Implement screen exit for MM01/MM02/MM03

HOT

By Vijayanand Poreddy

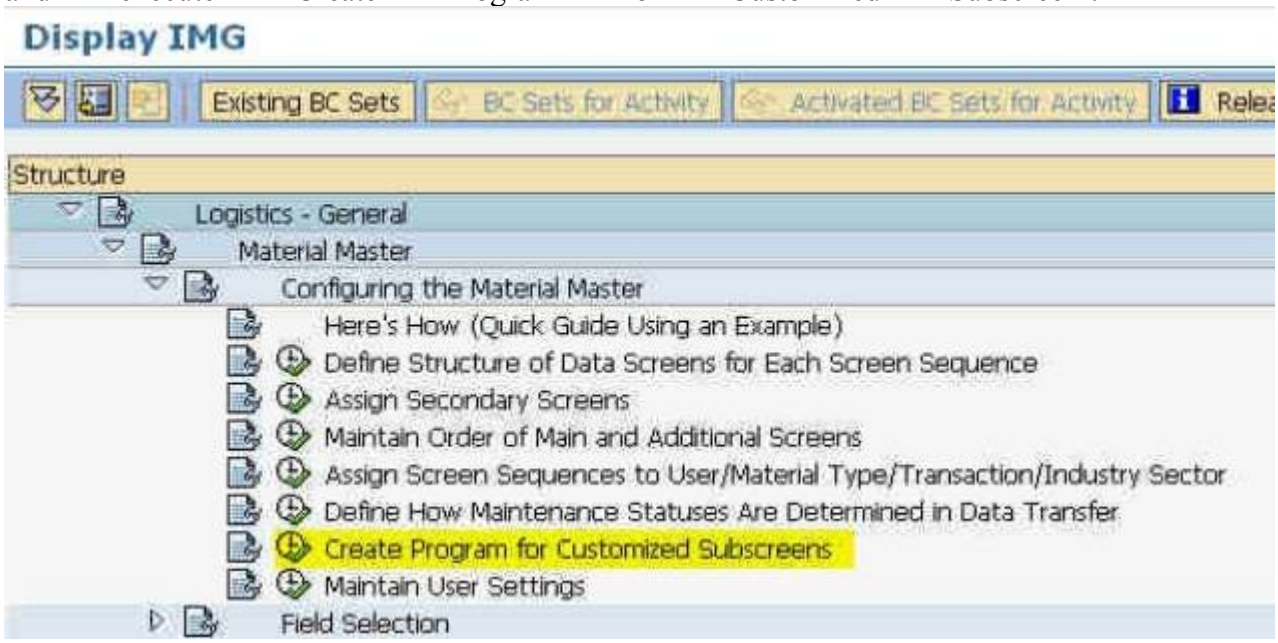
Requirement:

Add new field(s) to MM01 basic data 1 view (screen) and store the values into a Ztable along with material number as primary key.

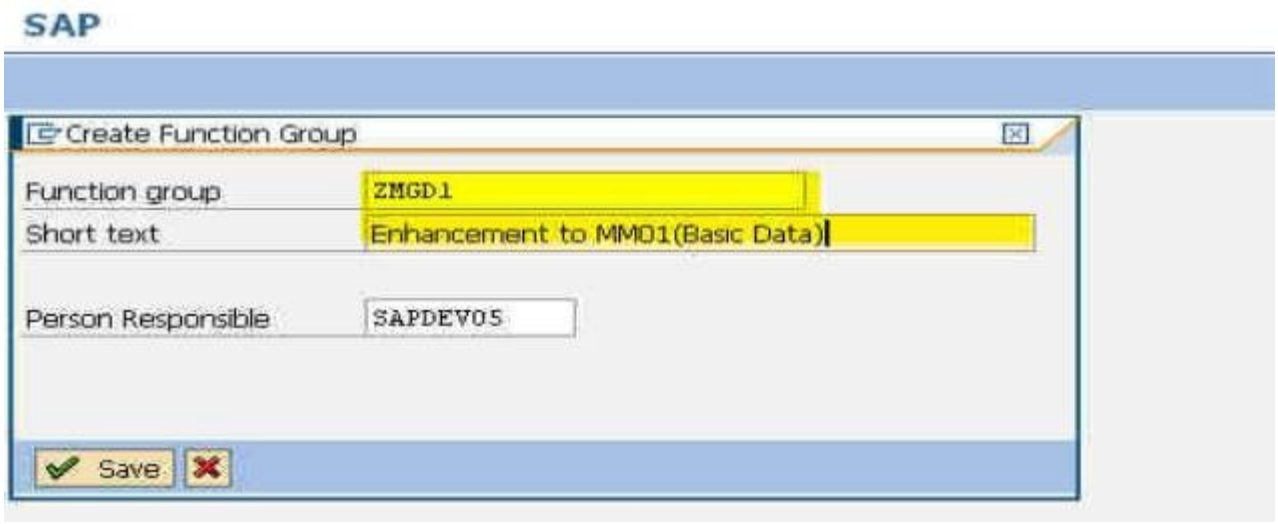
Solution:

1. Go to Transaction SPRO, Display IMG.

2. Go to Logistics-General → Material Master → Configuring the material master and execute 'Create Program for Customized Subscreen'.

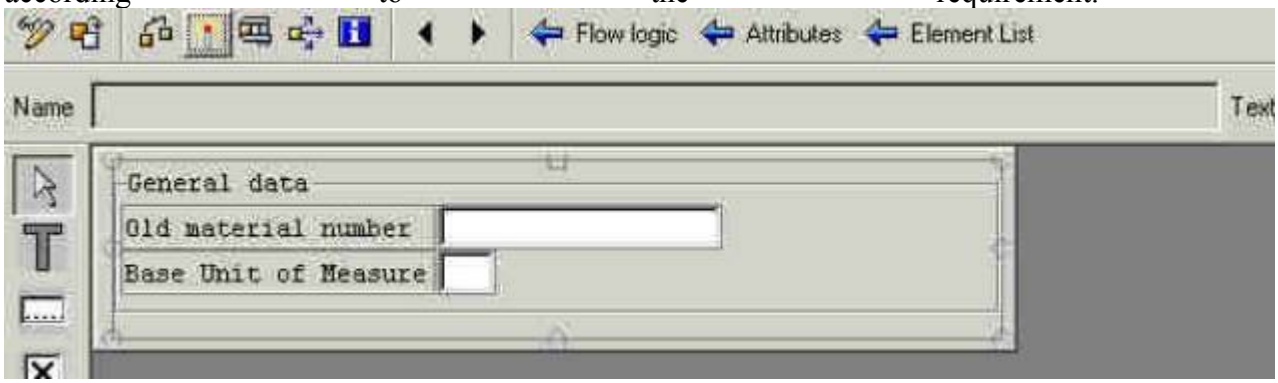


3. Create a function group of your own with Y or Z. In this case the function group name given ZMGD1.

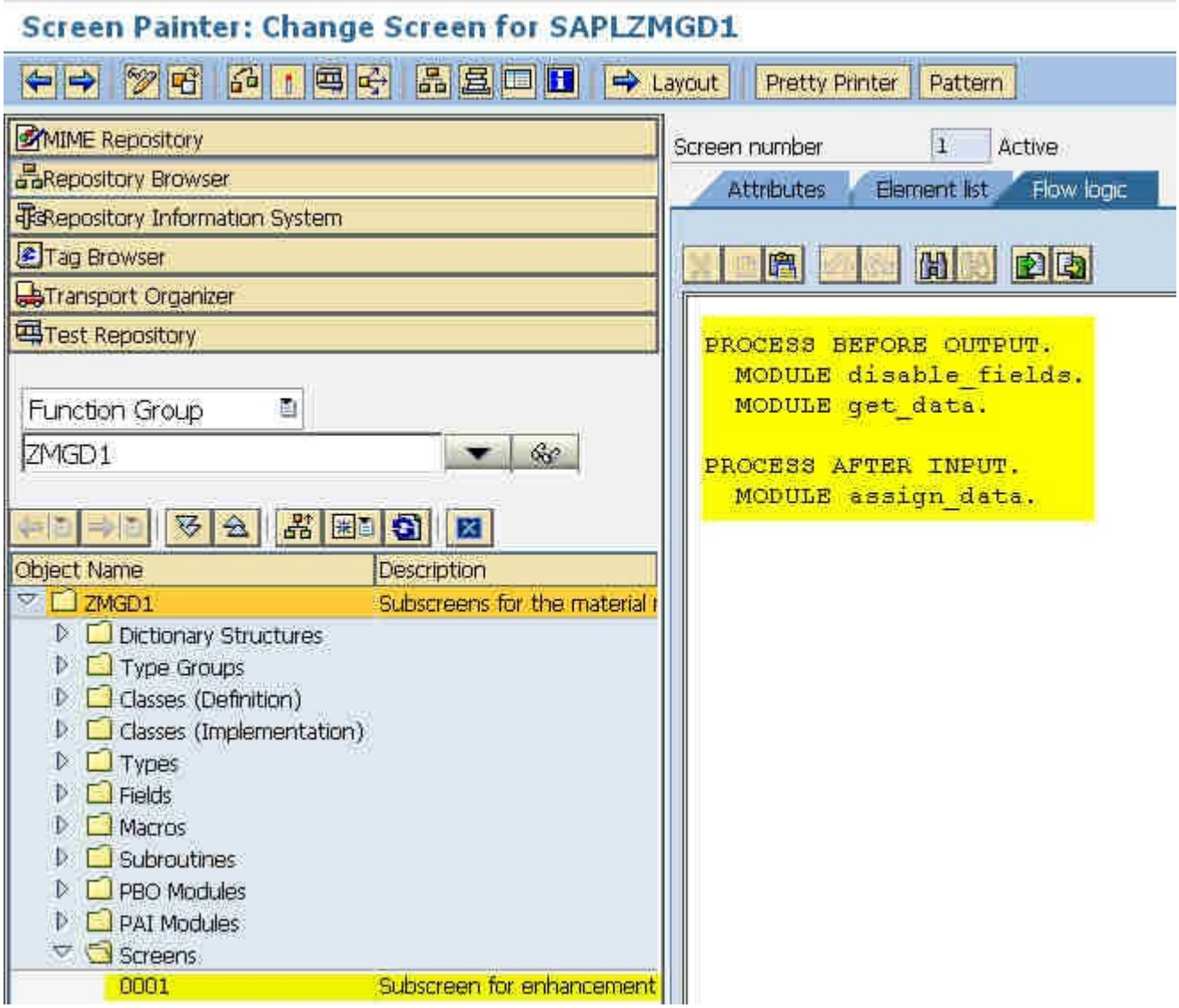


4. Go to transaction SE80 and open the function group created, here the function group is ZMGD1.

5. Open the screen 0001. Using screen design layout (SE51), customize the screen according to the requirement.



6. Write the flow logic in PAI and PBO as per the requirement.



7. PBO

- Inactive the fields for input when material is displayed (MM03)

```
*&---------------------------------------------------------------------*
*&      Module  disable_fields  OUTPUT
*&---------------------------------------------------------------------*
* Disable the fields for input
*----------------------------------------------------------------------*
MODULE disable_fields OUTPUT.

  IF sy-tcode = 'MM03'.
    LOOP AT SCREEN.
      screen-input = '0'.
      MODIFY SCREEN.
    ENDLOOP.
  ENDIF.
ENDMODULE.                    " disable_fields  OUTPUT
```

- Retrieve the data from Ztable for material change/display (MM02/MM03)

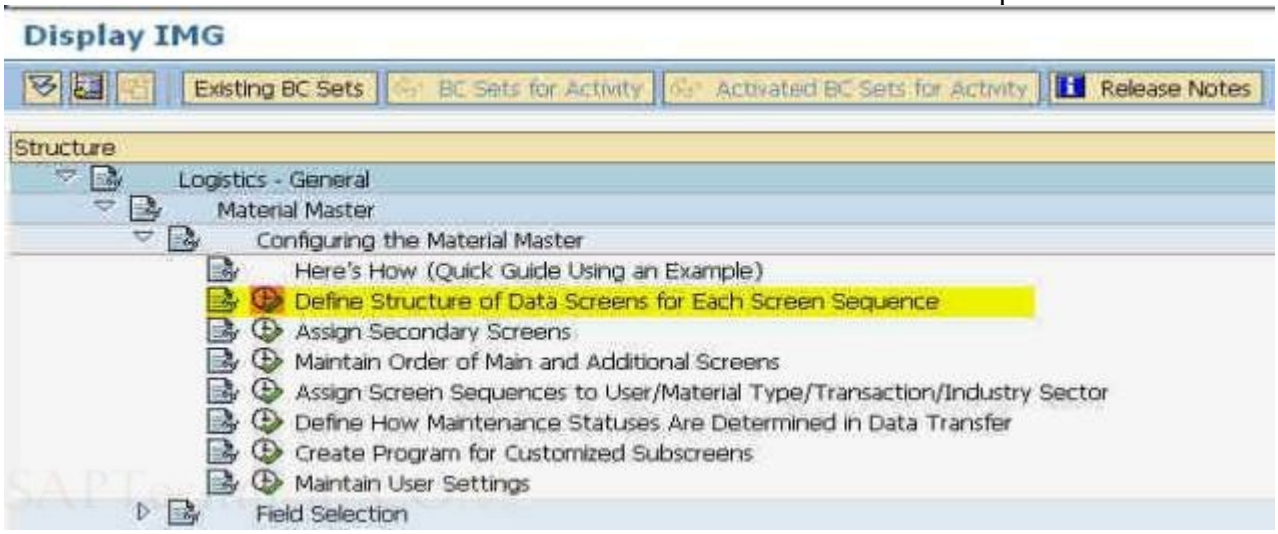
```
*&---------------------------------------------------------------------*
*&      Module  GET_DATA  OUTPUT
*&---------------------------------------------------------------------*
* This subroutine is used to get the data from Ztable
*----------------------------------------------------------------------*
MODULE get_data OUTPUT.
  IF sy-tcode EQ 'MM03'
  OR sy-tcode EQ 'MM02'.
    GET PARAMETER ID w_mat FIELD w_matnr.
    SELECT SINGLE
           bismt
           meins
      INTO (zmara_old-bismt,
            zmara_old-meins)
      FROM zmara_old
     WHERE matnr EQ w_matnr.
    IF sy-subrc EQ 0.
*     Do Nothing
    ENDIF.                             " IF sy-subrc EQ 0.
  ENDIF.                               " IF sy-tcode EQ 'MM03'
ENDMODULE.                             " GET_DATA  OUTPUT
```

8. PAI

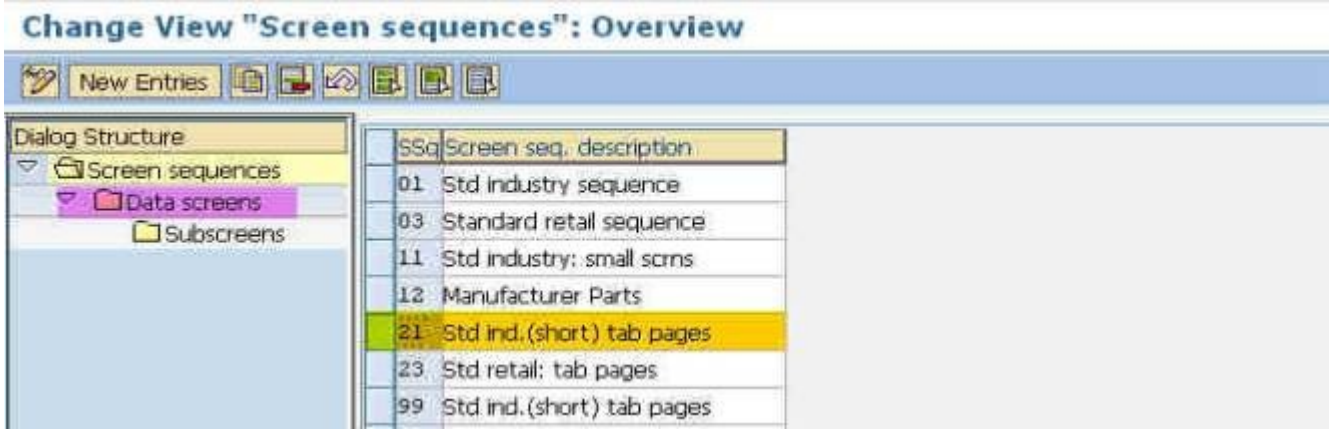
- Export the data into memory

```
*&---------------------------------------------------------------------*
*&      Module  ASSIGN_DATA  INPUT
*&---------------------------------------------------------------------*
* Export the data into memory
*---------------------------------------------------------------------*
MODULE assign_data INPUT.

  EXPORT zmara_old TO MEMORY ID 'ZMARA_OLD'.

ENDMODULE.                                  " ASSIGN_DATA  INPUT
```

9. Now go to transaction SPRO, Display IMG then go to Logistics-General → Material Master → Configuring the material master and execute 'Define Structure of Data Screens for Each Screen Sequence'.

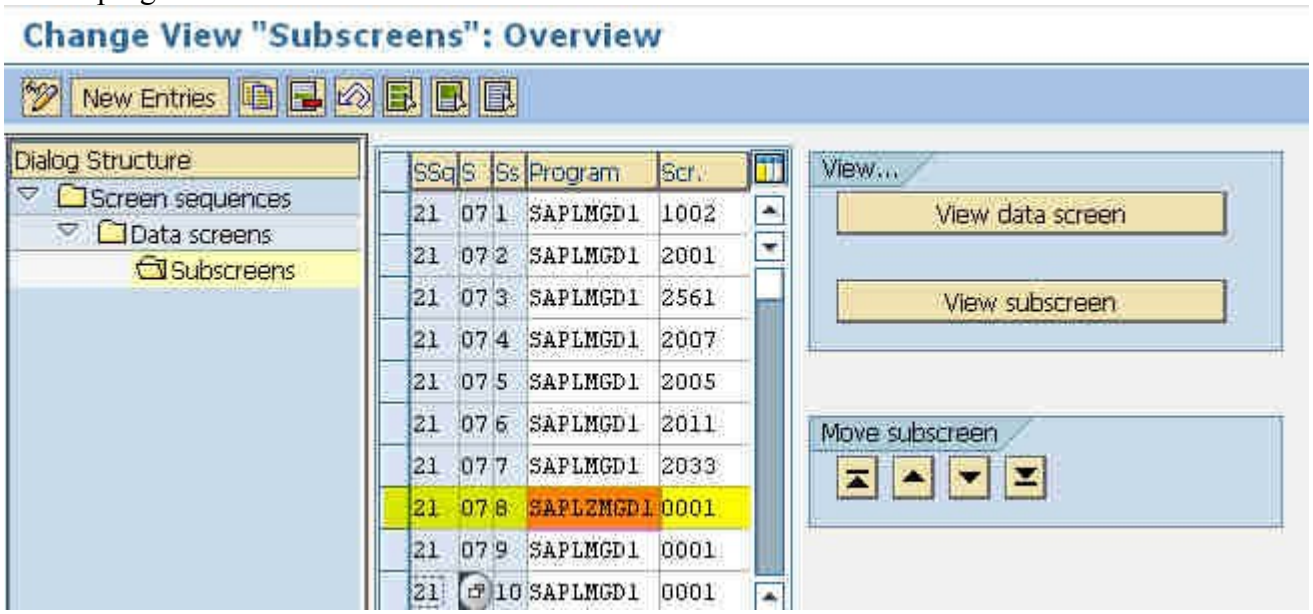


10. Select the corresponding screen sequence number and double click on data screen button. In this case screen sequence '21' has modified.



11. Select logical screen 07 (Basic Data 1) and double click on Subscreens.

12. In change view of subscreens, modify the program name of sub screen 21→07→08 to the subscreen program name which is created in step 6. In this case the program name is SAPLZMGD1. Save the modifications.



13. Now to save the given enhanced field value in the Ztable, write the required code in the user exit EXIT_SAPLMGMU_001.

- Import the data from memory (The data which is exported in PAI event, refer step 8)

```
TABLES:
  zmara_old.

IF sy-ucomm EQ 'BU'.
  IMPORT zmara_old FROM MEMORY ID 'ZMARA_OLD'.
  MOVE cmara-matnr TO zmara_old-matnr.
  MODIFY zmara_old FROM zmara_old.
ENDIF.                                  " IF SY-UCOMM EQ 'BU'.
```

Execute the transaction MM01/MM02/MM03 and test the scenario developed.

How to implement screen exit for a SAP standard transaction

By Roshini

Introduction

SAP provides standard transactions to enter data into database. But a client may want to maintain some additional information in SAP other than what is provided.
To make provisions for this, additional screens have to be provided and additional fields must be added into appropriate database table.
To pave way for this, SAP has provided the option for screen exits. Usually, SAP provides the following:

1. An append structure in the database table with the new fields.
2. A subscreen area into the standard screen – where the programmer can attach his subscreen of his own program with the new fields.
3. A function group under which the new subscreen has to be created with the new fields.
4. Function exits to synchronize the PBO and PAI of the standard SAP program with the PBO and PAI of the subscreen – so that data can flow back and forth between the standard SAP program and the program written by the developer for the subscreen. These function modules also exist in the same function group under which the subscreen will have to be developed.

Finally, a linkage has to be done between the subscreen area of standard SAP screen with the custom subscreen constructed by the developer.
Typically, SAP provides an enhancement in which the developer can create an append structure, use the function exits to synchronize the PBO and PAI of the standard SAP program and the custom subscreen program, and make the necessary linking(as mentioned above in step 4. But, again, this is not a hard and fast rule. Linking in some case, is also done by configurations.) SAP also usually provides the name of the function group under which the subscreen has to be developed.
Necessary guidance about implementing a screen exit development is usually available in the Documentation section of the enhancement (can be availed by transaction SMOD).

Pre-Requisites

The developer to work on screen exit should have essential knowledge on the following:

- DDIC concepts, including the knowledge of append structure.
- Concept of SAP Enhancements and implementing them using Projects.
- Concept of function exits.
- Knowledge on Module Pool – including sub screens, Tab strip controls etc.

Steps

Guidelines

So, a developer can follow the guidelines mentioned below to implement a screen exit to a standard SAP transaction, as and when required:

Find out the Required Enhancements

1. Go to SMOD. Press F4 in the Enhancement field. In the next popup window, click pushbutton 'SAP Applications'. A list will appear that contains information on all the enhancements, categorized under functional areas. Developer must search for the enhancements relevant to his functional area of interest – for e.g., Purchasing, Asset Accounting, etc.
2. Note down the enhancements. Then, come to the initial screen of SMOD and view the documentation of each enhancement to find out which one is required for your development.

Utilize the Enhancement in a Project

After you have found one, do as directed in the documentation. Generally, the steps are as follows:

1. Create a project using CMOD including your enhancement.
2. Create the append structure with new fields.
3. Go to the desired function group and create a subscreen with the new fields. Write PBO and PAI for the subscreen, if required.
4. Use the function exits in the enhancement to link the PBO and PAI of the subscreen with that of the main SAP program supporting the SAP transaction.
5. Maintain necessary linkage between the subscreen area of standard SAP program with the custom subscreen developed along with the custom program name. This can be done in the project (developed by CMOD including the enhancement) or outside as a part of configuration.
6. Activate the project.
7. Test to ensure that required functionality are met.

Case Study 1

Add three new custom fields for Asset master and maintain information for them

Requirement

Three fields in the legacy system have to be maintained in Asset master. These fields are:

1. Original Asset number – 20 characters
2. Location 2 – 15 Characters.
3. Model no – 20 characters

Location 2 should start with 'L'.

Pre-Analysis

Finding out the Enhancement

As described above, the enhancement is determined. It was found, that enhancement AIST0002 will serve the purpose. It contains the following components (can be viewed by transaction SMOD):
Exit Type Description EXIT_SAPL1022_001 Function Exit Check of User-Defined Fields when Using Create and Change BAPI EXIT_SAPLAIST_002 Function Exit Transfer Data for User Subscreens in PBO. EXIT_SAPLAIST_003 Function Exit Transfer of User-Defined Fields to SAP Master Data Transactions CI_ANLU Customizing Include Include structure to add new fields

Studying the Function Exits

The function module level documentation for the function exits are then viewed from transaction SE37. The documentation clearly laid out for the purpose for their use:
EXIT_SAPLAIST_002

Function module Level Documentation

This function module is called by asset master data maintenance at the start of the dialog. (When changing, it is called after reading of the data from the database; when creating it is called after the transfer of the default values from the asset class and reference asset.) The purpose of the function module is to enable this function group to recognize the master data. For interpreting or controlling master data fields that are important for user fields, it is possible to transfer to global variables at this point, so that they can be recognized when the user subscreens are processed.

Import Parameters

Understanding
This function module is called at the PBO to pass the information retrieved from the database to pass them to the custom subscreen and its underlying program. Import parameter : I_ANLU will be populated with the values for user-defined fields which will be passed to the subscreen program. So, there must be some sort of variable assignment from I_ANLU.
EXIT_SAPLAIST_003
Function module Documentation: This function module is called by SAP asset master data maintenance after the screens are processed, but before saving. The purpose of the function module is to transfer fields entered on user sub-screens of SAP asset data maintenance to the database for updating. The export parameter for this function module is:
Understanding
This function module will be used to transfer the user entered data in the subscreen fields to the main SAP program, which will then be saved into the database.

Studying the Documentation of the Enhancement

The enhancement documentation (as is viewed from the initial screen of SMOD] also supports the idea. Moreover, it informs that we need to develop a subscreen under function group XAIS. This is the function group under which the two function exit modules also exist. So, if the custom subscreen refers to the global data of the function group XAIS, then those values will also be available to these function exits as well.
Going to SE80 and viewing the function group XAIS helps us to inform that there are three DDIC tables declared for it:

Deciding the Final course of Action

After making all the investigations, the final course of action was determined.
SrlNo Step Justification

1. A project has to be created using transaction CMOD where the enhancement AIST0002 will be included.
2. Customizing include CI_ANLU has to be created with the custom fields demanded When CI_ANLU will be developed, the custom fields will get appended to the database table ANLU. Also, these fields will be used to create screen fields in the new subscreen.
3. A custom subscreen, say, 9000 will be developed under function group XAIS. The screen group for the screen will be 'CUST' (or any name). The three custom fields added to table ANLU (by creating CI_ANLU) will be used to create new fields in the screen.

In the PAI of the subscreen, validation for Location to start with 'L' will be added. The subscreen with three new fields has to be developed so that it can be attached to a subscreen area of the asset master screens.

1. In the custom include of the function exit module 'EXIT_SAPLAIST_002', the following code will be written:-

ANLU = I_ANLU. I_ANLU is the import parameter of this FM. The value is assigned to the global variable ANLU, referring which the three new subscreen fields are developed. So, data retrieved from database table ANLU will be passed to this FM as I_ANLU by the standard SAP main program. The value will be taken and passed to the global variable of the function group XAIS, so that the three custom fields (referring to ANLU of XAIS) get populated.

1. In the custom include of the function exit module 'EXIT_SAPLAIST_003', the following code will be written:-

E_ANLU = ANLU. The changed values in the subscreen fields exist in global variable ANLU for the function group XAIS. This function exit module will pass the data back to the SAP main program as E_ANLU.

1. Proper linkage/configuration has to be done so that the new subscreens get linked to the appropriate subscreen area of the Asset master screen. This has to be done – otherwise, the new custom subscreen will not be displayed in the Asset master screens.

Development

Creating a Project to include the enhancement

1. Go to transaction CMOD and create a project.
2. Enter a description for the project. Then, click on the pushbutton 'Enhancement Assignments' in the Application Toolbar.
3. Enter the name of the enhancement and Save.
4. Go to 'Components'.

Creating Custom Include for ANLU

The screen shown below will appear, showing all the enhancement components under the assignment AIST0002. Double-click on the name of the Include Structure to create it.
Create the include structure with three new fields, as required. Then, save and activate it.

Develop the subscreen and the program

Go to transaction SE80. For the function group XAIS, create a new subscreen 9000.
Create it as subscreen.
Then, go to the Layout of the screen and create three new fields from Database table ANLU.
Drag the fields in the screen body and place them.
Then, save and activate the screen and come back to screen flow editor.
Create the PAI module to add validation for field “Location 2”, as required .
Activate the whole function group and come out.

Write code in the Function Exits to synchronize the programs

Now, code has to be written in the function modules EXIT_SAPLAIST_002 and EXIT_SAPLAIST_003 so that data flows to and fro between the main SAP program and custom subscreen program. For that, go back to transaction CMOD and change the function exits.
Write code in the function module EXIT_SAPLAIST_002 called once at the beginning of the transaction:
Write code in EXIT_SAPLAIST_003 to pass the data from the subscreen to SAP main program.
Then, activate everything – the whole project and come out.

Complete the configuration to link the subscreen

The development portion is complete. Now, linking of the subscreen has to be done with the subscreen area of the main program. In most of the cases, this linking can be done in the enhancement itself. But, here, requirement is a bit different. It is done by configuration using SPRO.
Assets are created under Asset class. And for each asset class, there is a layout assigned to it. For a layout, there are multiple tab pages assigned to it. And, for each tab page, there are multiple screen groups/field groups assigned.
Here, the requirement is to create these three custom fields in the tab page ‘General’ of asset master screen (AS01/AS02/AS03/AS91).

Determine the Layout

To achieve this, first of all, we need to find out which layout is assigned to asset class 1000.For that, go to transaction AOLK(information has to be obtained from functional consultant).Select the Asset Class ‘1000’ and click on folder ‘General Assignment of Layout’.
Here, for Asset class 1000, for all the user groups, tab layout SAP is assigned. Since layout ‘SAP’ cannot be changed, it has to be copied and manipulated to include our screen group. Later, the new layout has to be assigned over here.

Create new tab layout

Go to transaction AOLA. Copy the tab layout ‘SAP’ to create another layout, say, YSUB.
System will copy all the settings and will inform you about that.
Select your newly created layout and double-click on the folder ‘Tab page titles’.
You want to put your custom fields in the tab page “General”. So, select this tab page entry and double-click on the folder "Position of Groups".
Here, all the field groups currently residing in the tab-page “General” are shown. Add an entry for your newly created fields.
Select the group box from the list. An entry will come with “U” padded with the custom subscreen prepared by you.
Then, save and come out.

Assign the new Layout to Asset Class

Now, go to tcode AOLK and assign tab layout YSUB for asset class 1000.

Save and come out.

Test the Exit

Everything is over. Now, go to transaction code AS01/02/03 or AS91 to deal with an asset of asset class 1000. You will see your new fields added to the screen. Add values to them…save. Then, enter into the tcodes again to see whether the values entered by you are being displayed or not.

Original Source: ittoolbox.com