



How To... Delete EAN Assignments from ORPA_MEAN

Applicable Releases:

SAP BW >= Release 3.5 and above

BI Content >= Release 3.52 and above

Plug-In >= 2004.1 and above

Version 1.01

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Document History

Document Version	Description
1.00	First official release of this guide
1.01	First correction of this guide

Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Business Scenario

You are extracting EANs (European Article Numbers) from an SAP Retail system to SAP Netweaver BW into the InfoObject ORPA_MEAN or a similar customer InfoObject following the instructions of

SAP Note 835111

Delta extraction MARM und MEAN for POS Analytics Content

You use the InfoObject that contains the assignments of SAP article numbers to EANs to execute material master data checks and enrichments in POS DM (PIPE).

If you are reusing EANs in your material master maintenance for the same EAN number type in SAP ERP, you are faced with the issue that the deletions of EAN article assignments are not uploaded to the BW InfoObjects by the extractor plug-in. Only changed or newly created entries of the MEAN table in ECC Retail are extracted by the generic extractor. As a consequence, it can happen that your ORPA_MEAN or corresponding customer InfoObject contains entries with multiple assignments of the same EAN to different SAP article numbers.

Characteristic ORPA_MEAN - maintain master data: List						
Data Records to be Edited						
Sequence N	UoM for Di	EAN to Article	EAN/UPC	EAN Number	Ind.: Main	
2	PC	000000000000001000	4022652000203	HE		
2	PC	000000000000001001	4022652000203	HE		

Figure: Multiple EAN to article assignment in ORPA_MEAN

2. Background Information

The solution proposed is containing:

- A generic extractor in SAP Retail that selects the deleted EAN article assignments of the MEAN table as delta (using a function module)
- The corresponding extract structure and a dedicated DataSource that can be replicated to the BW system
- Some update logic in the BW data flow into the InfoObject that is reassigning the EAN article combinations that are deleted in SAP Retail

3. Prerequisites

- SAP Netweaver BW with BI Content >= Release 3.52
- Plug-In >= 2004.1
- Extractor for MEAN data from SAP Retail into SAP BW ORPA_MEAN as described in SAP Note 835111

4. Step-by-Step Procedure

To extract the deleted EAN article assignments from SAP Retail to BW, it is necessary to execute different development steps in the following sequence:

SAP Retail

- A generic extractor in SAP Retail that selects the deleted EAN article assignments in MEAN table as delta (using a function module). An additional ALE change pointer message type is created to be able to extract the deleted EAN article assignments.
- The corresponding extract structure and a dedicated DataSource that can be replicated to SAP BW

SAP BW

- Some update logic in the BW data flow into the InfoObject ORPA_MEAN that is reassigning the EAN article combinations that are deleted in SAP Retail

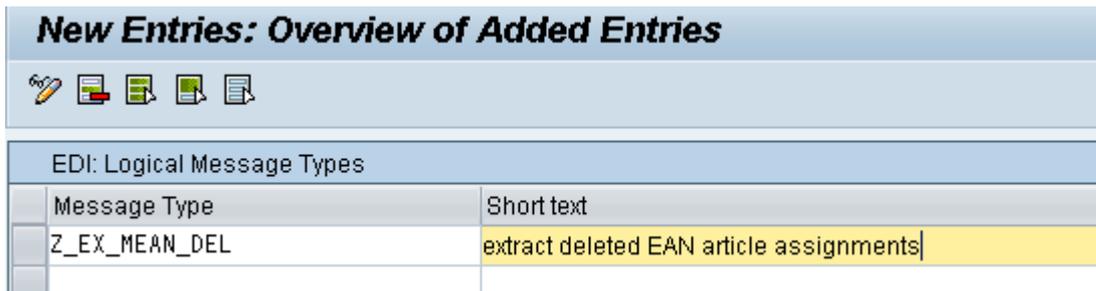
4.1 Creation of generic extractor in SAP Retail

1. Logon to SAP Retail
2. Create a new logical message type

Go to transaction WE81

Change View "EDI: Logical Message Types": Overview	
Message Type	Short text
/BEV1/NEMAT	Beverage Material Master Enhancements for Mass Mainten
/CWM/MATMAS_BAPI	Create and Change Material Master Data
/CWM/MATMAS_MASS_BAPI	BAPI for Mass Maintenance of Material Data
/CWM/MBGMCR	Post Goods Movements with MB_CREATE_GOODS_MOVE
/CWM/SHP_IBDLV_CHANGE	Change Inbound Delivery
/CWM/SHP_IBDLV_CONFIRM_DEC	BAPI Confirmation (CWM Save Replica Inbound)
/CWM/SHP_IBDLV_SAVE_REPLICA	BAPI Function Module for Replication of Inbound Deliveries
/CWM/SHP_OBDLV_CHANGE	BAPI for Change to Outbound Delivery
/CWM/SHP_OBDLV_CONFIRM_DEC	BAPI Confirmation (CWM Save Replica)
/CWM/SHP_OBDLV_SAVE_REPLICA	BAPI Function Module for Replication of Outbound Deliverie
/CWM/SHP_OBDLV_SPLIT_DECENTRAL	BAPI Delivery Split (CWM Save Replica)
/CWM/STPPOD	CWM Acknowledgement of Receipt (POD)
/DSD/HH_CONTROL	DSD Control Output (eod, del, drq, drp, eou)
/DSD/HH_CREDITDATA	DSD Credit Exposure and Credit ILmit
/DSD/HH_CUSTMASTEXT	DSD Customer Master Additions

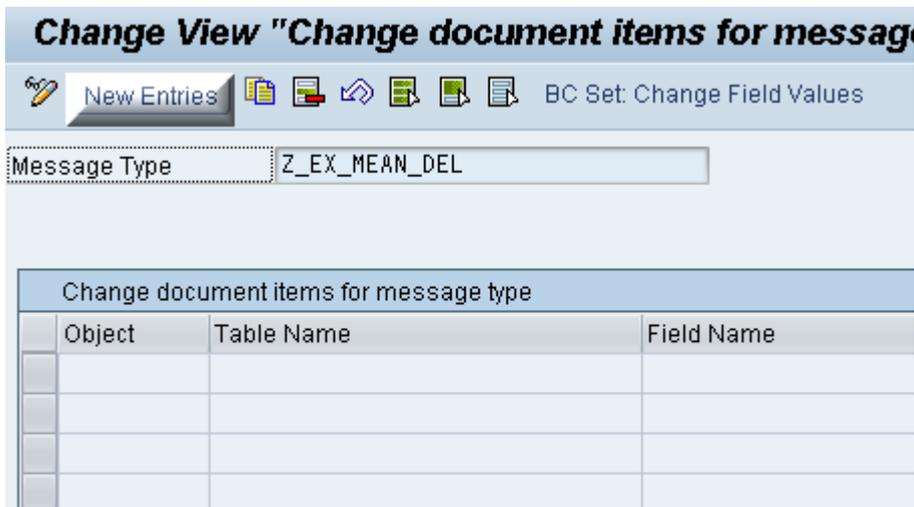
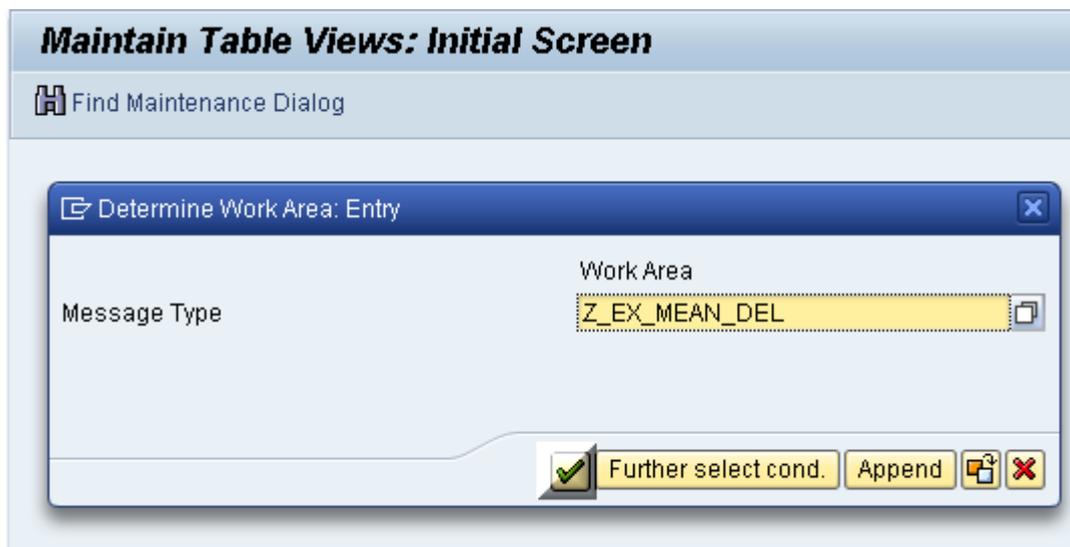
Create a new entry for message type 'Z_EX_MEAN_DEL' with a short text and save the entry



3. Create document items for newly created message type

Go to transaction BD52 to assign the MEAN table fields to the new message type

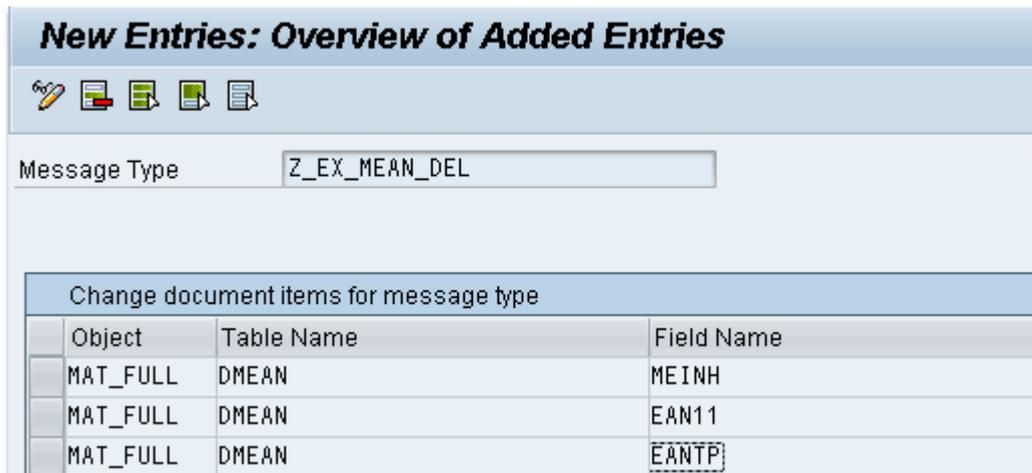
Z_EX_MEAN_DEL



Enter the following entries as change relevant fields for message type Z_EX_MEAN_DEL

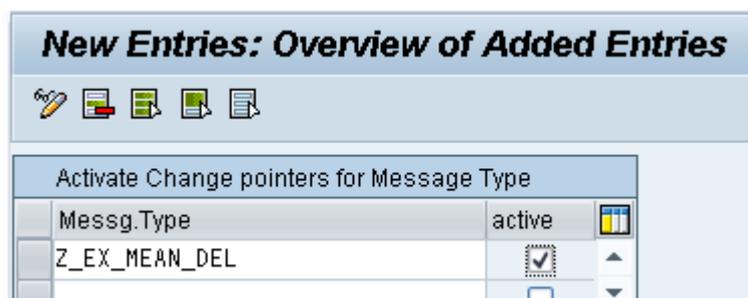
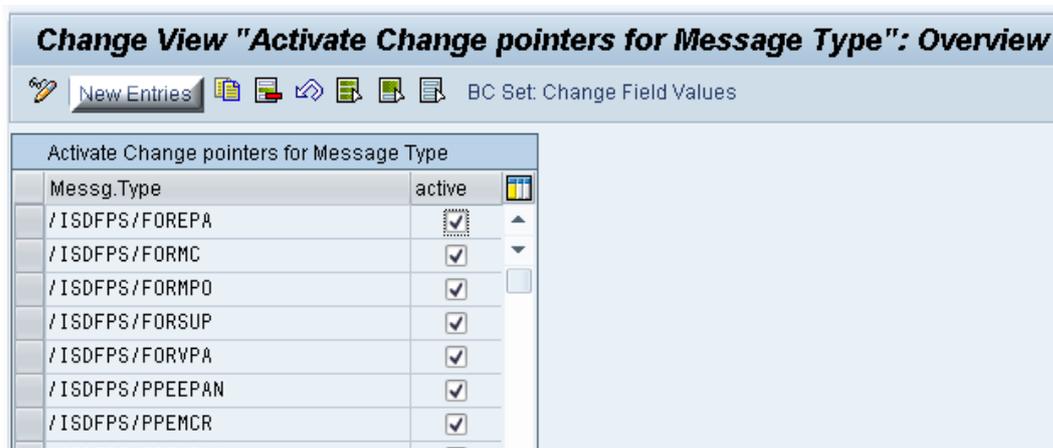
Object	Table Name	Field Name
MAT_FULL	DMEAN	MEINH
MAT_FULL	DMEAN	EAN11
MAT_FULL	DMEAN	EANTP

Save the entries



4. Activate the newly created change pointer message type

Go to transaction BD50 to activate message type Z_EX_MEAN_DEL



Save the new entry

5. Create a new data structure

Go to transaction SE11 and create a new structure 'ZEAN_EX_DELETED_ENTRIES' with following entries:

Component	Component type
MATNR	MATNR
MEINH	MEINH
EAN11	EAN11

ABAP Dictionary: Initial Screen

Database table

View

Data type

Type Group

Domain

Search help

Lock object

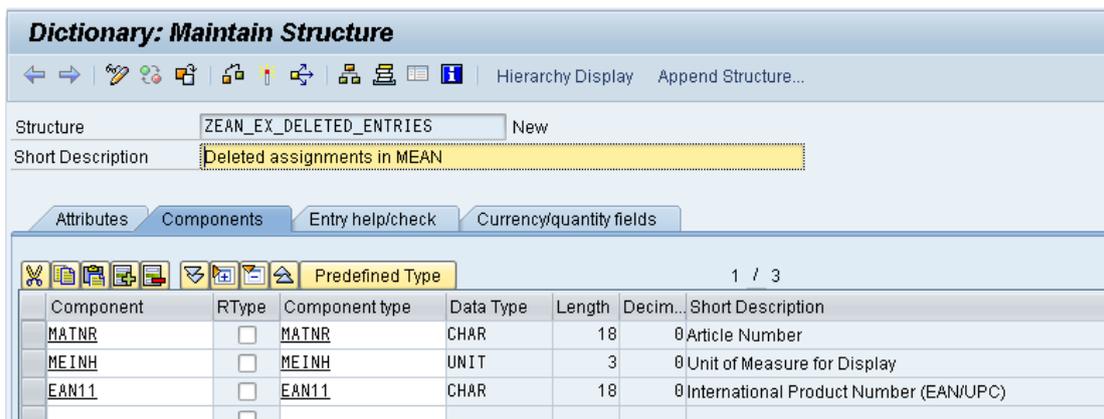
Display Change Create

ABAP Dictionary: Initial Screen

Data element

Structure

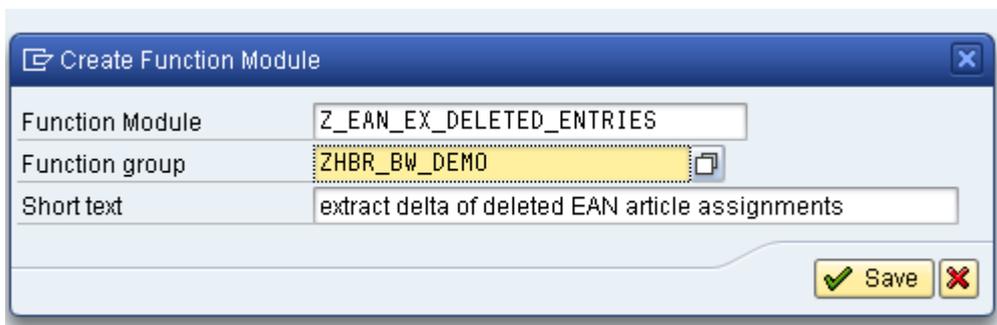
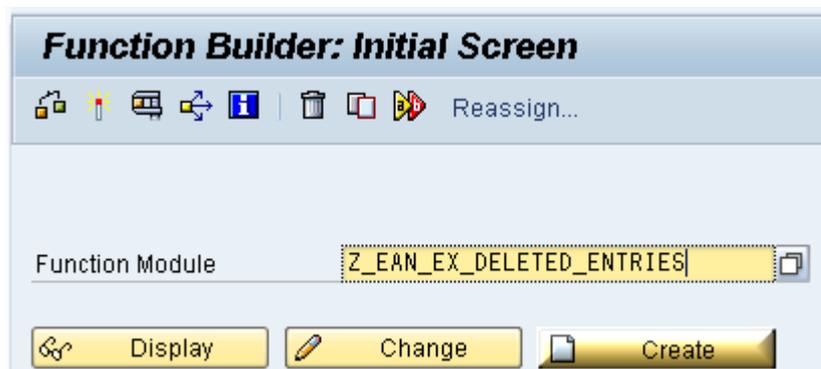
Table type



Activate the structure ZEAN_EX_DELETED_ENTRIES

6. Create a new function module

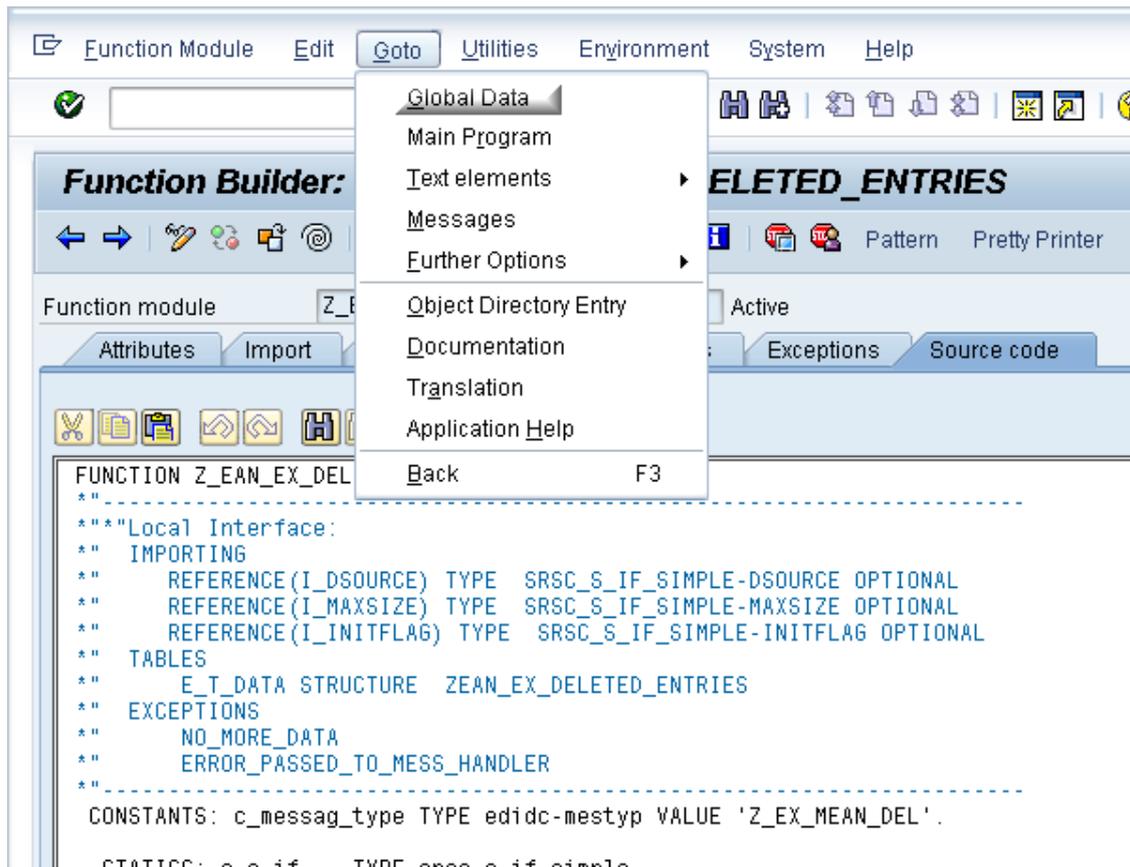
Go to transaction SE37 and create the new function module 'Z_EAN_EX_DELETED_ENTRIES' with a short text and assign it to a function group created for BW extraction developments



Important

To properly create the function module, it is necessary to execute the next steps in the correct sequence

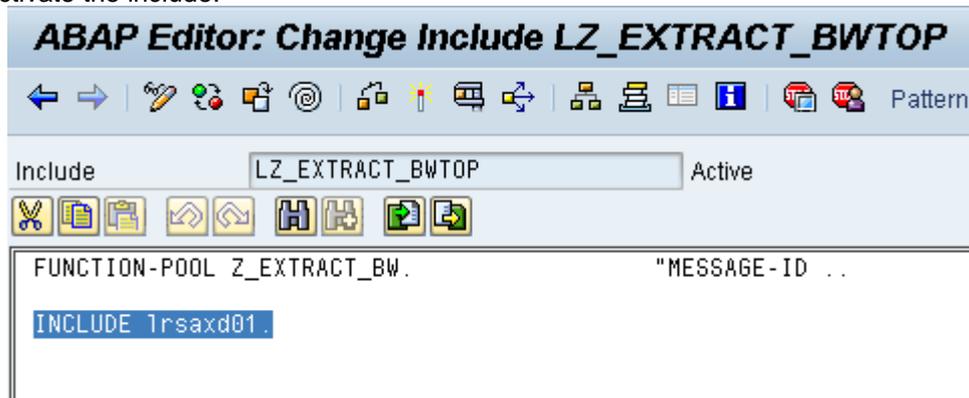
In the function module builder, select in the menu Goto -> Global Data



Add the coding:

INCLUDE 1rsaxd01.

Activate the include.



Go 1 step back to the function module builder

Press the 'Import' Tab



Maintain the following entries

Parameter name	Typing	Associated Type	optional	pass value
I_DSOURCE	TYPE	SRSC_S_IF_SIMPLE-DS	x	
I_MAXSIZE	TYPE	SRSC_S_IF_SIMPLE-MA	x	
I_INITFLAG	TYPE	SRSC_S_IF_SIMPLE-IN	x	
L_READ_ONLY	TYPE	SBIWA_FLAG	x	x

Parameter Name	Typi...	Associated Type	Default value	Op...	Pa...	Short text
I_DSOURCE	TYPE	SRSC_S_IF_SIMP...		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
I_MAXSIZE	TYPE	SRSC_S_IF_SIMP...		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
I_INITFLAG	TYPE	SRSC_S_IF_SIMP...		<input checked="" type="checkbox"/>	<input type="checkbox"/>	
L_READ_ONLY	TYPE	SBIWA_FLAG		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Press the 'Tables' Tab

Maintain the following entry

Parameter name	Typing	Associated Type	optional
E_T_DATA	LIKE	ZEAN_EX_DELETED_ENTRIES	x

Parameter Name	Typing	Associated Type	Optional	Short text
E_T_DATA	LIKE	ZEAN_EX_DELETED_ENT...	<input checked="" type="checkbox"/>	Deleted assignments in MEAN

Press the 'Exceptions' Tab

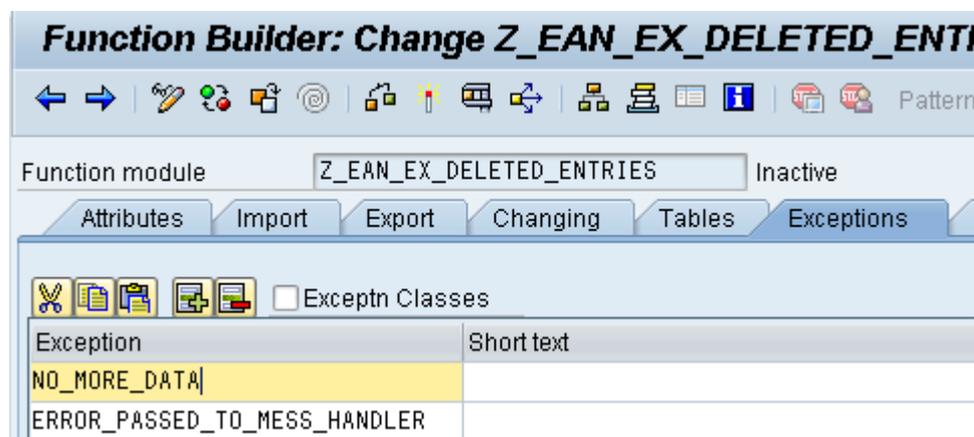


Maintain the following entries:

Exception

NO_MORE_DATA

ERROR_PASSED_TO_MESS_HANDLER



Press the 'Source Code' Tab



Add the coding for [function module Z_EAN_EX_DELETED_ENTRIES](#) (see appendix)

Activate the function module

Important

This function module will be the source for the generic extractor in SAP Retail. The function module is extracting the change documents for deleted assignments (in a delta mode). Newly created or changed EAN assignments are not considered at all.

7. Create the generic extractor

Go to transaction RSO2 and create the generic DataSource 'Z_MEAN_DEL_ATTR' for uploading master data attributes

Maintain Generic DataSources

DataSource

Transaction data

Master Data Attributes

Texts

Z_MEAN_DEL_ATTR

Create Change Display

Assign it to the relevant application component (i.e. IS-R-IO for IS retail master data), maintain short, medium and long text and select the newly created function module Z_EAN_EX_DELETED_ENTRIES as source and ZEAN_EX_DELETED_ENTRIES as extract structure.

Create DataSource for Master data attribs: Z_MEAN_DEL_A

Generic Delta

DataSource: Z_MEAN_DEL_ATTR

Applic. Component: IS-R-IO

Data Reconciliation:

Obj. status: New

Extraction from View

Extraction from Query

Extraction by FM

Texts

Short description: deleted EAN assign

Medium description: deleted EAN assignments

Long description: deleted EAN assignments

Extraction from DB View

View/Table:

ExtractStruct.:

Extraction frm SAP Query

InfoSet:

Extraction by Function Module

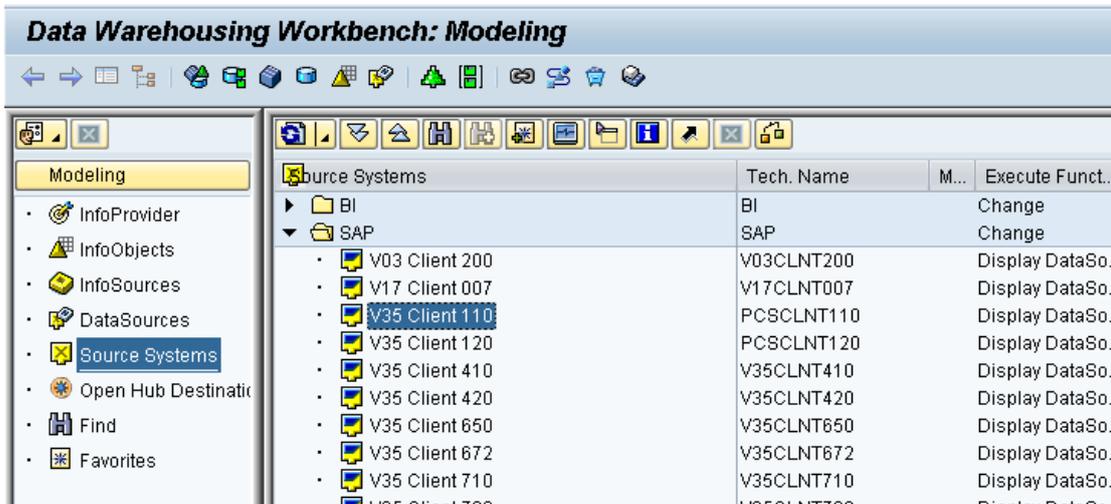
Function Module: Z_EAN_EX_DELETED_ENTRIES

Extract.Struct.: ZEAN_EX_DELETED_ENTRIES

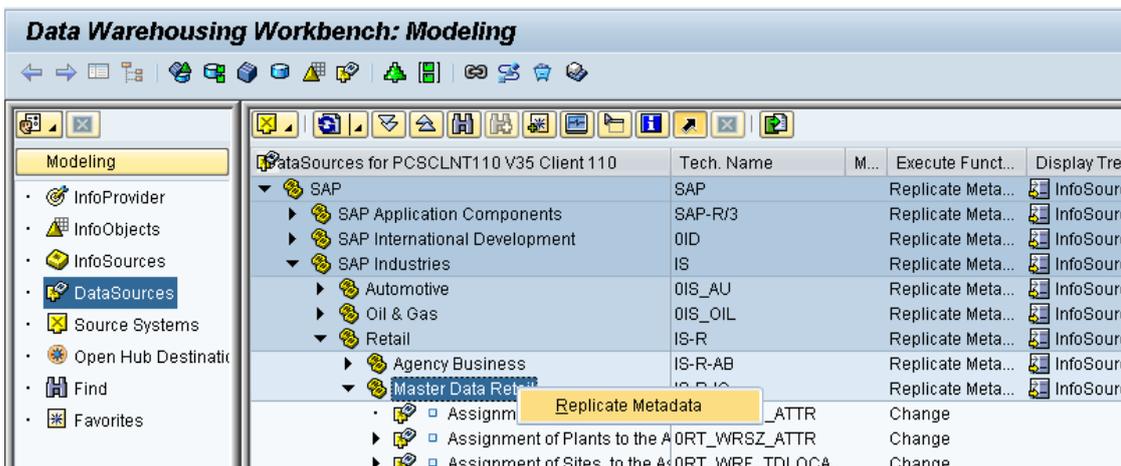
4.2 Uploading deleted EAN assignments to SAP BW

1. Logon to SAP BW

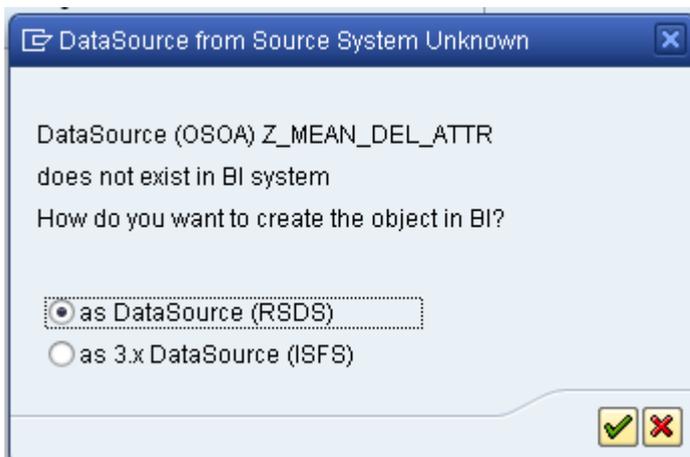
2. Replicate newly created generic DataSource from SAP Retail source system to SAP BW
Go to transaction RSA1 and select the relevant SAP source system



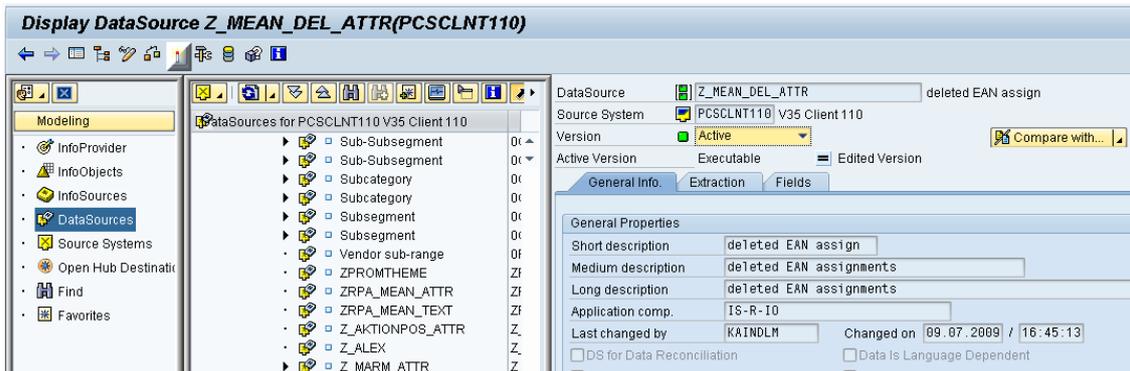
Select the application area defined for the generic DataSource and replicate the metadata



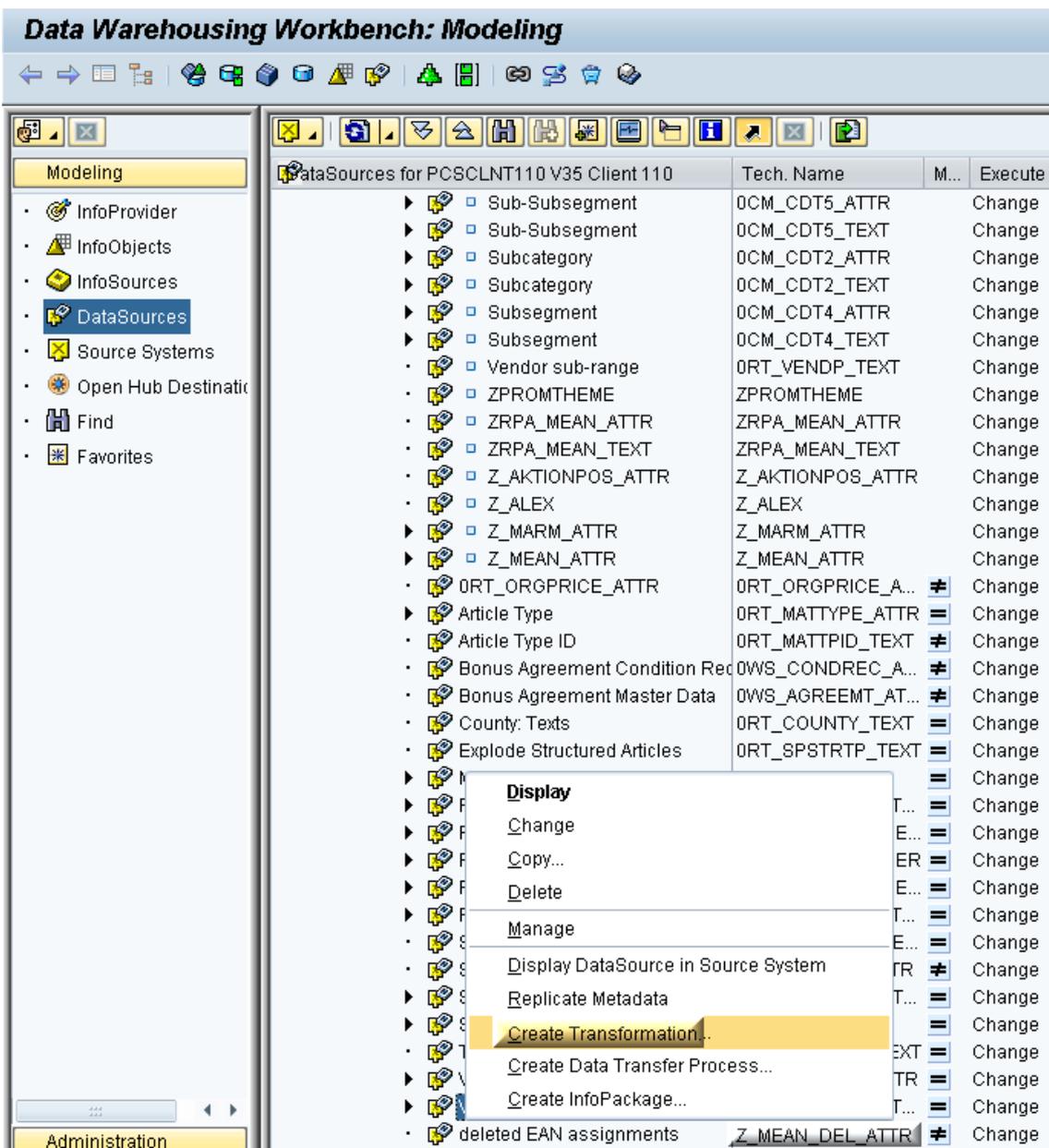
Replicate the DataSource as 7.x DataSource



3. create transformation from DataSource to InfoObject
activate the DataSource Z_MEAN_DEL_ATTR



Right click on the DataSource and select 'create transformation'



Assign the transformation to the attributes of the InfoObject ORPA_MEAN

Create Transformation

Target of the Transformation

Object Type: InfoObject Subtype of Object: Attributes

Name: ORPA_mean

Source of the Transformation

Object Type: DataSource

DataSource: Z_MEAN_DEL_ATTR

Source System: PCSCCLNT110

Map the fields from the DataSource Z_MEAN_DEL_ATTR to the InfoObject attributes of ORPA_MEAN in the following sequence:

MATNR -> ORPA_MEAN

MEINH -> ORPA_DISQU

Create a field routine for the field ORPA_LFNUM

Transformation Change

Transformation: RSDS Z_MEAN_DEL_ATTR PCSCCLNT110 -> IOBJ ORP...

Source: deleted EAN assignments (Z_MEAN_DEL_ATTR)

Target: EAN Assignment to Article (ORPA_MEAN)

Version: Active

Active Version: Executable

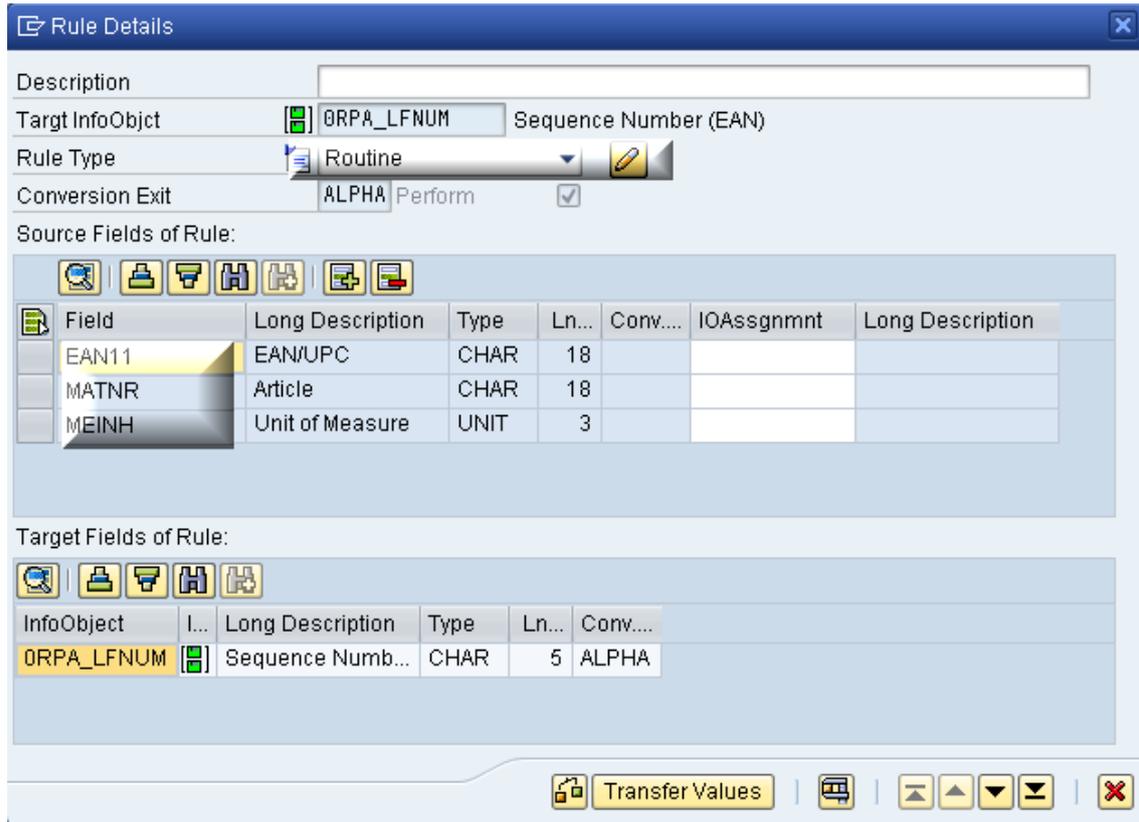
Pos	Key	Field	Descript.
1		MATNR	Article
2		MEINH	Unit of Measure
3		EAN11	EANUPC

Rule	Rule Name	Pos	Key	InfoObject	Icon	Descript.	Inte
	ORPA_LFNUM	1	?	ORPA_LFNUM		Sequence Number (EAN)	
	ORPA_DISQU	2	?	ORF		Measure for Display	
	ORPA_MEAN	3	?	ORF		Delete Rule	
	OEANUPC	4		OEANUPC		European Article Numbers/Universal Product Code	
	OEAN_NUMTYP	5		OEAN_NUMTYP		Number Type for European Article Number	
	ORPA_HPEAN	6		ORPA_HPEAN		Indicator: Main EAN	

Important

As the extractor from SAP Retail is not containing all relevant key fields of the InfoObject, it is necessary to implement some update logic in this transformation. The unique key of the MEAN table in SAP Retail and of the ORPA_MEAN InfoObject in SAP BW is MATNR (article number; ORPA_MEAN), MEINH (unit of measure for display, ORPA_DISQU) and LFNUM (consecutive sequence number, ORPA_LFNUM) but the extractor created cannot deliver this LFNUM sequence number. For that reason, it is necessary to identify the current valid EAN article and unit of measure combination stored in the InfoObject. This logic is implemented by the field routine. As the extractor is delivering the deleted article EAN assignments, it is important to set the mapping into the InfoObject field OEANUPC to initial.

The field routine to ORPA_LFNUM is containing all fields from the DataSource as source fields.



Rule Details

Description:

Target InfoObject:  ORPA_LFNUM Sequence Number (EAN)

Rule Type:  Routine 

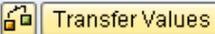
Conversion Exit: ALPHA Perform

Source Fields of Rule:

Field	Long Description	Type	Ln...	Conv...	IOAssignmnt	Long Description
EAN11	EAN/UPC	CHAR	18			
MATNR	Article	CHAR	18			
MEINH	Unit of Measure	UNIT	3			

Target Fields of Rule:

InfoObject	I...	Long Description	Type	Ln...	Conv...
ORPA_LFNUM		Sequence Numb...	CHAR	5	ALPHA

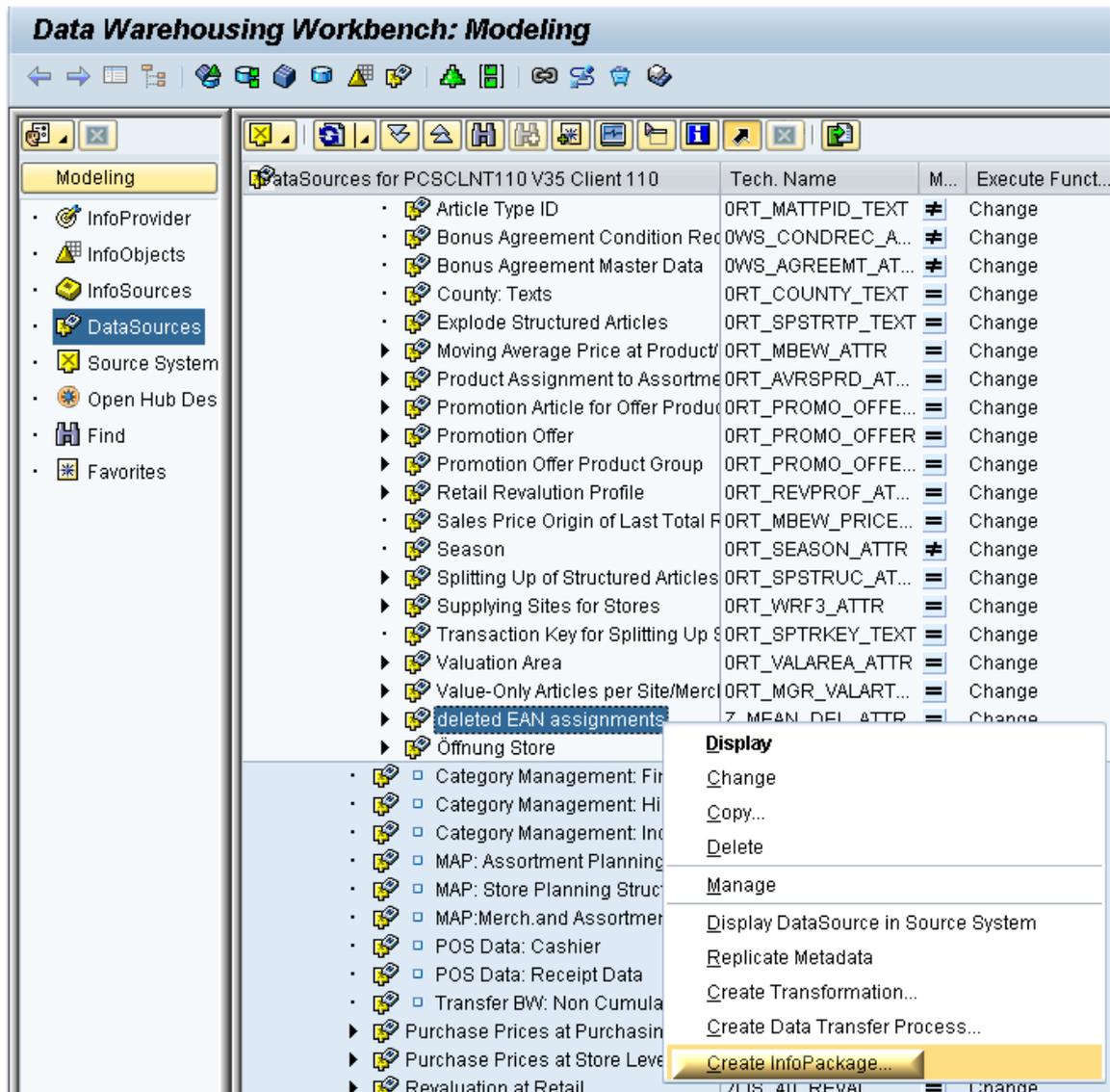
 Transfer Values |  |   

Copy the ABAP coding into the [field routine to ORPA_LFNUM](#) (see appendix)

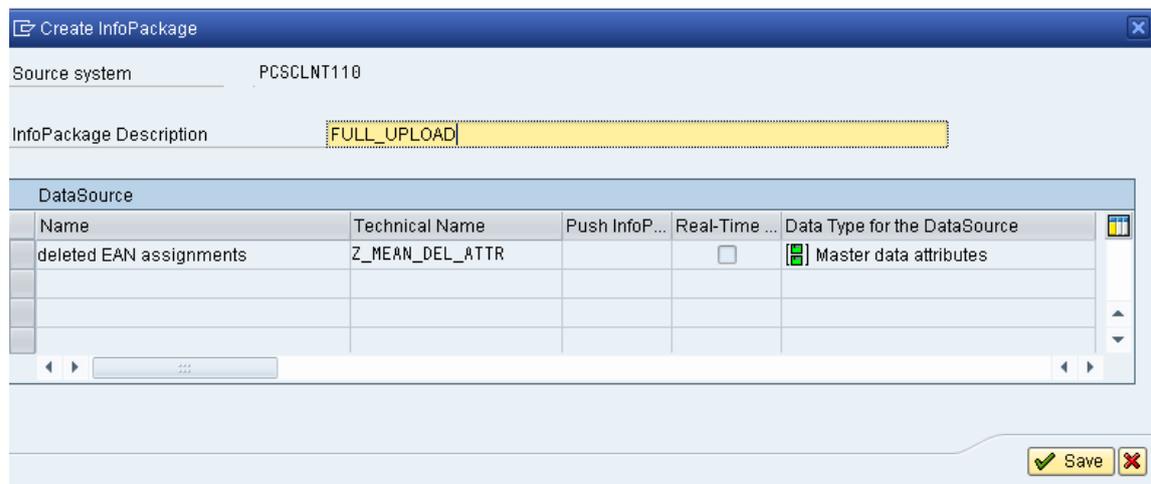
Save the routine and the transformation and activate it.

4. Create InfoPackage to upload the deleted EAN article assignments

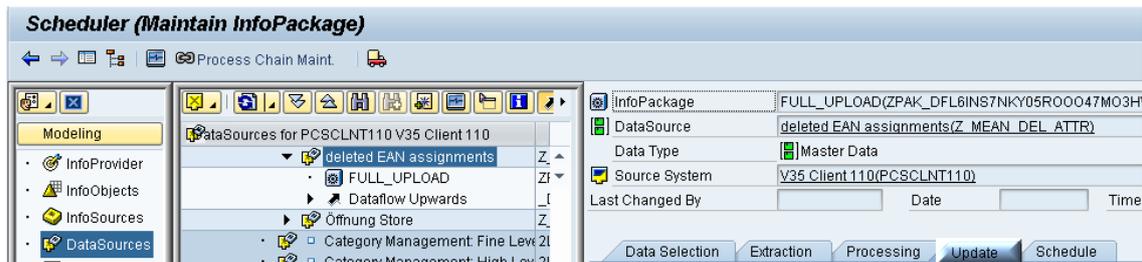
Right click on the DataSource and select 'Create InfoPackage'



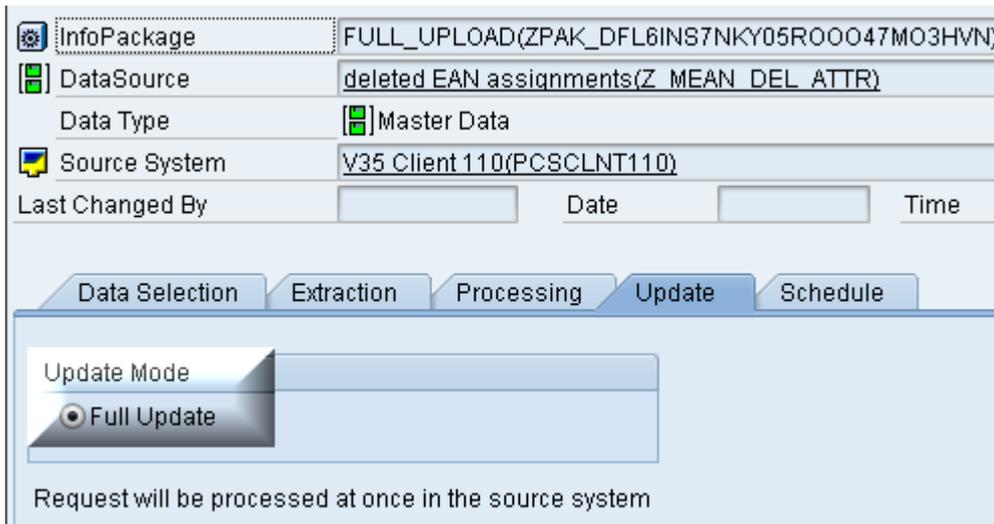
Define a name for the InfoPackage and save it



Select the 'update' tab



Select full update as update mode



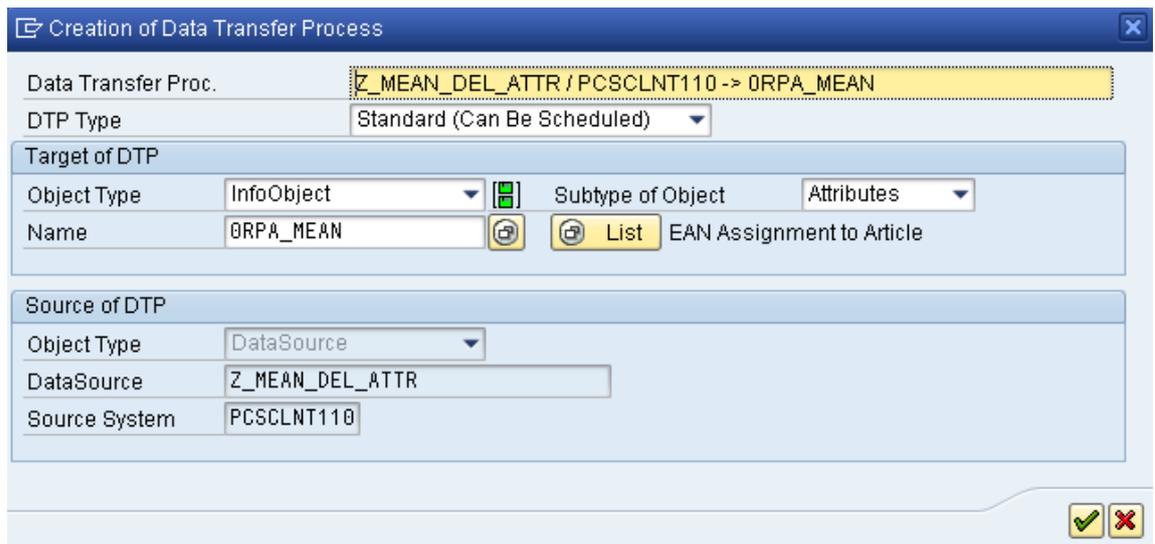
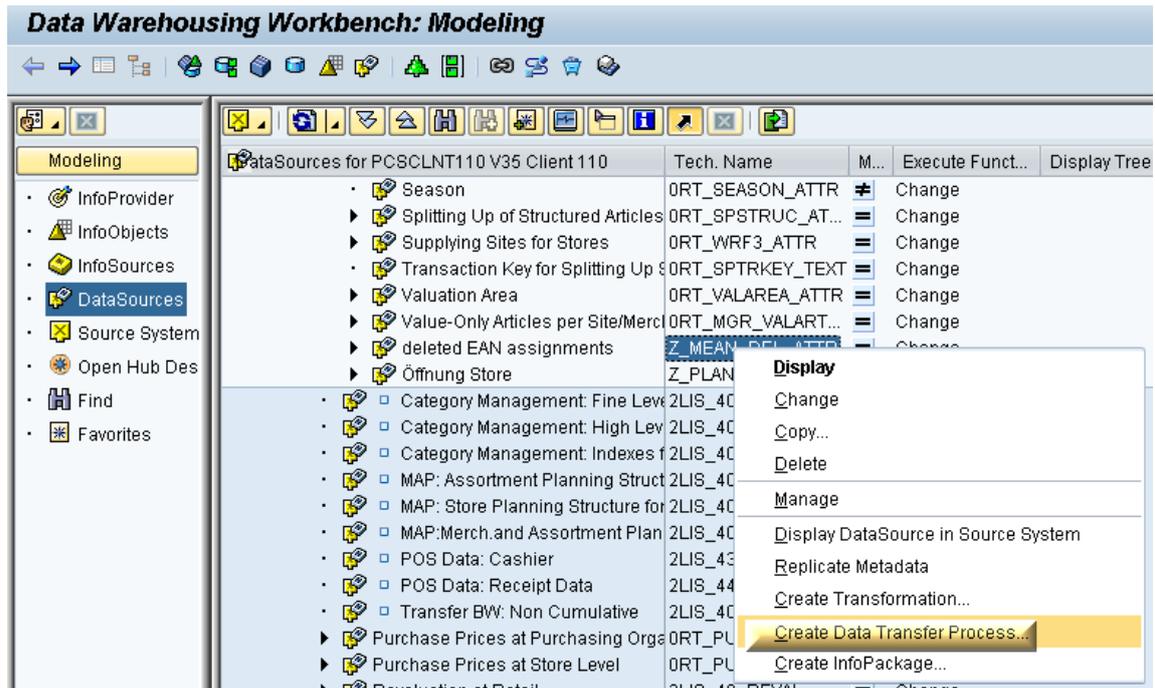
Important

The InfoPackage must be a full update InfoPackage as delta handling is not supported by generic extractors that are based on function modules. The function module that is the source of the generic extractor is delivering the delta updates for the SAP Retail system. The consequence of that fact with regard of what steps has to be executed in case that an upload from SAP Retail to BW is failing for this scenario will be described in the appendix section 'Error handling'.

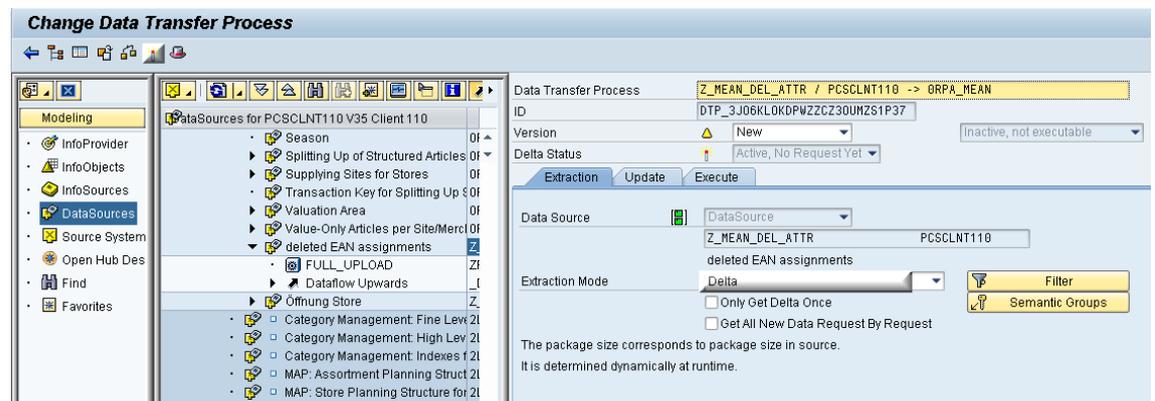
Save the InfoPackage

5. Create data transfer process

As 7.x DataSources are only updating the corresponding PSA tables, it is necessary to create a DTP to upload the data from the PSA table of the DataSource into the InfoObject. The DTP itself is executed in delta update mode



Activate the DTP

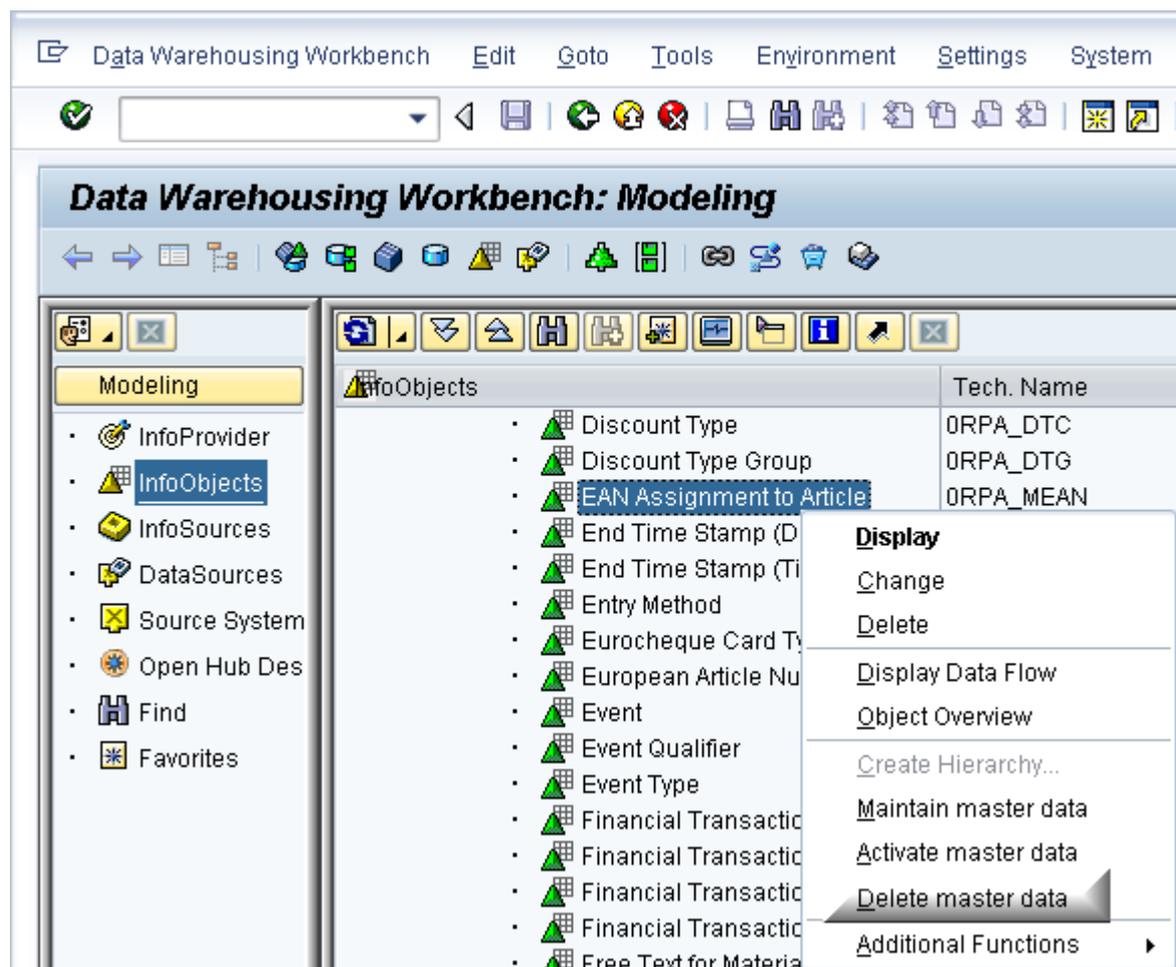


5. Appendix

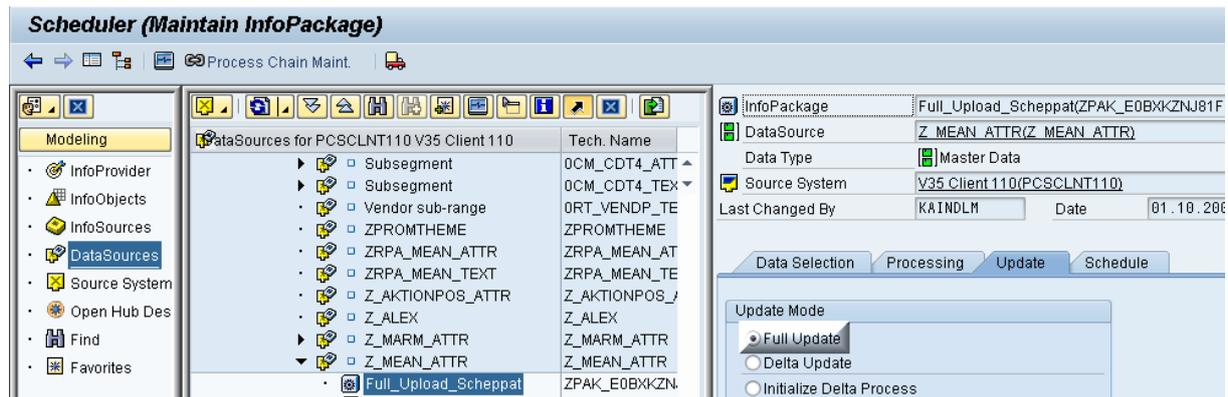
Appendix A - Error Handling

As the extractor is uploading the delta of deleted EAN article combinations, it is necessary to execute the following steps in case that the InfoPackage is failing during processing because it is not possible to repeat a failed delta upload (even if the InfoPackage is a full upload package, the function module used by the extractor is set up like a delta upload).

Delete all entries in the InfoObject ORPA_MEAN



Execute the Full update InfoPackage of the DataSource created following the instructions of note 835111 'Delta extraction MARM und MEAN for POS Analytics Content' that is extracting the attributes for the InfoObject ORPA_MEAN.



As this extractor is uploading all valid EAN article assignments from SAP Retail to BW, the consistency of the ORPA_MEAN InfoObject is given.

After that, it is sufficient to execute again only the Delta update InfoPackage for that DataSource and afterwards the InfoPackage to upload the deleted EAN article assignments described in this how to paper.

Appendix B – ABAP Coding

Function module Z EAN EX DELETED ENTRIES

```

FUNCTION Z_EAN_EX_DELETED_ENTRIES.
*-----
* * "Local Interface:
* " IMPORTING
* " REFERENCE(I_DSOURCE) TYPE SRSC_S_IF_SIMPLE-DSOURCE OPTIONAL
* " REFERENCE(I_MAXSIZE) TYPE SRSC_S_IF_SIMPLE-MAXSIZE OPTIONAL
* " REFERENCE(I_INITFLAG) TYPE SRSC_S_IF_SIMPLE-INITFLAG OPTIONAL
* " VALUE(L_READ_ONLY) TYPE SBIWA_FLAG OPTIONAL
* " TABLES
* " E_T_DATA STRUCTURE ZEAN_EX_DELETED_ENTRIES OPTIONAL
* " EXCEPTIONS
* " NO_MORE_DATA
* " ERROR_PASSED_TO_MESS_HANDLER
*-----
CONSTANTS: c_message_type TYPE edidc-mestyp VALUE 'Z_EX_MEAN_DEL'.

STATICS: s_s_if TYPE srsc_s_if_simple.

FIELD-SYMBOLS: <l_s_change_pointers> TYPE bdcf.

DATA: l_no_records TYPE i,
      l_s_data TYPE zean_ex_deleted_entries,
      l_s_chng_pntrs_idents TYPE bdcipident,
      l_t_chng_pntrs_idents TYPE TABLE OF bdcipident,
      l_t_change_pointers TYPE TABLE OF bdcf.

IF i_initflag = sbiwa_c_flag_on.

*****
* Initialization
*****

* Check DataSource validity
  IF i_dsource <> 'Z_MEAN_DEL_ATTR'.
    log_write 'E' "message type
  
```

```

        'R3'          "message class
        '009'        "message number
        i_dsource    "message variable 1
        ' '          "message variable 2
    CLEAR: sy-msgty, sy-msgid, sy-msgno, sy-msgv1, sy-msgv2,
           sy-msgv3, sy-msgv4.
    RAISE error_passed_to_mess_handler.
ENDIF.

* Fill parameter buffer for data extraction calls
s_s_if-dsource = i_dsource.
s_s_if-maxsize = i_maxsize.

* Set blocksize for Change Pointer read
CALL FUNCTION 'CHANGE_POINTERS_READ_MODE_SET'
    EXPORTING
        message_type = c_messag_type
        block_size   = 1000
    EXCEPTIONS
        OTHERS       = 1.

IF sy-subrc <> 0.
    log_write_full sy-msgty "message type
                  sy-msgid "message class
                  sy-msgno "message number
                  sy-msgv1 "message variable 1
                  sy-msgv2 "message variable 2
                  sy-msgv3 "message variable 3
                  sy-msgv4. "message variable 4
    CLEAR: sy-msgty, sy-msgid, sy-msgno, sy-msgv1, sy-msgv2,
           sy-msgv3, sy-msgv4.
    RAISE error_passed_to_mess_handler.
ENDIF.

ELSE.

*****
* Data transfer: Read Change Pointers and send data
*****

    WHILE l_no_records < s_s_if-maxsize.

* Read Change Pointers for message type Z_EX_MEAN_DEL
    CALL FUNCTION 'CHANGE_POINTERS_READ'
        EXPORTING
            message_type          = c_messag_type
        TABLES
            change_pointers       = l_t_change_pointers
        EXCEPTIONS
            error_in_date_interval = 1
            error_in_time_interval = 2
            OTHERS                 = 3.

    IF sy-subrc <> 0.
        log_write_full sy-msgty "message type
                      sy-msgid "message class
                      sy-msgno "message number
                      sy-msgv1 "message variable 1
                      sy-msgv2 "message variable 2
                      sy-msgv3 "message variable 3
                      sy-msgv4. "message variable 4
        CLEAR: sy-msgty, sy-msgid, sy-msgno, sy-msgv1, sy-msgv2,
               sy-msgv3, sy-msgv4.
        RAISE error_passed_to_mess_handler.
    ENDIF.

```

```

    IF l_t_change_pointers IS INITIAL.
      IF l_no_records = 0.
*       No more data
        RAISE no_more_data.
      ELSE.
*       Data for this call is handed over to SAPI
        EXIT.
      ENDIF.
    ENDIF.

* Make sure that Change Pointers are in the right sequence
  SORT l_t_change_pointers BY cpident.

  LOOP AT l_t_change_pointers ASSIGNING <l_s_change_pointers>.

* Collect processed Change Pointer IDs
  l_s_chng_pntrs_idents-cpident = <l_s_change_pointers>-cpident.
  APPEND l_s_chng_pntrs_idents TO l_t_chng_pntrs_idents.

  IF <l_s_change_pointers>-cdchgid = 'E'.
*   Transfer only deleted entries to BW
    l_s_data-matnr = <l_s_change_pointers>-cdobjid.
    l_s_data-meinh = <l_s_change_pointers>-tabkey(3).
    l_s_data-ean11 = <l_s_change_pointers>-tabkey+3.
    APPEND l_s_data TO e_t_data.
  ENDIF.
  ENDLLOOP.

* Write Status of processed Change Pointers
* only for processing in non read-only mode
* Modification 1 of original version

  IMPORT l_read_only FROM MEMORY ID 'RSFH_REO'.
  IF l_read_only NE 'X'.
    CALL FUNCTION 'CHANGE_POINTERS_STATUS_WRITE'
      EXPORTING
        message_type          = c_message_type
      TABLES
        change_pointers_idents = l_t_chng_pntrs_idents.

    IF sy-subrc <> 0.
      log_write_full sy-msgty "message type
                    sy-msgid "message class
                    sy-msgno "message number
                    sy-msgv1 "message variable 1
                    sy-msgv2 "message variable 2
                    sy-msgv3 "message variable 3
                    sy-msgv4. "message variable 4
      CLEAR: sy-msgty, sy-msgid, sy-msgno, sy-msgv1, sy-msgv2,
             sy-msgv3, sy-msgv4.
      RAISE error_passed_to_mess_handler.
    ENDIF.
  ENDIF.

* Delete duplicate records
  SORT e_t_data BY matnr meinh.
  DELETE ADJACENT DUPLICATES FROM e_t_data COMPARING matnr meinh.

* Record counter
  DESCRIBE TABLE e_t_data LINES l_no_records.

  ENDWHILE.

ENDIF.

```

ENDFUNCTION.

Field routine in transformation for ORPA LFNUM

```
* DATA: l_s_errorlog TYPE rssm_s_errorlog_int.

* Get sequence number of existing Material/Unit/EAN combination
SELECT SINGLE rpa_lfnum FROM /bi0/prpa_mean
  INTO result
  WHERE rpa_disqu = source_fields-meinh
        AND rpa_mean = source_fields-matnr
        AND eanupc = source_fields-ean11
        AND objvers = 'A'.

IF sy-subrc <> 0.
* Check if 'M' record is available
  SELECT SINGLE rpa_lfnum FROM /bi0/prpa_mean
    INTO result
    WHERE rpa_disqu = source_fields-meinh
          AND rpa_mean = source_fields-matnr
          AND eanupc = source_fields-ean11
          AND objvers = 'M'.

  IF sy-subrc <> 0.
* No record for Material/Unit/EAN combination available
    result = ''.
  ENDIF.
ENDIF.
```

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