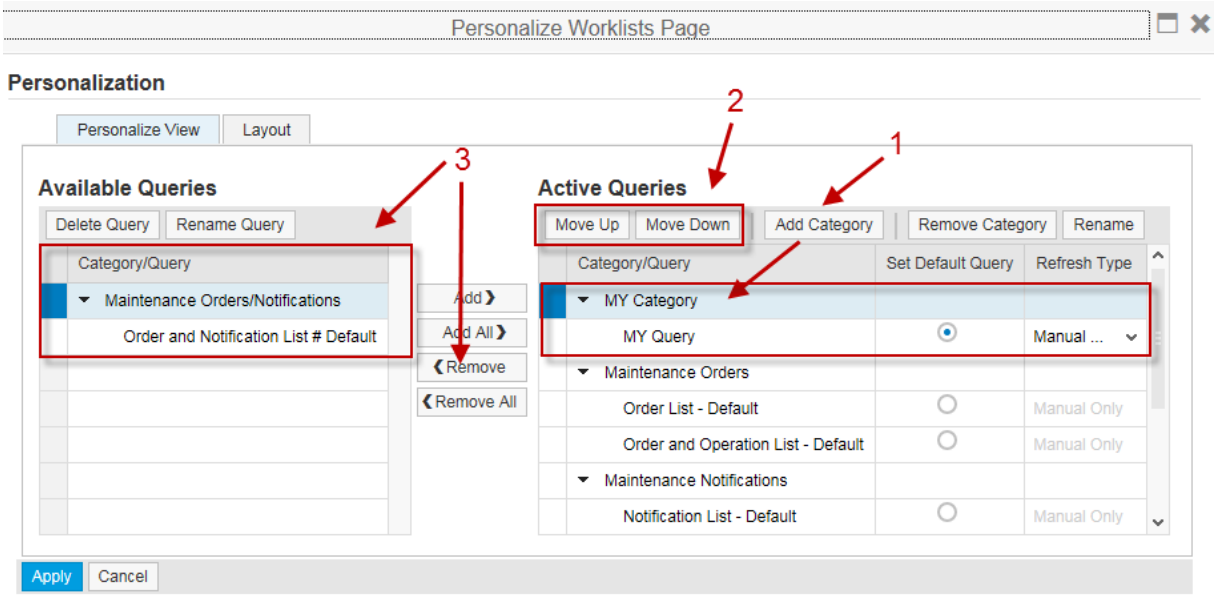
- *Change Query* (2)
  You can change the selection criteria and calculate the dates of the currently selected query or add *Quick Search Criteria*.
- *Define New Query* (2)
  You can add your own query - based on the available POWL types and own selection values. If you have added an individual query the system displays it as an additional tab page.
- *Personalize* (3)
  You can open a popup with several options for personalizing the view and the layout of the worklists. The personalization options offered in the popup are described later in this document.
- *Open Settings Dialog* (4)
  You can influence the shown/hidden columns. The procedure for changing the settings for the query result table is described in more detail later in this document.
- *View Dropdown List* (5)
  If you have created and saved individual views for the data table, you can select these views from a dropdown list.
- *Refresh* (6)
  The line in the bottom right-hand corner displays the date when the data was last read. If you select the link text *Refresh*, the system executes a manual refresh of the current query. However, by selecting the circle on the right-hand end of this line, you can refresh all queries on this page.



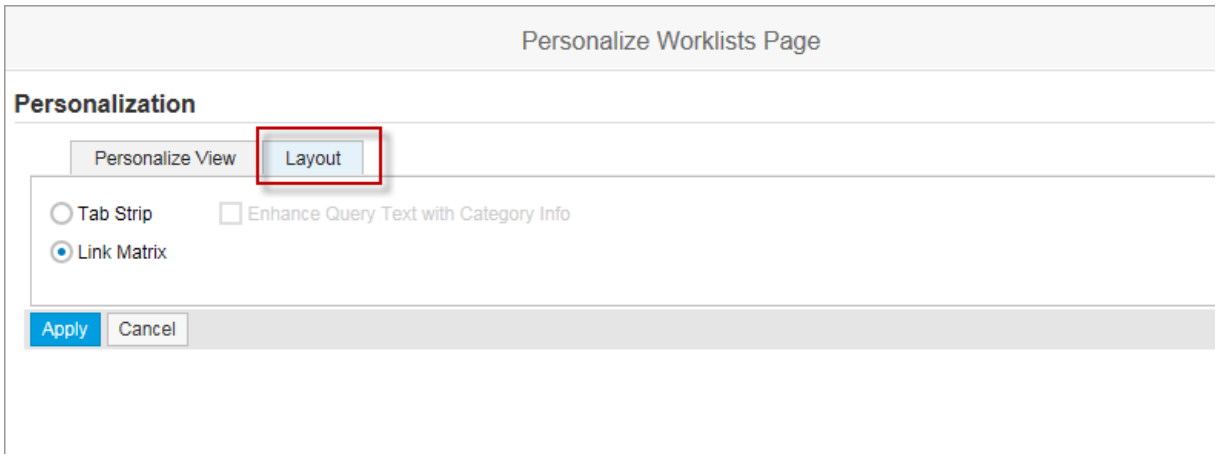
Note: When a POWL runs in 'shadow mode' the links for *Define New Query* and *Personalize* are inactive to prevent any inconsistencies in the cache, see note 1692542 - POWL Links disabled when shadowing mode is active.

Personalize (3) – Popup for Personalizing the View and the Layout

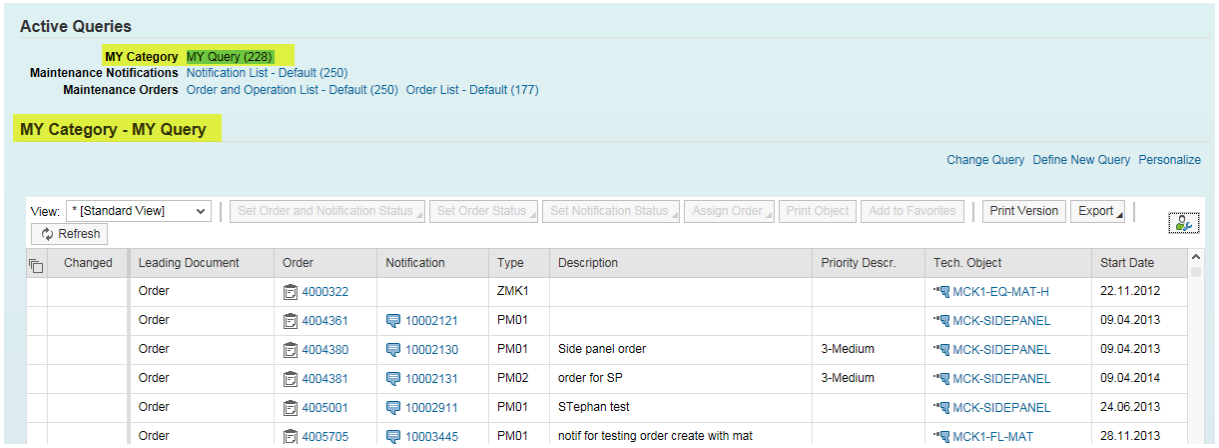
On the *Personalize View* tab page, you can change the order, the name and the display of queries and their categories. You can specify your own category (1), add your self-defined query, set your individual query as default and move it with *Move Up/Move Down* buttons (2) to the position where it should be displayed on the POWL page. The refresh mode can also be set individually. If you do not need all the active queries that are listed on the right-hand side, mark the corresponding entries and select *Remove* (3). The selected queries are moved to the *Available Queries* column.



On the *Layout* tab page, you can define how the tab matrix for choosing the queries should be displayed. In this example, we change from *Tab Strip* to *Link Matrix* and *Apply* the settings.



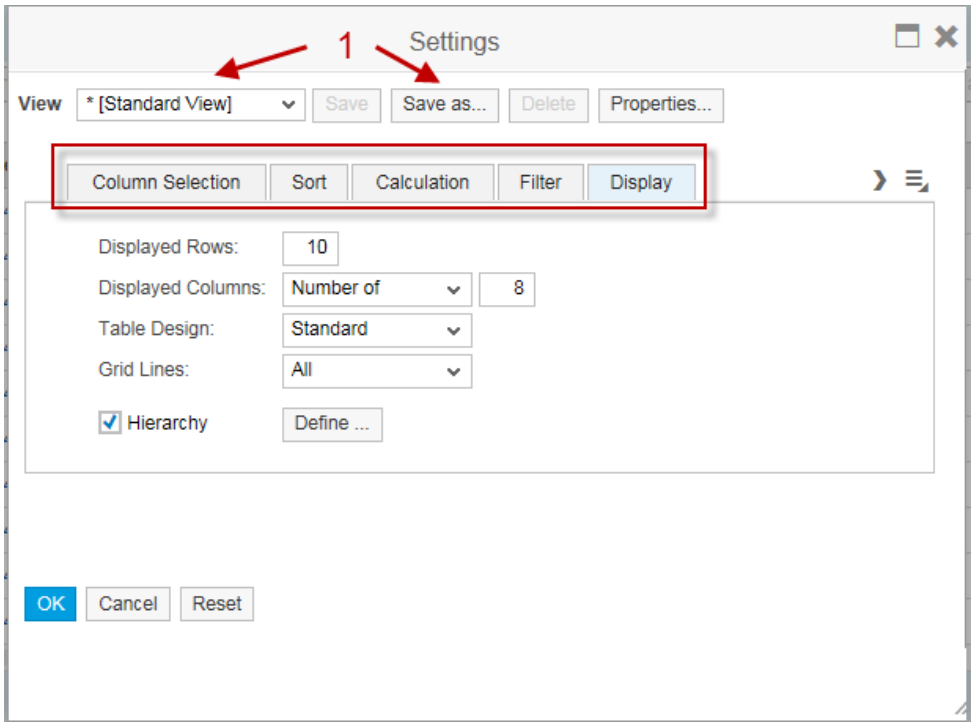
The personalized POWL page now opens with the settings for *Link Matrix* and displays the *MY Query* in category *MY Category* as default. The removed category *Maintenance Orders/Notifications* with its query *Order and Notification List # Default* is no longer displayed.



Open Settings Dialog button (4) – Changing settings for query result table

You can select the columns that should be shown or hidden and their sequence, as far as the sorting and the calculation including a line counting. In addition, you can set a filter on any column or change the display of the data table layout.

If you have changed anything in this popup and not yet saved your changes as a view variant, the system indicates this by a star in front of the value in the *View* (1) field. The changes only remain for the duration of this session. If you want to keep your settings for the next time, save them in a new view by selecting *Save as* (1).



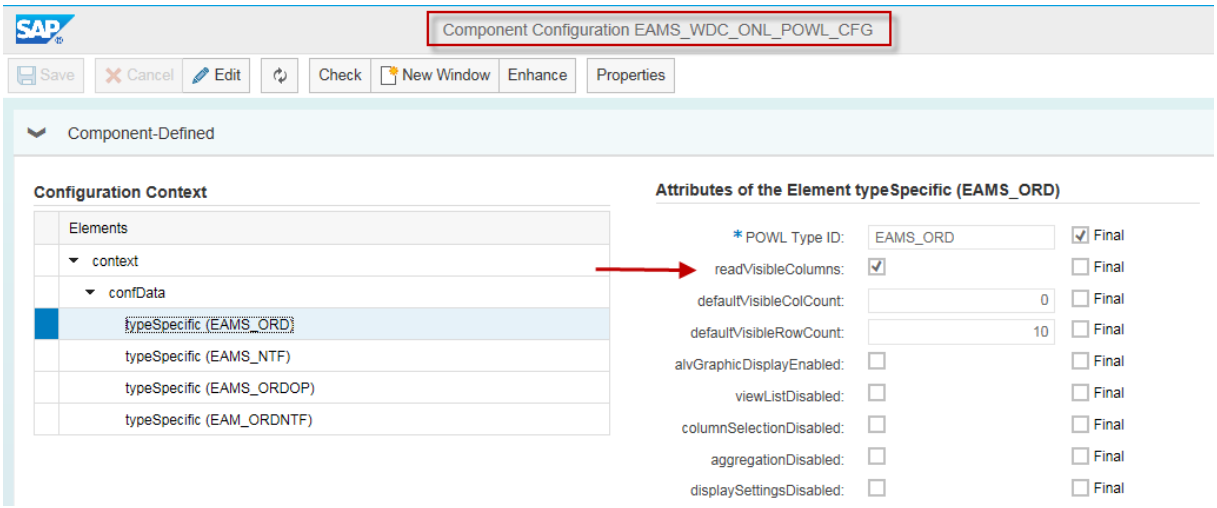
All personalization settings that are made for the POWLs are only visible for the respective user.

See also Personalization and View with Settings.

9.3 Configuration and Performance of POWLs

SAP delivers standard configurations for POWLs. If you want to change them or create your own POWL with the respective configuration, you can find detailed information about the POWL configuration parameters on the SCN Wiki page.

Performance optimizations for the *Notification and Order List* are delivered with SAP Note 2107154 - EAMS Web UI: Performance improvements in order lists, operations lists, and notification lists (POWL). In the configuration `EAMS_WDC_ONL_POWL_CFG`, the checkbox for parameter *readVisibleColumns* is selected by default for each of the POWL type IDs.



Hint: If you want to speed up the POWL display, hide less important columns with descriptions, such as material texts or plant texts.

You can find general documentation on configuring the order and notification list (POWL) in EAM generic functions under Configuration of Order and Notification List (POWL).

You can also find further information about POWLs in the SAP Community Network in the section dealing with Web Dynpro ABAP / POWL.

Quick Search criteria in EAM POWLs

You can define which criteria are to be displayed as quick search criteria in the left upper corner of the POWLs and enable a fast and easy filtering of the result list. You define fields as quick search criteria in the *Selection Criteria Settings* (transaction `POWL_QUERY`) of the POWL query.

If you want to provide the quick search criteria in the *Master Data Information Center* or *Order and Notification Information Center,* you have to deselect the field in the attribute '*enableNewUI*' for the respective component configurations `EAMS_WDC_MD_IC_POWL_CFG` and `EAMS_WDC_ONL_IC_POWL_CFG`. For more information, see the SAP note 2533626 and the corresponding attachment.

9.4 BAdIs in POWLs

9.4.1 Job List and Confirmation List

If you want to enhance the *Jobs* POWL list or the *Confirmations* POWL, you may have to do this in several places due to the architecture of the application.

Depending on the kind of enhancement, the following enhancement options may be useful:

- User interface/frontend layer: BAdI: Job List Enhancements (`BADI_EAMS_JOBLIST`)
- Backend/service provider interface layer: BAdI Adjustment of Data for Service Provider Access Methods (`/PLMB/EX_SPI_APPL_ACCESS`)

The Business Add-In BADI_EAMS_JOBLIST (enhancement spot ES_EAMS_JOBLIST) offers several methods for implementing enhancements in the frontend layer of the job list and confirmation list, for example adding actions (pushbuttons), adding additional columns, specifying additional selection criteria and defining urgency rules.

The available BAdI methods are described in the BAdI and interface documentation of BAdI BADI_EAMS_JOBLIST and interface IF_EX_BADI_EAMS_JOBLIST.

For general technical information about the implementation of POWL feeder classes, see the section Feeder Implementation of the online documentation for *Personal Worklists*.

This documentation describes the methods used in the POWL feeder class and will help you to identify the required BAdI methods.

The *BAdI Job List Enhancements* (BADI_EAMS_JOBLIST) can be accessed via IMG: *Integration with Other SAP Components -> Business Packages/Functional Packages -> Maintenance Roles -> Maintenance Worker -> Business Add Ins*.

9.4.2 Notification and Order List

Adding (Customer) Fields and (Customer) Actions

You can add (customer) fields and actions to the standard POWL configuration with Business Add-In (BAdI) *Changes to Order and Notification List* (BADI_EAMS3_POWL) in enhancement spot ES_EAMS3_UI. You can implement this BAdI via the IMG for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer* -> *Business Add-Ins*. The interface of BAdI BADI_EAMS3_POWL is similar to the interface used in the feeder class (CL_EAMS_UI_FD_ONL_POWL) of the *Order and Notification POWL* (IF_POWL_FEEDER).

Adding Fields

If you want to add customer-specific fields to a specific application, you can use BAdI BADI_EAMS3_POWL to enhance the UI accordingly. To fill the individual customer-specific fields with the respective data, you also have to implement BAdI /PLMB/EX_SPI_APPL_ACCESS. With BAdI method AFTER_QUERY you publish the customer-specific fields in the POWL structure EAMS_S_SP_ORDNTF_ONL. Proceed as follows:

- Enhance DDIC structure EAMS_S_SP_ORDNTF_ONL by adding a customer-specific append structure with customer-specific fields.
- Create an enhancement implementation for the enhancement spot /PLMB/ES_SPI.
- Create a BAdI implementation for the BAdI definition /PLMB/EX_SPI_APPL_ACCESS.
- Create a filter in the BAdI implementation for the fields IV_NODE_NAME (e.g. EAMS_ONL) and IV_ABBID (Application Building Block) (e.g. EAM_ORDNTF) in order to restrict the logic encoded in the BAdI implementation to the corresponding application.
- Implement the method AFTER_QUERY in order to publish the customer-specific fields after the standard query has been executed.
- Create an enhancement implementation for the enhancement spot ES_EAMS3_UI.
- Create a BAdI implementation for the BAdI definition BADI_EAMS3_POWL.
- Create a filter in the BAdI implementation for the powl_type (e.g. EAMS_ORD) in order to restrict the logic encoded in the BAdI implementation to the corresponding list (*Order List*, *Notification List*, or *Order and Notification List*).
- Implement the method GET_FIELD_CATALOG to specify the properties of customer-specific fields on the UI.

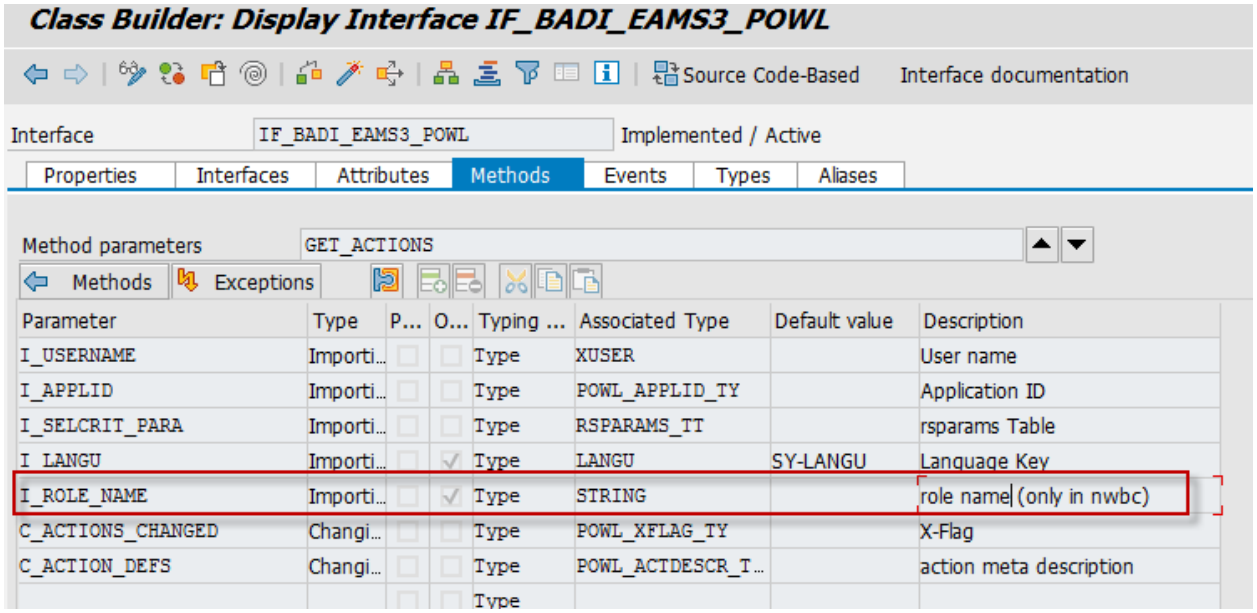
Adding Actions

If you want to add customer-specific pushbuttons or change existing ones in the Web Dynpro POWL application for the *Order and Notification List*, you can use the BAdI methods `GET_ACTIONS` and `HANDLE_ACTION` of `BADI_EAMS3_POWL`. Proceed as follows:

- Create an enhancement implementation for the enhancement spot `ES_EAMS3_UI`.
- Create a BAdI implementation for the BAdI definition `BADI_EAMS3_POWL`.
- Create a filter in the BAdI implementation for the powl_type (e.g. `EAMS_ORD`) in order to restrict the logic encoded in the BAdI implementation to the corresponding list (*Order List*, *Notification List*, or *Order and Notification List*).
- Implement the method `GET_ACTIONS` to add customer-specific actions.
- Implement the method `HANDLE_ACTION` to define your own customer-specific user command handling.

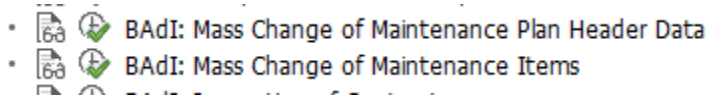
Restricting Actions to a User Group

If you are working in the SAP Net Weaver Business Client (NWBC) and want to restrict specific actions to a certain user group, you can fill the import parameter `I_ROLE_NAME` in BAdI method `GET_ACTIONS` of `BADI_EAMS3_POWL`. If you do not work in NWBC, this import parameter does not contain a value.



9.4.3 Maintenance Plan and Item List

You can use the Business Add-ins (BAdIs) *BAdI: Mass Change of Maintenance Plan Header Data* (`MPLAN_HEADER_MASS_CHANGE`) and *BAdI: Mass Change of Maintenance Items* (`MPLAN_ITEM_MASS_CHANGE`) to make customer-specific enhancements to the mass data change function for maintenance plans and items.

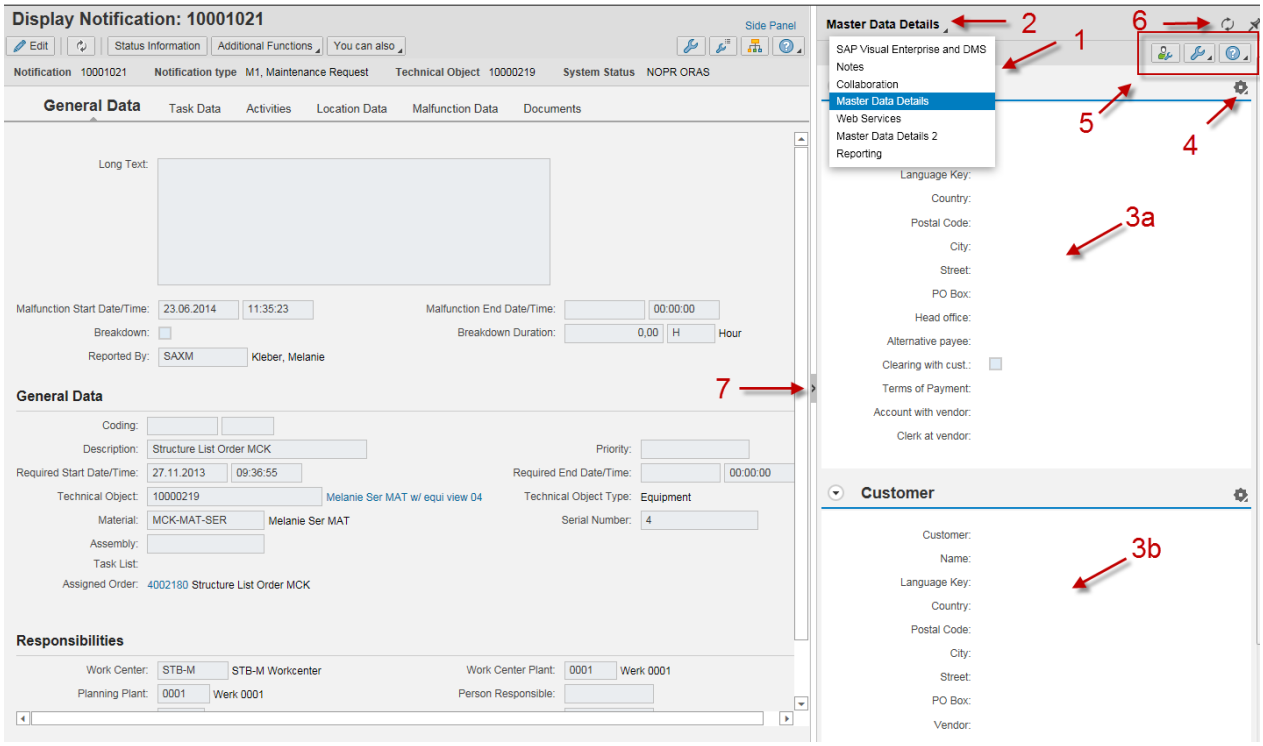


You can implement these BAdIs via the IMG for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer* -> *Business Add-Ins*.

10 Using Side Panels with the EAM Web UI

You can use side panels when processing technical objects, maintenance notifications, service notifications, maintenance orders, service orders, and task lists. Side panels are available in the SAP NetWeaver Business Client for SAP GUI applications and in Web Dynpro applications. You can enhance the side panels to meet your requirements, thereby specifying which information you want to have displayed in the side panel.

The picture below shows a Web Dynpro notification in NWBC for Desktop. You can open a dropdown list of available side panels (1). This allows you to select another panel. In this example, the panel *Master Data Details* (2) is shown. This panel contains two Collaborative Human Interface Parts (CHIPs) (3a and 3b). In the CHIP menu (4), you can display the properties and create or change CHIP Customizing settings. The left-hand button (5) in the side panel menu allows you to personalize the panel. With the button in the middle, you can choose between customizing the panel (for all users in the client) or configuring the panel (for all users in the entire system). The right-hand button is the help button. With the refresh button (6), you can update the CHIP data. Use the arrow (7) to close the panel.



You can use transaction `BSSP_CONTENT` (*Side Panel Content Browser*) to find information about side panels for users, transactions, roles, and so on in your system.

For more information about side panels, see Side Panel for Business Suite in the SAP Library. From here, you can also navigate to the documentation for delivered side panel roles.

For additional information, see Integrating Context-Sensitive Side Panels in the SAP Library.

10.1 Setting up Side Panels for EAM Web UI Applications

The following roles are delivered with EAM side panels:

- `SAP_BSSP_LO_SIDEPANEL`
- `SAP_BSSP_LO_SIDEPANEL_EXT` (contains SAP 3D Visual Enterprise Panel)
- `SAP_PM_BCV_SIDEPANEL` (contains Business Context Viewer Side Panel).

To show side panels in the EAM Web Dynpro applications, you have to copy the role `SAP_COCKPIT_EAMS_GENERIC_FUNC2` (in transaction `PFCG`) to your own role and add the three side panel roles mentioned above.

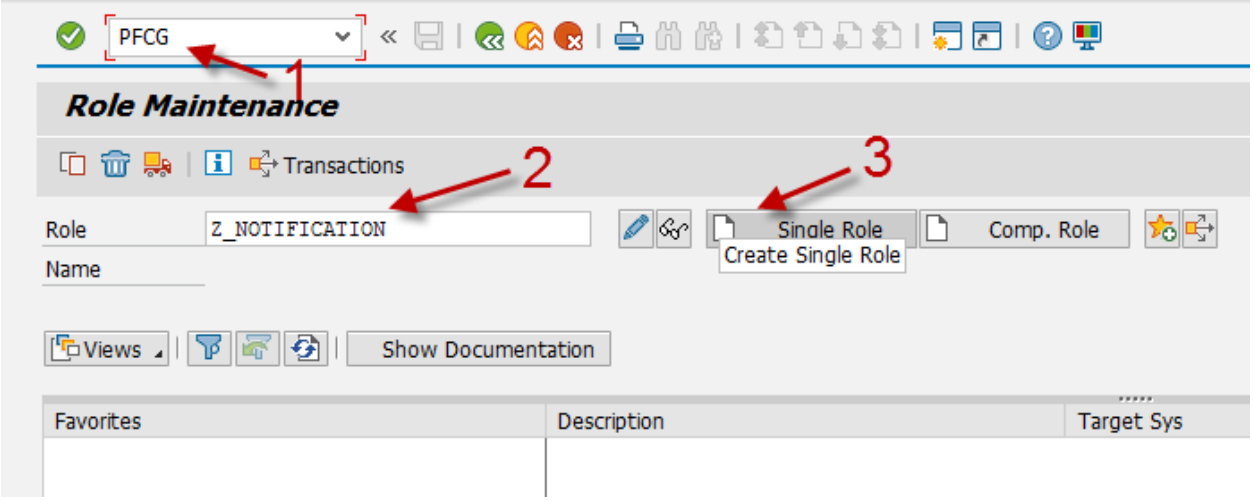
To show side panels in the EAM SAPGUI transactions, you have to add the roles `SAP_BSSP_LO_SIDEPANEL`, `SAP_BSSP_LO_SIDEPANEL_EXT` and `SAP_PM_BCV_SIDEPANEL` to the role you use for working with SAPGUI.

For up-to-date information about side panels and CHIPs for EAM, see SAP Note 1816377 - EAM Side Panels, Roles and Tagging information.

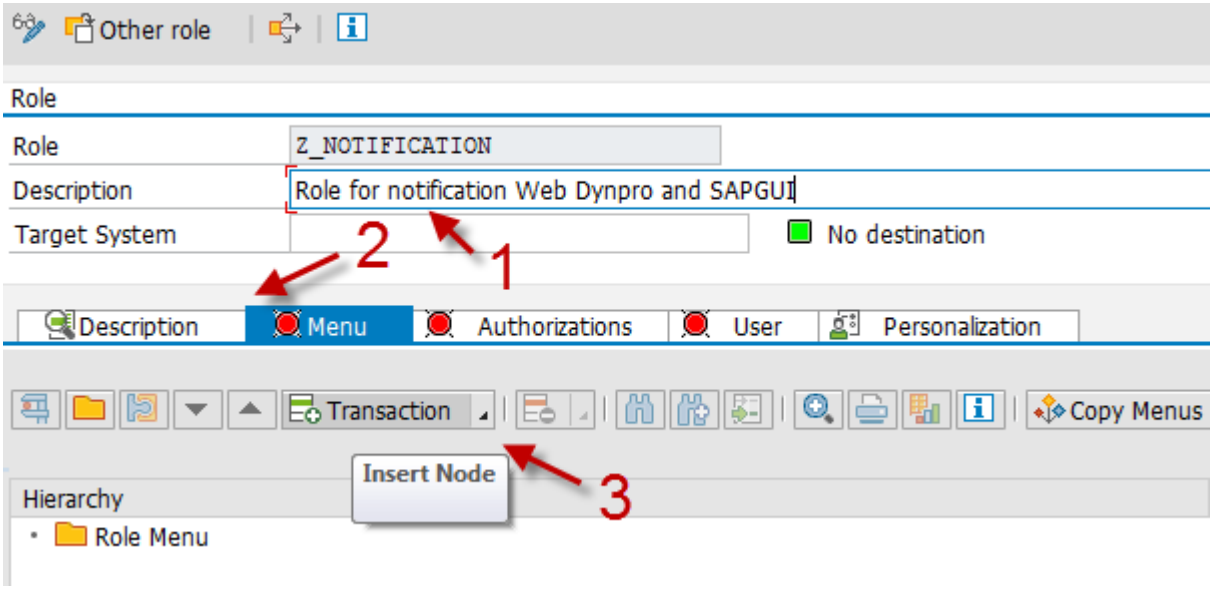
10.1.1 Adding Side Panel Functionality to Your Own PFCG Role (for Notification)

You can add existing side panels to your Web UI applications as well as to the corresponding SAPGUI transactions. In this example you want to add a side panel to the notification in Web UI and SAPGUI (transaction `IW23`).

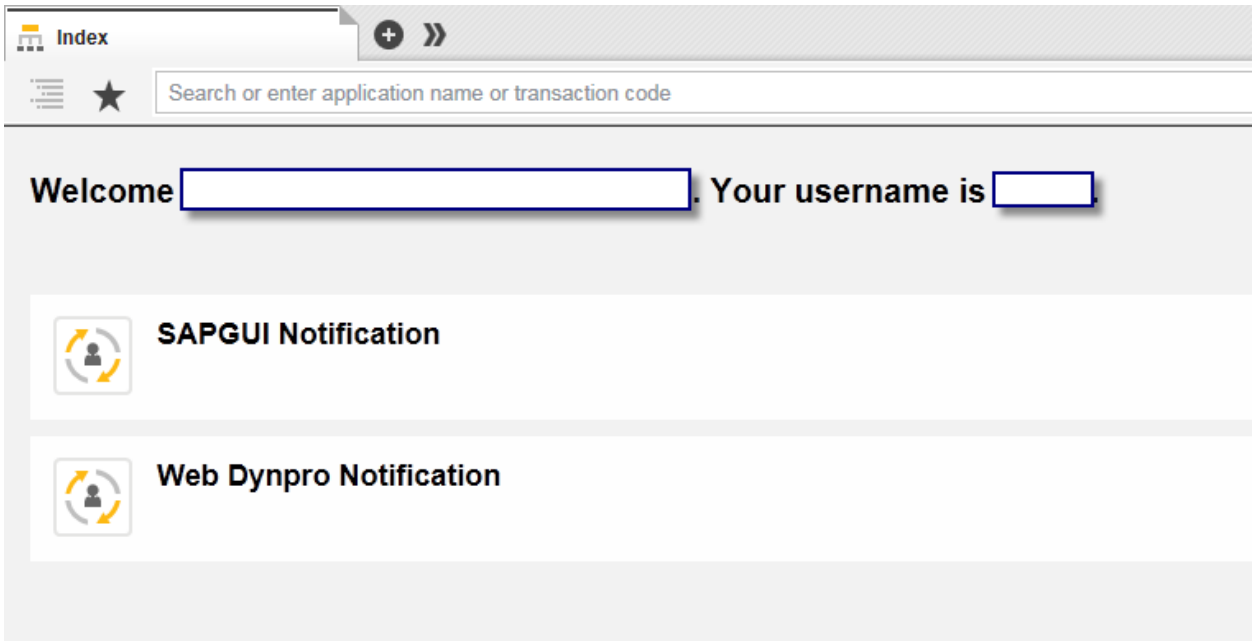
First, open transaction `PFCG` (1), enter a new role, such as `Z_Notification` (2), and choose *Create Single Role* (3).



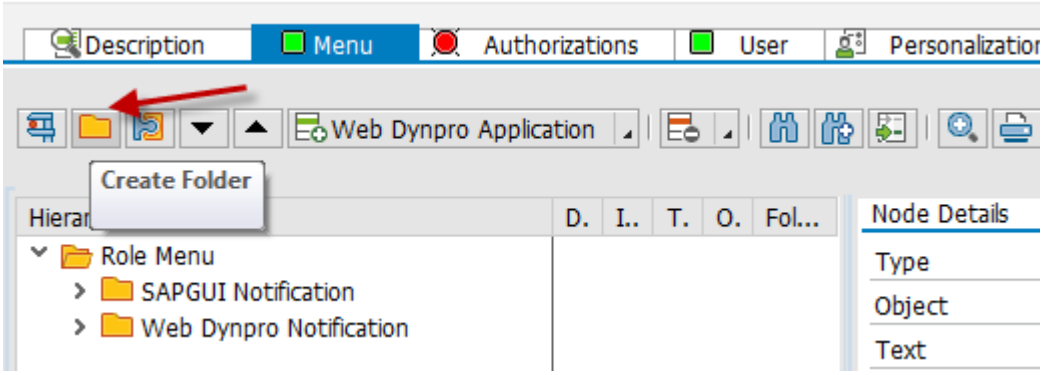
You enter a role description (1), then choose the *Menu* tab (2):



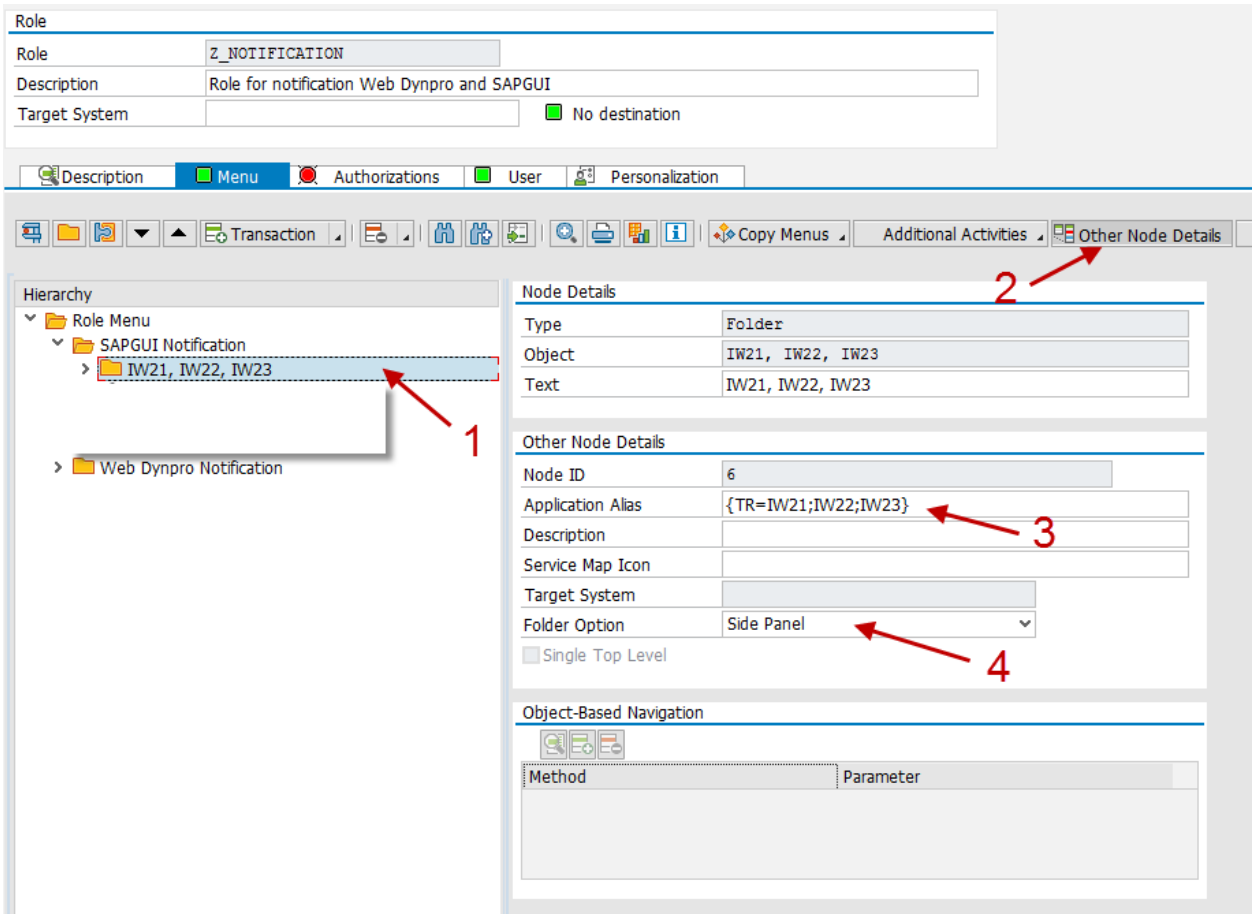
Before you can add existing side panels to the new customer-specific PFCG role, create a folder structure in the *Role Menu*. The folders are necessary to group the applications on the entry screen when you start NWBC for Desktop (see 15.2):



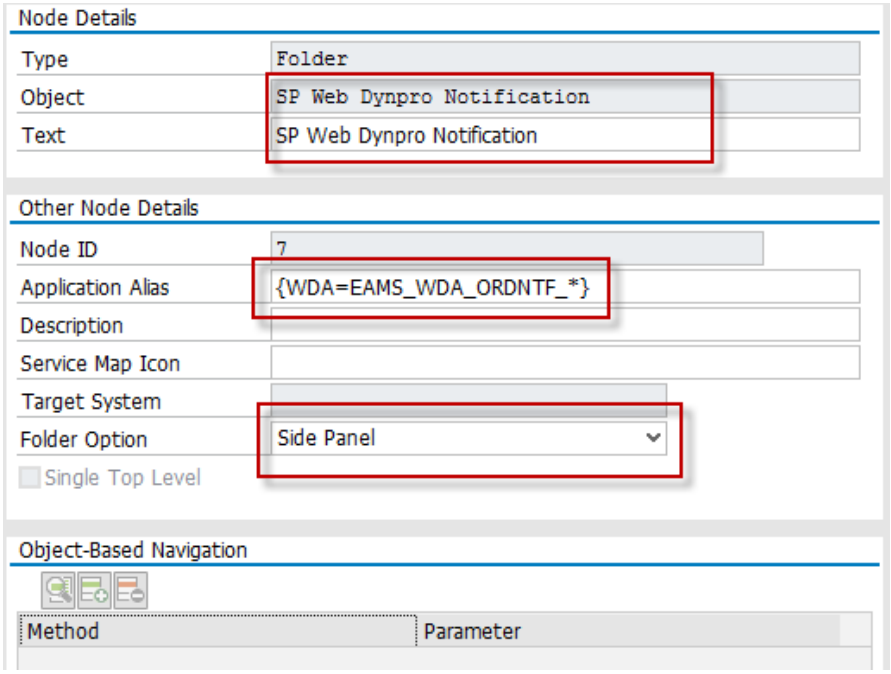
First you create two folders, one for SAPGUI Notification and one for Web Dynpro Notification:



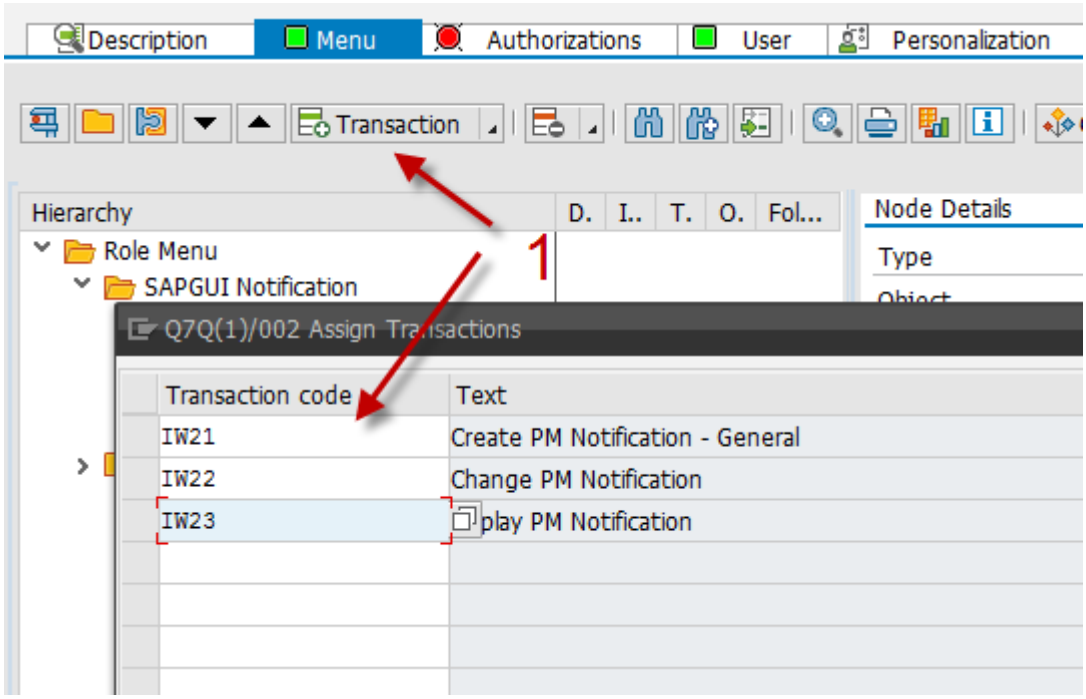
Then you create a subfolder for the *SAP GUI Notification* folder with side panel information for SAPGUI transactions `IW21`, `IW22`, `IW23`, which is also the name of the folder. To maintain the details, choose *Other Node Details* (2) and specify where you want the side panels to be shown (3). In addition, the folder option must be set to *Side Panel* (4). The side panels you define later for the notification will be stored in this folder.



Similarly, you create a subfolder for the *Web Dynpro Notification* folder with side panel information for the application configuration `EAMS_WDA_ORDNTF_OIF_CFG` on the Web UI:

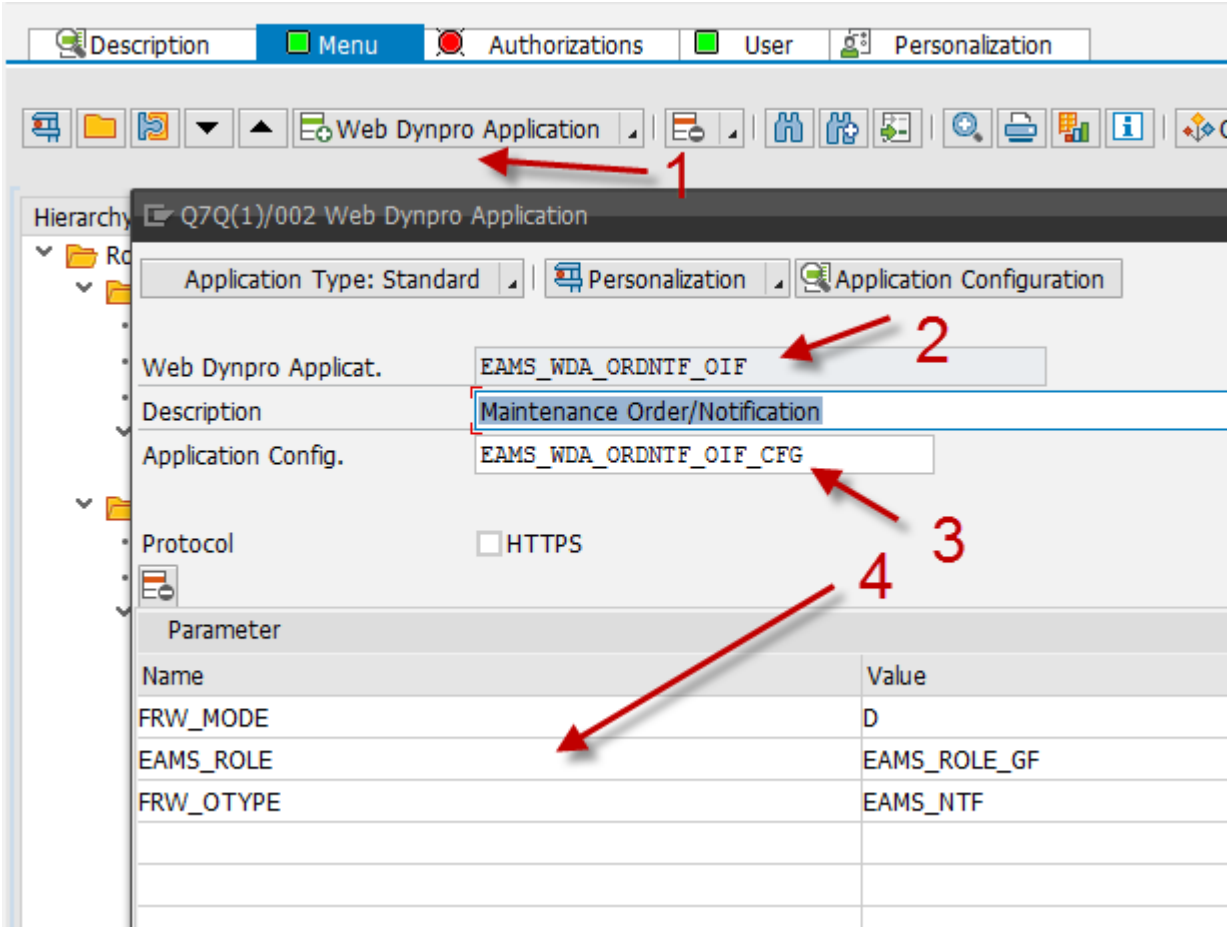


Once you have created the folder structure, select the folder *SAPGUI Notification* and add the transactions that are to appear in the NWBC role. To do so, you assign SAPGUI transactions to the role (1) by using the button *Add Transaction*. The transactions you enter in the popup are inserted in the folder structure under *SAPGUI Notification*.

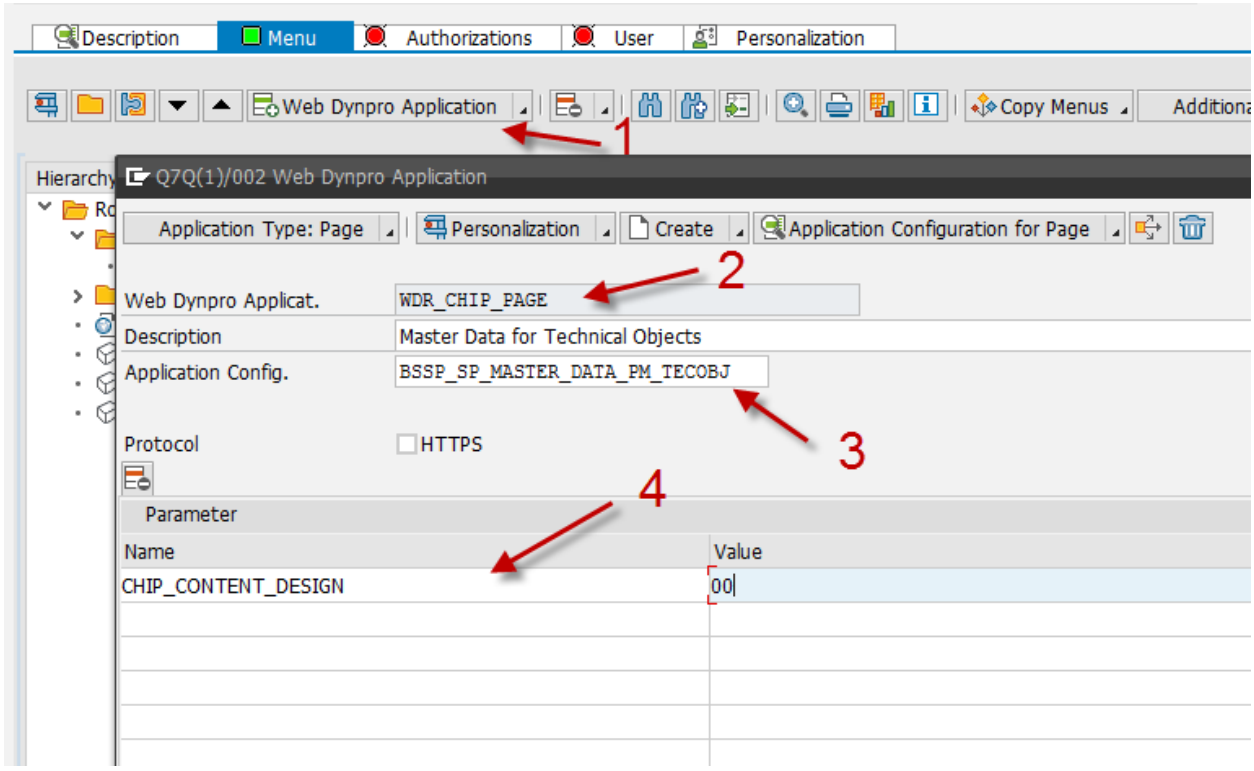


Then you determine which Web UI application is added to the *Web Dynpro Notification* folder and will appear in the NWBC role. To do so, mark the corresponding folder, choose *Add Web Dynpro Application* (1), and assign the Web UI Notification application with technical name `EAMS_WDA_ORDNTF_OIF` (2). The system automatically uses the

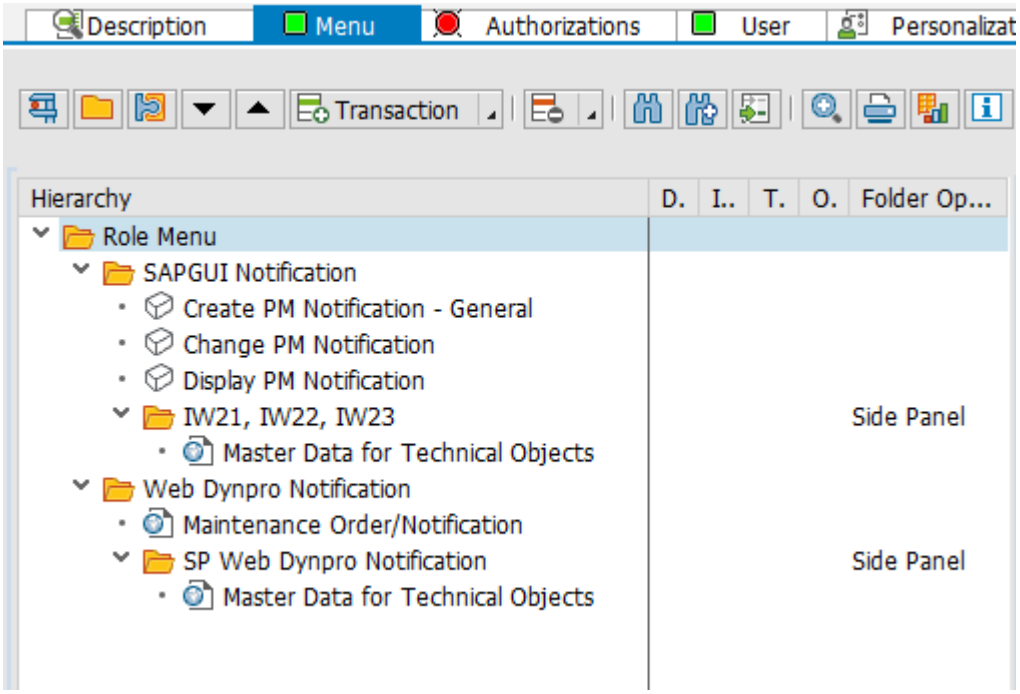
description from the dictionary. You can use the input help to enter the name for the application configuration. In this example, we are using the same configuration (3) as in role `SAP_COCKPIT_EAMS_GENERIC_FUNC2`. You also have to maintain a few additional parameters (4).



After having determined where you want the side panels to be available, you finally add one or more side panels to the folders with *Folder Option* `Side Panel`. In this example, you want to assign the existing side panel *Master Data for Technical Objects*. The side panel is a Web Dynpro application and contains a CHIP for *Equipment Details* and *Functional Location Details*. You therefore add this Web Dynpro application (1) to the side panel subfolders *IW21, IW22, IW23* (SAP GUI) and *SP Web Dynpro Notification* (Web UI) as a `WDR_CHIP_PAGE` (2). The application configuration is `BSSP_SP_MASTER_DATA_PM_TECOBJ` (3). The parameter `CHIP_CONTENT_DESIGN` (4) with value 00 ensures that the background of the SAPGUI and the side panel have the same design.

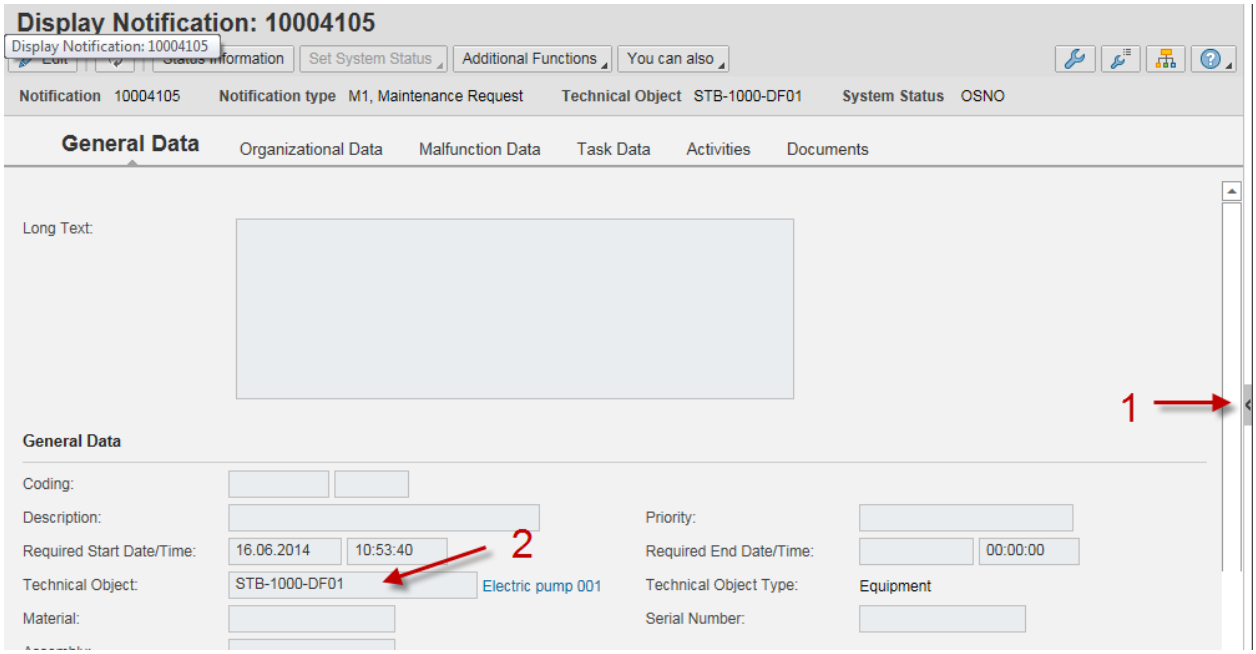


Now the side panel *Master Data for Technical Objects* is shown in the SAP GUI transactions of the notification as well as in the Web Dynpro application. Your new customer-specific role `Z_NOTIFICATION` looks like this:

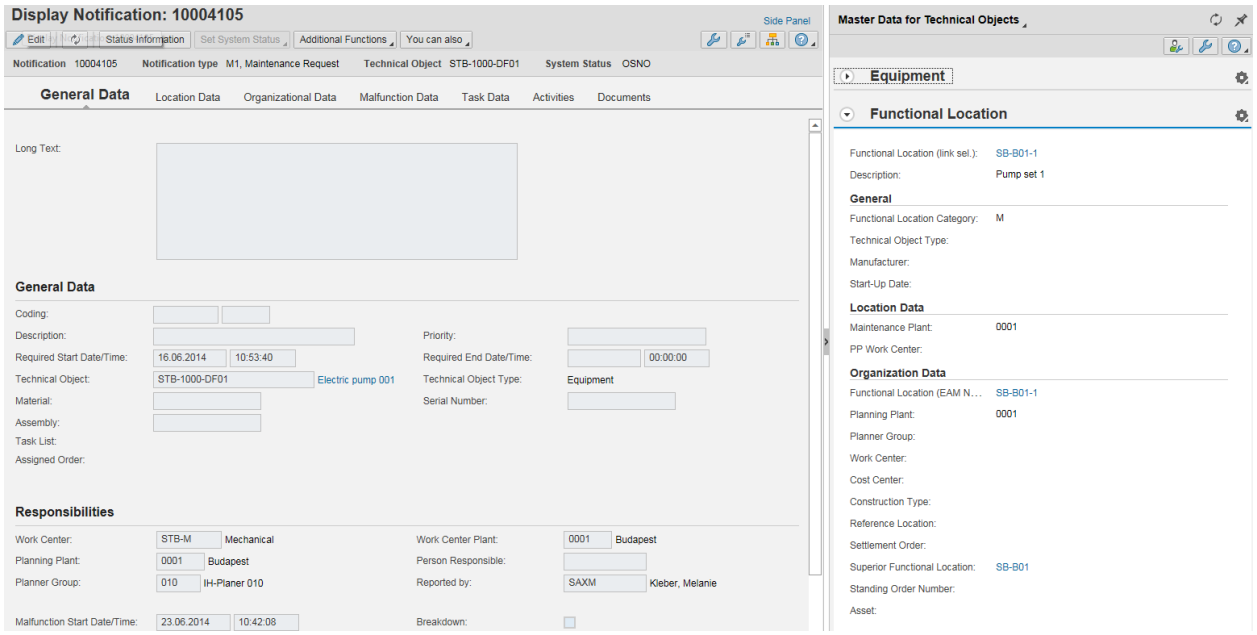


10.1.2 Displaying the Side Panel for a Notification

After having created your customer-specific role `Z_NOTIFICATION` (see chapter 10.1.1) and having added the side panel *Master Data for Technical Objects* to that role, you can now display this side panel in the notification. Start the NWBC for Desktop (see chapter 15.2) and choose the role `Z_NOTIFICATION`. In the notification, the arrow on the right-hand side of the screen (1) indicates that a side panel is available. Since the side panel *Master Data for Technical Objects* provides information about the technical object assigned to the notification, you must enter a technical object to see any data in the side panel CHIPs.



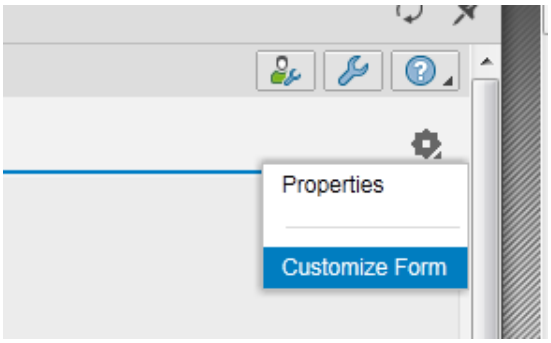
The first CHIP now displays detailed information from the master record of the piece of equipment. If a superior functional location exists, its details are displayed in the second CHIP.



10.1.3 Customizing and Link Navigation in EAM CHIPs

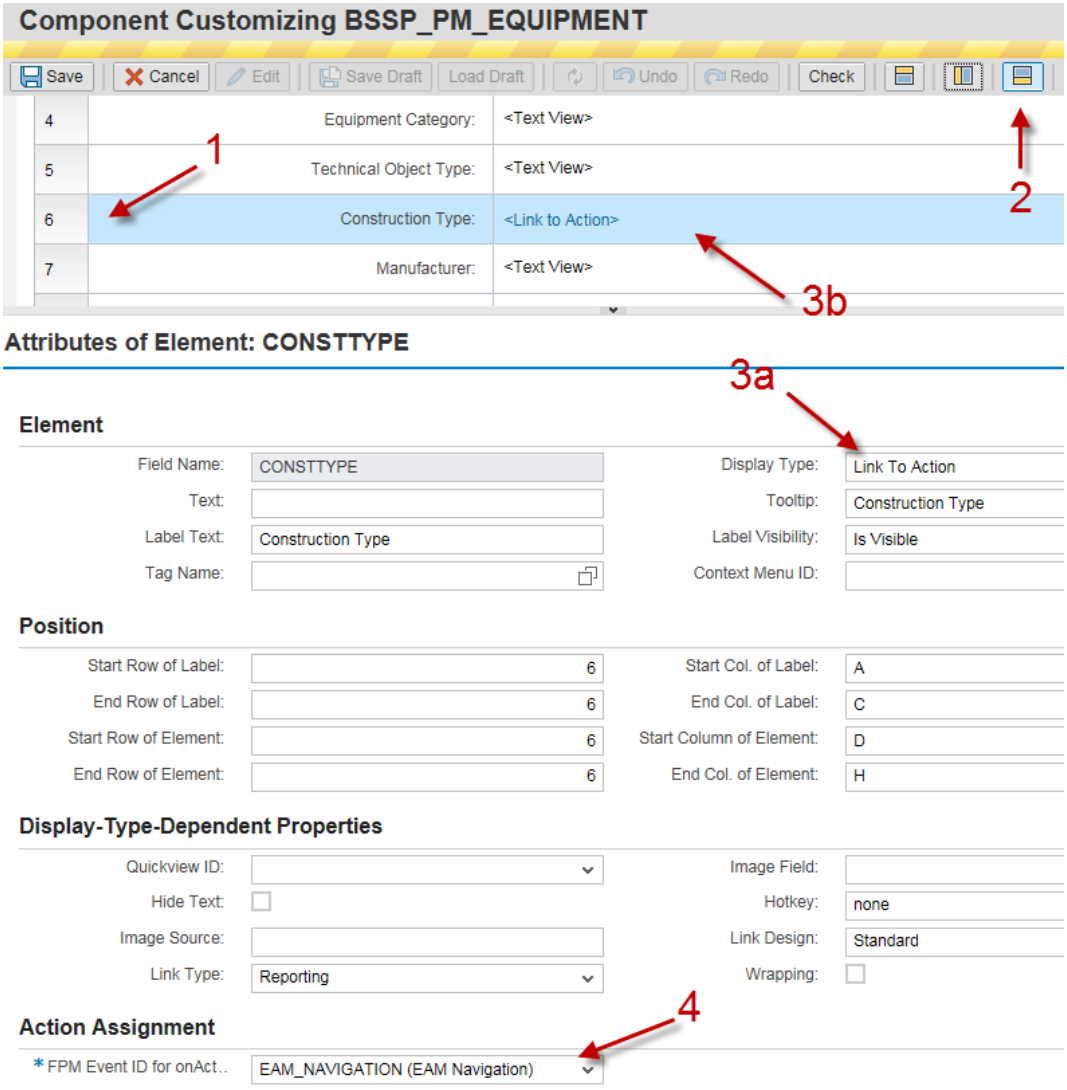
You can determine which context-sensitive information you want to be displayed in the side panel of the application by customizing the list of fields that are displayed in the CHIPs. In this example, you want to enhance the field list that is displayed in the side panel for the notification and add the construction type to the *Equipment* CHIP. Since you want to have all the information about the construction type to be accessible in the side panel, you provide a link to the construction type master data.

You can add fields to a CHIP by changing the customizing settings. To do so, choose *Customize Form* in the menu of the CHIP.



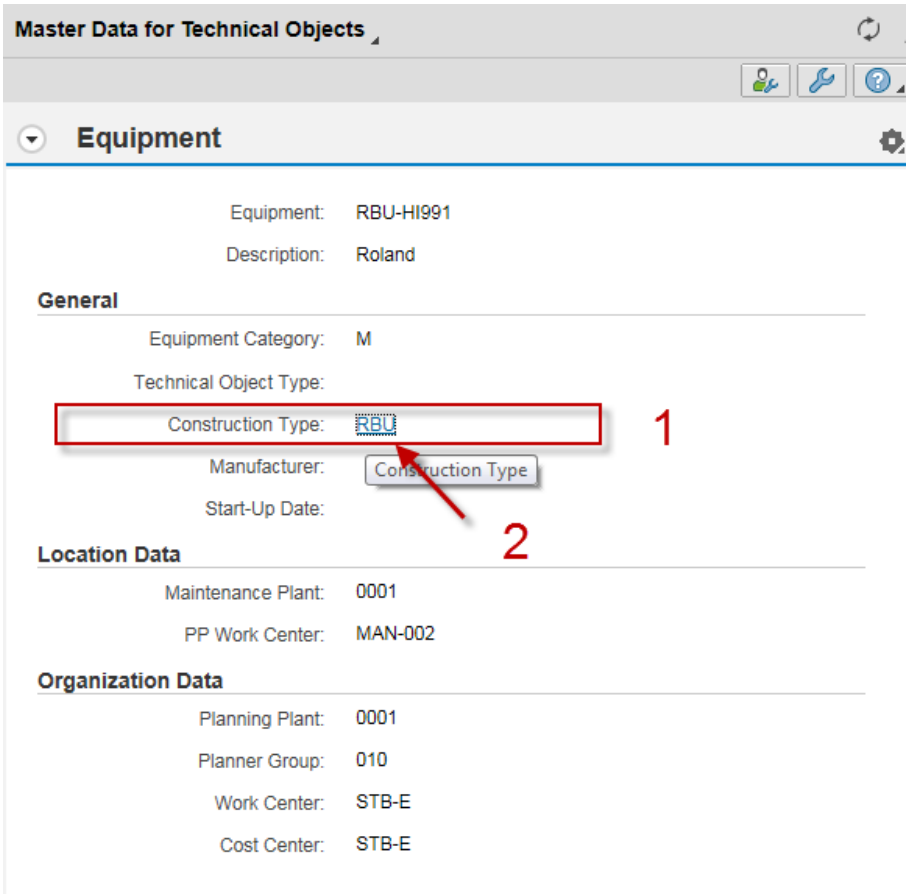
For the *Equipment* CHIP you open the component customizing of `BSSP_PM_EQUIPMENT`. The repository on the left-hand side provides a list of all fields that are available for the *Equipment* CHIP. You can move fields from the repository to the preview via drag and drop to add new fields to the side panel. If you move fields from the preview back to the repository, these fields are no longer visible in the side panel. In our example you move the field *Construction Type* (`CONSTTYPE`) from the repository to the preview. You want the new field to be shown in the screen area *General* underneath the *Technical Object Type*, so you move the field via drag and drop to that position in the preview.

Since you want to provide a link to the construction type data, you have to change the field attributes. To do so, select the new field (1), open the attributes (2), and change the display type from *Text View* to *Link to Action* (3a). Your changes are adapted immediately in the preview (3b). You then have to enter `EAM_NAVIGATION` (4) in the *Action Assignment* section.



If you now open the side panel for the notification and display the CHIP *Equipment*, the new field is displayed. If a construction type (1) is assigned to the respective piece of equipment, the system provides the link to the Web

Dynpro application (only if software component PLMWUI is activated) or the SAPGUI transaction (2). Depending on whether or not the software component PLMWUI is activated, either the Web Dynpro application opens or the *Material Master* (transaction `MM03`) of the construction type is displayed.



The possibility to provide links via Launchpad Navigation in side panels is delivered by SAP EAM in the following CHIPs:

Equipment (`BSSP_PM_EQUIPMENT`); link to master data

Functional Location (`BSSP_PM_FUNCTIONAL_LOCATION`); link to master data

Purchase Requisition Items (`BSSP_PM_PURREQITEM_LIST`); link to original document

Purchase Order Items (`BSSP_PM_PURORDERITEM_LIST`); link to original document

10.1.4 Using the SAP 3D Visual Enterprise Panel in WEB UI

The *SAP 3D Visual Enterprise* (BSSP_SP_VISUAL_ENTERPRISE) side panel enables you to visualize technical objects, spare parts, and instructions in the SAP 3D Visual Enterprise Viewer. 2D and 3D model views as well as animated scenes make critical maintenance processes such as finding the spare parts you need and carrying out instructions quicker and easier. You can also display the assigned RH files as thumbnails.

For more information about this side panel, see PM Side Panels: SAP 3D Visual Enterprise.

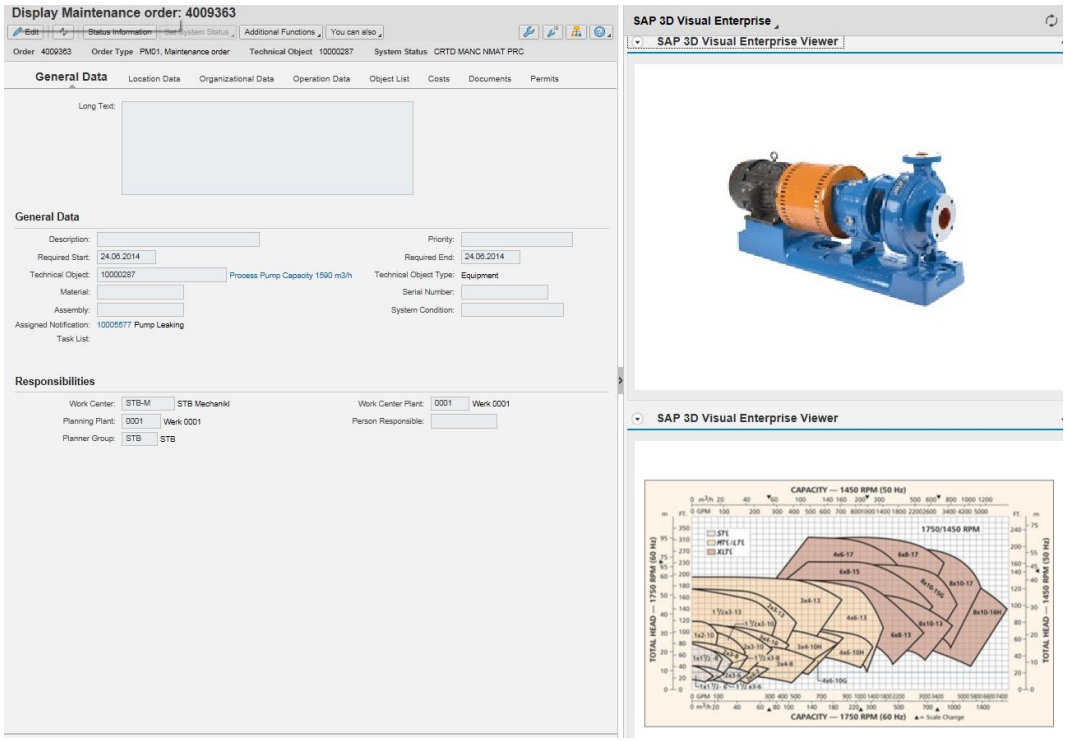
The *SAP 3D Visual Enterprise* side panel provides the following CHIPs:

- *SAP 3D Visual Enterprise Viewer* (DMS_CHIP_VIEWER)
- *Thumbnail* (DMS_CHIP_THUMBNAIL)

Furthermore, a logic for finding document info records is implemented on the *Viewer* CHIP. In the side panel, however, the system only displays document info records that are assigned at header level and whose assignment has already been saved.

You can determine which pictures are shown in which CHIP in customizing for *Cross-Application Components* under *Document Management* > *Visual Enterprise Generator* > *Define Search Sequence for Viewable File* (or transaction `SM30` for view `DMS_VEG_V_VSS`).

If you want the system to show different pictures on the side panel, you can place the *Viewer* CHIP twice on the side panel. Then you define different files to be displayed by determining different **search sequences** and setting different **usage parameters** in customizing of the CHIP itself (see 10.1.3 for information about CHIP customizing). Then the side panel displays, for example, the document info record directly assigned to the order header on one CHIP and the document info record assigned to the equipment of the order header on the other CHIP.



You can use the Business Add-In BAdI: *File Determination Logic for SAP 3D Visual Enterprise Viewer* (`BADI_EAMVE_FILE_SEARCH`) to influence the standard file determination logic.

10.1.5 List of PM Side Panels

The table below shows a list of all PM side panels used in PM transactions and WDAs. For detailed information about CHIPs and technical names, see SAP Note 1816377.

Web Dynpro Application	Application Configuration	Description
WDR_CHIP_PAGE	BSSP_SP_NOTES_ONLY	Notes
WDR_CHIP_PAGE	BSSP_SP_STREAMWORK	Collaboration
WDR_CHIP_PAGE	BSSP_SP_PM_COST_REPORTING	Reports
WDR_CHIP_PAGE	BSSP_SP_MASTER_DATA_PM	Master Data Details
WDR_CHIP_PAGE	BSSP_SP_WEBSER_PM_KUN_LIEF	Web Services
WDR_CHIP_PAGE	BSSP_SP_MASTER_DATA_PM_TECOBJ	Master Data Details
WDR_CHIP_PAGE	BSSP_SP_PM_ORDER_REPORTING	Reports
WDR_CHIP_PAGE	BSSP_SP_VISUAL_ENTERPRISE	SAP 3D Visual Enterprise
/BCV/WDA_UIF_SIDEPANEL	--	Business Context Viewer

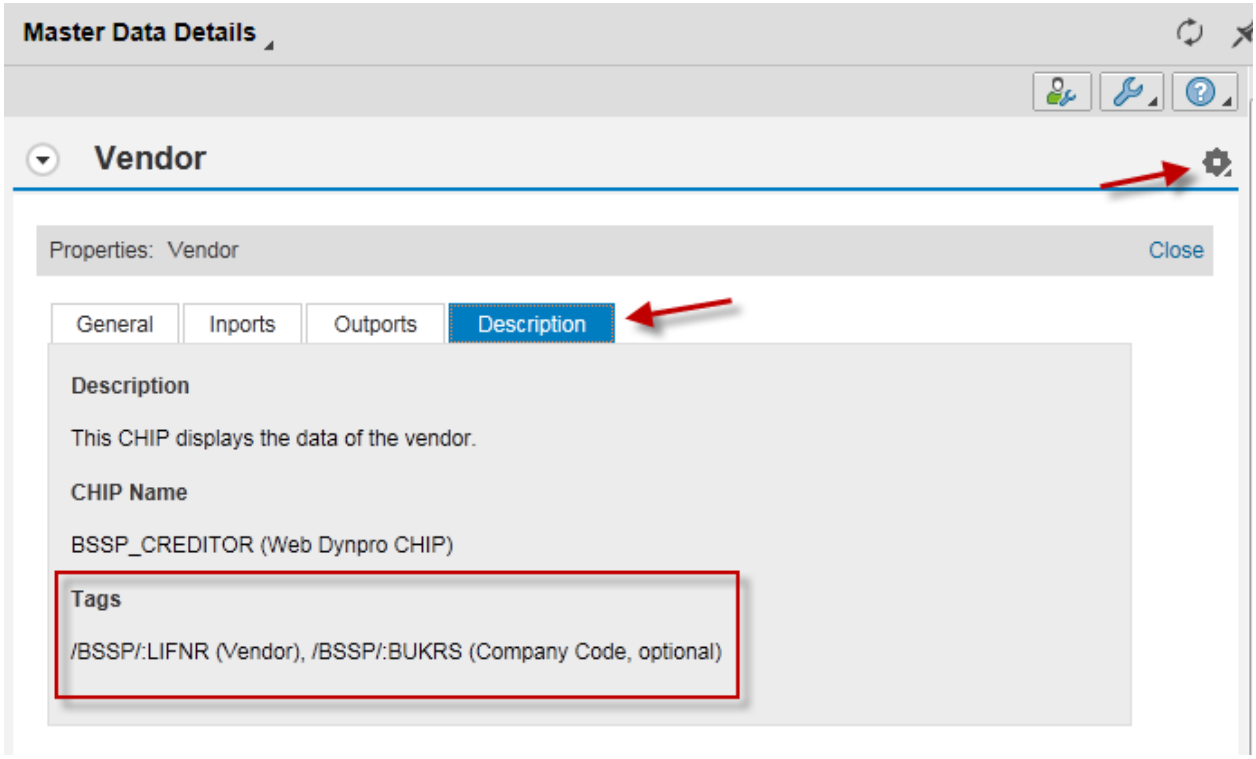
For information about Side Panels refer to SCN Blog Side panel for SAP Business Suite - Overview. For creating own content in Side Panels see SCN Blog Side panel for SAP Business Suite (2) - Adapting SAP's Side Panel content and creating new content.

10.2 Tags and Tagging

10.2.1 Tags Used by CHIP

Tagging (automatic wiring) is provided for you to set up a connection between an application whose data is needed (a Web Dynpro application or an application in the NWBC content area) and the CHIP in the side panel. The tags in the Web Dynpro application must be unique, meaning a specific tag can only be used once within a Web Dynpro application.

To find out which tags the CHIP uses, you open the properties of the CHIP (see 10.1.3) and choose the *Description* tab. For example, the CHIP *Vendor* needs values for tag *Vendor Name* (/BSSP/:LIFNR) and (optionally) for tag *Company Code* (/BSSP/:BUKRS).



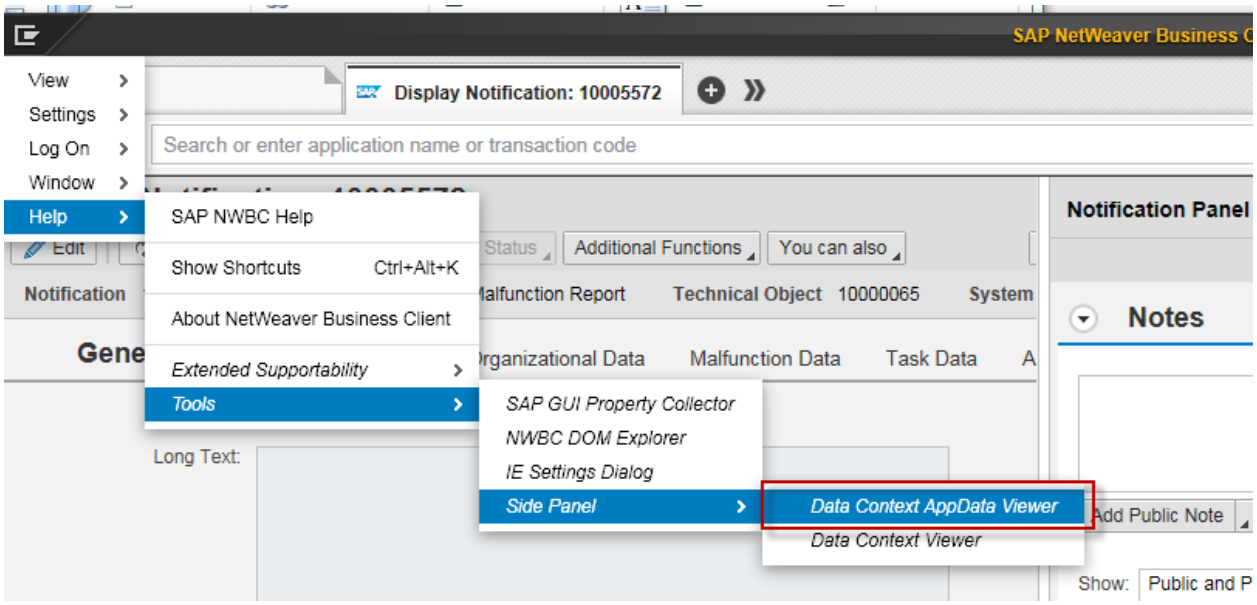
10.2.2 Availability of Tags in the System

SAP delivers standard tags for SAP GUI transactions. These SAP tags are stored in table `NWBC_VS_GUI_TAG`. If you add your customer-specific tags, you have to store them in table `NWBC_VC_GUI_TAG`. The tagging for EAM Web Dynpro applications is already provided by SAP. The namespace for the tags is `/BSSP/:`.

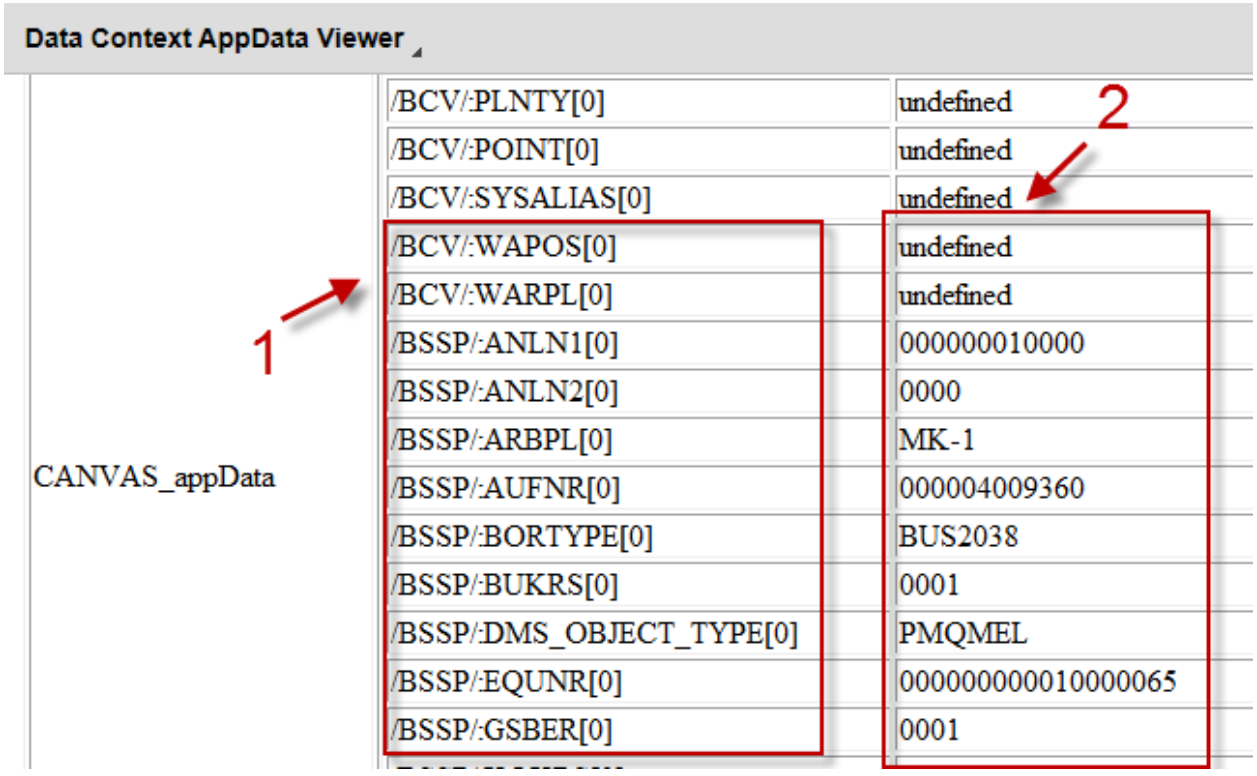
EAM roles and tagging are available in Software Component EA-APPL 617 as of SAP enhancement package 6 for SAP ERP 6.0 SP07 and are therefore included in enhancement package 7. For more details, see SAP Note 1816377.

10.2.3 Checking Current Tag Values

To check which value is currently transferred from the application to the CHIP tag, hold down the CTRL button while you click on the symbol in the upper left-hand corner and then follow this path:



Then you can change to panel *Data Context AppData Viewer* to see the tag names (1) and their values (2), which are mostly unconverted. Tags that do not have a value yet are indicated as *undefined*.



Hint: In SAPGUI transactions tags are read when they appear on the screen. We therefore recommend that you display all the tabs of an application to get all tags for the current transaction.

Tags starting with prefix '/BCV/:' are used for the *Business Context Viewer* which is discussed in chapter 10.4.

10.2.4 Creating Your Own Tags or Overriding SAP Tags

You can add customer-specific tags and replace the tags delivered by SAP.

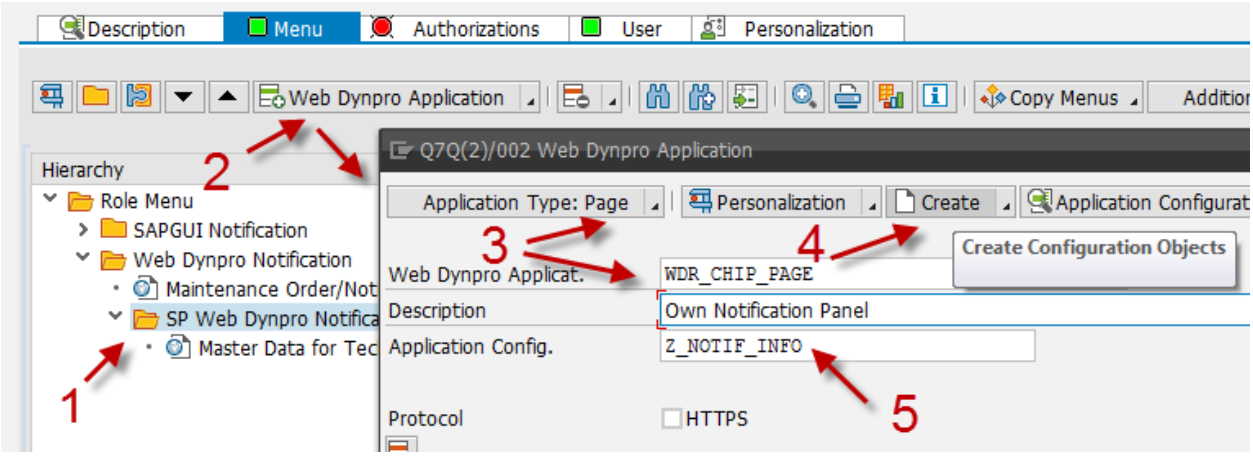
For detailed information about adding and changing tags, see Enhancing the Side Panel in the SAP Library. There you also find information about the Business Add-In (BAdI) `BSSP_TAGGING_SERVICE` (*Tagging Service for Side Panel*) and sections about the tagging for SAP GUI via table `NWBC_VS_GUI_TAG` and tagging via API.

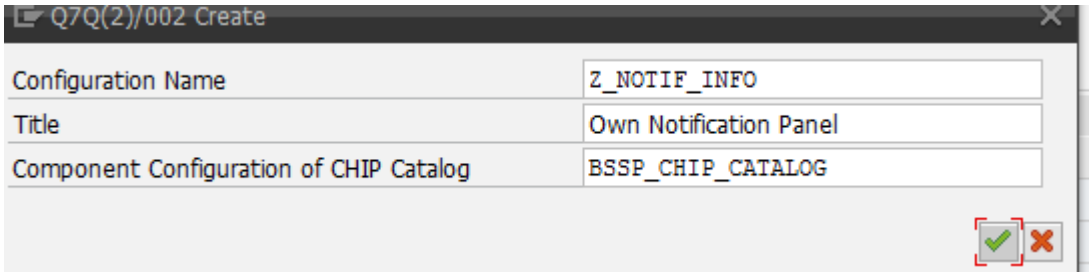
10.3 Setting Up Customer-Specific Side Panels and CHIPs

10.3.1 Setting Up Your Customer-Specific Side Panel

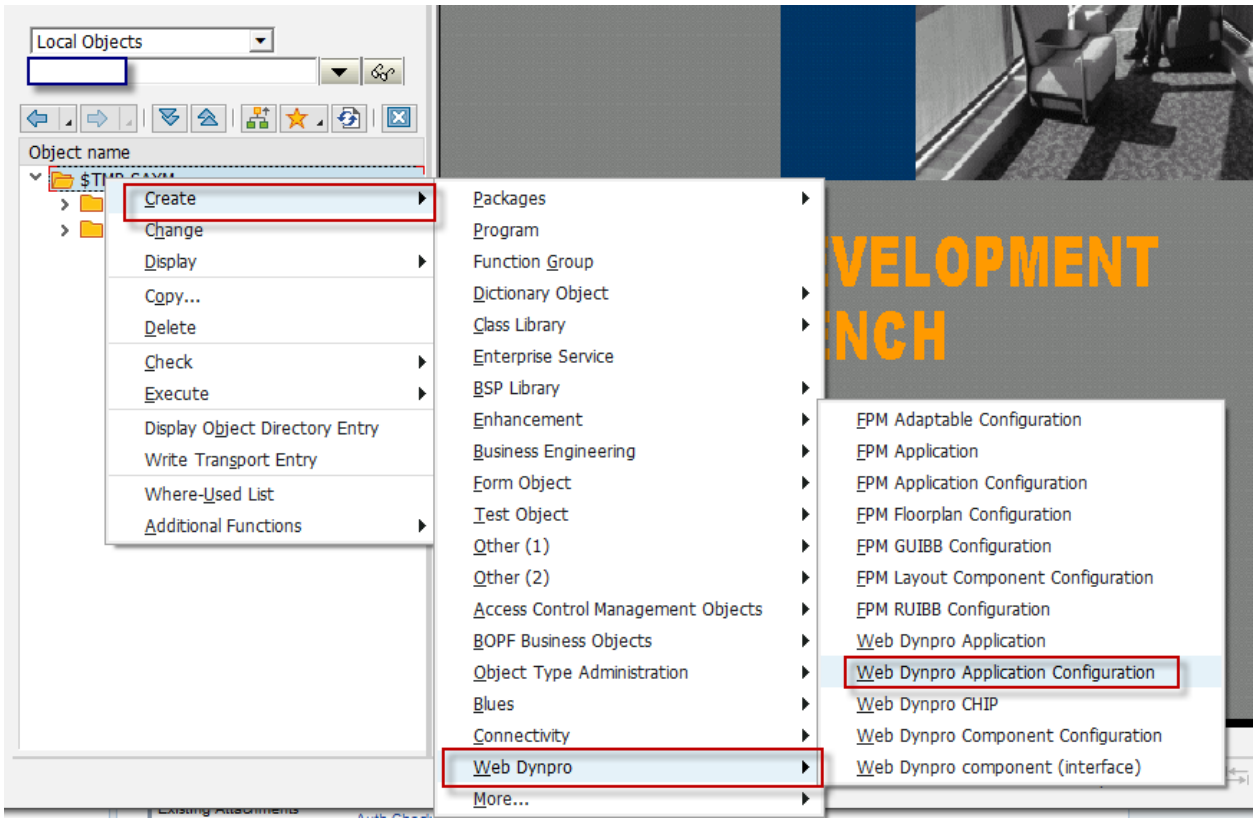
As described above, you can personalize SAP standard side panels by changing the sequence of CHIPs, adding new CHIPs, and removing existing ones. In addition, you can set up your own customer-specific side panel and choose the CHIPs you want to place on the panel.

In this example, you want to add a completely new side panel to the role `Z_NOTIFICATION` and choose which CHIPs from the CHIP catalog delivered by SAP you want to be placed there. To do so, access the role in change mode, choose the *Menu* tab and select the respective folder for the Web Dynpro Notification (1). Then you add a Web Dynpro application (2) and choose *Application Type: Page* (3). To create a new page, click on the button *Create* (4) and enter the configuration name, the title, and the CHIP catalog from which the CHIPs on this side panel are chosen.

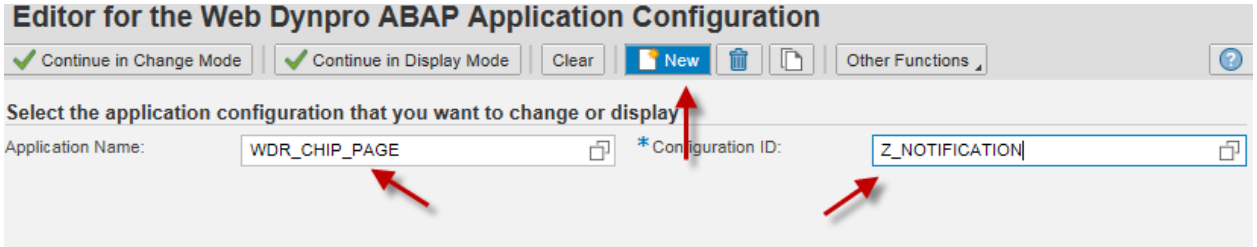




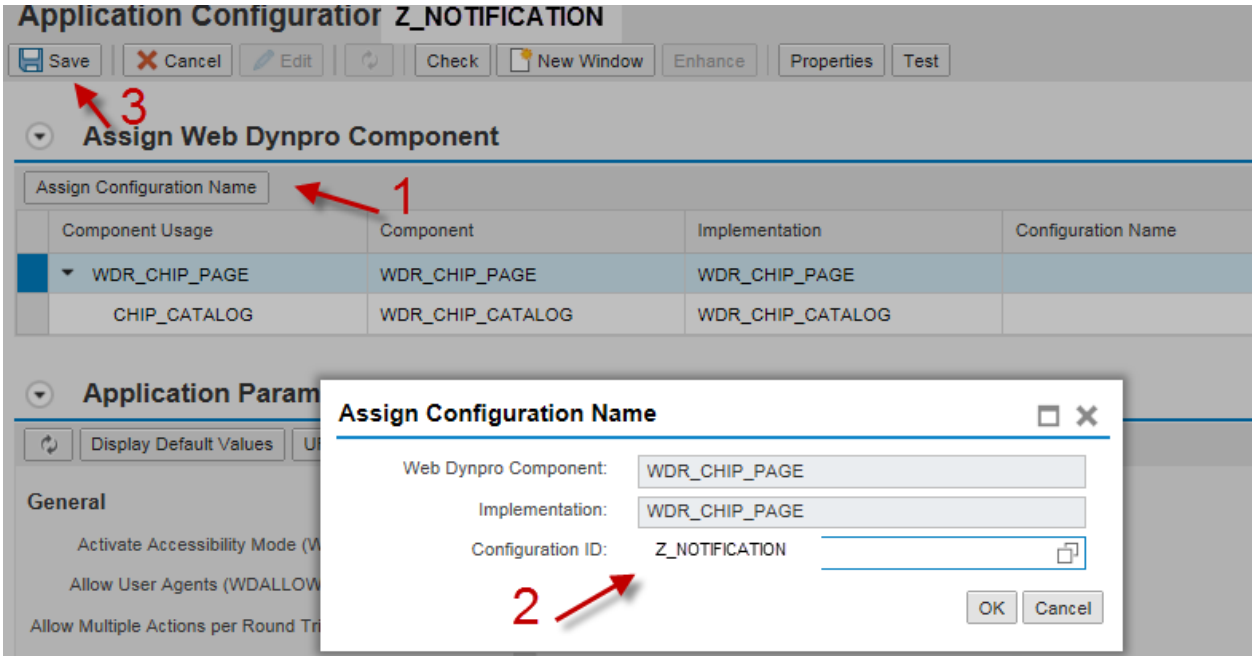
If this is not allowed in your client, change to a cross-customizing client and create the new side panel page in transaction `SE80`.



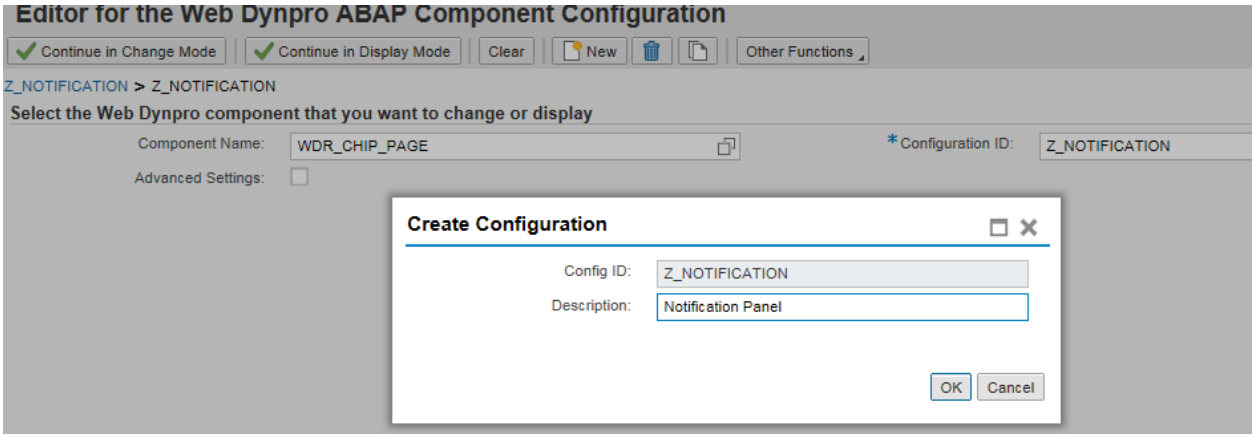
Enter the application name `WDR_CHIP_PAGE` and enter the new configuration ID `Z_NOTIFICATION`. To create a new side panel, click on the button *New* and enter a description. You have to provide a package in the next step.



In the *Application Configurator* you have to assign a configuration name (1). Since you have already entered the configuration ID in the previous step, the system displays this configuration ID in the input help (2). After having entered `WDR_CHIP_PAGE` as the *Application Name*, click on it and provide a description and the package. Then save your changes (3).

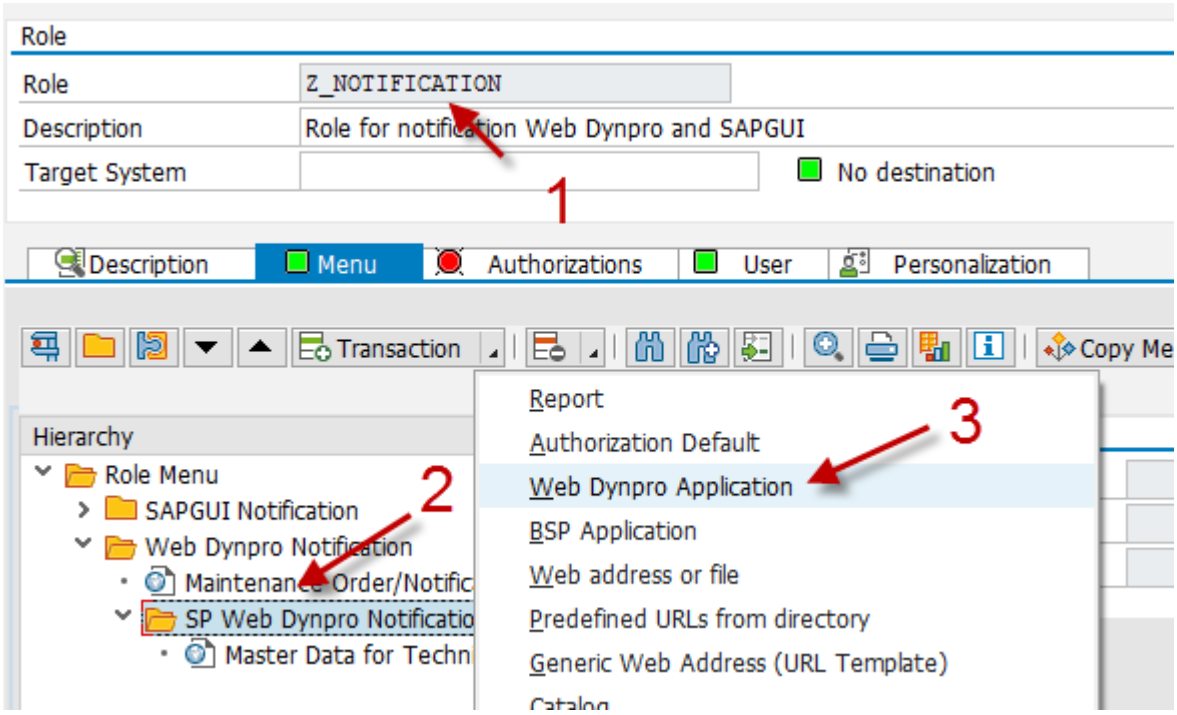


Now that you have defined the application, you can determine the configuration of the component that you assigned to this application. To do so, click on the component, enter a description and a package, and save your entries.

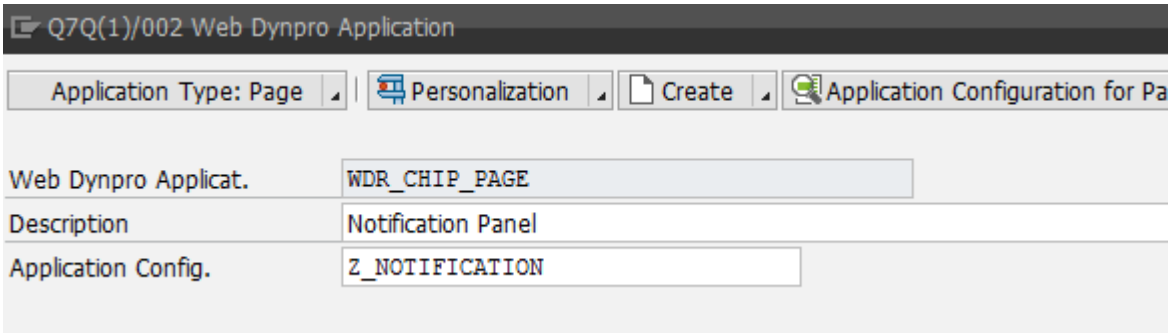


10.3.2 Adding the Panel to a Role

After having set up the side panel, you have to add the panel to the respective authorization role. To do so, access the role (1) in change mode (transaction `PFCG`), choose the *Menu* tab, and select the respective folder for the Web Dynpro Notification (2). Make sure that you add the panel to the role in the same client in which the role was created. Then choose *Web Dynpro Application* in the dropdown menu of the *Transaction* button (3).



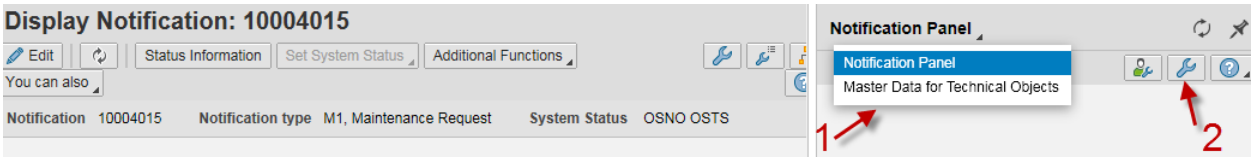
Fill in the required fields. The string entered in the *Description* field appears as the side panel name. Save your changes to the role.



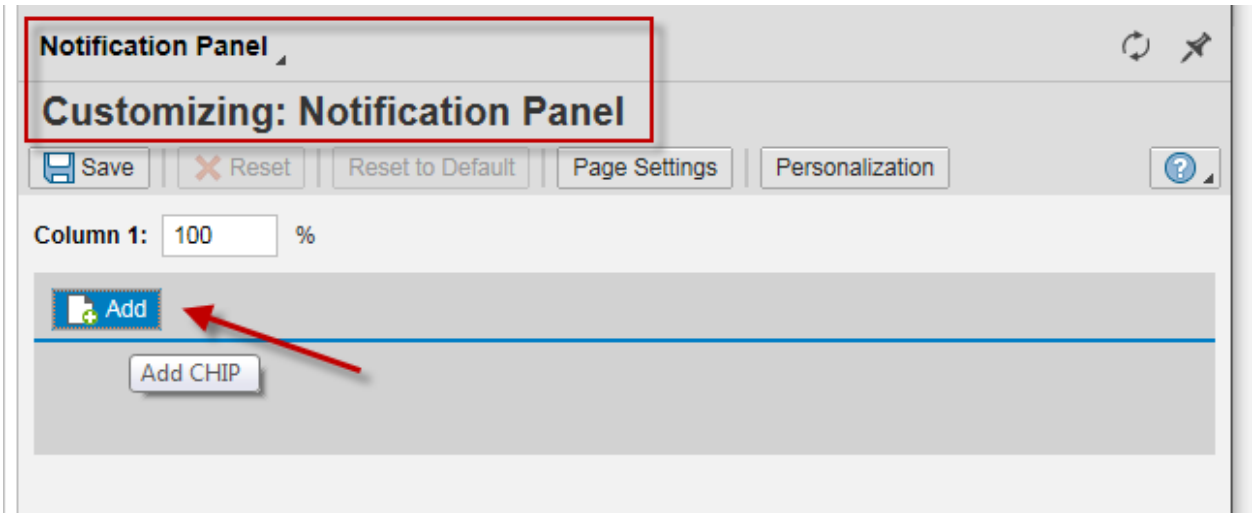
The panel is now visible in the correct folder.

10.3.3 Placing CHIPs on Your Customer-Specific Side Panel

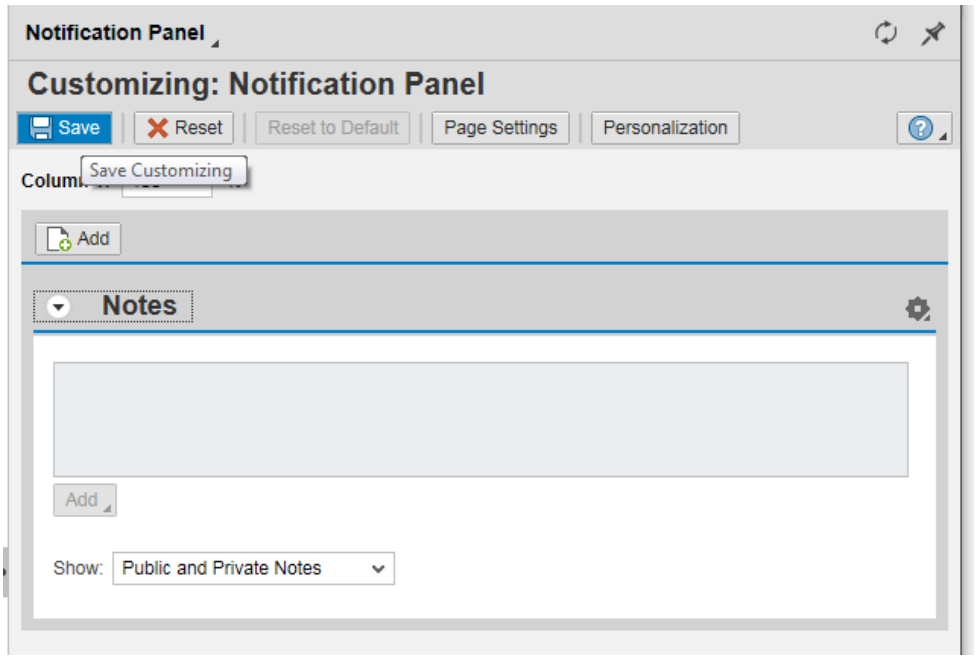
After having set up the empty side panel page and assigned the side panel to a PFCG role, you choose which CHIPS are placed on the panel. To do so, log on to NWBC for Desktop with the role `Z_NOTIFICATION` and choose *Display Notification* to display the empty side panel page (1). Click on the respective button to open this side panel in customizing mode (2). Your settings are then valid for all users in this client.



In customizing mode, you can select CHIPs by choosing the *Add CHIP* button. You can decide which CHIPs you want to be displayed on the new side panel.

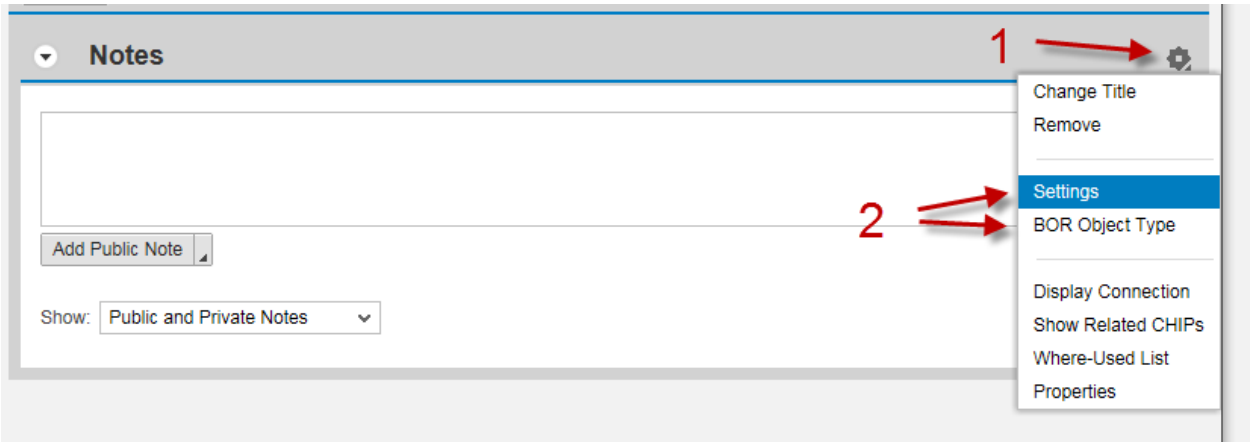


In this example, the *Notes* CHIP was selected and added to the side panel. If you want these settings to also be valid for other systems or clients, save your customizing settings in a transport request. You exit the customizing mode by choosing the *Personalization* button.

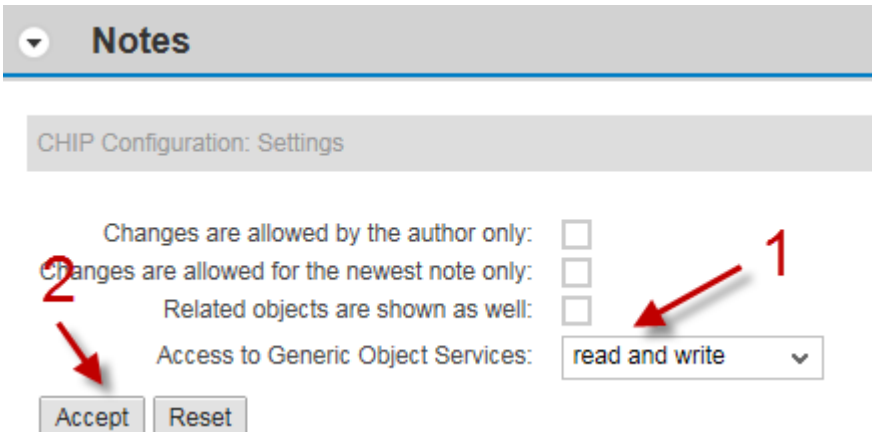


10.3.4 Entering the Customizing Settings of the CHIP

In many of the CHIPs you can make changes to what is displayed in customizing mode. To do so, access the respective CHIP in customizing mode and open the menu by clicking on the button in the upper right corner (1). In this example, you can change the title of the *Notes* CHIP, you can remove the CHIP from the side panel, or show related CHIPs. By clicking on *BOR Object Type* and *Settings* (2) you can influence the CHIP configuration settings.



In this example, you access the settings because you want the notes from the *Generic Object Services* (GOS) to also be displayed within this CHIP. Allow read and write access for GOS (1) in the settings and accept the changes (2). After you have finalized your personal settings, save your customizing settings of the side panel.



10.4 Business Context Viewer (BCV)

Business Context Viewer (BCV) is a framework that allows all SAP Business Suite applications to integrate different types of additional information into the context of their applications. This information can then be analyzed according to the user's business needs.

The analytic data that BCV displays is available in the side panel of the application, so you can see context-specific data to the application you are currently working in without changing the system or opening an additional window. The data can be originated from BW (Business Warehouse) or ERP and can be fetched via queries (BW), BAPIs or Embedded Search.

EAM-specific business content is delivered in the following BC sets:

- `EAMS_BCV_CONTENT`
- `EAMS_BCV_TL_CONF_MITEM`

These BC sets provide several search connectors and queries, so that EAM-specific information can be displayed in the BCV side panel. You can only use the BI connectors if a BW system is connected and the data is periodically uploaded.

For more information about BCV content in EAM, see Activating and Adapting Sample BCV content in EAM.

Users who want to use the BCV side panel have to be assigned to the technical role *Side Panel: BCV Plant Maintenance* (`SAP_PM_BCV_SIDEPANEL`), which is only available in the software component PLMWUI. To add the side panel to your own role, use `/BCV/WDA_UIF_SIDEPANEL` as the Web Dynpro Application instead of `WDR_CHIP_PAGE` without entering an application configuration. If you want to display the side panel with NWBC for desktop, see 15.2. For more information about the BCV side panel in EAM, see PM Side Panel: Business Context Viewer in the SAP Library.

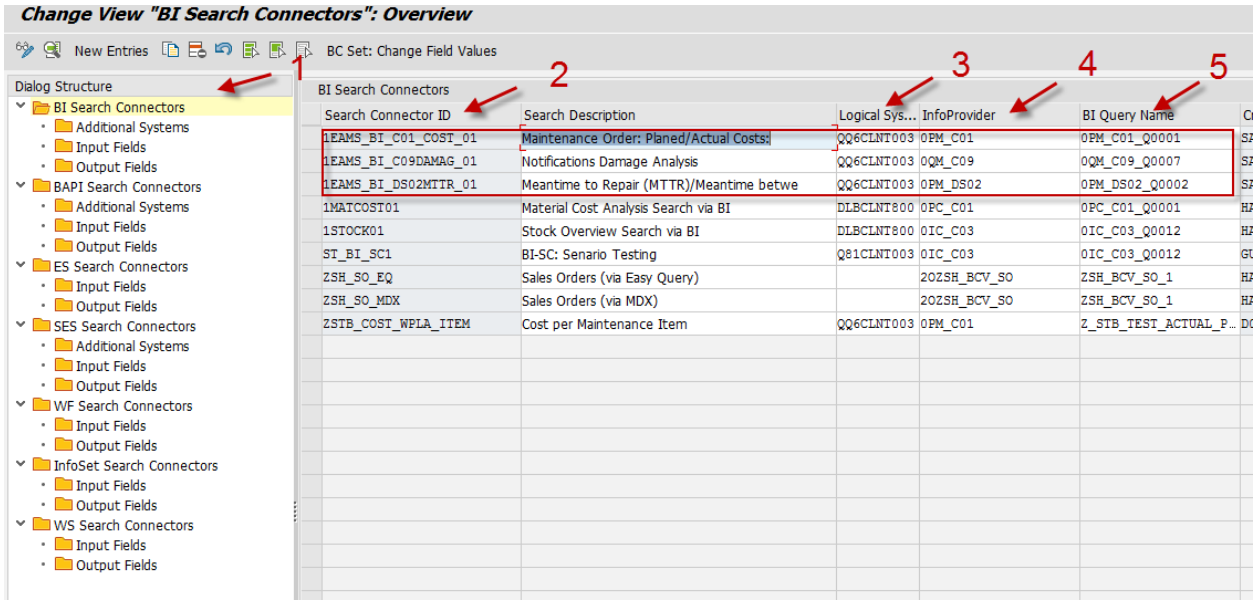
For more information about the Business Context Viewer, see Business Context Viewer (BCV) in the SAP Library.

For more information about the availability of EAM-specific BCV side panel content, see SAP Note 1816377.

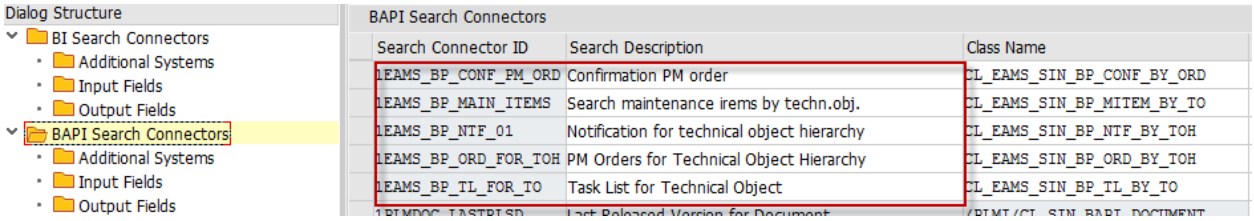
10.4.1 Customizing of BCV Content

Before you can use the BCV side panel in your application, you need to define search connectors in customizing. Search connectors establish the connection between the data provision technology and the Business Context Viewer (BCV) by providing search access to a specific data provider at a specific destination (logical system) or list of destinations. The definition of the search connector includes the description of the selection attributes and the structure of the result data. The search connector delivers result data in a predefined form for the specified selection attributes. You define search connectors in customizing for *Cross-Application Components* under *Processes and Tools for Enterprise Applications* → *Business Context Viewer* → *Search Integration* → *Define Search Connectors*.

The different types of search connectors are listed in the *Dialog Structure* on the left-hand side (1). If you select the *BI Search Connectors,* the list of all search connectors available for Business Warehouse is displayed on the right-hand side. The technical name of the EAM search connectors starts with `1EAMS*` (2). For setting up a connection to the BI system, you have to specify the logical system (3) for the EAM search connectors. Furthermore, you have to determine the info provider (e.g. a cube or another data store object) where the data is to be extracted from (4). You finally have to specify the query name for retrieving the data from the info provider (5). You can specify several queries for the same search connector.

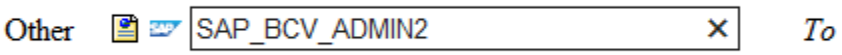


For EAM several BAPI search connectors were developed. You find them in the next section and they also start with 1EAMS*.

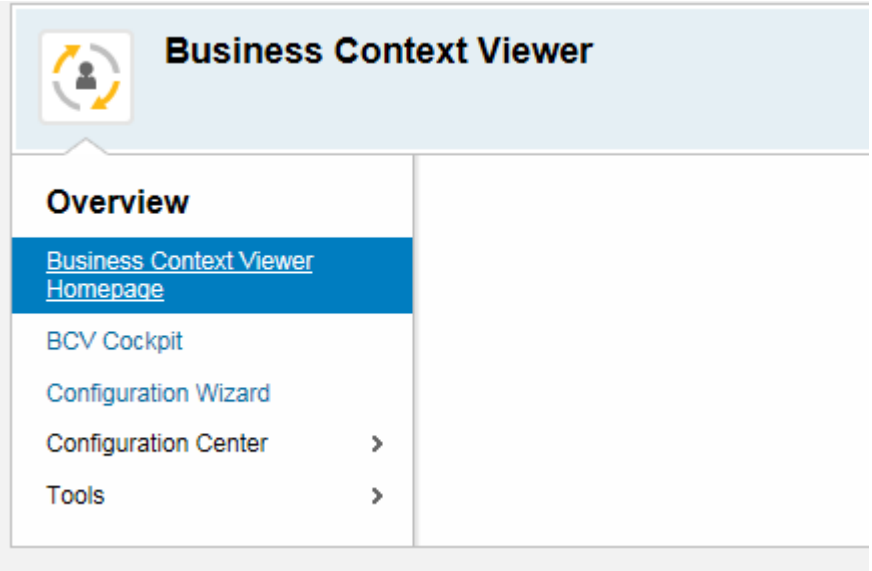


Using the NetWeaver Business Client role `SAP_BCV_ADMIN2` you can enter the Cockpit for the BCV administration and get an overview of the connectors, their queries and the dependent query views.

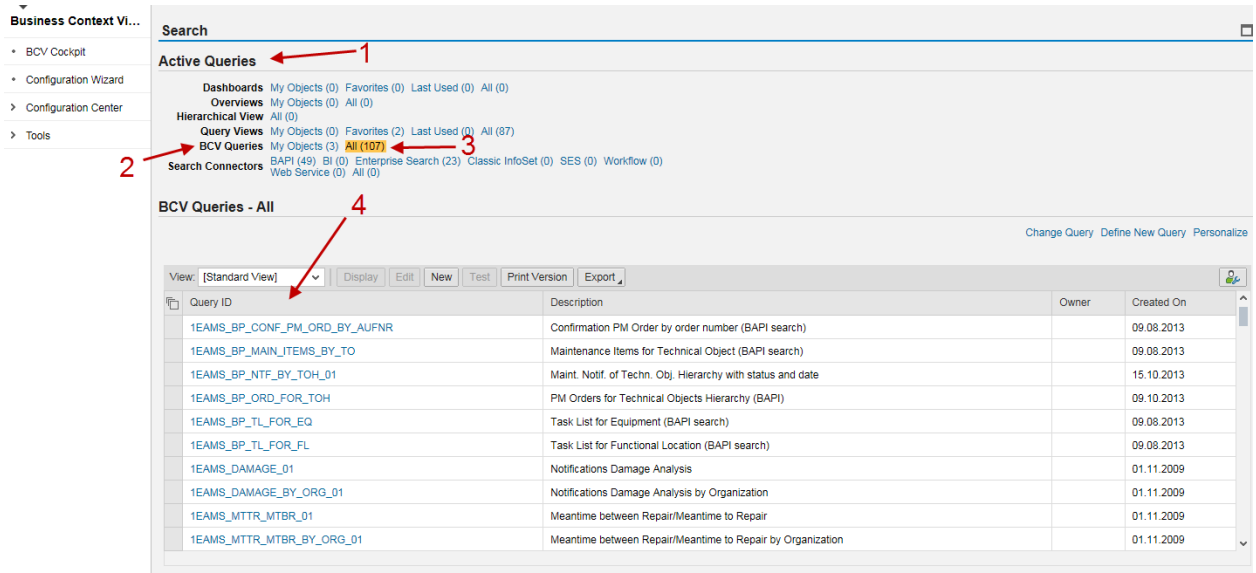
Start NWBC with role `SAP_BCV_ADMIN2`.



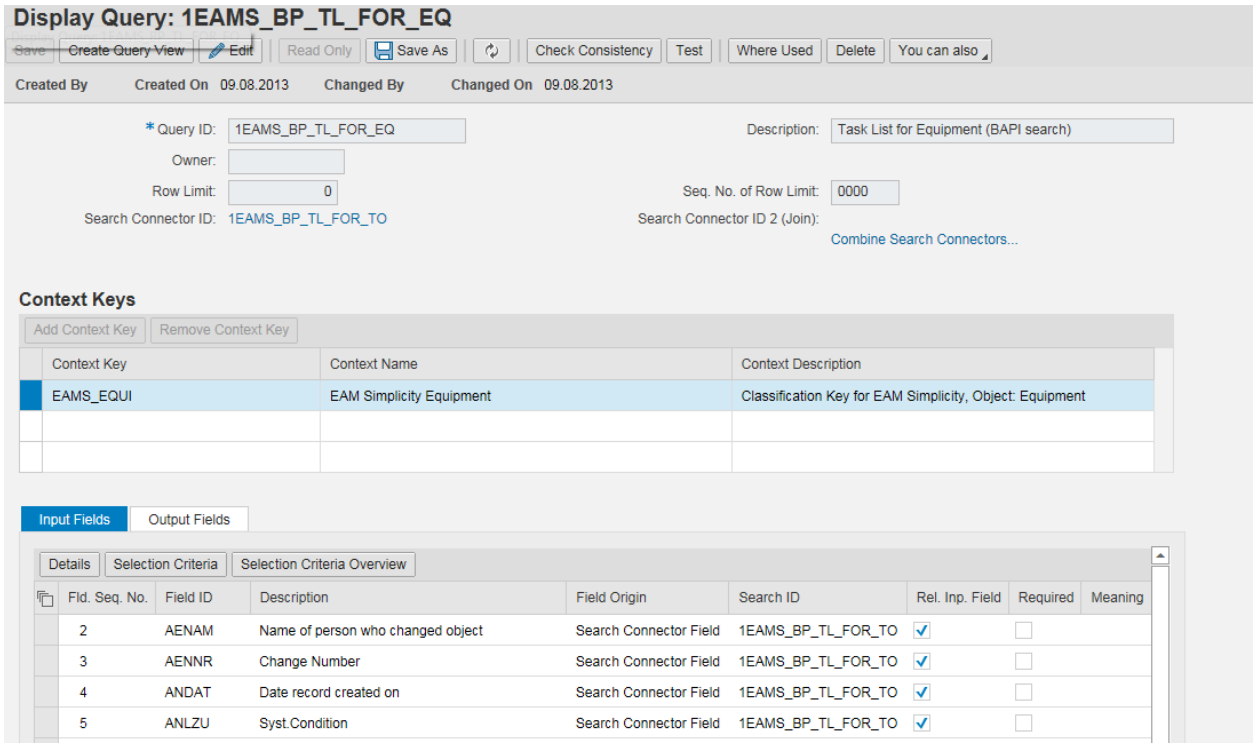
Open the Business Context Viewer Homepage.



You enter the *Search* screen with active queries (1), where you can select any of the dashboards, views, queries and connectors, and so on, that are available in the system. In this example, we selected the *BCV Queries* (2) and chose the link for showing *All* (3) existing queries. The queries listed start with 1EAMS* and are EAM queries for different purposes (see the descriptions).



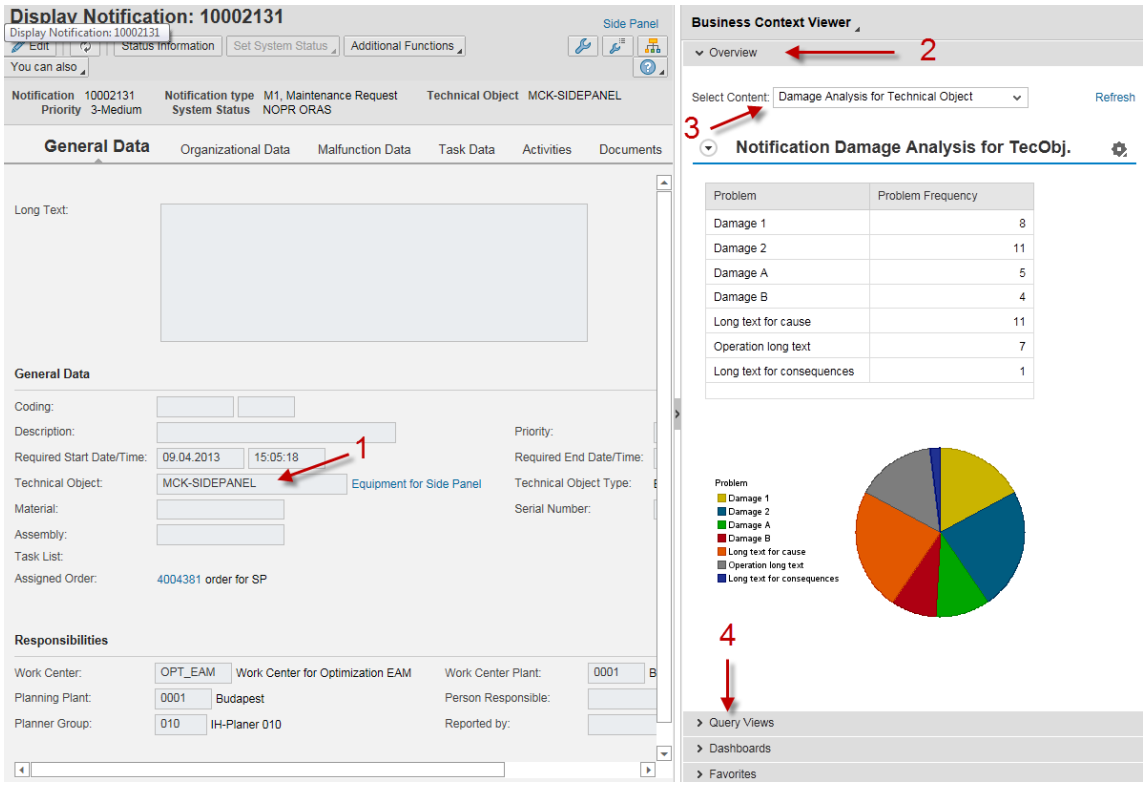
If you select a query by clicking the Query ID link (here `1EAMS_BP_TL_FOR_EQ`), you enter the details. Here you can also see which context key the query is assigned to. The context key of this example is `EAMS_EQUI`, which means that this query appears in the application for equipment.



10.4.2 Displaying the BCV Side Panel

In this example, you display a notification with a technical object (1), for which the BCV side panel is assigned via the PFCG role. The BCV side panel is divided into several sections. In the *Overview* (2) you can see a dashboard with two CHIPs that both show the damage frequency of the technical object. The damage frequency is displayed in a table and in a pie chart. You define the content shown in the *Overview* section in the BCV Configuration Cockpit (access via role `SAP_BCV_ADMIN2`).

In the section for *Query Views* (4) you can see the list of query views that are assigned to the context key `EAMS_NTF`, which is the context key for notifications. The context keys themselves are specified in the maintenance view `/BCV/V_CLF`. The BCV content displayed in the section *Query Views* opens in a separate NWBC tab.

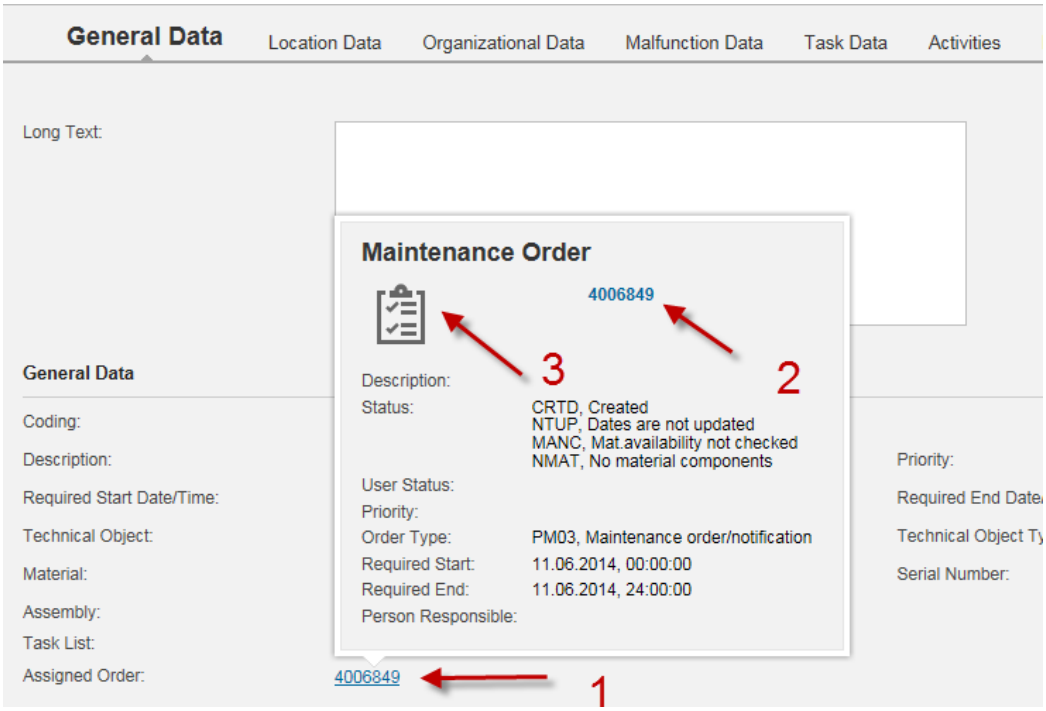


11 Using and Adapting Quickviews in EAM

On the SAP Web UI for Plant Maintenance, you can display relevant information about the maintenance documents, technical objects, materials, and long texts that are assigned to orders, notifications, task lists, and maintenance plans without having to navigate away from the screen you are working in. Quickviews appear as separate windows when you hover over an object and provide a preview of the object with the most important information. They also provide links for directly navigating to other objects and data.

You can determine whether quickviews are displayed or suppressed in single applications (see 15.6) or in all applications of a specific client (see 15.8). Quickviews are only displayed if you do not use an accessibility mode.

The example shows a quickview that is displayed on the *General Data* tab of the notification. By hovering over the assigned order number (1) the quickview provides you with the most important information about the order. A link allows you to navigate directly to the document (2) and an icon indicates the type of object for which the information is provided (3).

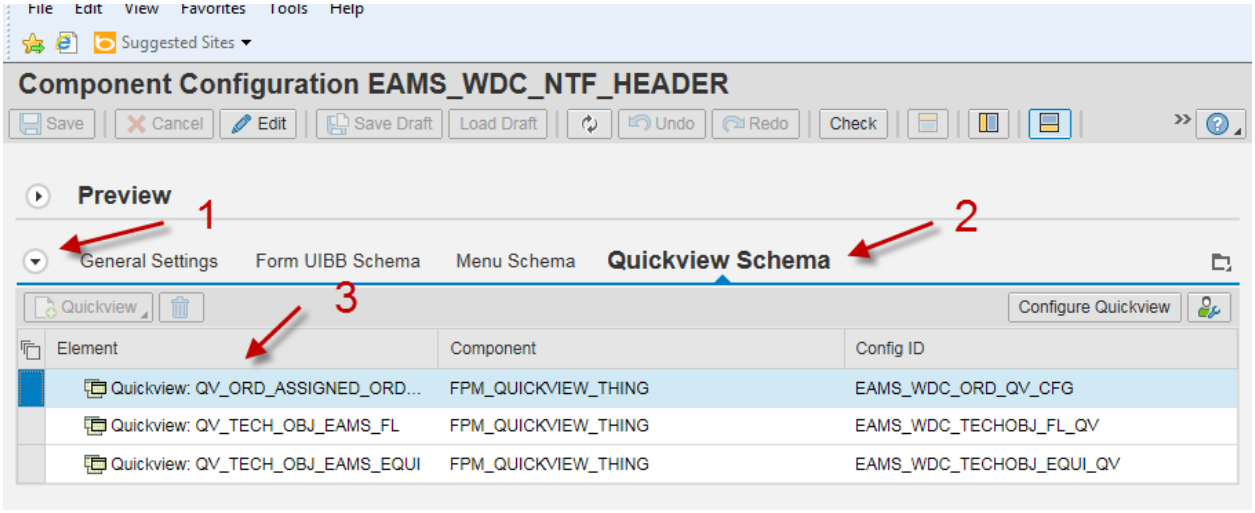


For more information about configuring quickviews see Quickviews in the SAP Library.

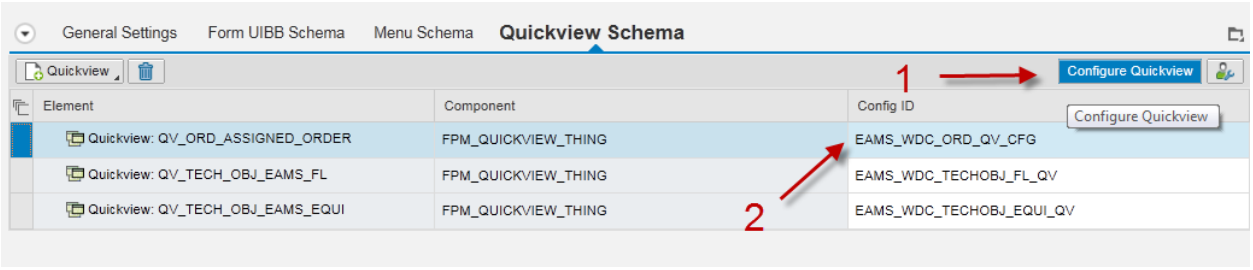
11.1 Changing an Existing Quickview

You can configure each individual quickview to display certain information for the users. To do so, you access the application, select a specific tab, and then choose the pushbutton *Show Configurable Areas*. The system highlights all configurable UIBBs in blue. Put the cursor in one of the highlighted areas and press the button in the

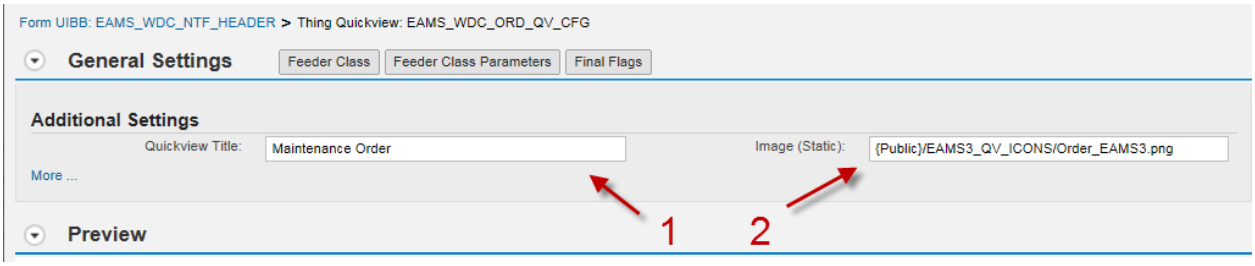
upper right corner (for a detailed description on how to access the configuration of UIBBs, see chapter 3). In this example you want to configure the quickview for the assigned order in the notification. To do so, access the configuration of the header data on the *General Data* tab. Open the screen area beneath the *Preview* (1) and select the *Quickview Schema* (2) to display all quickviews that are already defined for that UIBB. In this example, the quickview with information for the assigned order is displayed in the first row of the table (3).



To configure a quickview, select the respective table row on the *Quickview Schema* tab. Choose the *Configure Quickview* button (1) and open the quickview configuration for `EAMS_WDC_ORD_QV_CFG` (2).

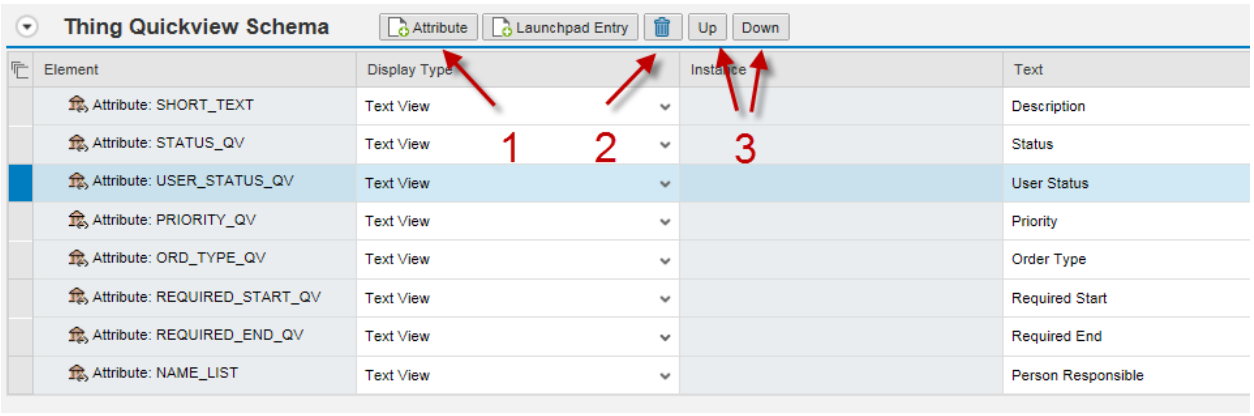


In the *General Settings* you can change the title of the quickview (1). The icon that appears in the quickview is a mime-repository object in folder *Public* (2).



You can also change the icons that are displayed in the quickview in transaction `SE80`. In the *MIME Repository* choose *SAP* → *BC* → *WebDynpro* → *SAP* → *PUBLIC* → *EAMS3_QV_ICONS*. If you want to use your own icons instead of the predefined ones, you have to create a new folder and store your changes in a transport request. To access your own icons enter `{PUBLIC}/CREATED_FOLDER/Icon.png` for a static image.

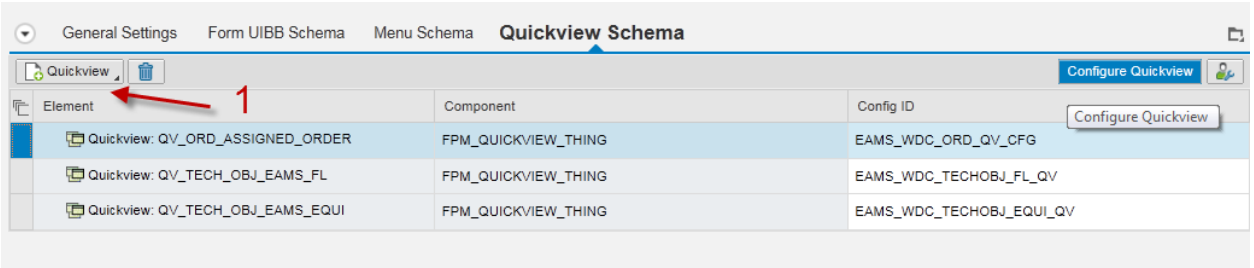
To configure which information you want to be displayed in the quickview, you open the *Thing Quickview Schema* beneath the *Preview* screen area. In the table you find all the fields that are currently displayed in the respective quickview. To add fields from the field catalog, choose the *Attribute* pushbutton (1). If a specific element is no longer needed in the quickview, you can select the respective line in the table and delete it with the trash bin (2). With *Up* and *Down* (3) you can determine the order in which the information will be shown in the quickview.



With the *Display Type* you determine whether the system displays the field name and the corresponding value (*Text View*) or if the quickview provides a link for directly navigating to other objects and data (*Link to Action*). If you want to change the display type to *Link to Action*, you have to implement this in method `PROCESS_EVENT` of the feeder class. The system behavior when someone clicks on the link is handled in method `PROCESS_NAVIGATION` of class `/PLMU/IF_FRW_ACTION_UTIL`. Importing parameters of method `PROCESS_NAVIGATION` have to be maintained in customizing table `/PLMU/V_FRW_NAV`. You must then assign the object types and navigation targets to launchpad targets in the launchpad transaction `LPD_CUST`. For more information about navigation in Web Dynpro Service Provider Interface, see the SPI Wiki documentation for Navigation.

11.2 Creating a Customer-Specific Quickview

Besides changing quickviews that have already been predefined for specific fields, you can also create a new quickview for a field where no quickview exists yet. To do so, you access the *Quickview Schema* in the configuration of the UIBB, choose the *Add Quickview* pushbutton (1), and provide the necessary data. New objects must be created in the customer namespace.



For a new quickview you need a Component Configuration with a corresponding feeder class. The feeder class uses interfaces `IF_FPM_GUIBB`, `IF_FPM_GUIBB_QV_THING` and `IF_FPM_MULTI_INSTANTIABLE`.

For more detailed information about creating quickviews, see FPM Developer's Guide 7.4 SP2 or a newer version.

12 Information on Several EAM Functions

12.1 Activation of Additional Functions in EAM

Some additional EAM functions are not part of a business function but have to be activated separately in Customizing. You can activate the respective functions in Customizing for *Plant Maintenance and Customer Service* under *System Enhancements and Data Transfer -> Activate Functions for Enterprise Asset Management* or directly in view `V_EAM_ACT_FUNC` (transaction `SM30`).

Switch	Description
PM087_WD	**Document Assignment in Web Dynpro** This function enables you to display, create, and assign relevant documents when processing maintenance orders on the SAP Web user interface for Plant Maintenance.
DOC_TL_WD	**Document Assignment to Task List in Web Dynpro** This function enables you to display and assign relevant documents at header and operation level when processing task lists on SAP Web user interface for Plant Maintenance.
DOC_TL_GUI	**Document Assignment to Task List in SAP GUI Transactions** This function enables you to display and assign relevant documents at header and operation level when processing task lists in SAP GUI transactions for Plant Maintenance.
DOC_BOV	**Document Assignment in Basic Order View** This function enables you to display and assign relevant documents when processing maintenance orders in the basic order view.
PM110_WD	**Operation Account Assignment in Web Dynpro** This function enables you to enter and change estimated costs per value category at operation level on the SAP Web user interface for Plant Maintenance.
VE_INT_GUI	**SAP 3D Visual Enterprise Integration in SAP GUI** This function enables you to use the SAP 3D Visual Enterprise Viewer to visualize technical objects in SAP GUI transactions for Plant Maintenance.
PM117_ADD	**Displaying Characteristics in Additional PM Lists** This function enables you to use the enhancements for list editing that are provided with business function Enterprise Asset Management Part 6 (LOG_EAM_CI_6) in additional single-level PM lists.
OPER_USR	**User Fields for Operations in Web Dynpro** This function enables you to display and edit additional fields in orders and task lists on operation level. If you activate this function and choose the Operation Data tab

Switch	Description
	page in an order or task list, the system displays the Additional Fields tab page in the details of the operation.
COMP_ENH	**Copying Materials and Changing Requirements Date in WD** This function supports you when maintaining materials that you have assigned to an order operation.

Note: For some of the features described above, you have to activate a specific business function additionally. For more information about further prerequisites, see the Customizing documentation for this IMG activity.

12.2 Attaching Documents in EAM Web UI

The EAM applications use the PLM WUI Documents in combination with the SAP Document Management System (DMS) for attaching documents to maintenance orders or technical objects, for example. Before you can use the PLM WUI Documents, you need to configure it in Customizing.

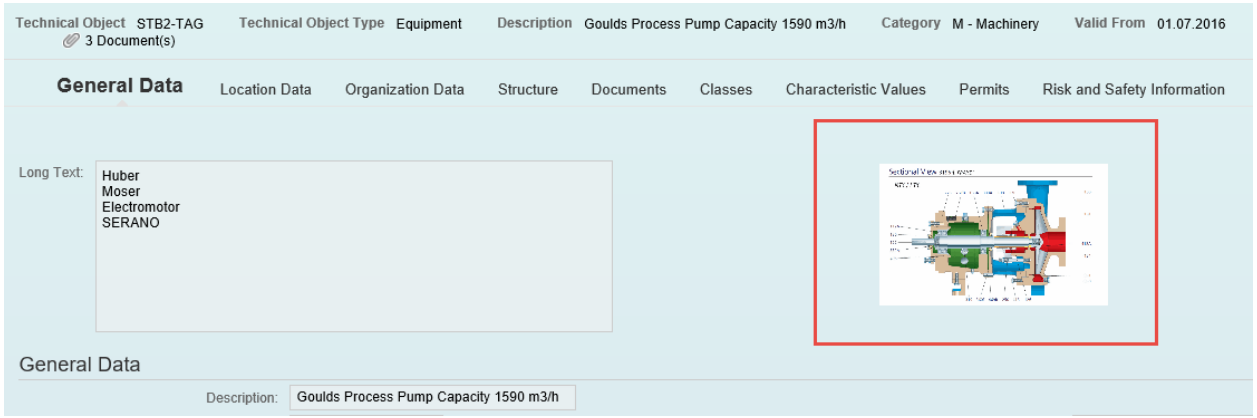
The following notes may help to understand and configure the PLM WUI Documents correctly:

- 1819440 - Understanding PLM WUI Documents and SAP DMS (FAQs) - describing the PLM WUI document behavior
- 1946629 - PLMWUI: Configuration Guide for Document Management on PLM Web UI - describing the configuration of DMS and Web UI in detail. The guide, attached to this note (`PLM_WUI_DMS_ConfigGuide_EN_EHP*.pdf`) covers the following areas:
  - Basic Document Management Configuration (SAP ERP Backend System)
  - Enhanced Document Management Configuration (PLM Web UI)
  - SAP 3D Visual Enterprise Generator

You find more information in the SAP Community Network about recent notes in the Web UI DMS Wiki.

12.3 Showing a Thumbnail in Technical Objects

You can display a very small picture of the original GIF file of the technical objects as a thumbnail in the screen area next to the long text field when displaying and changing technical objects on the SAP Web UI for Plant Maintenance. Therefore, EAM uses a functionality from SAP Product Lifecycle Management (PLM-WUI).



The following prerequisites must be met:

- You have activated the business function *PLM Web UI* (`/PLMU/WEB_UI`)
- You have attached a file with thumbnail information in the Document Management System (transaction `CV02N`).
- You have defined the search sequence for the file in Customizing in *Define Search Sequence for Viewable File* under *Logistics - General → Product Lifecycle Management (PLM) → PLM Web User Interface → Objects in PLM Web UI → Document in PLM Web UI* or directly in view `/PLMI/DIR_VSS` (transaction `SM30`).
- You have defined the search sequence for the file in Customizing for *Plant Maintenance and Customer Service → Master Data in Plant Maintenance and Customer Service → Basic Settings → Define Search Sequence for Viewable File* or directly in view `DMS_EAM_VEG_V_VSS`.

You can also visualize technical objects as thumbnails using the SAP 3D Visual Enterprise Viewer. For more information, see the documentation on the SAP Help Portal about the EAM integration with SAP 3D Visual Enterprise.

13 BAdIs and User Exits in EAM Web UI

13.1 Web Dynpro-Specific BAdIs

The Business Add-Ins (BAdIs) listed in the next chapters are available in all Web UI applications of EAM. They belong to the PLM framework on which these applications are built. Most of them react to a filter for the application name, e.g. EAMS_NTF for the notification application.

13.1.1 Enhancement Spot /PLMU/ES_FRW_CONSUMER_APPCC

You can use BAdI `/PLMU/EX_FRW_CONSUMER_APPCC` (*OIF Application Controller*) to influence the application logic and the appearance of the Web UI. The BAdI reacts to filter values:

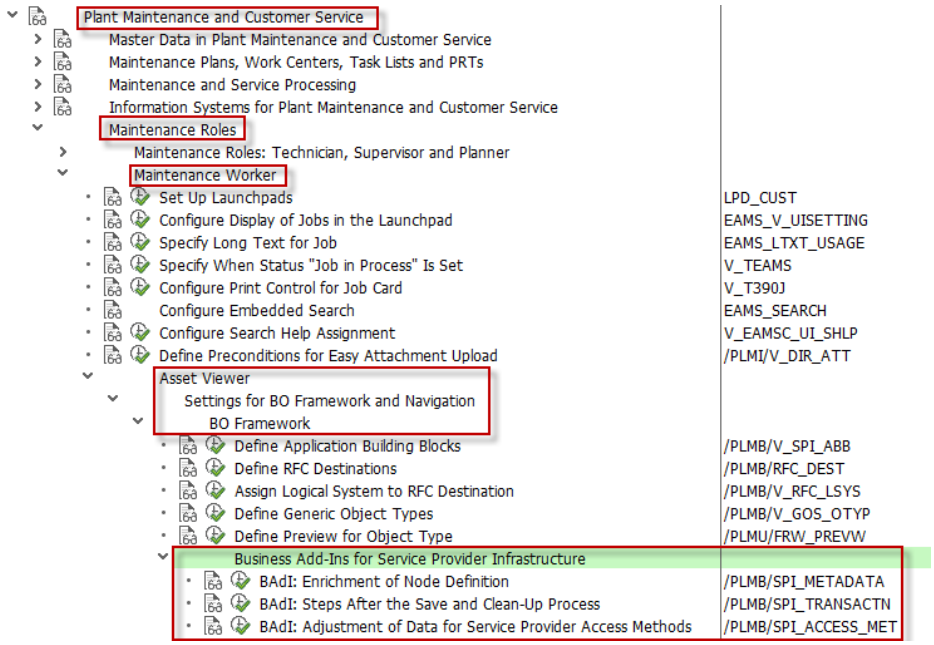
`WD_APPLICATION_NAME`	Character-like	Web Dynpro Application Name
`WDAPPLICATIONCONFIGURATIONID`	Character-like	Web Dynpro Application Configuration ID

Furthermore, the enhancement spot contains the BAdIs `/PLMU/EX_FRW_APPCC_GAF` and `/PLMU/EX_FRW_APPCC_OVP` for additional types of Floorplan definitions.

13.1.2 Enhancement Spot /PLMB/ES_SPI

In enhancement spot /PLMB/ES_SPI you find several BAdIs for enhancing and influencing the data of any Web Dynpro application. Two of the BAdIs can only be implemented by SAP, which is indicated in the usability-section.

Some of the BAdIs can be found via the IMG.



For a detailed explanation of SPI Framework Enhancements, see the Service Provider Infrastructure WIKI for Enhancements.

Example: You want to issue a message that a technical object has got a warranty

When you create a maintenance notification a message pops up in SAPGui transaction `IW21` regarding the warranty check. It is not implemented by SAP in EAM Web Dynpro applications.

The warranty check in Notification and Order can be achieved with an implementation of BAdI `/PLMB/EX_SPI_APPL_ACCESS` in enhancement spot `/PLMB/ES_SPI`.

The BAdI definition `/PLMB/EX_SPI_APPL_ACCESS` has several methods which can change data or do checks on data at different points in time of the execution of a Web UI application.

It reacts on filter values for *Application Building Block* and *Node Name* (would be for maintenance notification: `EAMS_NTF` and `EAMS_HEADER`).

The function module for bringing up the popup in SAPGui is `WARRANTY_CHECK_POPUP`. Parts of the coding should be copied to method `AFTER_RETRIEVE` of the BAdI Implementation in `/PLMB/ES_SPI` and an information message can be send to the UI that a warranty exists for the technical object.

13.2 BAdIs Influencing the Web UI Logic

This chapter provides an overview about all BAdIs that are available for the specific applications, such as creating and changing technical objects, maintenance orders, notifications, task lists, and maintenance plans. Originally these BAdIs were created to enhance or change the business logic of SAP GUI transactions. If the respective implementations exist, you can also use these BAdIs for influencing the Web UI logic. Additionally, BAdIs are listed that were created for influencing the Web UI logic only. The following list contains the most important BAdIs, but please note that the list may not be complete.

13.2.1 BAdIs for Technical Objects

The BAdIs listed here are available in the **EAM Technical Object** Web UI application and can be implemented by customers.

BAdI-Definition	BAdI-Description
/PLMI/EX_DIR_THMB	BAdI: Change Thumbnail Search
/PLMU/EX_FRW_SIDEPANEL	Side Panel BAdI Definition
APB_LAUNCHPAD_SELPAR	Modification of Selection Parameters in Launchpad
BADI_APB_LPD_MODIFY_LPD_LIST	Modify the Launchpad records
BADI_ESH_IF_F4_MODIFY_STEP	Allows modifications in the search help exit at runtime
BSV_STATUS_PROFILE	BAdI for Status Profile Evaluation
CACL_MAIN01	BAdI for Required Field Check
DMS_ES_GET_FILE	Get File For 3D And 2D Viewing
BADI_EAM_STRUCTURE_LIST	Extend Structure Lists
EAML_CHECK_LFE_DATA	BAdI for Checking Linear Data
EAML_LFE_SCREEN_MODIFICATION	BAdI for Customers to Modify Layout of Linear Fields
EAML_POINT_BY_MARKER	BAdI for Customer to Adjust Linear Point Determination (F4)
EAMS3_STRUCTURE_LIST_DATE	BAdI: Modification of Date for Structure List Explosion (Web UI)
BADI_EAMVE_FILE_SEARCH	BAdI: File Determination Logic for SAP 3D Visual Enterprise Viewer
BADI_IUID	Customer BAdI for Item Unique Identifier
BADI_IUID_MAN_ADJ_CON	BAdI for Modifying Adjusted Content in Manually-Created IUID Messages

13.2.2 BAdIs for Notifications

The BAdIs listed here are available in the **EAM Maintenance Notification** Web UI application and can be implemented by customers.

BAdI-Definition	BAdI-Description
/PLMU/EX_FRW_SIDEPANEL	Side Panel BAdI Definition
APB_LAUNCHPAD_SELPAR	Modification of Selection Parameters in Launchpad
BADI_APB_LPD_MODIFY_LPD_LIST	Modify the Launchpad records
BSV_STATUS_PROFILE	BAdI for Status Profile Evaluation
FMEF_FACTORY	Own Factory for Earmarked Fund Objects

BAdI-Definition	BAdI-Description
BADI_ESH_IF_F4_MODIFY_STEP	Allows modifications in the search help exit at runtime
DFPS_NOTIFICATION3	Check Constistent Data for Technical Status During Posting
BADI_EAM_AUTHORITY_CHECK_ORDER	Additional Authorization Check for Orders
EAM_WKCTR_SYNC	Synchronization of Work Center in Order and Notification
EAML_CHECK_LFE_DATA	BAdI for Checking Linear Data
EAML_LFE_SCREEN_MODIFICATION	BAdI for Customers to Modify Layout of Linear Fields
EAML_POINT_BY_MARKER	BAdI for Customer to Adjust Linear Point Determination (F4)
EAMS3_STRUCTURE_LIST_DATE	BAdI: Modification of Date for Structure List Explosion
BADI_IUID	Customer BAdI for Item Unique Identifier
NOTIF_EVENT_POST	Notification Update: Retrieval of Notification Data
CACL_CLASSIFICATION_UPDATE	Classification Update
/SPE/PICK_PARTS	BAdI for Pick Parts in EWM Material Staging
BADI_EAM_ITOB_BAPI_CUST_FIELDS	BAdI: Modification of Data in BAPIs for Technical Objects
IWON_NOTIFICATION	BAdI: Modification of Data in Notification BAPIs

13.2.3 BAdIs for Maintenance Orders

The BAdIs listed here are available in the **EAM Maintenance Order** Web UI application and can be implemented by customers.

BAdI-Definition	BAdI-Description
/PLMU/EX_FRW_SIDEPANEL	Side Panel BAdI Definition
APB_LAUNCHPAD_SELPAR	Modification of Selection Parameters in Launchpad
BADI_APB_LPD_MODIFY_LPD_LIST	Modify the Launchpad records
BSV_STATUS_PROFILE	BAdI for Status Profile Evaluation
DMS_ES_GET_FILE	Get File For 3D And 2D Viewing
BADI_EAM_AUTHORITY_CHECK_ORDER	Additional Authorization Check for Orders
MEASPOINT_CHECK	BAdI: Perform Measuring Point Checks in PRT Environment
EAM_WKCTR_SYNC	Synchronization of Work Center in Order and Notification
EAML_CHECK_LFE_DATA	BAdI for Checking Linear Data
EAML_LFE_SCREEN_MODIFICATION	BAdI for Customers to Modify Layout of Linear Fields

BAdI-Definition	BAdI-Description
EAML_POINT_BY_MARKER	BAdI for Customer to Adjust Linear Point Determination (F4)
BADI_EAMVE_FILE_SEARCH	BAdI: File Determination Logic for SAP 3D Visual Enterprise Viewer
BADI_ESH_IF_F4_MODIFY_STEP	Allows modifications in the search help exit at runtime
EAMCC_DOCUMENT_BADI_WD	BAdI: Documents in Order/Task List (SAP Web UI)
EAMS3_STRUCTURE_LIST_DATE	BAdI: Modification of Date for Structure List Explosion (Web UI)
BADI_IUID	Customer BAdI for Item Unique Identifier
PS_FUNCTION_SWITCH	BADI to switch on PS functions
BADI_PS_HLP_DRAFTS_EXIST	Check for Draft Existence
EAM_INSP_ROUNDS_CHECKS	BAdI: Make Checks When Changing Technical Objects
BADI_WCM_WCMOBJ	WCM: WCM Objects
BADI_WCM_ORDER	WCM: WCM-Relevant Order

13.2.4 BAdIs for Task Lists

The BAdIs listed here are available in the **EAM Task List** Web UI application and can be implemented by customers.

BAdI-Definition	BAdI-Description
APB_LAUNCHPAD_SELPAR	Modification of Selection Parameters in Launchpad
BADI_APB_LPD_MODIFY_LPD_LIST	Modify the Launchpad records
BADI_ESH_IF_F4_MODIFY_STEP	Allows modifications in the search help exit at runtime
BSV_STATUS_PROFILE	BAdI for Status Profile Evaluation
DMS_ES_GET_FILE	Get File For 3D And 2D Viewing
BADI_EAM_STRUCTURE_LIST	Extend Structure Lists
EAMCC_DOCUMENT_BADI_WD	BAdI: Documents in Order/Task List (SAP Web UI)
EAMS3_STRUCTURE_LIST_DATE	BAdI: Modification of Date for Structure List Explosion (Web UI)
BADI_EAMVE_FILE_SEARCH	BAdI: File Determination Logic for SAP 3D Visual Enterprise Viewer
EAM_INSP_ROUNDS_CHECKS	BAdI: Make Checks When Changing Technical Objects
BADI_WCM_WCMOBJ	WCM: WCM Objects

13.2.5 BAdIs for Maintenance Plans

The BAdIs listed here are available in the **EAM Maintenance Plan** Web UI application and can be implemented by customers.

BAdI-Definition	BAdI-Description
APB_LAUNCHPAD_SELPAR	Modification of Selection Parameters in Launchpad
BADI_APB_LPD_MODIFY_LPD_LIST	Modify the Launchpad records
BADI_ESH_IF_F4_MODIFY_STEP	Allows modifications in the search help exit at runtime
BADI_EAM_STRUCTURE_LIST	Extend Structure Lists
EAML_CHECK_LFE_DATA	BAdI for Checking Linear Data
EAML_LFE_SCREEN_MODIFICATION	BAdI for Customers to Modify Layout of Linear Fields
EAML_POINT_BY_MARKER	BAdI for Customer to Adjust Linear Point Determination (F4)
BADI_EAMS_VB_GEODB	BAdI: Enhancements for EAMS VB GeoDB
EAMS3_STRUCTURE_LIST_DATE	BAdI: Modification of Date for Structure List Explosion (Web UI)
MPLAN_BADI_HEADER_SAVE	Customer Enhancement When Saving Maintenance Plan

13.3 User Exits in Web UI

All User Exits that are listed here affect the data in the SAP GUI transactions as well as in Web Dynpro applications. A User Exit that was implemented in a specific SAP GUI transaction influences the corresponding Web Dynpro application as well. Nevertheless, we recommend further testing before you use the User Exits in a Web Dynpro application.

13.3.1 User Exits in Technical Objects

Exit Name	Enhancement	Description
IEQM0001	EXIT_SAPLIEL2_002	Add. checks for equip. installation at functional locations
IEQM0002	EXIT_SAPLIEL2_001	Additional checks for definition of equipment hierarchies
MGA00003	EXIT_SAPLOMCV_001	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_002	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_901	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_902	Material Master (Industry and Retail): Number Display

Exit Name	Enhancement	Description
ICSV0008	EXIT_SAPLIPAR_004	Validation of additional partner types
ILOM0002	EXIT_SAPLILOS_001	User exit when checking structure of location numbers
MCI10001	EXIT_SAPLMCI1_001	MCI1: PMIS/QMIS updating

13.3.2 User Exits in Notifications

Exit Name	Enhancement	Description
ICSV0003	EXIT_SAPLIPAR_002	Partner selection
ICSV0008	EXIT_SAPLIPAR_004	Validation of additional partner types
IWOC0002	EXIT_SAPLIQS0_001	PM/SM notification: Check whether status change is allowed
IWOC0003	EXIT_SAPLIWO1_004	PM/SM authorization check of ref. object and planner group
IWOC0003	EXIT_SAPLIWO1_005	PM/SM authorization check of ref. object and planner group
MGA00003	EXIT_SAPLOMCV_001	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_002	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_901	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_902	Material Master (Industry and Retail): Number Display
QQMA0013	EXIT_SAPMIWO0_019	QM: Default Values when Creating a Task
QQMA0019	EXIT_SAPLIQS0_006	QM/PM/SM: Default Partner when Creating a Notification
QQMA0025	EXIT_SAPLIQS0_017	PM/SM: Default values when adding a notification
QQMA0026	EXIT_SAPLIBER_001	PM/SM: Auth. check when accessing notification transaction

13.3.3 User Exits in Orders

Exit Name	Enhancement	Description
BBPK0001	EXIT_SAPLBBPK_001	Exit for determining the external procurement profile
IWO10002	EXIT_SAPLCOIH_002	PM maintenance order: Customer check for order release
IWO10005	EXIT_SAPLCOIH_005	Maintenance order: Cust.-specif. determination of profit ctr
IWO10007	EXIT_SAPLCOIH_007	Maint.order: Customer enhancement - permits in the order
IWO10009	EXIT_SAPLCOIH_009	PM Order: Customer Check for 'Save' Event
IWO10010	EXIT_SAPLCOIH_010	Maint. order: Cust. enhancement for determining WBS element

Exit Name	Enhancement	Description
IWO10022	EXIT_SAPLCOIH_014	Determine calendar from user exit
IWO10025	EXIT_SAPLCOIH_025	PM/SM order: Finding responsible cost center
IWOC0003	EXIT_SAPLIWO1_004	PM/SM authorization check of ref. object and planner group
IWOC0003	EXIT_SAPLIWO1_005	PM/SM authorization check of ref. object and planner group
MGA00003	EXIT_SAPLOMCV_001	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_002	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_901	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_902	Material Master (Industry and Retail): Number Display
QQMA0026	EXIT_SAPLIBER_001	PM/SM: Auth. check when accessing notification transaction
STATTEXT	EXIT_SAPLBSVA_001	Modification exit for formatting status text lines

13.3.4 User Exits in Task Lists

Exit Name	Enhancement	Description
CPAU0001	EXIT_SAPLCPAU_001	Enhancement for Authorization Check in Task Lists
MGA00003	EXIT_SAPLOMCV_001	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_002	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_901	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_902	Material Master (Industry and Retail): Number Display
PCSD0007	EXIT_SAPLCSDI_007	Check changes in STKO
PCSD0005	EXIT_SAPLCSDI_006	BOMs: component check for material items

13.3.5 User Exits in Maintenance Plans

Exit Name	Enhancement	Description
MGA00003	EXIT_SAPLOMCV_001	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_002	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_901	Material Master (Industry and Retail): Number Display
MGA00003	EXIT_SAPLOMCV_902	Material Master (Industry and Retail): Number Display

Exit Name	Enhancement	Description
IWOC0003	EXIT_SAPLIWO1_004	PM/SM authorization check of ref. object and planner group

13.3.6 Replaced User Exits

The following user exits are among others not called in the Web Dynpro applications anymore. You find in the following table a BAdI name where you can implement additional logic instead.

No more used Exit	BAdI - use instead	BAdI Description
QQMA0014	NOTIF_EVENT_SAVE	Change When Saving Notification
IEQM0003	EQUI_UPDATE *	Equipment Master Data

* Note: The BAdI EQUI_UPDATE is called in update task - this means for example the change of the equipment user status data is not yet saved to the database and you don't have access to the just changed user status in some application internal table. A solution is to put the logic into an RFC-enabled function module which is called in this BAdI implementation the following way: `CALL 'Z_PROXY_FM' STARTING NEW TASK.`

When this function module is called once all changes by the registered function modules in update task are committed by the `COMMIT` of the update process. In this case you start sending data (like messages) only after the updates have been finished successfully and you are able to read the user status data from the database. In case of a `ROLLBACK` no messages are sent.

14 Breakpoints

Transaction SAAB is used to maintain and activate checkpoint groups for checkpoints that can be activated (assertions, breakpoints, and logpoints).

For Enterprise Asset Management the following groups exist:

EAM_TZS_GEN	EAM: Time Zone Support generic Checkpoint
EAM_TZS_PAI	EAM: Time Zone Support PAI Checkpoint
EAM_TZS_PBO	EAM: Time Zone Support PBO Checkpoint
EAM_WKCTR_SYNC	EAM_WKCTR_SYNC
EAML	Linear Asset Management
EAMS_UI_BCV	Checkpoint Group for BCV Tagging and BAdI
EAMWS_SCL	EAM Worker Safety List of Relevant Risks

When dealing with Business Context Viewer the following groups may be of interest.

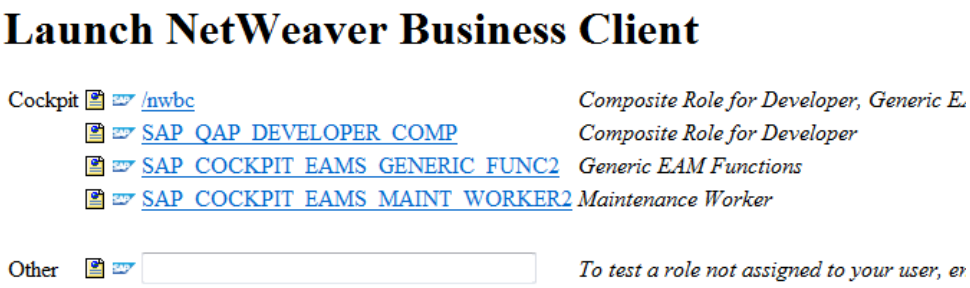
/BCV/CFG	BCV Configuration Assertions
/BCV/FND	BCV Foundation Assertions
/BCV/QRM	BCV Query Management Assertions

Depending on the framework on which EAM Web UI is based, you can use the input help to find all checkpoint groups starting with /PLMB/ and /PLMU/.

15 APPENDIX (Tips & Tricks)

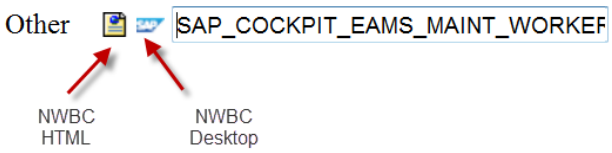
15.1 Starting the NWBC with PFCG Roles

- Log on to your system and enter `NWBC` in the transaction field.
- A browser window opens and shows all roles that are assigned to the user.
- Choose a role from the list or enter a role manually in the entry field *Other*.



Starting SAP NetWeaver Business Client for HTML or Desktop with PFCG role

15.2 NWBC for HTML or Desktop

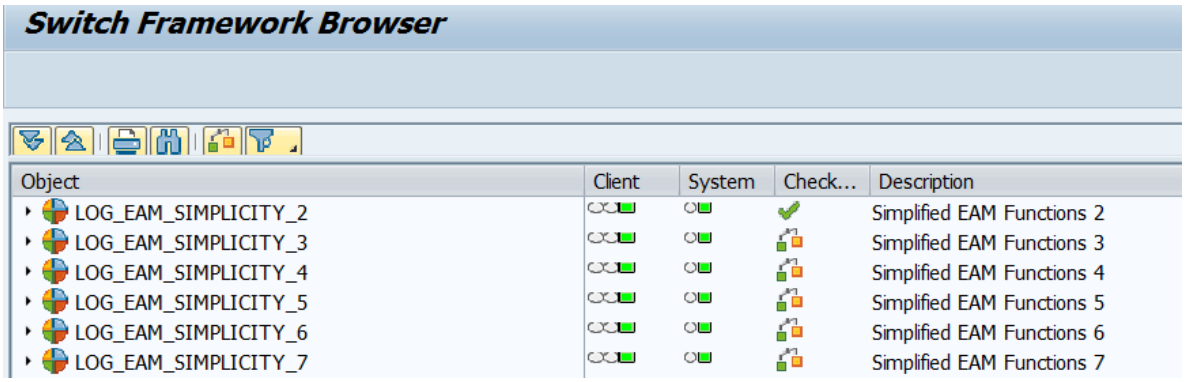


To test a role not assigned to your user, enter the role and choose one of the icons to start NWBC for Desktop or NWBC for HTML.

With the icon in front of the role, you can choose either the NWBC for HTML or NWBC for Desktop

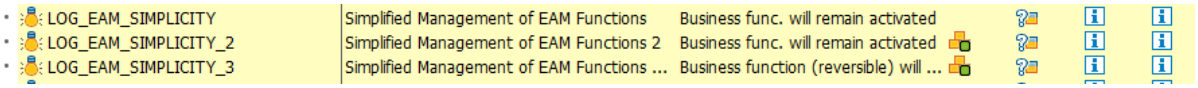
15.3 Checking the Status of Business Functions

- Log on to your system and enter `SFW_BROWSER` in the transaction field.
- Filter or search for the business function



Alternatively you can proceed as follows:

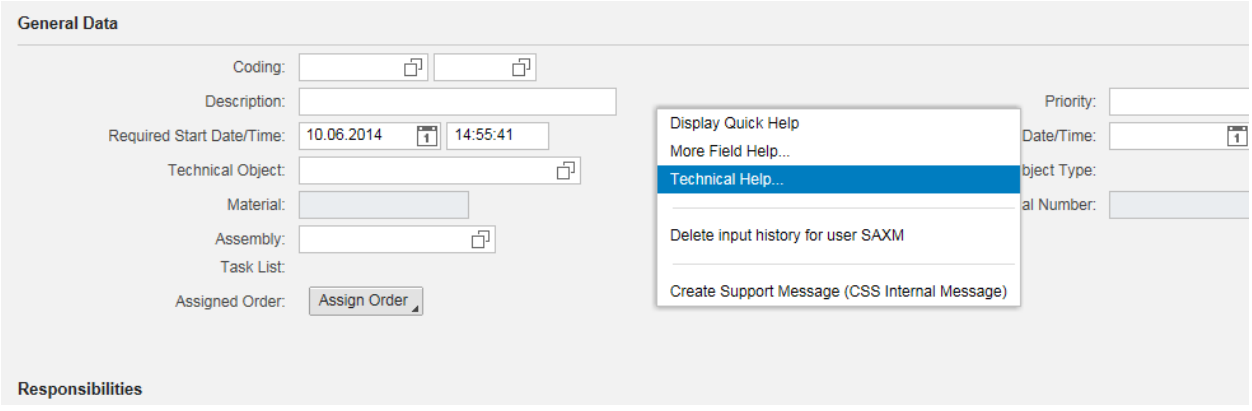
- Log on to your system and enter `SFW5` in the transaction field.
- Select folder *ENTERPRISE BUSINESS FUNCTIONS* and look for the required BF. The light bulb indicates whether the respective business function is activated or not.



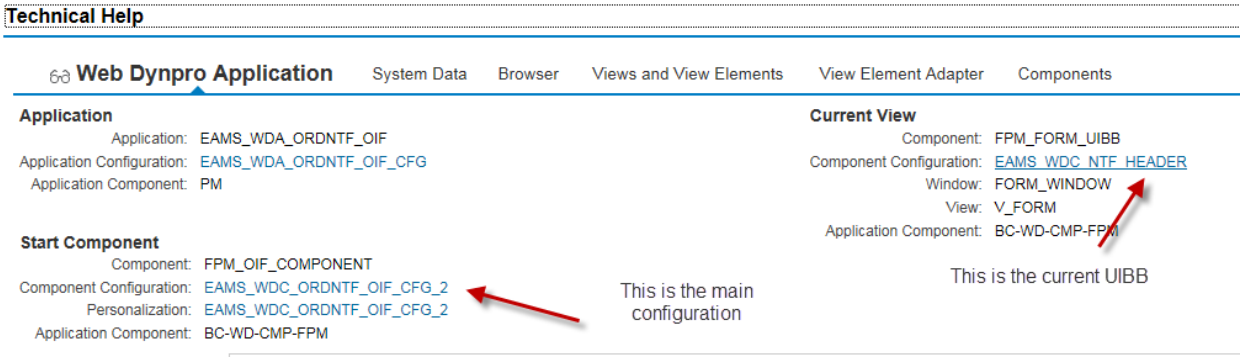
Here the business function `LOG_EAM_SIMPLICITY_3` is active, as well as the prerequisite BFs.

15.4 Entering the Component Configuration of a UIBB

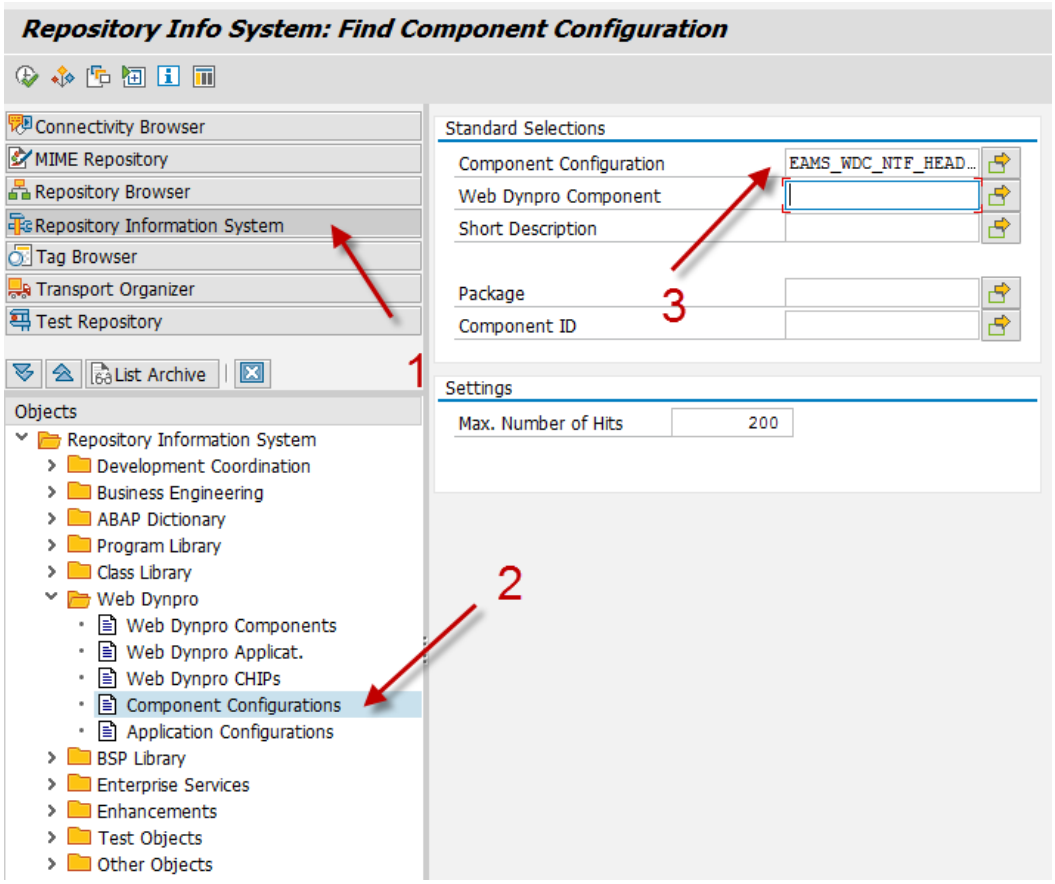
If you want to find out the configuration name of a specific UIBB, log on to the corresponding Web Dynpro application in NWBC. Put the mouse cursor on the UIBB and open the context menu by clicking the right mouse button. In the context menu choose *Technical Help*.



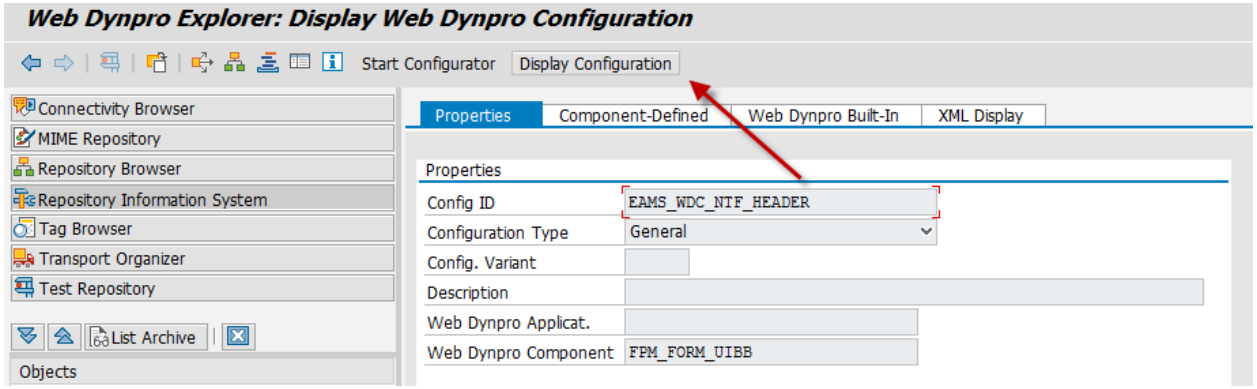
On the popup window you find the name of the Component Configuration. Links enable you to directly navigate to the respective configurations.



If you know the name of the configuration already, you can use transaction `SE80` to access the configuration. Select the *Repository Information System* (1), then *Component Configurations* (2) and enter the name of the configuration you want to look at or change (3).



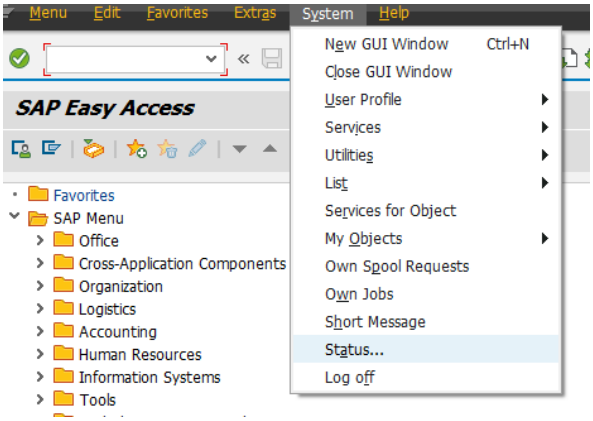
To display or change the configuration, choose execute and double-click on the search result. Then choose the *Display Configuration* button.



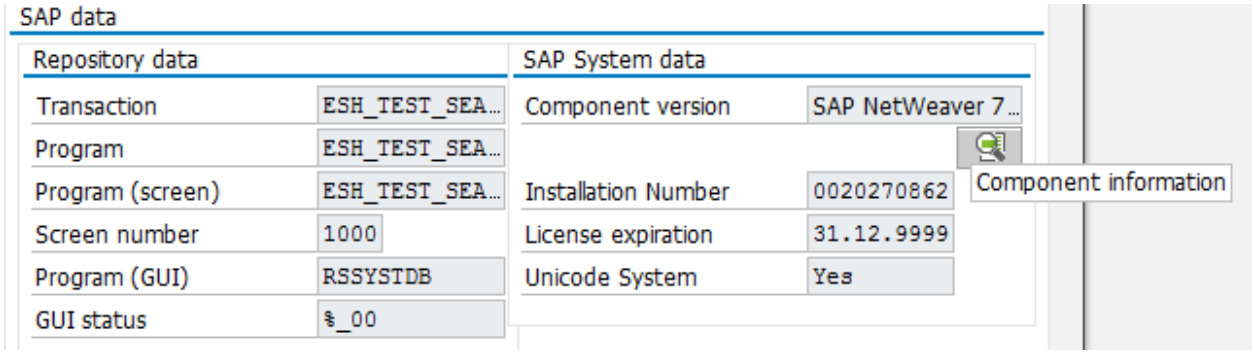
The system opens the configuration initially in display mode. If you want to make changes to the configuration, you have to switch to change mode first.

15.5 Finding out the Release and SP Level of a Software Component

If you want to find out the release and support package level of a software component, log on to the system and choose the menu entries *System* -> *Status.*



In the group box *SAP data*, column *SAP System data*, select the details for the *Component information*:

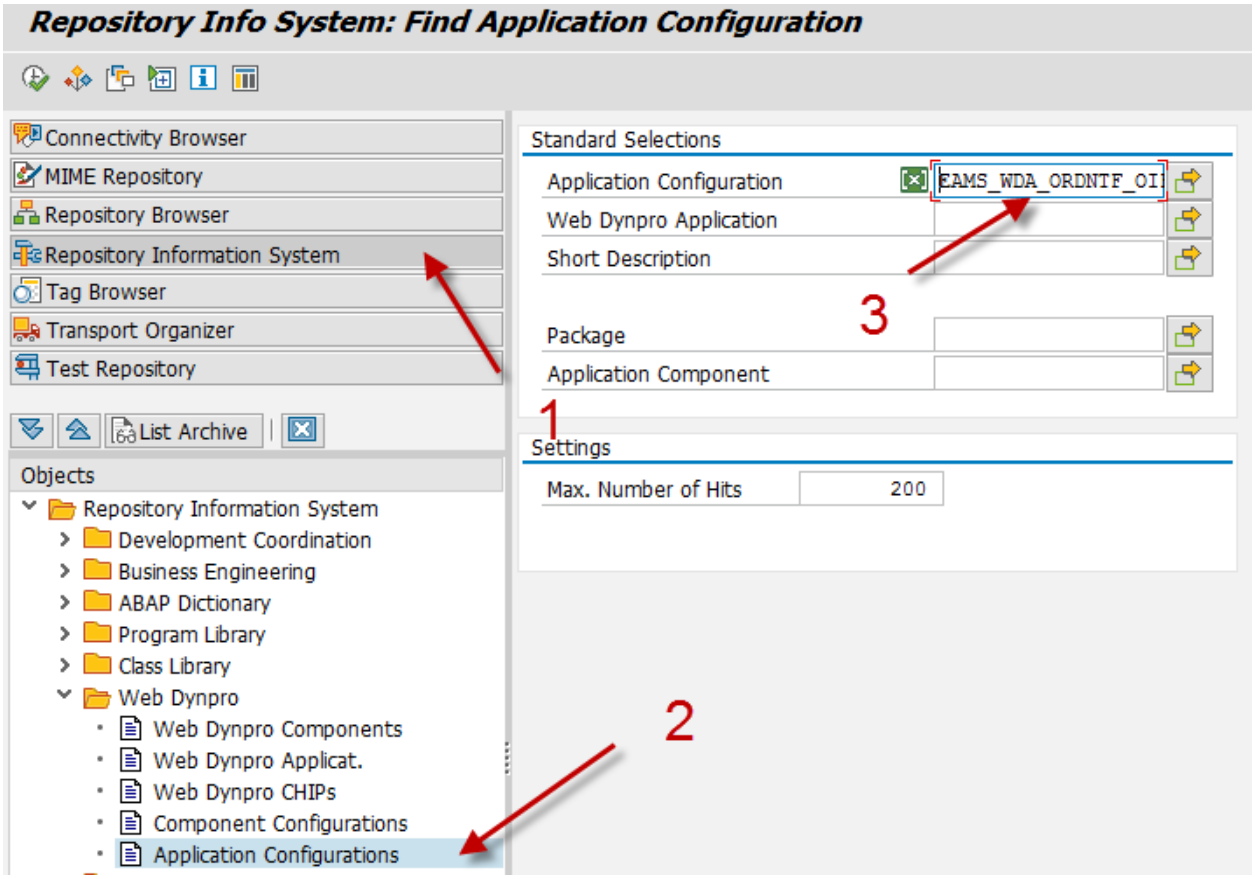


In this example, the software component SAP_APPL is on release SAP enhancement package 7 for SAP ERP 6.0 SP 04.

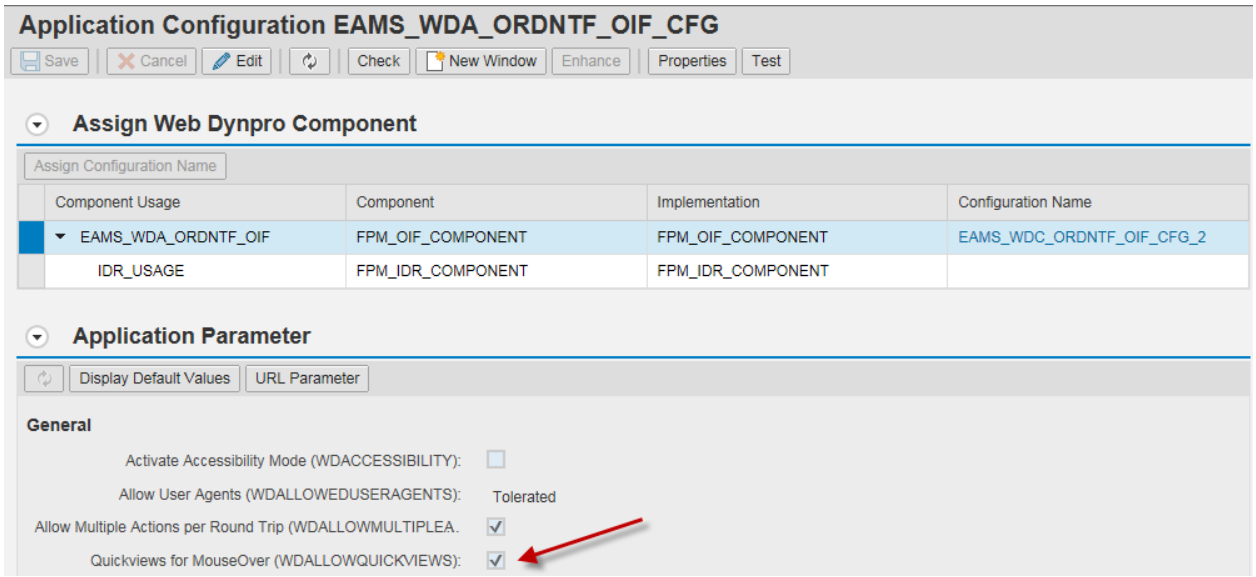
Component	Release	SP-Level	Support Package	Type	Short description of the component
MDG_APPL	607	0008	SAPK-60708INMDGAPPL		MDG Applications 607
SAP_APPL	617	0004	SAPKH61704		Logistics and Accounting
SAP_FIN	617	0004	SAPK-61704INSAPFIN		SAP_FIN

15.6 Displaying or Suppressing Quickviews in an Application

You can determine whether quickviews are displayed or suppressed in individual applications. To open the respective Web Dynpro application, select the *Repository Information System* (1) in transaction SE80. Then select *Application Configurations* (2) and enter the name of the configuration you want to look at or change (3). In this example, you open the configuration for the Notification EAMS_WDA_ORDNTF_OIF_CFG.



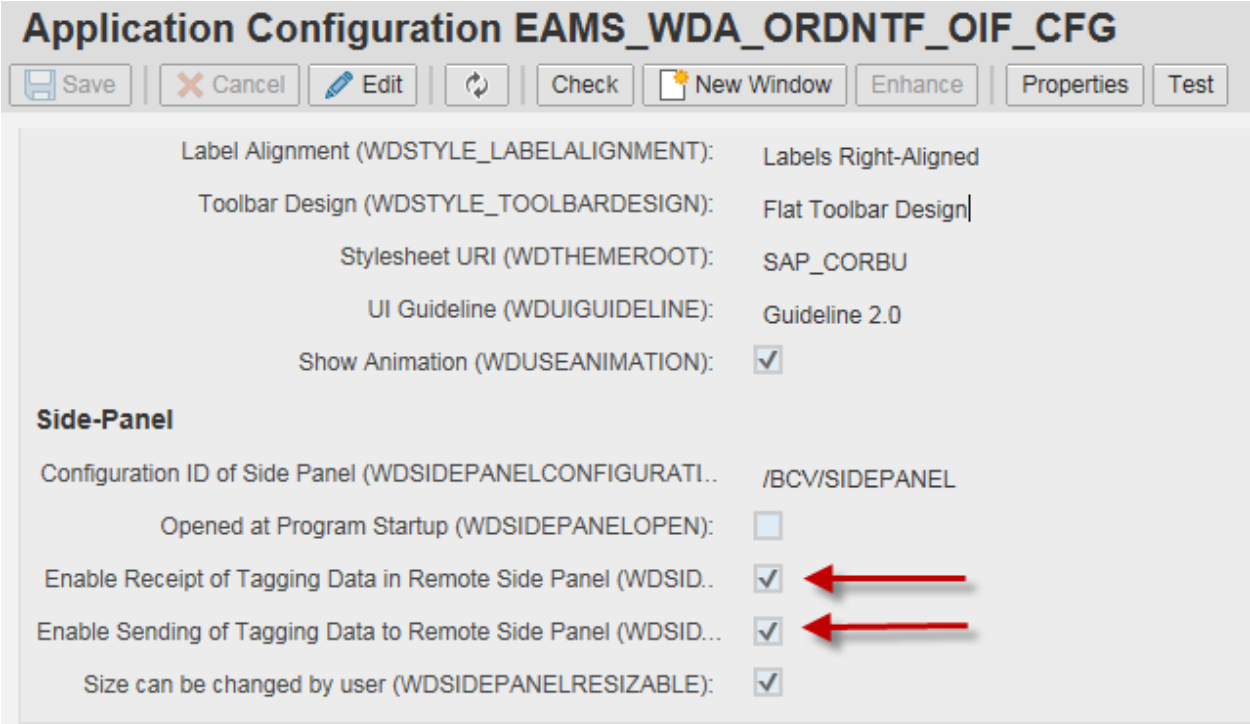
Open the configurator in display mode and check the application parameters. If you want the system to display quickviews in the application, make sure that the application parameter WDALLOWQUICKVIEWS is set. You can deselect the checkbox if you want to suppress quickviews in a specific application.



Hint: You can also make settings for quickviews that are valid for a whole client, independently from the application. For more information, see 15.8.

15.7 Allowing Data for Side Panels to be Sent and Received

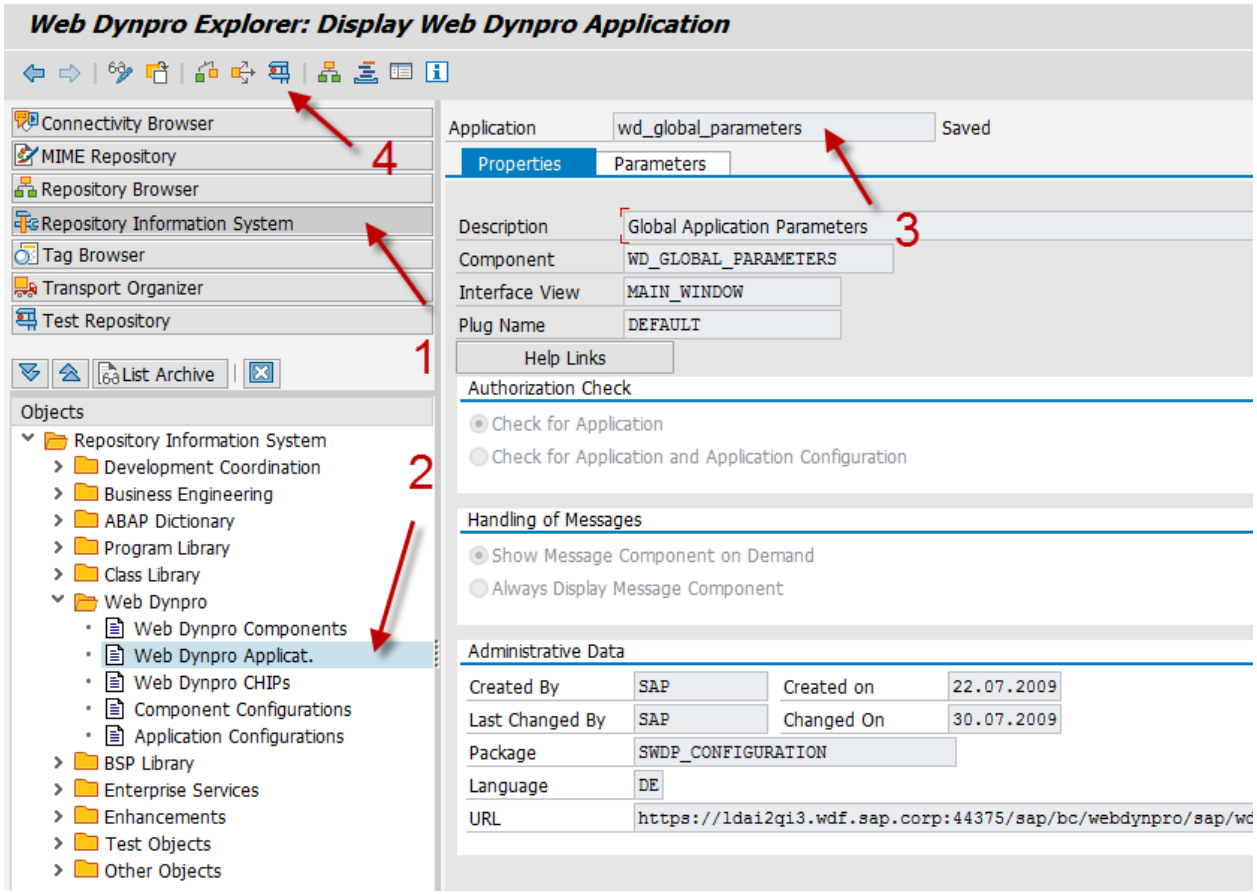
If you want to use side panels in Web Dynpro applications for Plant Maintenance and display context-sensitive information, you have to allow data to be exchanged between the side panel and the application. To do so, enter the application configuration of a Web Dynpro application as described in chapter 3. Check if you have selected the checkboxes of the application parameters `WDSIDEPANELREMOTECONSUMER` and `WDSIDEPANELREMOTEPRODUCER`. If these checkboxes are not selected, the side panel CHIPs will not receive any data from the application and will remain empty.



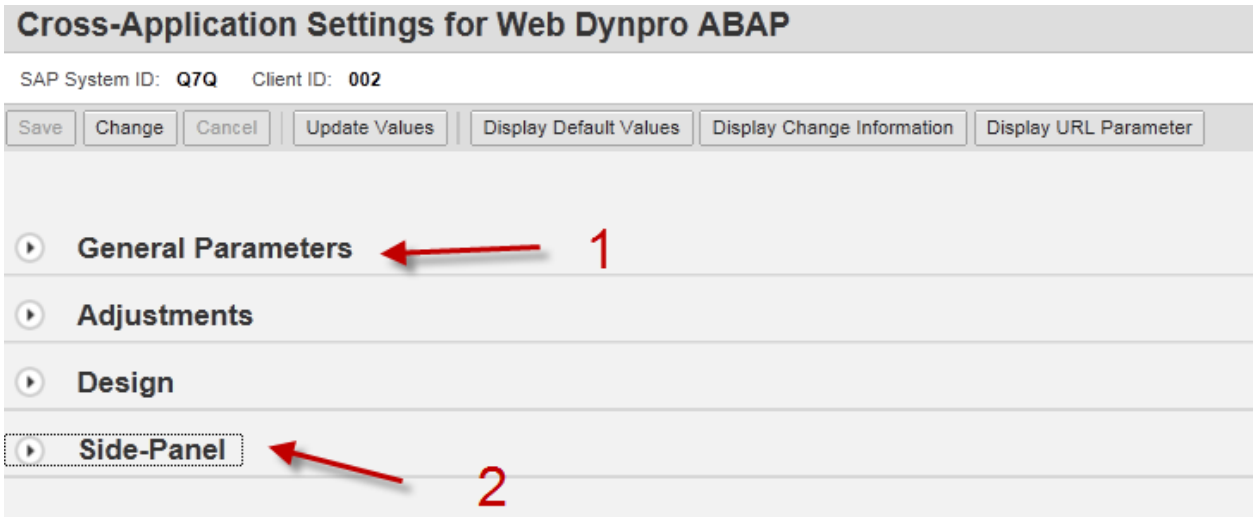
Hint: You can also make settings for side panels that are valid for the whole client, independently from the application. For more information, see 15.8.

15.8 Global Web Dynpro Parameter Settings for the Whole Client

If you want to make Web Dynpro settings that are valid for the whole client, select the *Repository Information System* (1) in transaction `SE80`. Then select *Web Dynpro Applications* (2) and enter `WD_GLOBAL_PARAMETERS` (3) as the application name. Start the application by choosing the button *Test/Execute* F8 (4).



In the *Cross-Application Settings for Web Dynpro ABAP* you see all parameter settings for the client, grouped in four sections:

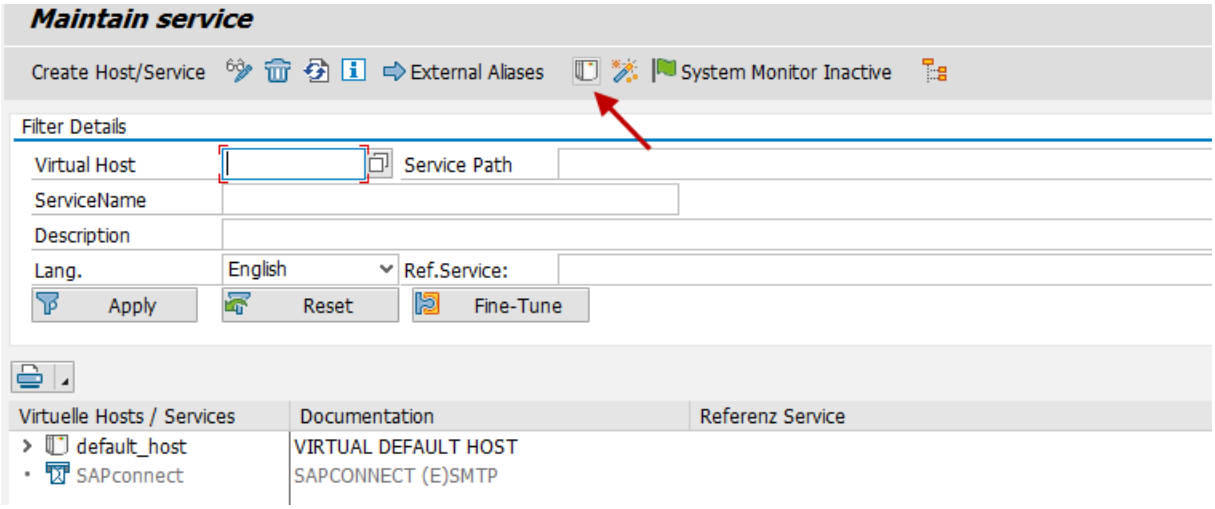


- To display or suppress quickviews for the whole client, change the parameter `WDALLOWQUICKVIEWS` in the *General Parameters*. For more information about quickview settings for individual applications, see chapter 15.6.

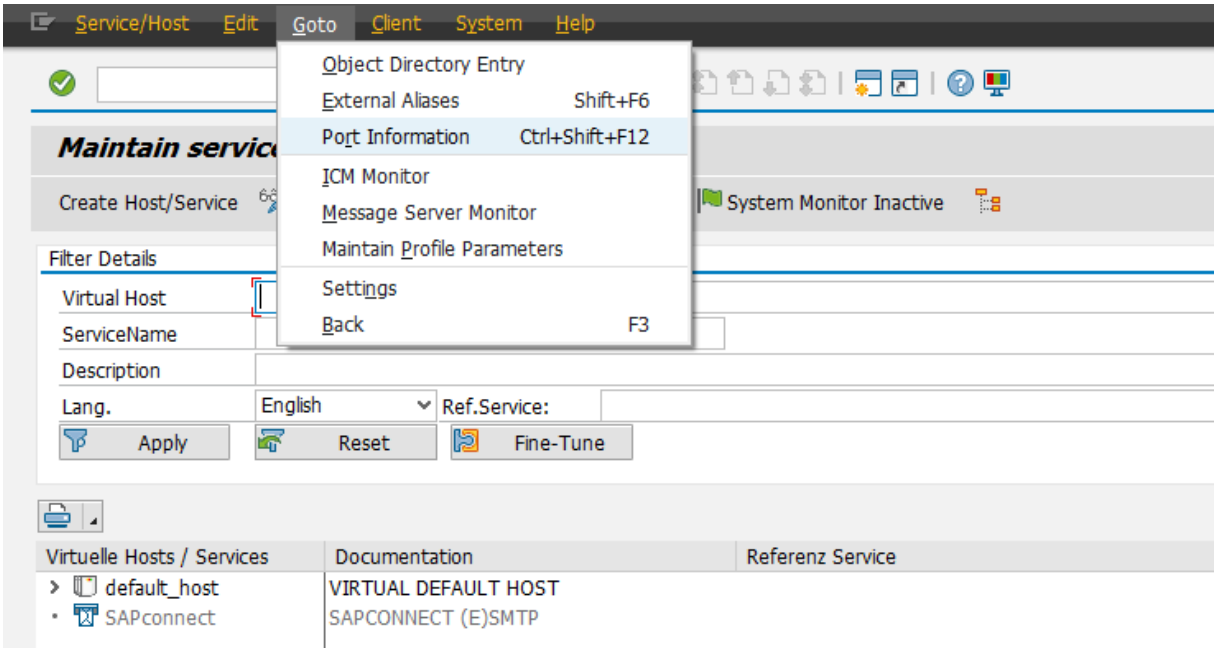
- To enable side panels to receive and send data, select the checkboxes of the parameters `WDSIDEPANELREMOTECONSUMER` and `WDSIDEPANELREMOTEPRODUCER` in section *Side-Panel* (2). For more information about side panel settings for individual applications, see chapter 15.7.

15.9 Determining HTTP/HTTPS Port Numbers

If you want to enable cross-system navigation and therefore have to find out the HTTP/HTTPS port numbers, choose *Tools -> Administration -> Network* and execute *HTTP Service Hierarchy Maintenance* (transaction `SICF`) in the SAP menu. After you have executed the report, choose the *Information on Port and Host* button.



To display the required HTTP/HTTPS port numbers, choose *Goto -> Port Information* in the toolbar.



15.10 Report for Metadata for Web UI

To use the report, create an executable Z-report in the ABAP Editor (transaction code `SE38`) and copy the attached coding. Create the following five text symbols for the report.

001	Node Name	9	19
002	MP Name	7	17
003	Structure Name	14	24
004	Structure Description	21	42
005	Field Name	10	20

Save and activate the report before executing.

Coding:

```
REPORT zz_get_mp_data.
TYPES: BEGIN OF  lty_output.
TYPES:
  abbid       TYPE /plmb/spi_abbid,
  mp_name     TYPE /plmb/spi_mp_name,
  sp_name     TYPE /plmb/spi_sp_name,
  struc_descr TYPE char40,
  field_name  TYPE dd03l-fieldname,
  END OF lty_output.

DATA: ls_output TYPE lty_output,
      lt_output TYPE STANDARD TABLE OF lty_output.

DATA:  lo_metadata_base  TYPE REF TO /plmb/if_spi_metadata_base,
       lt_metadata_node  TYPE /plmb/t_spi_metadata_node,
       ls_metadata_node  TYPE /plmb/s_spi_metadata_node,
       ls_metadata_abbid TYPE /plmb/s_spi_metadata_abbid,
       ls_abbid          TYPE /plmb/s_spi_abb,
       ls_dd03l          TYPE dd03l,
       lt_dd03l          TYPE STANDARD TABLE OF dd03l.

DATA: ls_layout TYPE slis_layout_alv,
      lt_fcat   TYPE slis_t_fieldcat_alv,
      ls_fcat   TYPE slis_fieldcat_alv.
FIELD-SYMBOLS:  <fs_output>  TYPE  lty_output,
                <fs_fcat>    TYPE  lvc_s_fcat,
                <fs_dd03l>   TYPE  dd03l.

PARAMETERS: p_abbid TYPE /plmb/spi_abbid OBLIGATORY,
    p_field TYPE dd03l-fieldname.

SELECT SINGLE abbid FROM /plmb/spi_abb INTO ls_abbid-abbid WHERE abbid = p_abbid.
IF sy-subrc NE 0.
  MESSAGE e001(cg) WITH p_abbid.
  EXIT.
```

```
ENDIF.

CALL METHOD /plmb/cl_spi_abb=>get_abb(
  EXPORTING
    iv_abbid = p_abbid
  IMPORTING
    es_abb   = ls_abbid ).

CREATE OBJECT lo_metadata_base
  TYPE (ls_abbid-mp_name).

lo_metadata_base->get_node_definition(
    EXPORTING
     iv_abbid           = p_abbid
   IMPORTING
     et_metadata_node   = lt_metadata_node
     es_metadata_abbid  = ls_metadata_abbid ).

LOOP AT lt_metadata_node INTO ls_metadata_node.
  ls_output-abbid   = ls_abbid-abbid.
  ls_output-mp_name = ls_metadata_node-name.
  ls_output-sp_name = ls_metadata_node-data_struc.
  APPEND ls_output TO lt_output.
ENDLOOP.

*read structure descriptions
IF lt_output IS NOT INITIAL.
  LOOP AT lt_output ASSIGNING <fs_output>.
    SELECT SINGLE ddtext FROM dd02t INTO <fs_output>-struc_descr
      WHERE tabname = <fs_output>-sp_name.
  ENDLOOP.
ENDIF.

* search for field in structures (DD03L)
IF p_field IS NOT INITIAL AND lt_output IS NOT INITIAL.
  ls_dd03l-fieldname = p_field.
  LOOP AT lt_output ASSIGNING <fs_output>.
    SELECT SINGLE * FROM dd03l INTO ls_dd03l
      WHERE tabname = <fs_output>-sp_name
      AND fieldname = ls_dd03l-fieldname.
    IF sy-subrc = 0.
      <fs_output>-field_name = ls_dd03l-fieldname.
    ENDIF.
  ENDLOOP.

ENDIF.

* create fieldcatalog
CLEAR ls_fcat.
ls_fcat-fieldname = 'ABBID'.
```

```
ls_fcat-inttype = 'C'.
ls_fcat-seltext_l = text-001.
ls_fcat-seltext_m = text-001.
ls_fcat-seltext_s = text-001.
APPEND ls_fcat TO lt_fcat.

CLEAR ls_fcat.
ls_fcat-fieldname = 'MP_Name'.
ls_fcat-inttype = 'C'.
ls_fcat-seltext_l = text-002.
ls_fcat-seltext_m = text-002.
ls_fcat-seltext_s = text-002.
APPEND ls_fcat TO lt_fcat.

CLEAR ls_fcat.
ls_fcat-fieldname = 'SP_Name'.
ls_fcat-inttype = 'C'.
ls_fcat-seltext_l = text-003.
ls_fcat-seltext_m = text-003.
ls_fcat-seltext_s = text-003.
APPEND ls_fcat TO lt_fcat.

CLEAR ls_fcat.
ls_fcat-fieldname = 'Struc_descr'.
ls_fcat-inttype = 'C'.
ls_fcat-seltext_l = text-004.
ls_fcat-seltext_m = text-004.
ls_fcat-seltext_s = text-004.
APPEND ls_fcat TO lt_fcat.

CLEAR ls_fcat.
ls_fcat-fieldname = 'field_name'.
ls_fcat-inttype = 'C'.
ls_fcat-seltext_l = text-005.
ls_fcat-seltext_m = text-005.
ls_fcat-seltext_s = text-005.
APPEND ls_fcat TO lt_fcat.

*define layout
CLEAR ls_layout.
ls_layout-coltab_fieldname = 'TABCOL'.
ls_layout-expand_fieldname = 'X'.
ls_layout-colwidth_optimize ='X'.

* display output table
CALL FUNCTION 'REUSE_ALV_GRID_DISPLAY'
  EXPORTING
    i_grid_title  = 'Web UI Structures per Node'
    is_layout     = ls_layout
    it_fieldcat   = lt_fcat
```

```
  TABLES
    t_outtab      = lt_output
  EXCEPTIONS
    program_error = 1
    OTHERS        = 2.
IF sy-subrc <> 0.
  MESSAGE ID sy-msgid TYPE sy-msgty NUMBER sy-msgno
          WITH sy-msgv1 sy-msgv2 sy-msgv3 sy-msgv4.
ENDIF.
```

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Material Number: