



SUIM
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Table Access Enforcer

This document will describes the SUIM product “table Access Enforcer”. In this document you will find the end-user documentation as well as the customizing steps needed to use this products

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1 The need for the TAE solution

A lot of companies using SAP have taken the decision not to use global transactions such as the transaction SM30 (Maintenance View) or the SE16 (Data Browser). These decisions are most often taken for security reasons.

In some case, the end users must access data and/or maintain some data. The customers then have to develop their own API for each need. These developments are expensive, must be maintained and over time, the customer loses the main reason for the interdiction of the SE16 and SM30 transaction. The restriction on data access display or modify in which SAP-tables.

2 TAE solution overview

2.1 Overview

The idea of TAE is to create a fully customizable solution to access and modify data in SAP-tables. This solution is also able to:

- Create “dual control” for accessing/modifying data in SAP tables
- Have a central overview of all accessed tables
- Check the authorizations on each table/view
- Check the authorizations on table content for each Field (for example company code) and display just the authorized information
- Avoid any customer development for these needs except transaction variants
- Have almost all functionality of the SE16 transaction (pre selection, Excel, Download, ..) for the TAE data browser
- Have almost all functionality of the SM30 transaction (Filter, save, print, ..) for the TAE-view maintenance

2.2 TAE Sub-modules

Following applications are delivered in the Table Access Enforcer

- Maintenance View Enforcer
- Data Brower Enforcer
- Customizing TAE

3 Maintenance View Enforcer

Administrative units require a display and a maintenance access to SAP tables. When executing the transaction SM30, the corresponding SAP view is called. In most cases, the name of the SAP view matches the name of the table. If this is not the case, you can find the view by clicking the button “Find Maintenance Dialog”.

Without TAE the at least one transaction to access and/or modify data in the view for each SAP-view has to be created. The customer was also not able (except with further development) to filter/hide unauthorized data within the SAP-View. This leads to a multiplication of the SAP developments and then a low acceptance because of the costs of these developments.

The Maintenance View Enforcer solves these issues by using customizing instead of development.

3.1 Customizing steps

The super user can define a view per application. This view is called special area. The special area is checked by authorizations.



Maintenance View Enforcer

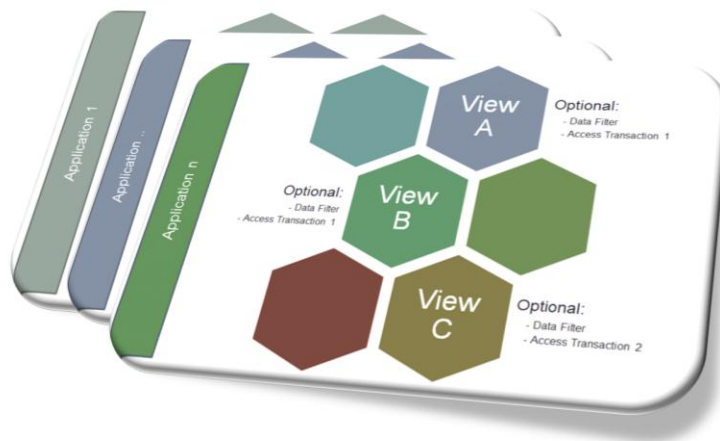


Figure 1: Concept of the Maintenance view enforcer

Inside each special area, you can customize its corresponding maintenance views (with optional for each view it start transaction and filter set). Each view can be also checked by authorizations with the activities “maintain and/or display”

3.1.1 Start the Customizing implementation guide

Execute transaction /TECS01/BC_TAB1_A1 (TAE: Workplace).

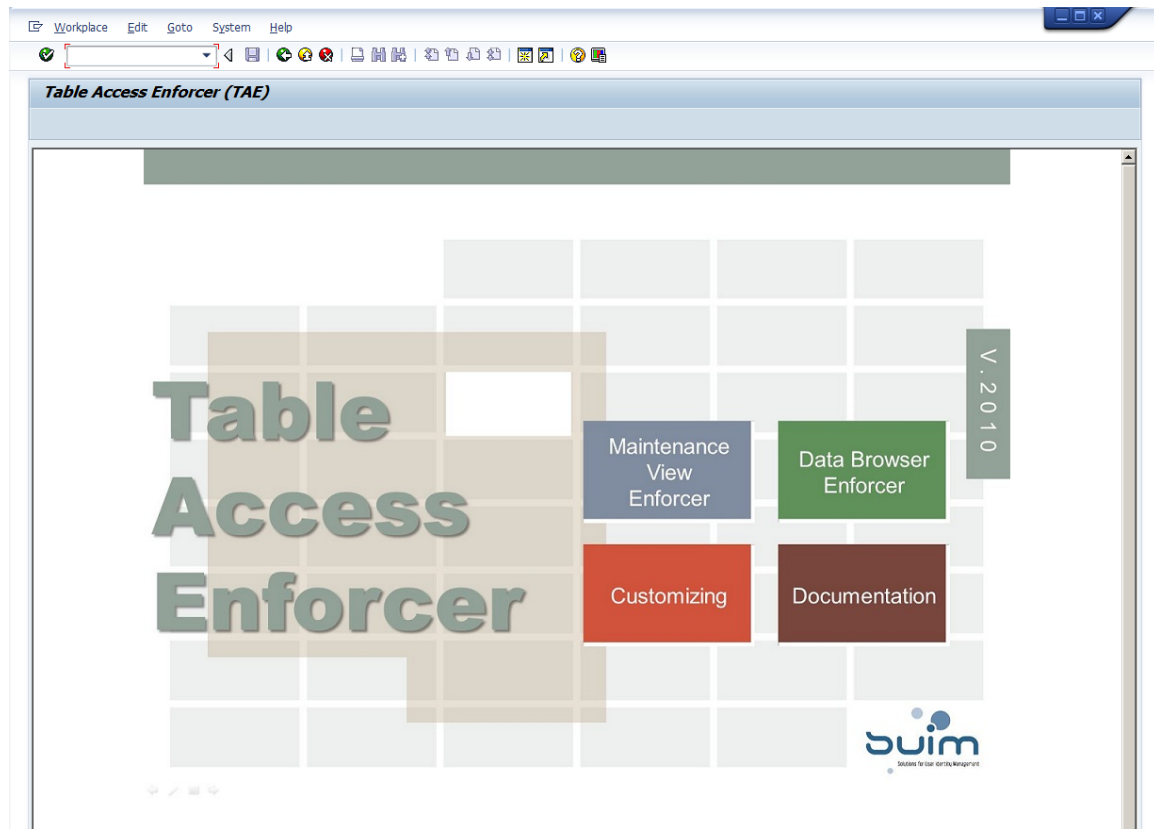


Figure 2: Table Access Enforcer Workplace

Click on the hotspot “Customizing” (Transaction /TECS01/BC_TAB) and expand the node “Maintenance View Enforcer”.

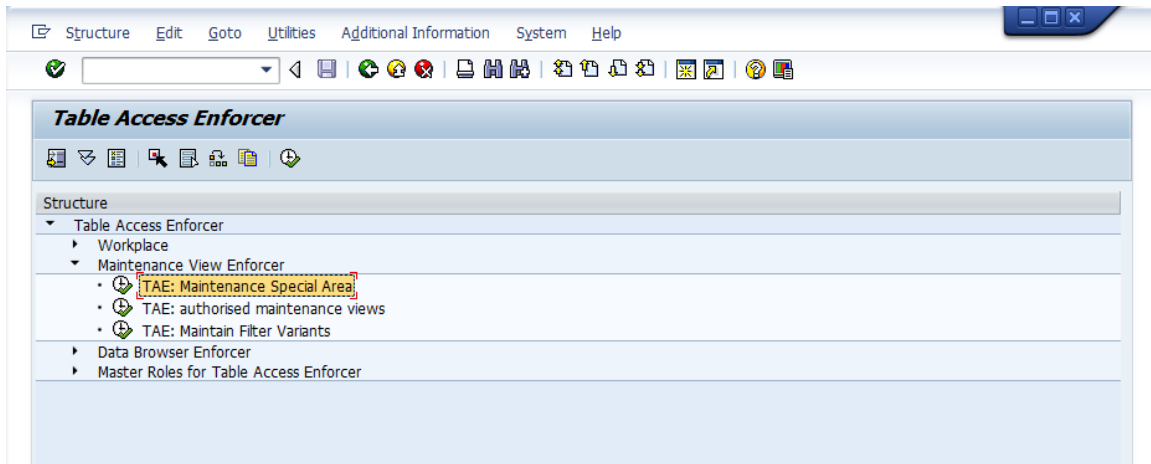


Figure 3: Customizing menu of the Maintenance View Enforcer

3.1.2 Special area

The special areas could be either the applications or the organizational element in which the table views are going to be customized. This attribute is going to be checked during the authorizations checks.

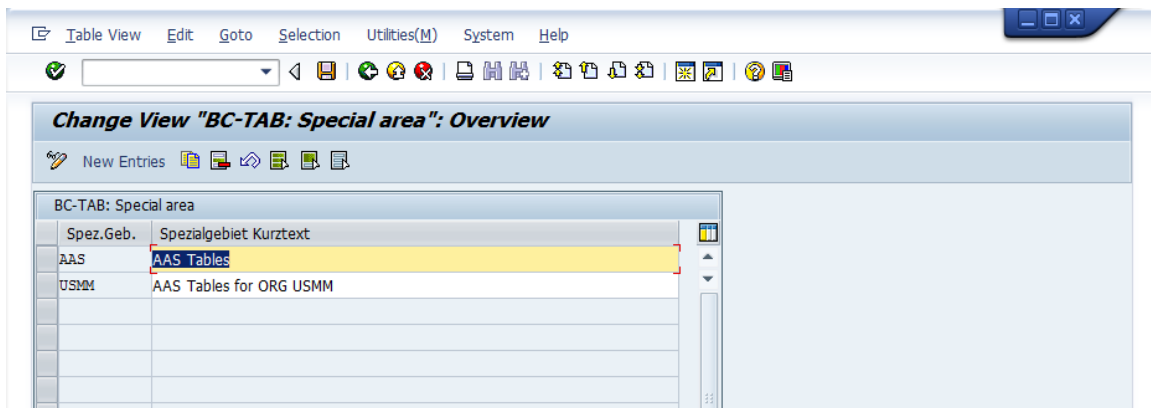


Figure 4: Customizing special areas

3.1.3 Authorized maintenance views

The maintenance views are the views(Tables) that are assigned to the special areas.

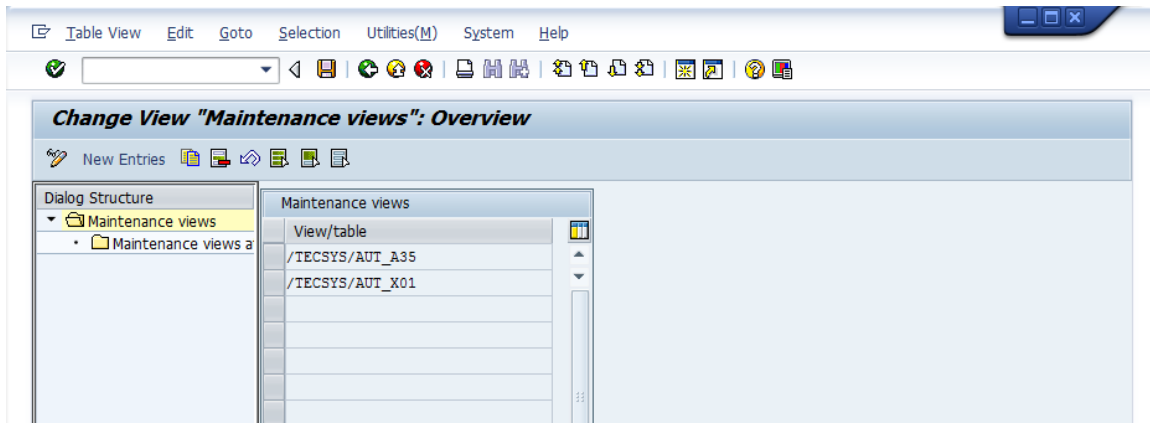


Figure 5: Customizing Maintenance Views

After selecting a view/table you can maintain two further attributes by clicking on the second level in the tree (Maintenance views attributes):

- The transaction code:
The transaction code allows you to assign a start transaction code for maintaining/displaying the table view. If the end-user does not execute the customized transaction to access the table, he will not be able to display/maintain the values.
- The filter values:
You can assign an already defined filter to the table view for hiding unwanted data to the end user. Example: If you have a Table view containing the field BUKRS, you can easily define a filter containing one BUKRS and assign this filter to the table view.

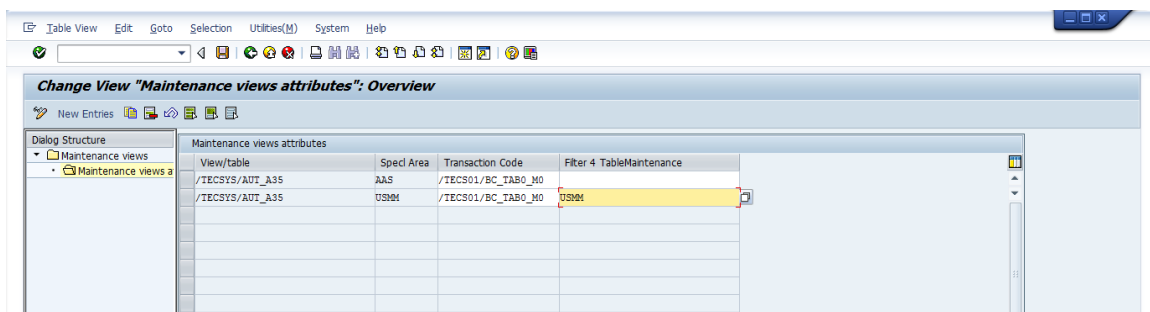


Figure 6: Assigning a start transaction and/or a filter range to a Maintenance View

3.1.4 Defining filters

Execute the transaction “TAE: Maintain Filter Variants” (Transaction code /TECS01/BC_TABO_M1) and select the table for which you want to define a filter.

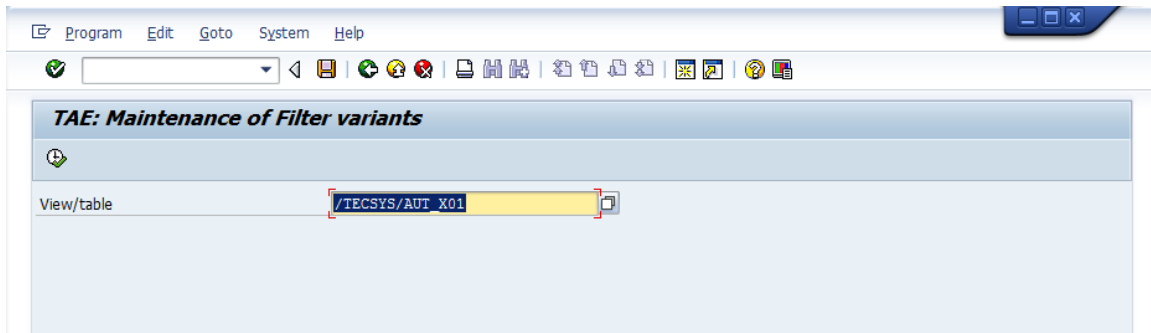



Figure 7: Defining filter range variants

If no filter exists, you can add a new row by clicking on „Insert Row“ .

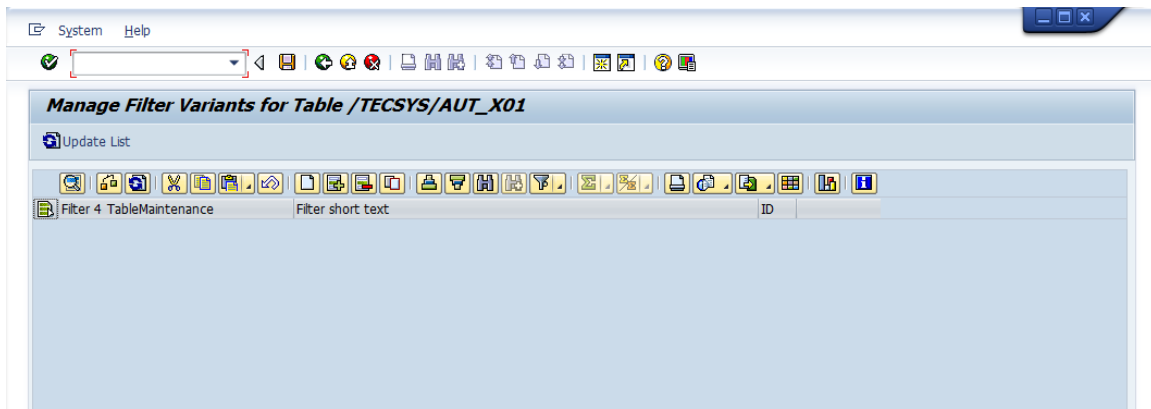


Figure 8: Filter range variants: inserting a new row

Fill the filter name as well as the filter short text and save. After clicking on the icon “Update List”, the button to maintain the filter values appears.

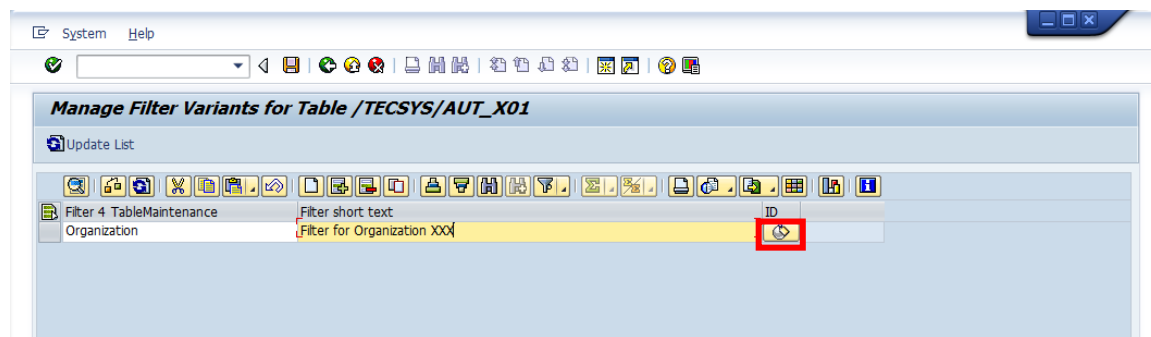



Figure 9: Filter range variants: maintaining the filter values

Click on the button “ID” . A popup appears with each field of the selected maintenance view.

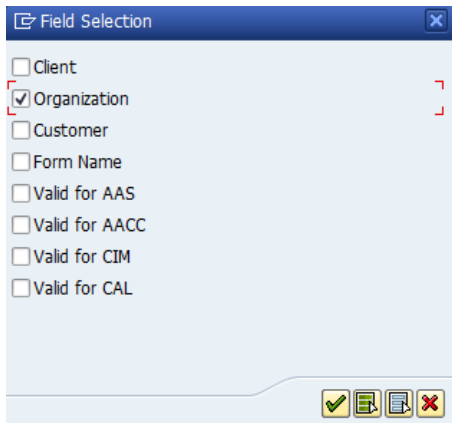


Figure 10: Filter range variants: choosing the view fields

Select the desired field. In this case “Organization”. Click on “OK” and fill values with which you want to filter the data. You can append multiple filter values to a single filter.

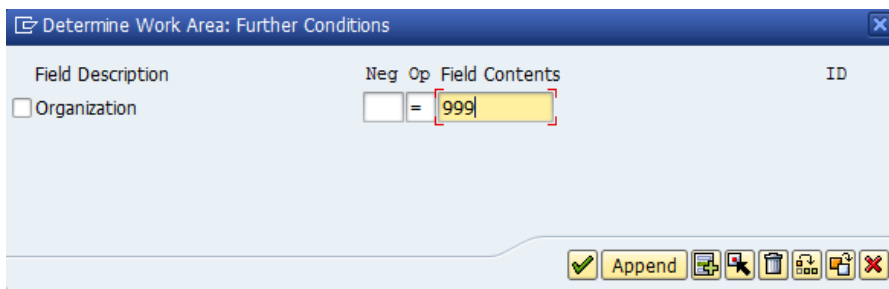


Figure 11: Filter range variants: customizing the view fields values

By clicking on “OK” you return to the previous screen.

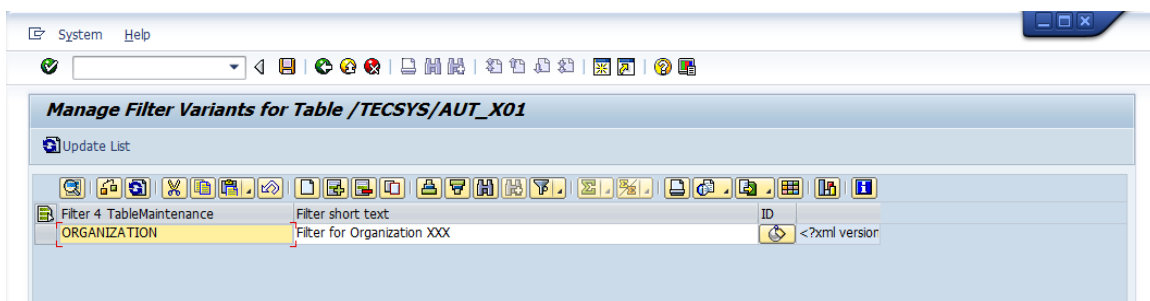


Figure 12: Filter range variants: saving the result

Save the entries. You can then assign the filter to the maintenance view (See Chapter 3.1.3).

3.1.5 Authorizations

The object ZT01_BA will be checked in the program and in the matchcode.

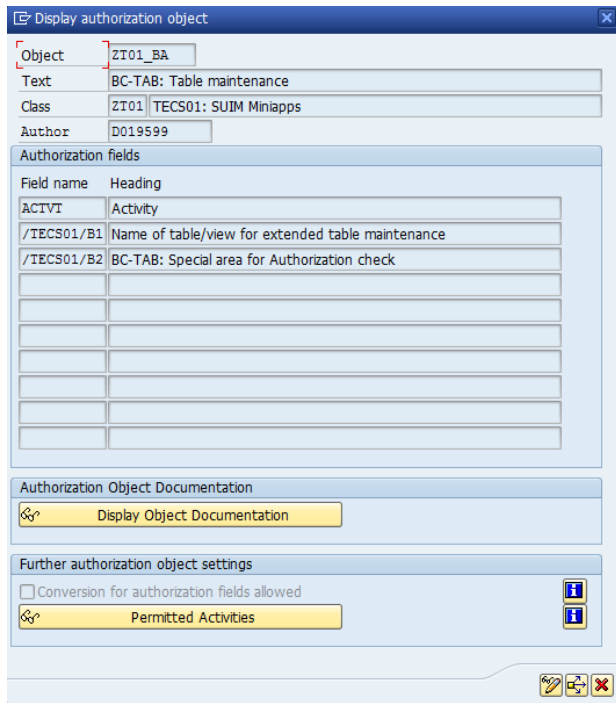


Figure 13: Authorization Object

The permitted activities are:

- 02 Change
- 03 Display
- 70 Administrate

The Field /TECS01/B1 needs to contain the name of the table to be displayed or maintained.

The Field /TECS01/B2: needs to contain the special area assigned to the table in customizing.

Furthermore, the user needs the authorization to execute the desired transaction (Authorization Object S_TCODE)

3.1.6 Defining transaction variants

If the end user must not have a selection screen for an action, you can create transaction variants and use the transaction variants in a Menu, in a user role or directly in a custom application.

Warning:

A transaction is normally defined in the development system and then transported into the productive system. If you set parameters in the transaction variant, these parameters must be consistent with the TAE customizing.

1. Execute transaction SE93

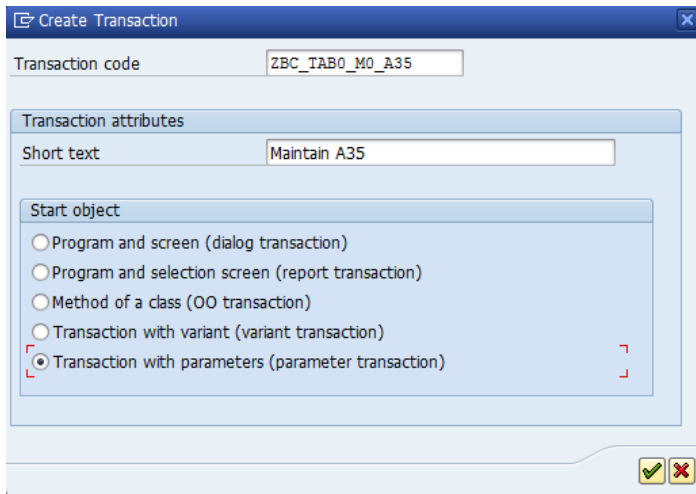


Figure 14: Creating a transaction with parameters

2. Choose Transaction with parameters
3. Fill corresponding fields :
 - a. Transaction/TECS01/BC_TAB0_M0
 - b. Skip initial screen if you want to skip the selection screen
 - c. In the register default values chose via F4 following fields
 - i. P_VIMNAM View name that you want to open
 - ii. P_SAREA Special area customized for this view name
 - iii. P_DIS for display mode
 - iv. P_UPD for modification mode

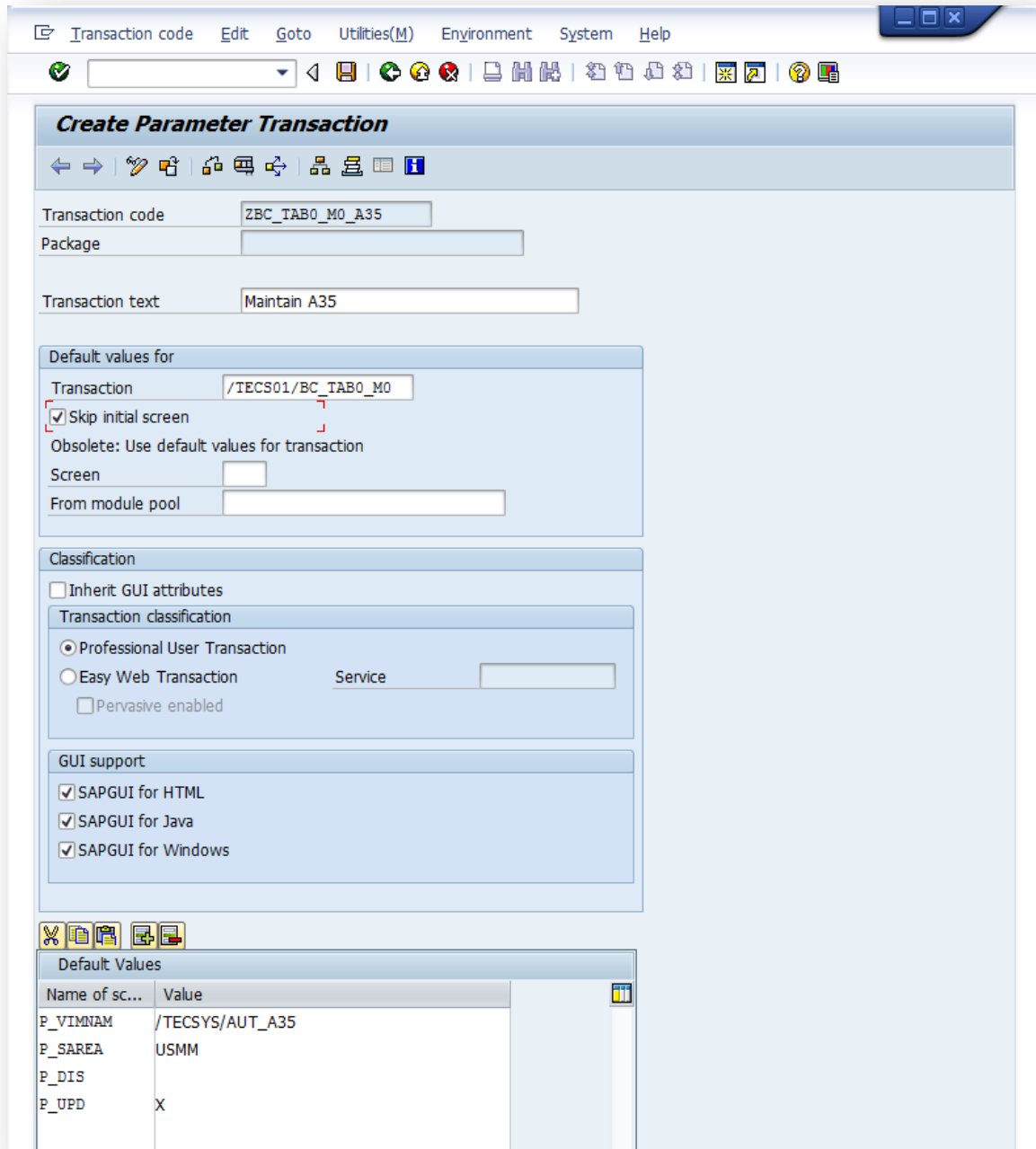


Figure 15: Detail definition of the transaction with parameters

4. Save the transaction variant
5. Either assign the package to enable the transport to productive system or chose local object

6. Test the transaction by executing it

3.1.7 Testing the application

For testing the application, execute the customized transaction. In this case /TECS01/BC_TAB0_M0

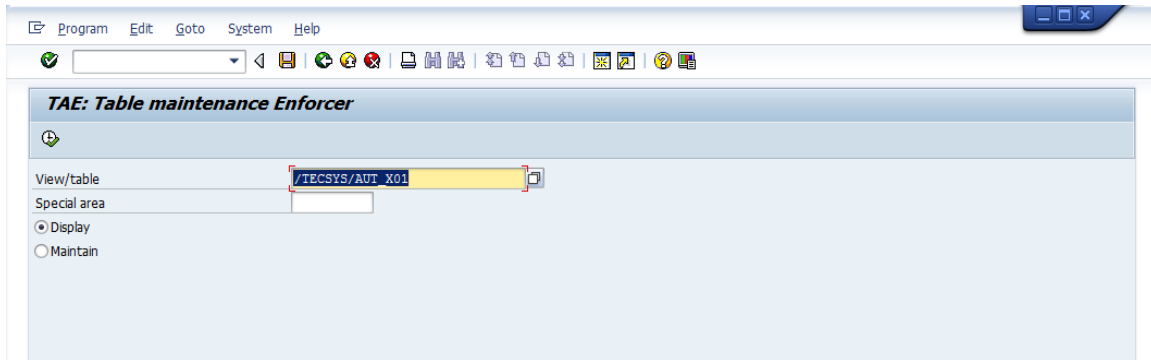


Figure 16: Testing the customized maintenance view

And the result is a delimited view by the selected filter attributes.

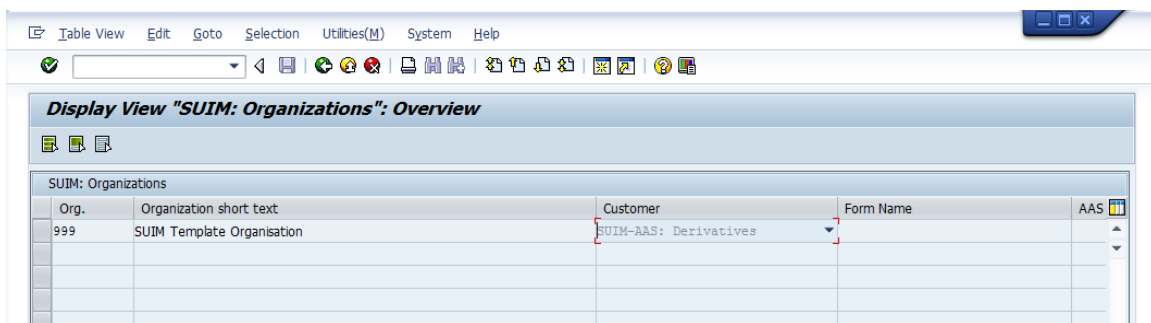


Figure 17: Result of the customized maintenance view

3.2 Using the Maintenance View Enforcer

3.2.1 Transactions

Execute transaction /TECS01/BC_TAB1_A1 (TAE: Workplace).

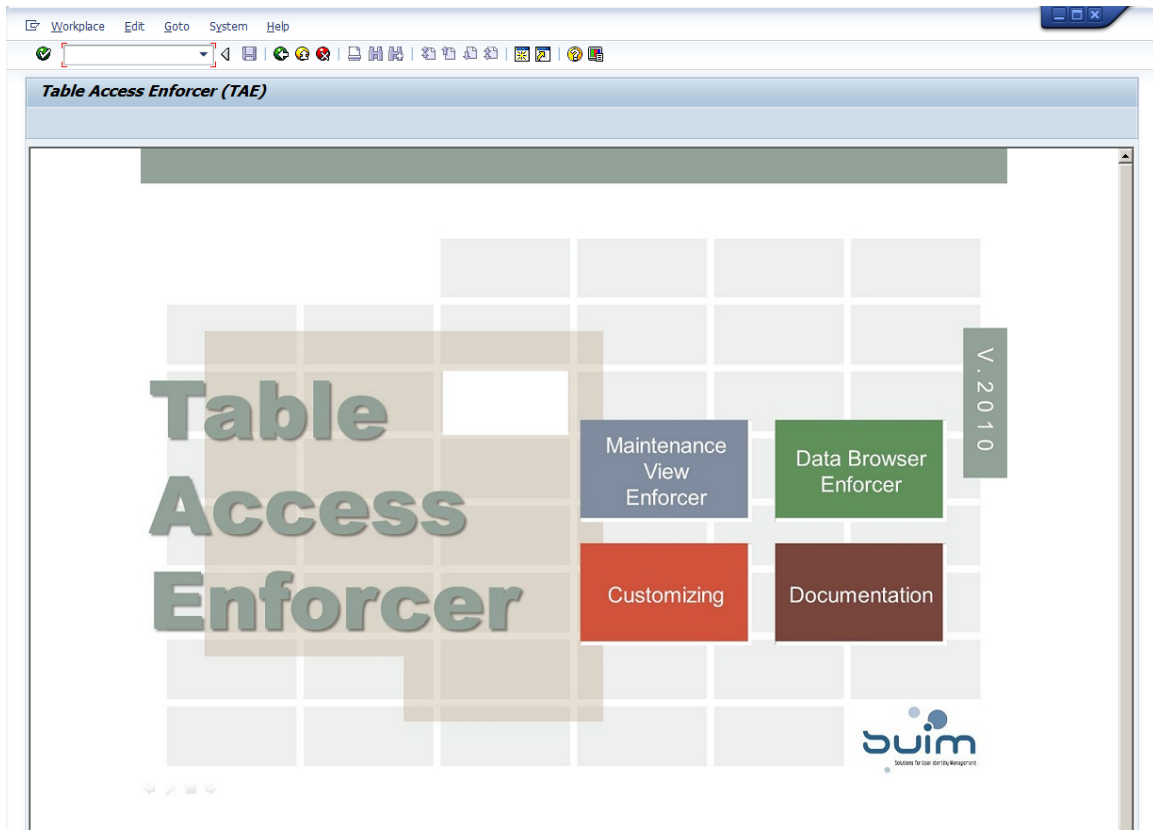


Figure 18: Table Access Enforcer Workplace

Click on the hotspot “Maintenance View Enforcer” (Transaction /TECS01/BC_TAB0_M0)

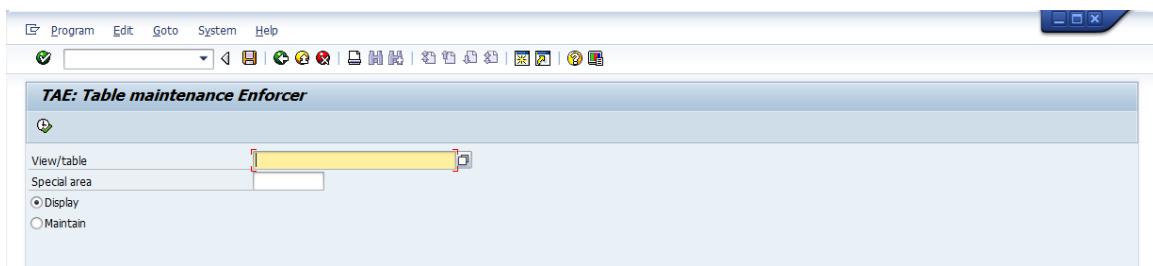


Figure 19: Executing the Maintenance view enforcer

By pressing F4 on the View/Table field, you will get the list of all customized maintenance tables for which you have an authorization.

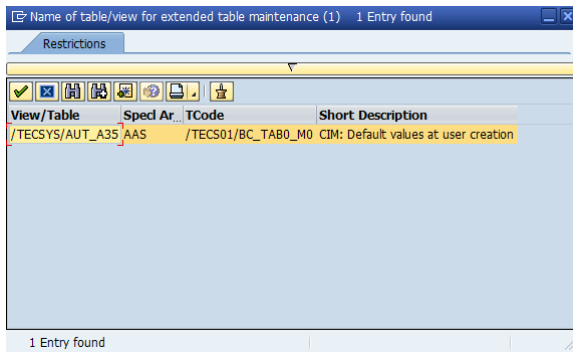


Figure 20: Choosing the View and the special area

Select the entry and execute the transaction in Display mode or in Modification mode.

3.2.2 Displaying the maintenance view

If you are authorized, the Maintenance view will be executed.

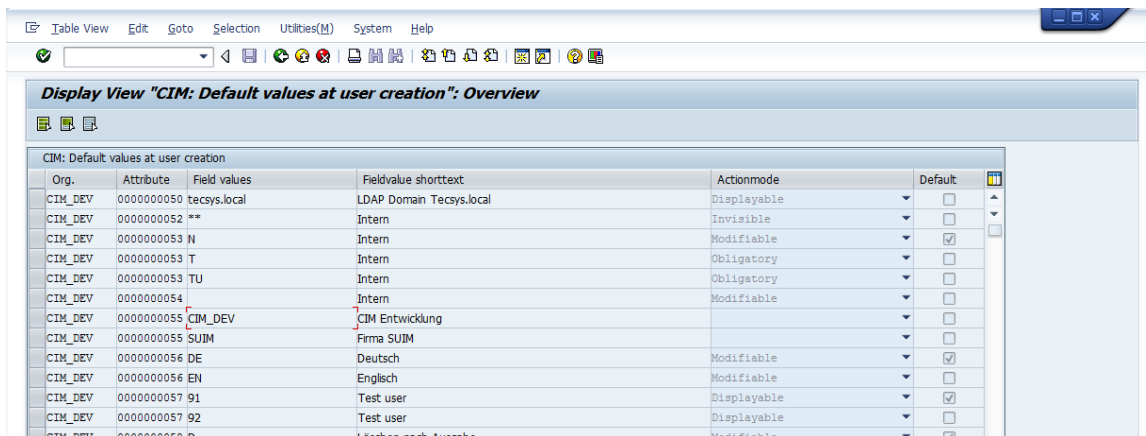
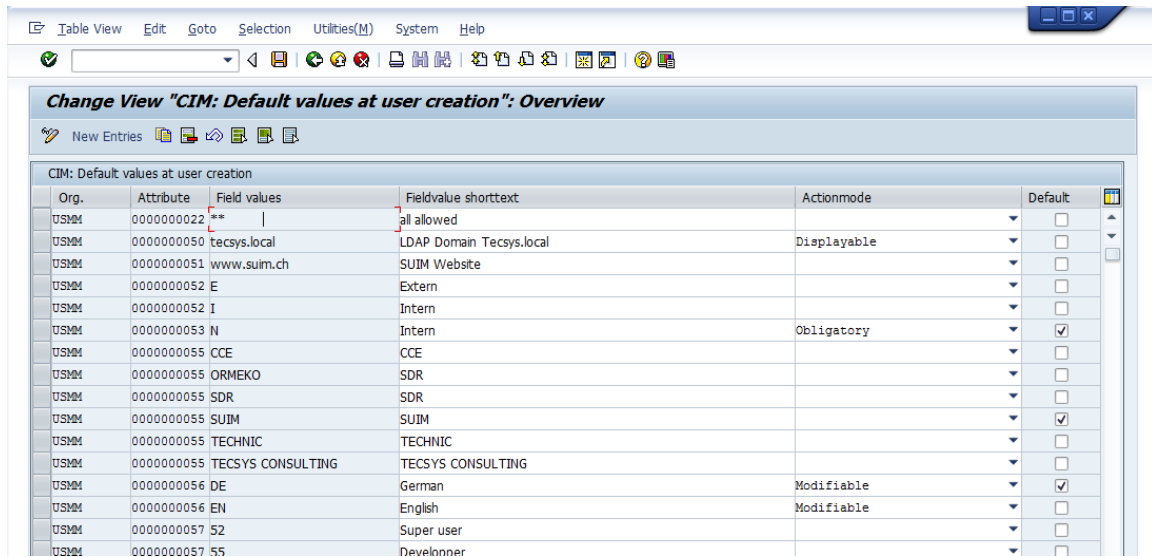


Figure 21: View result in display mode

3.2.3 Modifying data within the maintenance view

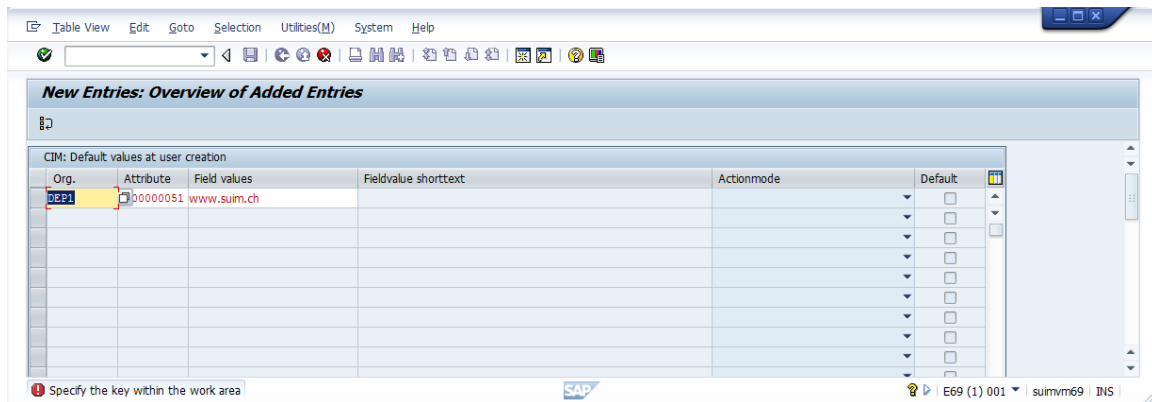
If you are authorized, the Maintenance view will be executed in “Modify” mode. If you have assigned a filter to the maintenance view in customizing, the displayed data will be filtered.



Org.	Attribute	Field values	Fieldvalue shorttext	Actionmode	Default
USMM	0000000022	**	all allowed		<input type="checkbox"/>
USMM	0000000050	tecsys.local	LDAP Domain Tecsys.local	Displayable	<input type="checkbox"/>
USMM	0000000051	www.suim.ch	SUIM Website		<input type="checkbox"/>
USMM	0000000052	E	Extern		<input type="checkbox"/>
USMM	0000000052	I	Intern		<input type="checkbox"/>
USMM	0000000053	N	Intern	Obligatory	<input checked="" type="checkbox"/>
USMM	0000000055	CCE			<input type="checkbox"/>
USMM	0000000055	ORMEKO	SDR		<input type="checkbox"/>
USMM	0000000055	SDR	SDR		<input type="checkbox"/>
USMM	0000000055	SUIM	SUIM		<input checked="" type="checkbox"/>
USMM	0000000055	TECHNIC	TECHNIC		<input type="checkbox"/>
USMM	0000000055	TECSYS CONSULTING	TECSYS CONSULTING		<input type="checkbox"/>
USMM	0000000056	DE	German	Modifiable	<input checked="" type="checkbox"/>
USMM	0000000056	EN	English	Modifiable	<input type="checkbox"/>
USMM	0000000057	52	Super user		<input type="checkbox"/>
USMM	0000000057	55	Develnner		<input type="checkbox"/>

Figure 22: View result in modification mode

If the user tries to add new entries which are not included in the filter criteria, the system will not accept to save these entries.



Org.	Attribute	Field values	Fieldvalue shorttext	Actionmode	Default
DEP1	00000051	www.suim.ch			<input type="checkbox"/>

Figure 23: Error by addition new entries in the table outside of the defined filter range

4 Data Browser Enforcer

Administrative units require an authorized and secure browser access to SAP tables. So far, for each table access, an ABAP program which extracts the data of a SAP table has to be created. These programs are easy to develop, but still need some reaction time until the developer resource is found. Another issue is that you do not have the possibility to easily pre-select data.

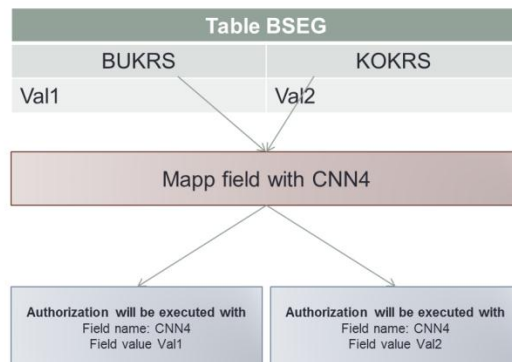
The Data Browser Enforcer is an application which solves these issues by using customizing instead to development.

4.1 Customizing steps

You can customize which table is allowed to be browsed. You may also define which fields of this table must be checked by authorizations. For avoiding duplicates, heavy customizing and complex authorization roles definition, the application used a mapping scenario for checking the fields.



Data Browser Enforcer



...

Figure 24: Concept of the Data Browser Enforcer

4.1.1 Start the Customizing implementation guide

Execute transaction /TECS01/BC_TAB1_A1 (TAE: Workplace).

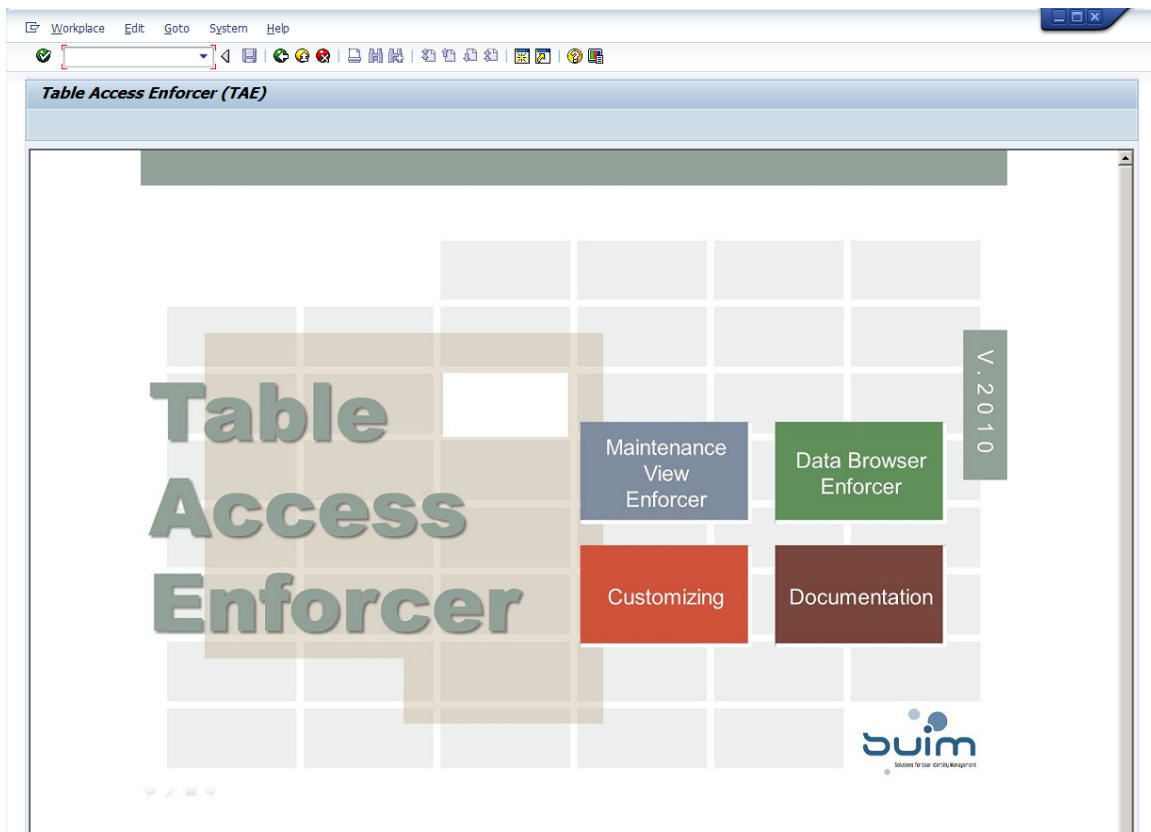


Figure 25: Table Access Enforcer Workplace

Click on the customizing hotspot in the main screen or execute the transaction /TECS01/BC_TAB. Expand the node Data Browser Enforcer.

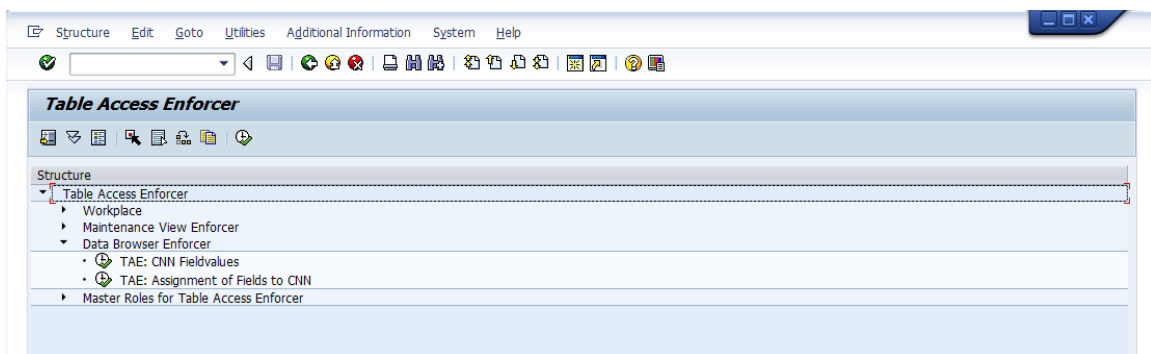


Figure 26: Customizing menu of the Data Browser Enforcer

4.1.2 CNN Fields

With CNN fields, you can map multiple table fields to a single authorization check. This allows for an easier customizing and easier authorization concepts for the Data Browser Enforcer. The CNN Fields are the logical fields by which you want to discriminate the table access.

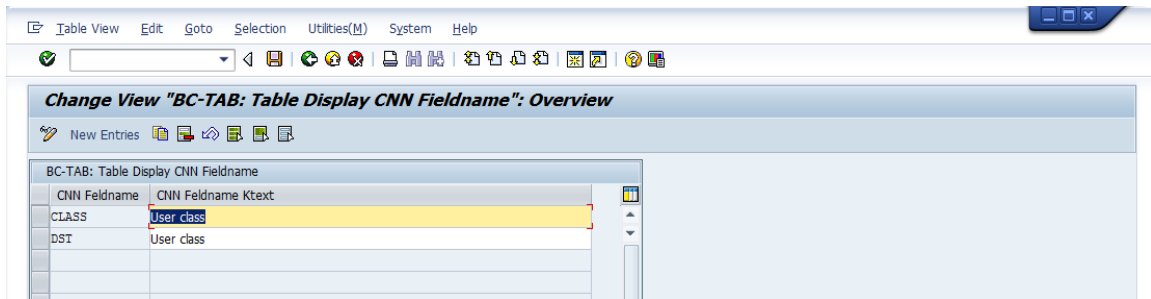


Figure 27: Customizing CNN fields

4.1.3 Allowed Tables to be browsed and fields values to be checked by authorizations

If a table should be browsed by the Data Browser Enforcer, it must be customized in this table. Optionally, you can enforce an authorization check by mapping a field of the table to a CNN field.

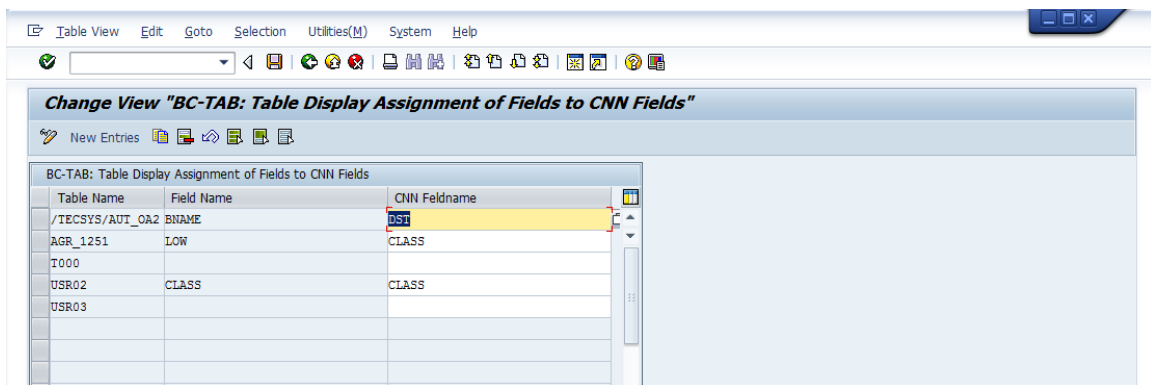
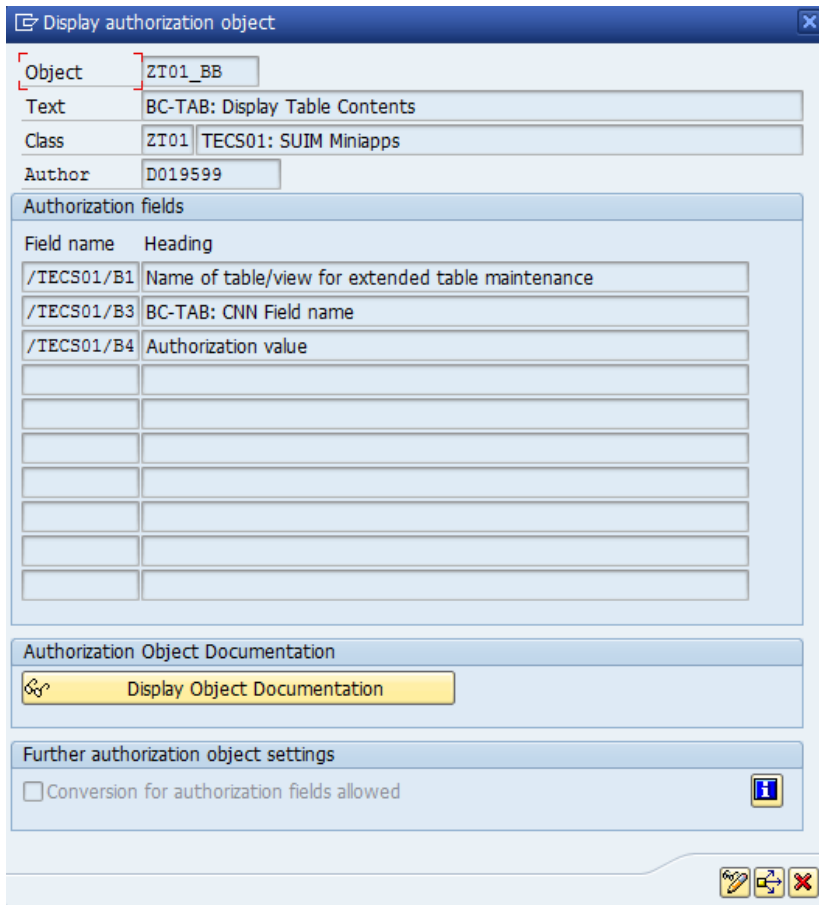


Figure 28: Allowed Tables to be browsed and opt. their field values to be checked by authorizations

4.1.4 Authorizations

The object ZT01_BB will be checked in the application and in the matchcodes.



Display authorization object

Object: ZT01_BB

Text: BC-TAB: Display Table Contents

Class: ZT01 | TECS01: SUIM Miniapps

Author: D019599

Authorization fields

Field name	Heading
/TECS01/B1	Name of table/view for extended table maintenance
/TECS01/B3	BC-TAB: CNN Field name
/TECS01/B4	Authorization value

Authorization Object Documentation

Display Object Documentation

Further authorization object settings

Conversion for authorization fields allowed

Figure 29: Authorization Object for Data Browser Enforcer

Field /TECS01/B1: Table name to be browsed

Field /TECS01/B3: CNN fieldname for authorization check

Field /TECS01/B4: Values to Filter

4.2 Using the Data Browser Enforcer

4.2.1 Transactions

Execute transaction /TECS01/BC_TAB1_A1 (TAE: Workplace).

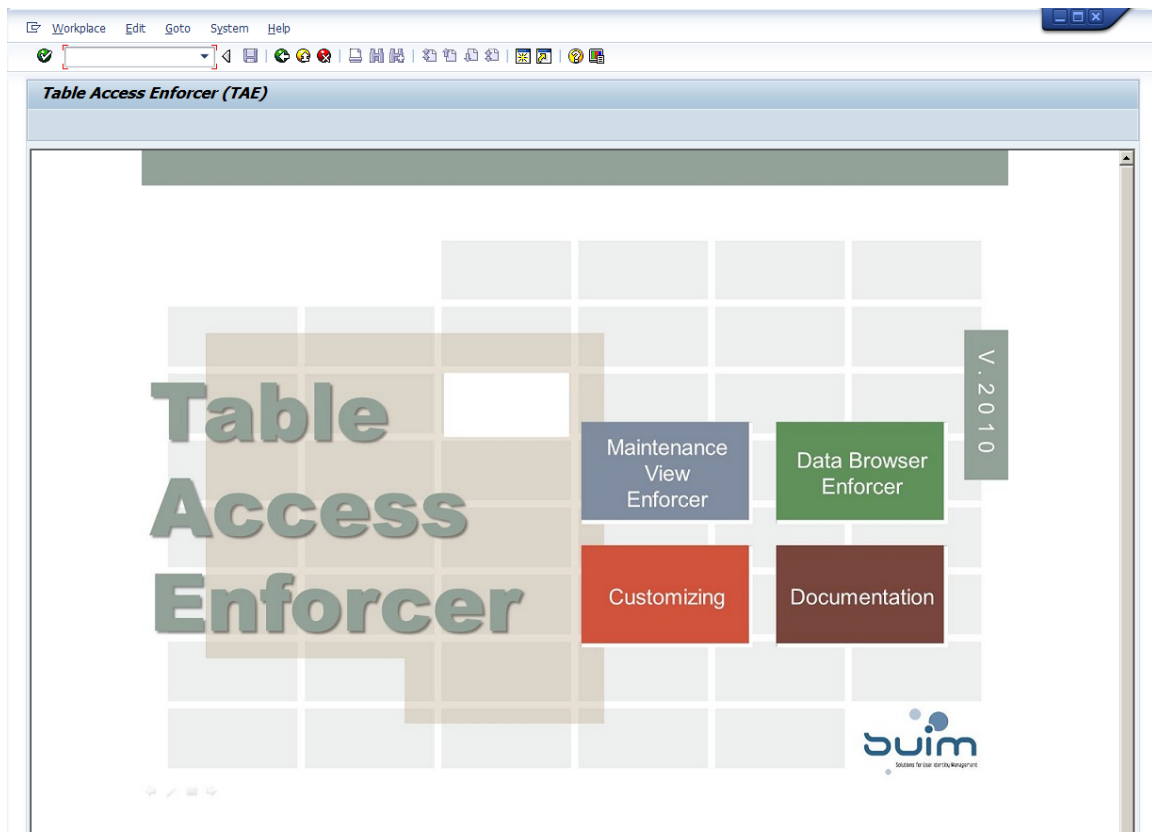


Figure 30: Table Access Enforcer Workplace

Click on the hotspot “Data Browser Enforcer” (Transaction /TECS01/BC_TAB1_A0)

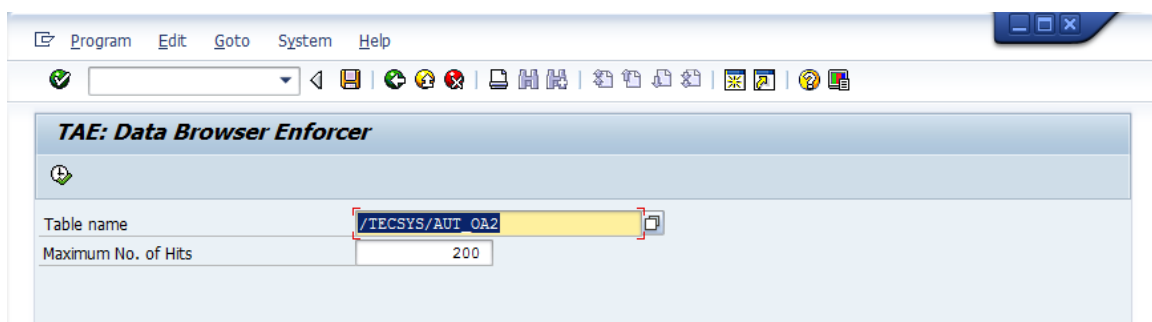


Figure 31: Executing the Data browser Enforcer

By pressing F4 on the “Table name” field, you will get the list of all customized tables for which you have an authorization.

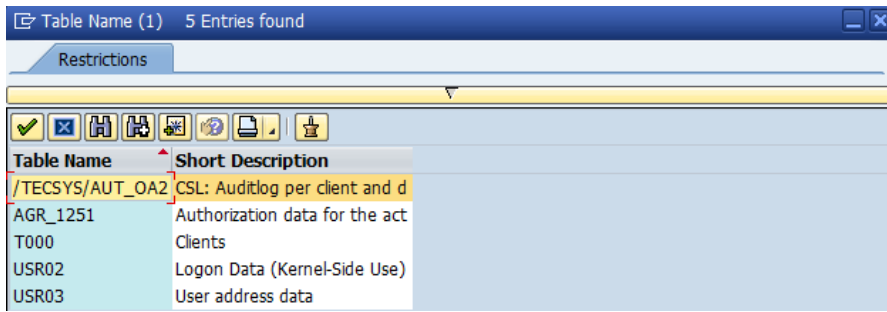


Figure 32: Choosing the table to browse data

Select the entry, set the maximum number of hits and execute the transaction.

Warning: Because an authorization check could be executed (depending on the customizing), if you set a maximum value (e.g. 200), and you pre-select some data, the system will scan all data, check the authorizations and bring back the first valid 200 rows. In case of very big tables, the response time due to this additional authorizations check could be high.

The system will list the possible fields for a pre-selection of values, as known from SE16.

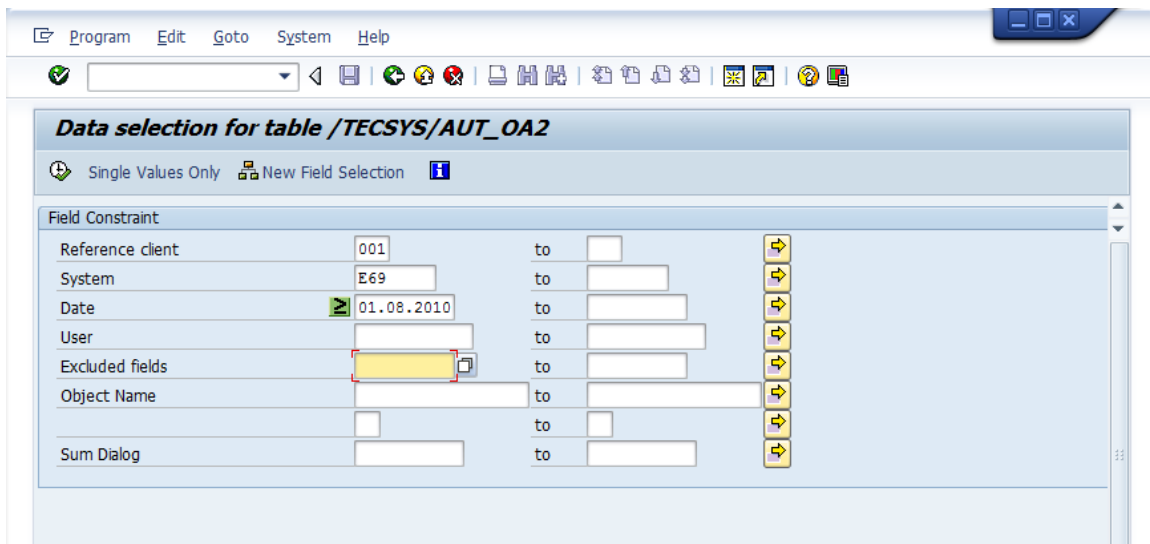


Figure 33: Selection fields

4.2.2 Displaying the authorized results

By pressing F8 or clicking on the „execute button, the (filtered) data is displayed in an ALV grid.

TAE: Data Browser Enforcer

System	Date	User Name	Excl.Field	Object Name		Σ	Sum Dialog
E69	02.08.2010	CAL_SUIM	TRAN	/TECSYS/CIM_200_A1	01		65
	02.08.2010	CAL_SUIM		LAST_SHORTDUMP	01		29
	02.08.2010	CAL_SUIM		LDAP	01		5
	02.08.2010	CAL_SUIM		LDAPLOG	01		3
	02.08.2010	CAL_SUIM		LDAPMAP	01		23
	02.08.2010	CAL_SUIM		RSTPDAMAIN	01		31
	02.08.2010	CAL_SUIM		SAPTERM	01		10
	02.08.2010	CAL_SUIM		SE11_OLD	01		36
	02.08.2010	CAL_SUIM		SE16	01		89
	02.08.2010	CAL_SUIM		SE24	01		28
	02.08.2010	CAL_SUIM		SE24	02		2
	02.08.2010	CAL_SUIM		SE38	01		39
	02.08.2010	CAL_SUIM		SE80	01		612
	02.08.2010	CAL_SUIM		SESSION_MANAGER	01		35
	02.08.2010	CAL_SUIM		SEU_INT	02		152
	02.08.2010	CAL_SUIM		SM30	01		48
	02.08.2010	CAL_SUIM		SM51	01		2
	02.08.2010	CAL_SUIM		SM59	01		38
	02.08.2010	CAL_SUIM		SU11	01		0

Figure 34: View result