How to handle the TDMS BPL Scenario Designer

User Guide

Version	Status	Date
1.0	Final	2010

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1 Overview

This user guide describes in detail how to handle the TDMS-BPL Scenario Designer. Depending on the chosen business context, in the TDMS-BPL Scenario Designer you can view the specific data model for the belonging business object. This predefined data model contains the business object as starting point together with the dependent objects, tables, and table relationships. Data is copied from the sender client and transferred to the receiver client based on this data model.

Furthermore, you can enhance the predefined business context by creating your own objects, such as customer table relationships, and by adding customer tables. You can add any tables detected by the crawler.

1.1 Prerequisites

The *TDMS-BPL Scenario Designer* view is displayed after executing the *Select Objects to be Copied* activity in the BPL process tree (see Figure 1).

The following prerequisites need to be fulfilled in order to execute the *Select Objects to be Copied* activity:

- When creating a TDMS package, *ERP Initial Repeatable Package for Business Process Library* needs to be chosen as process type.
- The RFC destinations are to be defined successfully in the *Define RFC Destinations* activity.
- Executing the *Create BPL Scenario* activity a business context needs to be chosen from the list of all the delivered business contexts.
- The *Start Crawler* activity must be executed successfully. As a result, the table statistics is available.
- The *Select Objects to be Copied* activity belongs to the optional activities that are displayed in the extended view only. You have to change from standard view to extended view by clicking the *Change view* icon in the icon bar of the process tree view.

1.2 Assumptions

You can find some information about the TDMS-BPL Scenario Designer in the SAP TDMS Solution Operations Guide yet. In this TDMS-BPL Scenario Designer guide, you are provided with more detailed information. This guide assumes that you have some level of familiarity with the basic BPL business object approach and the other important activities such as Start Crawler and Define Selection Criteria.

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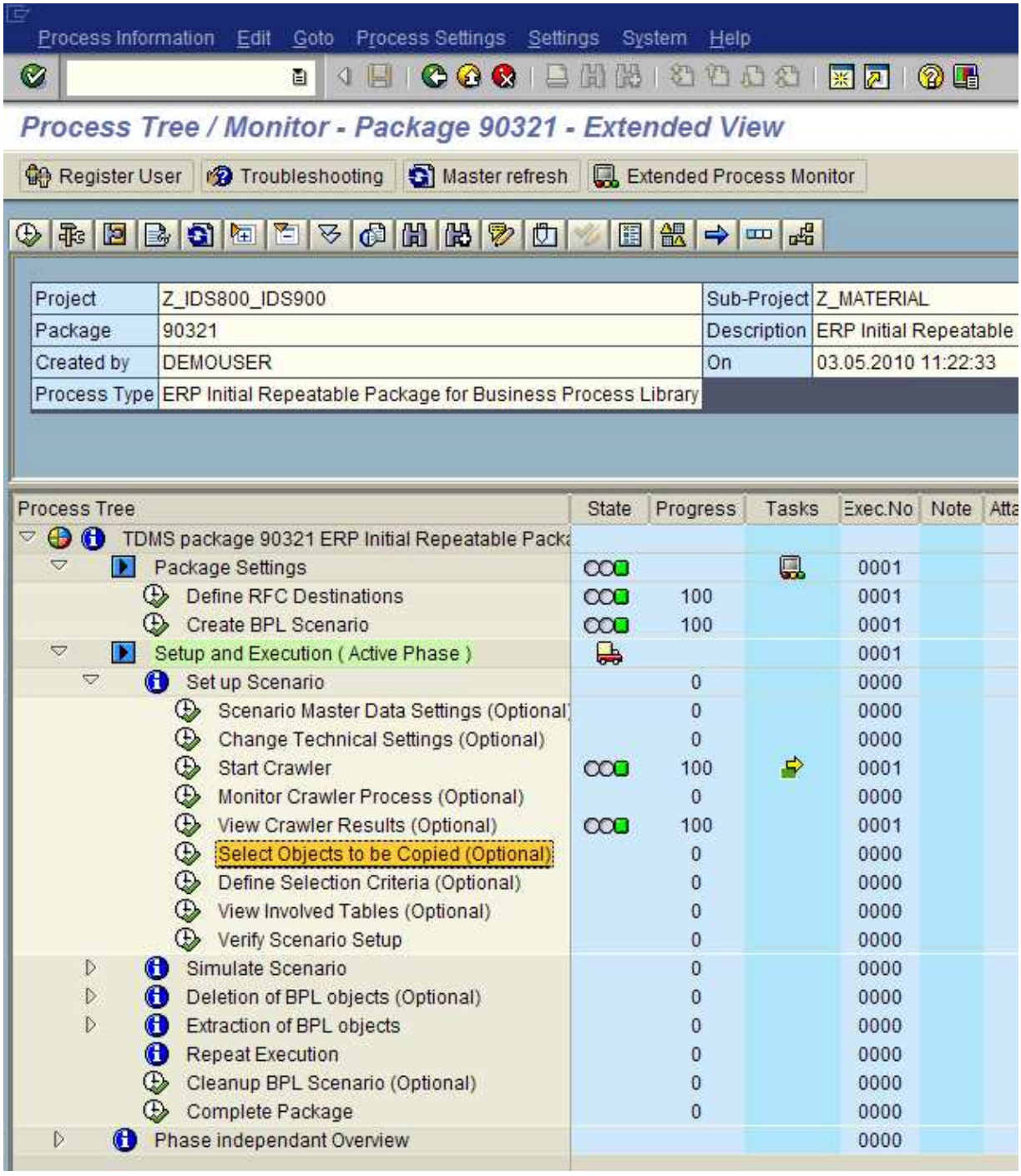

Figure 1: The *Select Objects to be Copied activity* belongs to the optional activities in the BPL process tree

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2 How to Navigate in TDMS BPL Scenario Designer

All predefined business contexts have a similar basic structure. A business context contains different predefined objects such as entities, tables and table relationships. These objects constitute a data model, which is shown in a hierarchical tree structure in the overview area of the TDMS BPL Scenario Designer view. This view consists of the overview area, the search area, and the search result area (see Figure 2).

You get an overview of a business context's basic structure in chapter Basic Structure of the Data Model. Then, all the different object types that can be included in a business context are described. The chapter about the search area and the search result area shows how to search for and to edit objects that have already been a part of the data model. To get an overview of the dependencies a certain object is involved in, you can use the Scenario Overall View or the Where-Used List. Finally, this feature is described.

2.1 Basic Structure of the Data Model

At the top of overview area, the scenario symbol and package description represent the root of the model's tree structure (see Figure 3, this figure shows the data model for the material business context).

To the scenario symbol, the start entity is attached (entity *Material* in Figure 3). An entity serves as a table container. To include a table in a scenario requires as a necessary (but not sufficient) condition that the table is attached to an entity.

Clicking the node to the left of the start entity the branch of attached objects is expanded. In Figure 3, you can see that further entities (e.g., *Classification object*, Standard text) and predefined tables (e.g., MAKT, MARA) are assigned to the start entity. One of the assigned tables is the so-called start table, namely table MARA in the material business context. To get this information, double-click the start entity. A popup opens that shows the entity's properties (see Figure 4). As start table, MARA is listed.

The standard procedure of setting up a scenario comprises that you define a selection for the start table (that is to say, for a primary key, normally) in the *Define Selection Criteria* activity (e.g., a certain range of material numbers (primary key MATNR) in start table MARA). The specific data environment for the selected objects will be extracted by tracking table dependencies. This process starts with the start table.

In Figure 3, you can see that a lot of table relationships are assigned to the start table (e.g., MARA-CDHDR, MARA-MARC). Double-clicking a table relationship a popup opens that shows the relationship's properties. As an example, see Figure 5. The table relationship MARA-MARC with the field relation MATNR = MATNR is displayed. MARA is the source table. MARC the target table. Those records will be extracted from the target table that fulfill the field relation, that is, the entry in table field MATNR of the target table needs to equal the entry in table field MATNR of the source table.

The process of tracking table dependencies starts with the start table and is based on table relationships. A table like MARC is a target table in the MARA-MARC relationship but a source table in following table relationships (e.g., table relationship MARC-MVER), that is, tables and table relationships form chains.

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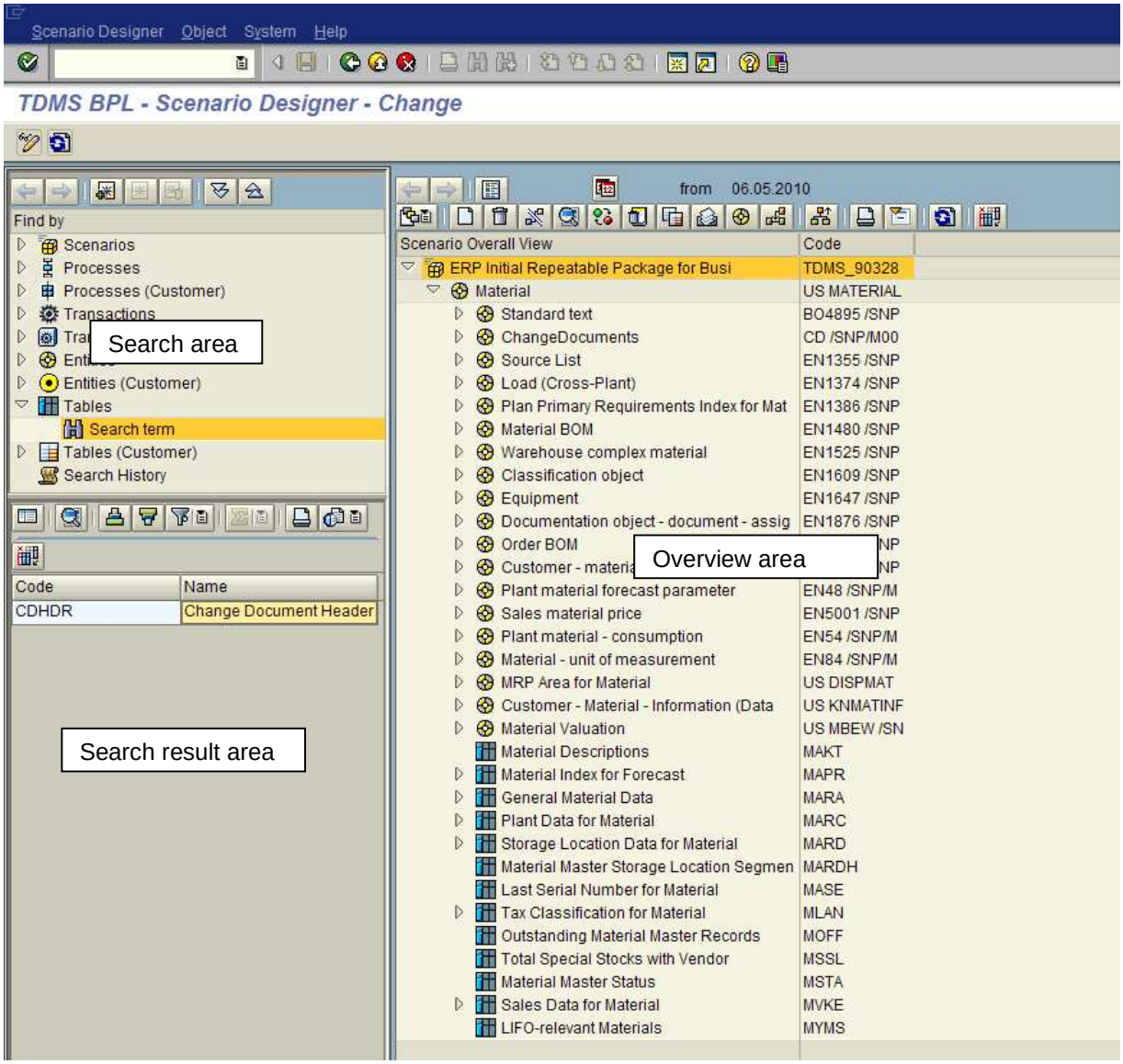

Figure 2: Areas of the TDMS BPL Scenario Designer View

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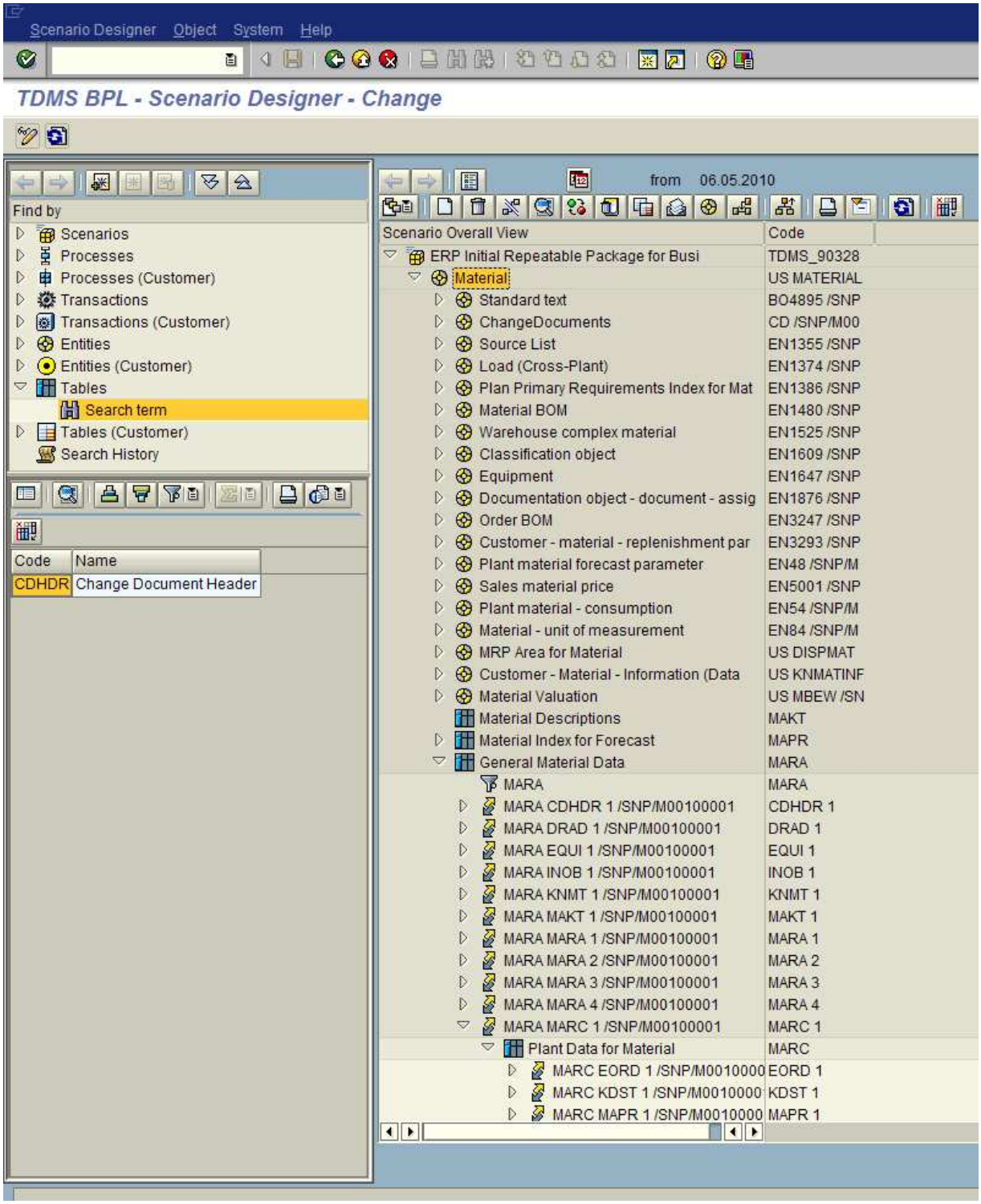

Figure 3: Basis structure of the data model with scenario symbol, start entity, start table, selection, table relationships and dependent tables

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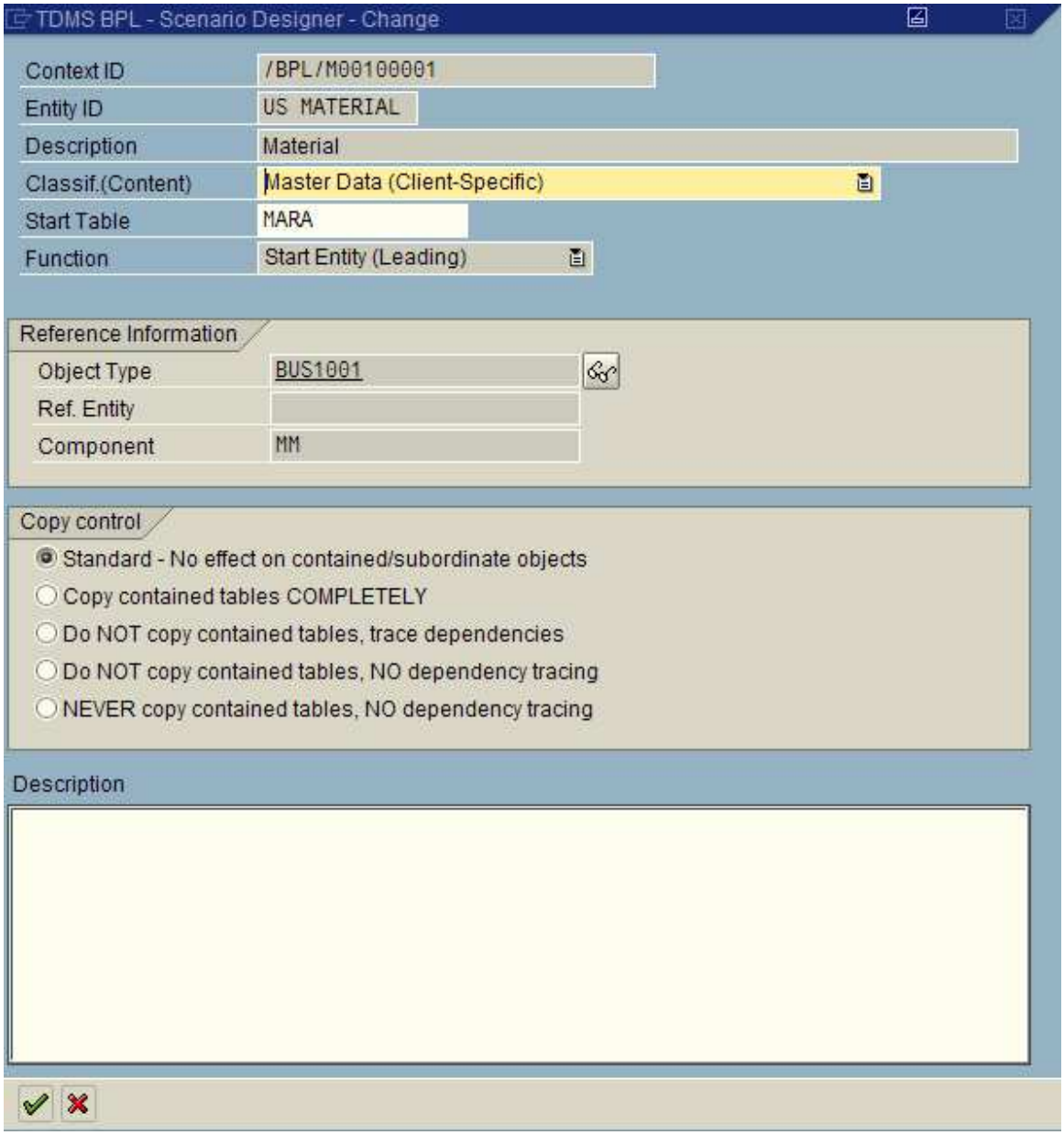

Figure 4: Double-clicking the start entity a popup opens that shows the entity's properties

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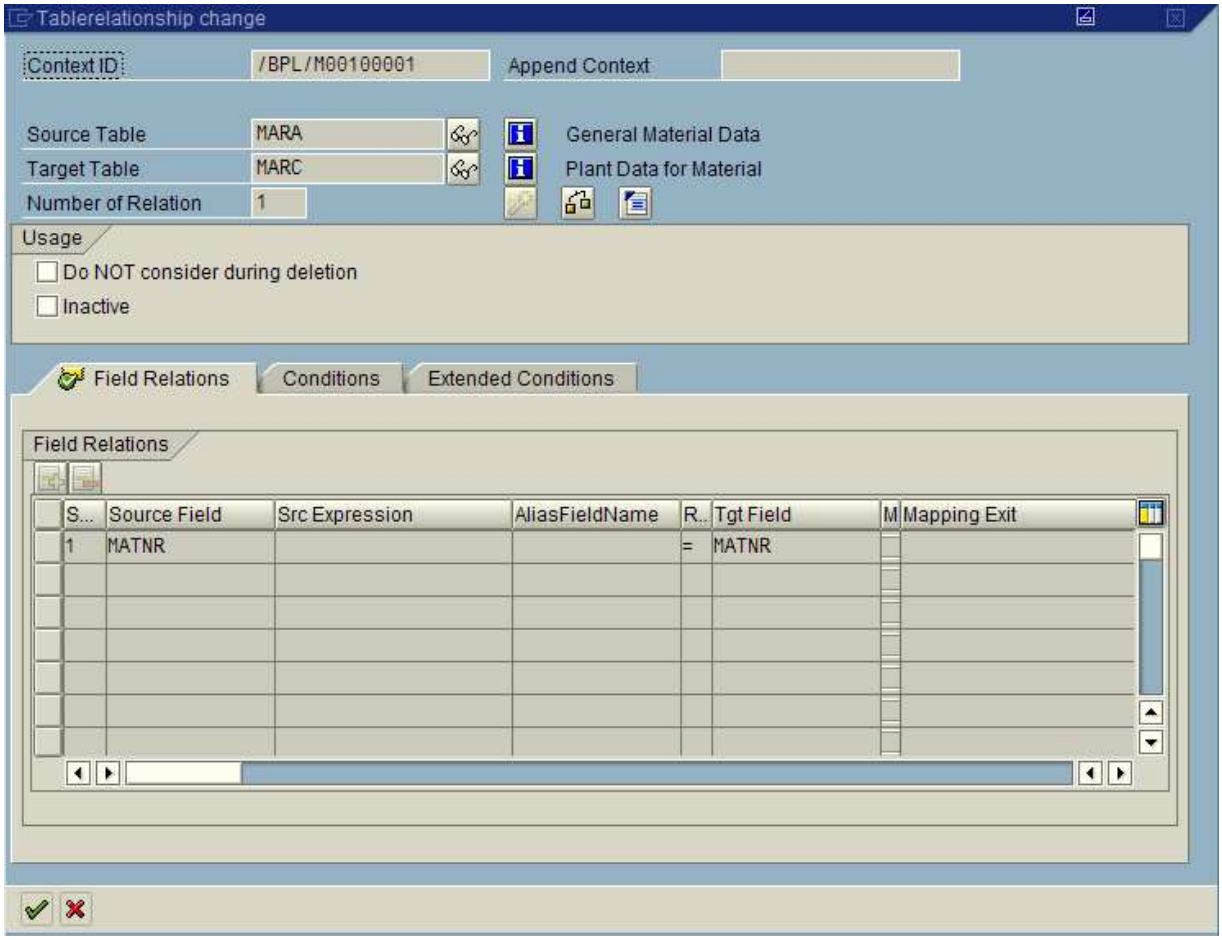

Figure 5: Table relationship with field relation MATNR = MATNR

2.2 Object Types in the Data Model Displayed in Overview Area

Chapter 2 describes the basic structure of the data model referring to a predefined business context. You can enhance the predefined data model by your own customer objects such as customer tables. The following object types can exist in the data model:

- Entities:

  An entity serves as a table container. You can assign tables and/or further entities directly to an entity. The name of an entity describes the function of the assigned tables. Entities can be either predefined (displayed as) or created by customer (displayed as).

- Tables:

  An object of the object type *table* represents a table in the sender/receiver system. A predefined business context contains predefined tables referring to the business object. You can add all tables detected by the crawler to a predefined business context by means of the *mass linking (tables)* feature. Tables can be either predefined (displayed as) or added by customer (displayed as).

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- Selections:

  A selection filters data sets from a table based on certain selection criteria. Selections can be either predefined (displayed as) or created by customer (displayed as).

  Note:

  Selections defined by customer in the *Selections* tab page of the *Define Selection Criteria* activity are displayed in Scenario Designer with the description *Field selections (generated)* (see Figure 6).

Figure 6: A selection defined by customer in the *Selections* tab page of the *Define Selection Criteria* activity is displayed as *Field selections (generat.)*

- Table relationships:

  The data environment of a business object is extracted by tracking table dependencies. These dependencies are specified in table relationships (displayed as). A table relationship describes specific properties (e.g., field relations) which the relationship between a dependent table (= target table) and a table above it (= source table) must fulfill. The system selects data records from the target table based on these properties. Table relationships can be predefined or created by customer.

- Exits:

  An exit (displayed as) modifies extracted table data (for example, by scrambling the data). Exits can be either predefined or created by customer.

2.3 Search Area and Search Result Area

In search area, you can search for entities and tables already included in the data model. This comprises both predefined objects and customer objects such as new customer entities or tables added by the *mass linking (tables)* functionality (for more details, see chapter Enhance a Predefined Business Context by Adding Further Tables).

Note:

Via search area, only such entities and tables will be found that have been included in the data model already. To enhance a predefined context by further tables contained in the table statistics (= the result of a crawler run) use the *mass linking (tables)* feature.

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To search for predefined entities or tables use Entities or Tables. Search for customer entities or tables via Entities (Customer) or Tables (Customer). Give a selection criterion and confirm. The search result area shows the search result.

Double-clicking a found object in search result area, you can view and edit this object in overview area. Via drag-and-drop, you can move a found object from search result area to another object in overview area and attach it according to the set of rules for allowed relationships (that is, you may attach a table to an entity but not vice versa, for example).

Example:

Assumption: Table MVER is included in the material business context but you do not know where it is located in the tree structure. To search for Table MVER, proceed as follows:

- In search area, click Tables (see Figure 7).
- Give MVER as search criterion.
- Table MVER is listed in search result area (see Figure 8). If needed, configure the displayed columns according to your needs via the *Column Configuration* icon in search result area.
- Double-clicking table MVER in search result area, the table is displayed in overview area (see Figure 9). Here, you can view and edit the table's properties (For example, double-clicking the table in overview area you can edit the copy control settings). Your changes apply in the data model's tree structure. With table MVER marked, clicking the *Goto* icon you can change from the *scenario overall view* to the *where-used list* to get an overview where the table is located in the tree structure (for more details, see chapter Scenario Overall View and Where-Used List). Via the *Scroll back* icon and the *Scroll forward* icon you can navigate between the different views in overview area and so go back to the data model view showing the complete tree structure.
- With table MVER displayed in search result area, you can attach this table to an entity or to another table in overview area by drag-and-drop (creating a new table relationship in doing so). As an example, see Figure 10 and Figure 11. Moving table MVER to table MARC via drag-and-drop, a popup opens for defining a table relationship.

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Figure 7: To search for the predefined table MVER in the material business context click the icon for predefined tables in search area

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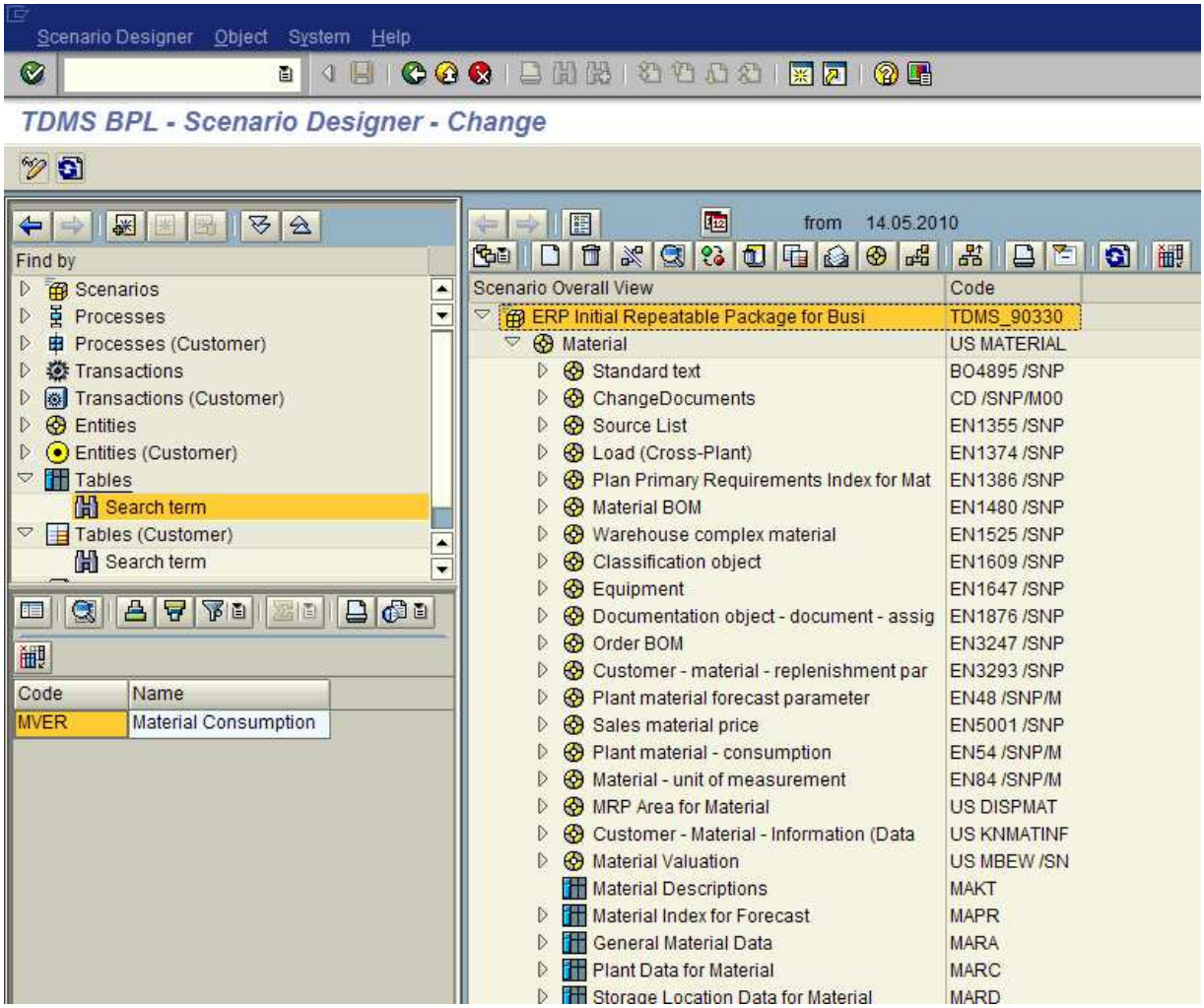

Figure 8: Table MVER is listed as a search result

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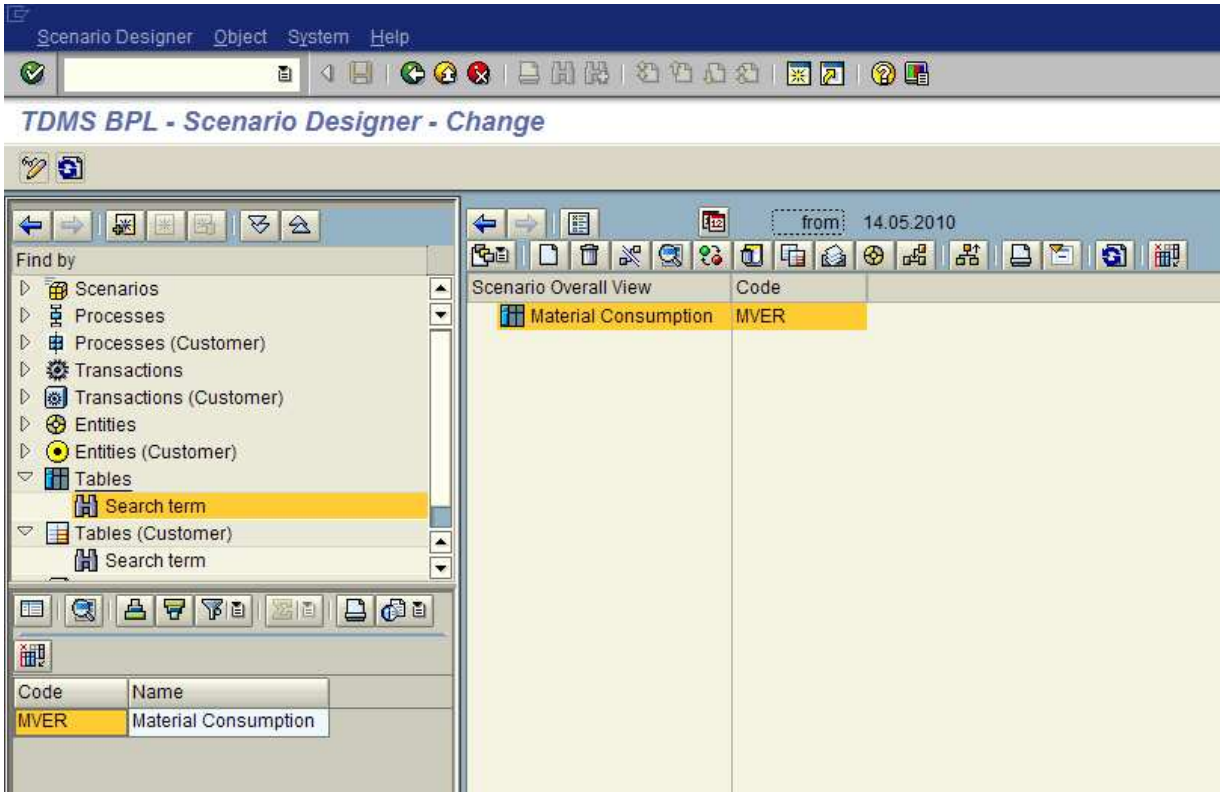

Figure 9: Double-clicking table MVER in search result area, the table is displayed in overview area

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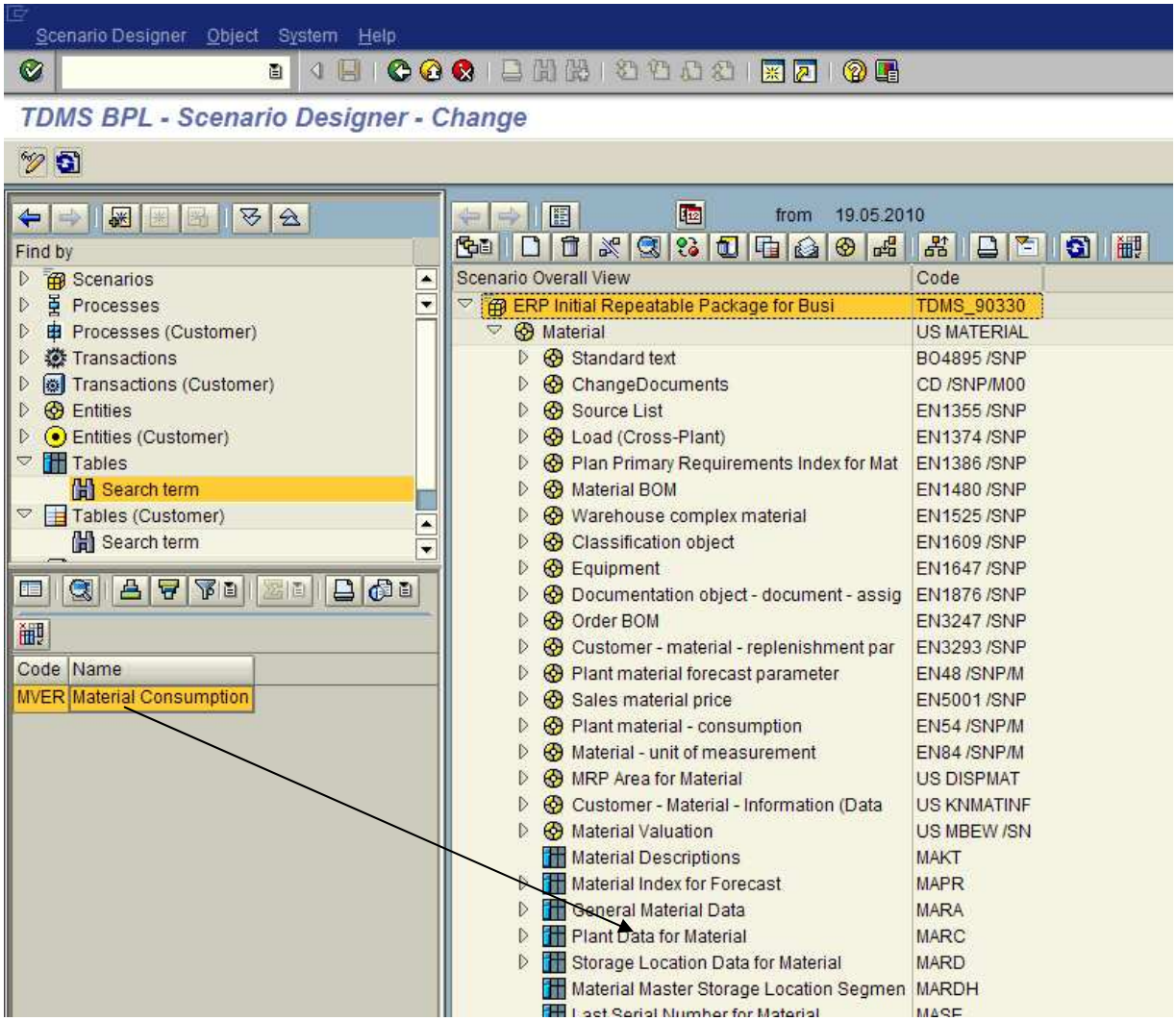

Figure 10: Via drag-and-drop, you can attach an object from search result area to another object in overview area (for example, table MVER to table MARC creating a table relationship)

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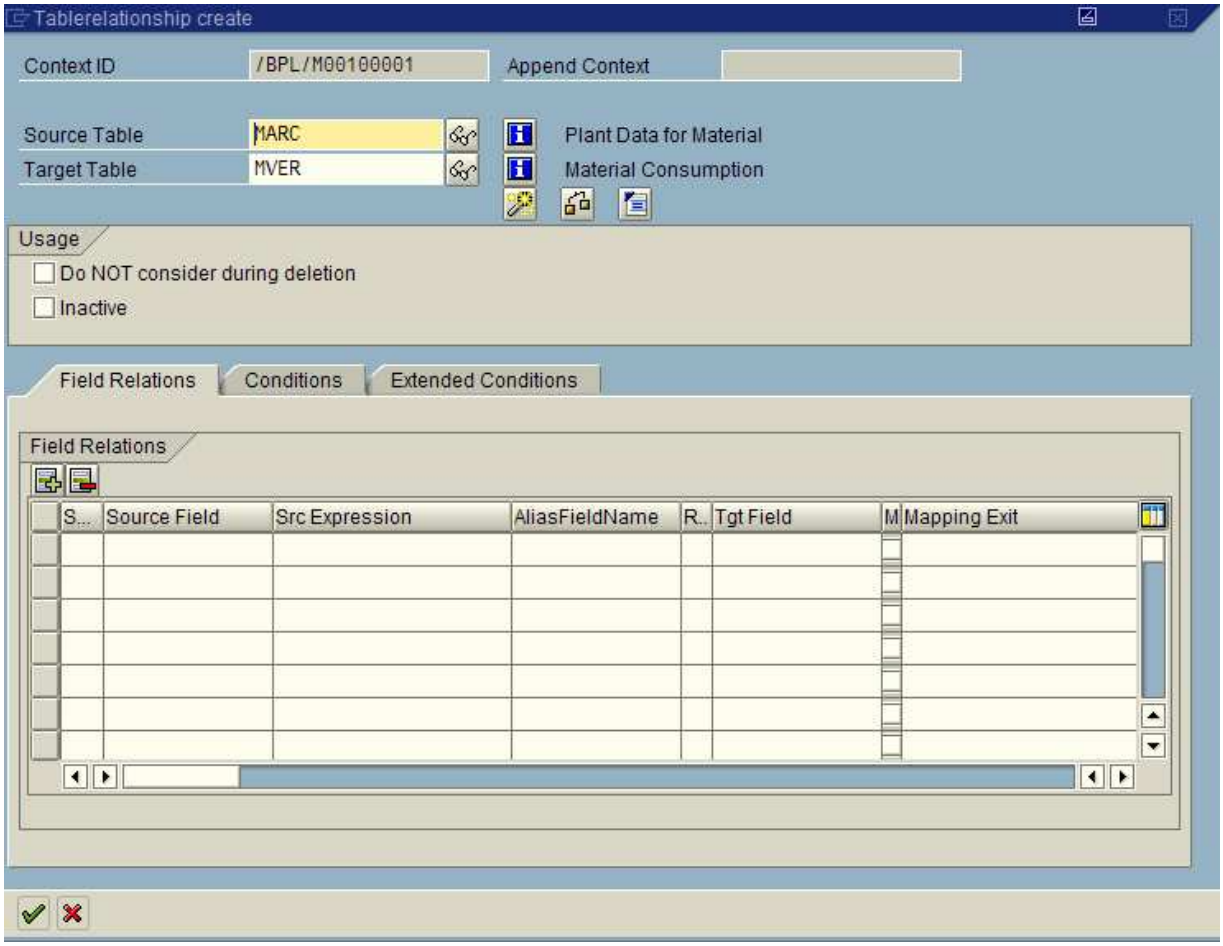

Figure 11: Moving table MVER from search result area to table MARC in overview area via drag-and-drop, a popup opens for defining a table relationship

2.4 Scenario Overall View and Where-Used List

There are two different points of view to look for where an object (such as an entity or a table) is located in the data model. For a certain object, the *Scenario Overall View* shows all relationships with this object as a parent object. In contrast, the *Where-Used List* displays all relationships with this object as a dependent object. With an object displayed in overview area, you can look for the *Scenario Overall View* by clicking the object with the right mouse button and choosing *Goto → Scenario Overall View* in the context menu. In the same way, you can change to the *Where-Used List*. Alternatively, you can mark the object, click the *Goto* icon , and choose between *Scenario Overall View* and *Where-Used List.* These views are also available for objects displayed in search result area. Choose either view in the context menu.

Example:

You search for table MVER in search area. The table is displayed in search result area. Clicking the table with the right mouse button and choosing *Where-Used List*, the where-used list is displayed in overview area (see Figure 12 and Figure 13). You can see that table MVER has been attached to entity *Plant*

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material consumption and is the dependent table in the MARC-MVER table relationship. Opening the node to the left of entity *Plant material consumption* you get the information that this entity has been attached to the *Material* entity (see Figure 14).

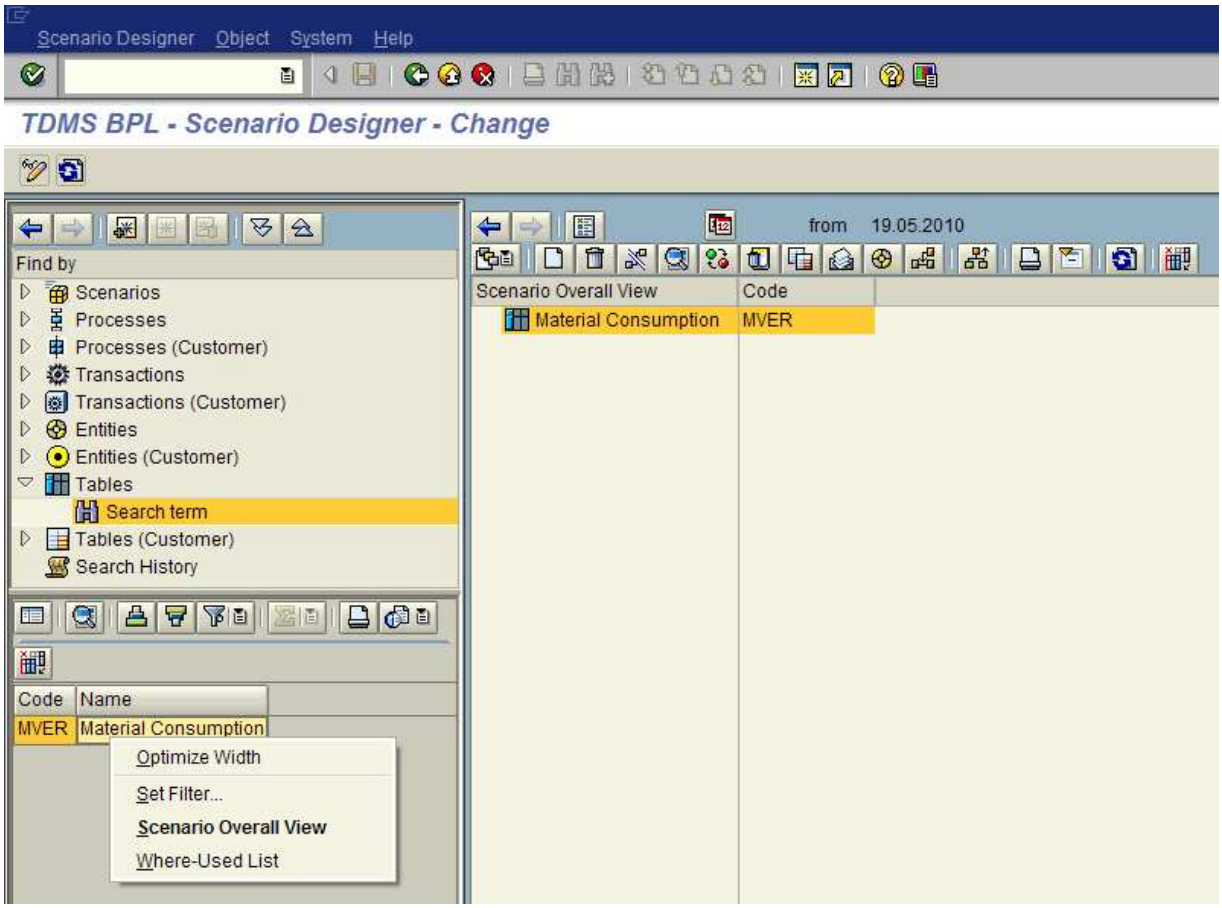

Figure 12: Calling the *Where-Used List* via the context menu in search result area

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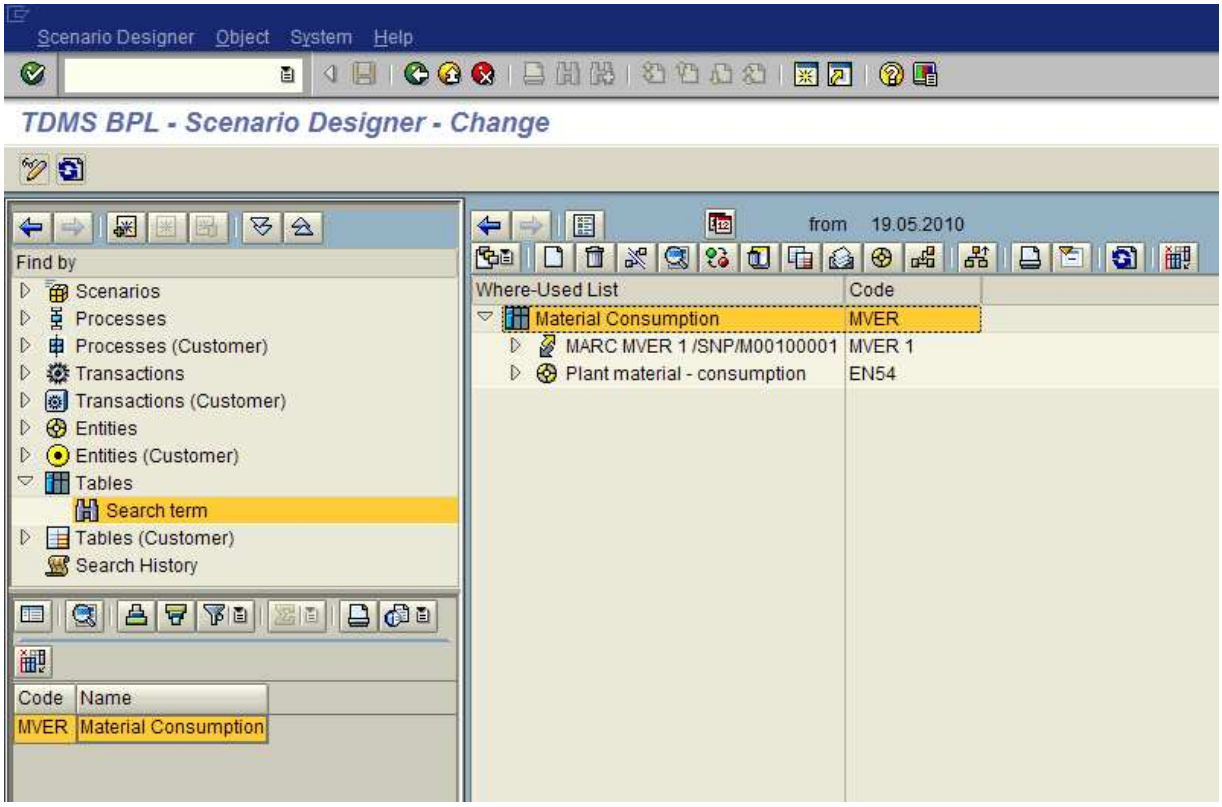

Figure 13: Where-Used List displayed in overview area

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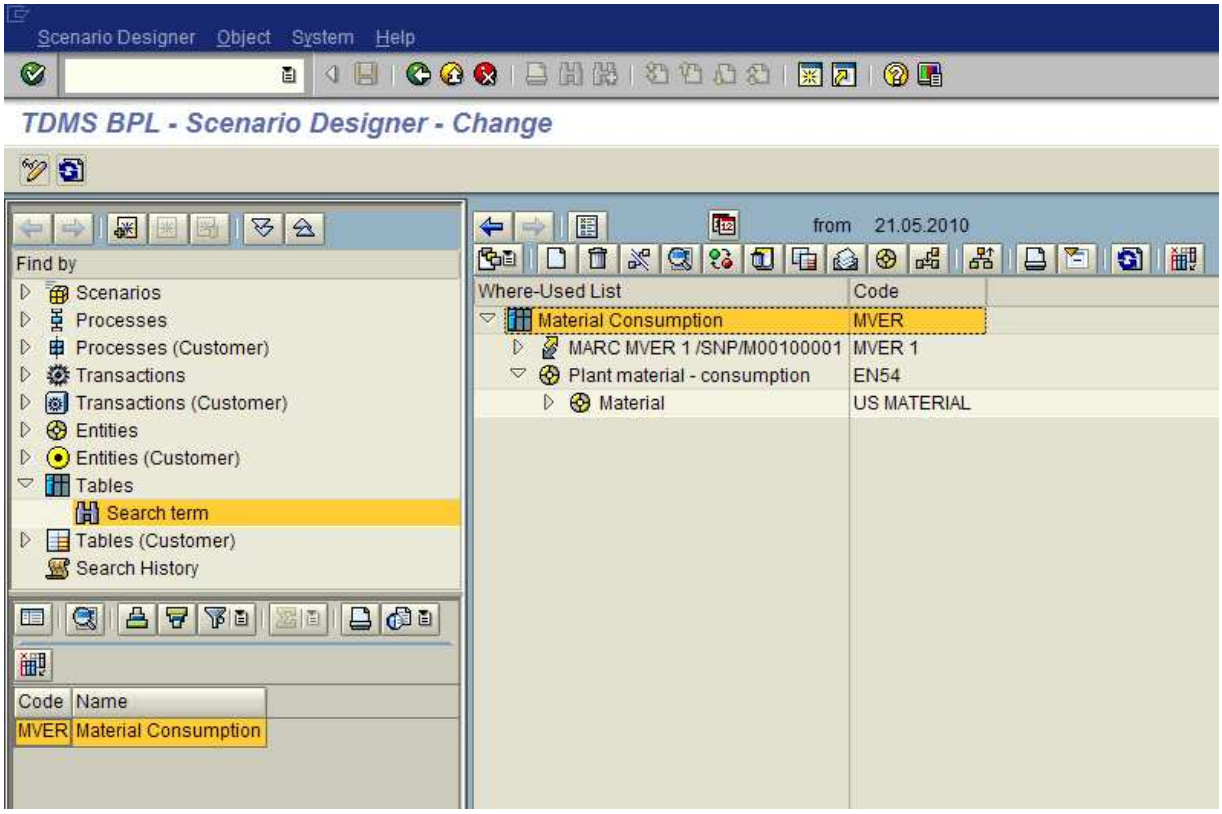

Figure 14: Determining the path to table MVER in the data model you can see that the *Plant material consumption* entity has been attached to the *Material* entity

3 Enhance a Predefined Business Context by Adding Further Tables

Within a scenario, you can extend a predefined business context and adapt it for your purposes by adding further tables using the *mass linking (tables)* feature. You can add any tables detected during the crawler run. This also comprises client-specific customer tables. As a result of *mass linking (tables)*, the added tables are attached to entities.

Note:

The direct assignment to an entity is only a necessary but not a sufficient condition for a table to be included in the scenario. In addition, one of the following steps needs to be done for a table to be considered during extraction:

- **The table must be involved in a table relationship (as source or target table)**
  or
- **the table must be set to complete copy in the copy control settings.**

For more details on how to involve a table in a table relationship, see chapter XXX. To set complete copy for all tables attached to a parent entity, double-click this entity and choose the radio button for *Copy contained tables completely*. To set complete copy for a single table, double-click the table and choose the radio button for *Copy table completely, trace all dependencies*.

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To add further tables via the *mass linking (tables)* functionality, please proceed as follows:

- Mark the start entity.
- Click the *Create* icon to create a new entity as table container for tables added by customer.
- In the appearing popup, choose *Entity (customer)* and confirm.
- A new popup opens. Give an entity ID and a description (see Figure 15) and confirm. Choose *Yes* in the appearing dialog window. The new entity is displayed in overview area (see Figure 16).
- Mark the new entity and click the *Mass Linking (Tables)* icon.
- In the appearing popup, give an appropriate selection criterion (e.g., Z*). There are additional filters. Per default, the filters for *Only Tables with Content* and *Application Tables* are set (see Figure 17).

  Note:

  There is a third filter for *Customizing tables*. Please be aware of that all predefined business contexts except for the *empty context for customer* consider master data and/or transactional data only. So if you attach a customizing table to an entity and set the table to complete copy you get a hint that *the object will be ignored during copy due to its classification* (see Figure 18**). To transfer customizing tables use the *empty context for customer* (for more details, see the chapter** How to Copy One or More Specified Tables**).**
- In the search result, mark the tables to be transferred and confirm.
- Opening the node to the left of the new entity, you can see the selected tables attached (see Figure 19). They are displayed as customer tables in contrast to the predefined tables. Repeat the *Mass Linking (Tables)* procedure, if applicable.
- To include the attached tables to the scenario, either involve the tables in table relationships or set the tables to complete copy.

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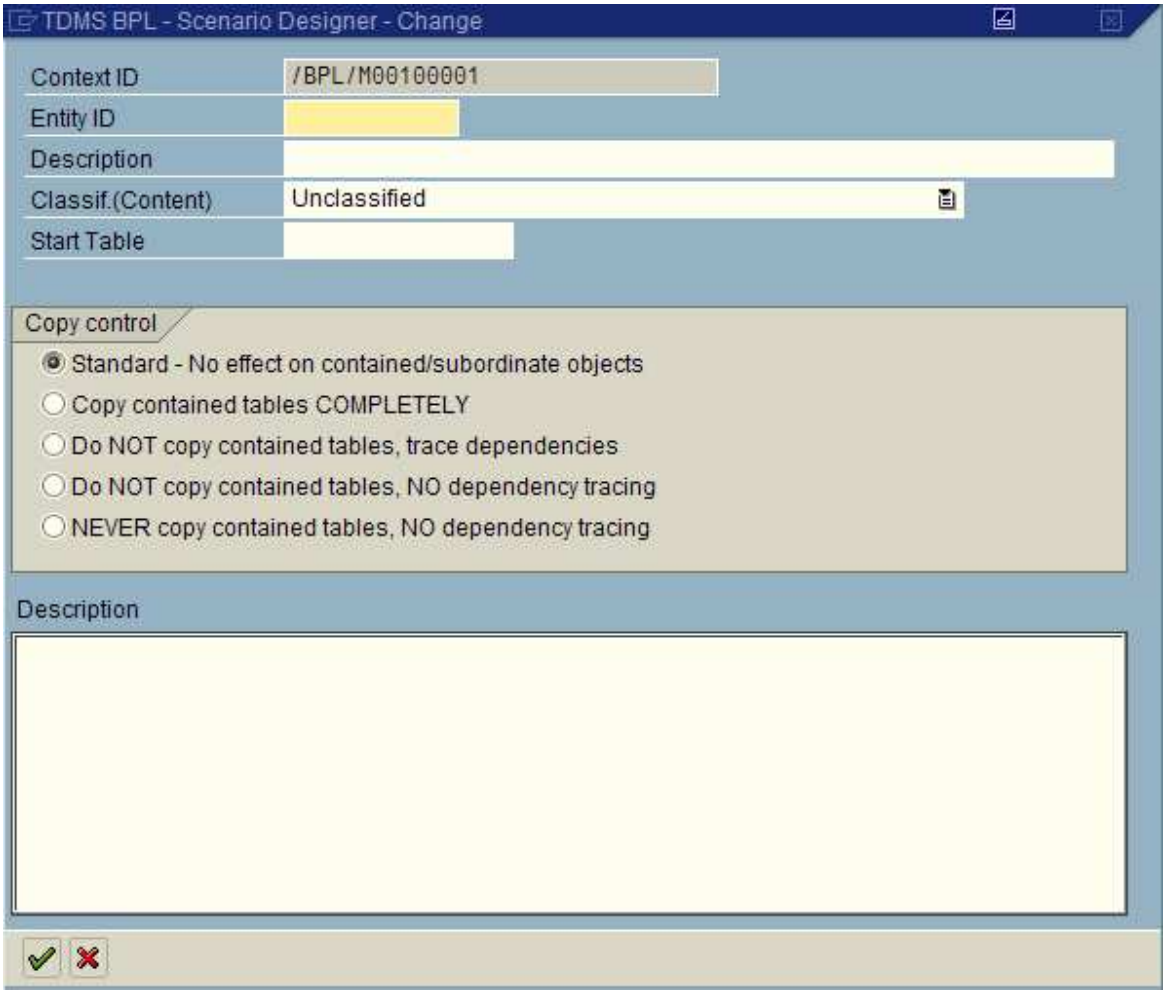

Figure 15: Give an entity ID and a description for the new entity

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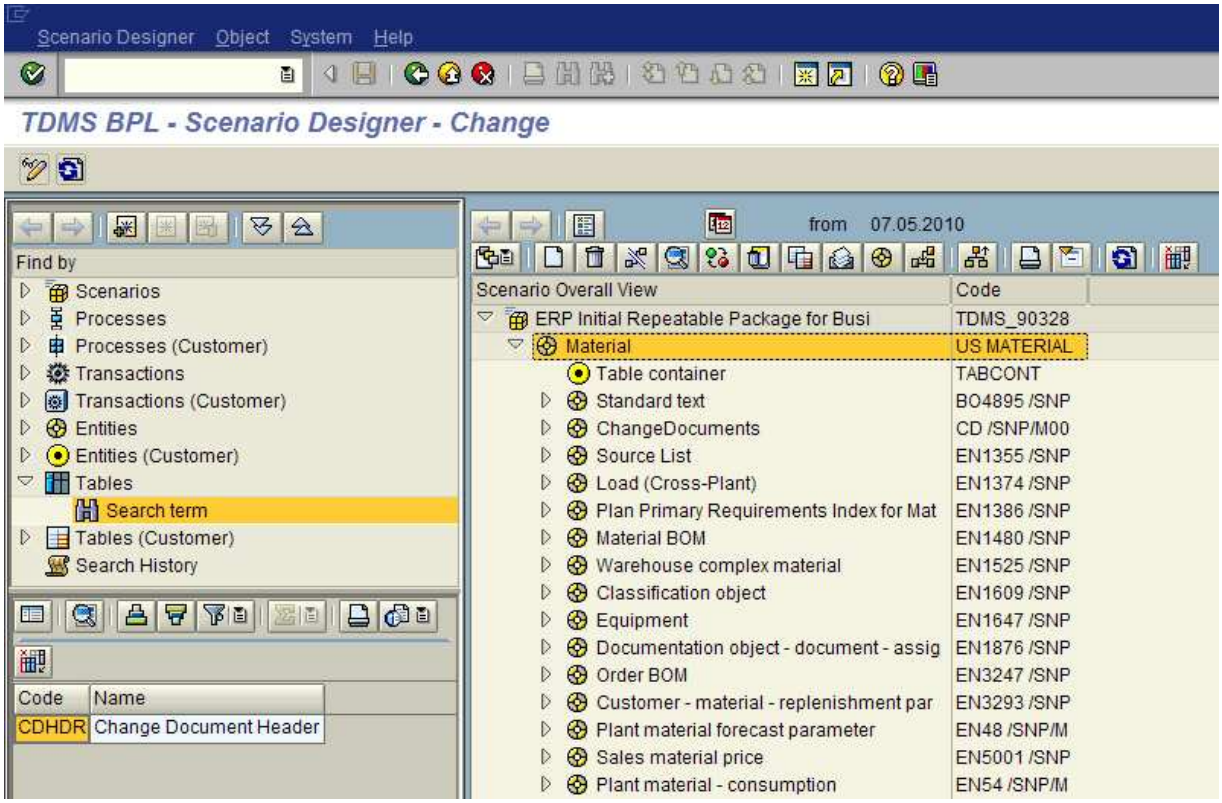

Figure 16: The new customer entity is displayed in overview area

Figure 17: Mass Linking (Tables): Give a search criterion. Per default, the filters for *Only tables with Content* and *Application Tables* are set.

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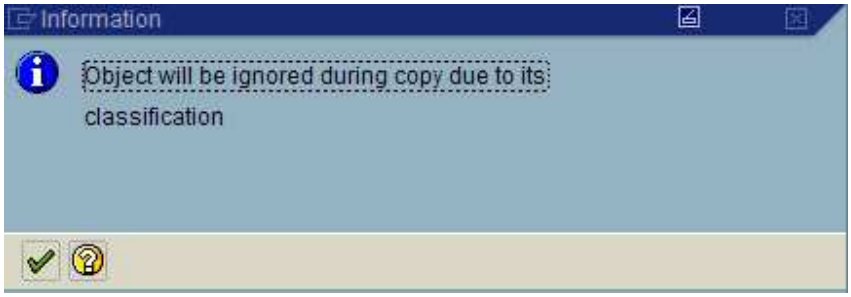

Figure 18: In a predefined business context (except for the *empty context for customer*), customizing tables will be ignored during copy due to their classifications

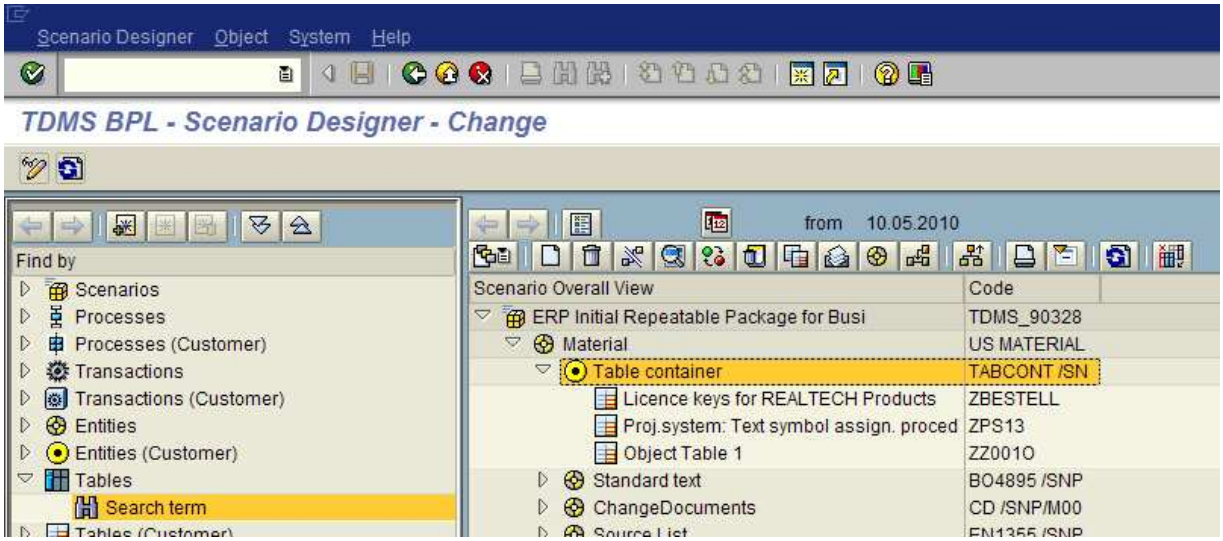

Figure 19: The tables selected via the *mass linking (tables)* functionality have been attached to the new entity

4 How to Involve Tables in Table Relationships

The previous chapter *Enhance a Predefined Business Context by Adding Further Tables* describes in detail how to extend a predefined context by attaching further tables to an entity. To include a table in the scenario, the assignment to an entity is only a necessary but not a sufficient condition. To consider an added table during extraction and to integrate the table in the process of tracking table dependencies, the table needs to be involved in at least one table relationship as source or target table.

This chapter shows the basic procedure of how to involve an added table in a table relationship. The given example uses the built-in *Suggest Field Relations* wizard to determine possible field relations between source and target table. After that, it is described how to use source expressions and how to define conditions. For extended conditions, please see the documentation in the *Extended conditions* tab page ( ) of a table relationship.

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4.1 Basic Procedure

To involve an added table in a table relationship, please proceed as follows:

- Before creating a table relationship you can get important information about a single table by double-clicking it in overview area. See Figure 20 as an example. Customer table ZTEST_VBAK has been assigned to a customer entity. Double-clicking the table, a popup opens that provides important information about this table such as delivery class, table type, and copy control settings (see Figure 21). Furthermore, there is an *information* icon in the popup. Clicking this icon you get further information about table and index sizes, primary keys and fields with an index access (see Figure 22). Via the button *Show table fields* the table fields with additional information are listed (see Figure 23).
- The VBELN field is not only a primary key for the ZTEST_VBAK table but also for start table VBAK. So it makes sense to create a table relationship between these two tables with VBAK as source table and ZTEST_VBAK as target table (= dependent table). To create a table relationship, move the target table to the source table via drag-and-drop (see Figure 24). As an alternative to drag-and-drop within overview area, you can select for the dependent table in the search area and move the table from the search result area to the source table in overview area via drag-and-drop (see Figure 25, Figure 26, and Figure 27). In both cases, a table relationship popup opens (see Figure 28).
- In the upper area of this popup, the source table and the target table are listed. Via the *Show table structure* icon, the table fields with additional information such as key fields, ABAP type and data elements are displayed. Via the *information* icon, information about primary keys and fields with an index access is provided.
  Clicking the *Suggest Field Relations* icon you can call a wizard that makes proposals for possible field relations based on data elements, domains, and key fields. In the given example, the wizard suggests the field relation VBELN = VBELN (see Figure 29). Clicking the *Check Relations* icon the entered field relations are checked for possible inconsistencies. Via the SQL Preview icon you can view the source code for the table relation (see Figure 30).
- After confirming your settings, the new table relationship is assigned to table VBAK in overview area (see Figure 31). Clicking the *Show contained tables* icon you can see that the ZTEST_VBAK table has been included to the scenario (see Figure 32).

Note:

For reasons of performance when processing large tables, please consider the following recommendations concerning the target fields in a table relationship:

- **The target fields in a table relationship should be primary keys or fields with an index access.**
- **Please keep the sequence of the index fields.**
- **Consider the positions of fields in an index. You should start with position 1 and take consecutive fields. It is not recommended to leave out intermediate fields (e.g., considering an index with 5 fields you might use the fields on positions 1, 2, and 3 as target fields but it is not recommended to use fields on positions 1, 4, and 5 leaving out positions 2 and 3).**

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Before accepting a field relation proposal please check if the proposal makes sense in form and content. A field relation between two date fields can be formally correct but to compare a booking date with a creation date does not make sense.

It is not possible to edit the field relations of a predefined table relationship directly. To change or extend the field relations of a predefined table relationship, you have to set this table relationship inactive and to create a new relationship between the concerned tables. See the example of table relationship MARC-MVER in chapter *Table Relationships Including Conditions*.

Instead of using the *Suggest Field Relations* wizard, you can also enter the field relations manually. On the *Field relations* tab page, give a sequential number for each field relation line. Enter the desired source field included in the source table (a F4 input help is available). How to use source expressions is described in chapter *Table Relationships Including Source Expressions*. Give the AliasFieldName, if desired. Define a relational operator via F4 input help and give a target field included in the target table (using F4 help). Normally, the *Must not be initial* setting is inactive. Activating this setting you can control that an initial entry in the source field must not be tracked. Via mapping exits, specific field relation requirements can be realized that would not be possible using standard means. This is for internal use only and not supported.

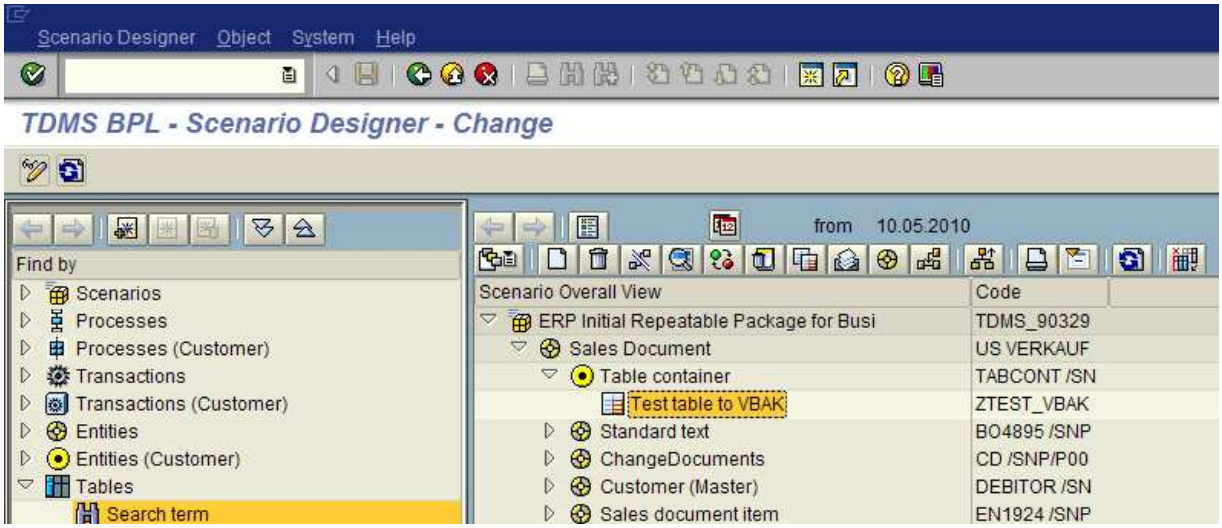

Figure 20: Customer table ZTEST_VBAK is assigned to a customer entity. Double-clicking the table important information about the table is displayed in a popup.

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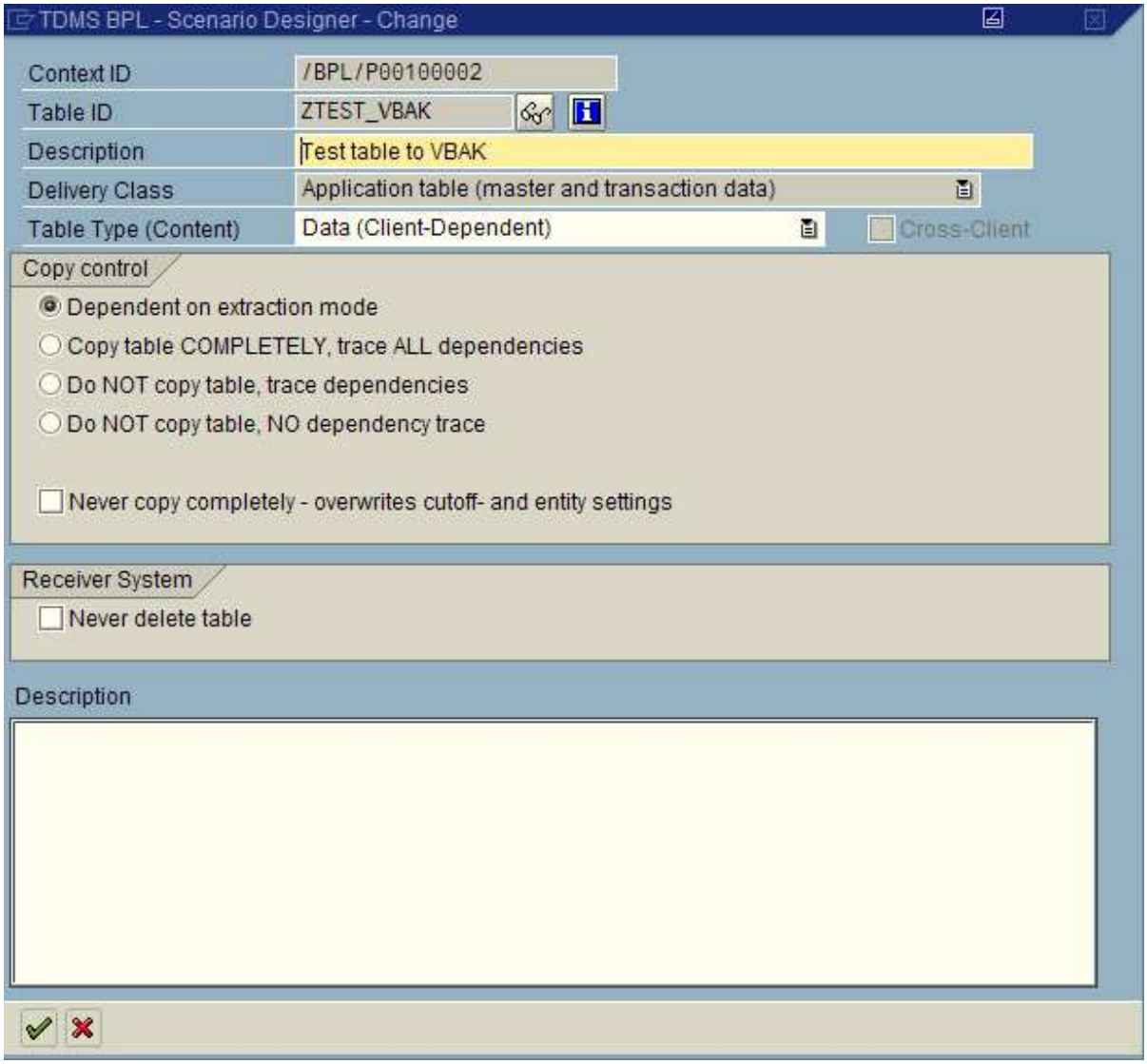

Figure 21: After double-clicking a table, a popup opens that provides important information about the table

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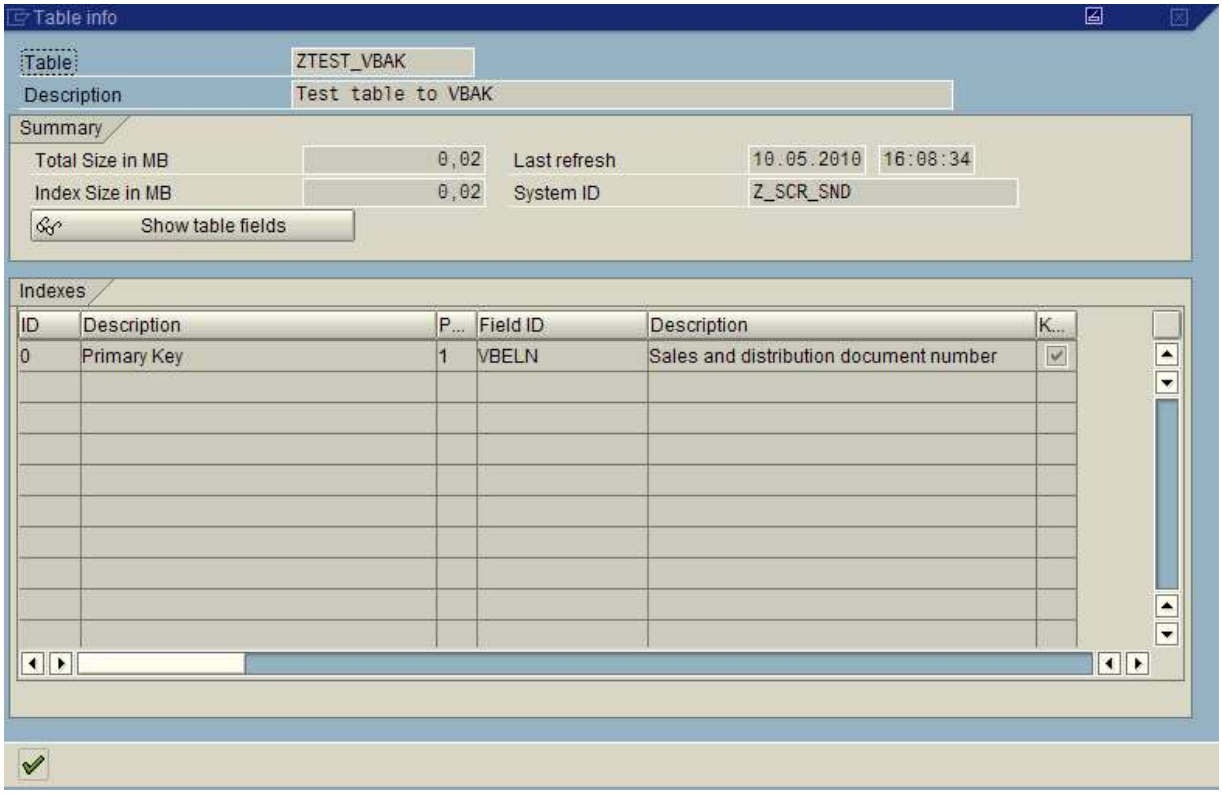

Figure 22: Information about primary keys and fields with an index access

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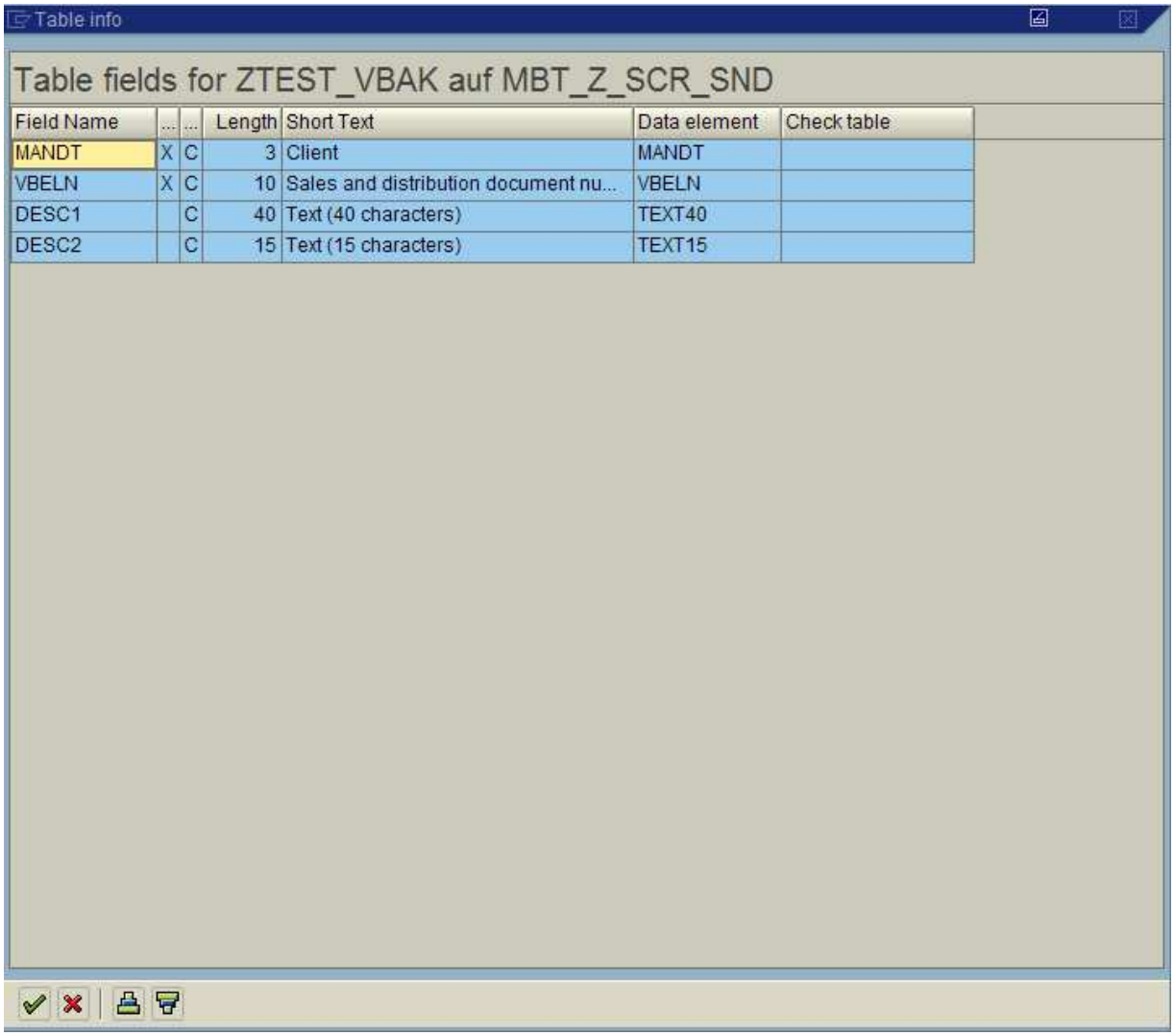

Figure 23: List of table fields

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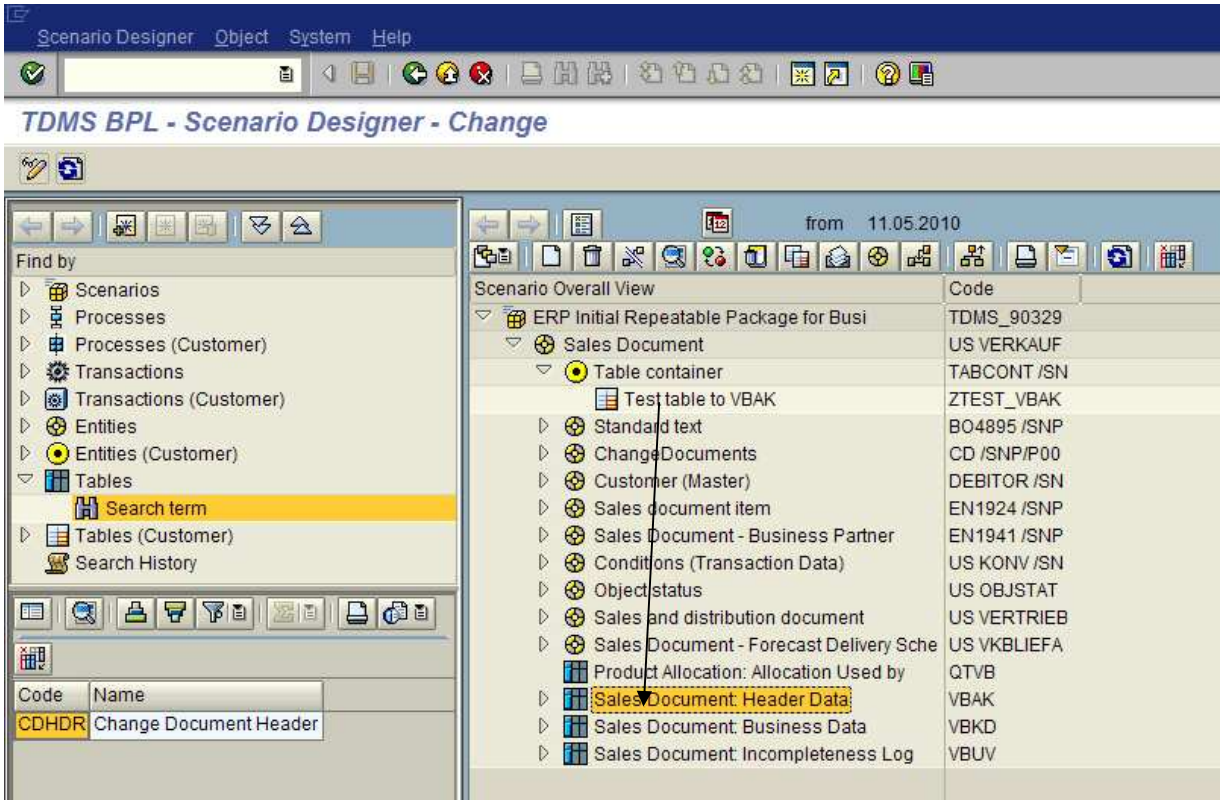

Figure 24: Create a table relationship via drag-and-drop moving the dependent table to the source table

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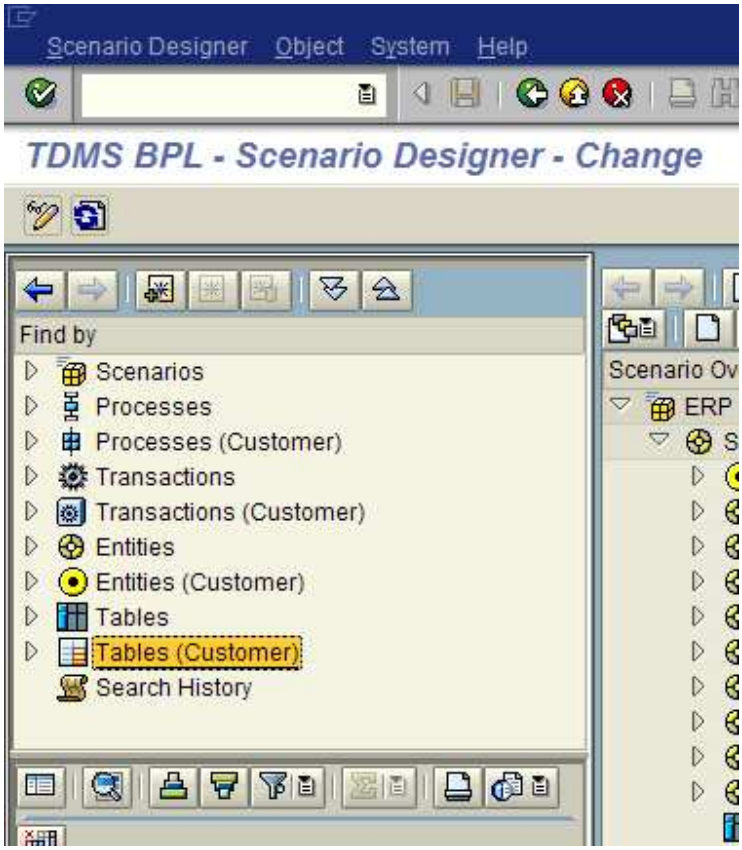

Figure 25: Search for the customer table in search area

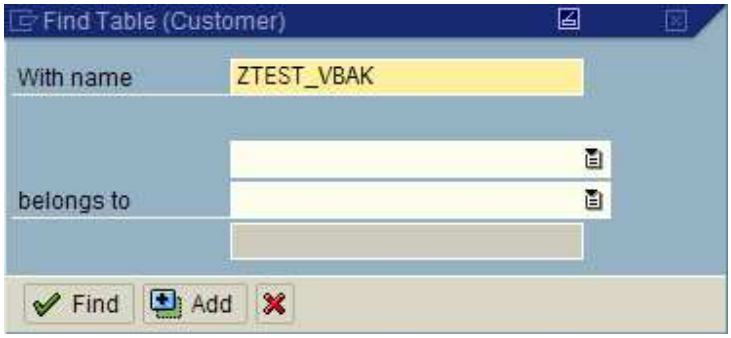

Figure 26: Select for the customer table

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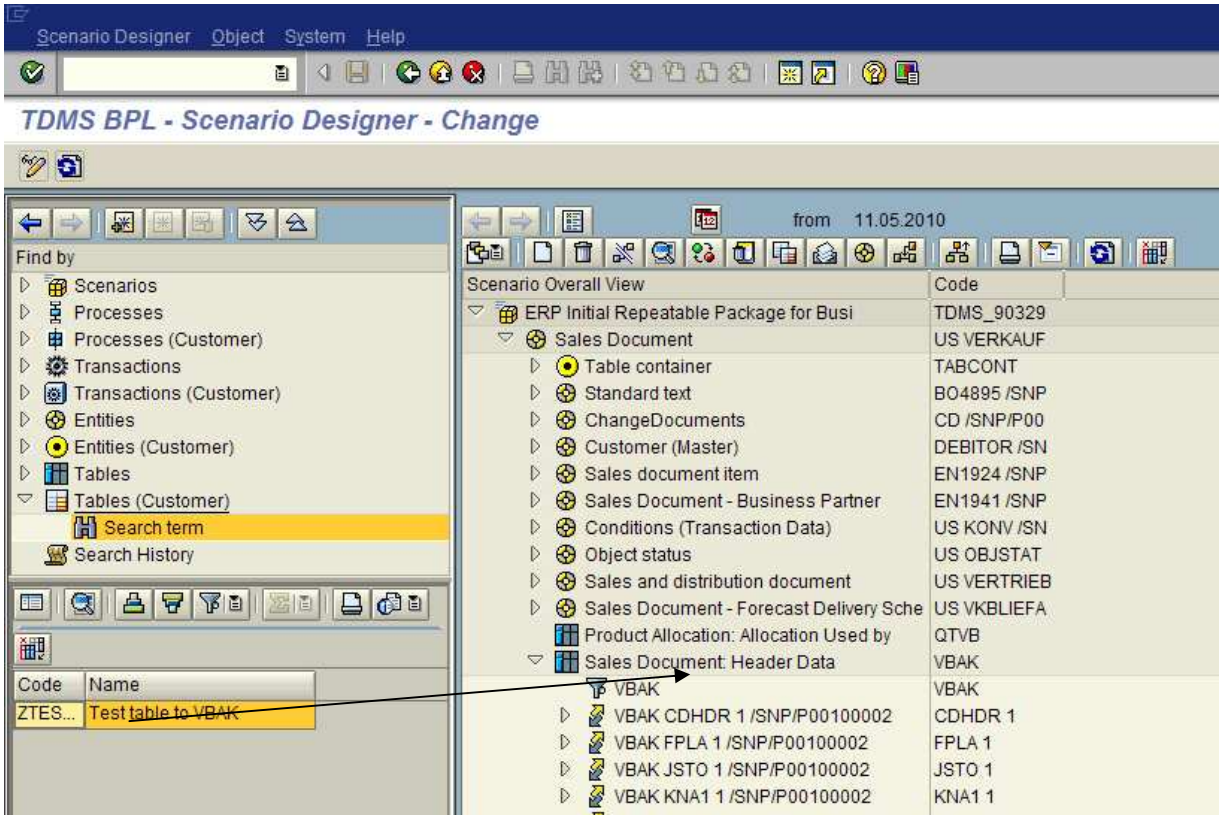

Figure 27: Move the dependent table from search result area to the source table in overview area via drag-and-drop

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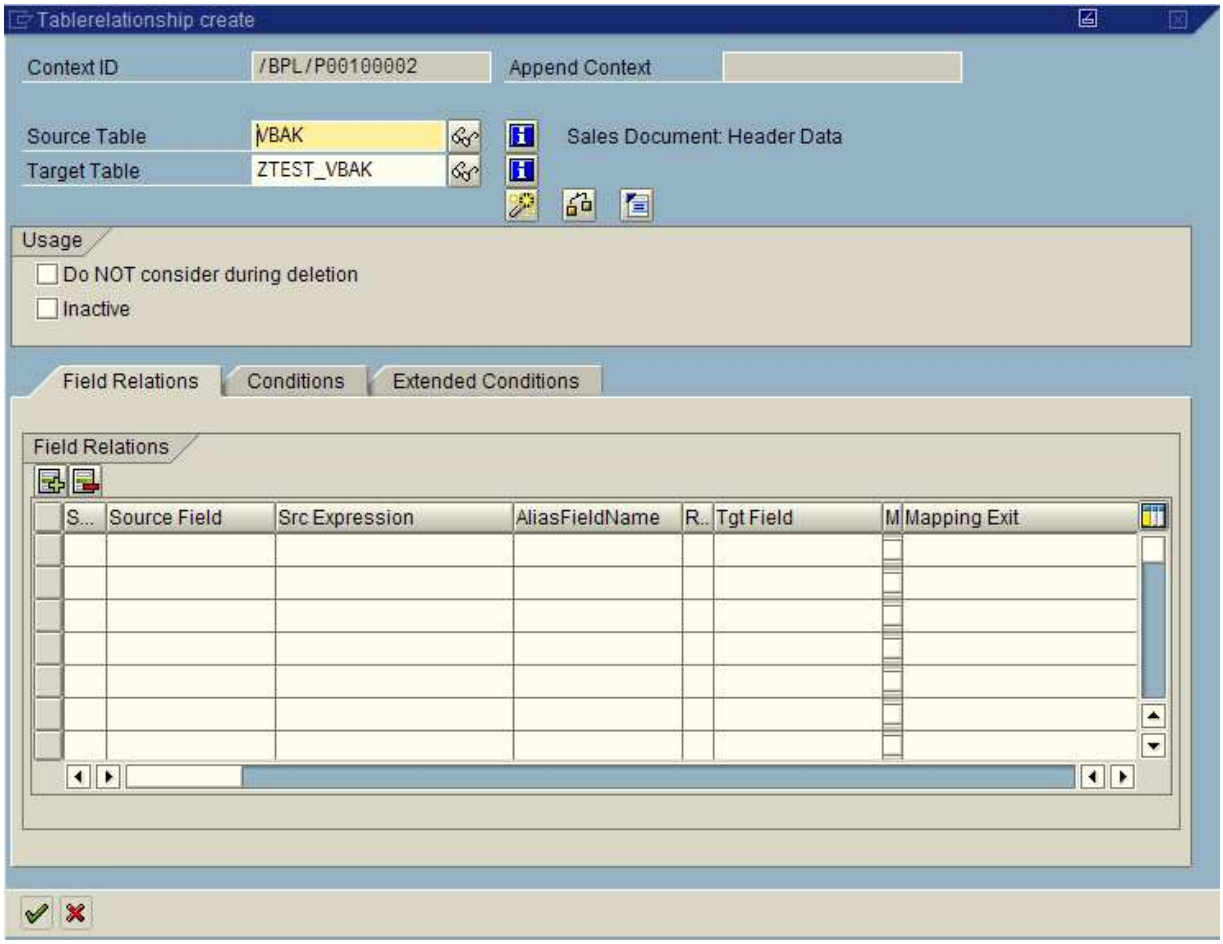

Figure 28: Table relationship popup

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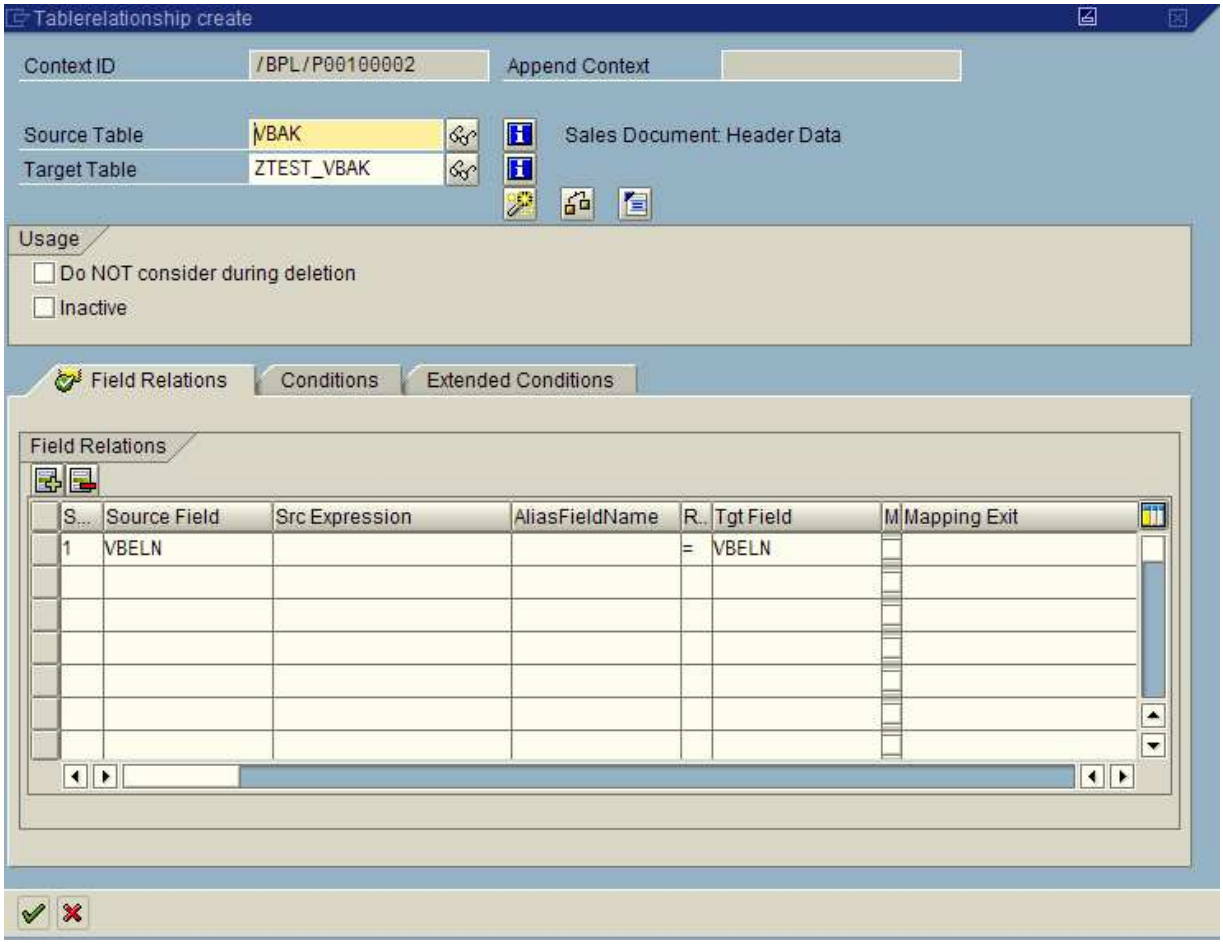

Figure 29: The field relation wizard proposes VBELN = VBELN

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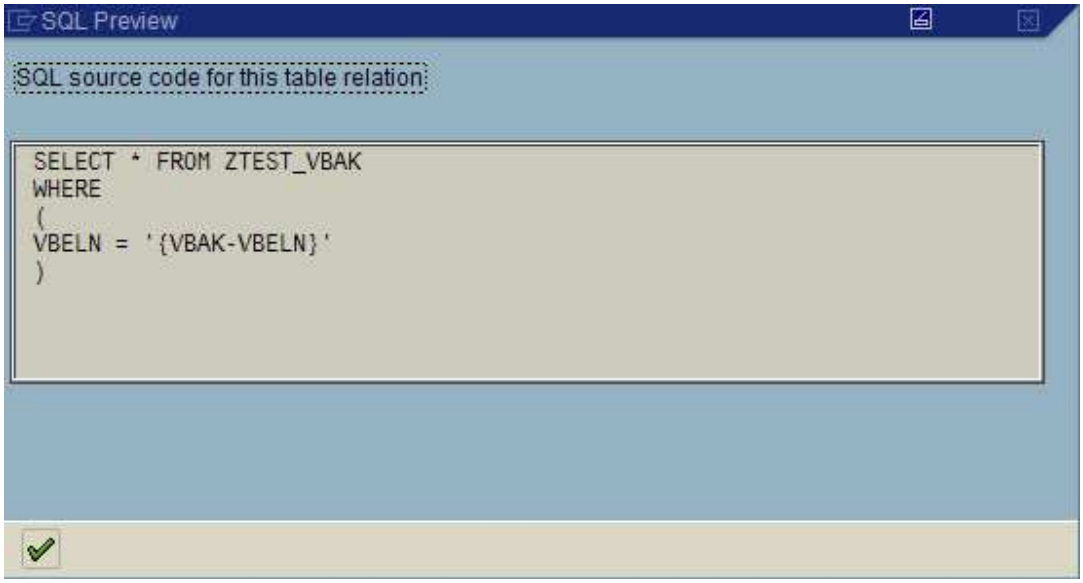

Figure 30: SQL preview for the given field relation

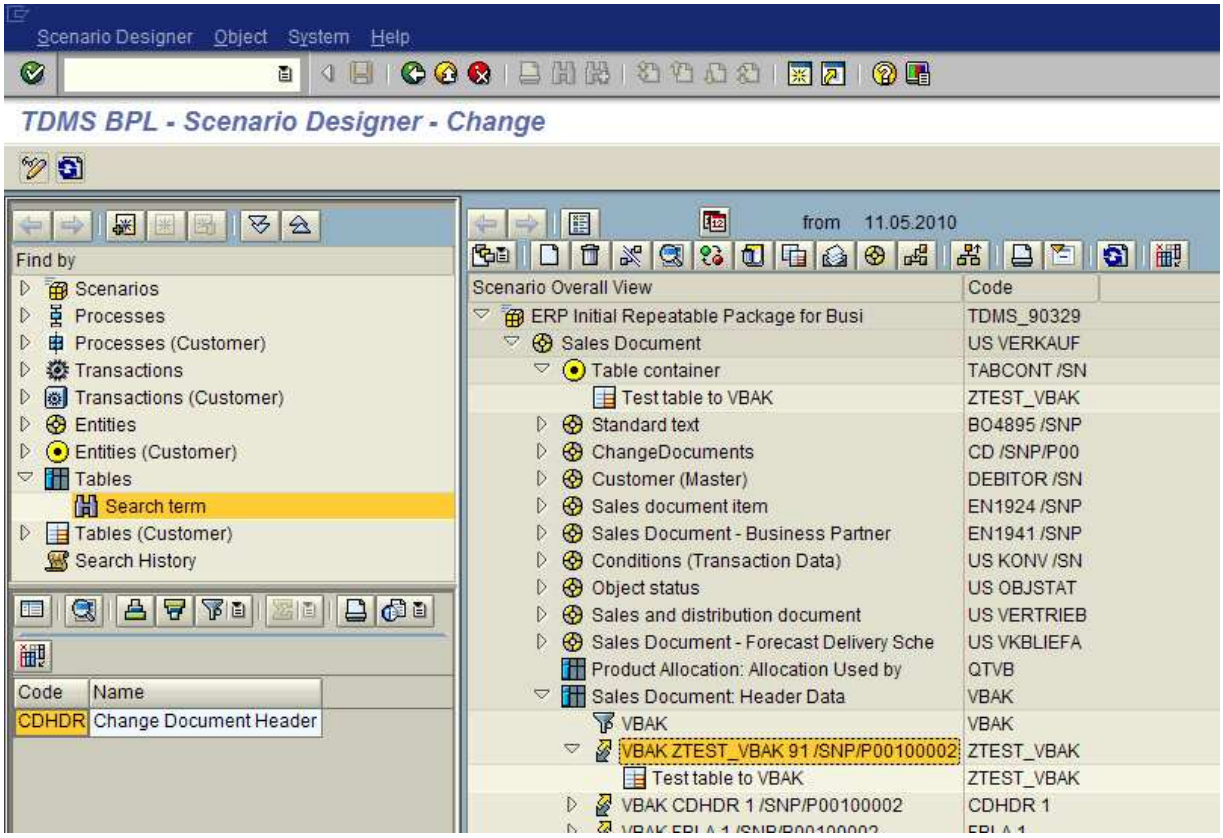

Figure 31: The new table relationship has been assigned to table VBAK

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Table ID	Table	Σ Rec. ...	Σ Size (MB)	D	T...	T...	...	...
ZTEST_VBAK	Test table to VBAK	68	0,02	A	DC			
STXH	STXD SAPscript text file header	363	20,16	A	DC			
STXL	STXD SAPscript text file lines	7.995	59,54	A	DC			
CDHDR	Change document header	188	14,27	A	DC			
CDPOS	Change document items	774	10,02	A	DC			
KNA1	General Data in Customer Master	1.294	0,55	A	MC			
KNBK	Customer Master (Bank Details)	136	0,03	A	MC			
KNEX	Customer Master: Legal Control - Sanctioned Party List	166	0,02	A	MC			
KNVA	Customer Master Loading Points	221	0,04	A	MC			
KNVI	Customer Master Tax Indicator	21	0,11	A	MC			
KNVK	Customer Master Contact Partner	593	0,31	A	MC			
COTPL	CO-ABC Template Master Data	24	0,02	A	MC			
COTPLT	CO-OM-ABC: Descriptive Text for Process Template	51	0,08	A	MC			
COTPLP	CO-OM-ABC: Items in Process Template	39	0,02	A	MC			
COTPLPT	CO-OM-ABC: Texts for Items in Process Template	59	0,12	A	MC			
CKBS	Base Planning Object - Unit Costing	1.367	0,02	A	MC			
CKBT	Texts for CKBS	86	0,02	A	MC			
LTBK	Transfer requirement header	218	0,07	A	TC			
LTBP	Transfer requirement item	277	0,05	A	TC			
CKHS	Header: Unit Costing (Control + Totals)	556	1,09	A	TC			
CKHT	Texts for CKHS	95	0,03	A	TC			
CKIS	Items Unit Costing/Itemization Product Costing	849	14,14	A	TC			
CKIT	Texts for CKIS	80	4,80	A	TC			
JCDS	Change Documents for System/User Statuses (Table JE...	85	14,11	A	TC			
VBAP	Sales Document: Item Data	1.187	15,13	A	TC			
VBKD	Sales Document: Business Data	515	10,88	A	TC			
VBPA	Sales Document: Partner	178	17,91	A	TC			

Figure 32: The customer table ZTEST_VBAK has been included to the scenario

4.2 Table Relationships Including Source Expressions

As an additional requirement, source expressions can be included in table relationships, that is to say, only those records will be extracted from the target table that contain certain source expressions in one or more target fields such as fixed or concatenated values. As examples, see Figure 33 to Figure 36. The table relationships ESLL-STXH and BKPF-CDHDR contain source expressions both with fixed and concatenated values. The corresponding SQL statements are displayed.

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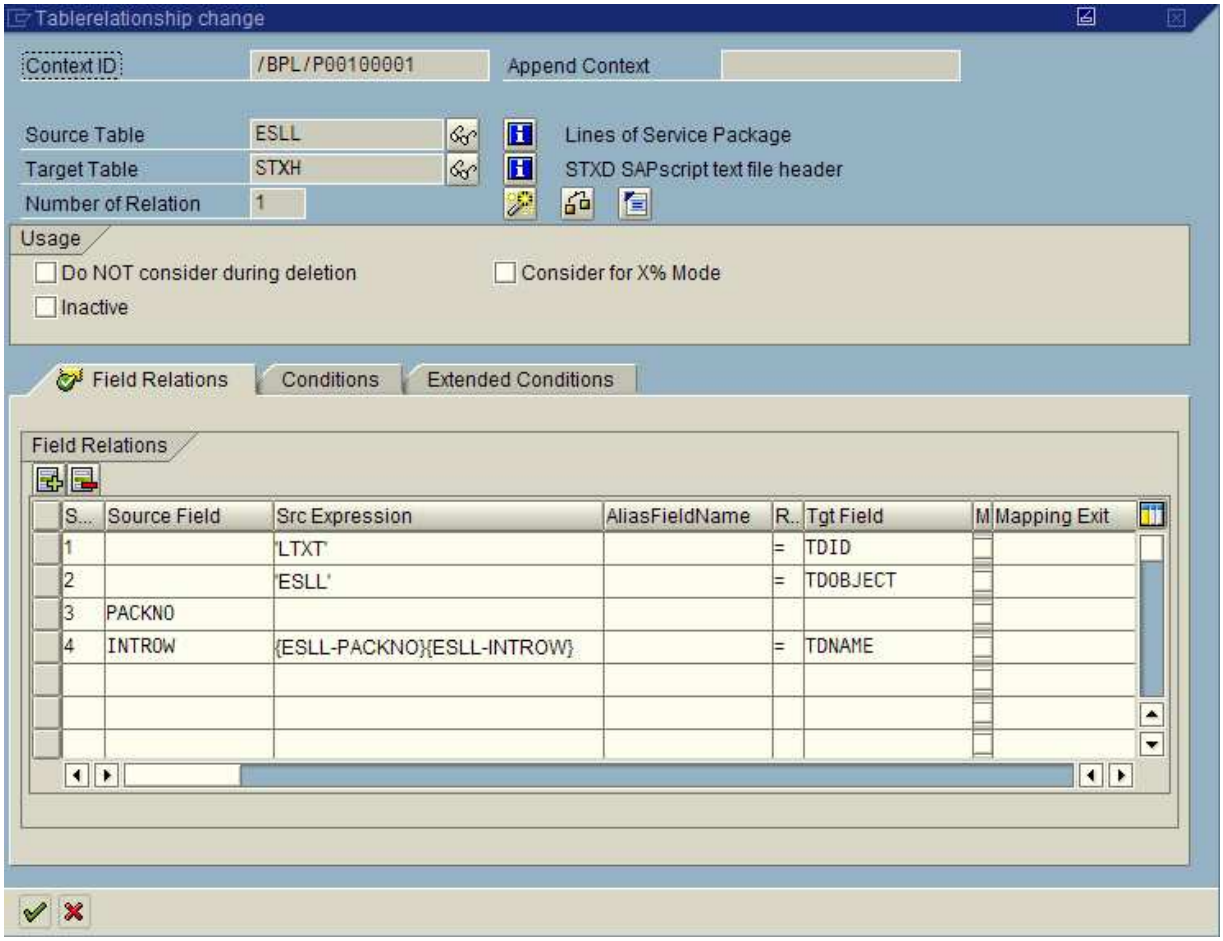

Figure 33: The table relationship between ESLL and STXH contains source expressions both with fixed and concatenated values

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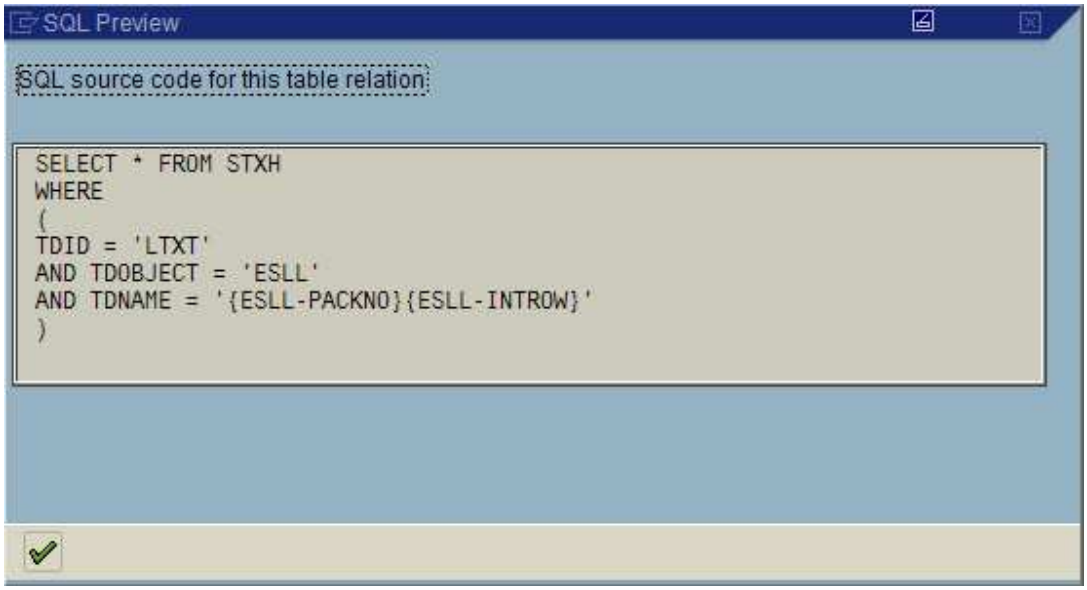

Figure 34: SQL statement for the table relationship between ESLL and STXH

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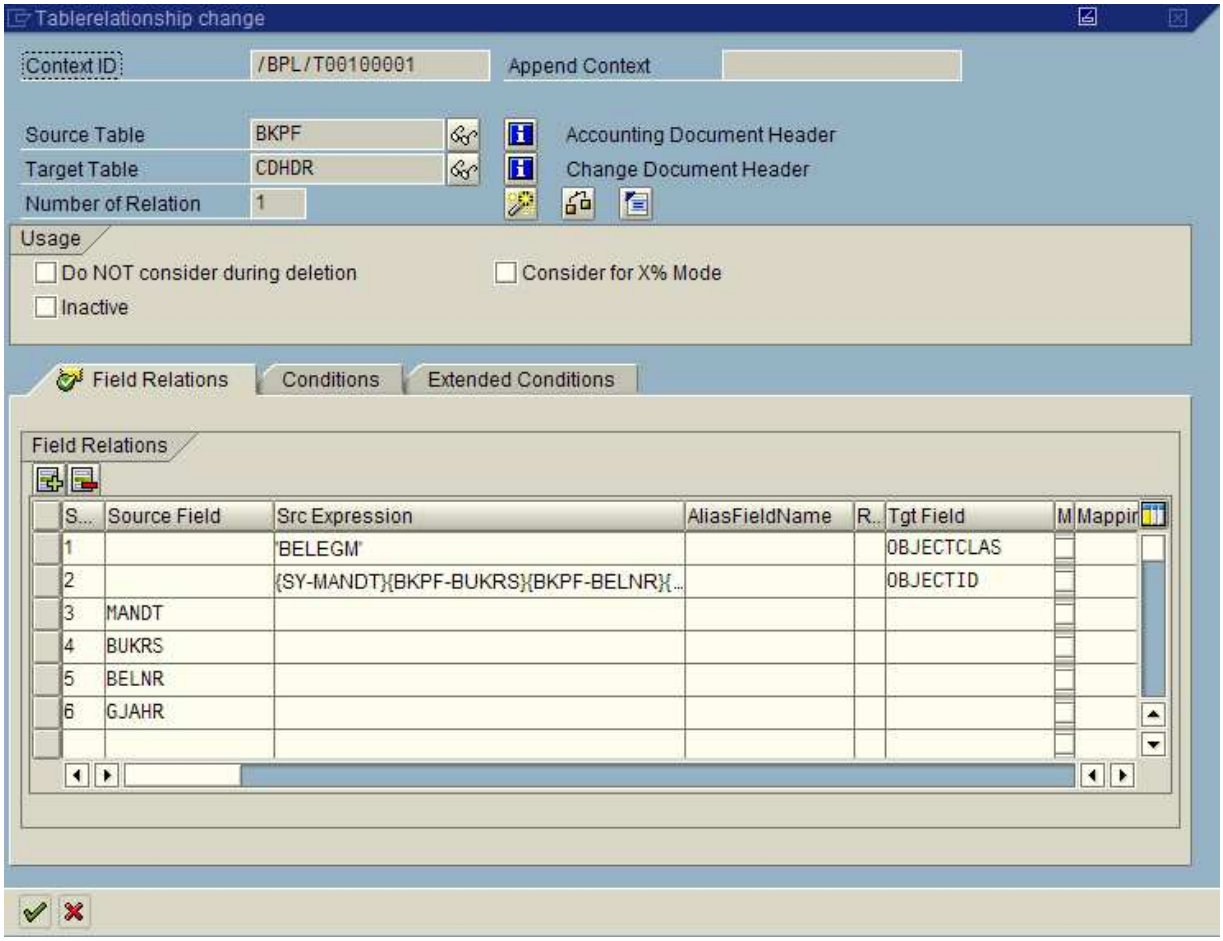

Figure 35: Table relationship BKPF-CDHDR with source expressions

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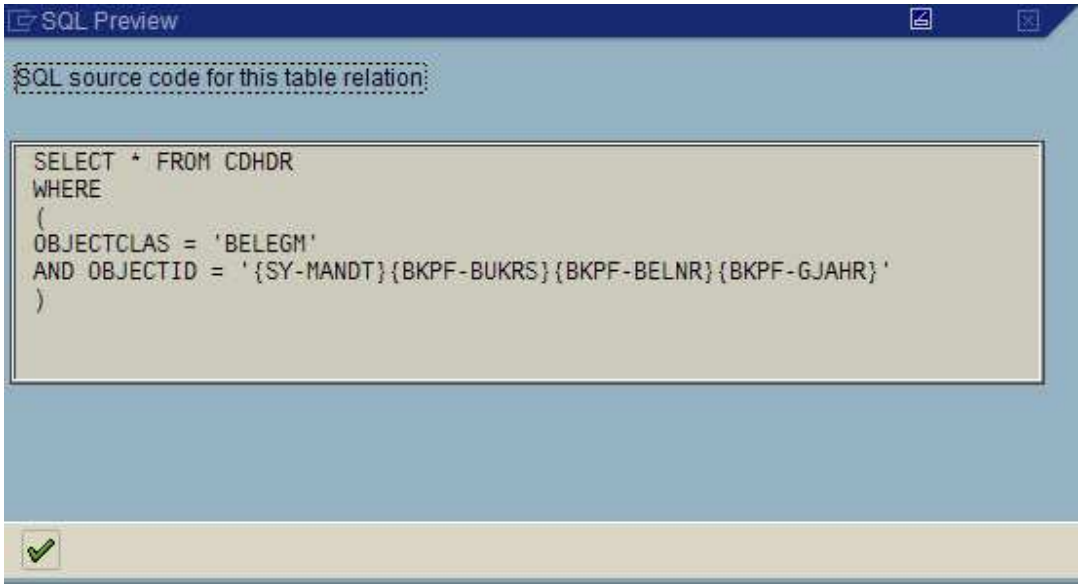

Figure 36: SQL statement for table relationship BKPF-CDHDR

4.3 Table Relationships Including Conditions

On the *Field relations* tab page of a table relationship, conditions can be defined that records from the target table must fulfill in order to be processed. As an additional requirement, on the *Conditions* tab page, you can give conditions that data sets from the source table need to fulfill in order to be tracked. In this way, you can restrict the amount of data to be processed.

Please be aware of that field relations and conditions of predefined table relationships cannot be edited directly. To do this, you must set the predefined table relationship inactive and create a new one between the two tables.

Example:

Assumptions:

- Chosen business context: Material
- Table relationship of interest: MARC <-> MVER
- Source table MARC (plant data for material): Table MARC shows in which plants a certain material is used.
- Target table MVER (material consumption): Table MVER shows how much of a certain material was consumed in a certain plant for a certain period.
- For the MARC-MVER relationship, you are only interested in tracking data for plants 1000 and 3000. You can implement this requirement by defining a condition.

Procedure:

- Set the predefined MARC <-> MVER relationship inactive:
  - Double-click MARC <-> MVER table relationship.

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- Set an indicator at *Inactive*, and confirm (see Figure 37 and Figure 38).

- Create a new MARC <-> MVER table relationship:
  - There are two possibilities:
    Move table MVER to table MARC via drag-and-drop within overview area
    or
    search for table MVER in search area and move the found table from search result area to table MARC in overview area via drag-and-drop.
  - A *Create table relationship* popup opens (see Figure 39). MARC is the source table, MVER the target table. The *Field relations* tab page is active. Click the *Suggest Field Relations* icon to get suggestions for useful possible field relations between source and target table based on information about data elements, domains and key fields. For the suggestions made by the wizard, see Figure 40.
  - You are only interested in MATNR and WERKS, so you can delete the last three lines via the *Delete Row* icon (see Figure 41). To check the consistency of entered table relations in the popup window, click the *Check relations* icon . To view information about the SQL source text for the table relationship, use the *SQL Preview* icon .

- To track only data for plants 1000 and 3000 from MARC, define a condition.
  - Click the *Conditions* tab page.
  - Enter the condition, as given in Figure 42.

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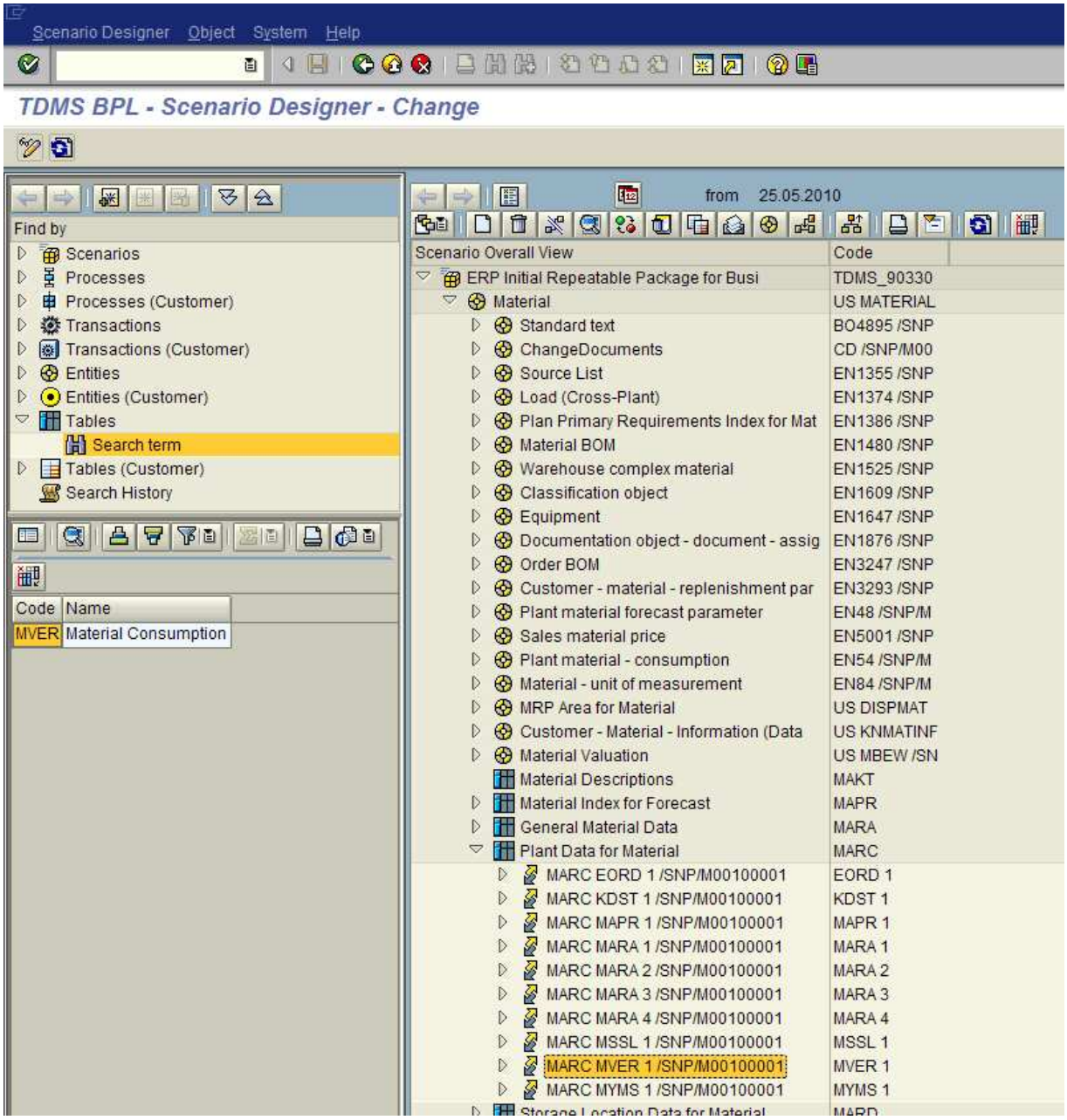

Figure 37: Predefined table relationship MARC-MVER

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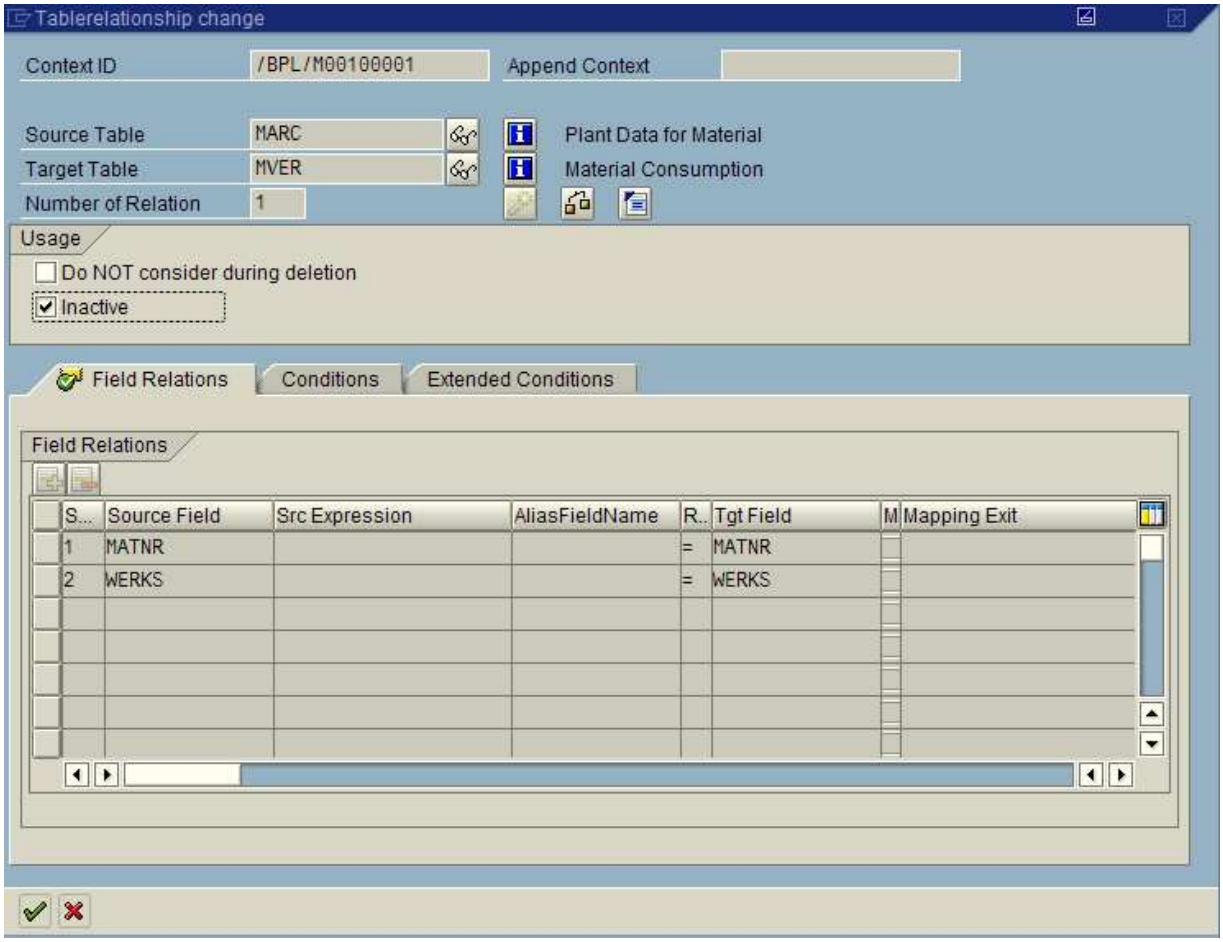

Figure 38: Set the predefined table relationship MARC-MVER inactive

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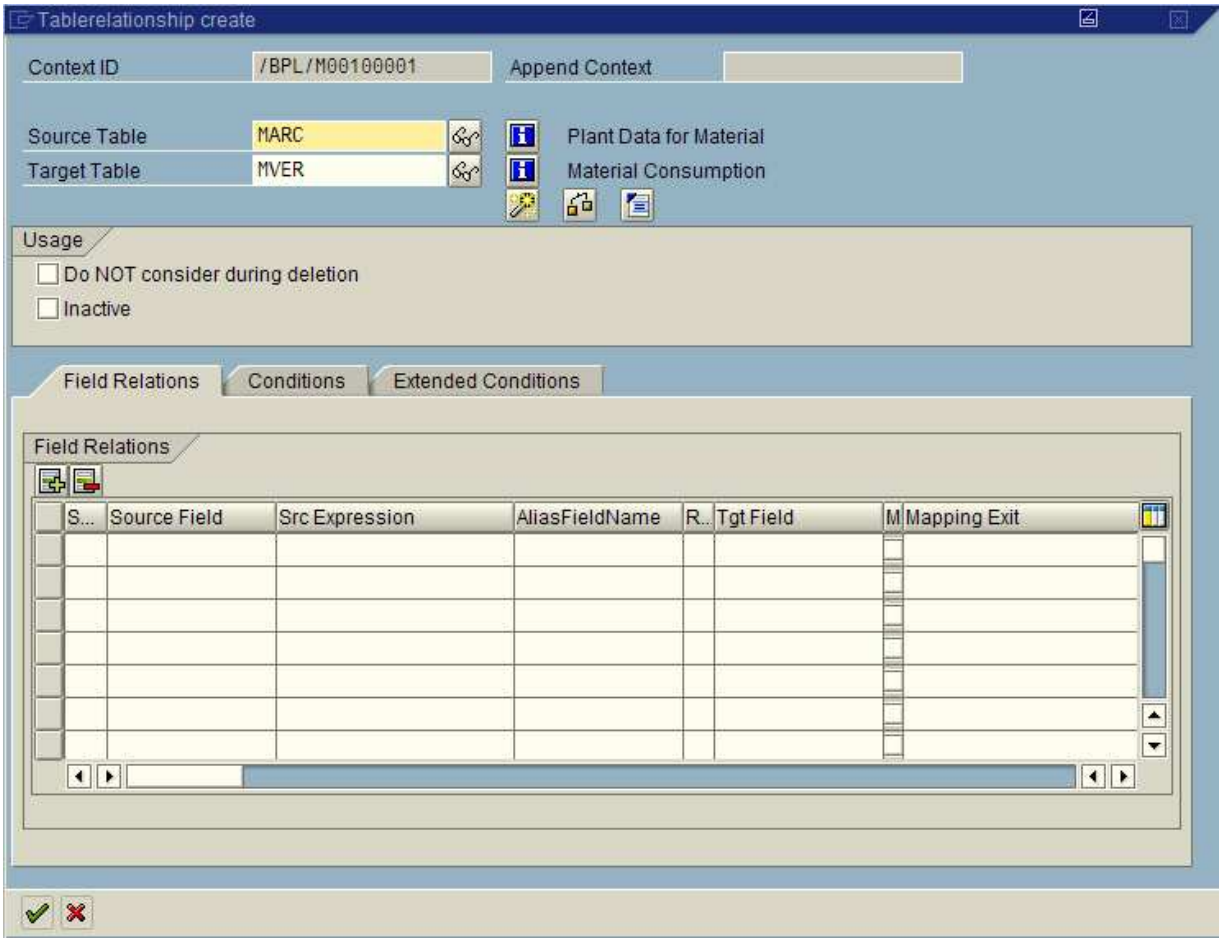

Figure 39: Newly created MARC-MVER table relationship

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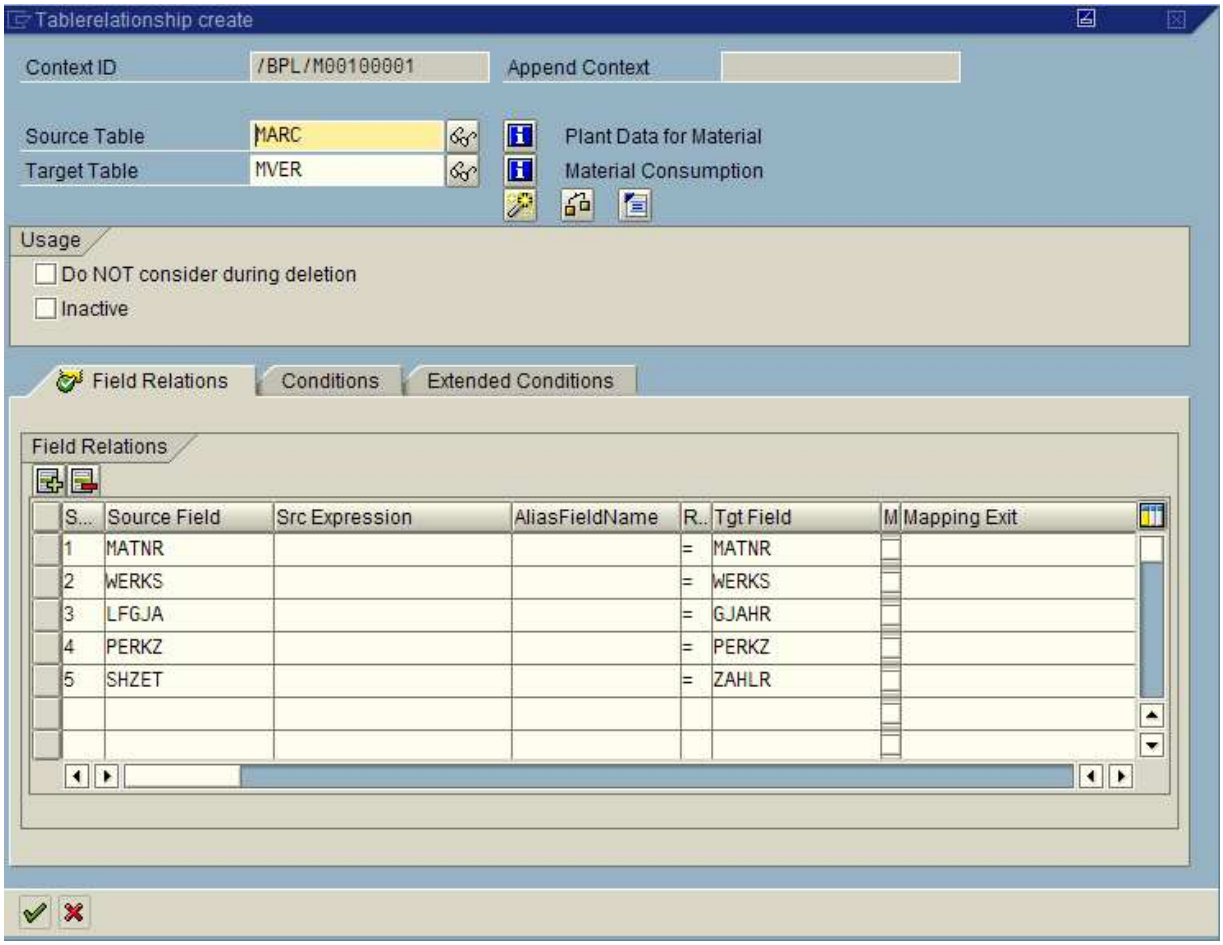

Figure 40: Field relations suggested by the wizard

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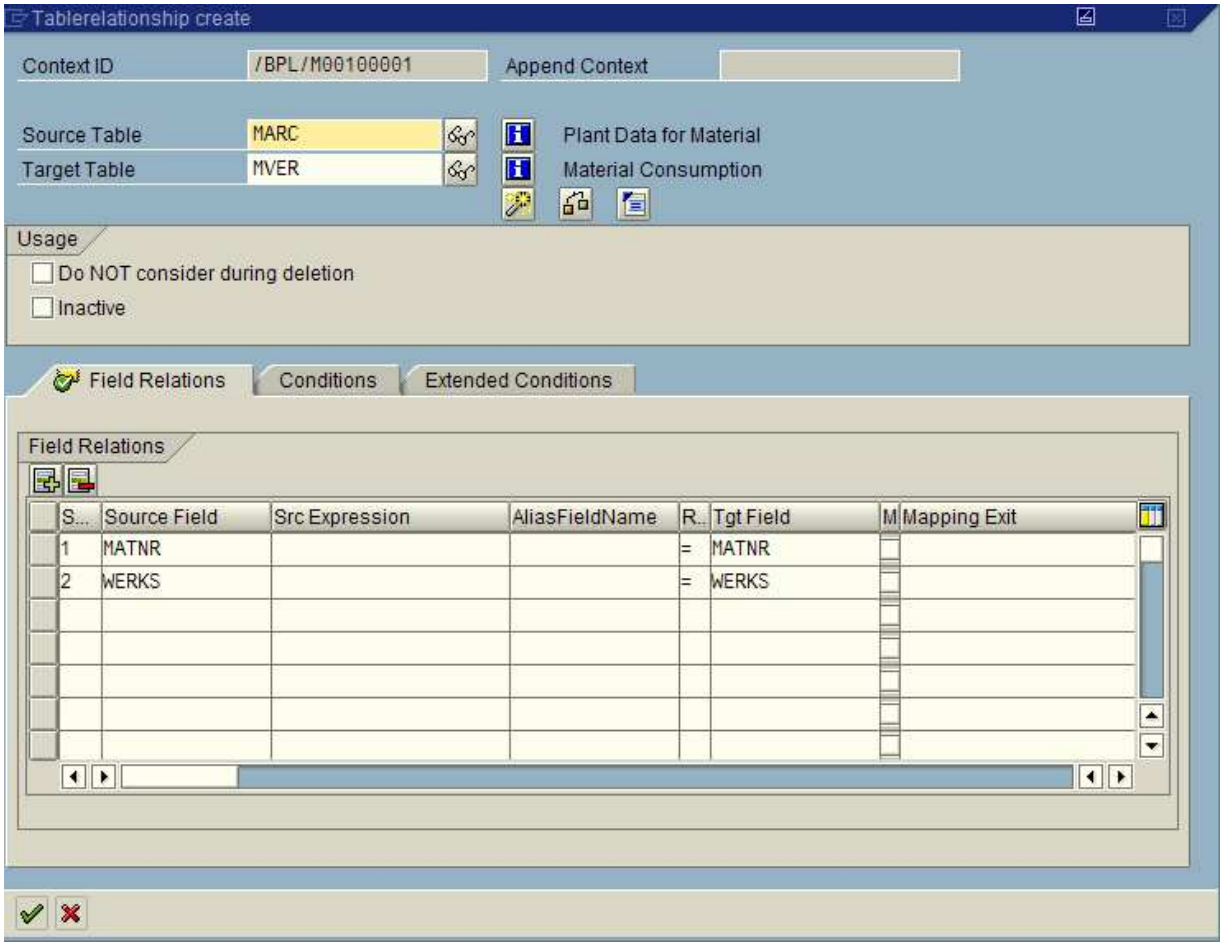

Figure 41: Field relations after deleting lines 3 to 5

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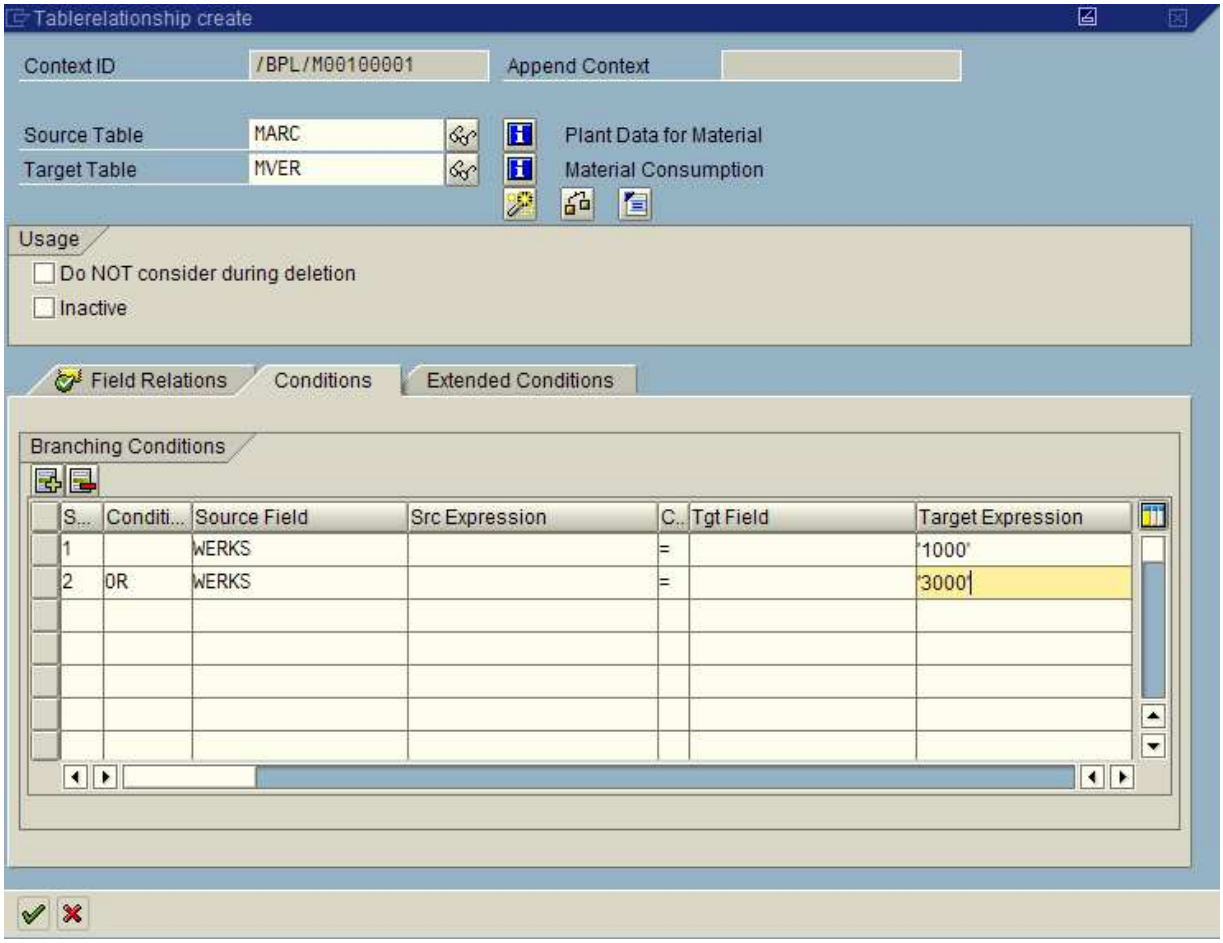

Figure 42: Condition in a table relationship

4.4 Table Relationships Including Extended Conditions

For detailed information about using extended conditions, see the documentation in the *Extended Conditions* tab page (see Figure 43).

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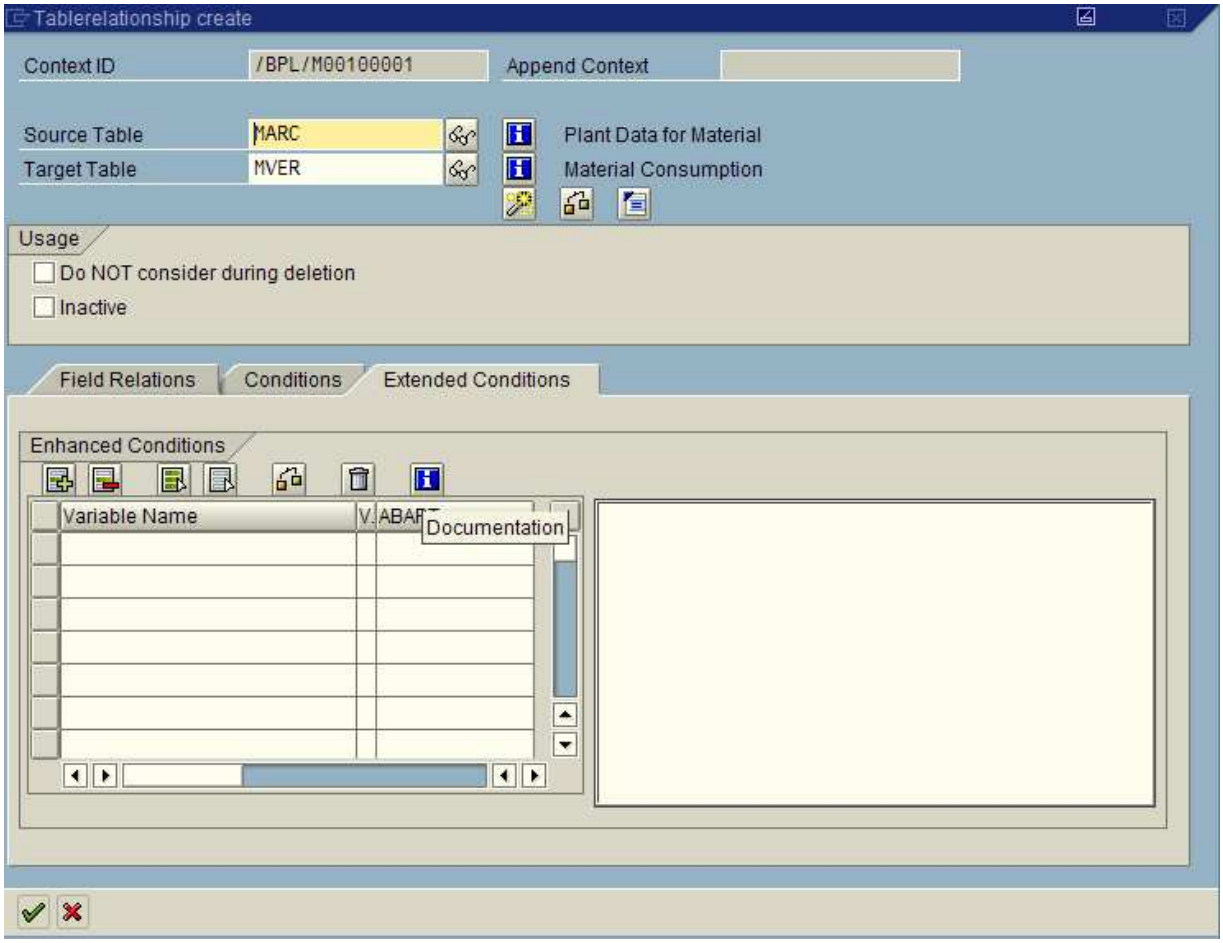

Figure 43: For more information about extended conditions, look for the given documentation on the *Extended Conditions* tab page

5 How to Copy One or More Specified Tables

Instead of extracting a certain business object together with its data environment, you can also copy one or more specified tables within a package. This makes sense, for example, if you want to supplement an already filled receiver system with only a few tables.

To transfer only one or a few specified tables, you have to choose the *Empty context for customers* in the *Create BPL Scenario* activity. This context does not include any predefined objects such as entities or tables but you have to define your data model from scratch. In contrast to the predefined business contexts, not only master data and transactional data can be transferred but customizing tables also.

Please proceed as follows:

- In the *Create BPL Scenario* activity, choose the *Empty context for customer* (see Figure 44).
- Execute the *Start Crawler* activity, if needed.
- Execute the *Select Objects to be Copied* activity (Make sure that you are in extended view.) The TDMS-BPL Scenario Designer opens. In overview area, no predefined entities or tables are contained (see Figure 45).
- Click the *Create* icon to create a new entity.

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- Choose *Entity (Customer)* and confirm.
- A new popup opens. Give an entity ID and a description (see Figure 46) and confirm. Choose *Yes* in the appearing dialog window. The new entity is displayed in overview area (see Figure 47).
- Mark the new entity and click the *Mass Linking (Tables)* icon .
- Give a search criterion for tables you would like to transfer (e.g., Z*). There are additional filters. Per default, the filters for *Only Tables with Content*, *Application Tables*, and *Customizing tables* are set.
- In the search result, mark the tables to be transferred and confirm (see Figure 48).
- Clicking the node to the left of the new entity you can see the selected tables attached (see Figure 49). Repeat the *Mass Linking (Tables)* procedure, if applicable.
- Because of the intelligent copy mode only one table has been included in the scenario so far, namely the table classified as start table. Double-clicking the entity you can see that one of the attached tables was automatically classified as start table (see Figure 50).
  To include the other tables in the scenario as well, one of the following steps needs to be done for each table, respectively:

  - The table must be involved in a table relationship as source table or target table
    or
  - the table needs to be set to complete copy in the copy control settings.

  For more details on how to involve a table in a table relationship, see chapter XXX. To set complete copy for all tables attached to a parent entity, double-click this entity and choose the radio button for *Copy contained tables completely*. To set complete copy for a single table, double-click the table and choose the radio button for *Copy table completely, trace all dependencies*.

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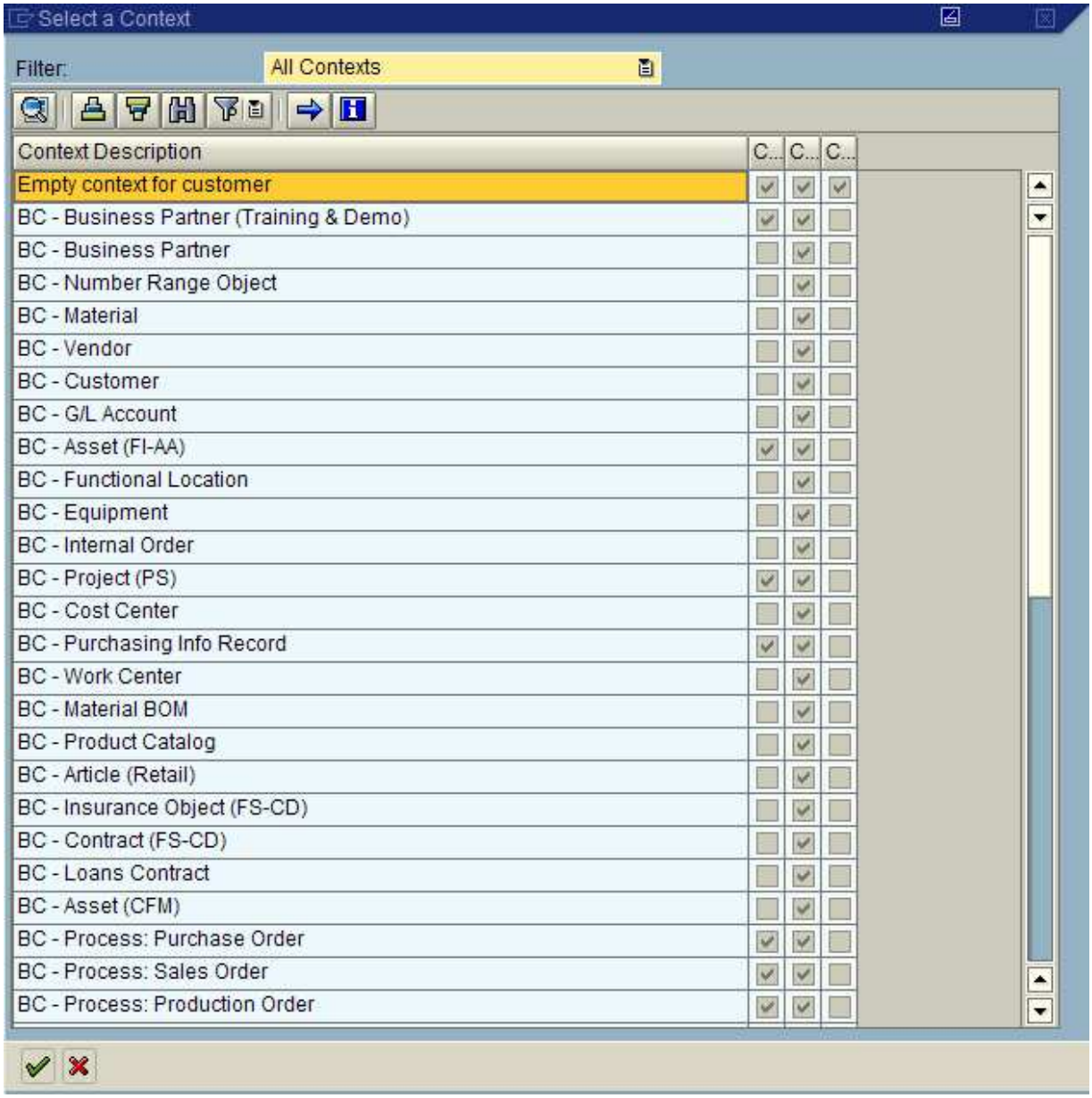

Figure 44: To copy one or more specified tables, choose the *Empty context for customer*

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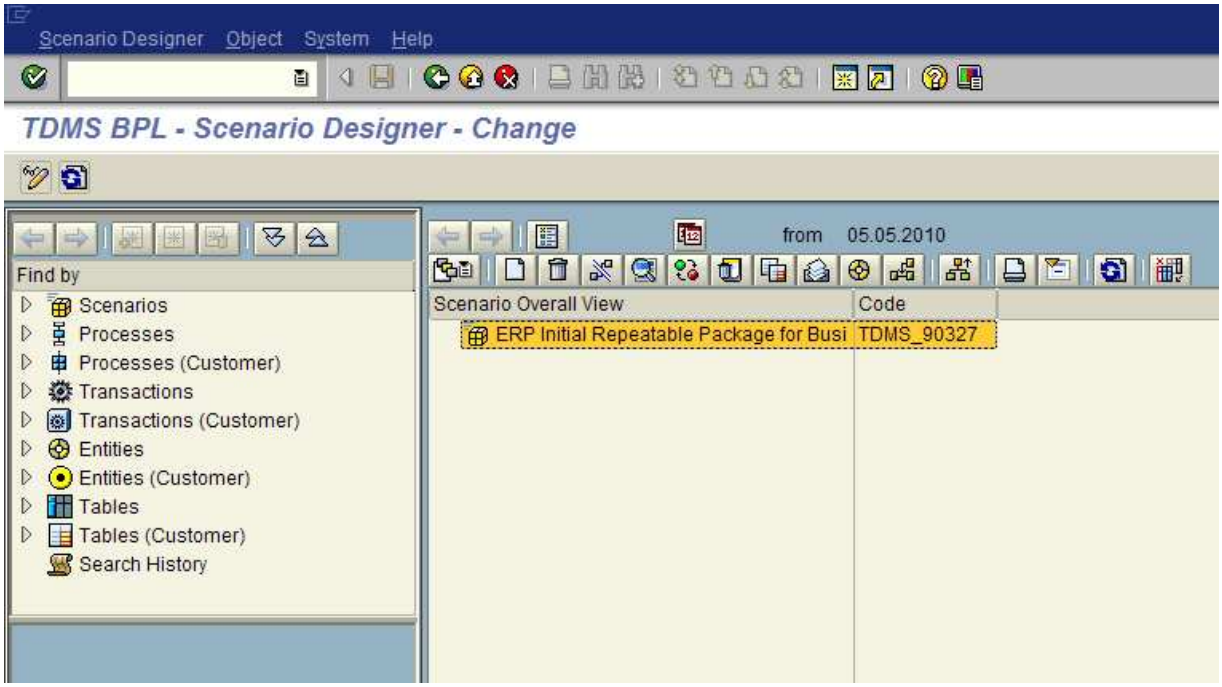

Figure 45: The *Empty context for customer* does not contain any predefined entities or tables

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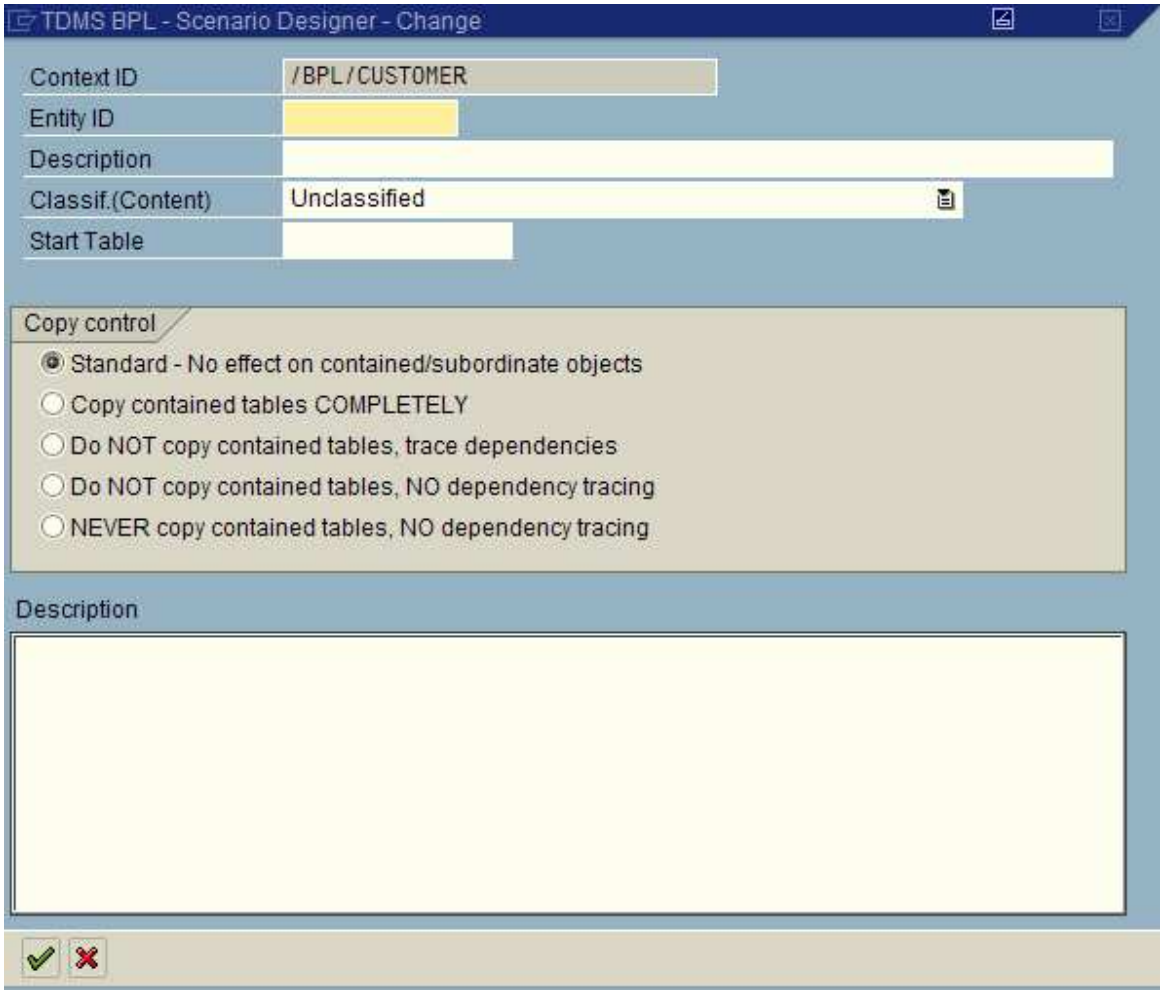

Figure 46: Give an entity ID and an entity description

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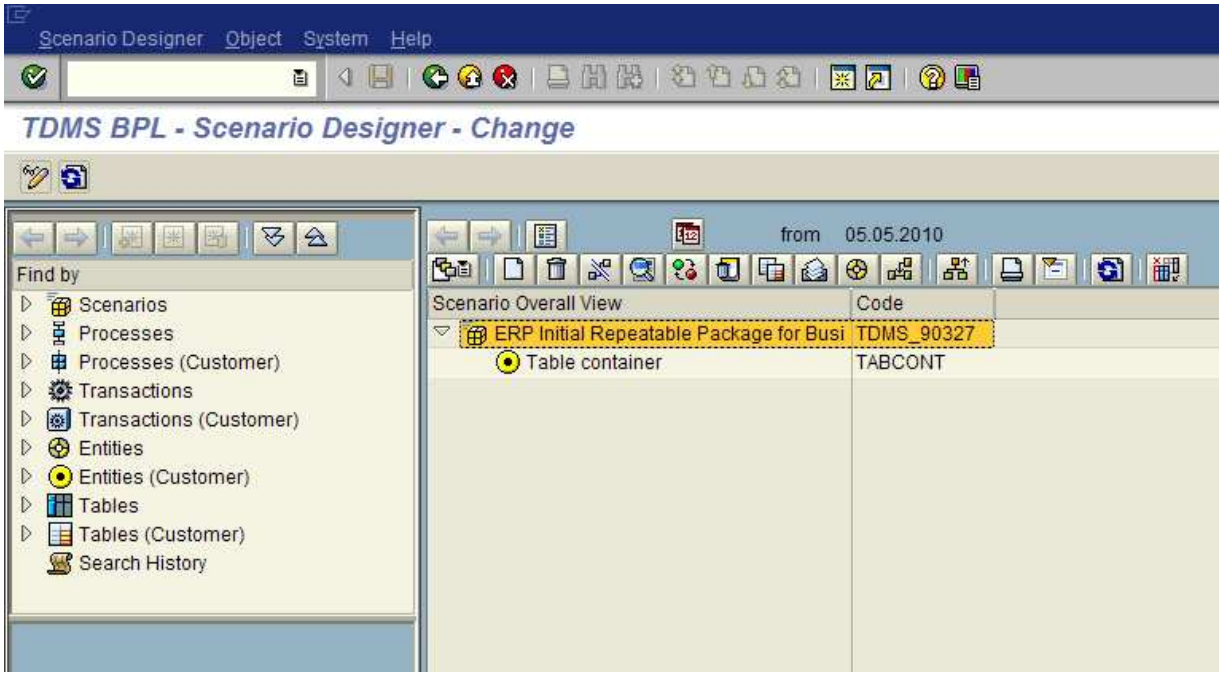

Figure 47: The new entity is displayed in overview area

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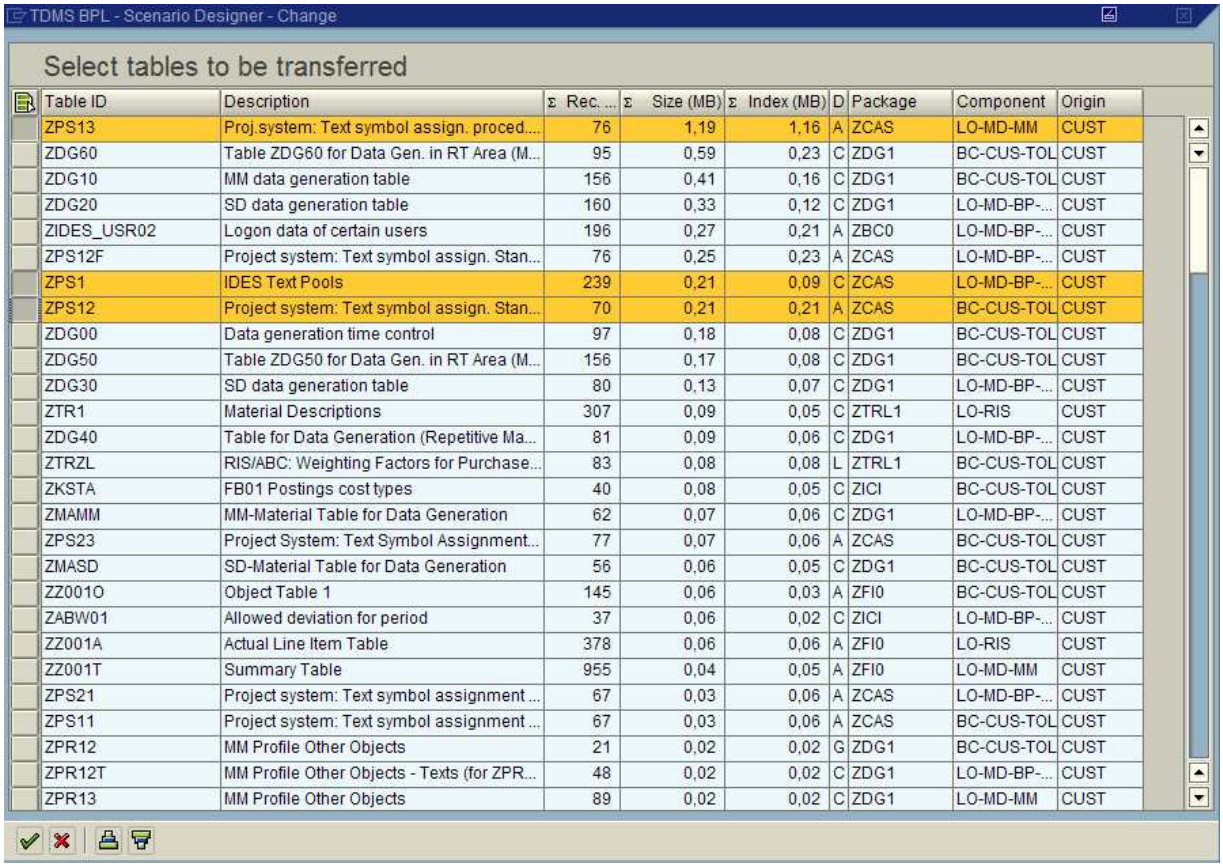

Table ID	Description	Σ Rec. ...	Σ Size (MB)	Σ Index (MB)	D	Package	Component	Origin
ZPS13	Proj.system: Text symbol assign. proced....	76	1,19	1,16	A	ZCAS	LO-MD-MM	CUST
ZDG60	Table ZDG60 for Data Gen. in RT Area (M...	95	0,59	0,23	C	ZDG1	BC-CUS-TOL	CUST
ZDG10	MM data generation table	156	0,41	0,16	C	ZDG1	BC-CUS-TOL	CUST
ZDG20	SD data generation table	160	0,33	0,12	C	ZDG1	LO-MD-BP-...	CUST
ZIDES_USR02	Logon data of certain users	196	0,27	0,21	A	ZBC0	LO-MD-BP-...	CUST
ZPS12F	Project system: Text symbol assign. Stan...	76	0,25	0,23	A	ZCAS	LO-MD-BP-...	CUST
ZPS1	IDES Text Pools	239	0,21	0,09	C	ZCAS	LO-MD-BP-...	CUST
ZPS12	Project system: Text symbol assign. Stan...	70	0,21	0,21	A	ZCAS	BC-CUS-TOL	CUST
ZDG00	Data generation time control	97	0,18	0,08	C	ZDG1	BC-CUS-TOL	CUST
ZDG50	Table ZDG50 for Data Gen. in RT Area (M...	156	0,17	0,08	C	ZDG1	BC-CUS-TOL	CUST
ZDG30	SD data generation table	80	0,13	0,07	C	ZDG1	LO-MD-BP-...	CUST
ZTR1	Material Descriptions	307	0,09	0,05	C	ZTRL1	LO-RIS	CUST
ZDG40	Table for Data Generation (Repetitive Ma...	81	0,09	0,06	C	ZDG1	LO-MD-BP-...	CUST
ZTRZL	RIS/ABC: Weighting Factors for Purchase...	83	0,08	0,08	L	ZTRL1	BC-CUS-TOL	CUST
ZKSTA	FB01 Postings cost types	40	0,08	0,05	C	ZICI	BC-CUS-TOL	CUST
ZMAMM	MM-Material Table for Data Generation	62	0,07	0,06	C	ZDG1	LO-MD-BP-...	CUST
ZPS23	Project System: Text Symbol Assignment...	77	0,07	0,06	A	ZCAS	BC-CUS-TOL	CUST
ZMASD	SD-Material Table for Data Generation	56	0,06	0,05	C	ZDG1	BC-CUS-TOL	CUST
ZZ001O	Object Table 1	145	0,06	0,03	A	ZFI0	BC-CUS-TOL	CUST
ZABW01	Allowed deviation for period	37	0,06	0,02	C	ZICI	LO-MD-BP-...	CUST
ZZ001A	Actual Line Item Table	378	0,06	0,06	A	ZFI0	LO-RIS	CUST
ZZ001T	Summary Table	955	0,04	0,05	A	ZFI0	LO-MD-MM	CUST
ZPS21	Project system: Text symbol assignment ...	67	0,03	0,06	A	ZCAS	LO-MD-BP-...	CUST
ZPS11	Project system: Text symbol assignment ...	67	0,03	0,06	A	ZCAS	BC-CUS-TOL	CUST
ZPR12	MM Profile Other Objects	21	0,02	0,02	G	ZDG1	BC-CUS-TOL	CUST
ZPR12T	MM Profile Other Objects - Texts (for ZPR...	48	0,02	0,02	C	ZDG1	LO-MD-BP-...	CUST
ZPR13	MM Profile Other Objects	89	0,02	0,02	C	ZDG1	LO-MD-MM	CUST

Figure 48: In the search result, mark the tables to be transferred

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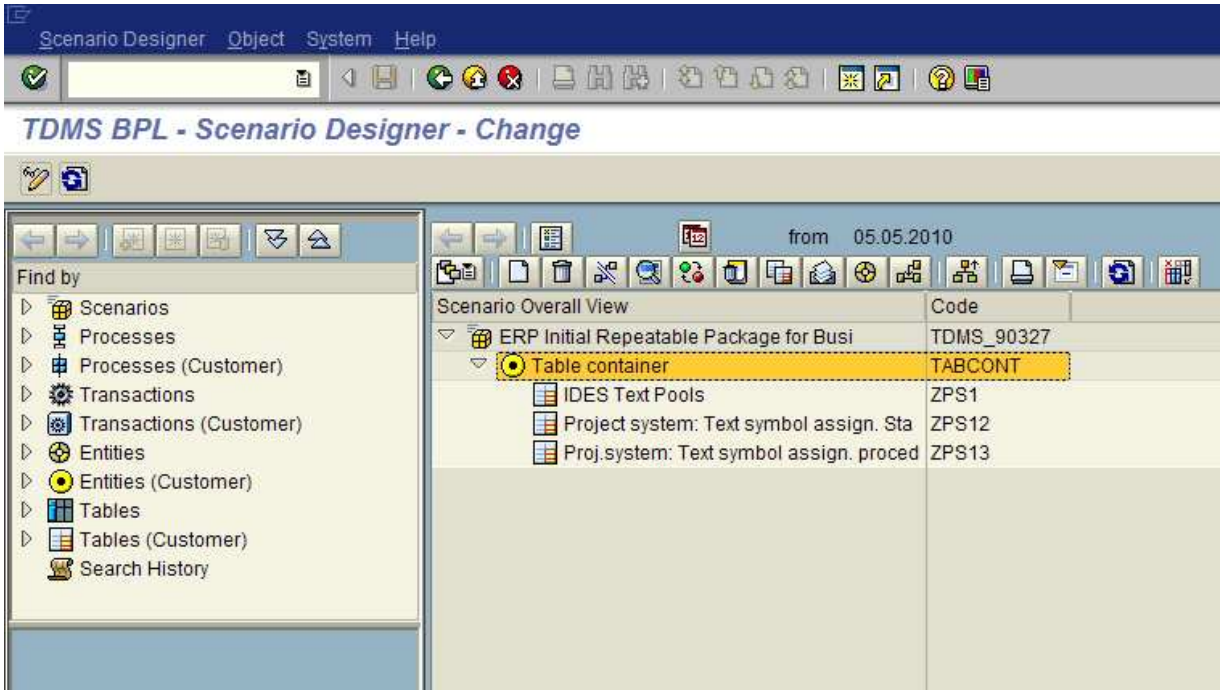

Figure 49: The selected tables have been attached to the new entity

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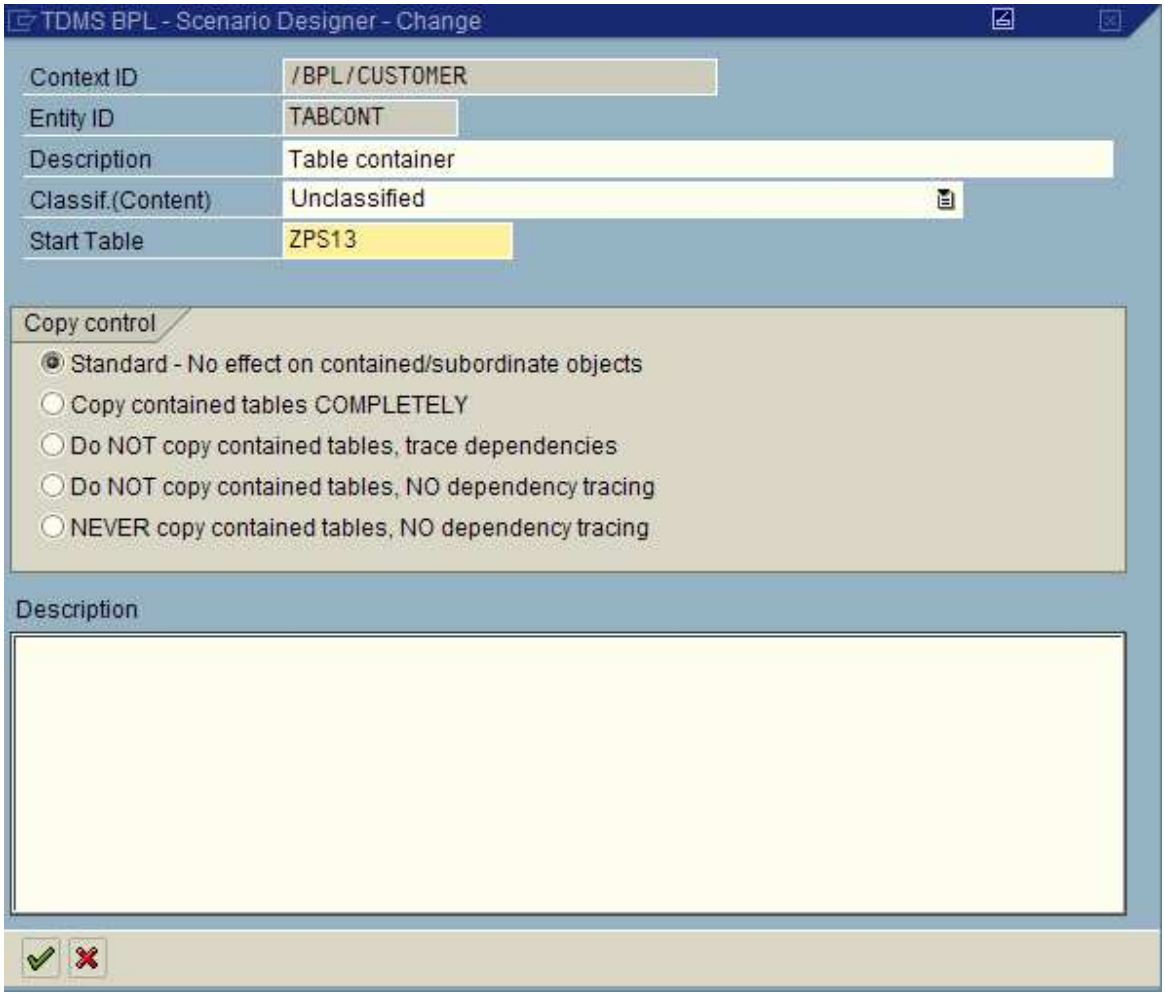

Figure 50: One of the attached tables was automatically classified as start table

6 Copy Control Settings

The copy control settings allow you to control the amount of data copied. You can edit copy control settings for entities and tables. You cannot delete predefined objects from the data model in the overview area, but you can use copy control settings to exclude them after all.

For example, you can exclude a branch of the tree structure consisting of an entity and all objects directly and indirectly attached to it from a scenario. If you want to extract a table that is not involved in a table relationship, you can choose *Copy table completely* in the copy control settings. Based on this setting, the table is included in the scenario (Of course, this setting implies that the table will be copied completely and is not involved in the process of tracking table dependencies).

6.1 Copy Control Settings for Entities

Double-click an entity to edit the copy control settings. You can select one of the following settings for the copy control for the entity:

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Criterion	Explanation
Standard - no effect on containing / subordinated objects	Normal situation: the tables that belong to the entity are copied based on extraction procedure and selections made
Copy containing tables COMPLETELY	All DIRECTLY assigned tables are copied completely (and not treated as dependent tables).
Do NOT copy containing tabs; trace dependency	All DIRECTLY assigned tables are not copied, but dependent objects are copied.
Do NOT copy containing tabs; no dependency tracing	Assigned tables are not copied and dependencies are not tracked further. The branch is excluded from extraction.
NEVER copy containing tabs; no dependency tracing	DIRECTLY assigned tables are never copied (even if they are assigned to more entities), dependencies of these tables are also no longer tracked.

The setting "Do NOT copy containing tabs; no dependency tracing" works as if the branch extending from the given entity was cut off in the scenario tree. The tables contained in this branch are not included in the extraction wherever they are attached, directly or indirectly, to the given entity in the scenario tree. However, this does not exclude the possibility that such tables in the scenario tree are attached, directly or indirectly, to further entities within other branches. Such tables can still be part of the extraction due to this assignment to further entities. If you select the setting "NEVER copy containing tabs; no dependency tracing", only the tables directly attached to the respective entity will be excluded from the extraction everywhere in the scenario tree.

Example:

If the tables 1, 2 and 3 are assigned directly to entity *XXX* that has been given the copy control setting “NEVER copy….”, these tables are generally excluded from the extraction in the scenario. However, if another entity *YYY* with the tables 4 and 5 belongs to entity XXX, the tables 4 and 5 will then be **included** in the extraction, because these tables are not directly assigned to entity XXX. Therefore it is no contradiction if the setting “DO NOT copy…..” excludes much more tables than the setting “NEVER copy……”.

6.2 Copy Control Settings for Tables

Double-click a table that is included in the scenario to edit the properties of this table. You can select from the following copy control settings for the table:

Criterion	Explanation
Dependent on extraction mode	Normal situation
Copy table COMPLETELY, track ALL dependencies	Does not treat table as dependent table, but copies all sets and tracks all dependencies
DO NOT copy table, trace dependencies	Table is not copied, but dependent objects are copied
DO NOT copy table, NO dependency trace	Table and all dependent objects are not copied
Never copy completely - overwrites cutoff and entity settings	With cutoff and entity settings, overwrites the possible setting that is to be copied completely
Never delete table	Table is never deleted in the deletion run in the target system

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6.3 Cut Entities and Tables Using Functionality *Cutoff / Attach*

To make exclusion of entities and/or tables easier, you can use the *Disable/Enable* feature. For all entities marked, you can set the copy control setting “Do NOT copy containing tabs; no dependency tracing”. For all tables marked, “DO NOT copy table, NO dependency trace” can be set.

To do this, mark the entities and/or tables you want to exclude and choose *Cutoff / Attach* . The copy control setting changes.

7 How to Scramble Data in a BPL Context

For reasons of data protection, a requirement can be that sensitive data (e.g., salary data, business partner data) is not visible in the receiver system. The system TDMS-BPL can modify the data to make it anonymous before it leaves the sender system (“scrambling”). By default, a specific exit is offered to scramble data on table level. The sensitive data in one or more table columns is overwritten by a neutral value (for example, 9999) dependent on field name, data element, and/or domain.

Note:

Please note that the scrambling of key fields should be avoided. There is the danger of duplicate keys, for example.

The procedure of how to scramble a pre-defined table differs slightly from the procedure for customer tables.

7.1 How to Scramble Table Columns in a Predefined Table

In the overview area, mark the table to be scrambled (see Figure 51). Choose *Assign* and select the *Exit* object type in the *Choose Relationship* popup (see Figure 52).

You can choose an exit from a list of exits. Select the exit with object abbreviation *DEFAULT AN*, and confirm (see Figure 53). The exit is attached to the marked table (see Figure 54). (Instead of using the predefined exit, you can also create a new customer exit as described in chapter 7.1.5).

Double-click the exit. The *Exit* popup opens (see Figure 55). Give an exit description.

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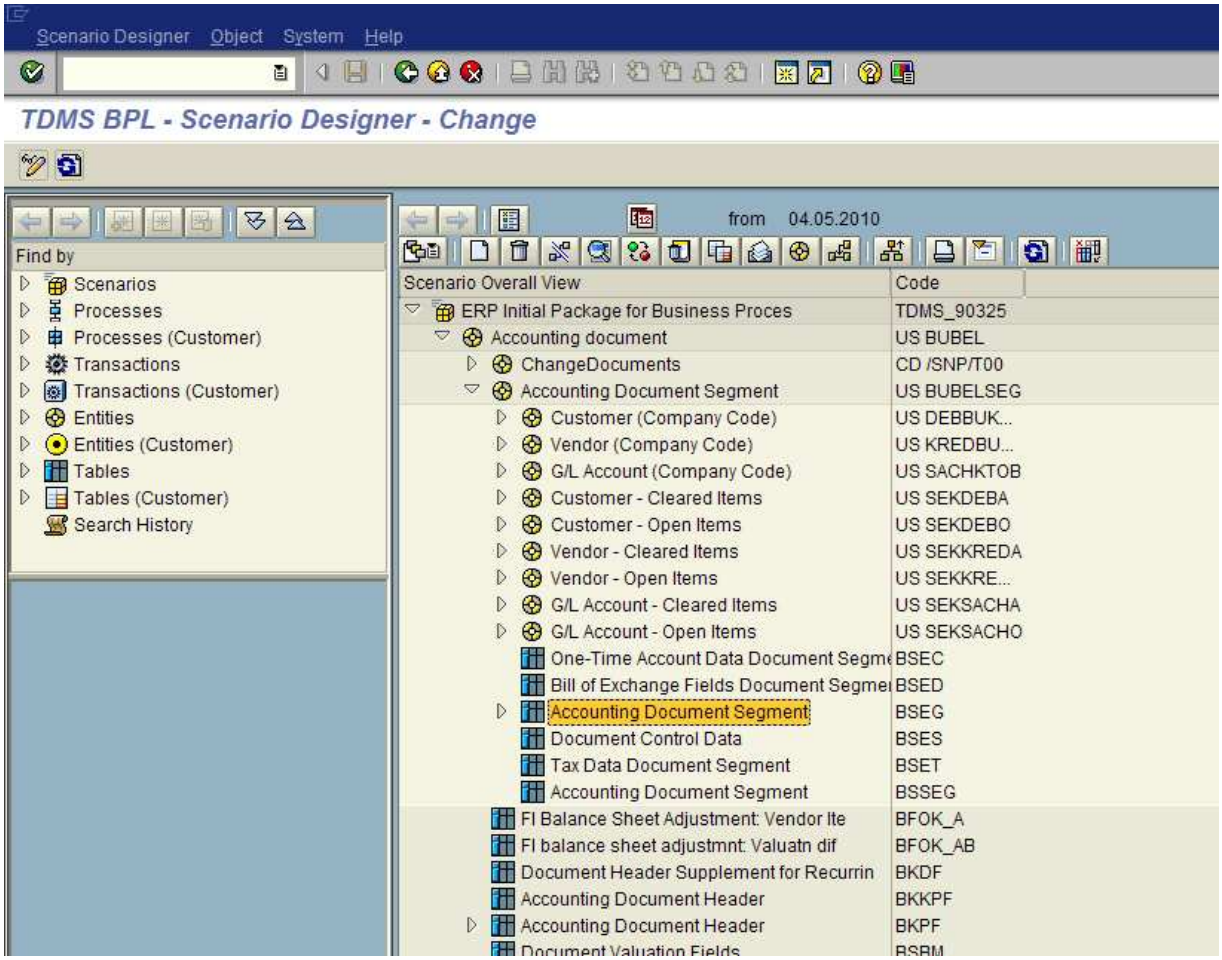

Figure 51: Mark the table you would like to scramble and click the *Assign* icon

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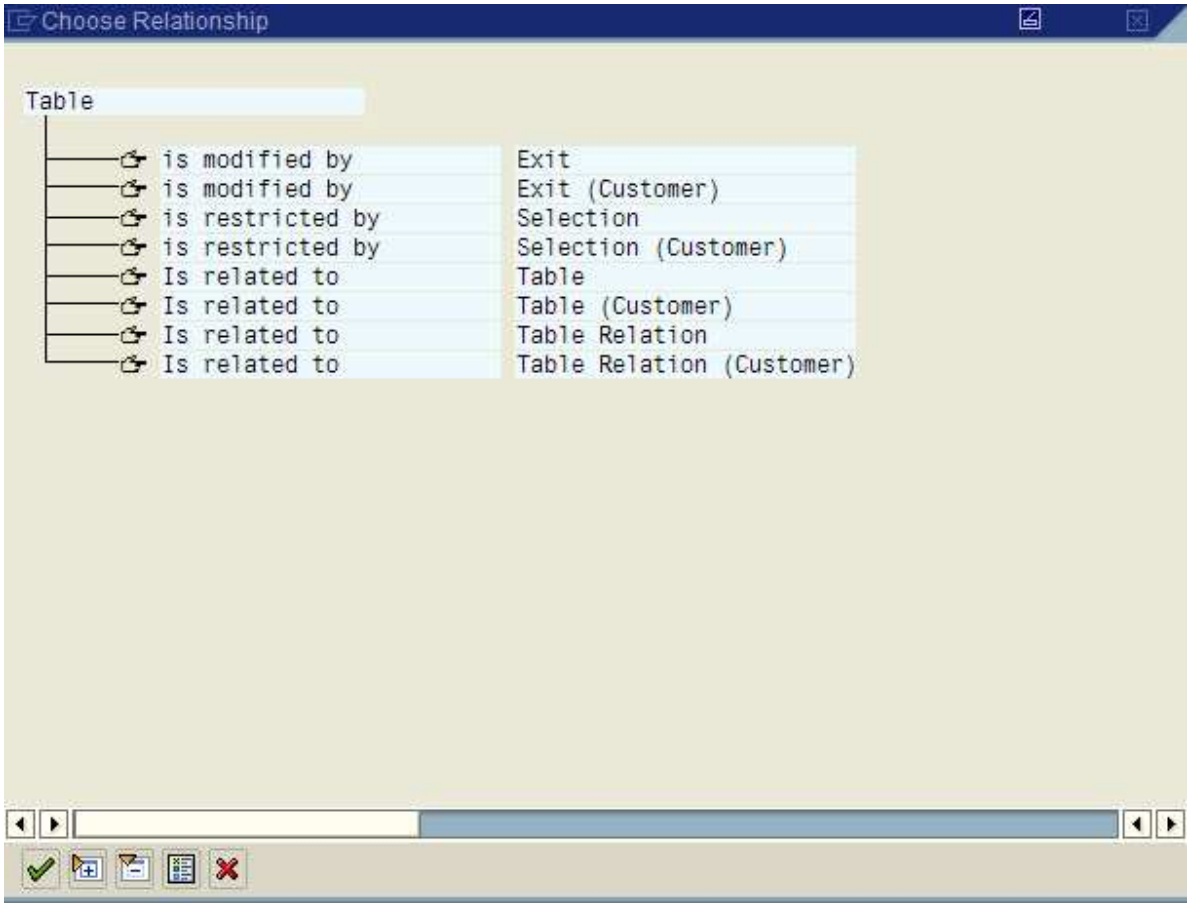

Figure 52: Mark *Exit* and confirm

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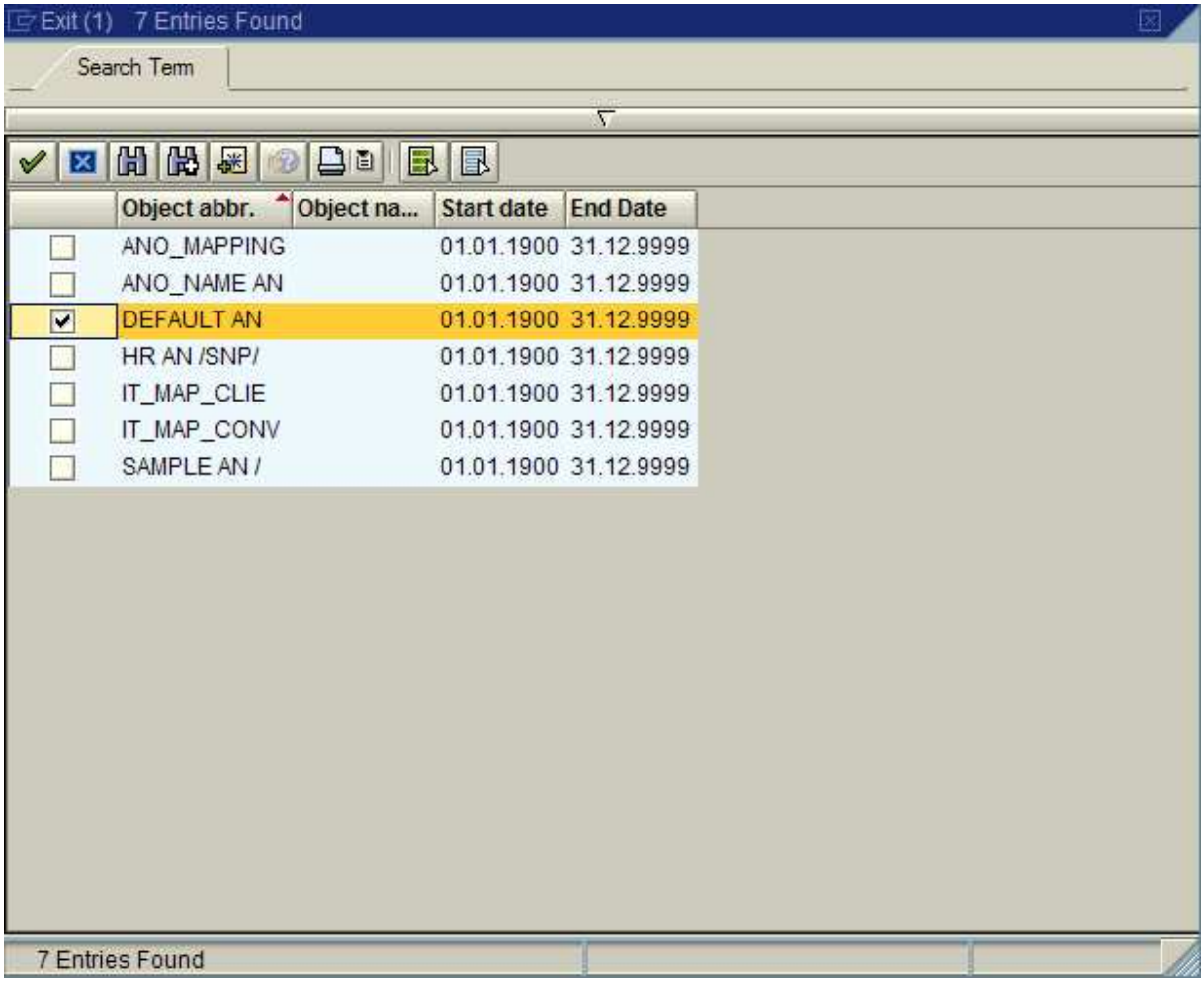

Figure 53: Choose the predefined exit *DEFAULT AN* for scrambling

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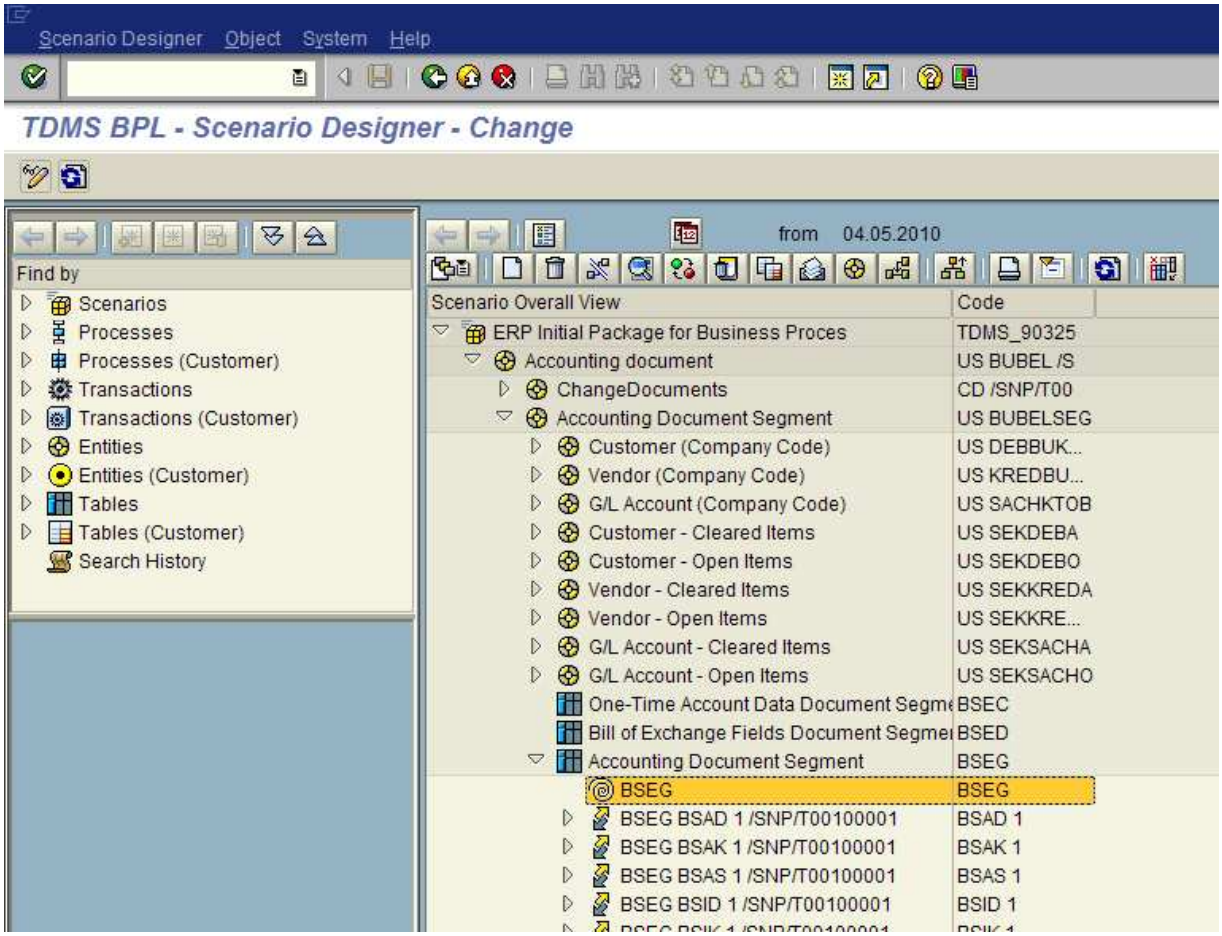

Figure 54: The exit is attached to the marked table

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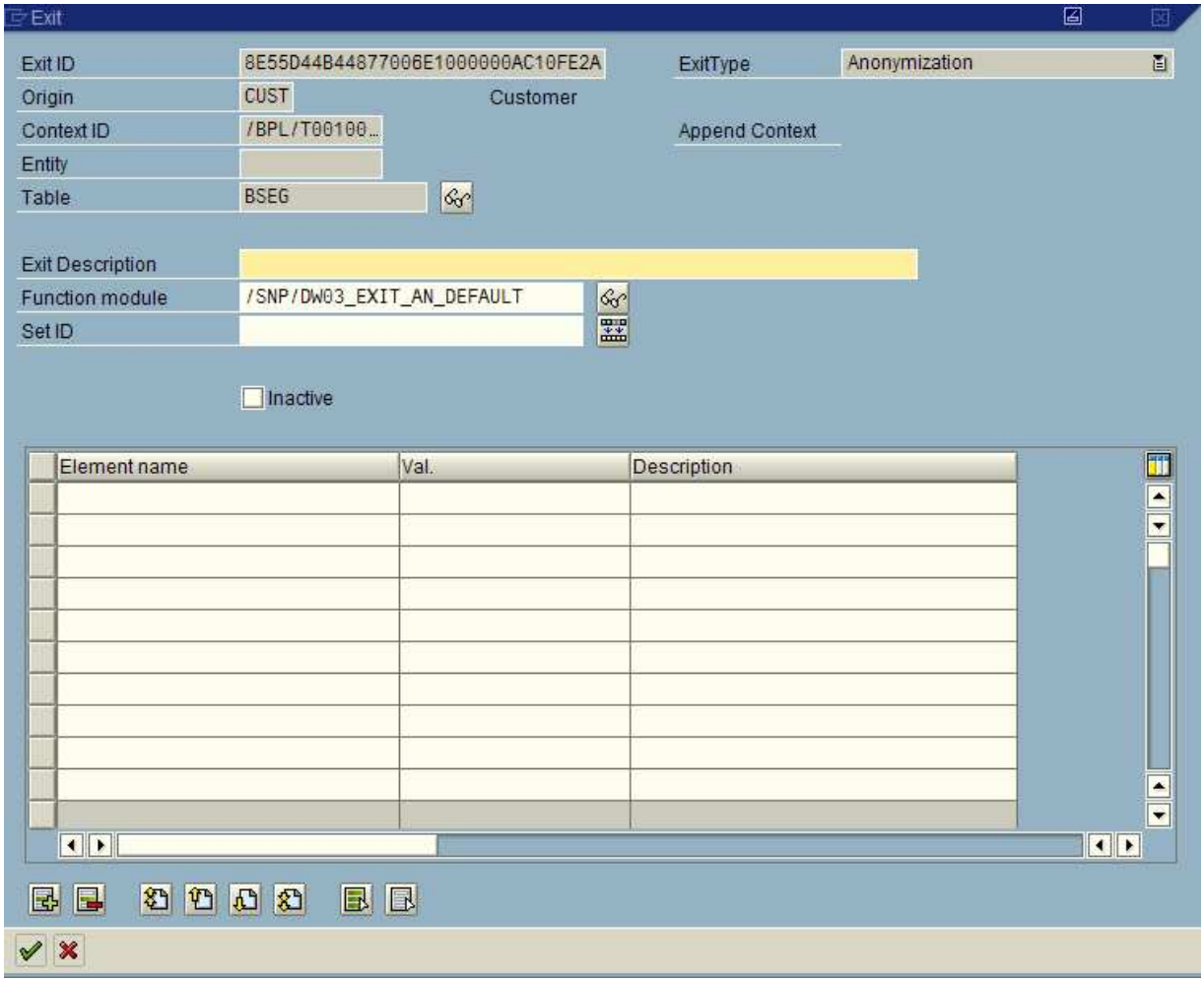

Figure 55: Edit the exit popup

The default function module that contains the scrambling logic is /SNP/DW03_EXIT_AN_DEFAULT.

In the lower table area within the *Exit* popup, you can define data elements, domains and/or field names as scrambling criteria and a neutral value used to overwrite the relevant data.

7.1.1 Scrambling Dependent on Data Elements

Defining one or multiple data elements as scrambling criterion, all table fields with these data elements will be scrambled.

Example:

In table BSEG, the table fields with assigned data elements KOART and DMBTR are to be scrambled. Edit the Exit popup as follows (see Figure 56):

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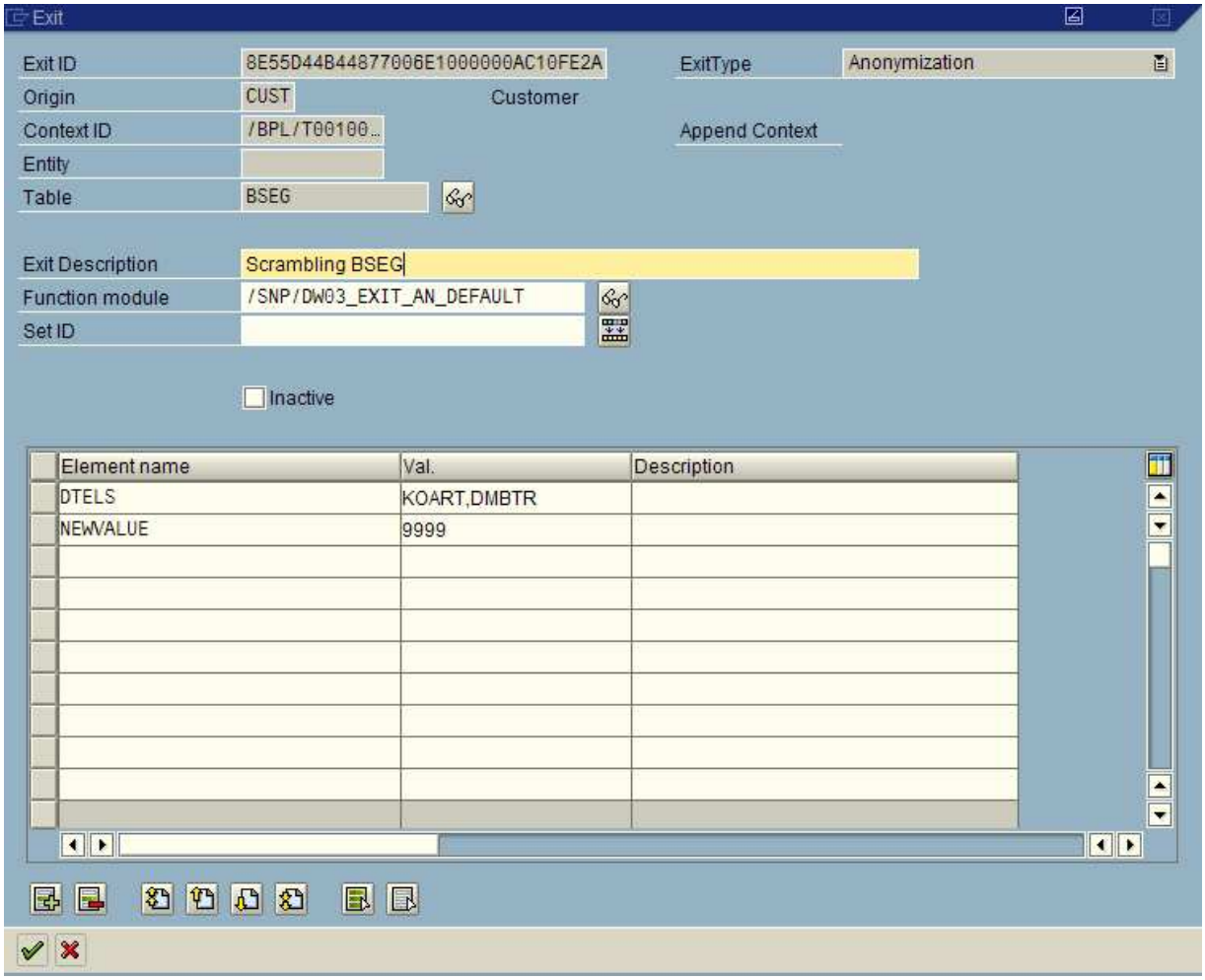

Figure 56: Scrambling dependent on data elements

7.1.2 Scrambling Dependent on Domains

Defining one or multiple domains as scrambling criterion, all table fields with these domains will be scrambled.

Example:

In table BSEG, the table fields with assigned domain WERT7 are to be scrambled. Edit the *Exit* popup as follows (see Figure 57):

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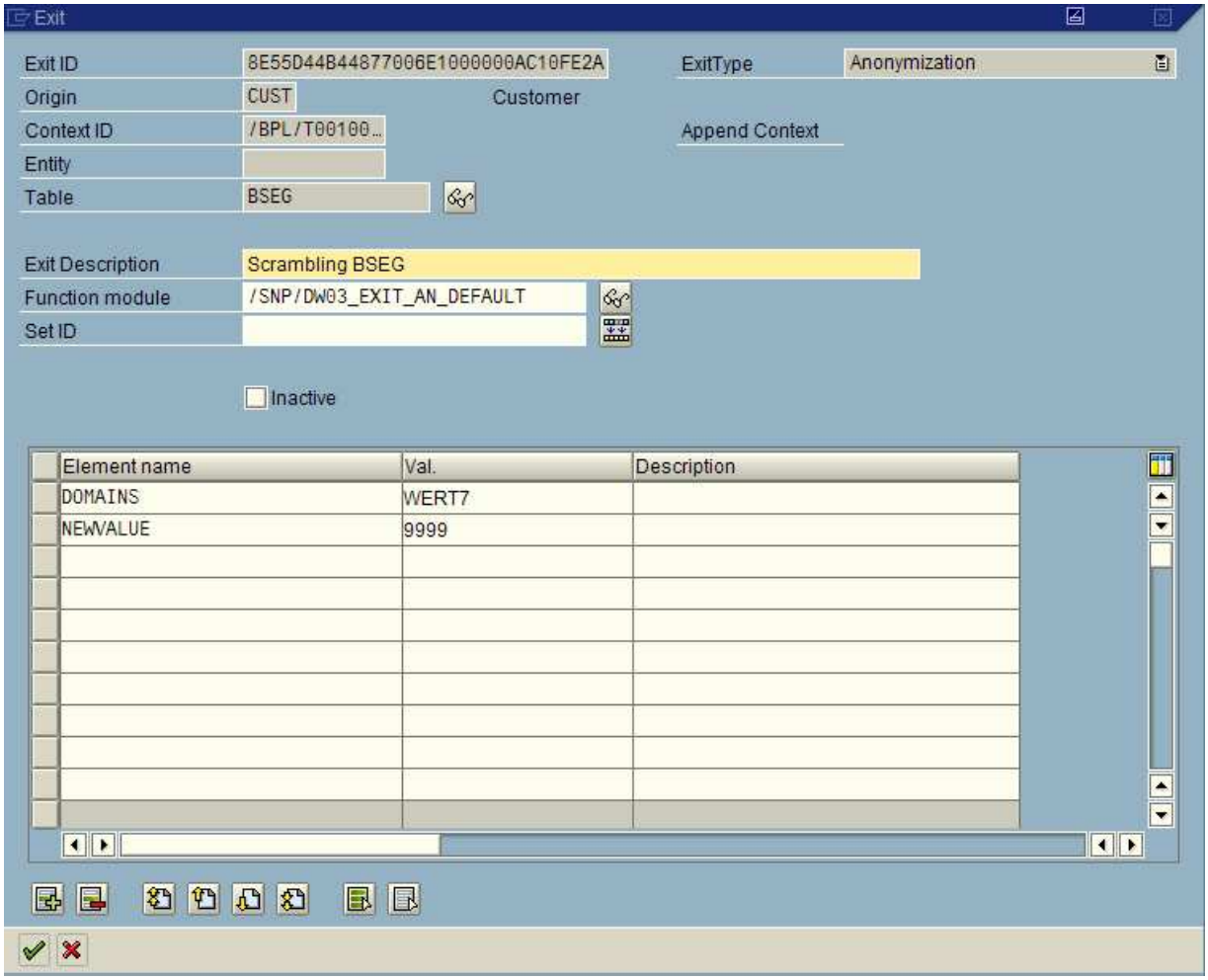

Figure 57: Scrambling dependent on domains

7.1.3 Scrambling Dependent on Field Names

Defining one or multiple field names as scrambling criterion, all table fields with these field names will be scrambled.

Example:

In table BSEG, the table fields SGTXT and PRCTR are to be scrambled. Edit the *Exit* popup as follows (see Figure 58):

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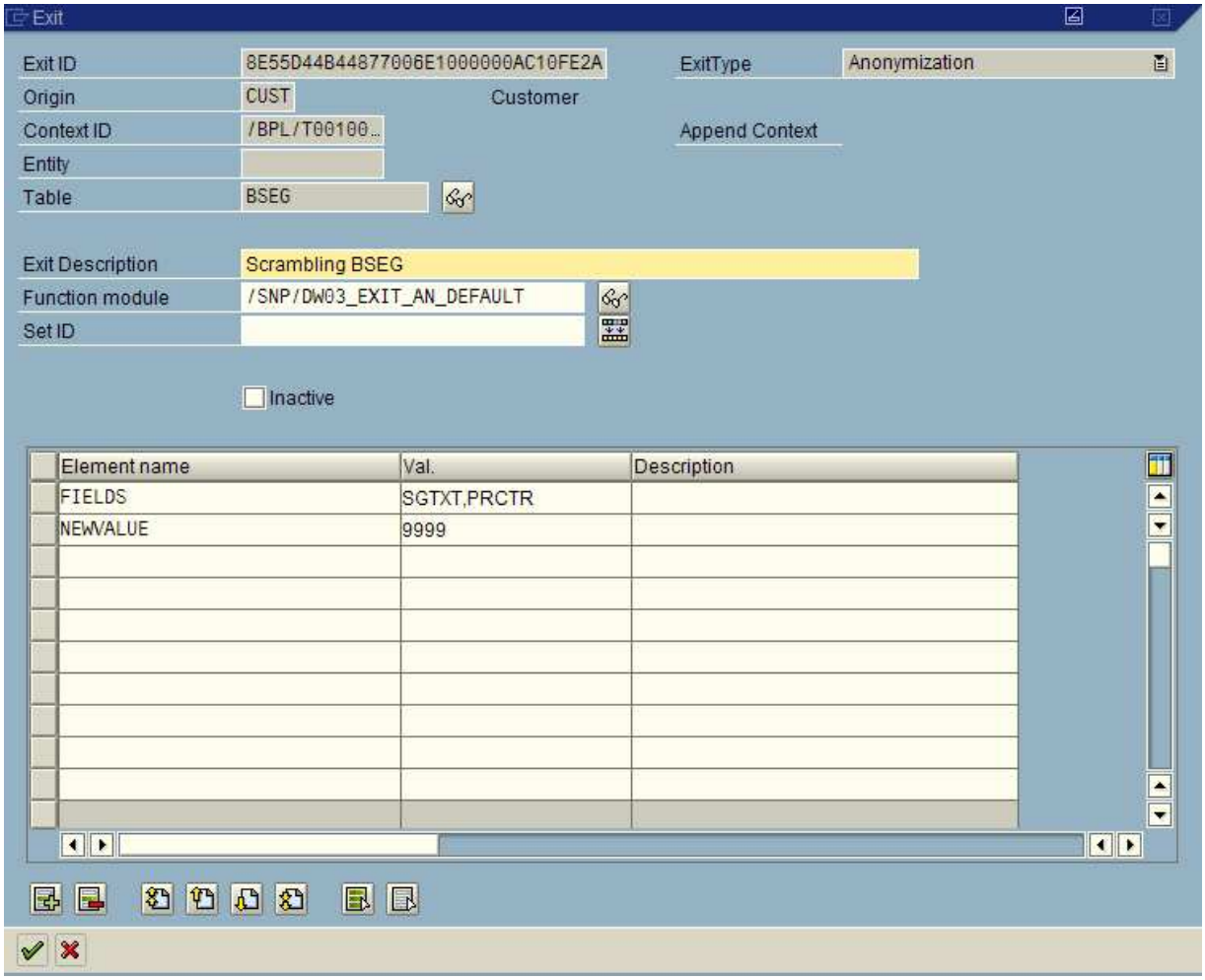

Figure 58: Scrambling dependent on table fields

7.1.4 Scrambling Field Names, Data Elements, and Domains Using One Exit

You can also scramble dependent on field names, data elements, and domains using one exit.

Edit the *Exit* popup as follows (see Figure 59):

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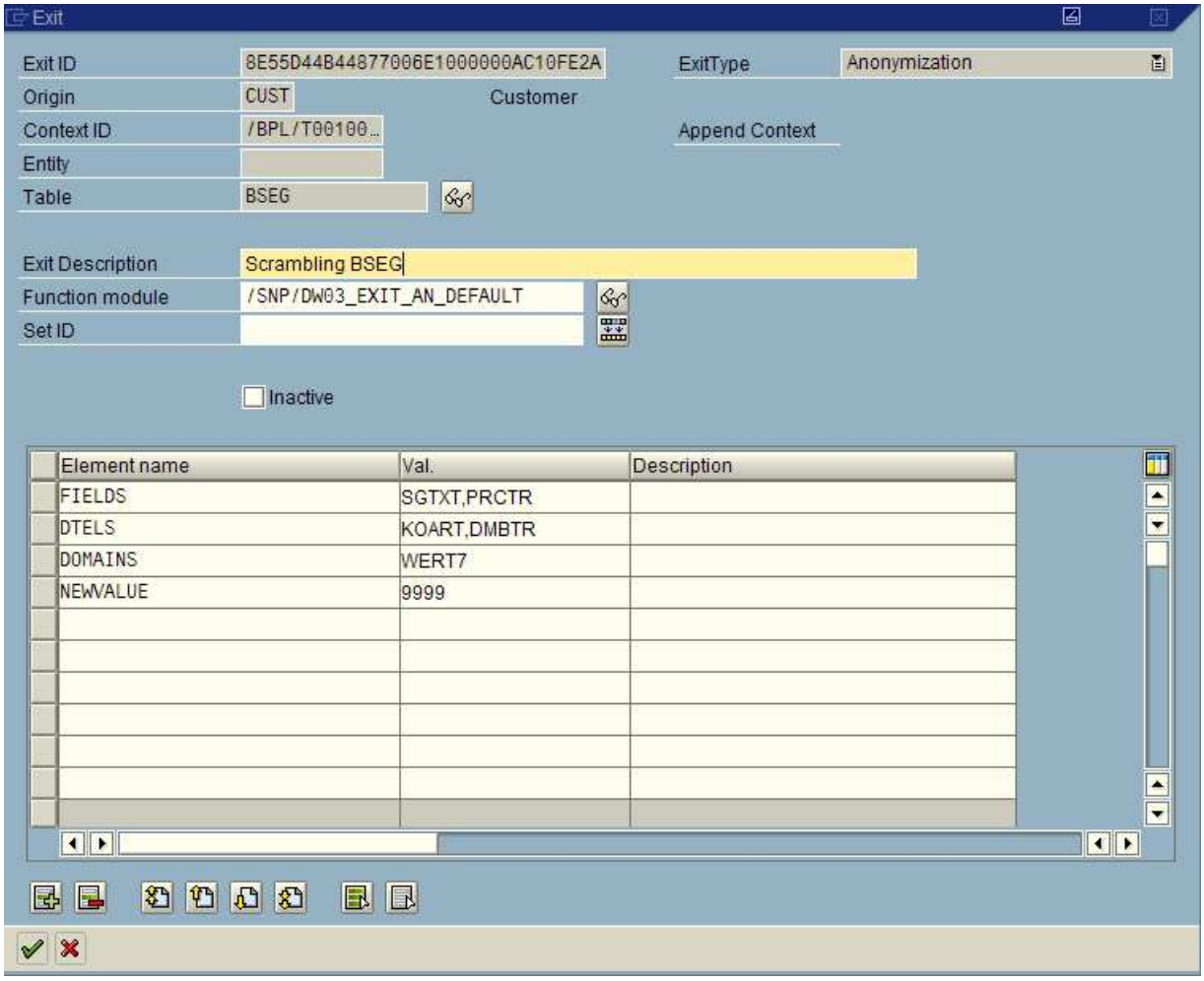

Figure 59: Scrambling dependent on field names, data elements, and domains using one exit

7.1.5 Reusing Already Existing Scrambling Exits

In the overview area, you can reuse an already defined scrambling exit for other tables if the scrambling criteria fit. Then you can assign the existing exit to the other tables via drag-and-drop.

Example:

A scrambling exit for table BSEG has been defined as follows (see Figure 60):

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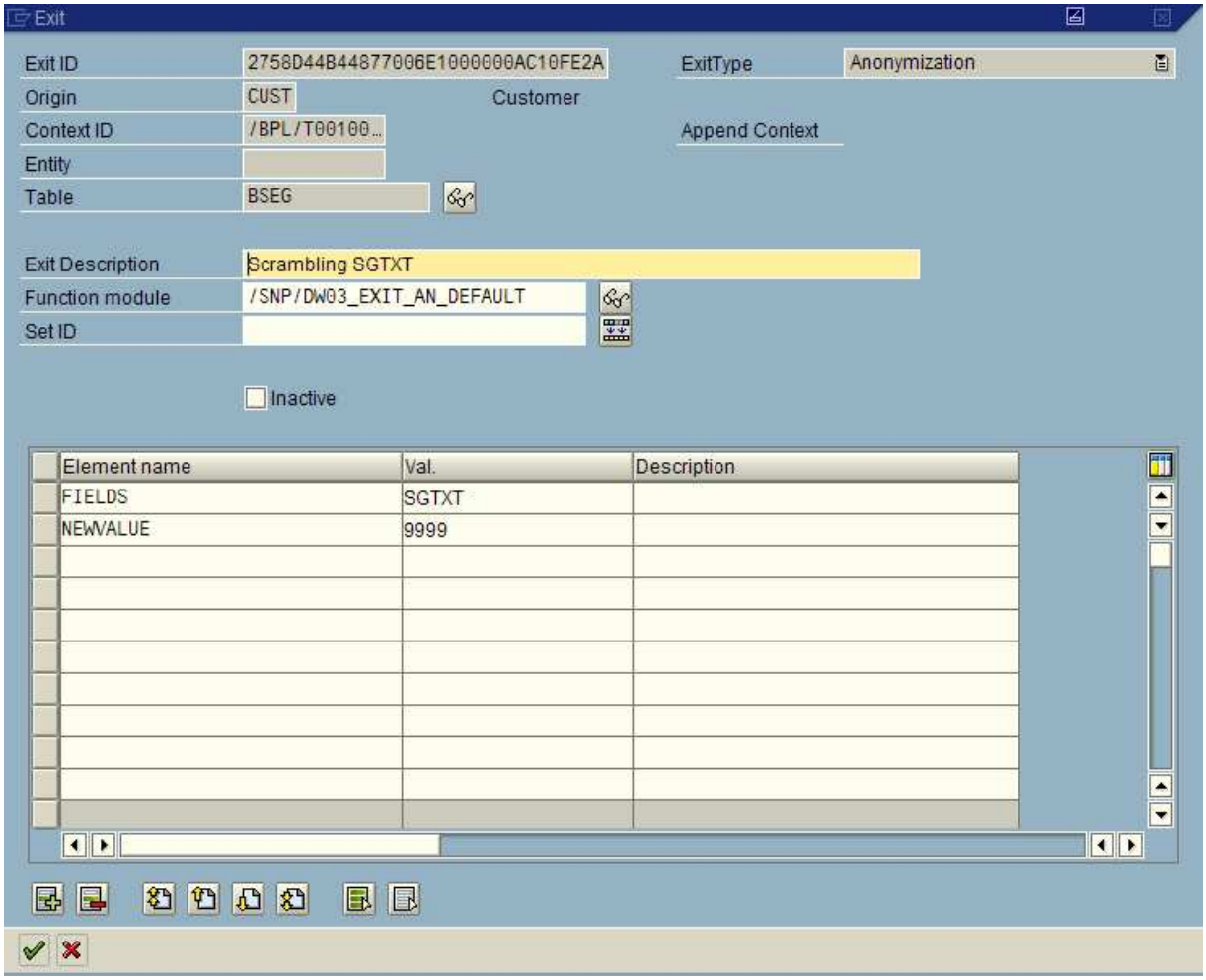

Figure 60: The already existing scrambling exit for table field SGTXT of BSEG can be reused for BSIS, BSID, BSAS, and BSAK

Tables BSID, BSIS, BSAS, and BSAK also contain the SGTXT field. You can assign the exit for BSEG to BSID, BSIS, BSAS, and BSAK. This can be done via drag-and-drop (see Figure 61).

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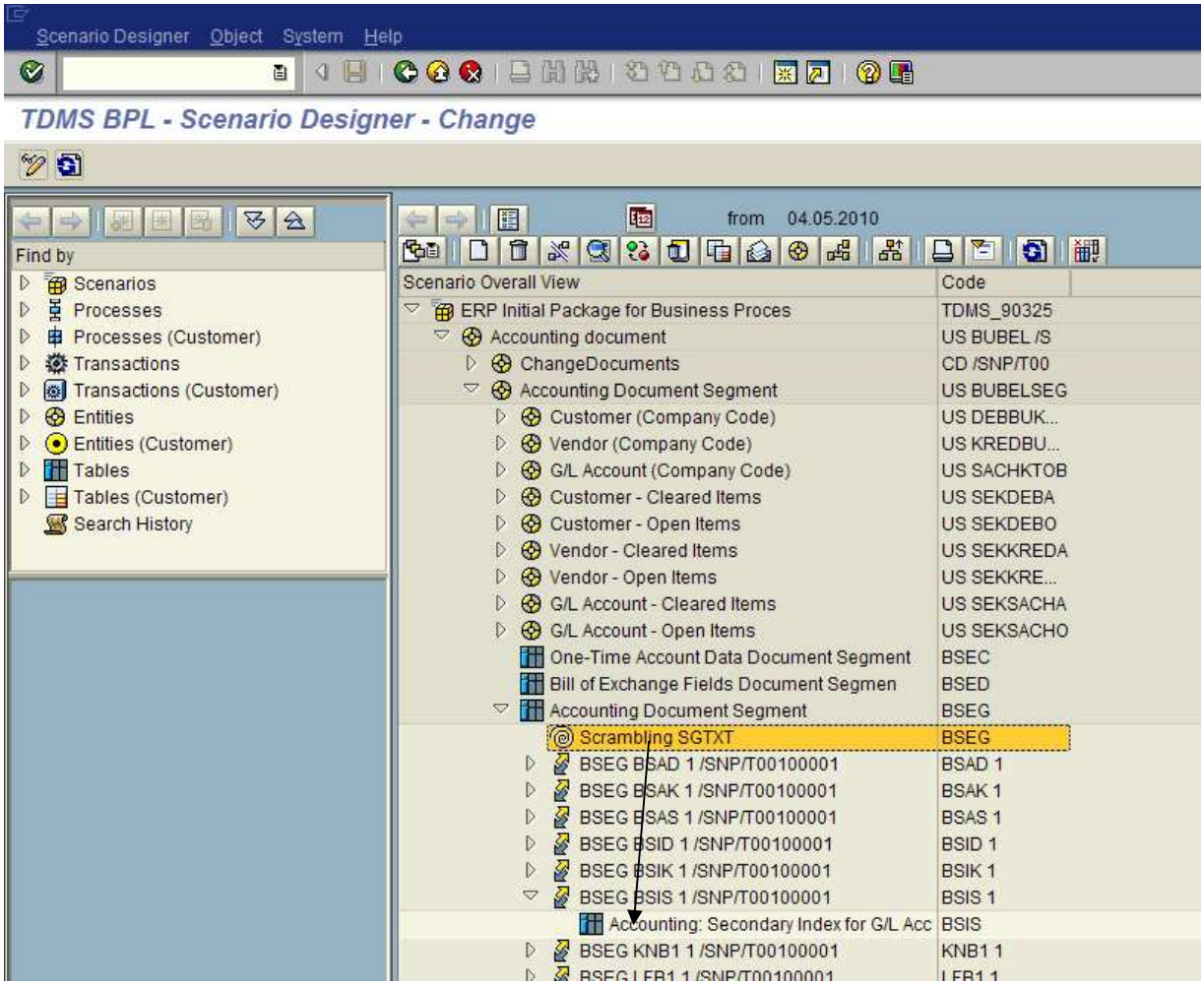

Figure 61: You can assign the already existing scrambling exit for table field SGTXT of BSEG to BSIS via drag-and-drop

Alternatively, you can proceed as follows:

- Mark the table to be scrambled (such as BSIS).
- Click *Assign*.
- Choose *Exit (Customer)*.
- The already defined scrambling exit is displayed (such as *Scrambling SGTXT* from the given example).
- Choose this exit.

Reusing existing scrambling exits is not obligatory. As an alternative you can also create a new exit for each table you would like to scramble. In this case, proceed as follows:

- Mark the table to be scrambled.

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- Click the *Create* icon .
- Choose *Exit (Customer).*
- A new exit popup opens (see Figure 62). Set an appropriate function module for scrambling (in this example /SNP/DW03_EXIT_AN_DEFAULT).

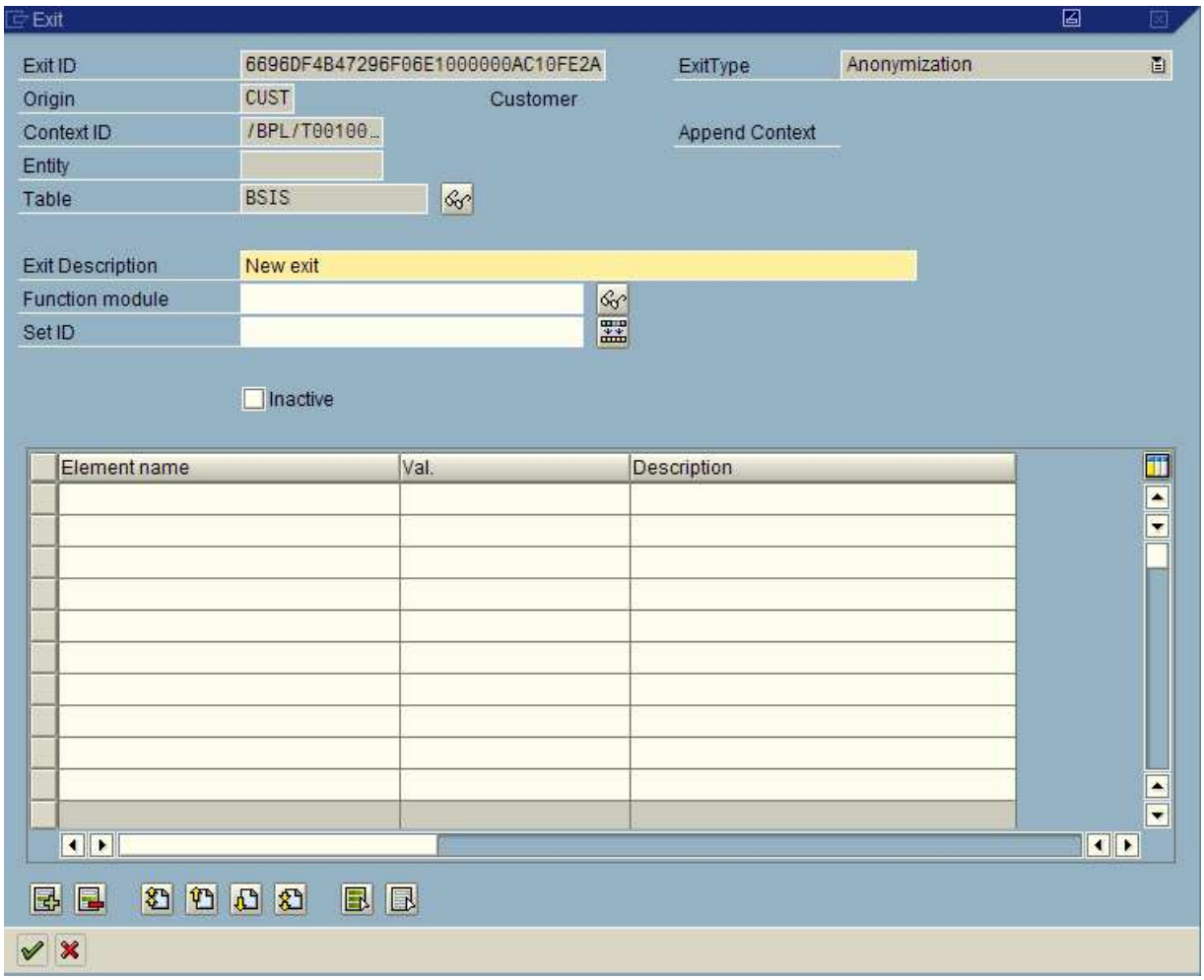

Figure 62: Creating a new customer exit no function module is given

7.2 How to Scramble Table Columns in a Customer Table

To scramble a customer table, you cannot use the predefined exit *DEFAULT AN.* You must create a new customer exit instead. Please proceed as follows:

- In the overview area, mark the customer table to be scrambled (see Figure 63).
- Click the *Create* icon .
- Choose *Exit (Customer)* (see Figure 64) and confirm.

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- An new customer exit popup opens (Figure 65).
- Give an exit description.
- As function module, enter */SNP/DW03_EXIT_AN_DEFAULT*.
- Now you can edit the lower area of the exit popup and reuse the defined exit as described for pre-defined tables.

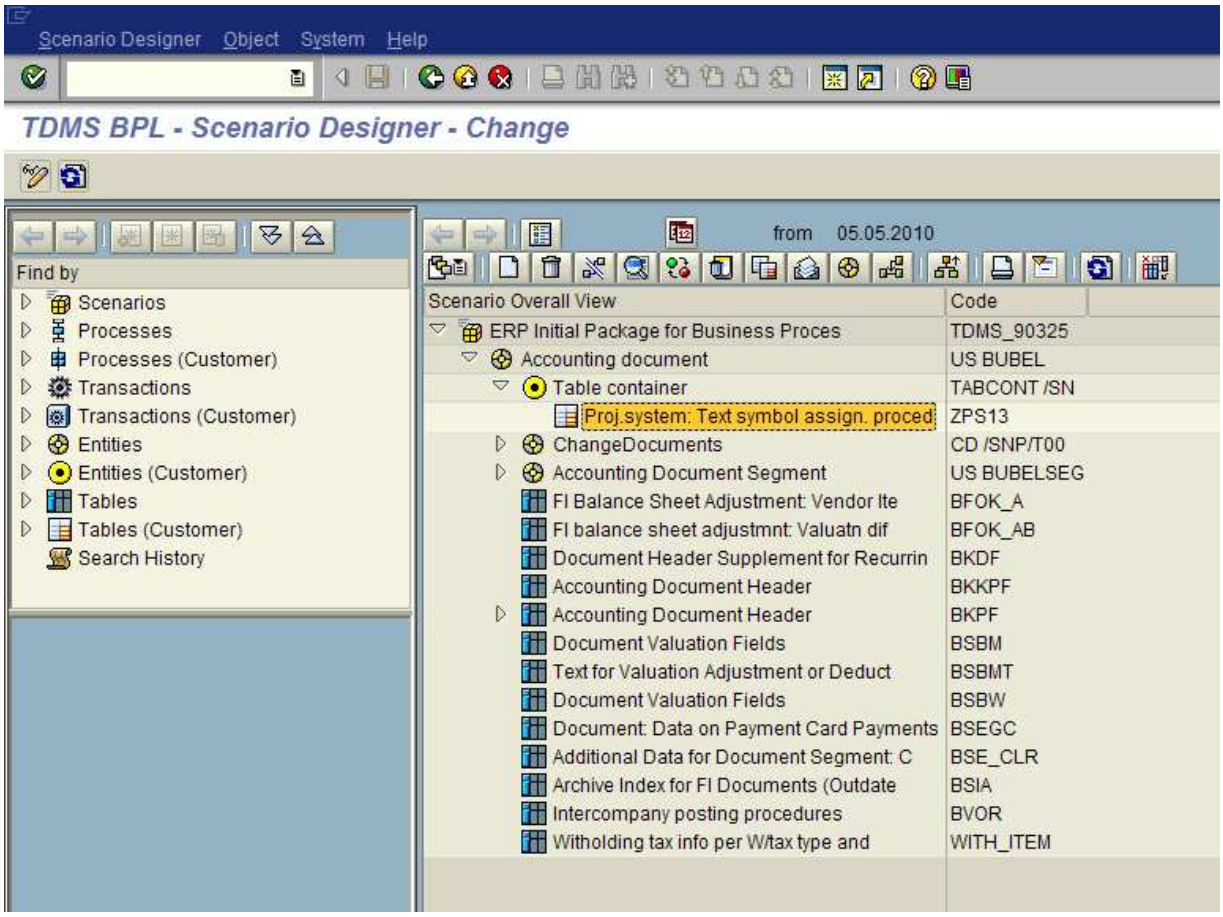

Figure 63: Mark the customer table to be scrambled

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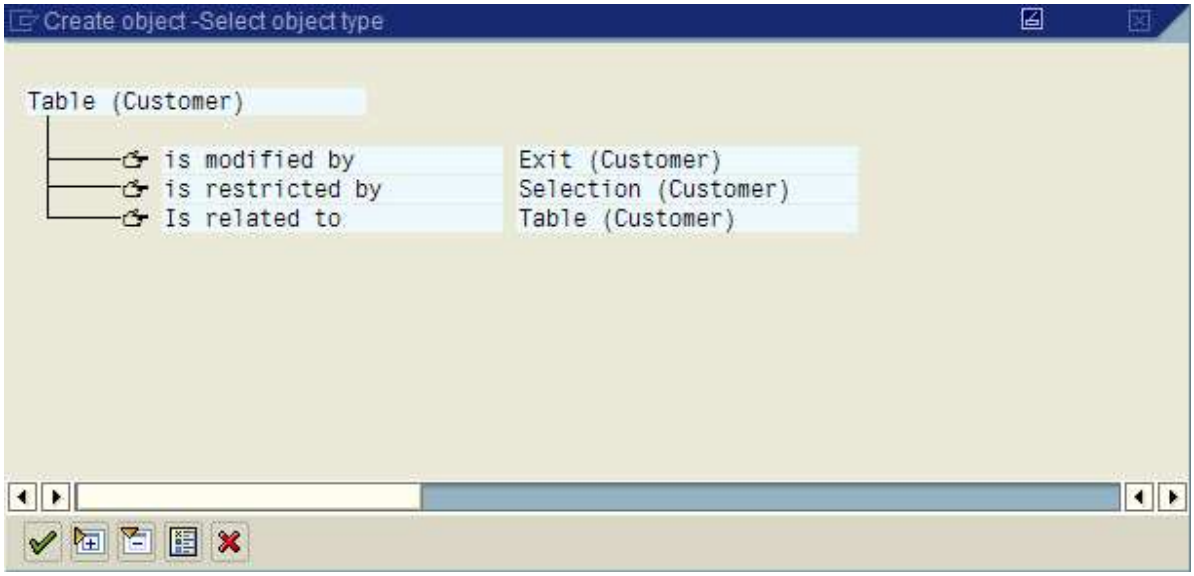

Figure 64: Choose *Exit (Customer)*

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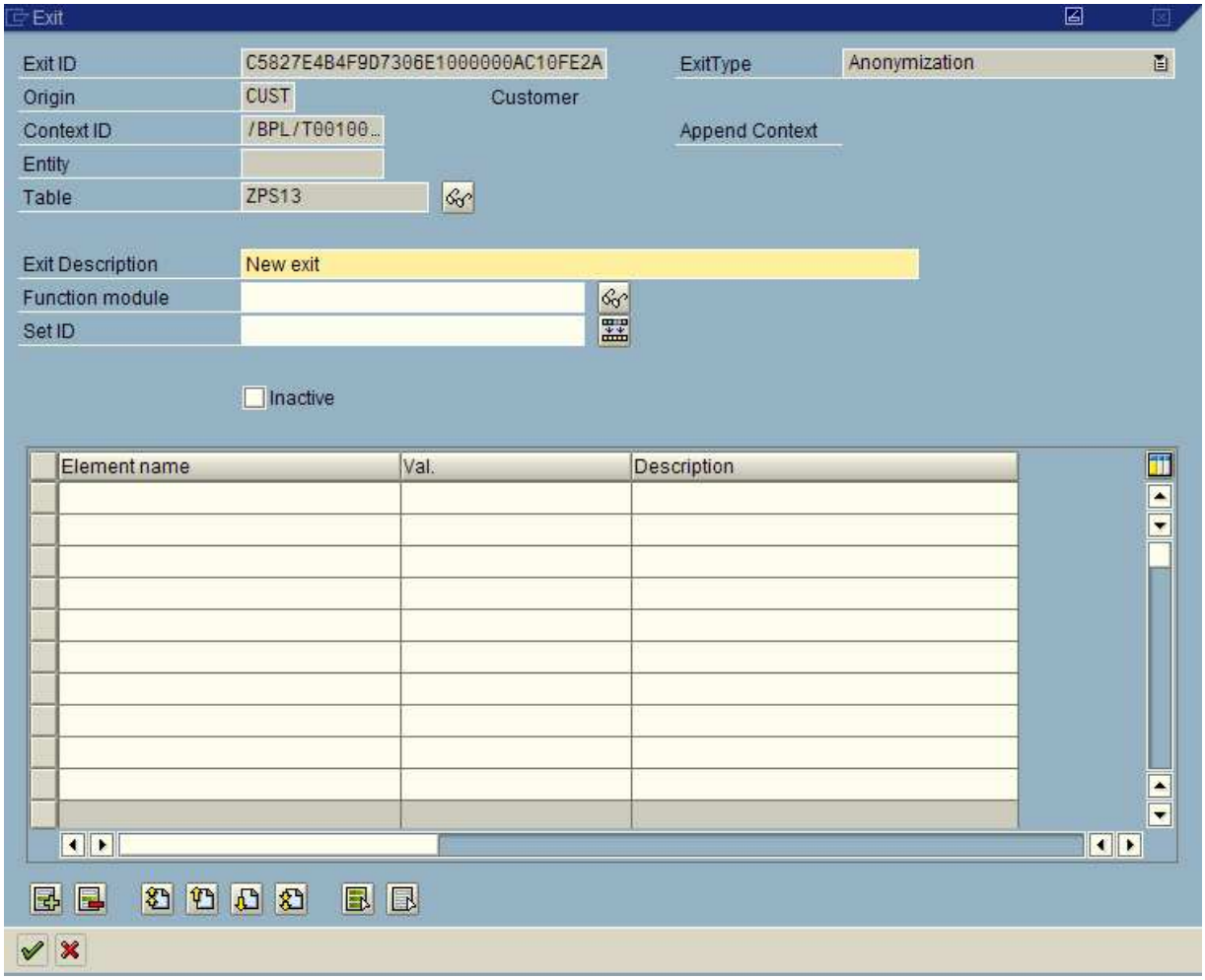

Figure 65: A new customer exit popup opens

7.3 How to Create Custom Scrambling Function Modules

Creating custom scrambling rules requires ABAP knowledge. The function module /SNP/DW03_EXIT_AN_DEFAULT should be copied to your customer namespace as a template. After implementing your custom scrambling function module on the sender system, it can be customized as function module in the scrambling exit configuration of the scenario designer.

7.4 How to Use TDMS Field Based Scrambling Rules in BPL

After you have defined your field based scrambling rules in the TDMS scrambling platform you can also use them in BPL (as of DMIS_EXT SP level 08). Please specify /SNP/DW03_EXIT_AN_TDMS as scrambling function module in your scrambling exit configuration and enter the following parameters:

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Element name	Value
SCR_PACKID	<your scrambling package>
SCR_RULEID	<id of the scrambling rule>
SCR_CLIENT	<client of the central system>

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