



Order to Cash Manager

For use with SAP® R/3®

Version 1.0

User Exit Enhancement

Adding Product Hierarchy Components
to the Order Window

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Product Hierarchy Components

The following sections illustrate how product hierarchy components can be added to the material section of the sales order window.

The screenshot displays the SAP Order to Cash Manager interface. The main window title is "Order to Cash Manager". Below the title bar, there is a menu bar with "List", "Edit", "Goto", "System", and "Help". A toolbar contains various icons for navigation and actions. The main content area is titled "All Sales Order Items" and contains a table with the following columns: Sales doc., Item, Matl group, Matl grp description, SG, Typ, LOB, LOB desc, Prod cls, Prod cls desc, Prod type, Prod type desc, Net price, per, UoM, and I. The table lists 144 items, with the first few items highlighted in yellow and red. The status bar at the bottom indicates "144 Order Items Displayed".

Sales doc.	Item	Matl group	Matl grp description	SG	Typ	LOB	LOB desc	Prod cls	Prod cls desc	Prod type	Prod type desc	Net price	per	UoM	I
27568	10	30074100	Test Material Group	40	PD	70	Prod Hier Desc	30	Prod Hier Desc	300	Prod Hier Desc	297.00	1	EA	891.
27569	10	30020000	Test Material Group	40	PD	10	Prod Hier Desc	20	Prod Hier Desc	200	Prod Hier Desc	112.99	1	EA	146,887.
27570	10	30020000	Test Material Group	40	PD	10	Prod Hier Desc	20	Prod Hier Desc	200	Prod Hier Desc	248.85	1	EA	3,732.
27571	10	30049000	Test Material Group	40	PD	40	Prod Hier Desc	30	Prod Hier Desc	300	Prod Hier Desc	0.00	1	EA	0.
27572	10	30073000	Test Material Group	40	PD	20	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	945.00	1	EA	945.
27573	10	30012000	Test Material Group	40	PD	10	Prod Hier Desc	20	Prod Hier Desc	200	Prod Hier Desc	4,121.53	1	EA	4,121.
27574	10	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	77.53	1	EA	775.
	20	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	79.05	1	EA	4,743.
	30	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	71.40	1	EA	1,785.
	40	30000000	Test Material Group	40	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	85.82	1	EA	1,287.
	50	30000000	Test Material Group	40	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	67.89	1	EA	2,376.
	60	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	47.87	1	EA	478.
	70	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	53.43	1	EA	1,602.
	80	30000000	Test Material Group	40	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	97.64	1	EA	8,787.
	90	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	100.22	1	EA	3,006.
	100	30000000	Test Material Group	40	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	54.09	1	EA	11,899.
	110	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	58.99	1	EA	4,719.
	120	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	60.48	1	EA	5,443.
	130	30000000	Test Material Group	52	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	99.83	1	EA	4,991.
	140	30000000	Test Material Group	40	PD	10	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	84.34	1	EA	843.
27575	10	30073000	Test Material Group	40	PD	20	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	925.65	1	EA	1,851.
	20	30073000	Test Material Group	40	PD	20	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	925.65	1	EA	1,851.
	30	30073000	Test Material Group	40	PD	20	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	925.65	1	EA	1,851.
	40	30073000	Test Material Group	40	PD	20	Prod Hier Desc	10	Prod Hier Desc	100	Prod Hier Desc	925.65	1	EA	1,851.

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Sample Program Logic

To accomplish this requirement, logic needs to be added to several user exits.

Sales Order Item Field Catalog

The field catalog for the order window is contained in structure ZVR_OMGR_ORDER. The product hierarchy components and descriptions are added to the structure in the material section. The structure already contains PRODH which is the combined product hierarchy field.

Structure: ZVR_OMGR_ORDER Active
Short text: OTC Manager: Order Data

Attributes Components Entry help/check Currency/quantity fields

43 / 92

Component	Component type	DTyp	Length	Dec.p...	Short text
ARKTX	ARKTX	CHAR	40	0	Short text for sales order item
MATKL	MATKL	CHAR	9	0	Material group
WGBEZ	WGBEZ	CHAR	20	0	Description of material group
STRGR	STRGR	CHAR	2	0	Planning strategy group
DISMM	DISMM	CHAR	2	0	MRP type
PRODH	PRODH_D	CHAR	18	0	Product hierarchy
PRODH1	ZZ_PRODH1	CHAR	2	0	Line of business
PRODH1_DESC	BEZEI40	CHAR	40	0	Description
PRODH2	ZZ_PRODH2	CHAR	2	0	Product class
PRODH2_DESC	BEZEI40	CHAR	40	0	Description
PRODH3	ZZ_PRODH3	CHAR	3	0	Product type
PRODH3_DESC	BEZEI40	CHAR	40	0	Description
NETPR	NETPR	CURR	11	2	Net price
KPEIN	KPEIN	DEC	5	0	Condition pricing unit
KMEIN	KMEIN	UNIT	3	0	Condition unit
NETWR	NETWR	CURR	15	2	Net value in document currency
WAERK	WAERK	CUKY	5	0	SD document currency
PSTYV	PSTYV	CHAR	4	0	Sales document item category
FKREL	FKREL	CHAR	1	0	Relevant for billing
FPLNR	FPLNR	CHAR	10	0	Billing plan number / invoicing plan number
LPRI0	LPRI0	NUMC	2	0	Delivery priority

Order to Cash Manager

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Include ZV_OTC_MANAGER_TZZ

This include is used to add global data to the program. For this enhancement, an internal table to hold the product hierarchy descriptions is added. In addition, the G_PRODHS variable is added based on structure PRODHS. The PRODHS is a standard structure that contains the product hierarchy components.

The screenshot shows the SAP ABAP Editor interface. The title bar reads "ABAP Editor: Change Include ZV_OTC_MANAGER_TZZ". The main window is divided into three panes:

- Object Explorer (Left):** Shows a tree view of the project "ZV_OTC_MANAGER". Under "Includes", the file "ZV_OTC_MANAGER_TZZ" is selected and highlighted in yellow. The description for this include is "Include ZV_OT".
- Include Properties (Top Right):** Shows the name "ZV_OTC_MANAGER_TZZ" and the status "Active".
- Source Code (Main):** Displays the following code:

```
* INCLUDE ZV_OTC_MANAGER_TZZ
* This include is provided so that custom data declarations can be
* added without modification of the TOP include.

data: g_prodhs          type prodhs,
      g_prodhs_sel     LIKE t179t-prodh.

* Product Hierarchy Descriptions
TYPES: BEGIN OF typ_prodh_desc,
       prodh          LIKE t179t-prodh,
       vtext          LIKE t179t-vtext,
       END OF typ_prodh_desc.

DATA: t_prodh_desc TYPE HASHED TABLE OF typ_prodh_desc
      WITH HEADER LINE
      WITH UNIQUE KEY prodh.
```

The status bar at the bottom indicates "Ln 1, Co 1" and "Ln 1 - Ln 18 of 18 lines".

Order to Cash Manager

For use with SAP® R/3®

Form **USEREXIT_INITIALIZATION**

In the global initialization user exit, code was added to load the product hierarch descriptions into an internal table.

The screenshot shows the SAP ABAP Editor interface. The left pane displays the object hierarchy for ZV_OTC_MANAGER, with the 'includes' folder expanded to show ZV_OTC_MANAGER_FZ0. The right pane shows the code for the ZV_OTC_MANAGER_FZ0 include, which is active. The code includes comments and a SQL SELECT statement to load product hierarchy descriptions into an internal table.

```
INCLUDE ZV_OTC_MANAGER_FZ0
FORM userexit_initialization
* This routine can be used for the following:
* Changing the colors used by the standard program
* Loading static data into internal tables defined by the user.
FORM userexit_initialization.
* The column colors can be modified by setting the following variables.
* All colors are defined as constants in the TOP include.
* g_key_color = color_light_blue_intense.
* IF p_colcd = 'X'.
* g_sold_to_color = color_orange.
* g_partner_color = color_orange_intense.
* g_material_color = color_green.
* g_inventory_color = color_grey_intense.
* ENDIF.
* The line colors can be modified by setting the following variables.
* IF p_ltcldr = 'X'.
* g1_line_color_1 = color_yellow.
* g1_line_color_2 = color_yellow_intense.
* g2_line_color_1 = color_yellow.
* ENDIF.
* Load the Product Hierarchy Descriptions to an internal table.
SELECT prodh
      vtext
FROM t179t
INTO TABLE t_prodh_desc
WHERE spras = sy-langu.
ENDFORM.
```

Order to Cash Manager

For use with SAP® R/3®

Form **USEREXIT_SET_FIELDCAT_GRID1**

The field catalog descriptions and colors are specified. Since we are displaying the components, the PRODH field is set to 'no display'.

The screenshot shows the SAP ABAP Editor interface. The left pane displays the object browser for 'ZV_OTC_MANAGER', with 'ZV_OTC_MANAGER_FZ1' selected under the 'Includes' folder. The main editor window shows the source code for 'ZV_OTC_MANAGER_FZ1'. The code defines a FORM routine 'userexit_set_fieldcat_grid1' that uses a CASE statement to set field catalog attributes based on the field name.

```
FORM userexit_set_fieldcat_grid1
* This routine can be used for the following:
*
* Adding field catalog attributes for user added fields.
* Changing the attributes of standard fields.
* Removing standard fields from the default layout.
*
*-----*
FORM userexit_set_fieldcat_grid1.
* CASE 1_fieldcat-fieldname.
* WHEN 'xxxxx'.
*   1_fieldcat-      =
* ENDCASE
CASE 1_fieldcat-fieldname.
  WHEN 'PRODH'.
    1_fieldcat-no_out      = 'X'.
    1_fieldcat-emphasize   = g_material_color.
  WHEN 'PRODH1'.
    1_fieldcat-emphasize   = g_material_color.
  WHEN 'PRODH1_DESC'.
    1_fieldcat-reptext     = 'LOB ds'.
    1_fieldcat-scrtext_s   = 'LOB ds'.
    1_fieldcat-scrtext_m   = 'LOB desc'.
    1_fieldcat-scrtext_l   = 'LOB desc'.
    1_fieldcat-emphasize   = g_material_color.
  WHEN 'PRODH2'.
    1_fieldcat-emphasize   = g_material_color.
  WHEN 'PRODH2_DESC'.
    1_fieldcat-reptext     = 'Prod cls ds'.
    1_fieldcat-scrtext_s   = 'Prod cls ds'.
    1_fieldcat-scrtext_m   = 'Prod cls desc'.
    1_fieldcat-scrtext_l   = 'Prod cls desc'.
    1_fieldcat-emphasize   = g_material_color.
  WHEN 'PRODH3'.
    1_fieldcat-emphasize   = g_material_color.
  WHEN 'PRODH3_DESC'.
    1_fieldcat-reptext     = 'Prod type ds'.
    1_fieldcat-scrtext_s   = 'Prod type ds'.
    1_fieldcat-scrtext_m   = 'Prod type desc'.
    1_fieldcat-scrtext_l   = 'Prod type desc'.
    1_fieldcat-emphasize   = g_material_color.
ENDCASE.
ENDFORM.
```

Order to Cash Manager

For use with SAP® R/3®

Form USEREXIT_CREATE_OUTPUT_ORDER

The logic to read the description for each component is added.

The screenshot shows the SAP ABAP Editor interface. The title bar reads "ABAP Editor: Change Include ZV_OTC_MANAGER_FZ1". The left pane shows the Object Browser with the following structure:

Object name	Description
ZV_OTC_MANAGER	Order to Cash
Dictionary structures	
Classes (Definition)	
Classes (Implementation)	
Types	
Fields	
Events	
FBO modules	
PAI modules	
Subroutines	
Screens	
GUI status	
GUI title	
Includes	
ZV_OTC_MANAGER_F00	Include ZV_OT
ZV_OTC_MANAGER_F01	Include ZV_OT
ZV_OTC_MANAGER_F02	Include ZV_OT
ZV_OTC_MANAGER_F03	Include ZV_OT
ZV_OTC_MANAGER_F04	Include ZV_OT
ZV_OTC_MANAGER_F05	Include ZV_OT
ZV_OTC_MANAGER_F09	Include ZV_OT
ZV_OTC_MANAGER_F20	Include ZV_OT
ZV_OTC_MANAGER_FZ1	Include ZV_OT
ZV_OTC_MANAGER_FZ2	Include ZV_OT
ZV_OTC_MANAGER_FZ3	Include ZV_OT
ZV_OTC_MANAGER_FZ4	Include ZV_OT
ZV_OTC_MANAGER_FZ5	Include ZV_OT
ZV_OTC_MANAGER_FZ9	Include ZV_OT
ZV_OTC_MANAGER_INI	Include ZV_OT
ZV_OTC_MANAGER_M01	Include ZV_OT
ZV_OTC_MANAGER_TCL	Include ZV_OT
ZV_OTC_MANAGER_TOP	Include ZV_OT
ZV_OTC_MANAGER_TZ1	Include ZV_OT
ZV_OTC_MANAGER_TZ2	Include ZV_OT
ZV_OTC_MANAGER_TZZ	Include ZV_OT

The main editor window shows the source code for include ZV_OTC_MANAGER_FZ1. The code is as follows:

```
*-----*  
* FORM userexit_create_output_order  
*-----*  
* This routine can be used for the following:  
*  
* Adding custom fields to the order grid.  
* Changing standard fields.  
* Adding colors, changing icons, etc.  
*-----*  
FORM userexit_create_output_order.  
  g_prodhs           = t_order_item_data-prodh.  
  g1_l_output-prodh1 = g_prodhs-prodh1.  
  g1_l_output-prodh2 = g_prodhs-prodh3.  
  g1_l_output-prodh3 = g_prodhs-prodh3.  
  IF NOT g_prodhs-prodh1 IS INITIAL.  
    PERFORM zz_determ_prod_hier_desc USING 'PRODH1'.  
    g1_l_output-prodh1_desc = t_prodh_desc-vtext.  
  ENDIF.  
  IF NOT g_prodhs-prodh2 IS INITIAL.  
    PERFORM zz_determ_prod_hier_desc USING 'PRODH2'.  
    g1_l_output-prodh2_desc = t_prodh_desc-vtext.  
  ENDIF.  
  IF NOT g_prodhs-prodh3 IS INITIAL.  
    PERFORM zz_determ_prod_hier_desc USING 'PRODH3'.  
    g1_l_output-prodh3_desc = t_prodh_desc-vtext.  
  ENDIF.  
ENDFORM.  
*-----*  
*eject  
*-----*  
* FORM userexit_process_events_grid1  
*-----*  
* This routine can be used for the following:  
*  
* Changing the standard event processing of the order grid  
* Adding custom event logic for new fields added to the field  
* catalog.  
*-----*  
FORM userexit_process_events_grid1.  
  * CASE g_column_id.  
  *   WHEN 'XXXXXXX'.  
  *     sy-subrc = 4.  
  *   ENDCASE.  
ENDFORM.  
*-----*  
*eject  
*-----*
```

Order to Cash Manager

For use with SAP® R/3®

Form ZZ_DETERM_PROD_HIER_DESC

A new routine was added to lookup the description from the internal table.

The screenshot shows the SAP ABAP Editor interface. The left pane displays the object browser for 'ZV_OTC_MANAGER', with 'ZV_OTC_MANAGER_FZ1' selected. The main editor window shows the source code for the include 'ZV_OTC_MANAGER_FZ1'. The code defines a form 'ZZ_DETERM_PROD_HIER_DESC' that uses a CASE statement to determine the product hierarchy description based on the 'PRODH1' field. It concatenates 'PRODH1', 'PRODH2', and 'PRODH3' into the 'g_prodh_sel' field and then reads data from the internal table 't_prodh_desc' to populate 't_prodh_desc-vtext'.

```
* FORM userexit_process_events_grid1
* This routine can be used for the following:
* Changing the standard event processing of the order grid
* Adding custom event logic for new fields added to the field
* catalog.
*-----*
FORM userexit_process_events_grid1 .
  * CASE g_column_id.
  * WHEN 'XXXXXXX'.
  *   sy-subrc = 4.
  * ENDCASE.

ENDFORM.
*-----*
* FORM zz_determ_prod_hier_desc
*-----*
* --> FIELDNAME
*-----*
FORM zz_determ_prod_hier_desc USING fieldname.
  CLEAR g_prodh_sel.
  CASE fieldname.
    WHEN 'PRODH1'.
      g_prodh_sel          = g_prodhs-prodh1.
    WHEN 'PRODH2'.
      CONCATENATE g_prodhs-prodh1
                  g_prodhs-prodh2
                  INTO g_prodh_sel.
    WHEN 'PRODH3'.
      CONCATENATE g_prodhs-prodh1
                  g_prodhs-prodh2
                  g_prodhs-prodh3
                  INTO g_prodh_sel.
  ENDCASE.

  CLEAR t_prodh_desc-vtext.
  IF NOT g_prodh_sel IS INITIAL.
    READ TABLE t_prodh_desc WITH TABLE KEY prodh = g_prodh_sel.
  ENDF.
ENDFORM.
```