



SD Billing Document Consolidation and Splitting

Technical Solution Guide

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SD Billing Document Consolidation and Splitting

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SD Billing Document Consolidation and Splitting

Consolidating or Splitting Billing Documents

Most organizations run the billing due list nightly to create billing documents. Quite often there are questions related to how and why certain deliveries or orders combine, or fail to combine, on billing documents. This document will explain how the standard system works and provide examples of how the standard logic can be enhanced.

Creating Billing Documents

Before attempting to alter the processing logic of the billing program, it is wise to understand its basic functionality. Billing documents are created using function module `RV_INVOICE_CREATE`. This function module is called from the billing document create transaction (`VF01/SAPMV60A`) and the billing due list (`VF04/SDBILLDL`). An internal table is passed to this function that contains one or more source documents for which billing is to occur. These documents are sorted by customer, sales organization and billing type. The result of this sort is several subsets of source documents that are grouped by the sort fields. For each subset, the billing logic attempts to create a billing document. During the creation, the system will populate billing document header and item fields from the source document. R/3 contains configurable routines called Data Transfer Routines that can be developed to alter the way fields are copied from a source document to a destination document (in this case, billing documents). These routines execute during this billing process. The subsequent section 'Data Transfer Routines' explains how these routines work in detail. Once the billing fields are populated, the logic compares the fields to the previous record. If the basic fields are equal, the current document will combine with the previous document. If the fields are different, a new billing document will be created. There are several fields in billing documents that will always be different and should not cause a split to occur. The subsequent section 'Standard Combination Criteria' explains this logic.

Relevant OSS Notes

The following OSS notes may be useful in understanding this process:

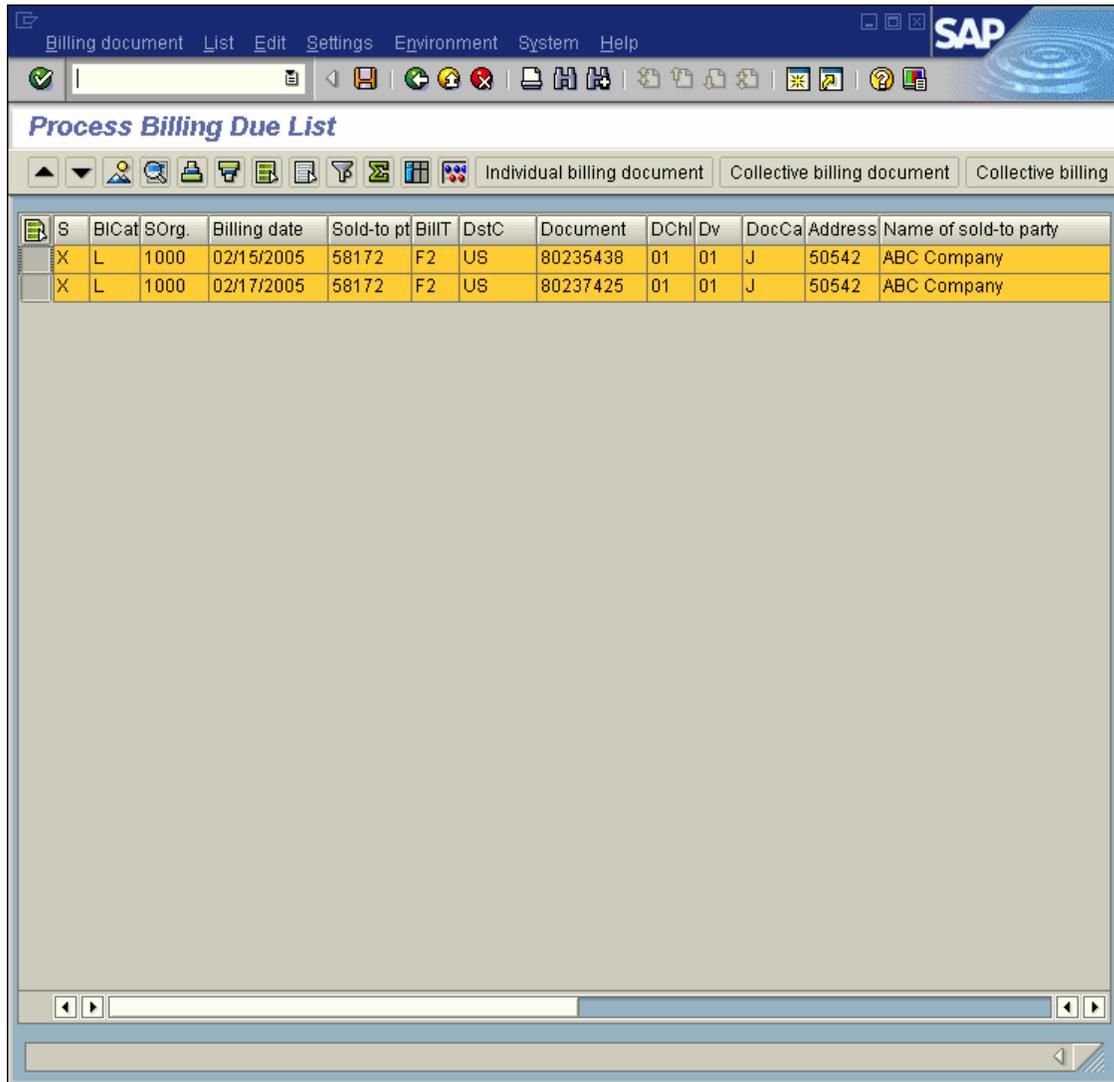
- 11162 Invoice Split Criteria in Billing Documents
- 36832 Invoice Split Fields from the Sales Order
- 308733 Billing Split Due to the Person Number

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Standard Combination Criteria

When creating billing documents, the system compares fields from the source documents to determine if splitting should occur. There are fields that must be specifically ignored during this process. For example the document creation time (VBRK-ERZET) will always be different and a split should not occur because of this. To handle this, the main billing program contains a hard coded character string that contains the field names of all fields to ignore during the source document comparison. The following screen shots demonstrate how this internal data string works. We have modified it in the illustration for demonstration purposes only. This should never be done in a real system, since the same result can be obtained using data transfer routines.

In the following example, we have selected two deliveries for the same customer, with different shipping conditions. The fact that the shipping conditions are different will cause a split to occur.

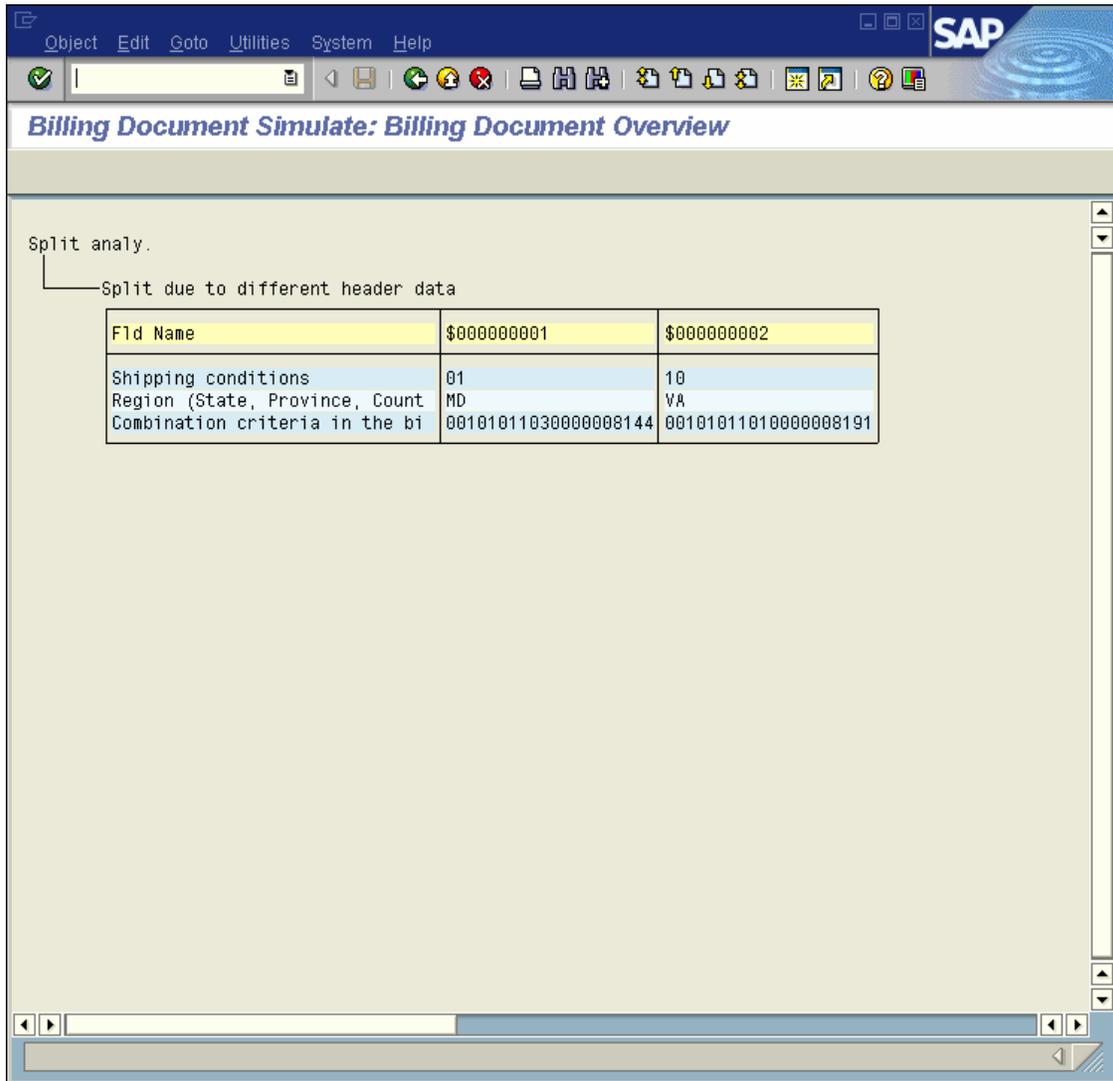


The screenshot shows the SAP Billing document List screen. The title bar reads "Billing document List Edit Settings Environment System Help". The main window title is "Process Billing Due List". Below the title bar, there are several icons and a search field. The main area contains a table with the following data:

| S | BI Cat | SOrg. | Billing date | Sold-to pt | BIIT | DstC | Document | DChl | Dv | DocCa | Address | Name of sold-to party |
|---|--------|-------|--------------|------------|------|------|----------|------|----|-------|---------|-----------------------|
| X | L | 1000 | 02/15/2005 | 58172 | F2 | US | 80235438 | 01 | 01 | J | 50542 | ABC Company |
| X | L | 1000 | 02/17/2005 | 58172 | F2 | US | 80237425 | 01 | 01 | J | 50542 | ABC Company |

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In this example, a split occurs due to differences in three fields. One of these fields is the shipping conditions.



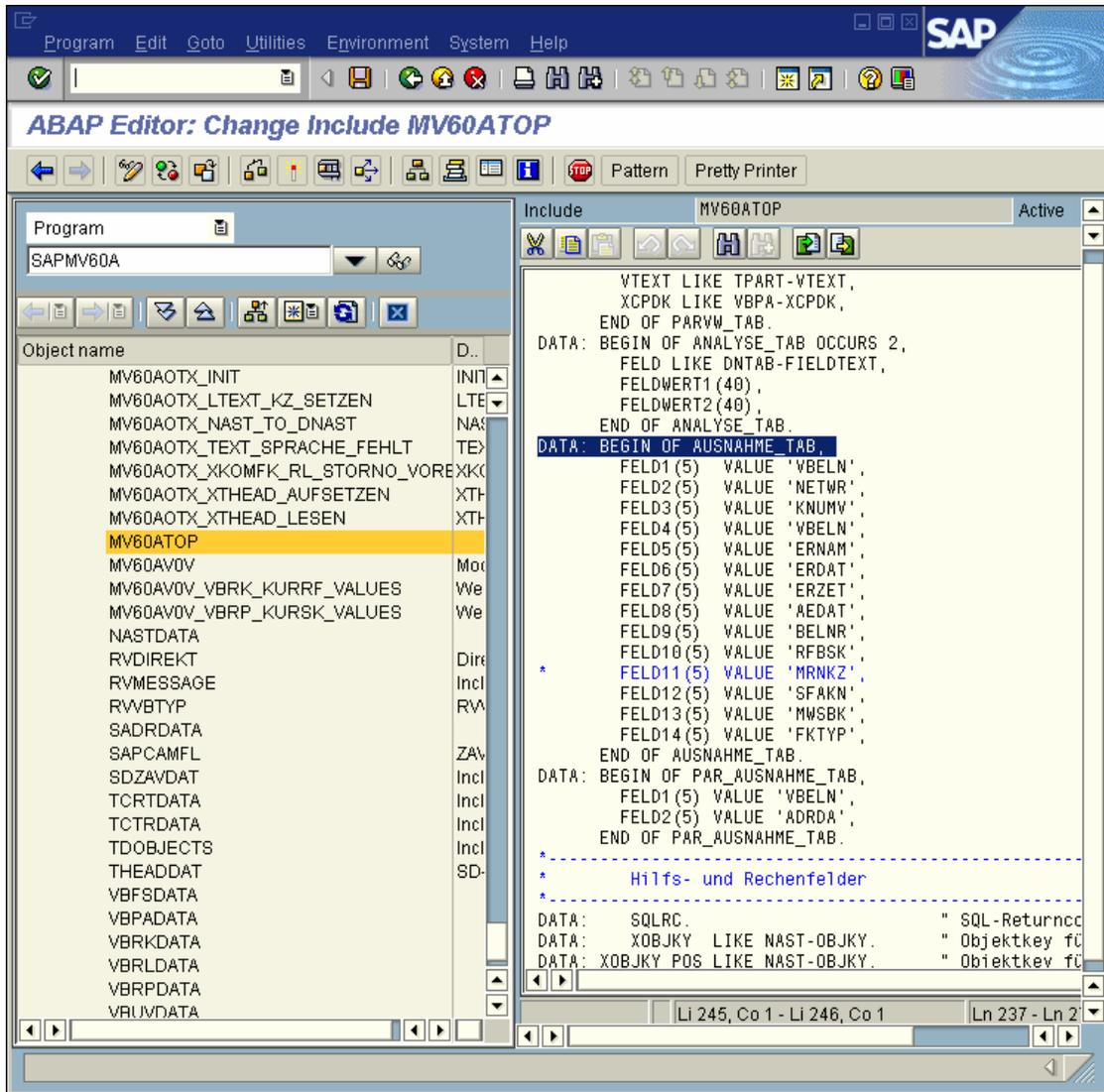
Split analy.

Split due to different header data

| Fld Name | \$000000001 | \$000000002 |
|--------------------------------|----------------------|----------------------|
| Shipping conditions | 01 | 10 |
| Region (State, Province, Count | MD | VA |
| Combination criteria in the bi | 00101011030000008144 | 00101011010000008191 |

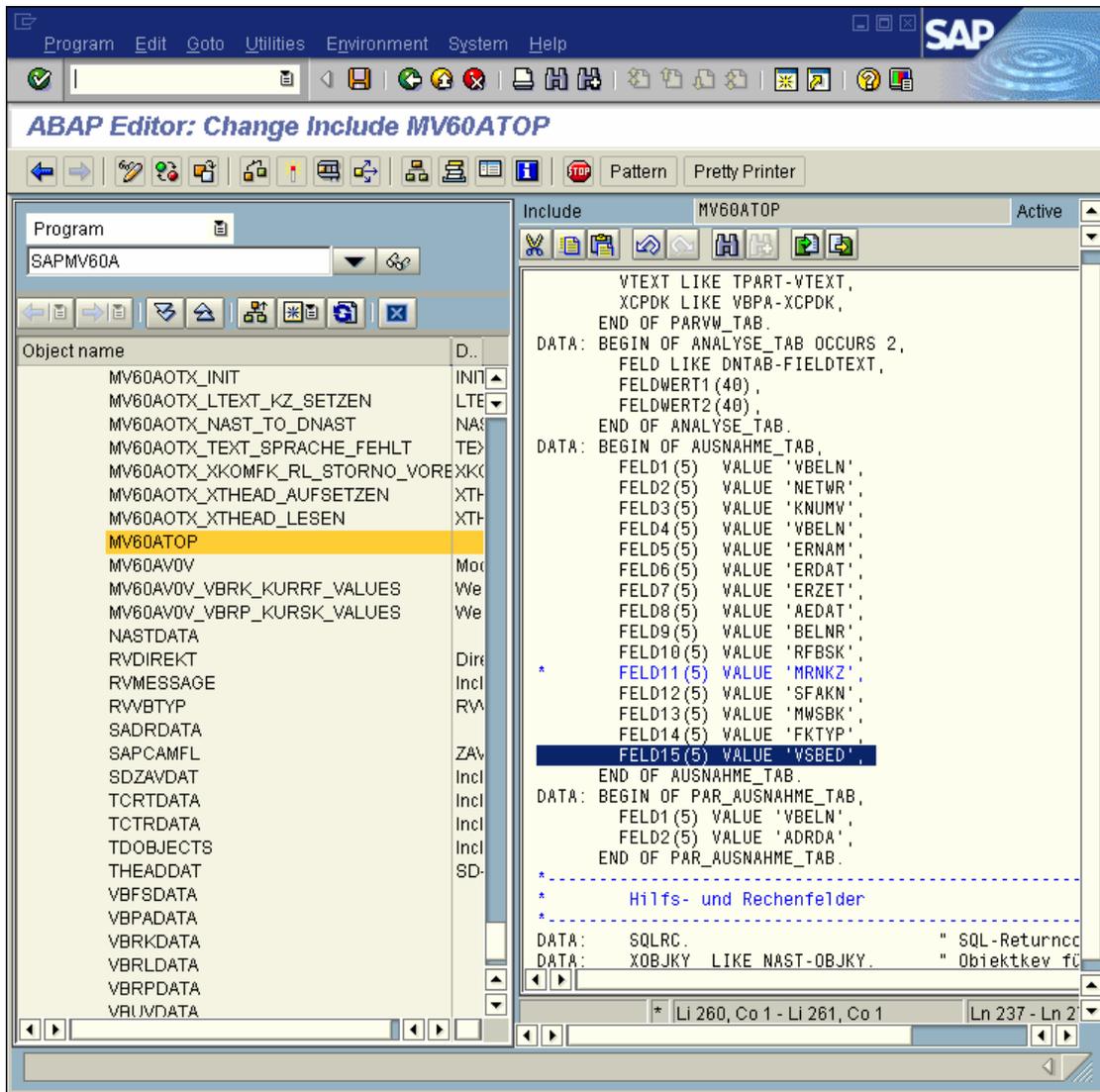
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Program SAPMV60A contains a hard coded list of fields that are excluded from consideration in the splitting logic. The following screen displays these fields as they are coded in the TOP include (MV60ATOP). This subset of fields may differ depending on the R/3 release.



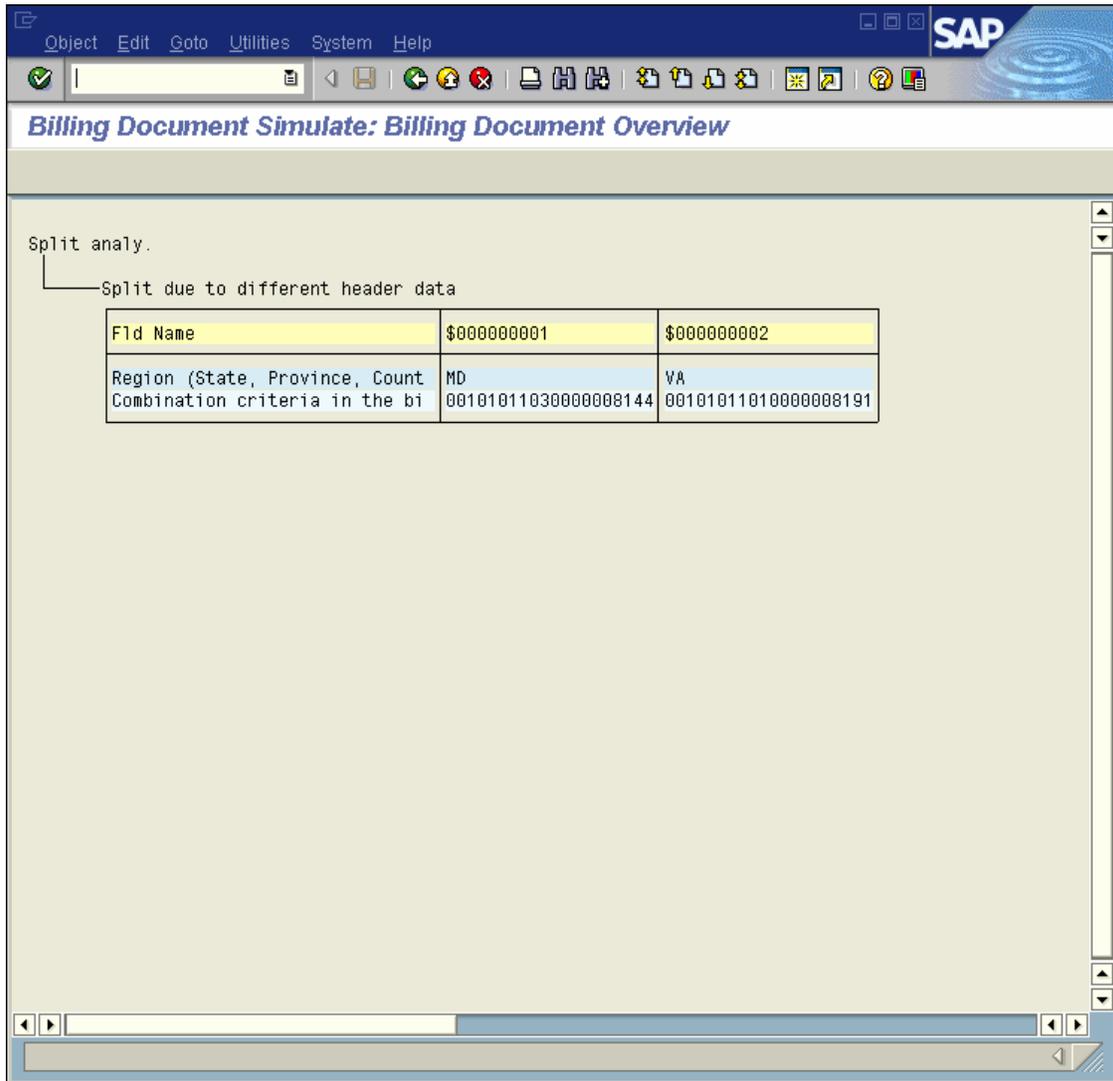
SD Billing Document Consolidation and Splitting

To illustrate how the AUSNAHME_TAB string controls splitting, we have added VSBED (Shipping conditions) to the list. Changing this list is not recommended, we have done it here temporarily to demonstrate the functionality of the standard logic.



SD Billing Document Consolidation and Splitting

The same two invoices are processed and the shipping condition is no longer causing a split.



Split analy.

Split due to different header data

| Fld Name | \$000000001 | \$000000002 |
|--|----------------------------|----------------------------|
| Region (State, Province, Count Combination criteria in the bi | MD 00101011030000008144 | VA 00101011010000008191 |

SD Billing Document Consolidation and Splitting

Data Transfer Routines

The correct way to control billing document consolidation and splitting is via Data Transfer Routines. These routines are created using transaction VOFM and assigned in the Copy Control configuration. R/3 contains several standard routines and you can create your own by cloning one of the standard routines. The main purpose of data transfer routines is to populate the fields of the document being created with data from the related preceding document.

Forcing a Split

The billing document header table (VBRK) contains a special field that is used to force a split to occur. The ZUKRI field is a character string that contains concatenated fields from the preceding documents. By adjusting the contents of this string within a data transfer routine, you can force a split to occur.

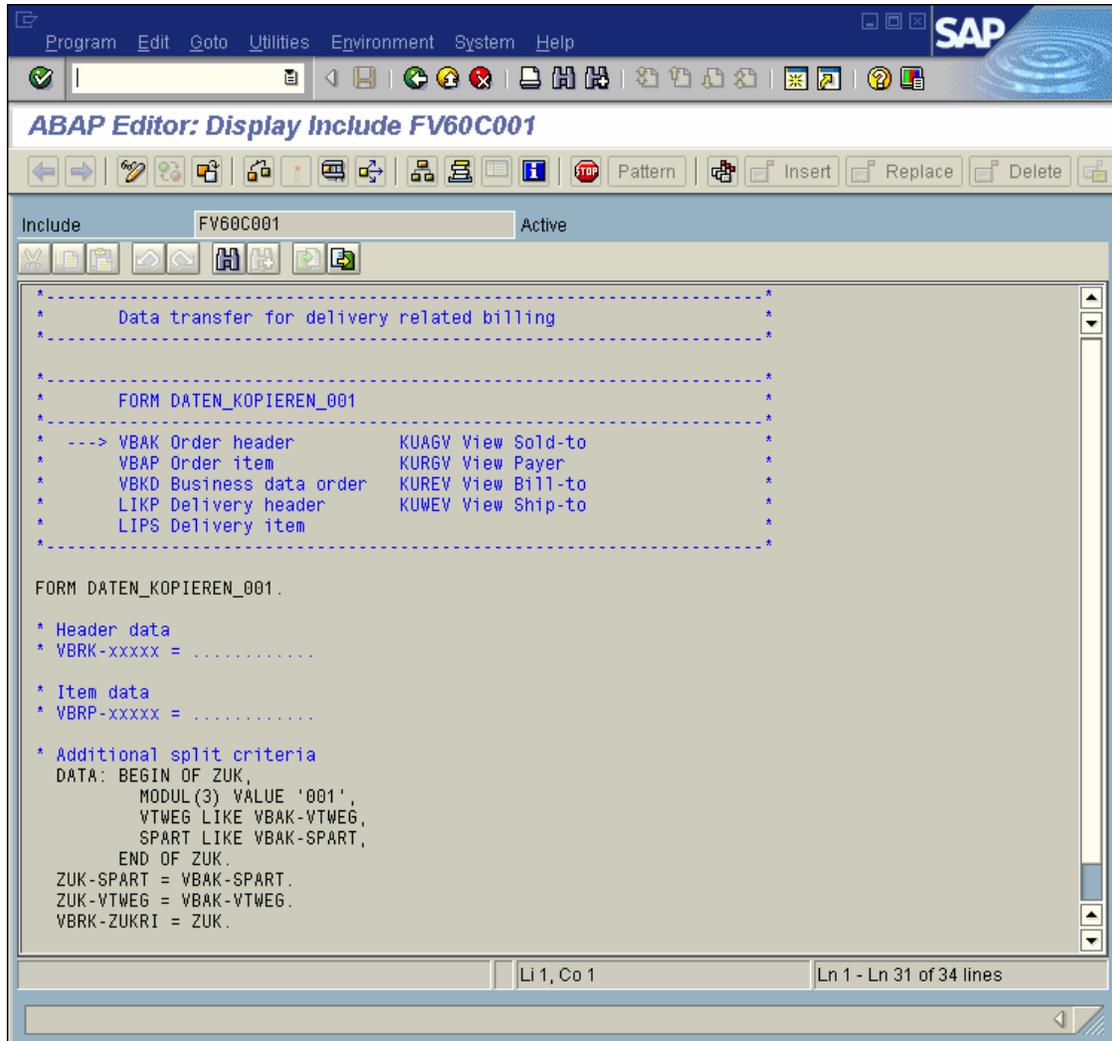
Preventing a Split

To prevent a split, the fields that cause a split to occur can be modified within a data transfer routine to contain the same value. For example, two deliveries that contain different shipping conditions will split because the shipping conditions are copied to the invoice header (VBRK). If the field is cleared for each invoice, the split will no longer occur.

SD Billing Document Consolidation and Splitting

Standard Billing Document Data Transfer Routine (001)

The data transfer routine below is one of the standard R/3 billing document routines. In this logic, the ZUK string is defined and populated with the distribution channel and division from the sales order header table. Additional fields can be added to this string and filled with values from any of the data structures listed in the comments section. The concatenated ZUK string then moved to the ZUKRI field of the billing document header (VBRK).



```
ABAP Editor: Display Include FV60C001
-----
Include FV60C001 Active
-----
*-----*
* Data transfer for delivery related billing *
*-----*

*-----*
* FORM DATEN_KOPIEREN_001 *
*-----*
* ---> VBAK Order header      KUAGV View Sold-to *
*       VBAP Order item      KURGV View Payer *
*       VBKD Business data order KUREV View Bill-to *
*       LIKP Delivery header  KUWEV View Ship-to *
*       LIPS Delivery item *
*-----*

FORM DATEN_KOPIEREN_001.
* Header data
* VBRK-xxxxx = .....

* Item data
* VBRP-xxxxx = .....

* Additional split criteria
DATA: BEGIN OF ZUK,
      MODUL(3) VALUE '001',
      VTWEG LIKE VBAK-VTWEG,
      SPART LIKE VBAK-SPART,
      END OF ZUK.
ZUK-SPART = VBAK-SPART.
ZUK-VTWEG = VBAK-VTWEG.
VBRK-ZUKRI = ZUK.
```

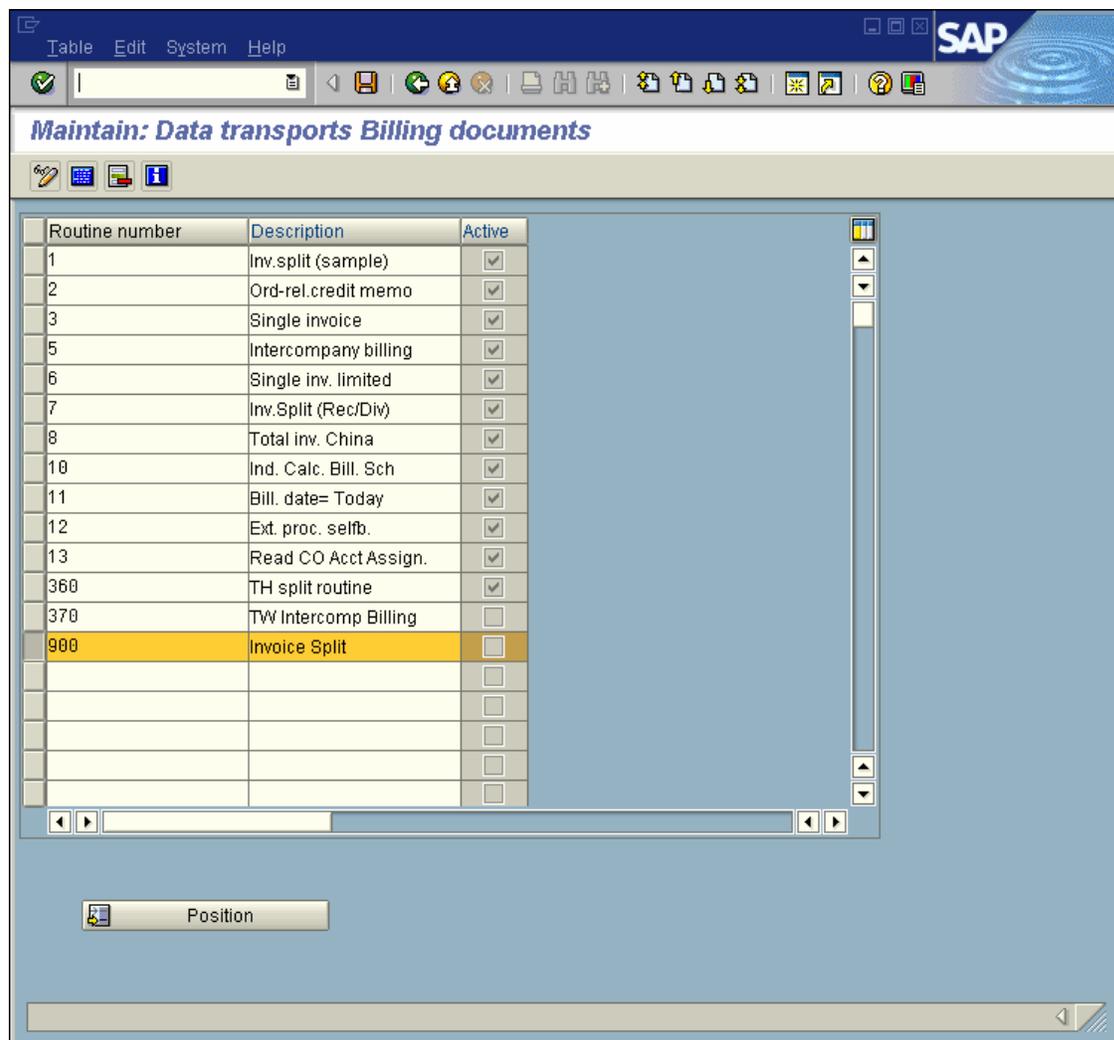
SD Billing Document Consolidation and Splitting

Implementing a new Data Transfer Routine

Implementing a new routine requires both development and configuration. The routine is created using transaction VOFM. The routine is then assigned via copy control configuration. The easiest method used to create a new routine is to clone one of the standard routines. The following steps illustrate this procedure.

Step 1 Clone the standard routine

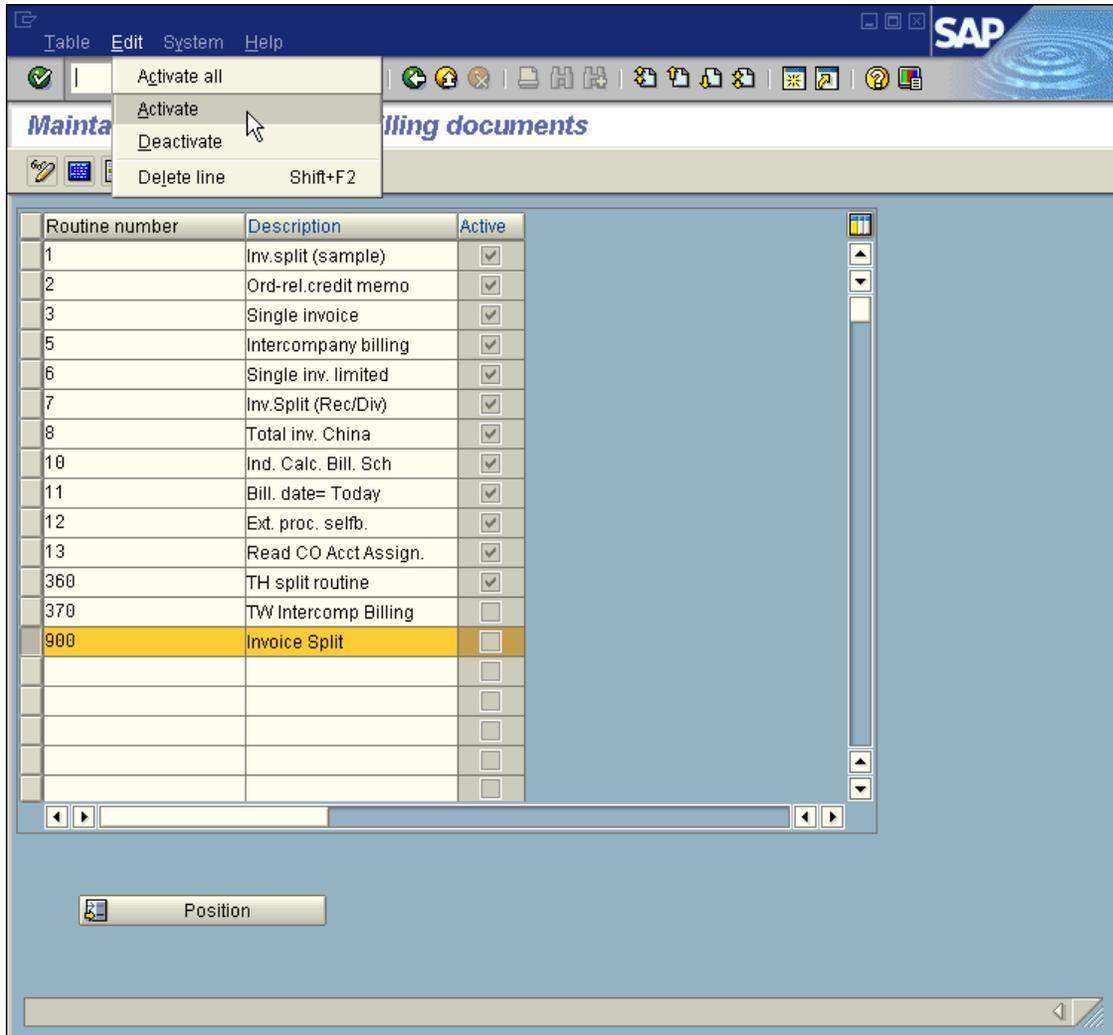
Using transaction VOFM, navigate to the data transfer routines for billing documents. The easiest way to create a new routine is to type the new routine number over one of the existing routines and press enter. The system will create the new routine as a clone of the one that was over typed.



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Step 2 *Activate the new routine*

VOFM routines need to be activated before they can be used.



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Step 3 *Assign the new routine in copy control*

Billing data transfer routines are assigned in copy control at the item category level.

The screenshot shows the SAP Display View 'Item': Details window. The interface includes a menu bar (Table view, Edit, Goto, Selection criteria, Utilities, System, Help) and a toolbar. The main content area is divided into several sections:

- Dialog Structure:** A tree view on the left showing 'Header' and 'Item' (selected).
- Target billing type:** F2 Invoice
- From delivery type:** LF Outbound delivery
- Item category:** TAN Standard Item
- Copying requirements:** 004 Deliv-related item
- Data VBRK/VBRP:** 900 Invoice Split
- Other fields:** Billing quantity (6), Pos./neg. quantity (+), Pricing type (6), PricingExchRate type, Cumulate cost (X), Price source.

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Example 1 Prevent an Invoice Split by Ship Condition

The following example demonstrates how to prevent billing document splits for a specific field.

Business Requirement

The billing due list in standard R/3 creates multiple billing documents for deliveries that contain different shipping conditions. The client wants these deliveries to combine into a single billing document.

Solution

To solve this problem, we will create a custom Data Transfer Routine. In this routine, we will clear the shipping conditions field. By clearing the field, it will contain the same value for all deliveries and will no longer cause a billing document split. The side effect of this change is that the billing documents will no longer contain a shipping condition.

SD Billing Document Consolidation and Splitting

Step 1 *Functionality Prior to Changes*

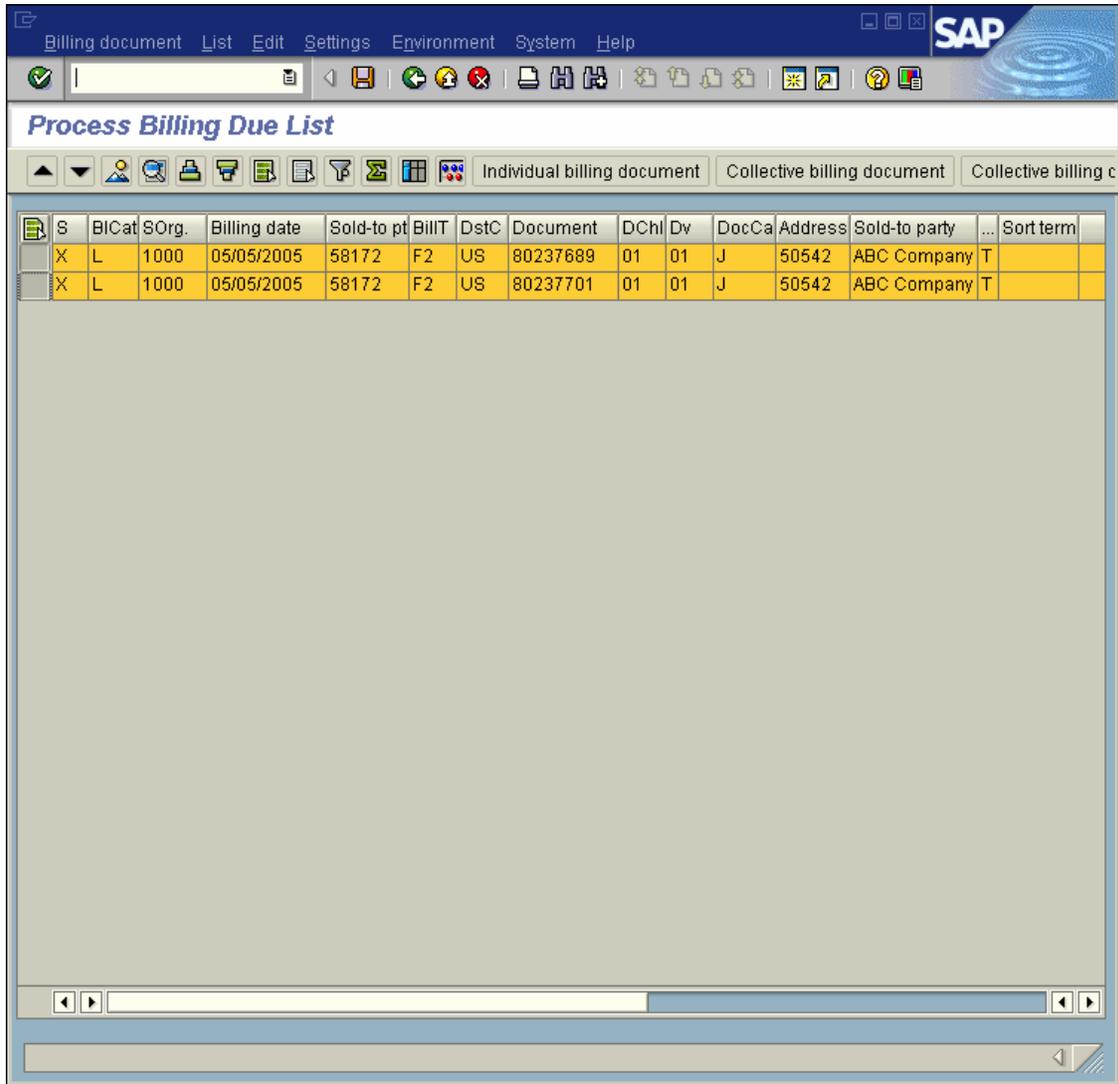
Below is the custom data transfer routine before making any changes. This routine was cloned from the standard routine 001.

```

*-----*
* Data transfer for delivery related billing *
*-----*
*
* FORM DATEN_KOPIEREN_900
*
* ---> VBAK Order Header      KUAGV View Sold-to
*       VBAP Order item       KURGV View Payer
*       VBKD Business data order KUREV View Bill-to
*       LIKP Delivery Header   KUWEV View Ship-to
*       LIPS Delivery item
*
FORM daten_kopieren_900 .
* Additional split criteria
DATA: BEGIN OF zuk,
      modul(3) VALUE '001',
      vtweg           LIKE vbak-vtweg,
      spart           LIKE vbak-spart,
      END OF zuk.
      zuk-spart       = vbak-spart.
      zuk-vtweg       = vbak-vtweg.
      vbrk-zukri      = zuk.
ENDFORM.
```

SD Billing Document Consolidation and Splitting

We have identified two deliveries for the same customer, on the same day, with different shipping conditions. The following screens display the functionality of the standard billing due list logic prior to our change.



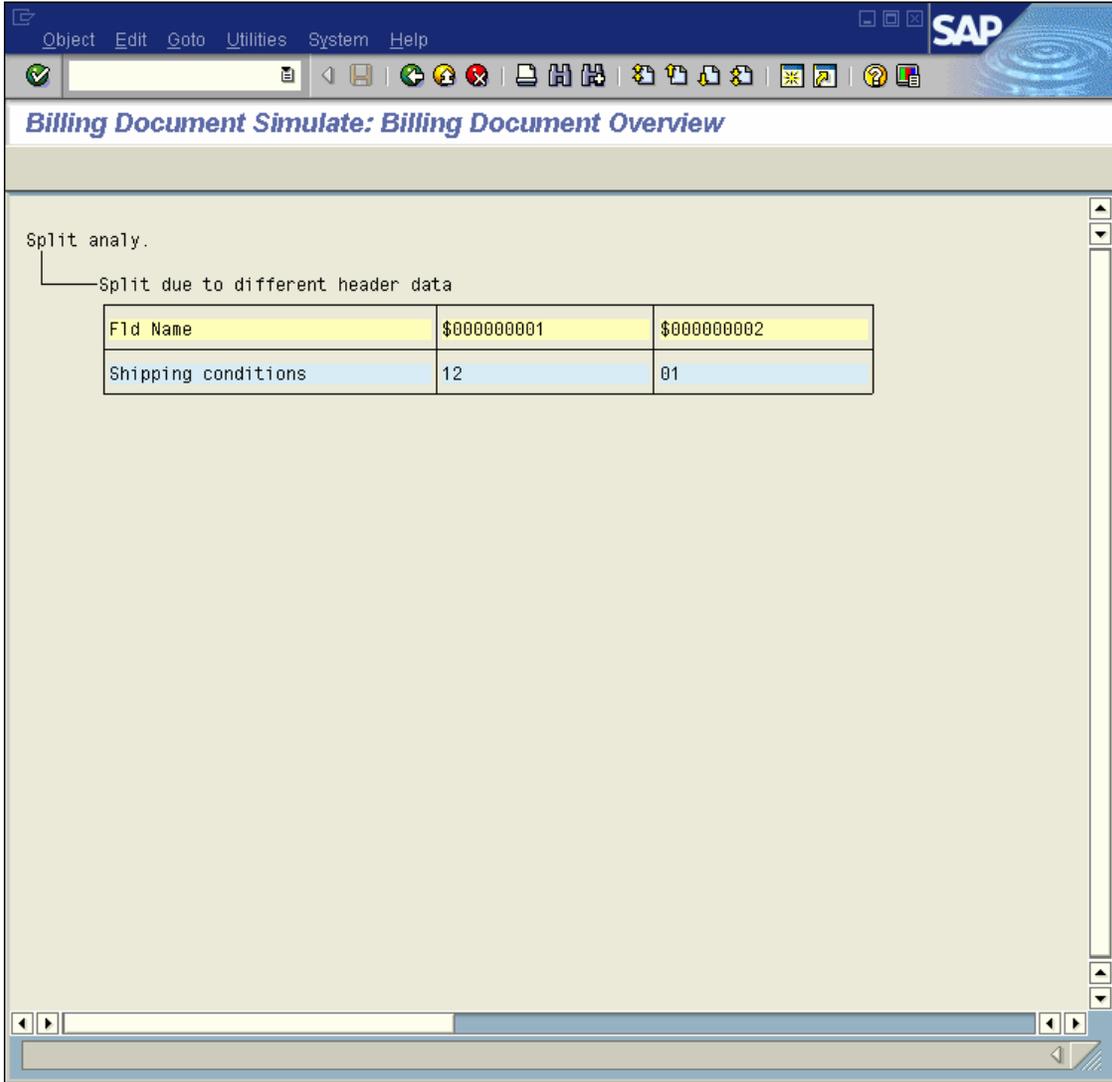
The screenshot shows the SAP 'Process Billing Due List' interface. The title bar includes 'Billing document List Edit Settings Environment System Help' and the SAP logo. Below the title bar is a toolbar with various icons. The main area contains a table with the following data:

| S | BICat | SOrg. | Billing date | Sold-to pt | BillIT | DstC | Document | DChl | Dv | DocCa | Address | Sold-to party | ... | Sort term |
|---|-------|-------|--------------|------------|--------|------|----------|------|----|-------|---------|---------------|-----|-----------|
| X | L | 1000 | 05/05/2005 | 58172 | F2 | US | 80237689 | 01 | 01 | J | 50542 | ABC Company | T | |
| X | L | 1000 | 05/05/2005 | 58172 | F2 | US | 80237701 | 01 | 01 | J | 50542 | ABC Company | T | |

Below the table is a large empty area and a scrollbar at the bottom.

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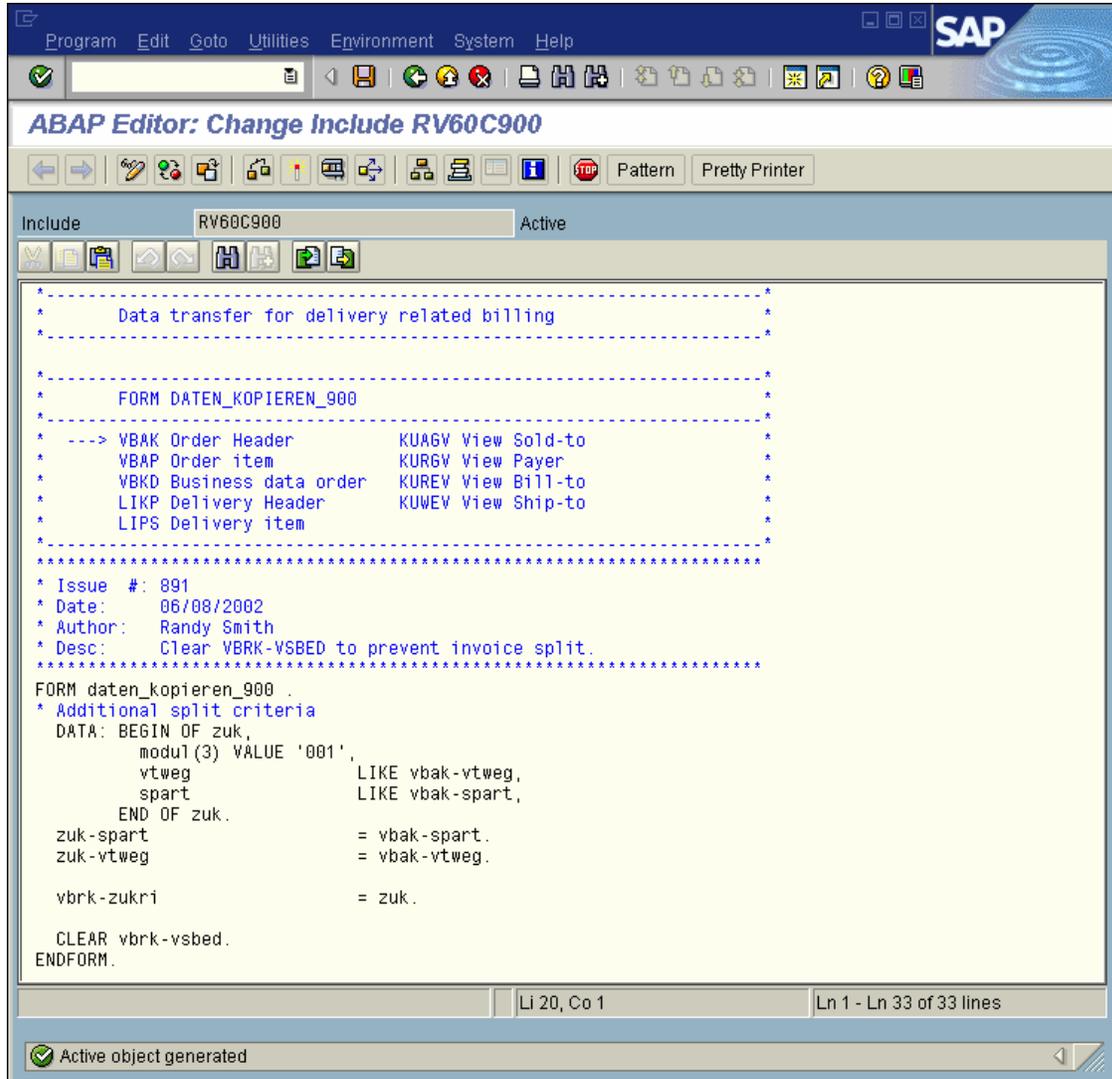
The result of the split analysis is a split based on the shipping condition.



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Step 2 Coding the Data Transfer Routine Change

In the custom data transfer routine, a single line of code is added that clears the shipping conditions.



```
ABAP Editor: Change Include RV60C900
-----
Include: RV60C900 Active
-----
*-----*
* Data transfer for delivery related billing *
*-----*
*-----*
* FORM DATEN_KOPIEREN_900 *
*-----*
* ---> VBAK Order Header      KUAGV View Sold-to *
*      VBAP Order item       KURGV View Payer *
*      VBKD Business data order KUREV View Bill-to *
*      LIKP Delivery Header   KUWEV View Ship-to *
*      LIPS Delivery item *
*-----*
* Issue #: 891 *
* Date: 06/08/2002 *
* Author: Randy Smith *
* Desc: Clear VBRK-VSBED to prevent invoice split. *
*-----*
FORM daten_kopieren_900 .
* Additional split criteria
DATA: BEGIN OF zuk,
      modul(3) VALUE '001',
      vtweg LIKE vbak-vtweg,
      spart LIKE vbak-spart,
END OF zuk.
      zuk-spart = vbak-spart.
      zuk-vtweg = vbak-vtweg.

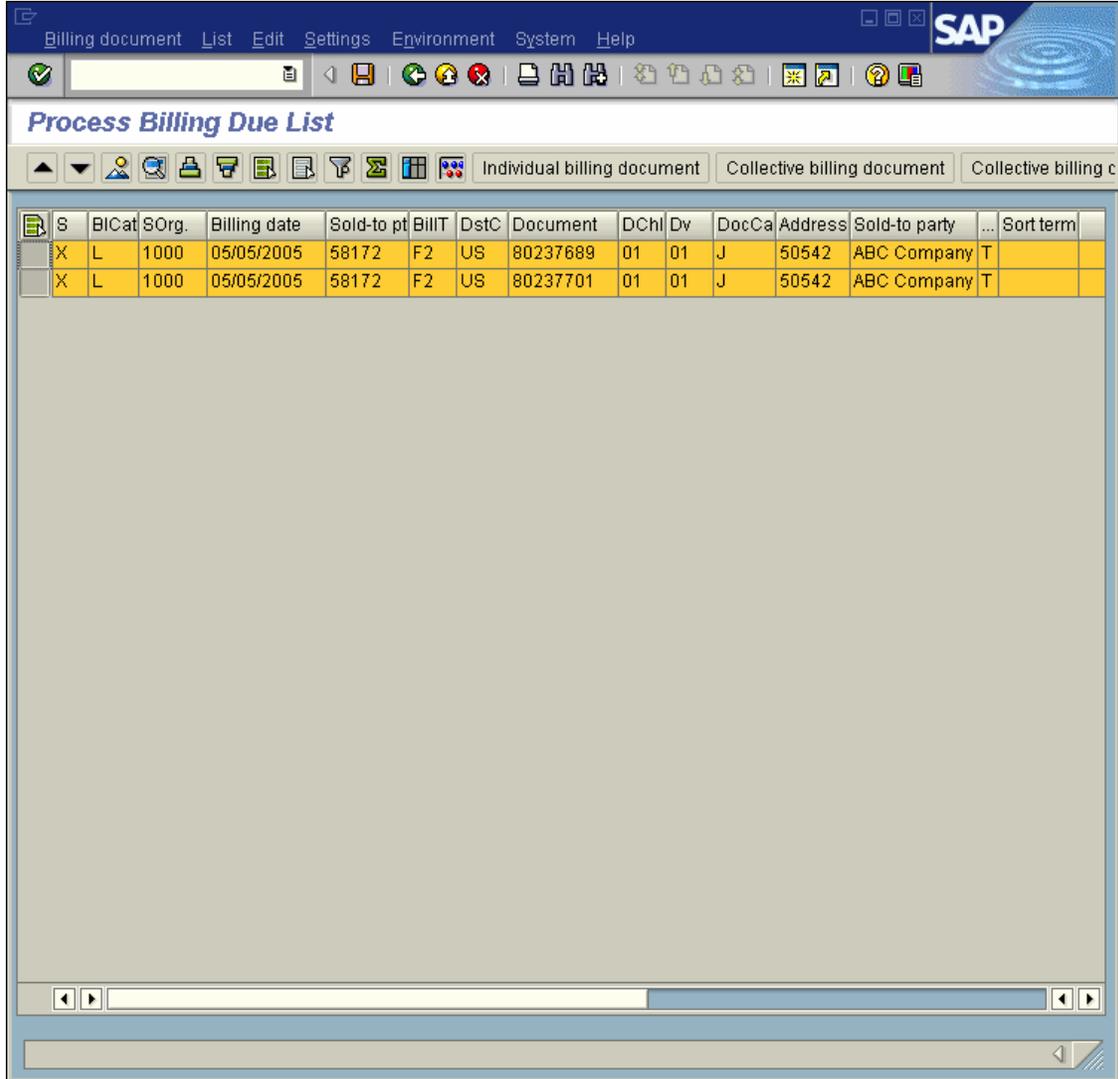
      vbrk-zukri = zuk.

      CLEAR vbrk-vsbed.
ENDFORM.
```

SD Billing Document Consolidation and Splitting

Step 3 Testing the Change

Using the same two deliveries, we execute the billing due list again after changing the routine in simulation mode.



The screenshot shows the SAP 'Process Billing Due List' window in simulation mode. The window title is 'Billing document List Edit Settings Environment System Help'. The SAP logo is visible in the top right corner. Below the title bar, there is a toolbar with various icons. The main area displays a table with the following data:

| S | BICat | SOrg. | Billing date | Sold-to pt | BIIT | DstC | Document | DChl | Dv | DocCa | Address | Sold-to party | Sort term |
|---|-------|-------|--------------|------------|------|------|----------|------|----|-------|---------|---------------|-----------|
| X | L | 1000 | 05/05/2005 | 58172 | F2 | US | 80237689 | 01 | 01 | J | 50542 | ABC Company | T |
| X | L | 1000 | 05/05/2005 | 58172 | F2 | US | 80237701 | 01 | 01 | J | 50542 | ABC Company | T |

At the bottom of the window, there is a scroll bar and a status bar.

SD Billing Document Consolidation and Splitting

Example 2 Billing Document Split by Plant

The following example demonstrates how to force a billing document split based on a specific field.

Business Requirement

The Billing Due List processes multiple deliveries for customers on the same day. If a customer has shipments from multiple plants, they are to appear on separate billing documents.

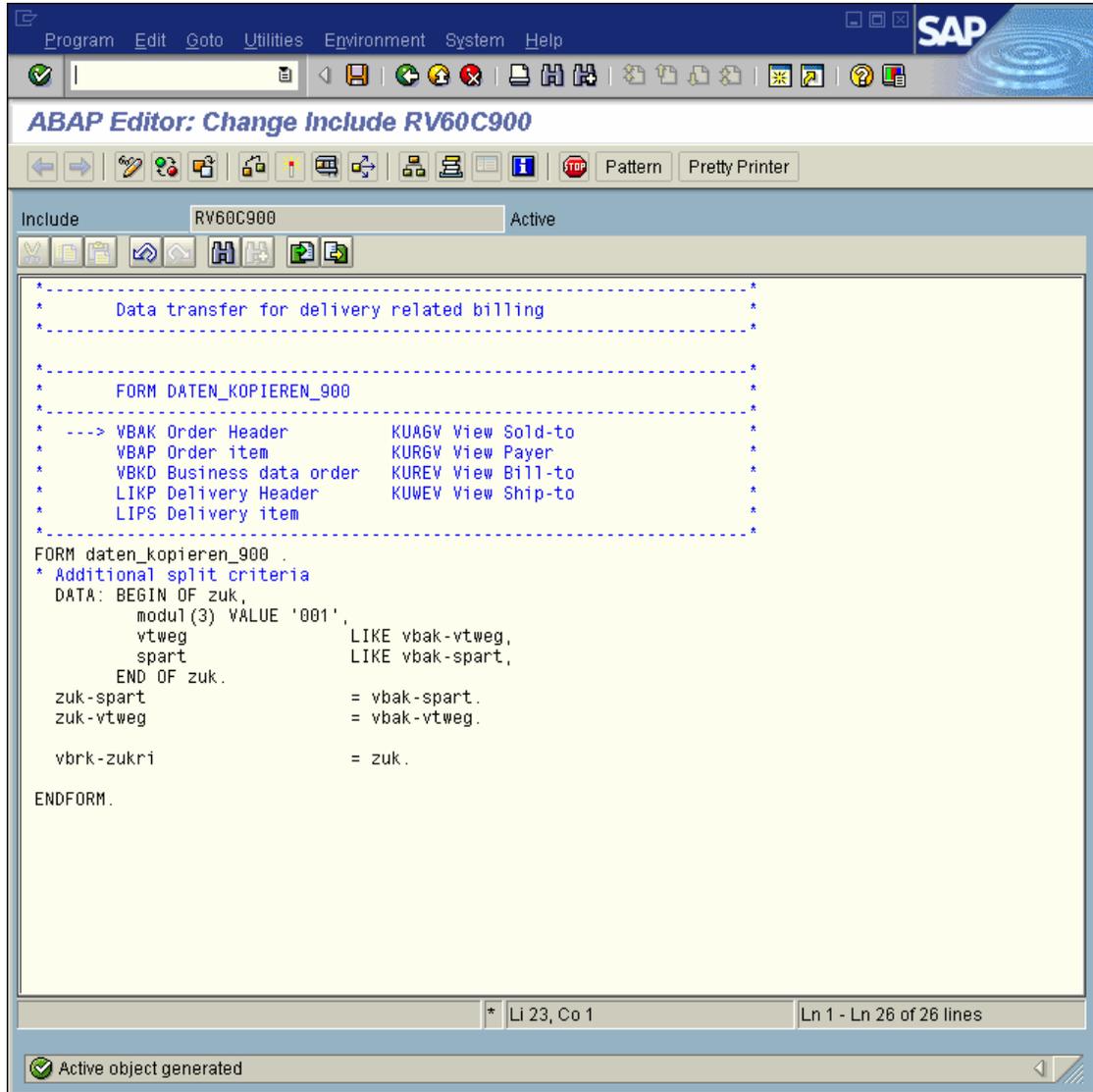
Solution

To solve this problem, we will create a custom Data Transfer Routine. In this routine, we will add the plant (WERKS) field to the Combination Criteria field (VBRK-ZUKRI) field. This will cause a billing document split by plant.

SD Billing Document Consolidation and Splitting

Step 1 *Functionality Prior to Changes*

Below is our custom data transfer routine before making any changes. This routine was cloned from the standard routine 001.



```
ABAP Editor: Change Include RV60C900

Include RV60C900 Active

*-----*
* Data transfer for delivery related billing *
*-----*

*-----*
* FORM DATEN_KOPIEREN_900 *
*-----*
* ---> VBAK Order Header      KUAGV View Sold-to *
*      VBAP Order item        KURGV View Payer *
*      VBKD Business data order KUREV View Bill-to *
*      LIKP Delivery Header    KUWEV View Ship-to *
*      LIPS Delivery item *
*-----*

FORM daten_kopieren_900 .
* Additional split criteria
  DATA: BEGIN OF zuk,
          modul(3) VALUE '001',
          vtweg           LIKE vbak-vtweg,
          spart           LIKE vbak-spart,
        END OF zuk.
  zuk-spart              = vbak-spart.
  zuk-vtweg              = vbak-vtweg.
  vbrk-zukri             = zuk.

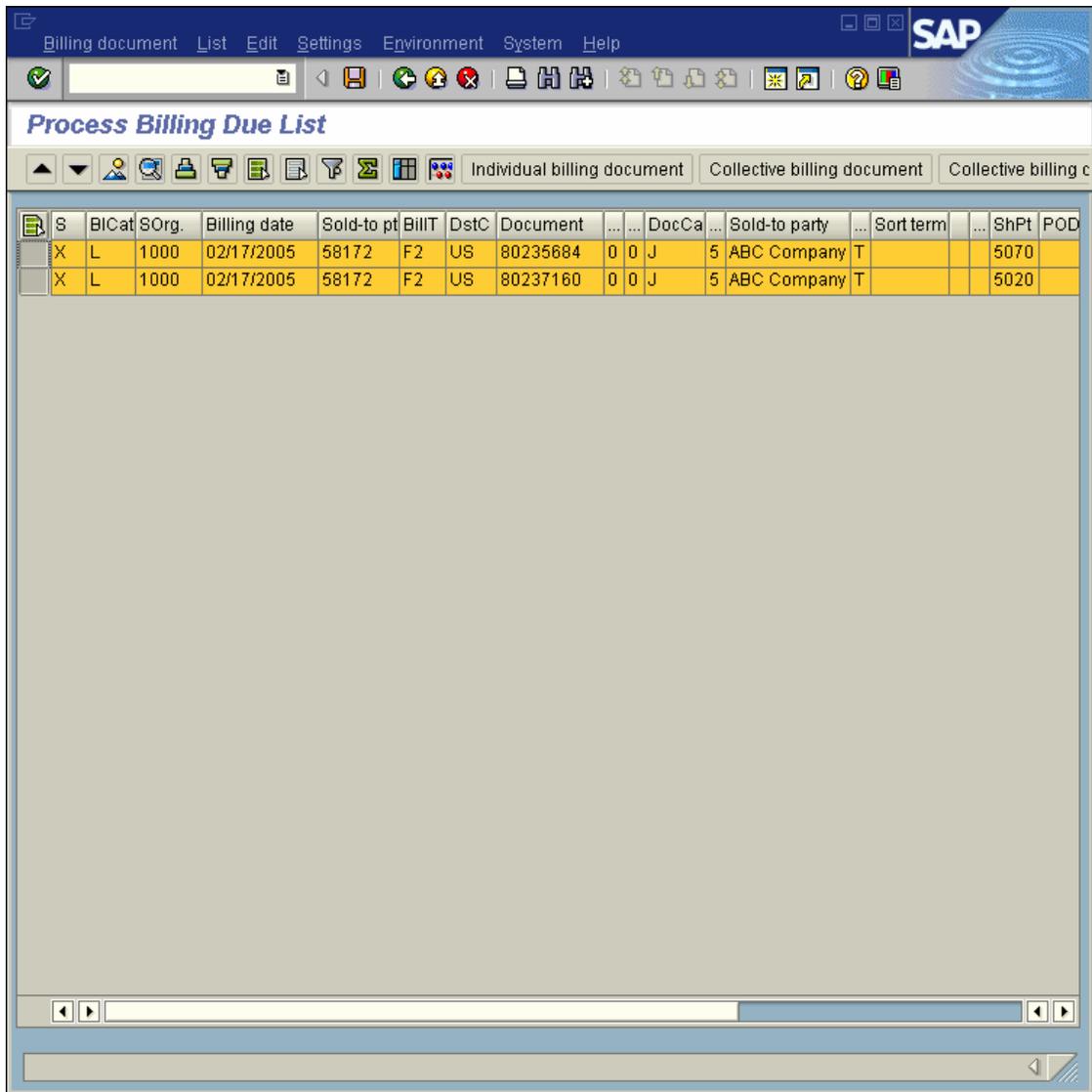
ENDFORM.
```

Li 23, Co 1 Ln 1 - Ln 26 of 26 lines

Active object generated

SD Billing Document Consolidation and Splitting

We have identified two deliveries for the same customer, on the same day, with different plants. The following screens display the functionality of the standard billing due list logic prior to our change.



The screenshot shows the SAP 'Process Billing Due List' interface. The title bar includes 'Billing document List Edit Settings Environment System Help' and the SAP logo. Below the title bar is a toolbar with various icons. The main area contains a table with the following data:

| S | BICat | SOrg. | Billing date | Sold-to pt | BillT | DstC | Document | ... | DocCa | ... | Sold-to party | ... | Sort term | ... | ShPt | POD |
|---|-------|-------|--------------|------------|-------|------|----------|-----|-------|-----|---------------|-------------|-----------|-----|------|-----|
| X | L | 1000 | 02/17/2005 | 58172 | F2 | US | 80235684 | 0 | 0 | J | 5 | ABC Company | T | | 5070 | |
| X | L | 1000 | 02/17/2005 | 58172 | F2 | US | 80237160 | 0 | 0 | J | 5 | ABC Company | T | | 5020 | |

SD Billing Document Consolidation and Splitting

Because there was no split, the invoice detail screen appears with items from each delivery.

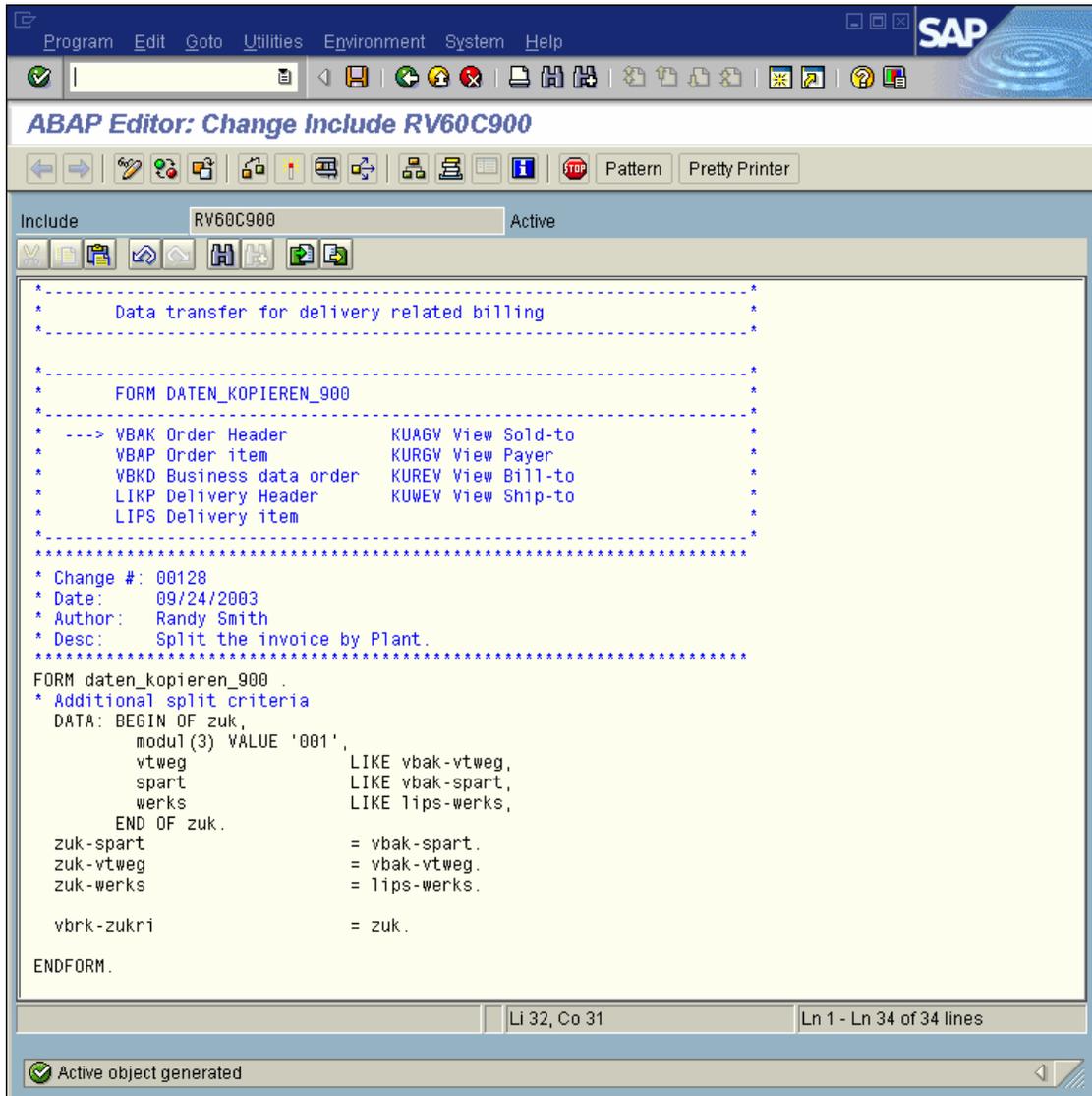
The screenshot shows the SAP 'Invoice (F2) Simulate: Overview of Billing Items' screen. The interface includes a menu bar (Billing document, Edit, Goto, Environment, System, Help), a toolbar, and a header area with the SAP logo. Below the header, there are fields for 'F2 Invoice' (\$000000001), 'Net value' (9,729.52 USD), 'Payer' (58172), and 'Billing date' (02/17/2005). The main area contains a table of billing items.

| Item | Description | Billed quantity | SU | Net value | Material | Cost |
|------|---------------------------|-----------------|----|-----------|----------|------|
| 160 | EA 5G KPG PROTHERM CON... | 24 | EA | 3,849.60 | 1168400 | |
| 180 | EA 5G POS THERMAL PL DEV | 8 | EA | 762.64 | 1806702 | |
| 181 | 50SH23.25X27.25IN MPDH TL | 3 | EA | 1,279.32 | 0676569 | |
| 182 | 50SH23.25X27.25IN MPDH TL | 3 | EA | 1,279.32 | 0676593 | |
| 183 | 50SH23.25X27.25IN MPDHTLC | 3 | EA | 1,279.32 | 0676650 | |
| 184 | 50SH23.25X27.25IN MPDHTLC | 3 | EA | 1,279.32 | 0676684 | |

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Step 2 Coding the Data Transfer Routine Change

In the custom data transfer routine, the plant field (WERKS) is added to the combination criteria field definition (VBRK-ZUKRI). In addition, logic is added to populate the field with the plant contained in the delivery item (LIPS-WERKS). This will cause the VBRK-ZUKRI field to differ when multiple plants are processed forcing the split to occur.



The screenshot shows the SAP ABAP Editor interface for a change include named 'RV60C900'. The editor displays the following code:

```
*-----*
* Data transfer for delivery related billing *
*-----*
* FORM DATEN_KOPIEREN_900 *
*-----*
* ---> VBAK Order Header      KUAGV View Sold-to *
* VBAP Order item            KURGV View Payer *
* VBKD Business data order   KUREV View Bill-to *
* LIKP Delivery Header       KUWEV View Ship-to *
* LIPS Delivery item *
*-----*
* Change #: 00128 *
* Date: 09/24/2003 *
* Author: Randy Smith *
* Desc: Split the invoice by Plant. *
*-----*
FORM daten_kopieren_900 .
* Additional split criteria
DATA: BEGIN OF zuk,
      modul(3) VALUE '001',
      vtweg           LIKE vbak-vtweg,
      spart           LIKE vbak-spart,
      werks           LIKE lips-werks,
    END OF zuk.
      zuk-spart       = vbak-spart.
      zuk-vtweg       = vbak-vtweg.
      zuk-werks       = lips-werks.

      vbrk-zukri      = zuk.
ENDFORM.
```

The status bar at the bottom indicates 'Active object generated' and 'Ln 1 - Ln 34 of 34 lines'.

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Step 3 Testing the Change

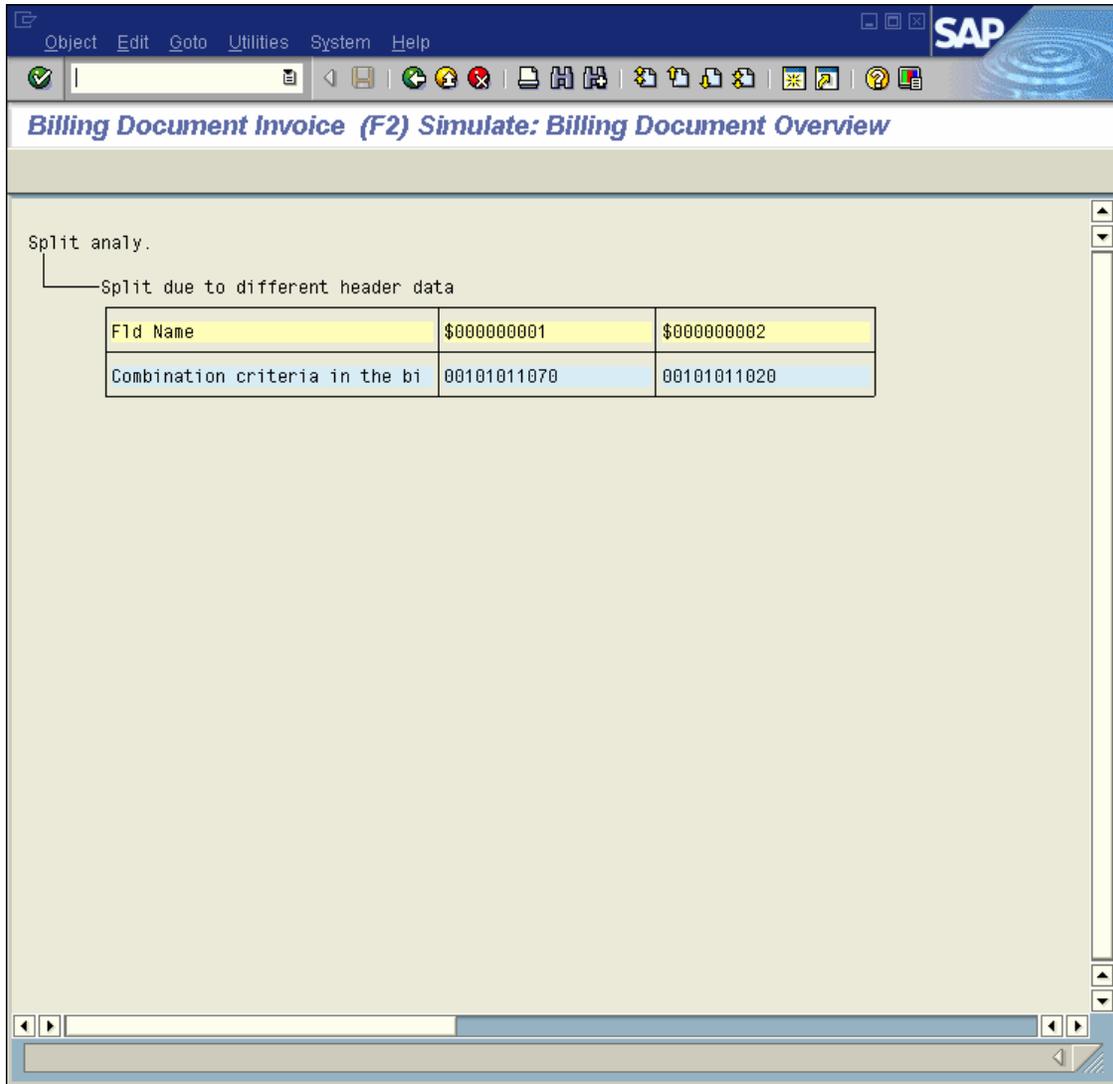
Using the same two deliveries, we execute the billing due list again after changing the routine in simulation mode.

The screenshot shows the SAP 'Process Billing Due List' window in simulation mode. The window title is 'Billing document List Edit Settings Environment System Help'. The SAP logo is visible in the top right corner. Below the title bar, there is a toolbar with various icons. The main area displays a table with the following data:

| S | BICat | SOrg. | Billing date | Sold-to pt | BIIT | DstC | Document | DChl | Dv | ... | ... | Sold-to party | Sold-toLoc | ... | ... | ShPt | P |
|---|-------|-------|--------------|------------|------|------|----------|------|----|-----|-----|---------------|------------|-----|-----|------|---|
| X | L | 1000 | 02/17/2005 | 58172 | F2 | US | 80235684 | 01 | 01 | J | 5 | ABC Company | Totowa | | | 5070 | |
| X | L | 1000 | 02/17/2005 | 58172 | F2 | US | 80237160 | 01 | 01 | J | 5 | ABC Company | Totowa | | | 5020 | |

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The result of the split analysis is a split based on the combination criteria field (ZUKRI). The field contains a string that is the concatenation of the value '001', distribution channel, division and plant.



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Example 3 Consolidated Invoicing by Customer

The following example demonstrates how to consolidate/split billing documents using a custom indicator on the Customer Master.

Business Requirement

Many customers place multiple sales orders per day. This results in multiple goods issues and billing documents per day also. Some customers want all shipments that occur on the same day, from the same plant to appear on a single invoice. Other customers want a separate invoice for each shipment.

Solution

To solve this problem, we will create a custom Data Transfer Routine. This routine will determine if deliveries should be combined into a single billing document or split based on a custom indicator added to the Customer Master. To accomplish this, the order number will be added to the Combination Criteria field (VBRK-ZUKRI). The order number will be moved into this field only if splitting is required. If billing consolidation is required, the order number will be null causing the consolidation to occur.

SD Billing Document Consolidation and Splitting

Step 1 Define an Indicator in the Customer Master

An indicator in the Customer Master is needed to drive the consolidation logic. Standard R/3 contains ten additional attributes on KNA1 that can be used for any purpose. For this project, we will use KATR7.

Transparent table: KNA1 Active
Short description: General Data in Customer Master

Attributes Fields Currency/quant. fields

| Fields | Key | Init. | Field type | Data... | Lgth. | Dec. p... | Check table | Short text |
|------------|--------------------------|--------------------------|------------|---------|-------|-----------|-------------|--|
| KATR1 | <input type="checkbox"/> | <input type="checkbox"/> | KATR1 | CHAR | 2 | 0 | TVK1 | Export to RAM |
| KATR2 | <input type="checkbox"/> | <input type="checkbox"/> | KATR2 | CHAR | 2 | 0 | TVK2 | Order via WEB |
| KATR3 | <input type="checkbox"/> | <input type="checkbox"/> | KATR3 | CHAR | 2 | 0 | TVK3 | View order status via WEB |
| KATR4 | <input type="checkbox"/> | <input type="checkbox"/> | KATR4 | CHAR | 2 | 0 | TVK4 | Price Protection |
| KATR5 | <input type="checkbox"/> | <input type="checkbox"/> | KATR5 | CHAR | 2 | 0 | TVK5 | Credit Card |
| KATR6 | <input type="checkbox"/> | <input type="checkbox"/> | KATR6 | CHAR | 3 | 0 | TVK6 | MSDS communication method |
| KATR7 | <input type="checkbox"/> | <input type="checkbox"/> | KATR7 | CHAR | 3 | 0 | TVK7 | Consolidated invoice |
| KATR8 | <input type="checkbox"/> | <input type="checkbox"/> | KATR8 | CHAR | 3 | 0 | TVK8 | National/Regional acct |
| KATR9 | <input type="checkbox"/> | <input type="checkbox"/> | KATR9 | CHAR | 3 | 0 | TVK9 | Bonus pay period |
| KATR10 | <input type="checkbox"/> | <input type="checkbox"/> | KATR10 | CHAR | 3 | 0 | TVK0 | Salesman type |
| STKZN | <input type="checkbox"/> | <input type="checkbox"/> | STKZN | CHAR | 1 | 0 | | Indicator: Is business partner a natural person? |
| UMSA1 | <input type="checkbox"/> | <input type="checkbox"/> | UMSA1 | CURR | 15 | 2 | | Annual sales |
| TXJCD | <input type="checkbox"/> | <input type="checkbox"/> | TXJCD | CHAR | 15 | 0 | TTXJ | Jurisdiction for tax calculation - tax jurisdiction code |
| PERIV | <input type="checkbox"/> | <input type="checkbox"/> | PERIV | CHAR | 2 | 0 | T009 | Fiscal year variant |
| ABRVW | <input type="checkbox"/> | <input type="checkbox"/> | ABRVW | CHAR | 3 | 0 | TVLV | Usage indicator |
| INSPBYDEBI | <input type="checkbox"/> | <input type="checkbox"/> | QINSPBYDEB | CHAR | 1 | 0 | | Inspection Carried Out By Customer (No Inspection |
| INSPATDEBI | <input type="checkbox"/> | <input type="checkbox"/> | QINSPATDEB | CHAR | 1 | 0 | | Inspection for a Delivery Note After Outbound Deliver |
| KTOCD | <input type="checkbox"/> | <input type="checkbox"/> | KTOCD | CHAR | 4 | 0 | T077D | Reference Account Group for One-Time Account (Cu |

It is a good practice to change the data element description to an appropriate description. For KATR7, we have changed the description to 'Consolidated invoice'.

SD Billing Document Consolidation and Splitting

Step 3 *Make the KATR7 Field Available to the Data Transfer Routine.*

The Data Transfer Routine will interrogate the KATR7 field to determine whether or not to consolidate documents. Structure KUAGV contains the Sold-to customer master data and this structure is passed to the routine. The structure contains include KUAGVZ which can be used to specify customer specific fields. The functions that read the customer master tables and populate the structures use MOVE-CORRESPONDING statements. Therefore, simply inserting KATR7 into the user include will cause the field to be read and populated. There is no need to specifically select the field from the table.

The screenshot shows the SAP Dictionary: Display Structure window for structure KUAGV. The window title is "Dictionary: Display Structure" and the structure name is "KUAGV" with status "Active". The short text is "Sold-to Party View of the Customer Master Record". The window has tabs for "Attributes", "Components", "Entry help/check", and "Currency/quantity fields". The "Components" tab is selected, showing a table of components. The table has columns: Component, Component type, DTyp, Length, Dec.p..., and Short text. The component KATR7 is highlighted in blue.

| Component | Component type | DTyp | Length | Dec.p... | Short text |
|-----------------------|-----------------------|------|--------|----------|--|
| TAXK9 | TAXK9 | CHAR | 1 | 0 | Tax classification 9 for customer |
| VBUND | VBUND | CHAR | 6 | 0 | Company ID |
| TXTPA | TXTPA | CHAR | 255 | 0 | Display text for partners (name, city, country, street) |
| RDOFF | RDOFF | CHAR | 1 | 0 | Switch off rounding? |
| .INCLUDE | KUAGVZ | | 0 | 0 | Customer Modifications:Sold-to Party View of Customer Mas |
| KVGR1 | KVGR1 | CHAR | 3 | 0 | Customer group 1 |
| KVGR2 | KVGR2 | CHAR | 3 | 0 | Customer group 2 |
| KVGR3 | KVGR3 | CHAR | 3 | 0 | Customer group 3 |
| KVGR4 | KVGR4 | CHAR | 3 | 0 | Customer group 4 |
| KVGR5 | KVGR5 | CHAR | 3 | 0 | Customer group 5 |
| KATR7 | KATR7 | CHAR | 3 | 0 | Consolidated invoice |
| .INCLUDE | KUAKDK | | 0 | 0 | Customer Condition Groups: Sold-to Party View of Cust.Mas |
| KDKG1 | KDKG1 | CHAR | 2 | 0 | Customer condition group 1 |
| KDKG2 | KDKG2 | CHAR | 2 | 0 | Customer condition group 2 |
| KDKG3 | KDKG3 | CHAR | 2 | 0 | Customer condition group 3 |
| KDKG4 | KDKG4 | CHAR | 2 | 0 | Customer condition group 4 |
| KDKG5 | KDKG5 | CHAR | 2 | 0 | Customer condition group 5 |
| ADRNR | ADRNR | CHAR | 10 | 0 | Address |

SD Billing Document Consolidation and Splitting

Field KATR7 is added to the structure.

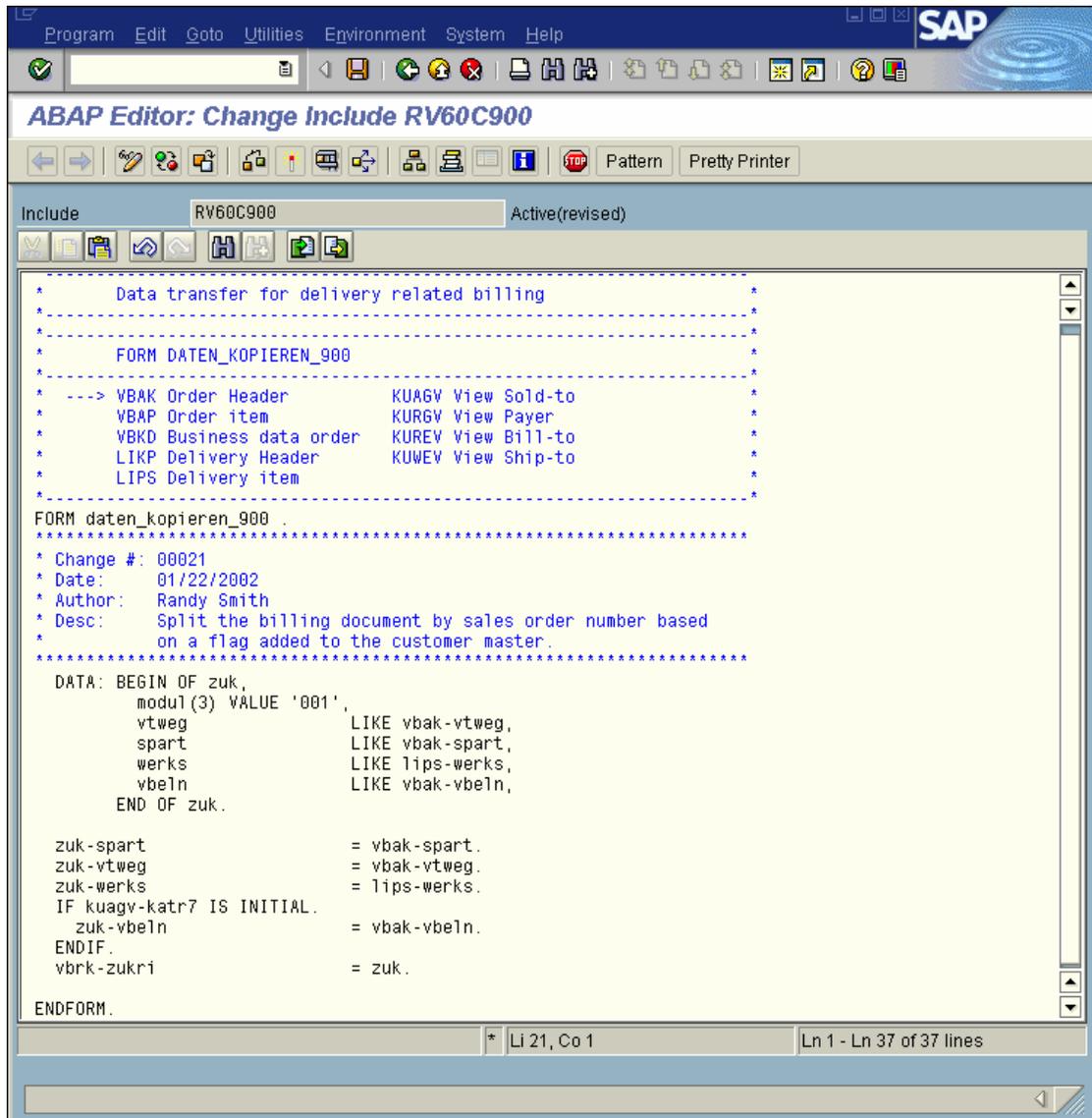
The screenshot shows the SAP Dictionary: Display Structure window for structure KUAGVZ. The window title is "Dictionary: Display Structure". The structure name is KUAGVZ and it is Active. The short text is "Customer Modifications:Sold-to Party View of Customer Master". The window has tabs for "Attributes", "Components", "Entry help/check", and "Currency/quantity fields". The "Components" tab is selected. The table below shows the components:

| Component | Component type | DTyp | Length | Dec.p... | Short text |
|-----------|----------------|------|--------|----------|----------------------|
| KAGR1 | KAGR1 | CHAR | 3 | 0 | Customer group 1 |
| KAGR2 | KAGR2 | CHAR | 3 | 0 | Customer group 2 |
| KAGR3 | KAGR3 | CHAR | 3 | 0 | Customer group 3 |
| KAGR4 | KAGR4 | CHAR | 3 | 0 | Customer group 4 |
| KAGR5 | KAGR5 | CHAR | 3 | 0 | Customer group 5 |
| KATR7 | KATR7 | CHAR | 3 | 0 | Consolidated invoice |

SD Billing Document Consolidation and Splitting

Step 4 Coding the Data Transfer Routine Change

In the custom data transfer routine, the order number field (VBELN) is added to the combination criteria field definition (VBRK-ZUKRI). In addition, logic is added to populate the field with the sales order number based on the new indicator added to the customer master. If the indicator is set (denoting that consolidation should occur), the order number field will be empty. If the indicator is not set (denoting that splitting should occur), the field will be filled. This will cause the VBRK-ZUKRI field to differ when multiple orders are processed forcing the split to occur.



```
ABAP Editor: Change Include RV60C900
Include: RV60C900 Active(revised)

*-----*
* Data transfer for delivery related billing *
*-----*
* FORM DATEN_KOPIEREN_900 *
*-----*
* ---> VBAK Order Header      KUAGV View Sold-to *
*       VBAP Order item       KURGV View Payer *
*       VBKD Business data order KUREV View Bill-to *
*       LIKP Delivery Header   KUWEV View Ship-to *
*       LIPS Delivery item *
*-----*
FORM daten_kopieren_900 .
*****
* Change #: 00021
* Date:    01/22/2002
* Author:   Randy Smith
* Desc:    Split the billing document by sales order number based
*          on a flag added to the customer master.
*****
DATA: BEGIN OF zuk,
      modul(3) VALUE '001',
      vtweg      LIKE vbak-vtweg,
      spart      LIKE vbak-spart,
      werks      LIKE lips-werks,
      vbeln      LIKE vbak-vbeln,
END OF zuk.

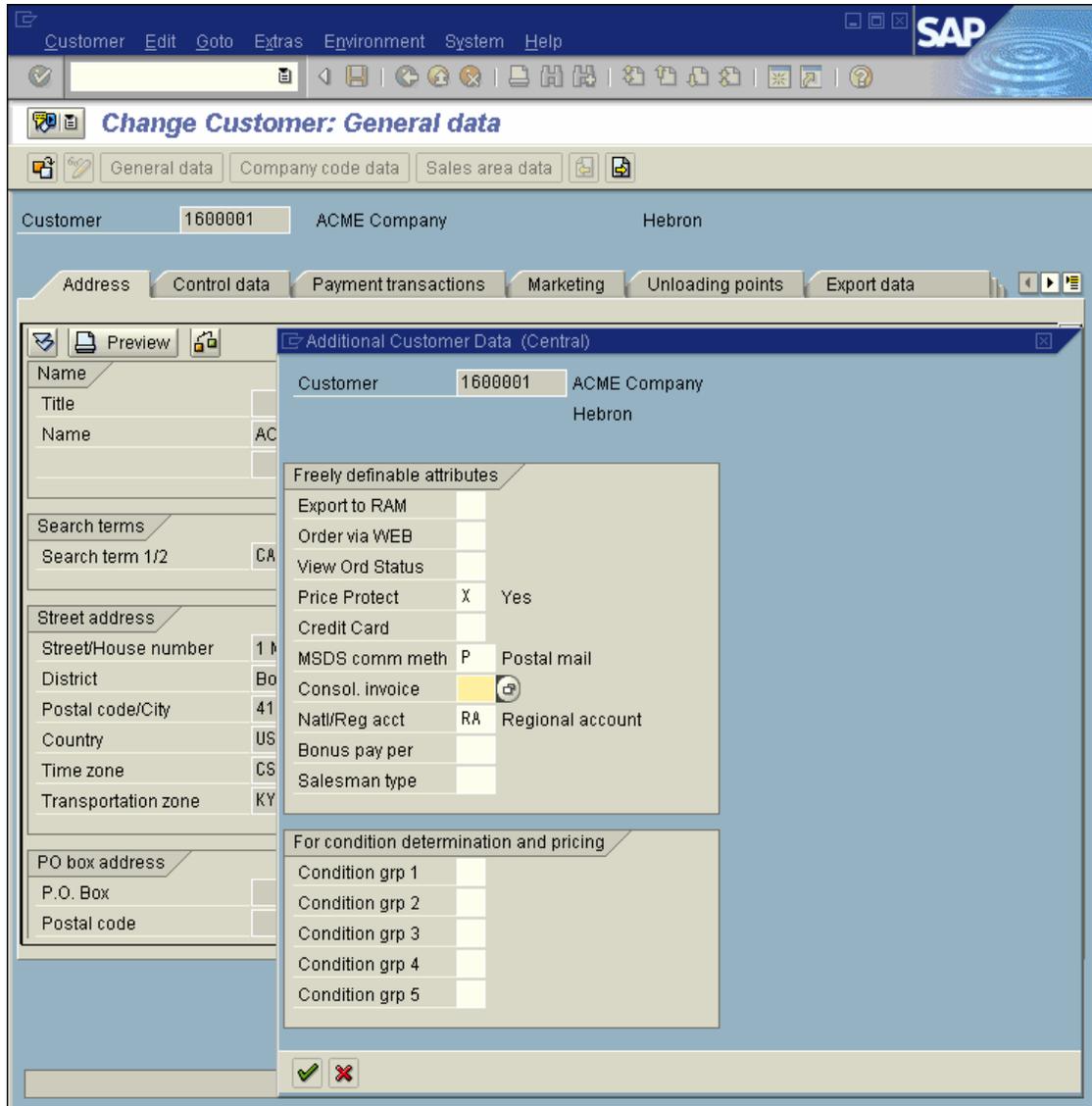
zuk-spart      = vbak-spart.
zuk-vtweg      = vbak-vtweg.
zuk-werks      = lips-werks.
IF kuagy-katr7 IS INITIAL.
  zuk-vbeln     = vbak-vbeln.
ENDIF.
vbrk-zukri     = zuk.

ENDFORM.
```

SD Billing Document Consolidation and Splitting

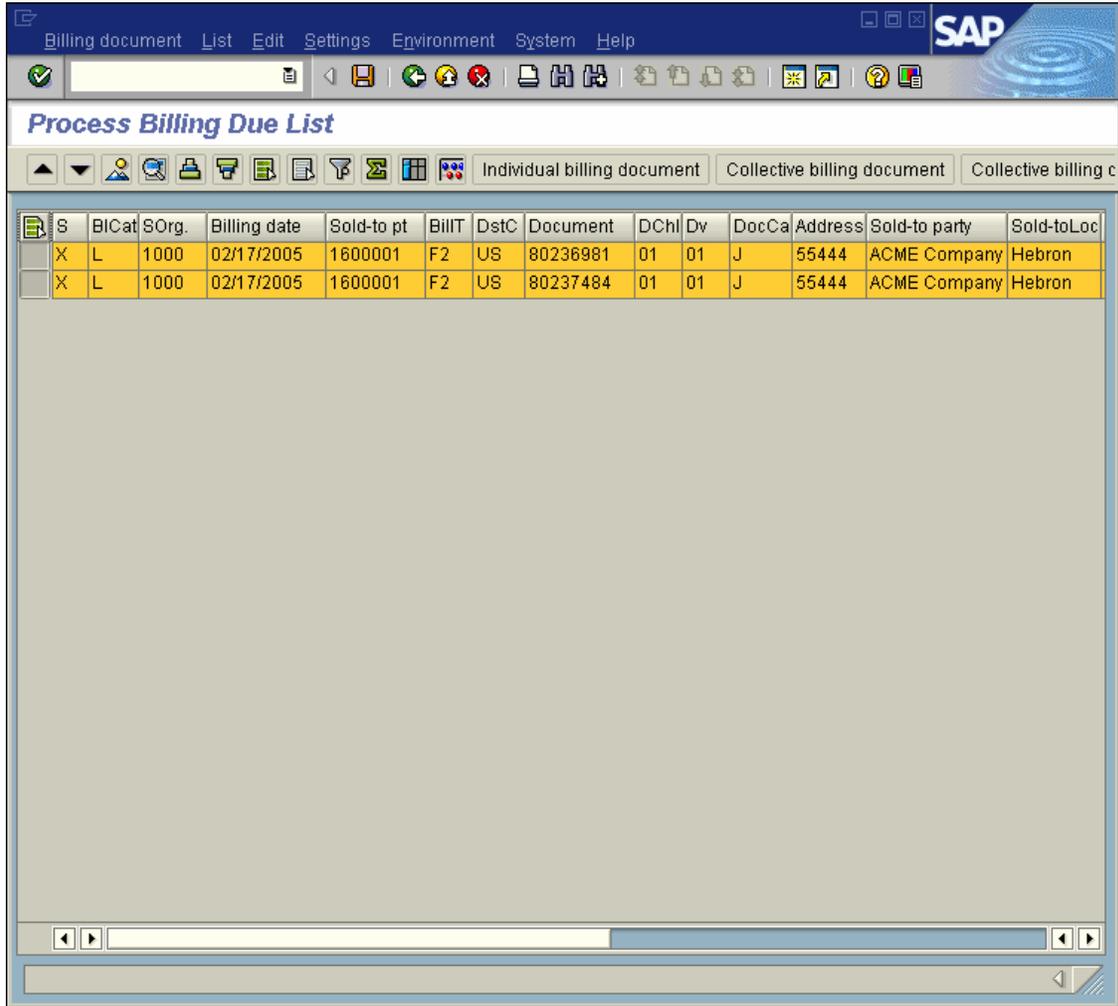
Step 5 Test1 (Create Separate Billing Documents)

The indicator on the customer master is set so that separate billing documents are created.



SD Billing Document Consolidation and Splitting

Execute the billing due list using two deliveries for the same customer on the same day. These deliveries are related to different sales orders.

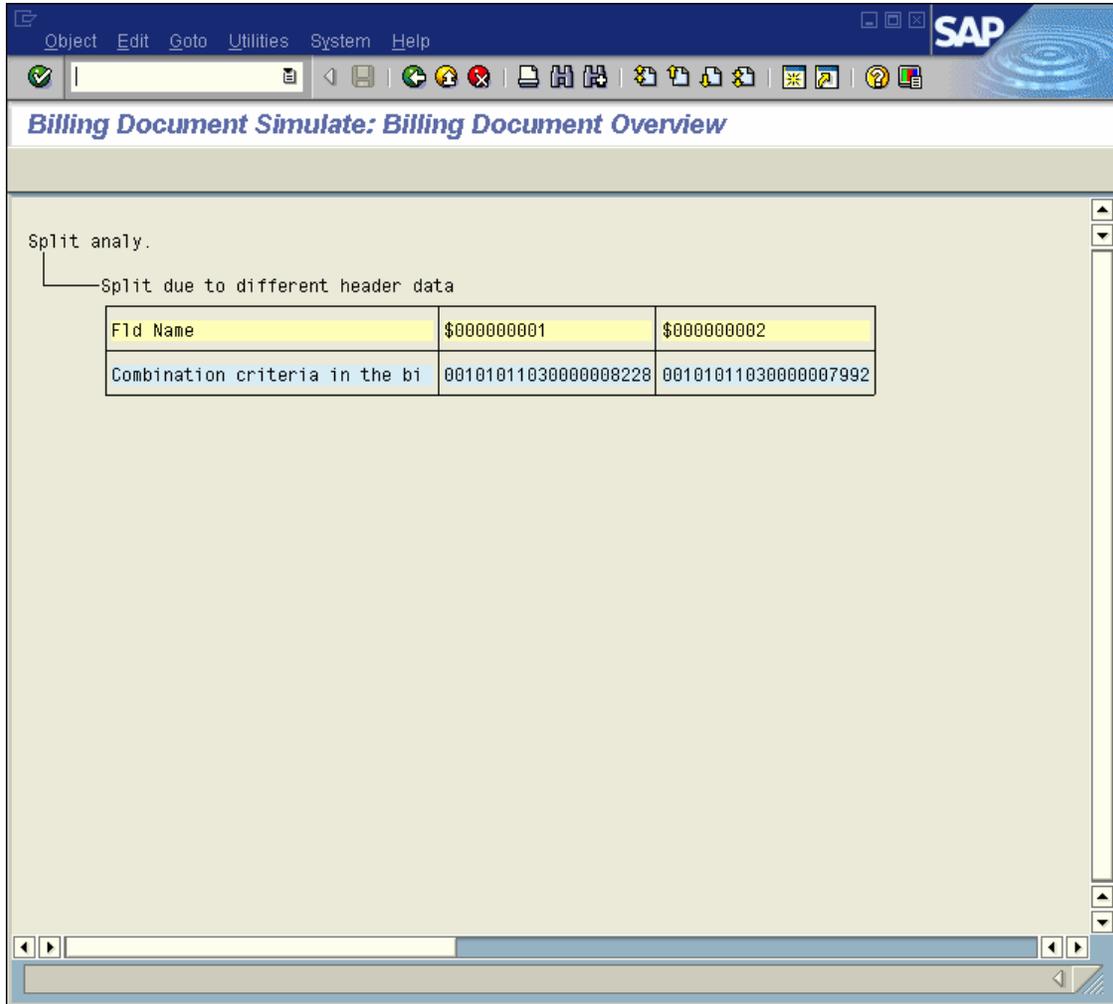


The screenshot shows the SAP 'Process Billing Due List' window. The window title is 'Billing document List Edit Settings Environment System Help'. The main area displays a table with the following data:

| S | BICat | SOrg. | Billing date | Sold-to pt | BillT | DstC | Document | DChl | Dv | DocCa | Address | Sold-to party | Sold-toLoc |
|---|-------|-------|--------------|------------|-------|------|----------|------|----|-------|---------|---------------|------------|
| X | L | 1000 | 02/17/2005 | 1600001 | F2 | US | 80236981 | 01 | 01 | J | 55444 | ACME Company | Hebron |
| X | L | 1000 | 02/17/2005 | 1600001 | F2 | US | 80237484 | 01 | 01 | J | 55444 | ACME Company | Hebron |

SD Billing Document Consolidation and Splitting

The result of the split analysis is a split based on the combination criteria field (ZUKRI). The field contains a string that is the concatenation of the value '001', distribution channel, division, plant and sales order number. In this example, the sales order numbers are different.



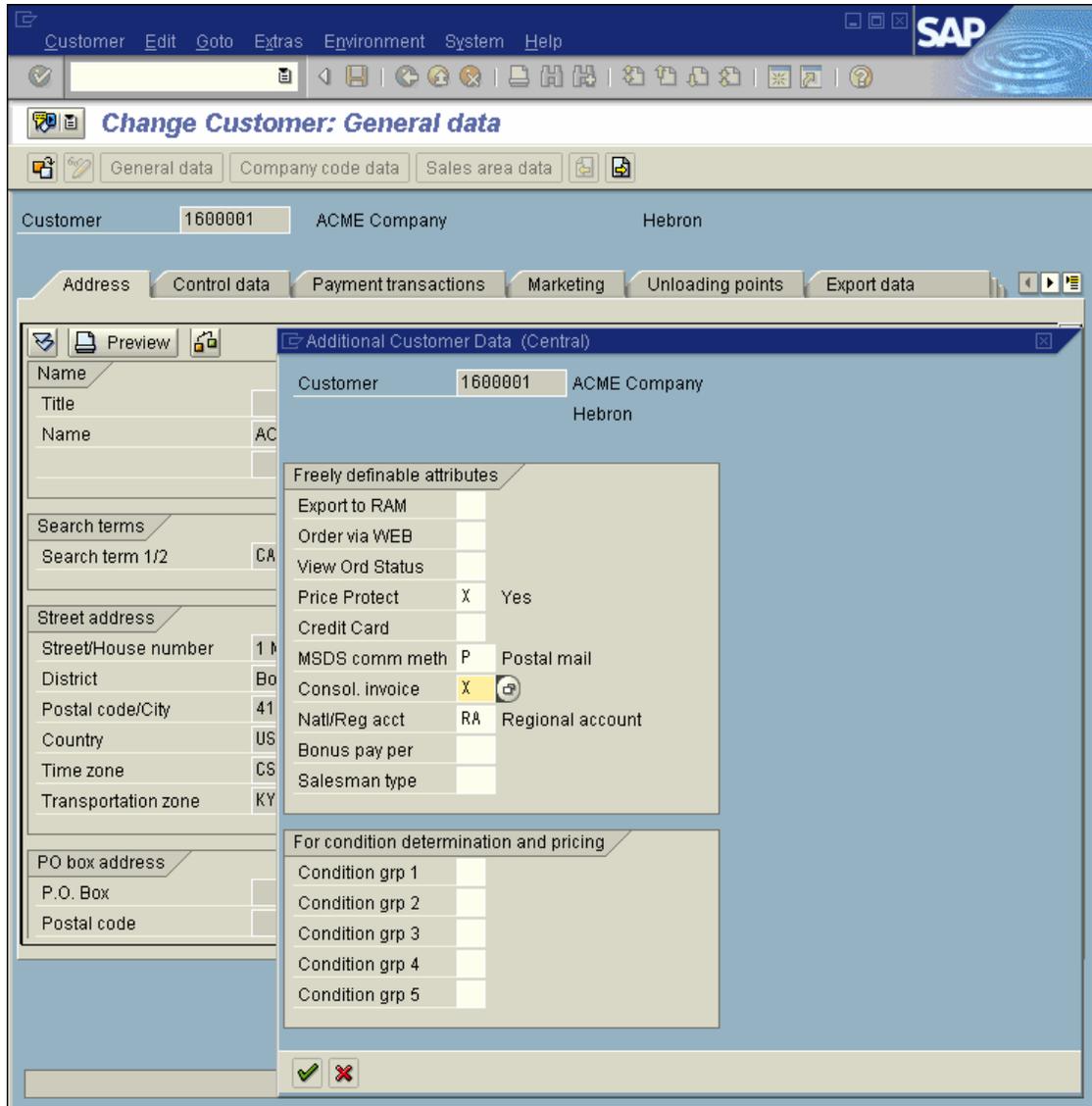
The screenshot shows the SAP Billing Document Simulate: Billing Document Overview interface. The main content area displays a split analysis table with the following data:

| Fld Name | \$000000001 | \$000000002 |
|--------------------------------|----------------------|----------------------|
| Combination criteria in the bi | 00101011030000008228 | 00101011030000007992 |

SD Billing Document Consolidation and Splitting

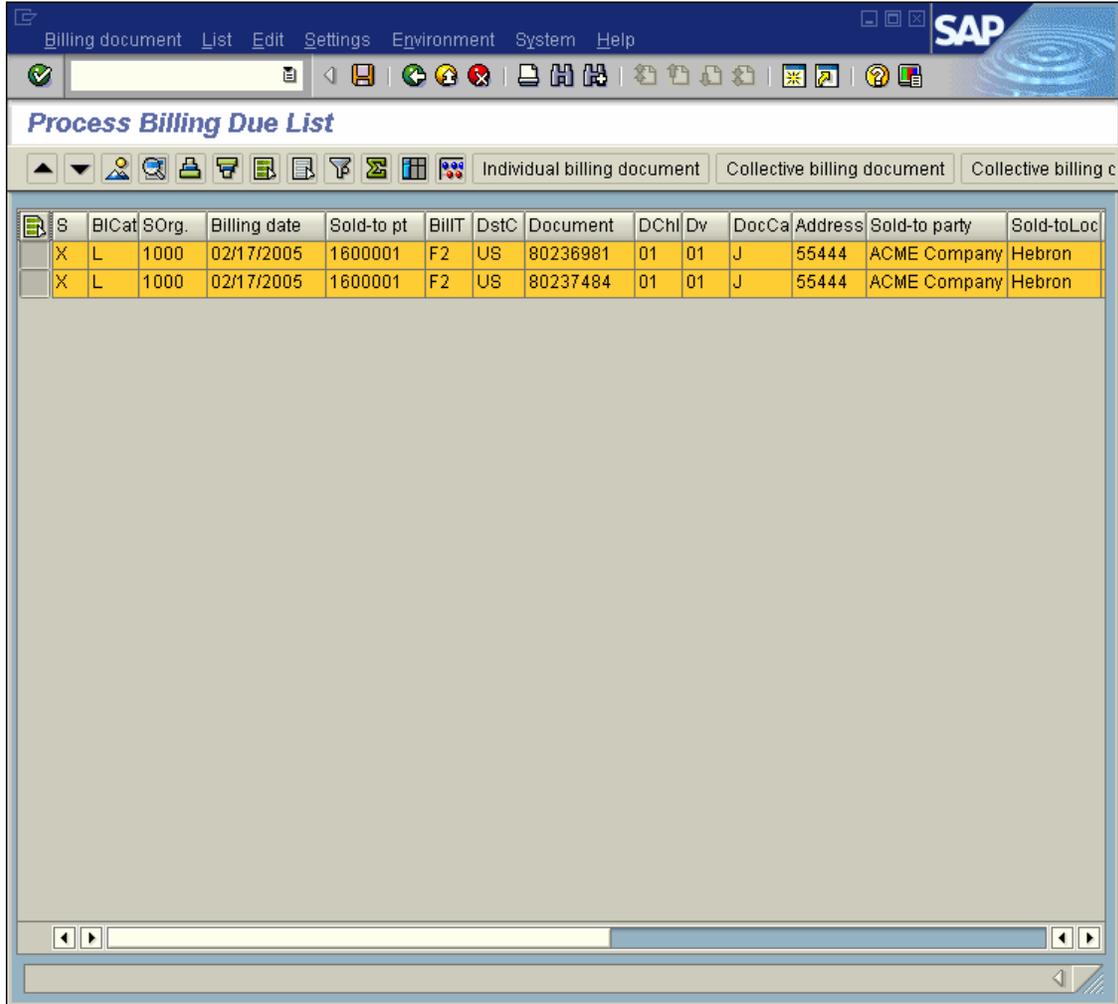
Step 6 Test2 (Create a consolidated Billing Document)

The indicator on the customer master is set so that billing document consolidation occurs.



SD Billing Document Consolidation and Splitting

Using the same two deliveries, we execute the billing due list again.



The screenshot shows the SAP 'Process Billing Due List' window. The window title is 'Billing document' and it includes a menu bar with 'List', 'Edit', 'Settings', 'Environment', 'System', and 'Help'. The SAP logo is visible in the top right corner. Below the menu bar is a toolbar with various icons. The main area of the window is titled 'Process Billing Due List' and contains a table with the following columns: S, BICat, SOrg., Billing date, Sold-to pt, BillT, DstC, Document, DChI, Dv, DocCa, Address, Sold-to party, and Sold-toLoc. The table contains two rows of data, both with a status of 'X' and a billing date of '02/17/2005'. The first row has a document number of '80236981' and the second row has a document number of '80237484'. Both rows are for 'ACME Company' and 'Hebron'.

| S | BICat | SOrg. | Billing date | Sold-to pt | BillT | DstC | Document | DChI | Dv | DocCa | Address | Sold-to party | Sold-toLoc |
|---|-------|-------|--------------|------------|-------|------|----------|------|----|-------|---------|---------------|------------|
| X | L | 1000 | 02/17/2005 | 1600001 | F2 | US | 80236981 | 01 | 01 | J | 55444 | ACME Company | Hebron |
| X | L | 1000 | 02/17/2005 | 1600001 | F2 | US | 80237484 | 01 | 01 | J | 55444 | ACME Company | Hebron |

SD Billing Document Consolidation and Splitting

Because there was no split, the invoice detail screen appears with items from each delivery.

The screenshot shows the SAP 'Invoice (F2) Simulate: Overview of Billing Items' screen. The interface includes a menu bar (Billing document, Edit, Goto, Environment, System, Help), a toolbar with various icons, and a header area with the SAP logo. Below the header, there are fields for 'F2 Invoice' (\$000000001), 'Net value' (2,395.52 USD), 'Payer' (1600001), and 'Billing date' (05/05/2005). The main area contains a table with the following data:

| Item | Description | Billed quantity | SU | Net value | Material | Cost |
|------|----------------------------|-----------------|----|-----------|----------|------|
| 10 | P30 28-27/32X33-7/32 TGOL | 3 | EA | 647.01 | 20003021 | |
| 30 | EA 5G 850S PLATE FIN GUM | 1 | EA | 58.62 | 1031889 | |
| 40 | EA 5G KPG ULTRATHERM PR... | 2 | EA | 171.70 | 1569078 | |
| 50 | EA 5G KPG REGEN MX1919 | 2 | EA | 270.32 | 8405201 | |
| 51 | P30 20-29/32X33-7/32 TGOL | 3 | EA | 468.93 | 20003175 | |
| 52 | P30 32-13/16X33-7/32 TGOL | 1 | EA | 245.26 | 0655035 | |
| 53 | P30 33X35-15/16 TGOLD 012 | 2 | EA | 533.68 | 0679829 | |