Basic Functions and Master Data in SD Processing (SD-BF)

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Contents

Basic Functions and Master Data in SD Processing (SD-BF)

Master Data in Sales and Distribution

Purpose

Sales processing is based on the following basic structures:

- Every company is structured in a certain way. In order to work with the SAP System your **company structure** has to be represented in the system. This is done with the help of various organizational structures.

- In sales and distribution, products are sold or sent to business partners or services are performed for them. Data about the products and services as well as about the business partners is the basis for sales processing. Sales processing with the SAP R/3 System requires that the master data has been stored in the system.

  In addition to sales and distribution, other departments of the company such as accounting or materials management access the master data. The material master data is stored in a specific structure in order to allow access from these different views.

- The processing of business transactions in sales and distribution is based on the master data. In the SAP R/3 System, business transaction are stored in the form of documents. These **sales and distribution documents** are structured according to certain criteria so that all necessary information in the document is stored in a systematic way.

Organizational Structures

Use

In the SAP R/3 System you can use several structures to represent the legal and organizational structure of your company. You can structure from the point of view of accounting, materials management, and sales and distribution. It is possible to combine these structures. The organizational structures form a framework in which all business transactions can be processed.

Organizational Structures in SD

Use

In the SAP R/3 System you can use several structures to represent the legal and organizational structure of your company. The organizational structures form a framework in which all business transactions can be processed.

Integration

You link the organizational structures in SD with those in Financial Accounting and Materials Management.

Activities

You maintain and assign the organizational units in Customizing for the enterprise structure.

Sales Areas

Use

SD is organized according to sales organization, distribution channel and division. A combination of these three organizational units forms the sales area.

The following graphic displays these organizational elements.

= Sales area
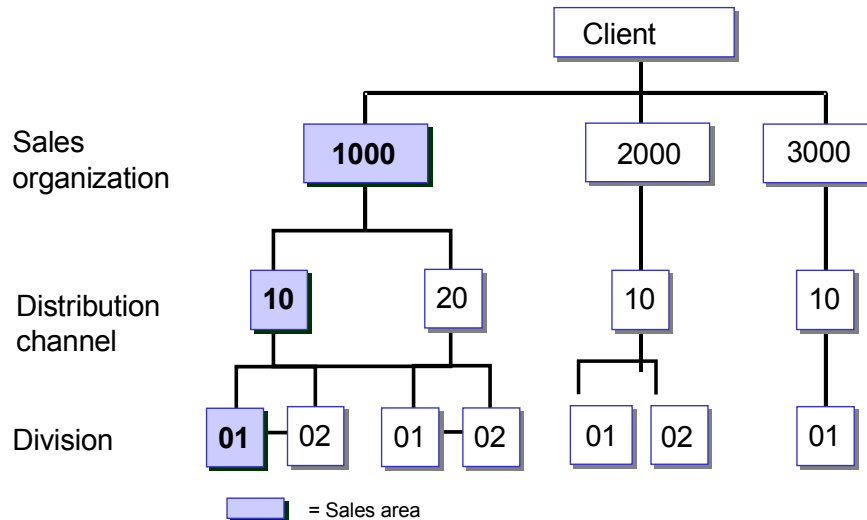
- In sales organization 1000, sales and distribution transactions can be carried out through all distribution channels and for all divisions.

- In sales organization 2000, products of both division 01 and division 02 are only sold through distribution channel 10.

- In sales organization 3000, only products of division 01 are sold, and only through distribution channel 10.

Features

Creating a sales area allows you to exclude certain combinations of the different organizational areas.

Sales organization

Definition

The sales organization is an organizational unit within logistics, that structures the company according to its sales requirements.

Use

A sales organization is responsible for the sale and distribution of goods and services.

It represents the selling unit as a legal entity. It is responsible for product guarantees and other rights to recourse, for example. Regional subdividing of the market can also be carried out with the help of sales organizations. Each business transaction is processed within a sales organization.

The sales organization must be specified in all sales documents. It is therefore available for all basic functions of SD (such as pricing, availability, etc.).

Structure

A sales organization can be subdivided into several distribution chains which determine the responsibility for a distribution channel.

Several divisions can be assigned to a sales organization which is responsible for the materials or services provided.

A sales area determines which distribution channel can be used to sell the products from one division in a sales organization.

Integration

Each sales organization is assigned exactly one company code for which you enter all accounting details of the sales organization.

A distribution chain can be active for several plants and the plants can be assigned to different company codes. If the sales organization and plant are assigned to different company codes, an internal billing document is sent between the company codes before the sales transactions are entered for accounting purposes.

Distribution channel

Definition

The distribution channel represents the channel through which salable materials or services reach customers. Typical distribution channels include wholesale, retail and direct sales.

Use

Within a sales organization a customer can be supplied through several distribution channels. In addition, the material master data relevant for sales, such as prices, minimum order quantity, minimum quantity to be delivered and delivering plant, can differ for each sales organization and distribution channel.

Structure

A single distribution channel can be assigned to one or more sales organizations.

Division

Definition

In the SAP R/3 System you can define a division-specific sales organization. Product groups, i.e. divisions, can be defined for a wide-ranging spectrum of products.

For every division you can make customer-specific agreements on, for example, partial deliveries, pricing and terms of payment. Within a division you can carry out statistical analyses or set up separate marketing procedures.

Internal Organization in Business Development and Sales

Use

The organization in Sales is represented by the elements sales office, sales group and salespersons. The following figure displays a sample organization in business development and sales.
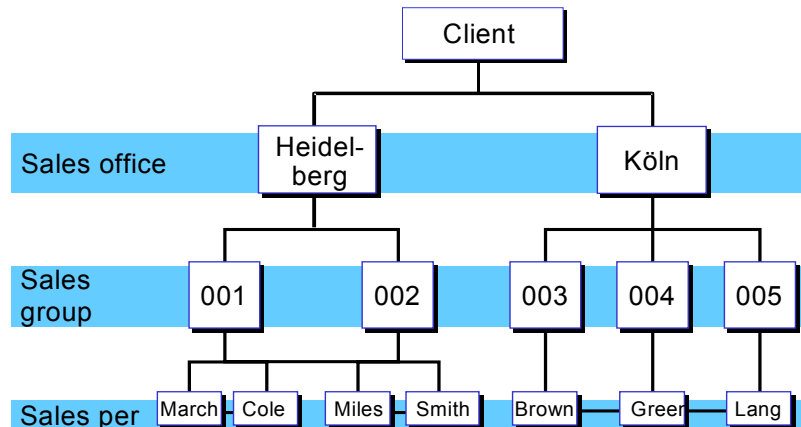
Sales office

Geographical aspects of the organization in business development and sales are defined using the term sales office. A sales office can be considered as a subsidiary. A sales office establishes contact between the firm and the regional market.

The branch of a firm in Hamburg, main street 1 can represent a sales office

Sales group

The staff of a sales office may be subdivided into sales groups. For example, sales groups can be defined for individual divisions.

Salespersons

You can maintain personnel master records for sales representatives in your company. In the personnel master record, you assign the salesperson to the sales office and the sales group.

You can also enter the system user name of the sales person. This allows mails to be sent to the salesperson (define the partner function for salespersonnel in the sales document).

Integration

Sales offices are assigned to sales areas. If you enter a sales order for a sales office within a certain sales area, the sales office must be assigned to that area.

The sales groups are assigned to the sales offices.

Internal Organization in Business Development and Sales

The salespersons are assigned to the sales group and the sales office via the personnel master record.

Organization in Shipping and Transportation

Use

Independent organizational entities, such as shipping points, are responsible for scheduling and processing deliveries to customers, as well as replenishment deliveries to your own warehouses.

A delivery is always carried out by one shipping point only. The shipping point depends on the following criteria:

- Delivering plant

- Type of shipping (for example, train, truck)

- Loading equipment necessary

Loading Point

Shipping points can be subdivided into loading points. For example, ramp 1, ramp 2 and ramp 3 belong to the shipping point *Forwarding depot*.

The following figure displays a possible organization in shipping.
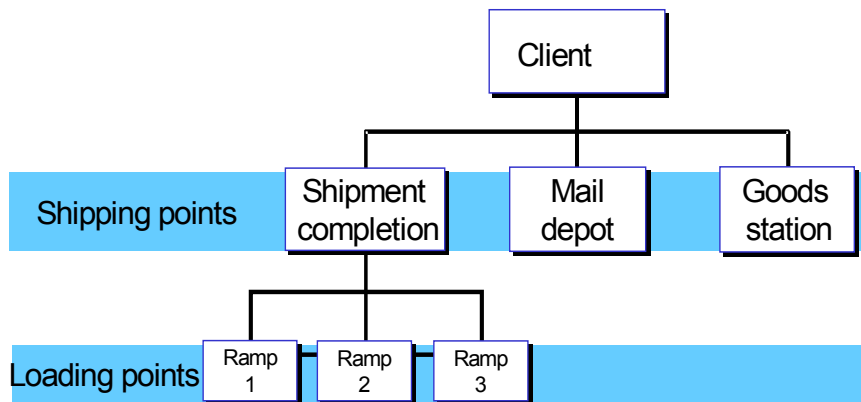
Transportation Planning Point

The transportation planning point is an organizational unit in Logistics, responsible for planning and processing transportation activities.

It organizes the responsibilities in a company, e.g. according to shipment type, mode of transport or regional departments.

Integration

The shipping point is assigned to a plant.

Loading points are assigned to shipping points.

Department and Receiving Point

Definition

Departments are subdivisions of a ship-to party. These might be, for example, different departments in a store, bays in a distribution center, or areas in a manufacturing plant.

Departments are assigned to receiving points, which in turn are assigned to unloading points. One receiving point may have several departments assigned to it, but each department is assigned to only one receiving point. By knowing a department, you can therefore also determine the receiving point and the unloading point.

Using departments and receiving points enables you to more finely specify the final destination for a shipment or portions of a shipment, thus reducing the time it takes for the goods to become available for the receiver's use or sale.

> A pallet load of merchandise is delivered to Bay 1 at a department store (unloading point). The shipment is broken down and delivered to one or more floors (internal receiving points). From there the packages are delivered to one or more departments, such as Housewares, Consumer Electronics, Health & Beauty Aids, or Women's Dresses.

Use

- Sales orders

  The receiving point and department are located on the Business Data Detail Shipment screen, either at the header or item level. If the header contains this information, this becomes the default for all items, but you can override it for individual items if you wish. Items in a sales order may have different receiving points and/or departments.

- Picking lists and delivery notes

  You can print the receiving point and department on picking lists and delivery notes. If this information was included in the sales order, then it will automatically be inserted in these other documents; otherwise, you can enter it manually. (However, picking lists and delivery notes are not split by receiving point or department.)

- Billing documents

  You can specify that the department and receiving point are to be printed on billing documents. You can also specify that invoices are to be split by receiving point and department.

In Customizing for Retail (*Retail* → C*entral coordination* → *Sales* → *Sales order processing* → *Maintain promotion/receiving point determination per sales document type*) you can specify for each type of document whether or not automatic department and receiving point determination is to be done.

Structure

The department and receiving points are fields in sales orders and delivery notes.

Integration

The system can automatically determine the appropriate department and receiving point for an article. To enable this you must first of all carry out the following:

- For external customers: Assign merchandise categories in the customer master

- For internal sites (for example, member stores or distribution centers): Assign merchandise categories in the company master

In either case, you then assign valid departments and receiving points to the customer or site, and a department to each merchandise category. A merchandise category can only have one department.

When you enter an article on a sales order, for example, the system checks the merchandise category to which the article belongs, then checks the merchandise category information for that site or customer. The system then locates the corresponding department and receiving point for this article.

Organizational Structures in Accounting

A group can be represented in the system using the terms client and company code. Generally, a client represents a group, while a company code represents a company in the sense of an independent accounting unit. Company codes are independent from each other in the legal sense.

The following figure illustrates how the client is subdivided in company codes.
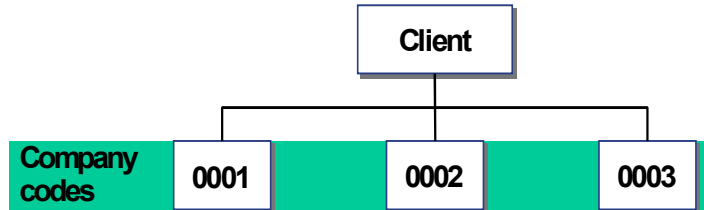
Organizational Structures in Material Management

To monitor the stock of material it is necessary to be able to store in the system the locations at which materials are kept. You can do this using the terms plant and storage location. A plant can either be a place of production or a single storage location, or a combination of closely situated storage locations where stock is kept.

Every plant is assigned to a company code. This ensures that stocks and stock values can be managed separately in each company.

The following figure illustrates how the client is subdivided in plants and storage locations.
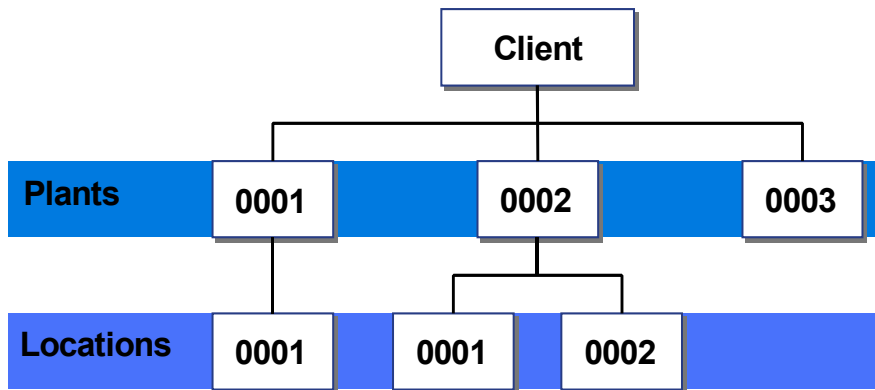
Link between Sales and Distribution and Accounting

By assigning sales organizations and plants you create a link between company codes and sales organizations. A plant, though always linked to one company code, can be assigned to different sales organizations. Within a company code several sales organizations can be active. Business transactions can also be carried out between different company codes (for example, during inter-company sales processing).

The following figure displays possible assignments of company codes, sales organizations and plants.
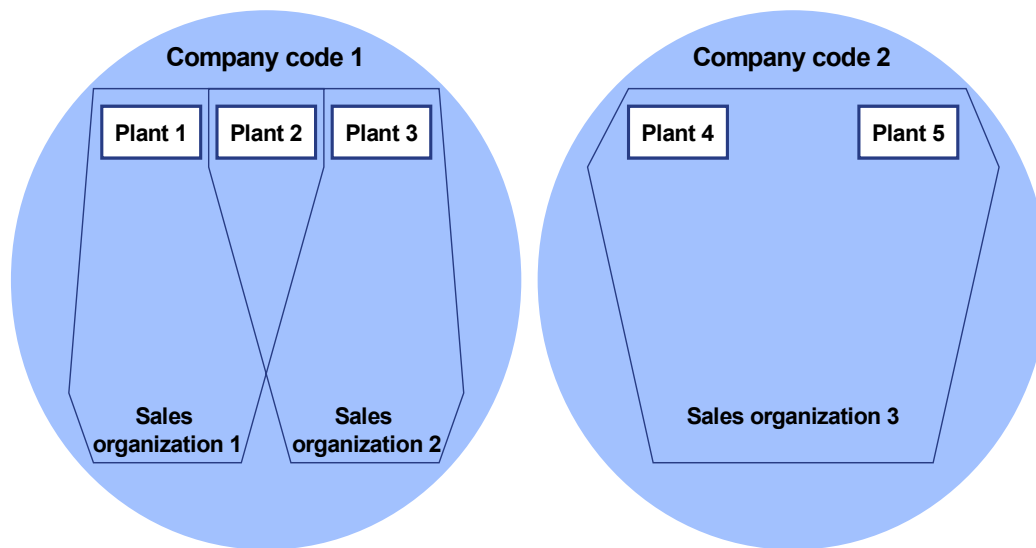
Plants 1, 2 and 3 belong to company code 1. Sales organization 1 uses plants 1 and 2. Sales organization 2 uses plants 2 and 3. Sales organizations 1 and 2 can make cross-company sales for goods from plants 4 or 5.

Link to Materials Management Structure

The plants allowed for sales are determined for each sales organization according to the distribution channel, so that a sales organization can sell goods from several plants. A plant can be assigned to different sales organizations. All of these sales organizations can sell from that plant.

You can differentiate further between the plants belonging to a sales organization from the sales view using the distribution channel. For certain plants within a sales organization, the distribution channel "sales from plant" is allowed, but not for others.

The following figure shows an assignment of sales organizations and plants.

Sales organization	1000	2000	3000
Plants	1000	2000	3000
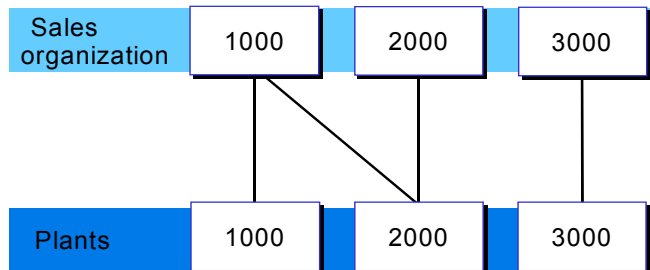
- Sales organization 1000 sells from plants 1000 and 2000

- Sales organization 2000 only sells from plant 2000

- Sales organization 3000 only sells from plant 3000

Customers and Business Partners

Definition

A company deals with different natural and legal persons during business transactions: A customer orders goods from your company. A forwarding agent might deliver goods to the customer. An employee within the company processes the business transactions. All roles a natural or legal person can assume are represented by **business partners** in the SAP R/3 System.

Business partners

A company has contact with its business partners, who are customers and vendors. Data on each of these and on the company's personnel is stored in a separate master record.

Customers

The term "customer" is used to define all customers to whom the company has contact. The term "vendor" is used to define all business partners who carry out a delivery or a service for the company. A business partner can be a customer and a vendor at the same time if, for example, your customer also supplies goods to you. In this case, both a customer master record and a vendor master record must be created for the business partner. You can create a link between the master records by entering the vendor number in the customer master record and the customer number in the vendor master record.

Vendors

Data on business partners who are vendors, for example, forwarding agents, is managed in the vendor master record. If a vendor is also a customer, a link can be created.

Personnel

Data on employees of your own company, for example, sales personnel or clerical staff, is managed in the personnel master record. Data on each employee can be managed by his or her personnel number.

Only the personnel department of your company is authorized to create a personnel master record, using Human Resources (HR). The personnel department of your company manages the personnel numbers of the employees. If HR is not used in your company, you can create a personnel master record yourself for employees in sales and distribution.

See also:

Logistics – General: Master Data Business Partners [Ext.]

Partner Determination in Sales and Distribution [Page 153]

Business Partner Master Data Structure

Use

You enter data on business partners with whom your company has a business relationship in master records. Master records contain all data necessary for processing business transactions. This is known as master data.

If you enter all master data, you spend less time processing business transactions because the system proposes the master data in these transactions.

Financial Accounting and Logistics use master data. General data and data relevant to both departments is stored in shared master records to avoid duplication.

Features

You can create and change master records using groups of data that differ in the level of detail.

Master records for business partners who are customers or vendors have the following structures:

Customer Master Records	**Vendor Master Records**
General data Company code data · Sales and distribution data	General data Company code data · Purchasing organization data
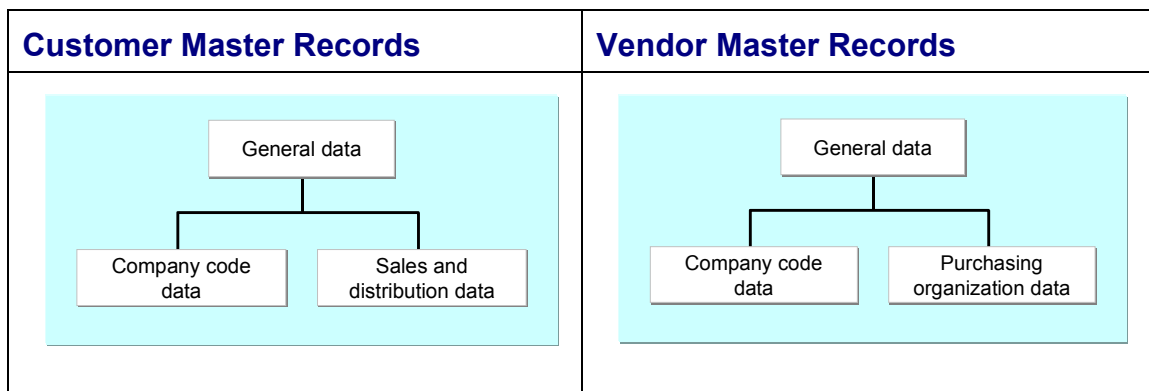
- General Data

    General data does not depend on the company code, the sales and distribution organization or the purchasing organization. General data applies to one business partner for all company codes, and in all sales areas and purchasing organizations. It includes:

    – Company name

    – Address

    – Telephone number

    General data is not limited to information used by both Financial Accounting and Logistics. The unloading point, for example, is unique for a customer and is only relevant for Sales and Distribution. However, because it is not part of the sales and distribution organization of your company, it is not sales and distribution data. It is general data.

Business Partner Master Data Structure

> If you edit a master record using the customer or vendor number without specifying a sales area, a purchasing organization, or a company code, the system displays only general data screens.

> The department that creates the master record for a business partner also enters general data. If Financial Accounting creates the master record, it must also enter general data, such as the address. When Logistics then enters data, the general data for the business partner exists. Logistics can display the general data.

- Company Code Data

    Company code data only applies to one company code. This data is only relevant to Financial Accounting, and includes:

    − Account management data

    − Insurance data

    If you edit a master record, you must specify the customer or vendor number and company code to access the screens containing company code data.

    You can only invoice a business transaction if the data on the payer partner function is entered in the Financial Accounting view.

- Sales and Distribution Data

    The data for one customer can differ for each sales area. The sales area is a combination of sales organization, distribution channel and division. This data is only relevant to Sales and Distribution, and includes:

    − Pricing data

    − Delivery priority

    − Shipping conditions

    If you edit a customer master record, you must enter the customer number and the sales area in order to access screens containing sales and distribution data.

    You can only process sales and distribution transactions, for example, a sales order, after entering the sales and distribution data for a customer.

- Purchasing organization data

    The data for one vendor can differ for each purchasing organization. This data is only relevant to Purchasing, and includes:

    − Purchasing data

    − Partner functions

    − Other data retention levels within the purchasing organization

        In addition to data that is valid for the whole purchasing organization, you can enter information on the *Purchasing data* and *Partner functions* screens that is only valid for a particular site or vendor sub-range. This includes terms of payment or incoterms that differ from those valid for the purchasing organization. Such data is retained at the following levels:

        - Vendor sub-range

        - Site

- A particular combination of vendor sub-range and site

    You negotiate better prices and conditions for a particular vendor sub-range than those valid for the purchasing organization. You create a vendor sub-range and maintain the different terms of payment for it.

Account Groups

Use

When you create a master record for a business partner, you must enter an account group. The account group determines:

- Which screens and fields are necessary for entering master data

- Whether you can or must make an entry in these fields

- How master record numbers are assigned (externally by you or internally by the system) and the number range from which they are assigned

- Which partner functions are valid

- Whether the business partner is a one-time customer or one-time vendor

Additionally, for vendor master records only, the account group determines:

- Whether default purchasing data [Ext.] in the vendor master is to be transferred to article master records and purchasing information records

- Whether there are any other data retention levels [Ext.] below the purchasing organization level (for example, site or vendor sub-range level) at which data can be retained in the vendor master, and if so, what these are

In the standard R/3 System, if you create a master record for the partner function ship-to party, for example, the system proposes an account group. You can also use account groups to define all other partner function combinations (for example, if the ship-to party is also the payer for the goods).

Prerequisites

In Customizing, you define account groups available in the following activities:

- *Logistics Basic Data: Business Partners*

  - Define Account Groups and Field Selection for Customers [Ext.]

  - Define Account Groups and Field Selection for Vendors [Ext.]

- *Accounts Receivable and Accounts Payable (Financial Accounting)*

  - Define Account Groups with Screen Layout (Customers) [Ext.]

  - Define Account Groups with Screen Layout (Vendors) [Ext.]

Additional Information

Changing an Account Group [Page 45]

Number Assignment

Use

A unique number is assigned to each business partner master record. You can use this number to access the master record, or to refer to the business partner when processing business transactions.

Features

The number for a business partner master record can be assigned in one of the following ways:

- Externally

    You assign the number. In this case, you define a number range that allows for alphanumerical number assignment. The system checks whether the number you enter is unique and within the number range defined by the account group.

- Internally

    The system assigns a consecutive number automatically from a number range defined by the account group.

The account group determines whether external or internal number assignment is allowed for a business partner master record. For account groups 0001 to 0005, for example, only internal number assignment is allowed in the standard R/3 System.

Number Range

A number range can be valid for more than one account group.

> You can use the number range to assign different numbers to a head office and subsidiaries.
>
> In the standard R/3 System, the account groups for the following customer partner functions are in the same number range so the numbers for these customer master records are assigned consecutively:
>
> - Sold-to party
> - Ship-to party
> - Bill-to party
> - Payer

Integration

A customer's number is unique for all sales areas and company codes. A vendor's number is unique for all purchasing organizations and company codes.

> You first create a master record for your business partner in one sales area. You then create a second master record for the same business partner in another sales area. In this case, the system identifies the business partner number and does not

Number Assignment

display the existing general data from the first master record for maintenance. You can use the change and display functions to access the general data.

Prerequisites

In Customizing you define the number ranges that are to be available. You do this in the following activities:

- *Logistics Basic Data: Business Partners*

    – [Define and Assign Customer Number Ranges [Ext.]](#)

    – [Define Number Ranges for Vendor Master Records [Ext.]](#)

- *Accounts Receivable and Accounts Payable*

    – [Create Number Ranges for Customer Accounts [Ext.]](#)

    – [Assign Number Ranges to Customer Account Groups [Ext.]](#)

    – [Create Number Ranges for Vendor Accounts [Ext.]](#)

    – [Assign Number Ranges to Vendor Account Groups [Ext.]](#)

Partner Functions

Use

Use partner functions to define the rights and responsibilities of each business partner in a business transaction. You assign partner functions when you create a master record for a business partner.

Features

The following are examples of partner functions that are defined in the standard R/3 System:

- Partner functions for partner type customer

    - Sold-to Party [Ext.]

        Contains data on sales, such as the assignment to a sales office or a valid price list

    - Ship-to Party [Ext.]

        Contains data for shipping, such as unloading point and goods receiving hours

    - Bill-to Party [Ext.]

        Contains the address and data on document printing and electronic communication

    - Payer [Ext.]

        Contains data on billing schedules and bank details

- Partner functions for partner type vendor

    - Ordering address

    - Invoice presented by

    - Goods supplier

    - Alternative payee

- Partner functions for other partner types, for example, personnel (HR master records)

    Employee responsible

    You can use this partner function, for example, to assign a buyer within your company to a vendor.

Examples of Business Partner Types and Functions

```
                        ┌─────────────────────┐
                        │  Business partners  │
                        └─────────────────────┘
              ┌──────────────────┼──────────────────┐
    ┌─────────────┐     ┌─────────────┐     ┌──────────────────────┐
    │             │     │             │     │ Other partner types, │
    │  Customers  │     │   Vendors   │     │     for example:     │
    │             │     │             │     │   Contact persons,   │
    │             │     │             │     │   Personnel, Sites   │
    └─────────────┘     └─────────────┘     └──────────────────────┘
          │                   │                       │
┌───────────────────┐ ┌───────────────────────┐ ┌──────────────────────────┐
│ • SP Sold-to party│ │ • VN Vendor           │ │  Other partner functions,│
│ • SH Ship-to party│ │ • OA Ordering address │ │       for example:       │
│ • BP Bill-to party│ │ • GS Goods supplier   │ │    CP Contact person     │
│ • PY Payer        │ │ • PI Invoice presented│ │  ER Employee responsible │
│ • Other partner   │ │   by                  │ │                          │
│   functions       │ │ • Other partner       │ │                          │
│                   │ │   functions           │ │                          │
└───────────────────┘ └───────────────────────┘ └──────────────────────────┘
```
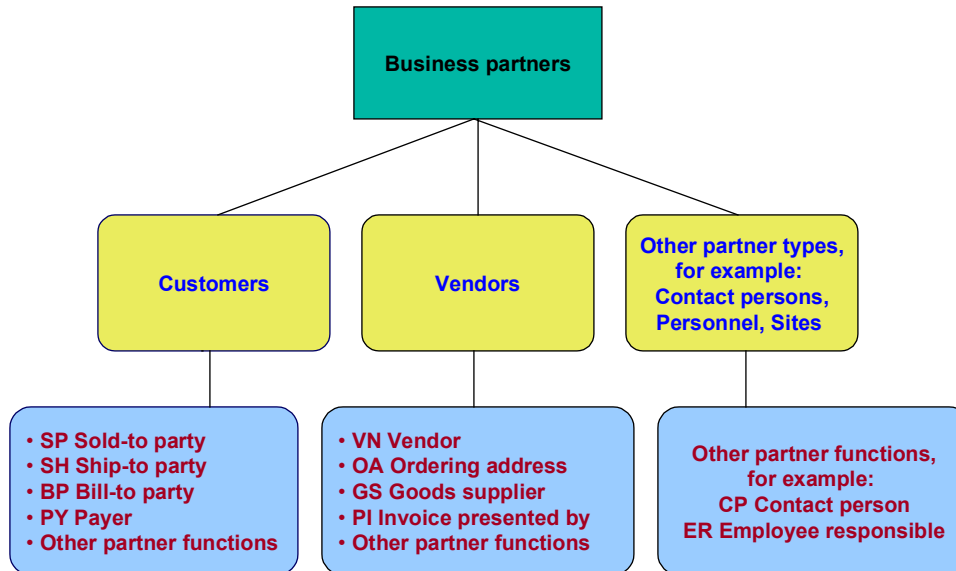
Activities

Customer partner functions

The company or person who places an order can be the same company or person who receives the goods and the invoice and pays. Because this customer assumes all partner functions, you create one master record for the customer. You create a customer master record for the sold-to party in which you enter data required for the other partner functions.

A subsidiary office can place an order and its head office can pay the invoice. In this case, you divide partner functions among the different offices. You need a corresponding number of customer master records. In one master record you enter, for example, the address of the sold-to party for correspondence, in the other, the address of the ship-to party for delivery. You establish a link between the partner functions in the customer master record of the sold-to party by entering the customer number of the respective partner functions.

Prerequisites

When creating master records, you define the partner functions for business partners by assigning an account group. For partner types customer and vendor, you define which account group can be used for which partner function. You do this in Customizing in the following activities:

- Customer

In Customizing for *Basic Functions (SD)* in the activity <u>Assign partner functions on the debit side to account groups [Ext.]</u>.

- Vendor

    In Customizing for *Purchasing* (*MM*) in the activity <u>Define permissible partner roles per account group [Ext.]</u>.

The partner determination procedure specifies the partner functions that are allowed or mandatory for processing a particular business transaction, such as a sales or purchase order.

Additional Information

<u>Partner Determination in Sales and Distribution [Page 153]</u>

<u>Vendors: Partner Determination [Ext.]</u>

Consumers

Use

A consumer is a natural, private business partner with whom you have a relationship involving the transfer of goods and services. You create customer master records for business partners who are consumers.

Features

Reference Customer

To create consumer master data and to process sales, you require reference data known as the reference customer. You can create a maximum of one reference customer per client. When you create the reference customer, you must enter company code data and sales area data. Company code data and sales area data is used with master records for consumers as follows:

- Company code data

    When you create a master record for a consumer, the company code data for the consumer is copied from the reference customer. Once the master record is created, you can maintain the data for this company code and additional company codes.

- Sales area data

    - Sales area data is not maintained for a consumer.

        You create a master record for a consumer and you do not enter sales area data. During operative business transactions, for example, when you create an order for a consumer, the sales area data is copied from the reference customer.

    - Sales area data is maintained for a consumer.

        You create a master record for a consumer and you enter sales area data. During operative business transactions, this sales area data is used by the system.

        ⇨

        A consumer cannot be a reference customer.

Maintenance of Consumer Master Data

You have the following options for maintaining consumer master data:

- You can maintain the minimum number of fields for consumer master data maintenance on a tab [Ext.].

- You can maintain all fields for consumer master data maintenance on an extended tab with additional tab pages.

When you maintain consumer master data, you can switch between these options without leaving the transaction. As for customer master data maintenance, standard tabs appear as defaults or you can create your own tab layouts for both consumer master data maintenance options.

Prerequisites

In customizing for *Business Partners*, you can create your own tab layouts for consumer master data maintenance. You do this in the activity *Create Tab Layouts for Consumers*.

Activities

Processing Operative Business Transactions

- Document Entry

    You have not maintained sales area data for a consumer. During document entry, the sales area data is copied from the master data of the reference customer.

- Partner Determination

    When you create an order, for example, partner functions are determined as follows:

    – You have not maintained sales area data for a consumer.

    The following partner functions are automatically assigned to the consumer who is ordering:

    - Sold-to party

    - Payer

    - Bill-to party

    - Ship-to party

    The reference customer is used to determine other partner functions, for example:

    - Forwarding agent

    - Employee responsible

    – You have maintained sales area data for a consumer.

    All partner functions are determined from the master record for the consumer.

- Output

    You have to set output determination for consumer master data processing using the condition technique (that is, the print proposal does not originate in the customer master data).

Additional Information

Creating and Changing Business Partner Master Data [Ext.]

Partner Determination in Sales and Distribution (SD-BF-PD) [Page 153]

Processing Customer Master Records

To call up the individual functions in the table, choose the following path from the SAP R/3 screen: *Logistics → Sales and Distribution → Master Data → Business Partners → Customer*

Function	Menu path	What you should know
Creating a Customer Master Record for Sales and Distribution	→ *Create → Sales and Distribution*	See Creating Customer Master Records [Page 38]
Creating central customer master record, for Sales and Distribution and Accounting	→ *Create → Whole*	Enter a company code in the entry screen. See Creating Customer Master Records [Page 38]
Changing customer master record, sales and distribution view	→ *Change → Sales and Distribution*	Enter a sales area in the entry screen, for which the changes are applicable. If you do not enter a sales area, the system displays only the general data.
Change central customer master record (Sales and Distribution and Accounting view)	→ *Change → Whole*	Enter a company code and a sales area in the entry screen.
Displaying customer master record, sales and distribution view	→ *Display → Sales and Distribution*	
Displaying central customer master record (Sales and Distribution and Accounting view)	→ *Display → Whole*	
Changing an account group	→ *Changing an account group*	See Changing Account Groups [Page 45]
Mark the customer master record for deletion	→ *mark for deletion*	See Deleting Customer Master Records [Page 41]

You often need to enter a valid sales area in the entry screen for customer master record maintenance. There are two buttons to help you with this entry.

- You can use the button *All sales areas*... to select one of the sales areas created in the system

- You can use the button Customer sales areas ... to display all sales areas valid for the customer and then select the required sales area

Additional Functions

When processing a customer master record, you can execute other functions such as creating text or setting blocks. When you are in display mode, you can only display these functions.

To call up the individual functions in the table, choose *Extras* in the *Change Customer* or *Display customer screen*.

Function	Menu path	What you should know
Blocking	→ Blocking data	You can process blocks for the transactions • Sales order • Delivery • Billing document • Sales support for example.
Deletion indicators	→ *Deletion indicators*	The company code data can be marked for deletion separately from the sales and distribution data.
Texts	→ Texts	Different text types and the first line of the text are listed. By double clicking on the first line you reach the detail display for a text.

See also:

Displaying Additional Information for Customer Master Records [Page 40]

Creating Customer Master Records

Use

You create a customer master record when you start a business relationship with a new customer.

You can find out how to call up maintenance of the customer master under Processing Customer Master Records [Page 36].

Procedure

1. Choose an account group such as sold-to party from the *Account group* field in the *Create customer: Entry* screen.

2. Enter a customer number in the customer field or leave it empty, depending on whether external or internal assignment is set for the account group.

3. Enter a sales area:

   − Sales organization

   − Distribution channel

   − Division

   By selecting *All sales areas* you can find out which combination of sales organization, distribution channel, and division is possible for the customer.

4. Press *Enter.*

   You reach the *Create Customer: General data.*

   The customer master screens are divided into tab pages. You can enter the required data in whichever combination you want.

   − Address

     Enter the address data.

     Enter a name in the field *Search term* which will later make it possible for you to retrieve the customer master record using a matchcode.

   − Control data

     Enter data for account control and control processing. If the customer comes from an EU country, you must enter a sales tax number.

   − Contact person

     Here you can enter data on the contact persons. You can use the buttons to enter additional data for each contact person, for example, visiting times, etc.

5. To enter sales-specific data, choose *Sales area data.*

   You reach the *Create Customer: Sales area data* You can enter the following data on the tab pages:

   − Sales

     Enter the data for pricing here.

−   Shipping

   Enter the shipping priority and shipping requirement.

−   Billing document

   Here you can enter the delivery and payment requirements.

−   Partner functions

   Define the possible partner functions for this customer and the business partner, that should be automatically proposed in a sales document such as a sales order. These functions could be, for example, contact partners, sales executives, different payers and so on.

   You can display additional information, for example, on the account group, when processing the data. You can find further information under Displaying Additional Information on Customer Master Records [Page 40].

6. If you want to work in the central view, you can enter company code specific data using the *Company code data* button.

7. Save your data.

   The following message is displayed at the bottom of the screen:

   The customer <Customer number> was created in the sales area <Sales organization> <Distribution channel> <Division>.

   Create with reference

   If a customer master record already exists with similar data, you can use this one and cut down on the time taken to enter data.

   Enter the number of the customer whose master record you wish to use as a reference in the *Customer* field in the *Reference* screen area of the entry screen.

   If you only enter the customer number in the reference section, the system will only copy the general data into the new customer master record. If you also enter data on the sales area, the sales and distribution data will also be copied. Only data, which can be identical for both master records, is copied. For example, address and unloading points are not copied, while country, language and account group are. You can change all copied data.

   Create an already available customer master record for a new sales area

   If you create a customer master record for a customer, for which a customer master record already exists in another sales area, then use the customer that has already been created as a reference. In this case you do not need to enter the general data for the second master record again.

See also:

Logistics – General: Business Partner Structure of the Master Data in the Business Partner Record [Page 25]

General Sales Master Data [Ext.]

Displaying Additional Information on Customer Master Records

Use

If you need special information on a customer master record, such as the name of the user who created the customer master record, or the sales areas, you can display these.

This display functions regardless of whether you are in the display or change screen.

Prerequisites

You are now in one of the screens for customer master record maintenance, for example *Display customer: General data*

Procedure

Function	Menu path	What you should know
Display the person that set up the master record	*Extras → Management Data*	
Display account group	*Extras → Management Data*	
Display information on the account group	*Extras → Account group information → Number ranges*	This displays • whether the account group identifies a one-time customer • whether internal or external number assignment is defined for the account group • which number interval has been defined for the account group
Display sales areas for which the customer has been created	*Extras → Sales Areas → Customer Sales Areas*	

Deleting a Customer Master Record

You mark a customer master record for deletion if, for example, you no longer maintain business relationships with the customer. By using the deletion indicator you mark the customer master record, so that the corresponding reorganization program later recognizes this master record and deletes it from the file. The master record is only deleted after all dependent data has been deleted.

The deletion indicator can be recognized by warning and error messages (for example, when entering a sales order).

Steps

To mark a customer master record of a sold-to party for deletion, use the following steps:

1. In the SD Master Data Screen [Ext.] select, *Business partners* →*Sold-to Party* →*Mark for deletion*.

   You reach the *Mark for Deletion Customer: Initial Screen.*

2. Enter the number of the sold-to party that you would like to mark for deletion.

   If you specify a sales area, you can mark the customer for deletion for selected sales areas on the next data screen. If you do not specify a sales area, you can mark the customer generally for deletion, i.e. for all sales areas, on the next data screen.

3. Press ENTER.

4. Set the deletion indicator.

5. Save the customer master record with *Save*.

   You return to the screen *Mark for Deletion Customer: Initial screen* and receive the message in the message area *Changes have been made*.

Removing the Deletion Indicator in a Customer Master Record

You can cancel a block in a customer master record by removing the block indicators. To do this, proceed exactly as if you wanted to set a deletion indicator. As soon as you reach the data screen *Mark for Deletion Customer: Details Screen,* you can remove the indicator and save the master record. You receive a message that the changes have been made. The deletion indicator has been removed.

You can also set a deletion indicator when you are in the customer master record by selecting *Extras* → *Deletion indicators* in the customer master record change mode and then entering the deletion indicator.

Blocking a Customer Master Record

A customer master record can be blocked, for example, when you want to temporarily stop business relations with a customer.

Steps

To block the customer master record of a sold-to party, for example, use the following steps. The procedure is the same for the other partner functions.

1. In the SD Master Data Screen [Ext.] select, *Business partners → Customer hierarchy →Block*.

   You reach the *Block/Unblock Customer: Initial Screen.*

2. Enter the number of the sold-to party you would like to block.

   If you do not specify a sales area, you can set a general block for all sales areas on the following data screen. If you specify a sales area, you can set the blocks for selected sales areas.

3. Press ENTER.

   You reach the *Block/Unblock Customer: Details* screen.

4. Select a sales order block, a delivery block or a billing block or all of them by using the appropriate keys.

   You can use predefined keys to indicate the reasons for block, and to determine the blocking type. It is possible, for example, to block the processing of credit memo requests for a particular customer, perhaps until credit difficulties are resolved.

5. Save the changes using *Save*.

   You return to the initial screen *Block/Unblock Customer: Initial Screen* where the following message is displayed: Changes have been made.

Unblocking Customer Master Records

You can cancel a block in a customer master record by removing the block indicators. First use the same steps as for blocking, as described above. As soon as you access the data screen *Block/Unblock Customer*: Details screen, you can remove the existing block indicator and save the master record. You receive a message that the changes have been made. The block is canceled.

You can also block a customer master record in the customer master record itself by selecting *Extras → Blocking data* in the customer master record change mode, and then entering the appropriate keys on the subsequent screen.

Displaying Changes in Customer Master Record

You can display all changes which have been made in a customer master record. You can display changes in the display mode and in the change mode. There are two ways of doing this:

- By using the function *Display changes* in the initial menu.

- By displaying the changes in the customer master record.

Steps

Displaying Changes to Sales and Distribution Data

To display changes to sales and distribution data in the customer master record for, for example a sold-to party, proceed as follows:

1. In the SD Master Data Screen [Ext.] select, *Business partners* →*Sold-to Party* →*Display changes* →*Display changes*.

   You reach the *Customer Account Changes: Initial Screen*.

2. Enter the customer number. In addition, you can enter criteria such as the sales area and the user who made the changes as search terms.

3. Press ENTER.

   You reach the screen *Customer Changes: Changed Fields* screen. The system lists the changed fields. The following functions are available to you:

   − You can display the changes made to a field by placing the cursor on the corresponding line and selecting *Edit* → *Choose*.

   − You can display all changes made to a customer master record by selecting *All changes*. You reach the screen *Customer Changes: Overview* where you see a list of the changed field entries, including the date, and the old and the new value.

4. Select Back until you return to the initial screen.

Displaying Changes to all Data

To display changes to all master record data (accounting data and sales and distribution data), proceed as follows:

1. In the SD Master Data Screen [Ext.] select, *Business partners* →*Sold-to Party* →*Display changes* →*Display central*.

   You reach the *Customer Account Changes: Initial Screen*.

2. Enter the customer number. In addition, you can enter criteria such as the sales area, the date from which you want to check for changes, the company code, and the name of the user who made the changes as search terms.

3. Select ENTER.

   You reach the screen *Customer Changes: Changed Fields* screen. The system lists the changed fields. You can perform the functions described in the above section.

4. Select Back until you return to the initial screen.

Displaying Changes for Multiple Customers

You can also use the *Display changes* function to display changes to customer master data for more than one customer. This is done as follows:

1. In the SD Master Data Screen [Ext.] select, *Business partners →Sold-to Party →Display changes →Multiple customers*.

    You reach the *Display of Customer Changes* screen.

2. Enter the range of customer names or numbers which you want to check. In addition, you can specify search terms such as the date from which you want to check for changes and the user who made the changes.

3. Specify the data (general, financial accounting, sales and distribution) which you want to check for changes by marking the appropriate fields. Then enter the corresponding organizational data as required. You can limit the field group(s) which are to be checked.

4. Indicate how you want the list to be sorted by entering the appropriate sort method in the *Sorting* field. If you want the technical names of the fields to be displayed in the compiled list., mark the *Technical field names* field.

5. Select ENTER.

    You reach the *Customer Changes:Changed Fields* screen. The system lists the changed fields.

    You can search within the list for, for example, records changed on a on a particular date or for a particular customer by selecting *Edit → Find.* A dialog box appears in which you can enter a search term which suits your purposes (the creation date or customer name, for example).

6. Select Back until you return to the initial screen.

Display in the Customer Master Record

You can also display the changes in the customer master record when you are in the change or display mode by selecting either *Environment → Field changes* or *Environment → Account changes.*

Changing an Account Group

If, for example, a customer who has always fulfilled the function of a payer then takes on the role of a sold-to party, you have to assign the new function to the customer. However, since screen and field selection in the customer master record are controlled by the account group, you can only assign the other function by changing the account group.

> Changes to the account group and the accompanying partner functions can only be made from a lower level to a higher level. For example, this means that a sold-to party cannot be assigned the function of a payer as fields which have already been maintained for this sold-to party would have to be masked. However, you can assign the sold-to party function to a payer.

Account Groups Which can be Changed

You can change the account group for the following partner functions:

- Ship-to party

- Bill-to party

- Payer

The following topic explains how you change the account group for a payer.

Steps

To change the account group of a payer, proceed as follows:

1. In the SD Master Data Screen [Ext.], select *Business partners* → *Payer* →*Change account group*.

    You reach the *Change Account Group* screen.

2. Enter the number of the payer whose account group you wish to change and press ENTER.

    You reach the dialog box *Company Codes/Sales Areas by Customer*. It shows you which company codes and sales areas for this payer you must maintain after you have changed the account group.

3. Press ENTER.

    You reach the *Change Account Group Customer: Initial Screen* dialog box which informs you of the account group of the previous partner function. Here, you enter the account group of the new partner function you wish to assign to the payer.

4. Enter the required account group in the field *New account group* and press ENTER.

    If fields need to be maintained as a result of the new account group, you reach the dialog box *Change Account Group: Critical Field Groups,* in which the field groups and fields to be maintained are listed.
    If the window is not displayed, no fields need to be maintained and you can proceed to Step 7.

5. Press ENTER.

Changing an Account Group

You reach the *Change Account Group* dialog box where you can change the account group if you made an error previously.

6. Check your entry and press ENTER.

   You branch to the customer master record where you can maintain the new fields for the new account group.
   If the customer has been created for several company codes/sales areas, master record maintenance is carried out here for the company code/sales area which was displayed first in the dialog box *Company Code/Sales Areas by Customer*.

   You only branch directly to customer master record maintenance if you have the authorization to change master records. Otherwise, these fields must be maintained at a later point in time by someone who has the authorization to do so.

7. Maintain all the screens in the customer master record which you feel are important. Maintain all the mandatory fields at least.

8. If you press ENTER after having reached the last screen, a dialog box is displayed in which you can save your data.

9. Select yes and press ENTER to save your data.

   You receive a message informing you that the account group of the customer master being processed has been changed.

10. Press ENTER.

    You return to the *Change Customer Account Group : Initial Screen* and you receive a message informing you that the changes have been saved.

You have now completed the maintenance of the new fields in the customer master for the first company code/sales area. If the customer has been created for several company codes/sales areas, maintain the fields for the remaining company codes/sales areas as well. The company codes/sales areas for the customer are displayed in the dialog box *Company Codes/Sales Areas by Customer* (see Step 3).

It may make sense to block the customer until all the necessary data has been maintained.

Comparing Customer Master Records

Steps

Customer master records are created and maintained in Financial Accounting and in Sales and Distribution. In some cases, a customer master record may have been created for a customer in SD but not in FI and vice versa. There is a program which determines which customer records have been maintained in one of these applications but not in the other.

To perform this function for the sold-to party, for example, proceed as follows:

1. In the SD Master Data Screen [Ext.] select, *Business partners* → *Sold-to party* →*Master data comp*.

   You reach the selection screen.

2. Enter the range of names or numbers of the customers for whom you want to check the master records.

3. If you want to create a list of customers for whom master records have been created in SD but not in FI, specify a sales area in the *Details specific to Sales and Distribution* section of the screen and activate the *Not in FI* button in the *Selection parameters* section of the screen.

   If you want to create a list of customers for whom master records have been created in FI but not in SD, specify a company code in the *Details specific to Financial Accounting* section of the screen and activate the *Not in SD* button in the *Selection parameters* section of the screen.

4. Enter further selection criteria if you want to limit the scope of the search.

5. You can enter a freely definable text in the *Additional heading* field. This text is displayed in the page header of the compiled list.

6. Select *Program* → *Execute.*

   Depending on your selection criteria, you obtain a list of customers for which customer master records exist in SD but not in FI or vice versa.

   You can search within the list for, for example, records created on a particular date or for a particular customer by selecting *Edit* → *Find.* A dialog box appears in which you can enter a search term which suits your purposes (the creation date or customer name, for example).

7. Select `Back` until you return to the initial screen.

Customer Hierarchies

Use

With customer hierarchies you can now create flexible hierarchies to reflect the structure of customer organizations. For example, if your customer base includes multi-level buying groups, cooperatives, or chains of retail outlets, you can create hierarchies to reflect the structure of these groups. You use customer hierarchies in order and billing document processing for partner and pricing determination (including rebate determination) and for creating statistics.

You can use customer hierarchies to assign price conditions and rebate agreements to one of the customer's subordinate levels, to ensure that all subordinate levels are valid for the customer. For each node that you indicate as relevant for pricing, you can create condition records for pricing. If one or more nodes in a hierarchy path for a sales order contain pricing data, this is automatically taken into account in pricing.

Integration

You can also use customer hierarchies for evaluations in profitability analysis (CO-PA) and in the Sales Information System (SIS):

To evaluate customer hierarchies with the sales information system and in the profitability analysis, you can maintain the field *Hierarchy assignment* on the *Marketing* tab page in the customer master record for a hierarchy customer. Here you can maintain 10 features for hierarchy customers (HIEZU01 to HIEZU10). You can use these to evaluate hierarchies statistically with up to 10 levels. (Field catalogue VHIE)

> Note that the hierarchy assignment is statistical. If you change the customer hierarchy, you may need to change the hierarchy level manually in the customer master record in the *Hierarchy assignment* field.

Features

A customer hierarchy is a flexible structure consisting of **customers**. Each customer - with the exception of the uppermost customer - refers to another customer at a higher level in the hierarchy (known as a **higher-level customer**). Customers that are assigned to higher-level customers are known as **dependent customers**.

To be able to display organizational elements, that are not independent partners, you can assign pure **hierarchy nodes** (account group 0012) in the hierarchy. Specific data can be assigned to a hierarchy node (for example, address, price conditions, rebate agreements) and this then applies to all subordinate customers.

As all nodes in a hierarchy are time-dependent, you can adapt the customer hierarchy to changes in the structure of a customer at any time.

- Customers can be reassigned in a hierarchy When reassigning a customer, all subordinate customers are moved with it

- You can add new customers to a hierarchy When you assign a new customer to an existing hierarchy, all pricing data, that applies to the higher-level hierarchy node, is automatically copied from the customer

- You can also remove customers from the hierarchy

See also:

Customer Hierarchies and Pricing

Customer Hierarchy Type

Definition

You can use the customer hierarchy type to determine the following:

- the purpose of a specific hierarchy (for example, pricing, statistics)

- which account groups are permitted in the hierarchy

- which organizational data is permitted in the hierarchy

Use

When you maintain a hierarchy, enter the corresponding hierarchy type.

Customer hierarchy type A is provided in the standard system (standard hierarchy). You can define your own hierarchy types in Customizing for sales and distribution under *Master data → Business partner → Customer → Customer hierarchy → Define hierarchy types.*

Organizational Data in a Customer Hierarchy

Use

When you create or maintain a hierarchy node, you must enter organizational data. Just as with customer master records, you specify the sales area: sales organization, distribution channel and division.

The sales area data can differ.

> Customers maintained for different divisions may be assigned to the same higher-level node.

Activities

In Customizing for Sales and Distribution under *Master data → Business partners → Customer Customer hierarchy → Assign sales and distribution areas*, you can determine which combinations of sales and distribution areas are permitted for each customer hierarchy type.

When you assign a customer to a node, the system checks to make sure the combination of sales area data is valid.

Account Groups in Customer Hierarchies

Use

The master records in the customer hierarchy are controlled by their <u>account groups.</u> You can use the same account groups for customer hierarchies as those used for partner determination in sales and distribution.

In Customizing for sales and distribution you specify,

- which account groups are valid for a particular hierarchy type

- which of these account groups are valid for **higher-level customers** in the hierarchy

> For example, you can exclude the possibility of defining ship-to parties as higher-level nodes, since ship-to parties play no role in pricing.

For customer hierarchies there is also an individual account group available: the account group **Customer hierarchy nodes** (0012). In a master record for this account group you can specify specific data that is only required for one node in a customer hierarchy, that does not take on any active role in order processing such as sold-to party, goods recipient etc.

Activities

The account group settings for the customer hierarchy can be made in Customizing for Sales and Distribution under *Master data → Business partner → Customer → Customer hierarchy → Assign account groups.*

If required, you can change the account group for a customer in the customer hierarchy, for example, you can assign the account group *Sold-to party* to a customer with account group *Customer hierarchy nodes*, that **cannot issue** orders, so that he can issue orders. For further information, see Changing An Account Group [Page 45]

Creating Customer Hierarchy Nodes

Use

You use customer hierarchy nodes as customers in a customer hierarchy, if you require an element to which data can be defined specifically for the customer hierarchy (for example, pricing or rebate relevance) but which does not take on an active role in order processing such as for example, a goods recipient.

You can define restricted, customer hierarchy specific data in the master record of a customer hierarchy node, but no data that is necessary for overall sales and distribution processing or for accounting.

In terms of creating and maintaining master data for nodes in a hierarchy, you proceed just as you would with customer master data. For further information, see Creating a Customer Master Record. [Page 38]

Procedure

To create a master record for a customer hierarchy node, proceed as follows:

1. In the SD Master data screen, select, *Business partners → Hierarchy nodes → Create*.

   You reach the entry screen for creating a customer master record. The account group *Hierarchy nodes (0012)* is automatically proposed.

   Alternatively you can choose *Business partner → Customer → Create* from the *Sales Master Data* screen and then select the Hierarchy nodes (0012) account group.

2. Enter the sales area, but leave the Customer field blank (in the standard version, the customer number is assigned automatically by the system). Press *ENTER.*

   You reach the *General Data* view for customer master maintenance. Enter the following data on the tab pages:

   - Address

     Name and address data

   - Marketing

     Assignment to the sales information system (SIS) and profitability analysis (CO-PA)

   - Contact person

     If required, name and other data to contact persons

   In the *sales and distribution* view, enter on the

   - *Billing document* tab page

     Whether the node is relevant for pricing and rebate processing

3. Save your work.

Validity Data for Assignments in Customer Hierarchies

Use

When creating or changing a hierarchy node, enter a valid-from date. For example, a customer advises you that the buying structure of his organization will change, effective the beginning of next year. You want to restructure the customer hierarchy in advance.

You maintain the hierarchy, changing the assignment of nodes as necessary and entering the valid-from date that corresponds to the change at the customer. Until that time the existing node assignments continue to function as before. In addition, you can also specify a valid-to date for a node. If you leave the valid-to date blank, the system automatically proposes 12/31/9999.

> You may want to define a temporary reassignment for a node for which you have already defined a future change. The following example shows how the system re-establishes the validity period in this case. There are two assignments for node 4712: a current assignment and a future assignment that becomes valid on the 01.01. 1995. The validity periods before the temporary reassignment look like this:
>
> 4712 $-\{\}-\rightarrow$4711 (01.01.1993 - 31.12.1994)
> 4712 $\rightarrow$5000   (01.01.1995 - 31.12.9999)
>
> You create a third, limited change to the assignment: 4712 $\rightarrow$ 4000. The system automatically redetermines all three validity periods. The resulting validity data looks like this:
>
> 4712 $-\{\}-\rightarrow$4711 (01.01.1993 - 30.06.1994)
> 4712 $\rightarrow$4000   (01.07.1994 - 31.12.1994)
> 4712 $\rightarrow$5000   (01.01.1995 - 31.12.9999)

See also:

Changing Customer Hierarchies

Maintaining Customer Hierarchies

Prerequisites

To be able to use customers for customer hierarchies, you must have defined the following in Customizing for Sales and Distribution,

- which account groups are permitted for hierarchies

- which account groups are assigned at a higher-level in the hierarchy

- which sales and distribution areas are permitted for hierarchies

Process Flow

1. You create master records for each customer, that you want to use in the hierarchy.

   Depending on the function the customers have in the hierarchy and in order processing, create master records for Customer hierarchy nodes or for the sold-to party, payer and so on. You can find further information in Creating Customer Master Records.

   In the customer master record you can indicate whether the customer is relevant for pricing, rebate processing, profitability analysis (CO-PA) or evaluations in the sales information system (SIS).

2. You create a hierarchy, in which you assign the hierarchy customers for the higher-level customer.

   Normally the sold-to party or goods recipient are assigned to the lowest hierarchy level. You can, however, also assign a sold-to party to a node, that is at a higher level. For example, you could assign a particularly large branch of a chain of retail outlets to the regional office instead of to the local office.

3. You can maintain the hierarchy at a later date, by

   - assigning new customers (these customers are automatically assigned a current validity date)

   - reassigning available customers

   - changing the validity period of a customer for the hierarchy

   - removing customers, if required, from the hierarchy

Result

If you assign a customer in the hierarchy, the system creates a time-dependent **assignment** for this customer to the higher-level customer. When processing the customer hierarchy, you can change these assignments. You cannot change the customer master data. Changes in the customer master record are made in customer master record maintenance.

You can create special conditions or agreements for higher-level customers in the hierarchy. During order processing, the system takes into account automatically during pricing the current customer hierarchy and chooses the valid conditions.

Maintaining Customer Hierarchies

Example

In the following example, the customer hierarchy represents the Smith nation-wide buying group. The central office - Smith Central - is defined as the top node in the hierarchy. The regional offices for the buying group, Smith south, central and north east, are defined as nodes, whereby Smith north is a higher-level node to Smith central and Smith north east.

Some nodes, for example, Smith north, are indicated as relevant for pricing, ie. conditions that are valid for them, are also valid for the customers assigned to them.
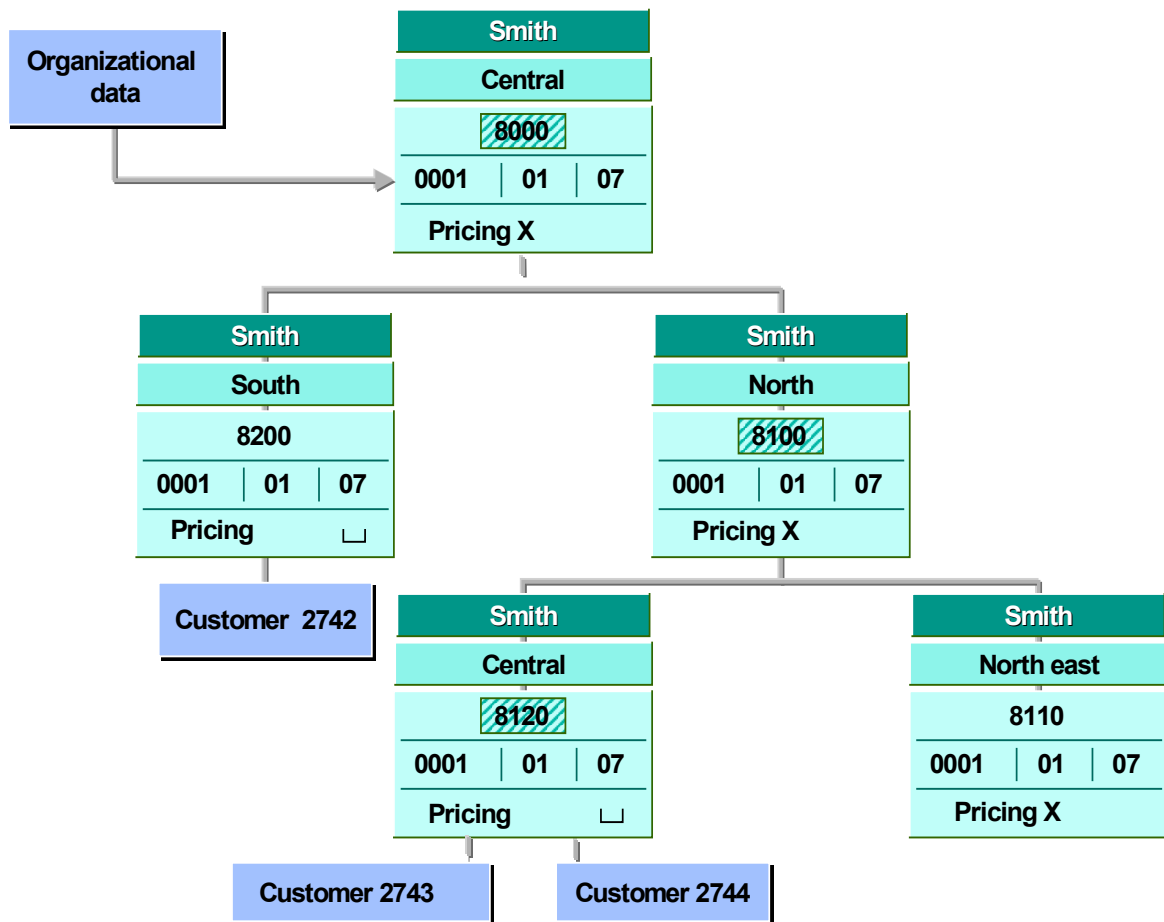
Customer hierarchy, organizational data and pricing relevance

See also:

Account groups in customer hierarchies

Calling Up Customer Hierarchy Maintenance

Procedure

1. From the Sales and distribution – Master Data menu, choose *Business partners* → *Customer hierarchy* → *Edit.*

   The selection screen for displaying the customer hierarchy appears.

2. You must enter the following data in the selection screen:

   – the required customer hierarchy type

   – a validity date

   – a customer number, which is assigned to the hierarchy

   The following points are recommended:

   • To display the complete customer hierarchy, enter the number of the highest node. If you only want to edit part of the hierarchy, enter the number of a customer on the corresponding lower level.

     To improve performance, we recommend that you enter a customer at the lowest possible hierarchy level.

   • There is a search help which automatically takes into account the hierarchy type and the validity date entered. It only displays customers that are valid at a given time for the hierarchy type.

   • If you want to create a new customer hierarchy, then enter a customer in the Customer field, which you want to assign to the hierarchy.

     If you do not enter a sales and distribution area, the system determines one automatically.

3. Choose *Execute*.

Result

The screen *Maintain customer hierarchy* screen.

In the left-hand side of the screen the customer hierarchy is displayed in an overview tree:

The customer entered in the selection screen appears with all higher-level and lower-level nodes, that are valid at a given point. Customers on the same hierarchy level as the customer entered and customers on a different level, that are not directly connected to the originally entered customer are not displayed.

In the **right-hand side of the screen** you can see detailed information on the customer selected such as the sub-ordinate customers assigned to it and the validity period.

In the right lower part of the screen you can see the application log in which the system messages are collected and displayed during processing of the customer hierarchy.

Creating Customer Hierarchies

Prerequisites

You must have created master records for the customers that you want to use in the hierarchy. For further information, see Creating Customer Master Records [Page 38] or Account groups in Customer Hierarchies [Page 52].

You reach Customer Hierarchy Maintenance [Page 57].

Creating Entry Nodes

If you want to create a new customer hierarchy, the area of the screen in which the overview tree is normally shown, is empty. Proceed as follows:

1. In the *customer* area in the right-hand side of the *Assignment* screen, enter the number and the sales area of the customer, that should display the uppermost nodes for the customer hierarchy.

    If you create the node at the highest level of the customer hierarchy, you do not need to enter data in the *Higher-level customer* area.

2. Enter a validity period for the uppermost hierarchy node.

3. Choose *Copy.*

    The system shows the customer at the highest point in the hierarchy.

Assigning Further Hierarchy Customers

1. To extend the hierarchy, mark the customer that you want to assign to the customer and choose *Customer → Assign.*

    To mark a customer, click on the symbol at the beginning of the line, so that the whole line is highlighted.

    The customer data appears in the right-hand side of the *Assignments* screen area in the *higher-level customer* area.

2. Enter in the area below the number and the sales area of the customer, that you want to assign. A validity period is proposed that you can overwrite.

    Choose *Copy.*

    The system shows the customer at the corresponding point in the hierarchy.

3. Repeat these steps for each customer that you would like to assign in the hierarchy.

Changing Customer Hierarchies

Use

Customer hierarchies are flexible and time-dependent, as organizations are constantly undergoing changes.

> A customer may reorganize its structure and assign some retail stores from one region to another.
>
> Or a customer may merge several of its area divisions into one new unit.

If the structure of your customer organization changes, you can show these changes in the customer hierarchy by

- assigning new customers

    For further information, see Creating a Customer Hierarchy. [Page 59]

- reassigning available customers

- changing the validity period of a customer for the hierarchy

    You can use this function to display future changes to the customer hierarchy.

- removing customers from the hierarchy

    For further information, see Removing Customers from the Hierarchy.

Prerequisites

You reach Customer Hierarchy Maintenance [Page 57].

Reassigning Customers

1. Select the customer that you want to reassign and choose *Customer → Ressign.*

2. In the right-hand side of the screen enter the number and the sales area of the target customer and choose *Copy.*

    > You can reassign a customer using drag & drop.

Result

The customer appears in the new place in the hierarchy from today's date onwards.

The indicators you enter to show whether the customer is relevant for pricing, rebates or statistics, only apply automatically for newly assigned customers.

If other customers are assigned to the reassigned customer, these are automatically reassigned as well.

Changing Validity Periods

1. Select a customer and choose *Customer → Assignment → Change Validity.*

2. Enter a new validity period in the right-hand side of the screen and choose *Copy.*

Result

The customer is assigned to the higher-level customer from the new *valid-to date* to the new *valid-from date.*

Previous assignments retain their validity until the new *valid-from* date or from the new *valid-to* date.

For further information, see <u>Changing Validity data in a Customer Hierarchy.</u>

Removing Customers From the Hierarchy

Use

If a customer leaves your customer organization, remove this customer from the hierarchy.

Prerequisites

You reach Customer Hierarchy Maintenance [Page 57].

Procedure

1. Select the customer that you wish to remove from the hierarchy.

2. Choose *Customer → Remove.*

   The customer no longer appears in the hierarchy.

   If other customers are assigned to the customer, these customers are also removed from the hierarchy.

Result

As from today's date, the customer is no longer part of the hierarchy.

Assignment of the customer is deleted from today's date, the customer master record, however, still exists. If you want to delete a customer master record, you must do this in maintenance of the sales master data.

You can find further information on deleting customer master records under Marking Customer Master Records for Deletion [Page 41].

Deleting an Assignment in a Customer Hierarchy

Use

You can delete assignments in a hierarchy. When you make a deletion, the system reacts differently, depending on the validity period of the assignment. For example, other assignments may automatically be changed as a result of the deletion. The following scenarios describe possible system reactions:

- The valid-from date lies in the past.

    The system updates the assignment and sets the valid-to date to yesterday's date.

- The valid-from date is today's date or lies in the future.

    The system physically deletes the assignment.

- Other assignments exist for the nodes in question with adjoining validity periods.

    The system checks whether validity periods of the remaining assignments can be extended (see following example).

    The following assignments exist for the same node (one assignment effective now, the other later):

    4712 →4711 (01.01.1993 - 31.12.1994)

    4712 →5000 (01.01.1995 - 31.12.9999)

    If you delete the second assignment on 02/02/1994, the system changes the valid-to date of the first assignment to 12/31/9999. However, if you delete the second assignment on 02/02/1995, the system changes the valid-to date of this assignment to 02/01/1995. If you delete the first assignment on 02/02/1994, the system advises you that a future validity for this assignment exists.

Analyzing Errors during Customer Hierarchy Maintenance

Use

The system informs you about errors occurring in the customer hierarchy maintenance. The system uses the application log which lists the errors, warnings and success messages.

For further information, see Application Log. [Ext.]

Updating a Customer Hierarchy

Use

If you change data in a customer master record (for example, the pricing indicator) that is already assigned as part of a customer hierarchy, the system does **not** automatically update the data in the hierarchy assignments. You must update the customer hierarchy in the next call up.

You have two options:

- Update the subhierarchy

    Updating of part of a hierarchy is quicker and puts less strain on the system.

- Update the whole hierarchy

    When updating the whole hierarchy, all valid customers in the customer hierarchy on one date are updated. The customer data, that cannot be displayed on the screen during processing, as there is less space for displaying on the entry screen, is also updated.

Prerequisites

You reach .

Update the subhierarchy

1. Select the highest customer whose data you would like to update.

2. Choose *Hierarchy → Update → Subhierarchy.*

    The marked customer and all subordinate customers are updated.

Update the whole hierarchy

1. Set the cursor in the overview tree.

2. Choose *Hierarchy → Update → All.*

    The system confirms that all assignments were updated.

Customer Hierarchies in Sales Order Processing

Use

Customer hierarchies are used to determine pricing and rebates in sales and billing documents. When you process a sales order for a customer who is assigned to a customer hierarchy, the system automatically determines the corresponding **hierarchy path**.

Hierarchy Paths

The hierarchy path shows the relationship of a customer to the chain of nodes all the way up to the top level of the hierarchy. The system uses partner determination to build the hierarchy path in the sales order.

Partner Determination for Customer Hierarchy Nodes

Purpose

During sales order processing, the system automatically determines special partner functions in the partner data of the document. The system uses these partner functions for the following purposes:

- To determine the hierarchy path and store it in the document

- To store hierarchy data per item (the pricing of individual items in the order may relate to different hierarchy nodes)

- To make it possible to display sales orders or invoices by node

The system automatically determines a default partner function (in the standard system 1A) in the sales order depending on the hierarchy type.

The system then uses partner determination to find higher-level partner functions, until it has determined the complete hierarchy path for the sales order. The standard version of the SAP R/3 System includes four standard partner functions for this purpose: **1A - 1D.** You can add as many additional partner functions as you require, up to a maximum of 26 levels.

Prerequisites

You have maintained the partner functions for the customer hierarchy (1A to 1..) in Customizing and assigned them to the partner determination procedure for the corresponding order type.

Process Flow

The following example shows how the system uses partner determination to determine the hierarchy path in a sales order.

Partner Determination for Customer Hierarchy Nodes

Customer hierarchy with hierarchy path

1. Customer 2743 in the customer hierarchy displayed places a sales order.

2. Using partner determination, the system creates the correct hierarchy path by searching for higher-level partners.

    The partner function 1A is defined in Customizing as the default partner function. The customer has the partner function AG (sold-to party).

3. The system defines the partner data from the hierarchy path determined in the order.

    In this example, the system determines the hierarchy path marked yellow and stores it as partner data in the sales order:

    Partner functions per hierarchy level

Customer	Hierarchy level	Partner function
8000	highest level	1D
8100	second level	1C
8120	third level	1B
2743	fourth level	1A

Displaying Higher-Level Partners in the Sales Order

Use

If you want to create a sales order for a customer, which is part of the customer hierarchy, you can display the higher-level partners (partner functions 1A, 1B, 1C and so on) on the partner screen of the sales order.

Procedure

1. Choose in the order *Goto* → *Header* or *Item* → *Partner.*

   You reach the *Partners* tab page.

2. In the *Scope of display* field on the above tab page, you have the following options:

   − All partners

      All partners involved in the order are displayed including the higher-level hierarchy partner.

   − All partners without the higher-level hierarchy partner

      The higher-level hierarchy partners are hidden.

   − Only higher-level hierarchy partners

      All higher-level hierarchy partners are displayed.

Customer Hierarchies and Pricing

Purpose

Customer hierarchies enable you to apply pricing and rebate agreements that are determined at a higher level than the customer. For each customer or node that you indicate as relevant for pricing, you can create condition records for pricing.

Prerequisites

You must create a pricing procedure in Customizing for sales and distribution for the condition types used in customer hierarchies. The standard version of the SAP R/3 System includes the following condition types for creating condition records in customer hierarchies:

Condition types

Condition type	Description
HI01	Percentage discount based on the node
HI02	Absolute discount based on material/node

These condition types have an exclusive indicator in the standard system, which means that if the same condition record is defined at different levels, the first valid record at the lowest level is chosen for these condition types.

You can also define individual access sequences for the condition types for customer hierarchies in Customizing.

Moreover, by using exclusion groupsyou can specify that if similar condition records exist at different levels of the hierarchy, the system takes the most favorable price or discount for the customer (regardless of which level in the hierarchy the pricing data comes from). For further information, see Condition Exclusion. [Ext.]

Process Flow

The following example explains how pricing is carried out in the customer hierarchy:
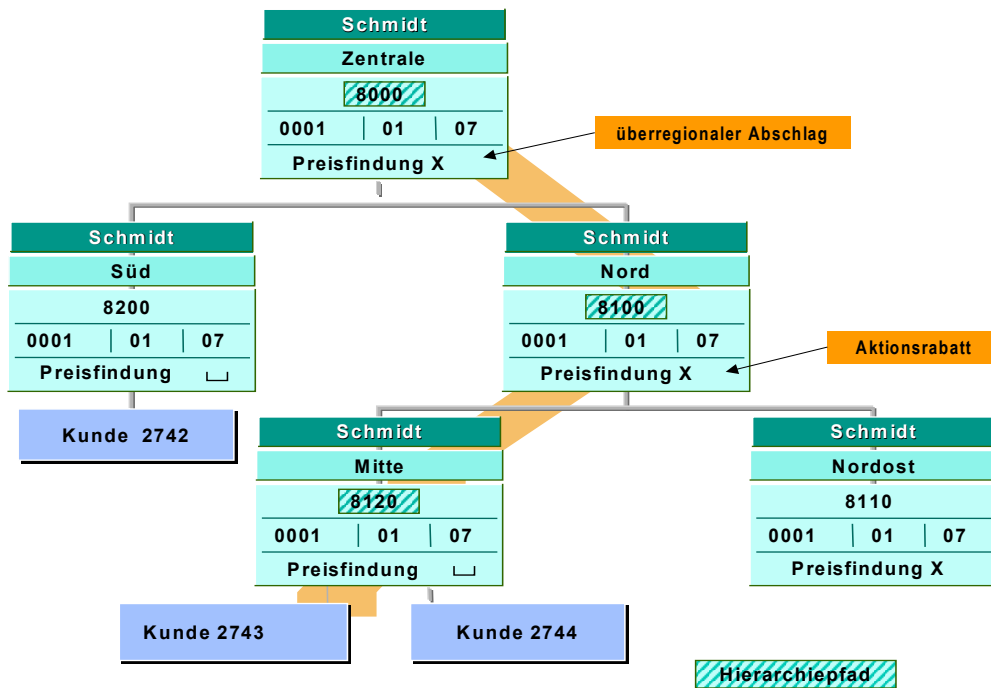
1. During negotiations, you establish a pricing agreement for a particular product line. You offer a national discount, available for all Smith stores. In addition, you offer a special promotional discount for Smith North.

2. You create the corresponding condition records for the Smith Central and Smith North nodes.

3. Customer 2743 issues an order. The system determines the current hierarchy path using partner determination:

    Smith Central → Smith North → Smith Central

4. The system searches every level of the hierarchy path for valid condition records, beginning at the lowest level.

    The system ignores the Smith Central node, as it is not relevant for pricing. There is a promotional discount in the master record for the Smith North node. Afterwards the system determines the national discount at Smith Central.

5. The system determines the price for the order. It takes into account all of the valid conditions in the hierarchy path.

Result

Customer 2743 receives the promotional discount and the regional discount.

Customer 2742 only receives the regional discount.

Products and Services

Use

Products and services are combined in the SAP R/3 System under the term **material**. All information necessary for the management of a material and its stocks, as well as its use, is maintained in the so-called material master record. This includes, for example, data on purchasing, on sales and on storage.

Different company areas and SAP modules access the material master records, which therefore must meet a wide variety of requirements. During sales processing, the system repeatedly accesses the material master records. It is one of the basic sources of data for sales processing. The material master record is accessed, for example, in the inquiry, in the quotation and in the sales order. Data in the material master record is also of great importance for shipping and billing. However, the data required for shipping, for example, is not the same as that required for sales or billing.

Material Types

Use

Material types in the SAP standard version are, for example, raw materials, trading goods, semi-finished products, finished products, or services. The material type represents certain features of materials in the system, and has important control functions: the material type is used, among other things, to group field selection functions for a material, or to define the screen sequence, the type of number assignment and number ranges during material master record maintenance. Depending on the material type, company areas maintain different data screens. This screen selection applying specifically to an application is called a "view".

The following are examples of possible material types in the SAP standard version:

- Trading Goods
- Non-stock Material
- Services
- Packaging Material

Trading Goods

Trading goods are movable goods intended for commercial exchange. Examples of trading goods are market goods, consumption goods and durable goods. Trading goods are always bought and re-sold by your company. The material master record for trading goods therefore always contains purchasing data and sales data. Trading goods are managed in the SAP R/3 System using the key HAWA.

Non-stock Material

Non-stock material includes materials that are not managed on an inventory basis (for example, small parts such as nails) though physically in stock. Non-stock materials are managed in the SAP System using the key NLAG.

Services

Services are represented and managed in the SAP System as materials. Services are immaterial goods that differ from other goods, particularly in that their production and consumption coincide. Services are generally regarded as non-transportable and non-stockable. Typical services are commercial services, transport services, bank and insurance services, goods from cultural organizations and the mass media, as well as services provided by the public security forces or the education and health sectors.

Since services cannot be stored, a material master record of this material type does not contain inventory data or inventory management data. No fields for gross weight, net weight or unit of weight are included in the basic data for a service, as are for other material types. Services are managed in the SAP R/3 System with the key DIEN.

Packaging Material

This material type includes all materials needed for packaging. For example, boxes or crates. Packaging materials are managed in the SAP R/3 System with the key VERP.

Other Material

Materials which cannot be assigned to any of the standard material types, can be maintained, as "Other material". Thus, besides standard material types (trading goods, finished products, services etc.) you can also create additional material types. When creating such a material, note that a material type must be entered on the first data screen. For standard material types, this entry is not necessary because the material type is selected in the menu.

Industry Sectors

Industry sectors indicate the assignment of a material to a certain branch of industry (for example, plant engineering and construction, chemical industry, mechanical engineering, and pharmaceuticals industry).

Use

Like the material type, the industry key also has important control functions. It determines, for example, the selection of data fields on screens or the screen sequence. The subdivision into different industry sectors is necessary because, for example, a material in the chemical industry, such as a chemical solution, differs from a material in mechanical engineering in its basic characteristics.

In the standard version of the SAP R/3 System, the following industry sectors have been defined for the material master record:

Industry Sectors in the Standard Version of the SAP R/3 System:

Industry key	Industry sector
A	Plant engineering and construction
C	Chemical
M	Mechanical engineering
P	Pharmaceutical

Organizational Structure of the Material Master Record

Use

Each company has a specific structure and a typical organization. This is represented in the SAP R/3 System as an organizational structure. A certain part of the organizational structure is relevant for every company area.

Organizational Levels

An organizational structure consists of several organizational levels. These are used by different company areas. The organizational levels *sales organization* and *distribution channel* are, for example, used exclusively by sales and distribution while *plant* and *storage location* are shared by sales and distribution and materials management.

The sales and distribution data for a material is managed at the organizational levels *client, plant, sales organization* and *distribution channel*. Therefore, you have to enter the plant, the sales organization and the distribution channel for which you want to change a material master record.

> If a material which is available both in plant 1 and plant 2 is to be changed in plant 1, enter only that plant number. You then only get the plant data for this material in plant 1. If you only enter the sales organization and the distribution channel, then you get the sales-specific data without plant data.
>
> Using the organizational level *distribution channel*, you can, for example, sell materials with different conditions. The prices agreed for distribution channel *wholesale trade*, for example, are not the same as those for distribution channel *retail sales*.

Data Structure of the Material Master Record

Use

All data and information entered for a material is stored in the data structure of the material master record. For sales and distribution, general data and sales and distribution data in the material master record are relevant.

General data

General data in a material master record is identical for every sales organization, plant and storage location. General data, which is of importance for all departments, is always entered by the department which creates the first part or view of the master record. General data contains, for example, the material number that identifies it, the material description, units of measure, value, weight, volume and divisions.

Sales and Distribution Data

Sales and distribution data in a material master record is defined for a specific sales organization and distribution channel. The delivering plant, the assignment to the sales group, grouping terms for price agreements and sales texts, for example, are included in sales and distribution data. The fact that a material is linked to a distribution channel allows the material to be sold with different conditions through the various distribution channels.

Sales and distribution data is divided into data that depends on the sales organization and data that depends on the plant:

- Sales organization/distribution channel data

  This data includes the delivering plant, the sales unit, the minimum order quantity and the minimum delivery quantity.

- Plant data

  This data applies to a plant and all its storage locations. Examples of plant data are MRP data, such as the safety stock quantity, the reorder level, or the shipping processing time.

Maintenance Status in the Material Master Record

Use

Every material master record has a maintenance status that indicates the department-specific view from which a master record is maintained.

The maintenance status is automatically updated and managed by the system.

As soon as a material master record, is maintained, for example, by sales and distribution, the indicator in the maintenance status is automatically set to V. If it is also maintained by purchasing, the system adds E to the maintenance status indicator. The same material master record can be maintained, for example, by sales and distribution and by purchasing, but not by accounting. The master record then would have the maintenance status V and E but not B (accounting).

You can display which departments have **not yet** maintained a material master record. For further information on this, see Maintaining a Material Master Record [Page 91].

Sales and Distribution Screens in the Material Master Record

Four screens in the material master record are relevant for sales and distribution:

- Sales 1

- Sales 2

- Sales/Plant Data

- Texts in Sales and Distribution

Use

The following overview includes a short description of the individual sales and distribution screens, and lists the important data fields found on these screens.

Sales and distribution screens	Description and important data fields
Sales 1	Basic data and units of measure (e.g. sales units, order quantities)
Sales 2	Material groupings and tax classification (e.g. product hierarchy, material pricing group)
Sales/Plant Data	Sales and shipping data (e.g. gross weight, loading group)
Texts in Sales and Distribution	Single-line or multi-line texts for sales documents, in several languages

Grouping Materials

Use

Materials can be grouped according to different criteria. This allows for easier management and better evaluation of materials with similar features. The standard version of the SAP Standard System does not provide exact criteria to differentiate between individual groupings. These result from company-specific applications. The materials can therefore be grouped by the company to meet their specific demands. The groupings are determined and defined by the system administrator. Contact him, if you have questions concerning the existing groupings.

In the standard SAP version the following groupings are possible, for example:

- Material Group

- Material group

- Product Hierarchy

Material Group

Goods with the same features (for example, nails) can be grouped using the field Material group. Unlike the product hierarchy, the material group does not contain different levels or possible combinations of goods. You can, however, use the material group to carry out different analysis functions.

The material group is defined by a nine-digit, alphanumeric key. It is not primarily of importance for sales and distribution, but is used mainly in materials management.

Material group

A further option for grouping materials is represented by the material pricing group. This can be used both for pricing as well as for evaluation and analysis. The material pricing group is defined by a two-digit, numeric key.

Product Hierarchy

The product hierarchy is used to group materials by combining different features. It is used for analyses and pricing. A product hierarchy can consist of up to eighteen characters. Its features can be combined in various ways. The following figure gives an example of how materials can be grouped using product hierarchies.

Characters 1-5	Electric devices 00001		Spare parts 00002
Characters 6-10	Drying machines 00001	Wet appliances 00002	. . . .
Character 11-18	Electriv ovens 00000001 │ Kitchen machines 00000002	Washing machines 00000001 │ Dish washers 00000002	....
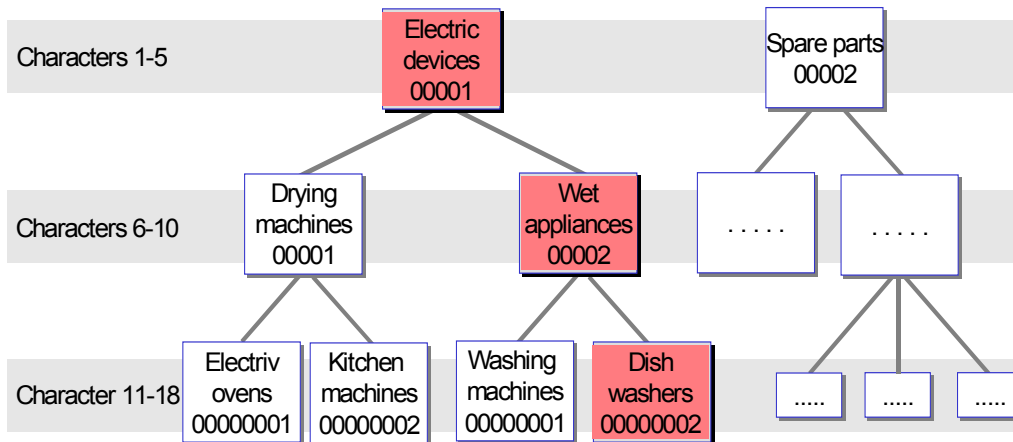
In this case, a dishwasher can be described by product hierarchy 00010000200000002. This series of characters states that dishwashers belong to the category electrical *appliances* (series of characters 00001, position 1-5), and also to *wet appliances* (series of characters 00002, position 6-10) and, finally, to *dishwashers* (series of characters 00000002, position 11-18).

Units of Measure and Quantity Specifications

Units of Measure

A material can be stored, transported and sold in various units of measure. In the SAP R/3 System, you can therefore define various units of measure which are maintained in the sales and distribution screens. However, you only need to maintain the fields of the units of measure if they deviate from the base unit of measure. If no other fields with units of measure are maintained, the system automatically takes the base unit of measure as a basis for its calculations. You can enter the following units of measure in the sales and distribution screens:

- Base Unit of Measure

- Alternative Unit of Measure

- Sales Unit

- Delivery Unit

Base Unit of Measure

Stocks of a material are managed in the base unit of measure. All quantity movements in other units of measure are converted automatically by the system into the base unit of measure.

Alternative Unit of Measure

As soon as units of measures other than the base unit of measure are used in a material master record, the system prompts you in a dialog box to enter a calculation factor to the base unit of measure, the so-called alternative unit of measure. The alternative unit of measure does not refer to an entry field in one of the sales and distribution screens. It is either requested in a dialog box or entered on a secondary screen, which you can access by pressing `F5 (Unit of measure)`. Several alternative units of measure can be defined.

If, for example, a product is managed in the base unit of measure "Piece" but is sold in the sales unit "Box", you must define the conversion factor. The alternative unit of measure can define, for example, that 1 box of this material contains 12 pieces.

Sales Unit

The unit of measure in which materials are sold is referred to as a sales unit (for example, piece or bottle). The value you define in the material master record is proposed during business transactions relevant for sales, such as the sales order. You can replace them with other alternative units of measure in the sales order.

Delivery Unit

The delivery unit refers to the unit in which materials can be delivered. Only exact multiples of the delivery unit can be delivered. For example, with a delivery unit of 30 bottles, 30, 60 or 90 bottles can be delivered, but not 100 bottles.

Quantity Specifications

Two different quantity specifications are used:

- Minimum Order Quantity

- Minimum Delivery Quantity

Minimum Order Quantity

The minimum order quantity refers to the minimum quantity the customer must order. A warning message appears if the minimum order quantity is not reached during order entry. The order can be entered in spite of the warning message.

Minimum Delivery Quantity

The minimum delivery quantity refers to the minimum quantity you must deliver to the customer. The minimum delivery quantity is automatically checked during delivery processing. A warning message appears during delivery processing if you enter a delivery quantity lower than the minimum delivery quantity. The delivery can be created in spite of this warning message.

Delivering Plants

The delivering plant refers to the plant from which the goods are to be delivered to the customer, within a specific sales organization and distribution channel. The plant can be automatically proposed by the system when processing a sales order, if it has been maintained in one of the master records. It can be derived from:

- the customer/product info record

- the customer master record of the ship-to party

- the material master record.

The order of priority is as in the list above.

Item Category Groups

Use

The item category group determines how a material is processed in the sales order. It defines, for example, that pricing does not take place for a free of charge item, such as a business gift; or that inventory management is not carried out for a service. When processing sales and distribution documents, the system uses the item category group to determine the item category. The system determines the item category based on the item category group of the material and the current business transaction, and proposes it in the respective document.

When creating the material types *non-stock material* and *services*, DIEN is proposed in both cases for the item category group, because the order processing for both material types is identical: for example, pricing is carried out for both, but no availability check.

Number Assignment for Material Master Records

Use

The material number can either be entered externally by the user, or assigned internally by the system. Both internal and external number assignment is possible. If you do not enter a material number when creating a material master record, the system automatically carries out internal number assignment.

Creating a Material Master Record

There are two ways of creating a material master record:

- A new material master record is created with or without reference. It is mainly the responsibility of materials management to create new material master records in the system.

- An existing material master record is extended by creating new segments for other company areas. Thus, a view which has not yet been maintained is added to the material master record.

This documentation describes the material master record exclusively from the sales view. Therefore, the following description refers to adding new views to already existing material master records.

Steps:

Using the example of trading goods (HAWA), the section below describes how to extend a material master record. You proceed in the same way for other material types.

1. In the SD Master Data Screen [Ext.] select, *Products* → *Material* → *Trading goods* →*Create*.

   The *Create Material: Initial Screen*.

2. Enter the number of the material whose sales and distribution screens you want to maintain.

3. Press ENTER.

   The system issues a message telling you that the industry sector has automatically been transferred from the master record.

4. Press ENTER.

   A dialog box appears from which you can select the views which you want to work with.

5. Select the sales views you want to maintain.

   By selecting views you define an individual screen sequence. If you do not select any new views you receive a system error message:

   Material already maintained for this transaction/event.

6. Press ENTER.

   Another dialog box appears in which you specify the organizational level at which you want to carry out the change.

7. Enter a valid combination of plant, sales organization and distribution channel to define the organizational level.

8. Press ENTER to reach step by step the data screen you want to edit.

   Edit these data screens. You must at least enter data in the required fields.

   After you have edited the last data screen, a dialog box appears in which you see the system message that the editing process will end. Select *Yes* to save your material data.

9. You return to the screen Create Trading Goods: Initial Screen, where the following system message is displayed:

Creating a Material Master Record

Material <Material number> created.

This concludes the processing. You have extended the material master record by adding new sales views.

Sales prices are determined by conditions. You will find a detailed description of how material prices and sales prices are calculated in the *SD Guide to Pricing and Conditions*. In the material master record you can access the price condition screen by selecting *Extras* → *Sales Details* → *Price* in the menu and maintain the material price.

Deleting a Material Master Record

A material may have to be marked for deletion, if it is no longer offered as a product. If a material has been marked for deletion, an error message appears during order entry or delivery processing, which blocks these transactions.

Steps:

You can mark a material of the material type "trading goods" for deletion by using the following steps:

1. In the SD Master Data Screen [Ext.] select, *Products → Material → Trading goods →Change*.

   You reach the Change Material: *Initial Screen*.

2. In the menu bar, select *Material → Set deletion flag → Immediately.*

   You reach the screen *Flag Material for Deletion: Initial Screen,* in which you enter the material, as well as the data on the organizational level.

3. Press `ENTER`.

   You reach another*Display* screen.

4. In the left column mark the material and the organizational level at which you want to mark the material for deletion.

5. Press `ENTER`.

   The material is marked for deletion.

A deletion flag cannot be cancelled. However, a material is only deleted during archiving, if all business transactions depending on it have been concluded.

Blocking a Material Master Record (Sales Status)

If a material has technical defects or is to be discontinued, you can block the material.

If you set a block, orders, deliveries and invoices containing this material cannot be created at all, or only with a warning message. The system reactions to a blocked material depends on the type of block set.

Steps:

You use the same procedure to block all material types. To block trading goods, for example, use the following steps:

1. In the SD Master Data Screen [Ext.] select, *Products* → *Material* → *Trading goods* →*Change*.

    You reach the Change Material: *Initial Screen*.

2. Enter the trading goods you want to block.

3. Press ENTER.

    A dialog box appears in which you can select a view.

4. Select view *Sales 1*

5. Press ENTER.

    Another dialog box appears in which you must define the organizational level.

6. Enter a valid combination of plant, sales organization and distribution channel.

7. Press ENTER.

    You reach the Change Material: Sales (1) screen.

8. Enter a blocking reason in the *Sales status* field.

9. Press ENTER.

10. Save the data record and return to the initial screen. You receive a message informing you that the material has been changed.

Maintaining a Material Master Record

Since different company areas access a material master record, it can happen that a material master record already exists for other company areas, but has not yet been maintained for your area.

You can use the function *Maintain material* to add new views to an existing material master record. In contrast to changing a material master record, you add new views to the data records when maintaining. The main difference between maintaining a material master record and creating it, in the sense of adding another view, is that, when maintaining, more selection criteria are available to you. These selection criteria are not available for the function *Change* and *Create*.

> The maintenance status tells you which department has already maintained the material master record. For more information on the maintenance status of a material master record, see Maintenance Status in the Material Master Record [Page 78].

Steps:

Use the following steps to maintain a material master record:

1. In the SD Master Data Screen [Ext.] select, *Products* → *Material* → *Maintain material*.

   You reach the *Extendable Mat.view(s): Initial Screen,* on which you can enter various selection criteria, such as maintenance status, plant, sales organization, etc. The entries in the fields displayed offer you a flexible way of searching. You can limit the search by combining criteria and select specifically: you can search for all materials, for example, which have not yet been maintained from a certain view and belong to a certain industry sector. You can combine any criteria.

2. Enter the sales organization for whose materials you want to maintain certain views.

3. Select *Execute*.

   You receive a list of all materials which have not yet been maintained from the view entered (i.e. sales).

4. Select the material you want to edit, by marking it at the left screen border.

5. Press *Actions* → *Maintain materials.*

   You reach the department-specific data screens of the material master record, which you can now maintain.

6. When you want to exit the material master record, the system prompts you to save the data.

7. Save your work.

   You return to the initial menu where you see the system message

   Material exists and is being extended.

Agreements

Definition

Arrangements which are defined in the system by the customer.

Use

Agreements can be defined in the system in various different ways:

- in the customer master record (for example, dates of required payments)

- as individual master data: customer material information, rebate agreements, promotions and sales deals

- in special sales document types: contracts, scheduling agreements

For more information, see

Customer Material Information [Page 93]

Rebate Agreements [Ext.]

Creating Promotions and Sales Deals [Ext.]

Customer Contracts [Ext.]

Scheduling Agreements [Ext.]

Customer Material Information

Purpose

Data on a material defined for one specific customer is stored in the customer material information records. This data includes

- the customer-specific material number

- the customer-specific material description

- customer-specific data on deliveries and delivery tolerances

If, for example, one of your customers uses a number for a material, which differs from the number your company uses to identify it, you can store the material number used by the customer in the customer material information record.

Features

During order entry, items can be entered by specifying the material number used by the customer. You also enter a customer material number in the order view of the sales order. You can then use both material numbers during the order entry, the material number your company uses or the one defined by the customer, because the system can carry out allocation automatically.

Data on the delivery and the individual delivery tolerances agreed upon with the customer for the material in question can also be checked and transferred to the sales order item.

You can also store a text in the customer material information record. It is copied to the relevant SD document items during text determination. In Customizing, the text type *Customer Material Text* is provided for this.

Creating Customer-Material Information Records

If a customer manages a material with a number that differs from the one your company uses, a customer-material information record is created.

Steps:

Use the following steps to create a customer-material information record:

1. In the SD Master Data Screen [Ext.] select, *Agreements* → *Cust.-material info* → *Create*.

    You reach the *Create Customer-Material Info Record* screen.

2. Enter the customer number, the sales organization and a distribution channel. Thus, you can specify to which part of your organization the information record applies.

3. Press ENTER.

    You reach the *Create Customer-Material Info Record: Overview* screen

4. Edit the data screen by entering data in the following fields:

  – In the field *Material* enter the number which identifies the material in your company.

  – In the field *Customer material* enter the number that the customer uses to identify the material.

5. Press ENTER.

    The system adds the material description used in your company.

    Press Info record details to display the items created, and to enter shipping data, as well as partial delivery agreements.

6. If you want to maintain a text, select *Goto* → *Texts* in the *Overview* screen

    You reach the *Text* screen, where you can enter your text.

7. If you want to enter several lines of text, mark the text lines and select *Edit* → *Detail,* to get to the SAPscript editor.

8. Save your text after maintaining it in the SAPscript editor. You return to to the *Text* screen of the sales information record using *Goto* → *Back*.

9. Save the data record.

    In the message line, you receive the message that customer-material info record was saved.

Item Proposal

Use

Frequently occurring material combinations and common delivery quantities can be stored as item proposals. When creating an order, you can take items from the item proposal. You can also use a search help. An item proposal can consist of materials of different material types.

The order entry can be processed more efficiently using item proposals. Item proposals can be transferred into a sales order document or be selected from a selection list, for example. Data from the current material master is always taken into account. Items proposed from an item proposal can always be changed in the sales order.

An item proposal, containing the materials a customer usually orders, can be assigned to that customer, for example. When using item proposals in the sales document, this item proposal is then proposed for selection.

Creating Item Proposals

Item proposals are created, if certain material combinations are often ordered and delivered in certain quantities. When creating item proposals, different materials with proposed quantities can be entered.

You can also adopt bills of material (e.g., configurable materials) into an item proposal. However, it is NOT possible to explode, or configure a bill of material in an item proposal. You can only carry this out when you are copying it into a sales order.

Steps:

Use the following steps to create an item proposal:

1. In the SD Master Data Screen [Ext.] select, *Products →   Item proposal →Create*.

   You reach the *Create Item Proposal: Initial Screen*.

2. Edit the data screen by at least entering data in the fields *Item proposal type*, *Sales organization*, *Distribution channel* and *Division*.

3. Press ENTER.

   You reach the *Create Item Proposal: Overview - Fast Entry* screen where you enter the item proposal.

4. Create the item proposal by entering the materials and the quantities. In the field *Description*, you can define a search term which you can later use to retrieve the item proposal by using the matchcode.

   If you want to create an item proposal for a bill of material, enter the header material without the component. When the item proposal is transferred to the sales document, the bill of material is then exploded or configured. Make sure that an item category is determined in the sales order that allow bill of material explosion or configuration. This is controlled in Customizing for the item category in the *Structure scope* field.

5. Press ENTER and save the item proposal.

   The system saves the item proposal and assigns an item proposal number. You receive the following system message:

   Item Proposal <Item proposal number> was saved

   You remain on the same data screen, where you can create another item proposal. Select *Back* to return to the initial screen.

Basic Functions in SD

Purpose

The most important basic functions are:

- [Pricing [Ext.]](#)
- [Availability Check [Ext.]](#)
- [Credit Management [Ext.]](#)
- [Material Determination [Page 117]](#)
- [Output Determination [Ext.]](#)
- [Text Processing [Page 176]](#)
- [Tax Determination [Ext.]](#)
- [Account Determination [Ext.]](#)

Free goods

Implementation Options

In many sectors of industry it is common to provide products free of charge, or not to charge the customer for some of the goods sold when a customer purchases certain goods.

The following forms of free goods exist:

- **Inclusive**

  The customer only pays for a part of the goods required. The rest of the goods are free. This is called **Inclusive free goods** and means that part of the purchase quantity is designated as free goods and is not billed.

  The material supplied as free goods always has the same unit of measure as the purchased quantity.

  Of ten bottles of wine, two are designated as free goods. If you order ten bottles, then ten are delivered but you are not billed for two of them. You have received **inclusive free goods**.

- **Exclusive agreement,**

  The customer pays for the goods ordered and receives additional goods. This is known as **exclusive free goods** and means that free goods is granted for an additional quantity to that in the purchase order. More is delivered than was ordered and the additional quantity is not billed.

  The goods delivered as free goods do not have to be the same as material ordered.

  When four coffee machines are ordered, the vendor supplies a packet of coffee as free goods. Therefore, if you order four coffee machines, you receive a free packet of coffee.

Features

You create a free goods agreement in the same way as you do a condition. You can set the requirements governing when free goods are granted at as many levels as required, e.g. at customer/material level or customer hierarchy/material level. The standard system provides for customer/material level. The free goods agreement has a validity period. In the free goods agreement you can save different rules for determining the free goods quantity. You can determine a minimum amount for the sold material. The free goods only then apply from this minimum amount. The free goods quantity can be defined proportionally to the quantity of the material sold. Another rule defines the free goods quantity per *full* unit of the material sold. I.e., free goods might be granted only for a certain number of full pallets and not for partially loaded pallets.

Free goods processing is supported in the sales order for direct sales. When creating the sales order, the free goods items are created automatically according to free goods agreement. The free goods are represented as an item. The free goods item is a subitem of the originating item. The free goods items are relevant for delivery and are copied to the delivery. The free goods item

can be copied to the billing document. It is possible to have the free goods in the invoice as free of charge items.

In the sales order and in the billing document, pricing can be carried out for a free goods item. An automatic discount of 100 percent at the end of pricing ensures that the item is free of charge. This facilitates representation in the statistics and in the Profit Analysis. The free goods can be represented there not only as manufacturing costs but also as a special type of sales deduction.

Constraints

Free goods is currently only supported on a 1:1 basis. This means that an order item can only be the source of one free goods item. This means that agreements involving relationships such as 'Buy material 1 and get material 2 and material 3 free of charge' or 'Order material 1 and material 2 together and get material 3 free of charge' are not supported.

Free goods is not currently supported in combination with material structures (e.g. product selection, bills of material, variants with BOM explosion).

Free goods is currently only supported for sales orders with document category C (not for quotations, for example).

Free goods is not currently supported for deliveries without reference to a sales order.

Free goods is not currently supported for make-to-order production, third-party order processing and scheduling agreements.

Maintaining Free Goods Master Data

Use

Free goods master data must be maintained before automatic free goods determination can be carried out. The condition technique is used for free goods in the same way as for pricing.

Features

The free goods master data has the following features:

- Free goods can be maintained as either inclusive or exclusive.

- You can set the requirements governing when free goods are granted at as many levels as required, e.g. at customer/material level or customer hierarchy/material level. Just as in pricing, condition tables are used for this which you can enhance according to your own requirements.

- You can specify a validity period for the free goods agreement.

- You can specify a minimum quantity for which free goods is to be granted.

- Stages can be defined with regards to the minimum quantities and their dependent free goods.

- For exclusive free goods, you can define a material other than the material sold to be granted as free goods.

- You can define different rules for determining the free goods quantity:

  - proportional (rule 1)

  - related to number of units (rule 2)

  - only for whole units (rule 3)

    You grant 10 pieces of a material as exclusive free goods for an order of 100 pieces.

    A customer orders 150 pieces.

    Depending on the rule used, the customer receives the following free goods quantity:

Calculation rule	Free goods quantity
Rule 1	15 pieces
Rule 2	10 pieces
Rule 3	0 pieces

- You can enhance the rules for determining the free goods quantity with your own routines (Transaction VOFM in menu point *Formulas*).

- Delivery controlling

For the delivery you can control whether the free goods are processed independently or whether they are only copied to the delivery for partial delivery or full delivery.

Maintaining Free Goods

1. In the SD Master Data Screen [Ext.] select, *Pricing* →*Free goods* →*Create*.

    You reach the data screen *Create free goods determination*.

2. Enter data for *Sales organization, Distribution channel* and *Customer*.

    You maintain master data for inclusive and exclusive free goods in the same screen. In exclusive free goods, the additional free goods material field is also available for entry.

    You can choose between exclusive and inclusive at any time.

    If required, you can switch from a scale quantity for inclusive to exclusive free goods.

3. Now maintain the following data:

Field description	Contents
Material	Material, for which free goods is to be granted
Minimum quantity	Minimum quantity for which free goods can be granted
From	Quantity of sales material
FGQ	Quantity unit of free goods material
Free goods	Quantity of free goods with reference to the quantity and quantity unit of the sales material
AQU	Quantity unit of the free goods additional quantity
Rule	Calculation rule
D	Delivery controlling
Additional material	Additional material (only available for entry in exclusive free goods)

4. If you want to use a scale, select *Scales*. If you want to change the default validity period, select *Validity periods*.

5. Save the free goods.

Result

The system marks the free goods record as being either inclusive or exclusive.

The system automatically calculates the percentage amount of the free goods with regards to the quantity. If the sales material and the free goods use different units of measure, then this calculation is not carried out.

> If you create a free goods record with a different material as the exclusive free goods material, then a bell icon appears at the end of the record in the inclusive free goods screen. Normally, when you display a list of free goods records, you can only see the exclusive free goods material if you go to double line display or if you go tot he exclusive free goods screen for the record. This icon indicates a different exclusive free goods material in the first list.

If you do not enter an exclusive free goods material, the system automatically uses the sales material.

> You can also branch to free goods maintenance from the pricing conditions maintenance screen.
>
> If possible, data from the condition record are proposed for the free goods (e.g. customer number, material number).

Free Goods in Sales and Distribution Processing

Use

If you grant free goods to a customer, you can implement automatic free goods determination. The system automatically create a free goods item in the sales order. The item is free of charge. For inclusive free goods, the main item is automatically reduced by the free goods quantity. For exclusive free goods, the quantity of the main item remains the same.

> You grant 2 pieces of a material as free goods when the customer orders 100 pieces. For inclusive free goods, the two pieces are deducted from the quantity of the sales material and created as a separate free of charge item. For exclusive free goods, the customer receives two additional pieces as an additional free of charge item (see figure below).

Inclusive bonus quantity: Order quantity 100				
Item	**Material**	**Quantity UM**	**Plant**	**Item Cat**
10	Main item	98	St	0001	TAN
20	Free goods	2	St	0001	TANN

Exclusive bonus quantity: Order quantity = 100				
Item	**Material**	**Quantity UM**	**Plant**	**Item Cat**
10	Main item	100	St	0001	TAN
20	Free goods	2	St	0001	TANN

Prerequisites

Customizing

Free goods determination requires Customizing settings in SD basic functions.

Master data

Free goods determination requires that the free goods be maintained in the master data.

Features

Free goods determination in the customer order

The free goods records have a validity period. They are accessed using the pricing date.

The free goods item is determined automatically by the system, according to the data in the free goods record. In the standard system, item category TANN is set for free goods items.

> You can also enter free goods manually by entering item category TANN as the item category in double line entry. In this case, however, the system will not access the master data and the control parameters contained therein.

The system informs you if an order does not reach the minimum quantity specified for free goods. In Customizing you have the option of suppressing this message or setting it as an error (In Customizing choose: *Sales and distribution - Sales - Sales documents - Define variable messages* This case concerns message V4 160).

You can view a free goods analysis carried out by the system. In the order choose: *Environment → Analysis → Free goods → Inbound.* The system displays the key it uses to access the free goods master data. It also informs you if free goods is not possible (e.g. for product selection).

You can change the free goods quantity. The system issues an error message if the free goods quantity exceeds the quantity of the material ordered.

Other than the quantity, no other data is available for entry in the free goods item.

⚠️

Subsequent changes to quantities or dates can be made to the main item. This means that free goods determination is carried out again. This means that manual changes to the free goods quantity are lost.

Free goods in the delivery

Free Goods in the Delivery [Ext.]

Free goods in the billing document

The free goods items are displayed as items free of charge.

Integration

Free goods in Controlling (**CO**-**PA**)

You have different options for transferring costs in Controlling (CO-PA). This is best explained using the following three examples:

1. Example:

- Free goods is granted to promote the free material.

- The free goods material is treated independently of the material ordered.

- The cost value is taken as the cost of the free goods material.

Billing document in SD

Material	Quantity	Price	Discount	Cost
Main item	10 pieces	100 USD		40 USD
Free goods	1 pieces			5 USD

Individual items in CO-PA

Material	Quantity	Sales revenue	Sales deduction	Costs
Main item	10 pieces	100 USD		40 USD
Free goods	1 piece			5 USD

This example corresponds with the standard version.

Pricing is not activated for the free goods item category (TANN).

Free Goods in Sales and Distribution Processing

2. Example:

- Free goods is granted to promote the free material.

- The free goods material is treated independently of the material ordered.

- The cost value and the sales deduction is taken as the cost of the free goods material.

Billing document in SD

Material	Quantity	Price	Discount	Cost
Main item	10 pieces	100 USD		40 USD
Free goods	1 piece	20 USD	- 20 USD	5 USD

Individual items in CO-PA

Material	Quantity	Sales revenue	Sales deduction	Costs
Main item	10 piece	100 USD		40 USD
Free goods	1 piece	20 USD	- 20 USD	5 USD

To implement this example, you must make the following settings in Customizing (for further information, see the IMG under: *Sales and distribution – Basic functions - Free goods*):

- You activate pricing for the free goods item category (TANN) using special setting 'B'.

- You defined a new condition type, which you set in the corresponding pricing procedure as a 100% discount.

- You assign requirement 55 (free goods) to this condition type - which checks for indicator 'B' in pricing.

3. Example:

- Free goods is granted to promote the material ordered.

- The costs of the free goods are assigned to the material ordered.

- Neither costs nor sales deductions are taken into account for the free goods.

Billing document in SD

Material	Quantity	Price	Discount	Cost
Main item	10 pieces	100 USD		45 USD (40 + 5)
Free goods	1 piece			

Individual items in CO-PA

Material	Quantity	Sales revenue	Sales deduction	Costs

Main item	10 pieces	100 USD		45 USD
Free goods	1 pieces			

You need to make the following settings in Customizing:

Deactivate pricing for item category TANN. This is the standard version setting.

At main item level in copy control for delivery to billing document, you activate transfer of the cost price from the sub-items to the main item (see the information in the IMG under: *Sales and Distribution -Basic functions - Free goods*).

Free goods in the Sales Information System

The three examples given in the previous section for CO-PA, are equally valid for the Sales Information System.

Inclusive Free Goods without Item Generation

Use

The free goods function has two forms, *inclusive* and *exclusive*.

When you are using the *inclusive free goods* function, the system creates two items after you enter the order quantity and release the data:

- The first item with the order quantity less the free goods quantity

- The second item as a free goods item with the free goods quantity

This solution has the following drawbacks:

- Customer requirements are not obvious.

- The function is not possible for structured materials.

- The availability check runs independently.

- The schedule lines are not correlated.

- You cannot view full delivery of the required quantity.

- Picking contains two independent items

- The items are viewed independently in Warehouse Management.

- Scale prices for the order quantity are only possible via group conditions

- The document volume is increased.

The advantages of this solution are:

- The free goods quantity can be viewed at order entry.

- The free goods quantities can be used for statistical purposes.

Alternatively, as of 4.5A, you can create inclusive free goods without item generation.

Prerequisites

In the free goods master record in the *Free goods category* field, select free goods category 3 (inclusive free goods without item generation).

Features

In free goods master data maintenance, this new free goods type is dealt with in the same way as the inclusive free goods procedure described above.

In order processing, you can not create order sub-items.

For pricing in the main item, you need to create a discount. The standard system provides pricing procedure RVAA01 and condition type NRAB.

Condition type NRAV is set up as follows:

- It does not determine a discount from a condition record. It uses condition basis formula 029 in the pricing procedure to determine a discount from the free goods factor.

- The condition receives the new pricing requirement 059 in the pricing procedure. This requirement checks whether free goods have already been determined.

- The condition type receives condition category *f*. This condition category ensures that the condition is redetermined every time the quantity is changed, since this can also mean a change to the free goods quantity.

Example: Free goods assignment without item generation in an order item:

Condition type		Condition value:
PR00	10 pieces at 10 USD	100 USD
RA00	- 10 %	10 USD
Net 1	9 USD	90 USD
Free goods ←	3 pieces at 9 USD	-27 USD
Net 2	6.30 for one piece	63 USD

- The free goods quantity is shown in printouts (e.g. for order confirmations or invoices).

- The free goods quantity can not be used in the Profitability Analysis or for statistical purposes.

- The free goods are generally treated proportionally during partial billing. There are no variants defined in the standard system, although you can create them by defining your own condition basis formulae (full discount in the first/last billing document, for example).

- The billing document does not create separate items. If you require this, you must use the procedure for inclusive free goods with item generation (see above).

Dynamic Product Proposal

Use

A product proposal is a list of products for a specific customer that is automatically proposed during sales document processing. You can determine yourself which materials should be displayed as product proposals in the sales document. You can also specify the sequence in which the materials are to be displayed in the product proposal.

During sales document processing, the system displays a product proposal in the item overview, according to the customer and business transaction. It displays the material number, material description and the historical order quantities in the sales unit last used. To use them again, you can just copy them.

The system does not run the standard checks (pricing, availability, incompleteness, material determination, free goods determination, and so on) until you enter the order quantities.

The product proposal acts both as an entry aid and also an aid to sales support and promotions. It is particularly useful tool in the telephone sales area. During sales document processing the materials, that are particularly relevant for a particular customer, are displayed to the processor. This enables them to provide appropriate advice to the customer quickly and easily. You can use the sales document history to analyze the customer's purchasing habits and recognize straightaway if their behavior changes, for when instance when they suddenly stop ordering a product.

The product proposal differs from cross selling in that it is dependent on the customer and sales area, and is therefore displayed in the sales document as soon as you have entered a customer. Cross selling, on the other hand, is triggered by the material. In other words, the system proposes cross-selling materials according to the material or a characteristic of the material you have entered.

Prerequisites

You must make the following settings in Customizing:

- Define the customer pricing procedure for the product proposal

- Define the document pricing procedure for the product proposal

- Assign the document pricing procedure for the product proposal to sales document types

- Maintain the table of origin for the product proposal

- Define the procedure for the product proposal and specify the access sequences

- Maintain procedure determination (in background) for the product proposal

- Maintain procedure determination (online) for the product proposal

You can find these settings in Customizing for Sales and Distribution under *Basic Functions*. For more detailed information about these settings, see the Implementation Guide for the Product Proposal.

Features

You can determine the product proposal from different data sources:

- Order history

Dynamic Product Proposal

- Listed materials

- Excluded materials

- Item proposal

- Customer/material info records

- Customer-specific data sources

For the product proposal you can combine materials from other data sources: For example, you could combine the total of all materials in the last n-sales orders with all materials listed for the customer, plus all materials in certain item proposals, but not including those specified in the exclusion. You can then determine the sequence in which they appear yourself.

You can access the data sources either online, in background processing, or using a combination of both. It is also possible to have a combination of both access techniques. If you want to access various different data sources, we recommend that you use background processing, in order to keep the system load as low as possible while working online.

Working with the Product Proposal in the Sales Document

As soon as you have entered a sold-to party in the sales document, the system calls up the function module for determining the product proposal and runs the accesses according to the online product proposal procedure.

All materials that it finds for the product proposal are automatically displayed as proposal items in the sales document.

> None of the normal checks at item level, such as the availability check and pricing, are carried out for the materials included as product proposals. These checks are only carried out when you have given the material an order quantity and an item number is assigned.

If you have entered the order history as a data source in Customizing, the system also displays the historic quantities for each material.

> In standard system the fields with historic quantities are displayed at the end of the table. When working with the product proposal, SAP recommends placing the field with historic quantities, for example behind the field *Order quantity.*

The checks are only carried out (for example, pricing, availability check) when you enter the order quantities for a material from the product proposal. The item then receives an item number.

The *Source* field shows which data source was used to determine the product proposal for each item (for example, O = order history). If a material is determined from several sources (such as the listing and order history), the system displays the first data source used to determine the material, according to the access sequence defined in Customizing.

You can use *Product proposal active <-> inactive* pushbutton to hide or display materials from the product proposal. This only applies to items where no quantities have been entered.

When the order history is the source of the product proposal, you can use the *Copy IP quantity* pushbutton to copy the quantities from the first column with the most up-to-date information (usually the last order) as an order quantity.

Constraints

The system does not generate a product proposal when you use:

- Batch input

- Incoming IDocs

- BAPIs

- Change/display sales document

- Create sales document with reference

Cross Selling

Use

Mail order catalog retailers frequently use cross selling to increase sales. When a customer orders an article over the phone, the order taker can suggest additional articles that the customer might buy. For example, if the customer orders a VCR, you might suggest purchasing some blank tapes; for a cellular phone, a leather carrying case.
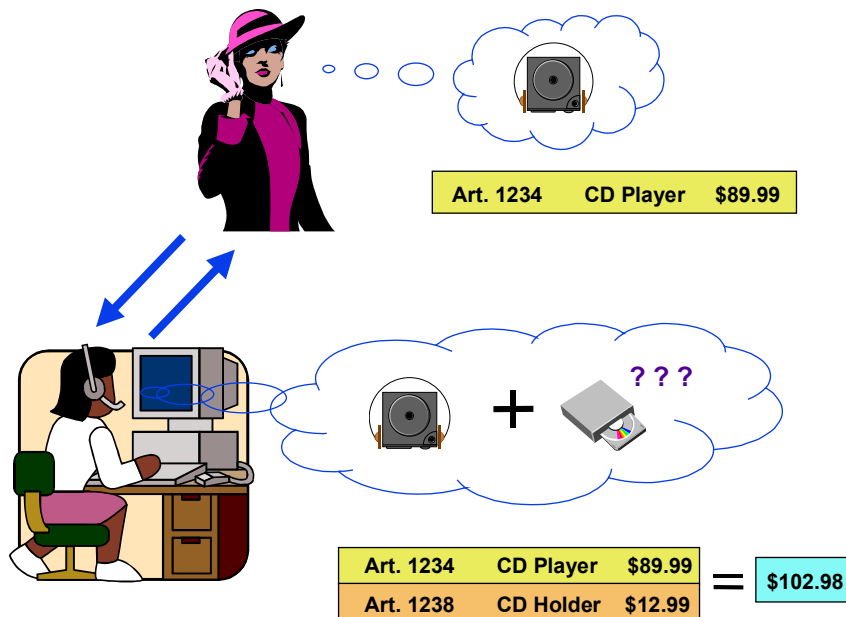
The sales transaction takes place as normal: The customer chooses an article and the order taker enters it on the sales order screen. The order taker can press `Enter` after each article, or wait until the customer has finished selecting the article he or she wants.

- If the order taker presses `Enter` after entering the data for one article, then a dialog box appears automatically, displaying a list of articles to be suggested to the customer. These cross selling articles are ones that pertain specifically to the purchased article.

- If the order taker waits to press `Enter` until the customer has finished ordering, then the dialog box appears automatically, this time showing all of the articles in the sales order, along with their corresponding cross selling articles.

> The articles that appear in the cross selling dialog box always depend on which articles are in the sales order. If you want to have the system suggest articles based on the customer's past purchasing history or other factors, see Dynamic Product Proposal [Page 111] in the standard SD documentation.

The cross selling dialog box displays the following information:

- Article number

- Description

- Sales unit of measure (each, 3-pack, etc.)

- Price per unit of measure (calculated either by the standard R/3 pricing scheme or by a custom pricing scheme you have defined)

- Availability check

- Delivery flag (that is, whether the cross selling articles can be delivered independently of their corresponding main articles in the sales order, or whether the cross selling articles can only be shipped either together with or after the main articles have been shipped)

> You can turn off the availability check in Customizing, thereby increasing system performance.

Integration

You can set up the system so that if a customer orders a specific article, a list of other suggested articles appears as well. If the customer chooses to accept one of the suggested articles, the article is flagged in the sales transaction data indicating that this article was a result of cross selling. You can then analyze the results in the Business Workbench or Retail Information System to see how successful your cross selling strategy is (that is, how frequently a suggested article is actually purchased by the customer).

For each article, you can assign one or more cross selling articles.

Prerequisites

To set up cross selling, you must make the following settings in Customizing:

- Create the conditions tables, access sequence, and calculation schemes for determining cross selling articles, since the cross selling function relies on the conditions technique. (Alternatively, you can use the analysis discussed in "Activities" below to create the data automatically.)

- Create a cross selling profile with the following attributes:

    - Determination of cross selling articles via function module

    - Price calculation scheme

    - Scheme using conditions technique

    - Flag indicating how the cross selling dialog is to appear

    - Flag indicating whether an availability check is to be performed

- Assign the cross selling profile to a sales area, document scheme, and customer scheme.

Activities

In order to determine which products are most frequently purchased together, you can use report SDCRSL01 (transaction SE38) to analyze sales orders for a specified period time (for example, for the previous 30 days). The system will search through all the orders, list all the articles purchased, and how often certain pairs of articles (or even three or more) appeared in the same

Cross Selling

sales order: for example, 10% of the time, customers purchased a specific shirt-and-tie combination. In this way, you can mine the R/3 database to find article combinations that might not have occurred to you (for example, a movie and a CD with the sound track for the movie.

Alternatively, you can manually assign combinations of articles for cross selling purposes, based on other information you may have.

Material Determination

Use

Material determination enables the automatic substitution of materials in sales documents during sales order processing. For example, during the course of a sales promotion, the system can, during sales order entry, automatically substitute a material that has promotional packaging. A consumer product may have a special wrapper for, for example, the Christmas season. Using material determination, the system substitutes the material only during the specified period.

The following graphic illustrates the determination of a promotional product in the sales order.
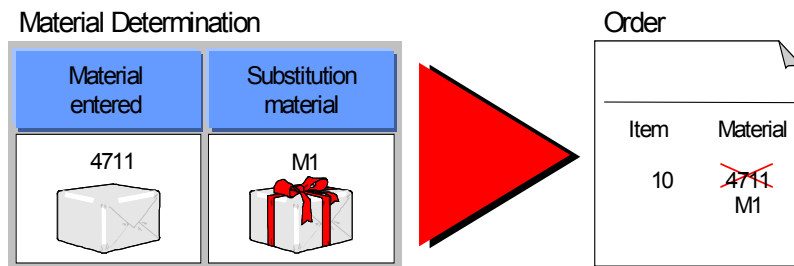
In addition, you can use material determination if you want the system to automatically substitute, for example:

- customer-specific product numbers with your own material numbers

- International Article Numbers (EANs) with your own material numbers

- Substituting discontinued materials with newer materials

Creating Master Records for Material Determination

To create a material determination record, proceed as follows:

1. In the SD Master Data Screen [Ext.] select, *Products* → *Material Determination* → *Create*.

   You reach the screen *Create Material Determination: Initial.*

2. Enter `A001` in the *Determination type* field.

   The standard version of the SAP R/3 system includes only material determination type *A001*. Depending on the requirements of your organization, your system administrator may create additional types.

3. Press `ENTER`.

4. Enter the following data:

   – Validity period for the master record

   – Material entered (the material you want the system to substitute with another)

   – Substitute material.

   – Optionally, a reason for the substitution (the reason may appear in system messages during sales order processing)

   In the case of International Article Numbers, you must also enter a unit of measure for the substitute material.

5. Save your master data.

Automatic Product Selection

Purpose

In the standard order processing cycle, a customer requests a specific product that you then ship. In reality, however, there are situations where you want to substitute the product ordered with an alternative, for example a product that is repackaged for Christmas, or with a free sample or coupon.

With the product selection functions in the R/3 System, you can flexibly manage product substitution. Based on your priorities for the customer account and restrictions imposed by the customer, you can ship a promotional item when the customer requests a standard one.

Integration

Product selection functions rely heavily on the condition technique and material determination.

The documentation for this function deals with *automatic* product selection. If you prefer using a manual process for proposing alternative products and generating messages, refer to the general documentation on material determination [Page 117].

Features

The standard available-to-promise (ATP) check is available to help you determine exactly what to ship. A check is carried out:

- At order entry

  This ensures that sufficient quantities of the product acceptable to the customer are available to meet the requested delivery date.

- At picking

  This ensures that your preferred substitute is shipped. If there is insufficient stock of the item, the system fulfills the order with other alternative items.

With product selection functions, you can set the system to automatically select products according to their availability and priority. For tracking purposes, the system stores data about what the customer has ordered. You can use this information as a reference, or for printing invoices and packing lists.

Product Selection

Use

Product selection uses material determination functions to automatically propose a variety of substitute products based on your requirements, customer requirements, and product availability.

Features

When you enter a material in a sales order, the system checks whether you have set up product selection for this material. If so, it creates a list of possible alternatives, checking each to determine current stock availability, and whether the customer would accept it based on the product attributes.

For each valid substitute that if finds, the system creates a sub-item.

If there is not enough inventory for the alternatives to completely confirm the requested quantity, the system confirms the partial amount and transfers the open quantity to planning. (This depends on your settings for the substitutes [Page 139].)

The system carries out a new product selection when you trigger the availability check on the main item, for example when you change a quantity or date. Depending on the substitution reason [Page 127] that you specify, substitutes are also redetermined in the delivery.

Evaluating the Substitution Procedure

Before setting up product selection, you must determine how substitution is to be carried out, as well as evaluate the process flow from beginning to end. Here are several questions to help you prepare:

- How are substitute products determined?

  By the product entered in the order, or by material group?

- How many substitutes are offered for each product?

  How are they prioritized?

- Are there any product attributes that would cause a customer to refuse or accept a substitute?

  For example, coupons, packaging, or special offers.

- Are products substituted consistently, or does the substitution process change according to dates or seasons?

  What is the date range validity for the substitution rules?

  For example, material A is substituted with material B in November and December. The rest of the year, it is substituted with material C.

- What number is printed on documents?

  The product number entered in the order, the substitute product number, or both?

  Is this consistent for all documents, for example, order confirmations, deliveries, and invoices?

- How is pricing performed when a product is substituted?

  Are prices based on the product entered or the substitute product?

- Are standard item and schedule line categories suitable for your company's product selection?

  The standard item categories are **TAX** (main item) and **TAPS** (sub-item).

  Their schedule line categories are **CX** and **PP** respectively.

- Should the system carry out a new product selection when you copy data from document to document?

  For example, you may want a new product selection when copying from sales order to delivery, but not from sales order to return.

Configuring Product Selection

Product selection is controlled by a range of Customizing activities, mainly for material determination.

The following topics explain the configuration procedure step by step. Activities have been divided up to make them easier to perform.

Setting the Condition Technique

Prerequisite

Product selection uses the condition technique to determine substitutes for a material entered in the order. Review the field catalog, condition tables, access sequences, and condition types in the standard system to determine if they fit your company's version of product selection. If not, you can modify the field catalog and create condition tables, access sequences, and condition types that meet your requirements.

Procedures

Modify the field catalog (OV26)

The field catalog for material determination contains fields used by the system to determine substitute products. Review the fields in the standard catalog. If your company determines substitutes based on a field not listed in the catalog, simply add it:

1. Add the new field to the user include structure:

   − Header data KOMKDZ

   − Item data KOMPDZ.

2. Add coding to the routines for assigning values to the new fields in order processing in program MV45AFZA. Use user exits:

   − USEREXIT_MOVE_FIELD_TO_KOMKD (header fields)

   − USEREXIT_MOVE_FIELD_TO_KOMPD (item fields)

3. Add the new field to the field catalog (Customizing activity Basic *Functions* → Material *Determination* → Maintain prerequisites for material *determination* → Maintain field catalog).

Create a condition table for substitution (OV16)

The condition table serves as the format and eventual storage area where detailed condition records on product substitution mappings are stored.

To create a table, perform the Customizing activity *Maintain prerequisites for material determination* → *Create condition tables*:

1. Enter a table number, using a number greater than 500, or leave the table field blank for the system to assign a number automatically.

2. Select the appropriate fields to be included in the table.

3. Generate and save the table.

Create an access sequence for substitution (OV11)

The system uses the access sequence to search for valid condition records within the condition tables.

Setting the Condition Technique

To create an access sequence, perform the Customizing activity *Maintain prerequisites for material determination* → *Maintain access sequences*:

1. Choose New entries.

    Enter an access sequence key and a description.

2. Save and choose *Back* to return to the main screen.

3. Select the new entry and choose *Accesses*.

4. Choose New entries.

    Enter an access level, the condition table number and, if necessary, a requirement. Add additional tables if needed.

5. Save and choose *Back*.

6. Select the new entry and choose *Fields*.

    Enter a direct value or select the initial value indicator.

7. Save and choose *Back*.

8. Select the new access sequence and choose *Utilities*.

    Complete the access sequence field with the new access sequence number.

Create condition type and assign access sequence (OV12)

The condition type directs the system to the access sequence and eventual condition table containing the condition records that are used to determine substitutes.

To create a condition type, perform the Customizing activity *Maintain prerequisites for material determination* → *Define condition types*:

1. Choose *New entries*.

    Enter a condition type key and a description.

2. Assign a valid access sequence and specify the rule to be used to propose the *from* and *to* validity dates.

3. Save.

Creating Product Substitution Procedures

Prerequisite

Substitution procedures contain condition types that direct the system to the access sequence and eventual condition table containing the condition records that are used to determine product substitutes.

Procedure

To create a procedure, perform the Customizing activity *Basic Functions → Material Determination → Maintain prerequisites for material determination → Maintain determination procedures* (transaction **OV13**):

1. Choose *New entries*.

    Enter a procedure key and a description.

2. Save and choose *Back* to return to the main screen.

3. Select the new entry and choose *Control*.

4. Choose *New entries*.

    Enter an access level, counter number, the condition type, and, if necessary, a requirement. Add additional condition types if needed.

5. Save and choose *Back* to return to the main screen.

Assigning Procedures to Sales Document Types

Prerequisite

The system uses the document type to decide what data in the sales document to use for determining substitute products. The link between procedure and document type directs the system to the selection records that are processed during order entry.

By making this assignment, you are essentially "turning on" substitution for specific document types. If you do not make an assignment, the system does not check for substitutes even if the records exist.

Procedure

To assign a product selection determination procedure to document types, perform the Customizing activity *Basic Functions* → *Material Determination* → *Assign procedures to sales document types* (transaction **OV14**).

Creating Substitution Reasons

Prerequisite

The substitution reason directs how the system performs product selection. With this reason, you can specify, for example:

- What products should be printed in documents, such as an order confirmation

- Whether the selected products should be reevaluated when the document is referenced, for instance when a delivery is created

- Whether the selected products should be copied directly from the source document, from returns for example.

Procedure

To create a substitution reason, perform the Customizing activity *Basic Functions → Material Determination → Define substitution reasons* (transaction **OVRQ**):

1. Choose *New entries*.

   Enter substitution reason key and a description.

2. Select the *Entry* indicator if you want the original material (not substitutes) to be printed in documents.

3. Leave the *Warning* and *Strategy* indicators blank.

   Do not mark these indicators, or you will not be able to perform automatic product selection based on ATP.

4. Assign either outcome A or B depending on your preferences for the following:

   Substitution Outcome Reason Codes

	Outcome	
	A	**B**
Create as sub-items	Yes	Yes
New product selection in delivery	Yes	No

   You must choose either *A* or *B*. **Do not** leave this field blank.

Integration

One of the most important decisions that you have to make about the product selection process is whether or not substitutions determined in the order are to be redetermined in the delivery.

OUTCOME A

When you assign outcome *A* to a substitution reason, note the following special processing features and constraints:

- The system redetermines product substitutions when copying them from sales documents to deliveries.

- Rush orders are not supported.

Creating Substitution Reasons

- Main item and sub-items must be carried through from the sales document, to the delivery, to the billing document.

- If you use listings and exclusions in the sales document process, the system does not take them into account when redetermining substitutions in the delivery.

- The system uses only the copy rules associated with the main item when transferring data from document to document.To transfer the sub-item from order to delivery, assign copy rule **110** to it.

- Item category usage indicator **PSHP** is used for the main item, and **PSEL** for the sub-item.

OUTCOME B

When you assign outcome *B* to a substitution reason, note the following special processing features and constraints:

- The system does not redetermine product substitutions when copying them from sales documents to the deliveries. All items are copied directly.

- Rush orders are fully supported.

- Main item and sub-items do not have to be carried through from the sales document, to the delivery, to the billing document.

- If listings and exclusions are used in the sales document process, the changes made as a result influence the delivery documents.

- The system takes copy rules for both the main and sub-items when transferring data from document to document.

- Item category usage indicator **PSA1** is used for the main item, and **PSA2** for the sub-item.

In this example, product selection is performed in the order.

If you select outcome *A*, the system carries out a new product selection in the delivery. At the time the delivery is created, there is more inventory available for the first alternative material, cold tablets with coupon. In this case, the system ignores the second alternative and confirms the entire requested quantity of the first alternative.

If you select outcome *B*, the product selection from the order is copied directly to the delivery. There is no new availability check.

Substitution Outcome Scenario

Order

Requested

Cold Tablets   **100 PC**

Substitution

Cold Tablets w/coupon

50 PC

Cold Tablets 10% Free

50 PC

OUTCOME A

OUTCOME B

Delivery

Requested

Cold Tablets   **100 PC**

Substitution

Cold Tablets w/coupon

100   PC

✔ **ATP**

Delivery

Requested

Cold Tablets   **100 PC**

Substitution

Cold Tablets w/coupon

50 PC

Cold Tablets 10% Free

50 PC

Copy
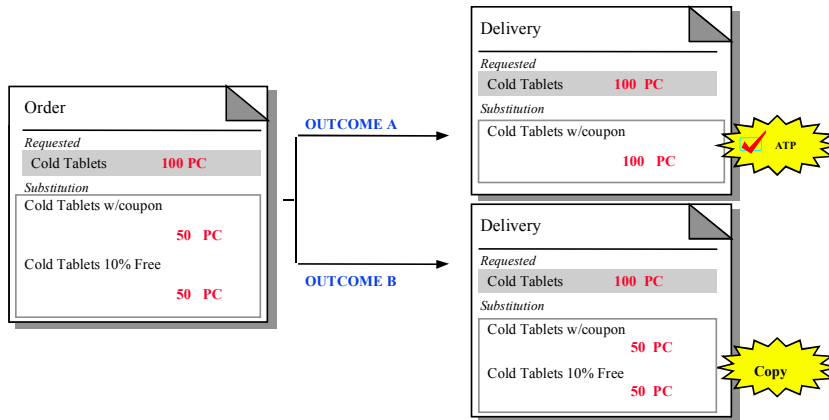
Setting Item Categories

There are two separate item categories in sales documents for product selection. The item category **TAX** contains specifications for the main item (original product). The other, **TAPS**, contains specifications for the sub-items (substitute product).

Review the item category configurations in the standard system. If these do not meet your requirements, perform the activities in the following topics to modify the item category configuration, or create your own categories. Note that if your product selection procedure requires that pricing be done at the main item instead of the sub-item, you will have to create new item categories.

The following examples detail how pricing is carried out at the main item level and sub-item level for product selection.

In this first example, the price for the order is determined based on the price condition records for the main item only. You have deactivated pricing for the sub-item category, so the system does not determine a price for it. Since both the main item and the sub-item categories are relevant for billing, the prices (even if there is no price) are copied to the invoice and billed accordingly.

Pricing at the Main Item
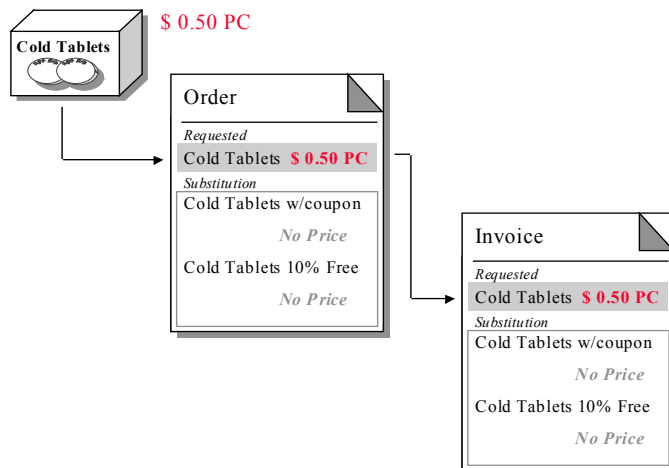
In this second example, the price for the order is determined based on the price condition records for the sub-items. You have deactivated pricing for the main item category, so the system does not determine a price for it. Since both the main item and the sub-item categories are relevant for billing, the prices (even if there is no price) are copied to the invoice and billed accordingly.

Pricing at the Sub-item

$AVE $!

Cold Tablets

$ 0.52 PC

Cold Tablets

10% Free

$ 0.51 PC

Order

Requested

Cold Tablets *No Price*

Substitution

Cold Tablets w/coupon

$ 0.52 PC

Cold Tablets 10% Free

$ 0.51 PC

Invoice

Requested

Cold Tablets *No Price*

Substitution

Cold Tablets w/coupon

$ 0.52 PC

Cold Tablets 10% Free

$ 0.51 PC

Configuring Sales Document Item Categories

Prerequisites

Item categories contain instructions about the attributes of the line item to which they are assigned. Review the standard sales document item categories for product selection. If you decide that these do not meet your business requirements, for example if you require that pricing be done at the sub-item level rather than the main item level, create new sales document item categories.

Procedures

We recommend that you copy, then change the standard sales document item categories instead of creating them from scratch. To copy categories, perform the Customizing activity *Sales* → *Sales Documents* → *Sales Document Item* → *Define item categories* (transaction **VOV7**).

To copy the **main item category,** select the entry *TAX* and choose *Copy*. Overwrite the key and description with your sales document item category. Make any additional changes and save.

To copy the **sub-item category**, select the entry *TAPS* and choose *Copy*. Overwrite the key and description with your sales document item category. Make any additional changes and save.

If you are using outcome A [Page 127], select the relevance for delivery indicator (*Item relev.for.dlv)* for the main item category. Although the main item may not actually be delivered, this is necessary so that the system can carry out a new product selection in the delivery.

If you are using outcome B [Page 127], select this indicator for the sub-item category only.

Configuring Delivery Item Categories

Prerequisite

Review the standard delivery item categories for product selection. If you decide that these do not meet your business requirements, for example if you want to remove schedule lines with a zero quantity (i.e. substitutes that were not selected), create new delivery item categories for the main and sub-items.

Procedures

We recommend that you copy, then change the standard item categories instead of creating them from scratch. To copy categories, perform the Customizing activity *Logistics Execution → Shipping → Deliveries → Define item categories for deliveries* (transaction **OVLP**).

To copy the **main item category**:

1. Select the entry *TAX* and choose *Copy*. Overwrite the key and description with your delivery item category.

2. Be sure to leave the availability check off field (*AvailCkOff)* blank so that the main item is not checked when items are copied to the delivery.

3. If you are using batch-managed materials, select the *No batch check* indicator so that the main item is not processed in the delivery for batch assignment.

4. Make any additional changes and save.

To copy the **sub-item category**:

1. Select the entry *TAPS* and choose *Copy*. Overwrite the key and description with your delivery item category.

2. Be sure to leave the availability check off field (*AvailCkOff)* blank so that the sub-item is checked.

3. Make any additional changes and save.

If a new product selection is carried out in the delivery, the system may copy zero quantity line items into the delivery (due to rejection of a substitute). To prevent zero line items from being copied, enter **B** in the *Check quantity 0* field.

Determining Sales Document Item Categories

Prerequisite

When you create a sales document, the system determines the item category for an item according to settings in the item category determination table for the sales document type, item category group, item usage, and higher level item.

In product selection, you choose the item category usage based on the outcome that you specify in the reason for substitution [Page 127], either *A* or *B*. The following usages are available for sales document main and sub-items:

Item Category Usage

	Outcome	
Usages	*Order & Delivery*	*Order Only*
	A	**B**
Main item	PSHP	PSA1
Sub-item	PSEL	PSA2

Procedures

Make new entries for the appropriate document type and usage indicator for the outcome that you have specified. To assign categories, perform the Customizing activity *Sales* → *Sales Document* → *Sales Document Item* → *Assign item categories* (transaction **VOV4**).

To assign the **main item category**:

1. Choose *New entries* to enter the order type, item category group, and usage codes.

2. Leave the higher level item blank.

3. Enter the new sales document main item category in the default *Item category* field.

4. Save and choose *Back* to exit.

To assign the **sub-item category**:

1. Choose *New entries* to enter the order type, item category group, usage codes, and higher level (main) item category.

2. Enter the new sales document sub-item category in the default *Item category* field.

3. Save and choose *Back* to exit.

Determining Delivery Item Categories

Prerequisites

When you create a delivery, the system determines the item category for an item according to settings in the item category determination table for the delivery type, item category group, item usage, and higher level item.

In product selection, you choose the item category usage based on the outcome that you specify in the reason for substitution [Page 127], either *A* or *B*. There are two usages available for delivery document main and sub-items:

Item Category Usage

	Outcome	
Usages	*Order & Delivery*	*Order Only*
	A	B
Main item	PSHP	PSA1
Sub-item	PSEL	PSA2

Procedures

Make new entries for the appropriate document type and usage indicator for the outcome that you have specified. To assign categories, perform the Customizing activity *Logistics Execution → Shipping → Deliveries → Define item category determination in deliveries* (transaction **0184**).

To assign the **main item category**:

1. Choose *New entries* to enter the delivery type, item category group, and usage codes.

2. Leave the higher level item blank.

3. Enter the new delivery main item category in the default *Item category* field.

4. Save and choose *Back* to exit.

To assign the **sub-item category**:

1. Choose *New entries* to enter the delivery type, item category group, usage codes, and higher level (main) item category.

2. Enter the new delivery sub-item category in the default *Item category* field.

3. Save and choose *Back* to exit.

Setting Copy Control

Prerequisite

This section details copy control values relevant for product selection only. However, you should select copy routines based on your assessment of the entire order processing cycle. For general information on standard copying functions, see the Customizing activities for the relevant sales documents.

Procedures

Copy Control for Sales Document Item Categories

Copy control tables for sales documents specify the values to be transferred from sales document to sales document in the sales order cycle. The copy routines in these tables contain instructions for fields in all levels of the sales document. There is also an additional field for instructions specific to product selection.

To configure copy control for sales documents, perform the Customizing activity *Sales* → *Maintain copy control for sales document* → *Copying Control: Sales Document to Sales Document* (transaction **VTAA**). Choose *Item* in the *Navigation* section, select an item, choose *Detail* and enter one of the following values in the *Copy product select.* field.

- **Blank** - The main item is copied. The system carries out a new product selection for the sub-items.

- **A** - The main and sub-items are copied. If you change the order and trigger ATP, the system redetermines product selection.

- **B** - The main and sub-items are copied. Product selection is fixed. If you change the order and trigger a new ATP check, the system does not trigger a new product selection.

- **C** - Not used.

The main and sub-item categories should be copied into all documents in order for product selection to function properly. To ensure consistency, all schedule lines should be copied even if there are zero quantities.

Note that when you choose outcome A [Page 127], the system uses the copy rules for the main item only. When you choose outcome B [Page 127], it uses the copy rules for both the main and sub-items.

Copy Control for Delivery Item Categories

Copy control tables for deliveries specify the values to be transferred from sales document to delivery document in the sales order cycle. The copy routines in these tables contain instructions for fields in all levels of the delivery document. There are no entries here that are unique to the product selection functions.

To configure copy control for deliveries, perform the Customizing activity *Logistics Execution* → *Shipping* → *Copying Control* → *Specify copy control for deliveries* (transaction **VTLA**).

Note that copy routine *110* is only supported when you use outcome *A* and usage *PSEL* for deliveries.

Copy Control from Delivery to Billing Document

Copy control tables for deliveries specify the values to be transferred from delivery document to billing document in the sales order cycle. The copy routines in these tables contain instructions for fields in all levels of the delivery document. There are no entries here that are unique to the product selection functions.

To configure copy control for billing documents, perform the Customizing activity *Sales and Distribution → Billing → Billing Documents → Maintain copying control for billing document → Copying Control: Delivery to Billing Document* (transaction **VTFL**).

Here are two examples of how to maintain the item category and copy rules for main items, and sub-items, that are relevant for pricing and billing:

Main item is relevant

If the main item in the sales order is to be priced in the order and billing document, set the sales document main item category to be relevant for pricing and billing. Copy rules from delivery to billing document should be set in such a way that billing quantities are cumulated to the main item, and sub-items contain zero quantities. The pricing condition record can then be determined based on the main item, while the quantities are still representative of the amount of the sub-items that were actually delivered.

Sub-item is relevant

If the sub-item in the sales order is to be priced in the order and billing document, set the sales document sub-item category to be relevant for pricing and billing. Copy rules from delivery to billing document should be set in such a way that quantities are summarized to the sub-items. The main item should contain zero quantity.

Setting Schedule Line Categories

Prerequisite

Schedule line categories contain specific instructions for the sales document schedule line, dictating how the system passes requirements, and checks availability and other data. In product selection, the system uses the schedule line category to determine whether to process the main item or the sub-item.

Review the schedule line category configurations in the standard system. If these do not meet your requirements, perform the following activities to modify the schedule line category configuration, or create your own categories.

For your reference, here are the SAP standard settings for schedule lines:

Outcome A

Schedule line Category	Item category Assignment	Delivery Relevance	Movement Type	Availability	Requirements
CX	**TAX**	**X**			
PP	**TAPS**		**601**	**X**	**X**

Outcome B

Schedule line Category	Item category Assignment	Delivery Relevance	Movement Type	Availability	Requirements
CD	**TAPA**	**Optional**			
CP	**TAN**	**X**	**601**	**X**	**X**

Procedure

To configure schedule line categories, perform the Customizing activity *Sales → Sales Documents → Schedule lines → Define schedule line categories* (transaction **VOV6**).

To configure the **main item schedule line**:

1. Select the entry *CX* and choose *Copy*.

2. Overwrite the key and description with your schedule line category.

3. Make any additional changes and save.

To configure the **sub-item schedule line**:

1. Select the entry *PP* and choose *Copy*.

2. Overwrite the key and description with your schedule line category.

3. Make any additional changes and save.

Entering Materials for Substitution

1. Choose *Logistics* → Sales and *distribution* → Master *data* → *Products* → *Material determination* → *Create*.

2. Enter a material determination type and choose *Enter*.

   The standard system contains only material determination type *A001*, but you may create additional types [Page 123] as required.

3. Enter a substitution reason [Page 127].

   The system cannot determine the outcome without a substitution reason. **You must specify one in order to carry out product selection**.

   You can enter a reason at the general level in the *Proposed reason* field. The system proposes this reason automatically for any substitutes that you enter. You can also enter a reason for each substitute (scroll right and maintain the *Reasn* field).

4. Enter a validity period for the substitution.

   In product selection, the system checks the validity date in the condition records and the requested delivery date in the order header. Note that forward scheduling is supported.

5. Enter the product that you want the system to substitute.

   Product selection is triggered automatically when you enter this product in an order.

6. Enter substitute products.

   To enter more than one alternative, select the main material, choose *Alternative materials* and list the alternatives in order of priority.

   Set the material requirements planning (MRP) indicator for one of the alternatives if you want the system to confirm a partial quantity and pass information about the material shortage on to planning. The system creates a special sub-item [Page 142] in the order for partial confirmations.

   Enter the original product as the first alternative if you want the system to check this material for availability first, before checking for other alternatives.

   Original Material: Product A

   Alternatives: Product *A* → Substitute 1

                     Product *B* → Substitute 2

                     Product *C* → Substitute 3

   When you enter product A in an order, the system checks whether the item is on substitution before checking availability. Once it determines that the material is to be substituted, the system attempts to find an alternative from the list of possibilities. Beginning with product A, the system checks availability for each potential substitute to determine if there is sufficient inventory.

7. Enter a unit of measure for the substitute material if you use international article numbers (EAN).

Entering Materials for Substitution

If you do not enter a substitute unit of measure (UOM), the system determines one using the sales UOM, or if you have not entered one, the base UOM.

8. Save and exit.

Product Attributes

Use

By defining product attributes, you take customer preferences for product substitution into account. For example, you may have customers who refuse products produced abroad, or products that contain a coupon. When you define product attributes, the system checks them in product selection, ignoring any material with a product attribute that the customer has explicitly rejected.

Activities

You can store information for up to ten product attributes in both the material master record and the ship-to party master record:

Define product attributes in the material master

To assign product attributes to a material, choose *Logistics → Sales and distribution → Master data → Products → Material → <Material> → Create* or *Change*. Enter a material and select the *Sales: Sales org. data 2* view. Mark the attributes that apply.

Attribute *1* could be defined as a material that is packaged with a coupon, for example, while attribute *2* could indicate that the coupon is worth less than $0.50. If the material contains a coupon for $1.00, you would select attribute *1* only.

To assign meaningful names to the attributes, refer to the documentation on reserve fields in the IMG. Choose *Sales and distribution → System Modification → Create new fields (without condition technique) → Reserve fields in the customer master record*. Double click on this title and scroll down to the *Using reserve fields* section.

Define product attributes in the customer master

Select *Logisitics → Sales and distribution → Master data → Business partners → Ship-to party* (if different from the sold-to party*)*. Enter a customer and choose the *Sales* view in the sales area data. Choose *Environment → Product attribute*. Mark the product attributes that the customer is **not** willing to accept.

For example, mark attribute *1* if the customer does not want products with coupons. Mark only attribute *2* if the customer is willing to accept a product with a coupon, but only if its value is greater than $0.50.

If you change the ship-to partner during order entry, the system carries out a new product selection to ensure that the attributes of the product and the customer are compatible.

Unlike in manual product selection, in automatic product selection you cannot set the system to issue a warning or error message when the preferences of the customer do not match the product attributes assigned to the material. If the customer preferences and product attributes are not compatible, the system simply does not propose the product as a possible substitute.

Product Selection in Sales Orders

Purpose

The system carries out product selection automatically in the sales order when you enter a material for which you have set product selection functions in Customizing [Page 122].

Process Flow

1. You enter an item and choose *Enter*.

2. Before performing the standard availability check, the system checks to determine if the product is currently on substitution.

    If so, the system uses the requested delivery date in the header to determine a list of possible alternatives.

3. The system runs several checks on on each possible substitute, for example to determine if the customer would accept the product based on the product attributes [Page 141] and current stock availability.The system checks substitute materials until the order quantity is satisfied, or until there are no more possible substitutes.

    When a valid alternative is found, the system creates a sub-item for it, using the item category [Page 130] that you have defined for the main material in Customizing.

    If there is not enough inventory for the alternatives to cover a required quantity, the system confirms only the available amount and ignores the rest. The main item contains information on the confirmed quantity of the sub-item, but is not relevant for planning. For this reason, the material shortage is not passed on to planning.

    If you set the material requirements planning indicator [Page 139] for one of the alternatives, however, the system creates an *additional* sub-item for this material, assigning it a confirmed quantity equal to zero, and a required quantity equal to the open quantity. Since this material is placed as the final alternative in the substitution, it captures any remaining quantities. The system takes this item into account and passes the material shortage on to planning.

4. Based on your settings Customizing, the system performs pricing at the main or sub-item level.

    If you make any changes to the main item, the system automatically rechecks availability and recalculates prices for all items in the substitution list.

Product Selection in Deliveries

Purpose

Depending on your settings in Customizing, the system carries out a new product selection in the delivery. This function allows you to recheck the available quantity of the substitutes and make the adjustments necessary to ship the largest quantity of preferred materials to the customer.

Process Flow

When you create a delivery for an order containing a product that is on substitution, the system checks:

- The substitution reasons [Page 127] assigned to the alternative products

  If you have specified outcome *A*, the system carries out a new product selection in the delivery. If you have specified outcome *B*, sub-items are copied unchanged into the delivery from the order.

- For zero quantities

  If the customer has rejected a product, or there is no available inventory for a substitute, the sub-items contain a zero quantity. The system determines whether these items should be included in the delivery from the delivery item category [Page 133].

- The main and sub-item categories [Page 130] to calculate weight at the appropriate level

  Note that if the main item is weight/volume relevant, you must create a new VOFM copy routine to copy this value from the order.

Product Selection in Billing Documents

Purpose

The system prices materials based on your settings for main and sub-item categories [Page 130].

Process Flow

The system copies delivery items determined in product selection directly into the billing document. There is no new product selection.

Product Selection in Returns

Purpose

When you create a return with reference to a previous document, you must take copy rules into account for items determined in product selection.

Process Flow

1. You create a return. The system copies items from the order based on copy rules [Page 136] for the item category.

   You have already set the system to copy order items determined in product selection exactly as they are.

2. After products are copied to the return, you manually change the quantity of the sub-items to reflect the actual amount being returned. The system automatically adjusts main item calculations to reflect these changes.

3. You continue with the standard delivery and billing processes.
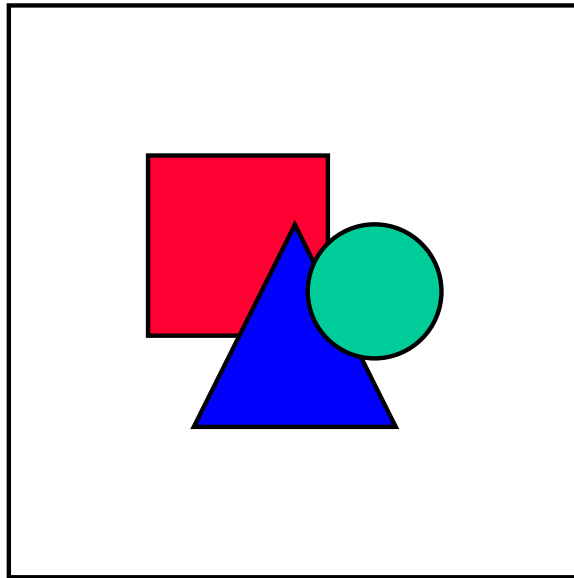
Note that the system does not carry out product selection in return deliveries, regardless of your settings. All entries are copied as they are from the return order.

Product selection functions are supported only in returns that are based on orders. There are no Customizing settings for product selection in billing documents. If you create a return in reference to an invoice, the system automatically copies *all* schedule lines. You must then manually delete items that you do not want. Additionally, the system does not copy quantities. These you have to enter manually in the return.There is no quantity correlation between main and sub-items.

Special Functions

Use

In addition to standard sales order functions, there are other functions influenced by product selection. These are:

- Rescheduling

- Changing manual item categories

- Listing/Exclusions

- Customer/Material information records

- Satisfying orders

- Referring to open quotes and contracts

- Forward scheduling

- Allocation

- Automatic batch determination

- Minimum order/delivery quantities

- Bill of material (BOM) substitution

- Different units of measure (UOM)

- Weight/Volume

- Changing partners

Features

Rescheduling

When you reschedule (transaction **V_V2**), orders that contain items determined in product selection are reevaluated. If the substitution settings have changed, or there is more product available, the system may determine other substitutes. This may result in products being promised to the customer other than those agreed to at the time of order entry. To avoid this, you can set the *fixed date and qty* indicator in the order (choose *Goto → Item → Schedule lines*). The system will not take the order account when rescheduling.

Items determined in product selection are only considered in a rescheduling run when you have set the input parameters to include all materials. If you specify only certain materials, main and sub-items from product selection are excluded.

The *fixed date and quantity* indicator **does not** influence product selection in the delivery.

If a product selection item has been partially delivered, the system does not take it into account in rescheduling runs.

Changing manual item categories

If you change the main item category after product selection has been run, the system processes the sub-item category accordingly, but does not delete the sub-item.

If you would like to change a main item with an item category that is not valid for product selection (for example, third party orders), you must add this item category to the condition table/access sequence and process it accordingly.

For third party orders, only the main item is passed to the purchase requisition, not the sub-items.

Listing/Exclusions

If you create listings or exclusions for a customer, the system processes them before confirming substitute items in the order. If any of the materials are affected and removed from the list of possible alternatives, the system issues a message informing you.

This function is also available in the delivery.

Customer/Material information records

If the customer uses a different material number than your internal number, you can create a customer-material info record. Customer material info records can be used in conjunction with product substitution at either the main or sub-item level.

If a record refers to a sub-item, only a portion of the detail data is copied to the schedule line. The minimum order and delivery quantities, and the plant are not copied, for example.

Fulfilling orders

In product selection, the system consumes the available inventory of each substitute prior to checking the available inventory of the next alternative. It does not optimize its proposals to give the customer the least possible number of alternatives. This means that there may be a single alternative that would completely satisfy the customer order. But because the substitutes are consumed one at a time in order of priority, the customer is shipped several products:

Material entered: Product A	Requested quantity is 30
Condition record for alternatives:	Product *A* ATP qty 10 - substitute *1*
	Product *B* ATP qty 20 - substitute *2*
	Product *C* ATP qty 30 - substitute *3*
The system proposes:	Product *A* ATP qty 10 - substitute *1*
	Product *B* ATP qty 20 - substitute *2*

The system does not select product *C* although it would satisfy the order completely. For the system to consume product *C* first, you would have to reprioritize it as substitute *1*.

Referring to open quotes and contracts

In the standard system, you can set the system to inform you in standard orders if existing quotes or contracts exist for any items. When you activate this function, you can reference a schedule line to the existing document. These schedule lines then take on pricing and additional information from the reference document.

This function is for the main item only in product selection, not sub-items.

Special Functions

Forward scheduling

Forward scheduling is supported in product selection.

Allocation

The system does not take substitutes that are on allocation into account.

Material	Allocation - Allowed Amount
Product *A*	50 pieces
Product *B*	50 pieces

Substitution Routine	
Material entered:	Product *A*
Substitute	Product *A*
	Product *B*

If you were to place an order for 100 pieces, the system would normally propose 50 pieces of product *A* and 50 of product *B*. However, when allocation is coupled with product substitution, the system does not accept the alternative materials. Instead, it issues a message informing you that 100 pieces remain after product selection.

Automatic Batch Determination

Product selection and automatic batch determination do not work together in the sales order. The system substitutes products based on their available quantities, then carries out batch determination to find an appropriate batch for the quantity entered. In this case, the system may select items that do not have valid batches in the available inventory.

Material PRODBATCH-01 has a substitution routine/batches as follows:

Material	Substitution	Batch number	Quantity	Status
PRODBATCH-01	1	BATCH01	10 pieces	Good
PRODBATCH-01a	2	BATCH01A	30 pieces	Bad
PRODBATCH-01c	3	BATCH01B	40 pieces	Good

If you book an order for PRODBATCH-01 for 40 pieces, the system displays the following data for product selection and automatic batch determination:

	Line	Material	Quantity	Batch number
ENTERED	010	PRODBATCH-01	40 pieces	
SUB 1	011	PRODBATCH-01	10 pieces	BATCH01

SUB 2	012	PRODBATCH-01a	30 pieces	------------

The system issues a warning informing you that it could not select a batch.

Minimum order/delivery quantities

The system does not process minimum order and delivery quantities in sub-items (either from material master or customer-material info records).

Bill of material (BOM) substitution

Product selection does not support substitution for BOM main or sub-items.

Different units of measure (UOM)

Different units of measure for substitutions are not permitted. For example, you cannot substitute one case of material *1* with two cases of material *2*.

The base unit of measure, in this example one case, must be consistent between the material entered and its alternatives.

Weight/Volume

When you set the weight/volume relevance indicator for the main item category, the weight/volume of the main item is based only on the values of the main item, not the sub-items. The system does not consider the weight/volume of the sub-items in the calculation.

The system does not automatically copy the weight/volume values of the main item into the delivery or the billing document. If you need to view the weight/volume of the main item in the delivery, or if you want to use pricing conditions based on weight/volume that are repriced in the billing document, write new VOFM data transfer routines. Refer to SAPNet Note **71603** for more information.

If the weight/volume relevance indicator is set for the sub-item category, the weight/volume is based on the actual weight/volume of the sub-items. The system automatically copies these values into subsequent deliveries and billing documents.

Changing partners

You cannot change partners assigned in the product selection items.

Material Listing and Exclusion

Purpose

Material listing and exclusion lets you control which materials specific customers may or may not buy. For example, if you create a material listing for a specific customer, the customer can only order products from that list. You can also create a master record for material exclusion for a particular customer. Then the customer can not order excluded materials from you.

The following figure shows the functionality of material determination.
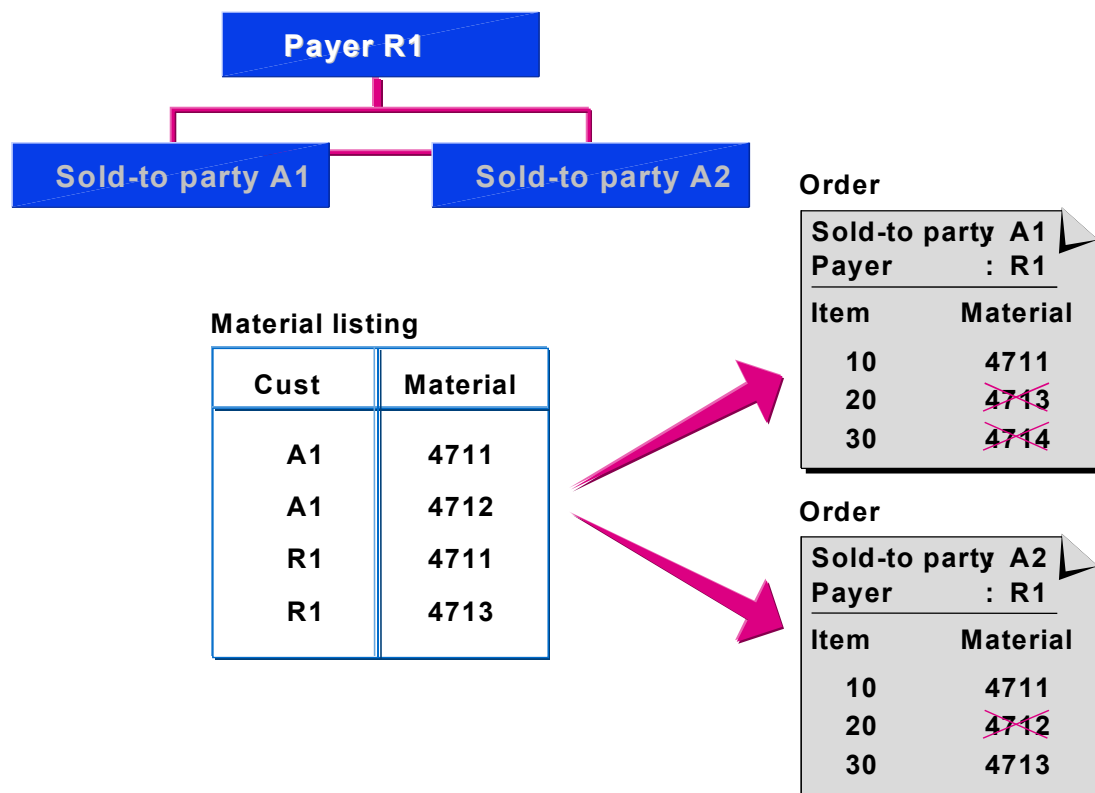
Partner Functions in Material Listing

Material listing applies to two partner functions in Sales & Distribution: the sold-to party and the payer.

In the standard version of the SAP R/3 system, when the sold-to party and payer are different, the material listing check is as follows:

- If the sold-to party has a material listing, the system only checks this listing (no other check takes place).

    ⇨

    The material listing for a sold-to party can include materials that do not appear in the material listing for the payer (for example, in the case of materials that are rarely ordered or only in exceptional cases)

- If there is no listing for the sold-to party, but a listing has been created for the payer, the system automatically checks the payer's listing.

- If no material listing data exists for either the sold-to party or payer, then the customer may order any material.

Customizing

You make the settings for this in Customizing for SD Basic Functions.

Creating Master Records for Material Listing and Exclusion

To create a material listing or exclusion record, proceed as follows:

1. In the SD Master Data Screen [Ext.] select, *Products* → *Listing/exclusion* →*Create*.

   You reach the *Create Listing/Exclusion: Initial Screen*.

2. Enter a value in the *List/excl.type.*

   The standard version of the SAP R/3 system includes two material listing/exclusion types:

   – A001 for material listing

   – B001 for material exclusion

3. Press ENTER.

   The *Selection of Key Combination* window appears. The standard version includes only one key combination:*Customer/material*.

4. Mark the *Customer/material* field and press ENTER.

   You reach the screen where you create the master data.

5. Enter a customer, validity period, and the materials that you want to list or exclude.

Partner Determination in Sales and Distribution (SD-BF-PD)

Implementation Options

As part of its business activities, a company has a great deal of contact with natural and legal persons, that work in relation to each other and fulfil different functions.

> A customer orders goods from a company. In order to ensure that the goods arrive safely, a forwarding agent may be commissioned with the delivery. A sales employee processes the business transactions in the company.

The component *Partner Determination in Sales and Distribution* enables you to display the partners involved in the business transaction, their functions and their business relationships in the R/3 system. When creating or processing sales documents, the system can determine the partners automatically.

Integration

Using Other Components in Logistics

In partner determination the system takes data from the business partner master records. In the component hierarchy the business partner master data for *Customer* and *Vendor* is assigned to *Logistics - General (LO) - Logistics Basic Data: Business Partners - Customer or Vendor.*

With Financial Accounting (FI)

As accounting data is always needed for processing a business transaction, sales and distribution data is created for a business partner in a common master record.

From an accounting view there are customers **Customers** and vendors **Creditors.** Therefore, customer master data is managed in a customer master record and vendor master data is managed in a creditor master record.

With Human Resources (HR)

The master records for the partner type *Personnel* (e.g. sales personnel) are maintained in the personnel master record in the application component *Human Resources* (HR) - *Personnel Management (PA).* If HR is not used in your company you can also create a personnel master record yourself for employees in sales and distribution. You can find further information in the implementation guide (IMG) for Sales and Distribution under *Master Data → Business Partners → Use sales employee without HR*

Features

The function that a partner (natural or legal person) fulfils in a business process is shown in the R/3 system as a partner function.

The component offers various partner functions that are significant for sales and distribution processing. There are also special partner functions for sales support available. If required, you can define new partner functions in Customizing.

Partner Determination in Sales and Distribution (SD-BF-PD)

You can use partner procedures to assign a group of partner functions in Customizing to each transaction (e.g. billing document).

You can maintain partner relationships in the customer master and in the sales and distribution documents. As a rule there are already partner relationships in the customer master record. When creating a sales document these are automatically created in the document header.

You can change the proposed partner functions in the sales document if this is permitted in Customizing.

In the sales documents, you can define partners at item level as well as header level, if this is allowed in Customizing.

Partner Control

Implementation Options

Since in sales and distribution processing in the R/3 system the right partner is automatically set up with the required function in the document, several settings are necessary, and you should carry these out accordingly in the structures for your partner relationships.

1There is a control function for this purpose in Customizing for Sales and Distribution, which will be looked at in more detail in the following sections.

Detailed information on how to make these settings in Customizing can be found in the implementation guide (IMG) for sales and distribution under *Basic functions → Partner determination* in the corresponding documentation.

Process Flow

The process for partner determination activities is generally as follows:

1. Define partner functions for the different tasks that business partners in your company generally carry out in the sales and distribution process.

2. Combine several partner functions together into partner procedures and assign these to the document types.

3. Assign business partner functions on the debit side (partner type *Customer*) to an account group.

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Partner Type

Use

The partner type enables general scheduling for business partners acting on the market. You can use the partner type to see the master records that were used to transfer the partner data into the document.

The following table shows which partner types are available in sales and distribution processing and which partner functions are assigned to these partner types in the standard system.

Partner Types and Assigned Partner Functions

Partner type	Partner function, e.g.	Entry expected from system	Type of master record
Customer (CU)	Sold-to party (SP) Ship-to party (SH) Bill-to party (BP) Payer (PY)	Customer number	Customer master record
Vendor (V)	Forwarding agent (fwdg agent)	Vendor number	Vendor master record
Human resources (HR)	Employee responsible (ER) Sales personnel (SP)	Personnel number	Personnel master record
Contact person (CP)	Contact person (CP)	Contact partner number	(created in customer master record, no master record of its own)

No new partner types may be added to the partner types given by the system.

Activities

If a partner belongs to different partner types, you must create a corresponding amount of master records for this partner. If, for example, a customer company also delivers goods to you, you must create a customer master record as well as a vendor master record.

Partner Functions

Use

By assigning a partner function to a partner you can determine which functions the partner fulfils in the business process. A partner can have more than one function.

The diagram shows partner functions which are typical for sales and distribution processing.
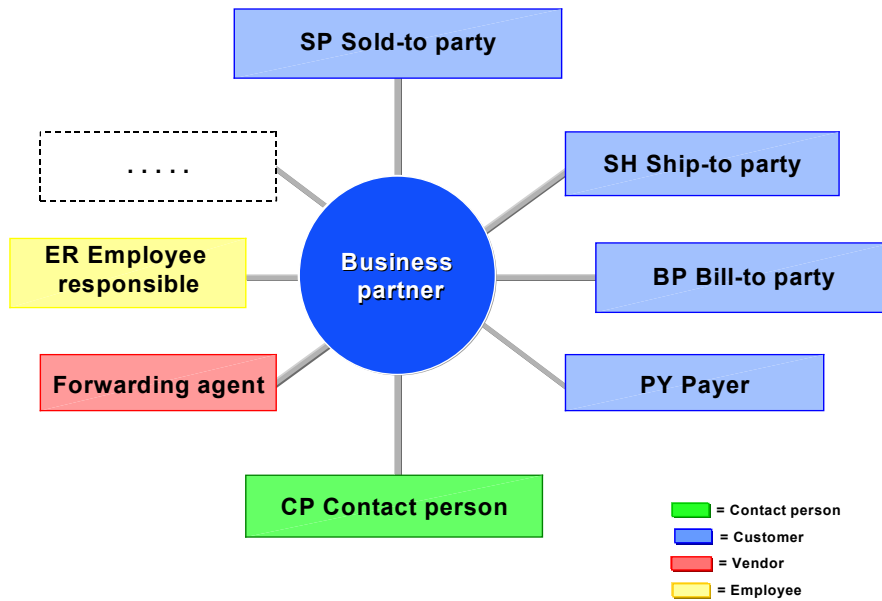
In the simplest case all required partner functions for partner type Customer are taken over by the customer, that is to say a customer appears in the partner functions *Sold-to party, ship-to party, payer* and *bill-to party.* As these functions are as a rule absolutely necessary for sales and distribution processing, they are defined in the system as obligatory functions. You can change this setting in Customizing or define other functions as obligatory functions.

You can define other partner functions in the customer master or in the sales document.

Integration

Partner functions are classified using partner types. Partner types enable general scheduling of partner functions in creditors,customers, personnel and contact persons.

Features

The following partner functions exist, for example, in the standard system for sales and distribution:

Partner Type Customer

- Sold-to party
- Ship-to party

Partner Functions

- Bill-to party

- Payer

- Sold-to party authorized to release against a contract:

    You can define the sold-to party authorized to release against a contract in the partner screen of a contract. This partner may only schedule orders with reference to this contract, even when he is not the sold-to party authorized against a contract.

Partner Type Contact Person

Contact persons are natural persons whom you must contact at the customers for business processing (for example, purchasers) It is not necessary for you to be a customer employee, you could, for example, be an independent advisor.

You can create contact persons directly in the customer master record. You are then assigned to this customer. The contact persons can however be assigned to other customers.

Partner Type Vendor

- Forwarding agent

    A forwarding agent is an example of a business partner on the credit side, who is included in a sales process. If you commission a particular forwarding agent for deliveries to a specific customer, you can define the forwarding agent in the customer master record as the partner.

Possible partner functions on the credit side in the sales process are for example, interpreters, auditors.

Partner Type Personnel

- Employee responsible

- Sales personnel

    You can enter an employee from your firm as the person responsible:

    – In the customer master: if the employee is normally responsible for processing transactions with this customer

    – In the sales document: if the employee is responsible for processing the business transaction.

These functions are also significant in Sales Support (CAS). For more information on this, refer to Information on Sales Personnel [Ext.].

Partner Determination Procedure

Use

In the partner procedure you can determine whether partner functions can or should occur in a partner object (customer master, sales document, item category etc.).

For each object, in whixh partner functiions can be created, you can define partner procedures. That means

- for the customer master

- for sales documents

- for sales documents and billing documents: for items

By assigning a procedure you determine for which account groups (for the customer master), which sales document types (for sales documents) and for which item categories this procedure is valid.

The following procedure shows, for example, the partner determination procedure functions for sales documents and for the customer masters.
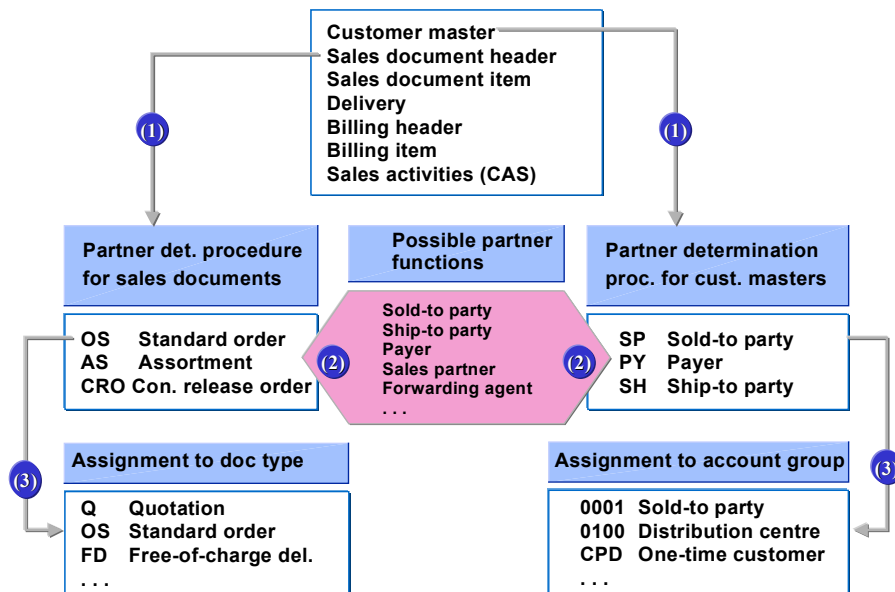
Features

In the partner determination procedure you can determine for each partner function:

- whether the partner function is an obligatory partner function

- whether the partner function may be changed in the document

Partner Determination Procedure

For sales documents and sales activities you can also enter in the partner procedure that the corresponding partner function should be occupied by another other than the sold-to party master record (source control).

Activities

In Customizing there are pre-defined partner procedures available, which contain frequently used partner functions with the necessary characteristics. These partner procedures can be modified if necessary or you can create new partner procedures.

You can find further information in the implementation guide (IMG) for sales and distribution under *Basic functions → Partner Determination → Define and assign partner determination procedures.*

Example

You can create a partner determination procedure for billling documents in which the sold-to party, bill-to party and the payer are obligatory but the ship-to party is not. (For billing it is more important to know who orders and pays for the goods rather than who receives them)

Partner Source

Use

In the standard system the business partner is automatically copied from the customer master when creating sales documents and sales activities. Here the system takes the sold-to party from the customer master.

If you wish that the business partners are not taken from the sold-to party master record but that another partner function is taken from the customer master record, you can set this up in Customizing.

Activities

You can fmake these settings in the implementation guide (IMG) for sales and distribution under *Basic functions → Partner Determination → Define and assign partner determination procedures.* There you will further information in the documentation.

Example

In the different regions you work together with fixed vendors. Therefore you want the forwarding agent in the sales document to be determined in relation to the ship-to party and not the sold-to party.

Ensure in Customizing first of all that the ship-to party is determined from the sold-to party master record. Then the system goes into the ship-to party master record to determine the forwarding agent.

Assigning the Account Group to Partner Functions

Use

An important requirement for proper sales order processing is that each customer can only include those functions relevant for him in a document. You can achieve this by assigning permitted partner functions to an account group.

Examples from the system:

- The partner function SP can be taken from a customer of one of the following account groups: 0001 (sold-to party). 0005 (sales prospect), 0007 (sales partner), one-time customer. . .

- The partner function AG cannot take customers from the following account groups: 0002 (ship-to party), 0003 (payer) or 0004 (bill-to party).

Activities

If you have created a new partner function of the partner type *Customer*, you must then assign a partner function to the account groups for which it is permitted.

Customizing

You can make these settings in Customizing for Sales and Distribution for partner determination.

You can find further information in the implementation guide (IMG) for sales and distribution under *Sales and Distribution → Basic functions → Partner Determination → Assign partner functions on the debit side to account groups.*

See also:

LO – Business Partner: Account Groups [Page 28]

Partners in the Sales and Distribution Process

Implementation Options

The following shows how partner determination is used in sales and distribution processing. The procedure is divided into two parts:

I.   Creating master records

II.   Creating sales documents

Prerequisites

You have implemented the settings described in the section Partner Control [Page 155] in Customizing.

Process Flow

I. Creating Master Records

1. If you create a customer master record, you must first of all decide which functions this customer fulfils in the business process. Then you select the account group for the customer.

     If your customer merely acts as the ship-to party, create a master record for a ship-to party. In this case the system automatically proposes the account group 002. The partner can then only occur as the ship-to party.

     You can find further information on account groups in the documentation on business partners under Account Groups [Page 28].

2. Then you can determine which other partners are involved in the business transactions and which functions these partners fulfil, for example, additional ship-to party, contact person or forwarding agent.

3. In the screen *Partner functions sales area,* assign the possible functions to the customer and enter the other partners and their functions. All of the partners that you enter here must already have a master record.

     If you create a master record for a sold-to party, the obligatory functions *ship-to party, bill-to party* and *payer* are automatically assigned with the sold-to party You can, however, overwrite the partners, if the partner functions have been defined in Customizing as changeable.

Example

The following table contains some examples of which partner combinations appear on the market and which activities you execute in the R/3 system, in order to show these relationships in the customer master record.

Scenario:	Activities	Prerequisites

Partners in the Sales and Distribution Process

The partner issues orders, receives the goods and the invoice and pays.	You create a sold-to party master record for the customer (account group 001).	
Customer A has three partners, to whom goods can be delivered.	You create a sold-to party master record for customer A. In the screen *Partner Functions Sales Area* enter all three possible ship-to parties.	There are master records for the three partners with the possible partner function *SP.* You have not defined the function SP as *definite* in Customizing.
Customer 101 is the sold-to party, the invoices are paid for by customer 102 (e.g. central payment point.	You create a master record for the sold-to party. In the screen *Partner functions Sales Area* change the default **Customer 101** to **Customer 102** in the field *Payer PY.*	A master record exists for customer °102 with the possible partner function *PY.*2
Forwarding agent T is generally commissioned with deliveries to customer 4.	In the screen *Partner Functions Sales Area* enter the additional partner function SP and the forwarding agent creditor number.	A vendor master record exists for the forwarding agent.

II. Creating Sales Documents

1. When you create a customer sales order, enter the sold-to party.

    You can also enter a ship-to party first. The system then uses this to determine the sold-to party.

2. Using the sold-to party the system extends the partner created on the partner screen in the customer master record for the functions, which have been determined for the corresponding document type in the partner determination procedure (if it has not been determined in Partner Source [Page 161] in the partner determination procedure, that specific functions are not dependent on the sold-to party but are taken by another partner function.

    If several partners have been created in a customer master for a function, a screen appears on which you can choose the valid partners for this document.

    If no partner has been defined in the customer master for a partner function, this function is not automatically transferred into the document. You can enter this function manually onto the order partner screen.

    If a partner function has been defined in the partner determination procedure as an mandatory partner function, but no partner has been defined in the customer master, you must enter the partner manually otherwise the order will be incomplete.

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3. If required, change the partner in the partner screen for the document header or the document items. This is only possible, if the functions in the partner determination procedure are defined as changeable.

4. If required, enter other functions in the partner screen. The functions, which you add, must be contained in the partner determination procedure.

Result

The planned partners are automatically copied into the subsequent order documents (for example, the bill-to party in the billing document).

See also:

Partner Determination for Customer Hierarchy Nodes [Page 174]

Displaying Partner Information from Documents

Use

When creating, changing or displaying a sales document, you can display information directly from the document on the partners involved in the business transaction.

Features

In the **partner screen** you can see which partner functions have been taken by which partners in the order which you are currently working on. You can change the partners in the partner screen or add other partners for the order. You can also change a partner's address, without this affecting the master record.

In the sales documents you can also display information about the order partners on the debit side (partner type *Customer*).

- You can branch into the **customer master record** for the sold-to party, ship-to party, bill-to party or payer.

- You can display the **sales summary** for the sold-to party from the sales document.

Displaying Partner Screen from the Sales Document

Use

In order to check which partners are involved in a particular business transaction and which partners carry out certain partner functions, cally up the sales document partner screen. You can also change the partners here when creating or changing an order.

You can also display communication data from the order partner screen for the partner.

Prerequisites

You can display the partner screen for the document header in sales activities, sales documents, deliveries and billing documents.

You can display the partner screen for the document header in sales activities, sales documents, deliveries and billing documents.

The following procedures describe how to display the partner screens from the sales documents. Displaying in other document types is carried out analogue.

Displaying the Partner Screen for the Document Header

Choose *Goto → Header → Partners.*

The partner functions and related partners for the document header are displayed.

Displaying the Partner Screen for a Docuemnt Item

1. Select the item for which you want to see the partner.

2. Choose *Goto → Item → Partners.*

The partner functions and related partners which have been selected for the item are displayed.

Displaying and Changing the Partners Address

You can display the address and telephone number of a partner from the partner screen and if required, change them.

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These changes only apply to this order and do not have any effect on the partner master data.

1. Select the partners in the partner screen, whose address data you wish to see and choose *Partner Details.*

You reach the detail screen for the first of the partners selected.

2. Choose *Edit → Next partner* to display the other partners.

3. If required, change the address or telephone number.

Displaying Information on the Customers

Prerequisites

You must be in the sales document overview screen.

Branching into the Customer Master Record

To display the customer master record for the payer:

1. Choose *Environment → Display partners → Payer.*

    You reach the initial screen for displaying the customer master record for the order payer.

2. Choose the screen that you would like to see and select *Further.*

Displaying the Sales Summary

Choose *Environment → Display partners → Sales Summary.*

You go directly into the sales summary for the document sold-to party, which you are currently editing.

See also Sales summary [Ext.].

Different Partners at Item Level

Use

It may happen that in a business transaction the partner in the document header does not apply to all items, for example, if specific goods for a customer are normally delivered to another ship-to party.

In sales documents and billing documents you can enter one of the deviating partners from the document header at item level.

Prerequisites

You have planned to have the partner function in the partner determination procedure for sales document items or billing items.

Activities

When creating a document, the system copies the document header partners to the items. If you want to define another partner than the one in the document header at item level, overwrite the proposal from the item partner screen.

Entering Different Partners at Item Level

Use

The following example of a customer order shows how you can name a partner at item level, that is different from the partner in the document header.

Customer 101 is generally the sold-to party as well as the ship-to party. He would only like the delivery to go directly to warehouse L1 outside of the town for materials with a specific volume.

Customer 101 divides an order with two items: The first item should be delivered to customer 101, the second position must be delivered to L1 because of its size.

Prerequisites

You have planned the partner function *ship-to party* in the partner determination procedure in Customizing for sales document items and have defined this as changeable.

Procedures

1. Create a customer sales order as usual.

   The system copies the partner from the customer master into the document header and then from the document header into the items.

2. Select the item, that should receive a deviating partner.

3. Choose *Goto → Item → Partners.*

   The partner screen for the item appears. Here you can overwrite the changeable partner functions.
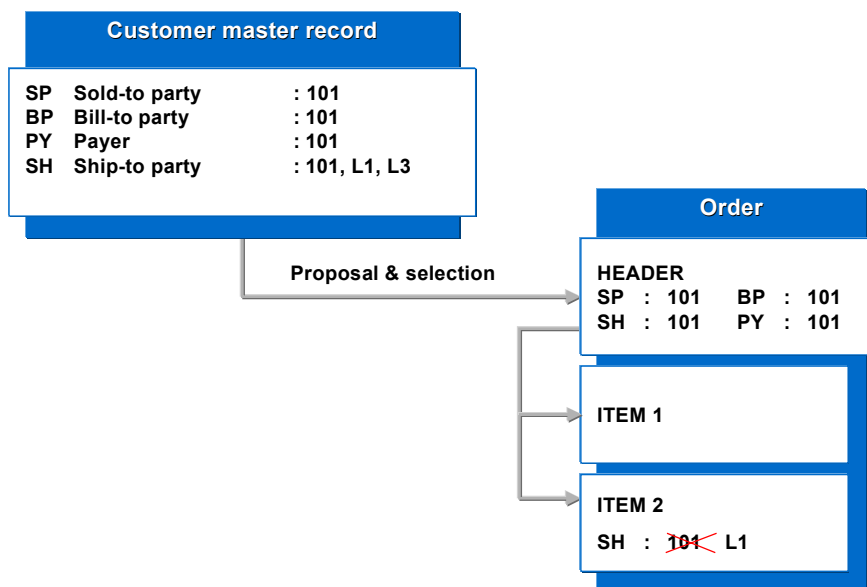
Result

The material from the first item is delivered to customer 101, the material from the second item to warehouse L1.

Authorized Partners for Release Orders

Use

When you create a release order for a contract, you enter the number of the contract and the name of the partner who is requesting the goods. The system then checks if the business partner is authorized to release against the contract.

Depending on the settings in Customizing, the system determines whether a partner is authorized to release against the contract by checking against one of the following:

- Partners in the contract (Rule *A*)

  If the partner has the partner function *AG* (sold-to party) or *AA* (sold-to party for release order) in the contract, the system accepts the partner as the sold-to party for the release order.

- Partners in the hierarchy (Rule *B*)

  If the partner who wants to release against the contract is the sold-to party of the contract or at a lower level in customer hierarchy to the sold-to party in the contract, the system accepts the partner as the sold-to party for the release order.

After the authorization check, the system also checks if more than one ship-to party is defined in the contract. If the contract contains a *WE* (ship-to party) and several *AWs* (ship-to party for release order), the system lists the possible ship-to parties in a dialog box. You select the appropriate ship-to party for the release order.

> You can define authorized sold-to parties (AA) and additional ship-to parties (AW) in the customer master record. When you create a contract for the customer, these partners are proposed for selection.

Prerequisites

You activate the partner authorization check in the Customizing activity 'Define Sales Document Types'.

Partner determination procedure *KAB* (partners in contract) contains the partner functions *AA* and *AW*. You must assign this procedure to the sales document types for which the partner authorization check is relevant. You make this assignment in the Customizing activity 'Define and assign partner determination procedures'.

In the standard R/3 System, the partner releasing against the contract and the ship-to party which you select are copied into the release order. If you want to control which partners are copied into the release order, you can define a copying routine for the relevant document types in the Customizing activity 'Maintain Copying Control for Sales Documents'. For example, you can specify that only the sold-to party releasing against the contract is copied into the release order and the other partners are determined from the customer master record of the sold-to party.

Features

If rule *B* is defined for the contract type, you can search for authorized partners for a release order using the contract number. Equally, you can search for the relevant contract for a release order using the partner number. In this case, the partner authorization rule is irrelevant.

Partner Determination for Customer Hierarchy Nodes

Purpose

During sales order processing, the system automatically determines special partner functions in the partner data of the document. The system uses these partner functions for the following purposes:

- To determine the hierarchy path and store it in the document

- To store hierarchy data per item (the pricing of individual items in the order may relate to different hierarchy nodes)

- To make it possible to display sales orders or invoices by node

The system automatically determines a default partner function (in the standard system 1A) in the sales order depending on the hierarchy type.

The system then uses partner determination to find higher-level partner functions, until it has determined the complete hierarchy path for the sales order. The standard version of the SAP R/3 System includes four standard partner functions for this purpose: **1A - 1D.** You can add as many additional partner functions as you require, up to a maximum of 26 levels.

Prerequisites

You have maintained the partner functions for the customer hierarchy (1A to 1..) in Customizing and assigned them to the partner determination procedure for the corresponding order type.

Process Flow

The following example shows how the system uses partner determination to determine the hierarchy path in a sales order.

Customer hierarchy with hierarchy path

4. Customer 2743 in the customer hierarchy displayed places a sales order.

5. Using partner determination, the system creates the correct hierarchy path by searching for higher-level partners.

   The partner function 1A is defined in Customizing as the default partner function. The customer has the partner function AG (sold-to party).

6. The system defines the partner data from the hierarchy path determined in the order.

   In this example, the system determines the hierarchy path marked yellow and stores it as partner data in the sales order:

   Partner functions per hierarchy level

Customer	Hierarchy level	Partner function
8000	highest level	1D
8100	second level	1C
8120	third level	1B
2743	fourth level	1A

Texts in Sales and Distribution

Purpose

In a business relationship, it is essential that business partners exchange information throughout the logistics chain. In sales and distribution, this exchange of information is supported by texts in master records and documents. You can maintain these texts for one particular customer or define them so that they can be used more flexibly.

Texts can be used in many areas of sales and distribution:

- Sales notes for customers
- Sales texts for materials
- Explanations in order confirmations
- Shipping instructions in deliveries

You can define as many text types as you require (sales texts, shipping texts, internal notes, supplement texts etc.) for master records and documents.

You can take the settings for the texts from Sales and Distribution Customizing under *Text control.*

Features

You store the texts that are to serve as information carriers in the system and in the output in the customer master record, the material master record, and in the sales and distribution documents. In addition the following processing and control functions are supported:

- Texts are proposed from the master records in the sales and distribution documents, if you have made the appropriate setting.
- Texts can be copied from a reference sales and distribution document into another sales and distribution document (e.g. from an inquiry into a sales order or from an order into a delivery).
- The copying of texts can be made language dependent, if required.
- You can change copied texts.
- You can integrate standard texts into the sales and distribution documents.

Texts in Customer and Material Master Records

The following figure shows some of the texts which are defined for customer and material master records in the standard version of the SAP Standard System.

```
┌──────────────────────────────────────────────────────────────────────┐
│  ┌─────────────────┐   ┌─────────────────┐   ┌─────────────────┐      │
│  │  Central texts  │   │ Contact partner │   │ Sales and       │      │
│  │ External sales  │   │ Partner notice  │   │ distribution    │      │
│  │     note        │   │ Location plan   │   │ External sales  │      │
│  │ Accounting note │   │ Powers of       │   │     note        │      │
│  │ Marketing note  │   │   attorney      │   │ Shipping        │      │
│  │       .         │   │       .         │   │  specification  │      │
│  │       .         │   │       .         │   │ Marking in      │      │
│  └─────────────────┘   └─────────────────┘   │   shipping      │      │
│                                              │       .         │      │
│                                              └─────────────────┘      │
│         ╲                 [ Customer ]                 ╱               │
│          ╲_____╱             │
└──────────────────────────────────────────────────────────────────────┘

                          ┌─────────────────┐
                          │   [ Document ]   │
                          └─────────────────┘
                          ┌─────────────────┐
                          │        ╱╲        │
                          │   [ Material ]   │
                          │  Sales and       │
                          │  distribution    │
                          │     text         │
                          │ Purchase order   │
                          │     text         │
                          └─────────────────┘
```
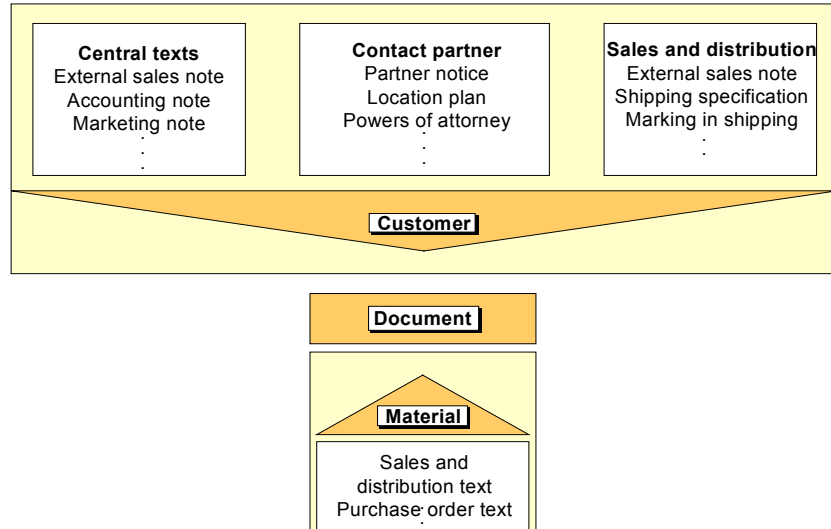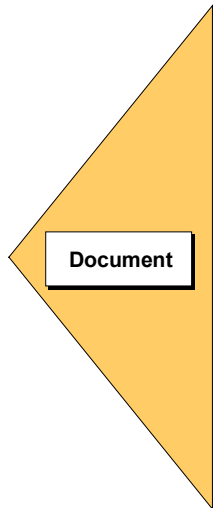
View Dependency

The processing of texts in the customer master record is dependent on view. You maintain the text groups relevant for each view by selecting *Extras → Texts* on the general data, sales and distribution or the contact person screens.

For example, you can enter partner notes for a contact person by branching to the screen containing the contact person data and selecting *Extras → Texts*.

Texts in Sales and Distribution Documents

The following figure shows some of the texts which can be entered for the various document types at header and item level in the standard version of the SAP Standard System. The heading "Sales document" covers the sales document types inquiry, quotation and order.

Sales document	Delivery	Billing document
Sales header Form header text Header notice 1 Form appendix text Shipping requirements Contractual reqs . **Sales item** Material sales text Item notice Packing note . .	**Delivery header** Form header text . **Delivery header without reference** Form header text . . **Delivery item** Material sales text . **Delivery item without reference** Material sales text	**Billing header** Form header text Header notice 1 . **Billing document item** Material sales text Item notice Inbound delivery text . .

Document

Document Header Texts

Header texts refer to the entire document and can be found in the document header.

One important header text is the form header text which is automatically copied from the reference document or the customer master record in the standard version of the SAP R/3 System. It can also be entered manually in the sales and distribution document. As the form header text appears at the top of all sales and distribution output, you should reserve it for important information for the business partner.

Another important header text is the supplementary text. It appears, for example, at the bottom of the order confirmation in the standard version of the SAP R/3 System. Supplementary texts include contract agreements or liability exclusion clauses, which are to be referred to at the end of a form.

Document Item Texts

Item-specific texts refer to the document items to which they are assigned. You can maintain a separate text for each document item.

The material sales text is an important item text, as it describes the material in more detail. In the standard version of the SAP R/3 System, it is copied automatically from a reference document or a sales and distribution text. As with all item texts, the material sales text can also be entered directly in the sales and distribution document.

Using Sales Texts

In the standard version of the SAP R/3 System, not all document texts are activated when sales and distribution forms are issued. A large number of texts are solely for internal information purposes and are not included in the sales and distribution forms. Thus, you can enter packing information for the shipping department as an item text.

You can specify, which texts are to be used for internal purposes and which are to be used in the sales and distribution forms. Individual settings are made in Customizing for sales and distribution in the menu option Layout definition.

Copying Sales Texts

You can enter texts manually in the header and in the individual items of the document in all phases of sales and distribution processing, or you can copy them automatically from the preceding documents or master records.

The form header text in the document header and the material sales text for each item is always copied from the preceding document or a master record. Neither of these texts can therefore be edited as long as the reference texts exist for them.

You can specify if you want a text to be **copied** from a preceding document or from a master record using access sequences in customizing.

The following figure shows how texts are copied from the master records into a sales document and how the texts are transferred into a subsequent document when it is created with reference to another document.
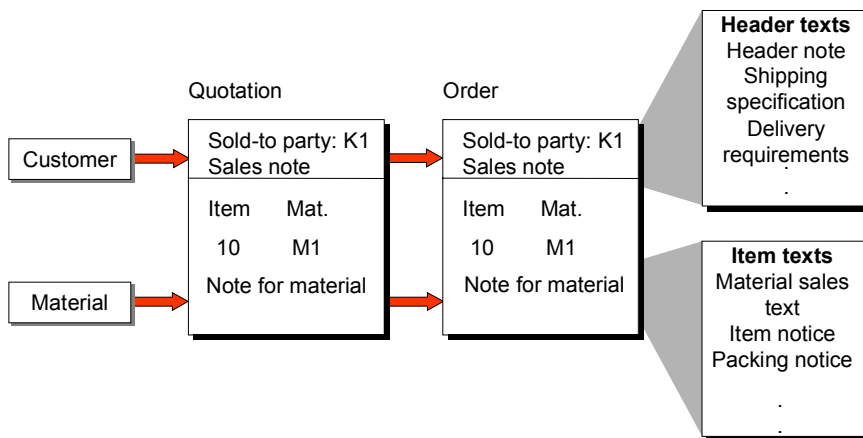
Example of Copying Text

The standard version of the SAP R/3 System defines that the system uses the following access sequence to find a reference text for the form header text in the sales and distribution document:

1. If a relevant header text exists in the reference document header, this text is copied into the header of the sales and distribution reference document. If the header text exists in several languages, the text is copied in all languages into the sales and distribution document header.

2. If there is no header text in the reference document, or the document is created without reference, the system copies the customer sales note from the customer texts in the customer master record in the language assigned to the sold-to party.

3. If there is no customer sales note in the sold-to party language, the system copies the customer sales note from the customer sales texts in the customer master record in the language assigned to the sales organization.

4. If there is no customer sales note in the language assigned to the sales organization, the system copies the customer sales note from the central sales texts in the customer master record in the language assigned to the sold-to party.

5.

6. If there is no customer sales note in the language assigned to the sold-to party, the system copies the customer sales note from the central sales texts in the customer master record in the language assigned to the sales organization.

7. If the system is not successful in finding an appropriate text, no header text is entered in the sales and distribution document.

Referencing and Duplicating Texts

Use

It is often required for texts in sales and distribution documents that a particular text appears unchanged throughout sales and distribution processing in the documents, for example, that the terms of payment remain in the document header from the quotation phase up until billing.

On the other hand, it may be necessary to change a text in a document without changing this text in the follow-up documents.

Therefore, there are two options in SAP sales and distribution processing for transferring a text from a master record or a document into a follow-up document.

- Duplicating text

- Referencing text

    Referencing has the following advantages:

    − Less storage space is needed.

    − It ensures that the text is copied from the document into the follow-up document unchanged.

Prerequisites

It should be specified in Customizing whether referencing or duplicating is to be carried out for each text type in the text determination procedure.

Activities

Duplicating texts

If a text is duplicated, the system creates a copy of the text. If you change the original text, this has no effect on the text in the follow-up document.

You can also change the copied text without affecting the corresponding text in a preceding or follow-up document.

Referencing texts

If a text is referenced, then it only appears once in the database: In the documents in which the text appears, the original text is merely referred to as a reference. If you change the reference text later, the referenced text is automatically changed with it.

As soon as you change a referenced text, the system automatically deletes the reference to the relevant reference text. The text is then duplicated and becomes an independent text, which is no longer affected by changes made to the reference text.

The reference remains lifted, if you change a text and then undo the changes again later.

Using Standard Texts

If you want to use texts more than once, you can enter these texts as standard texts and include them in the master record or document texts. If you define standard texts, they are included in the sales and distribution forms when they are issued.

Some standard texts to which you can refer in the sales and distribution documents have been defined in the standard version of the SAP R/3 System.

Notes on Entering Text

You can use standard texts to give notes to the employee entering an sales and distribution document regarding the information he should include in specific header or item texts and the sequence in which he should do it. For example, by including a standard text such as a header note in the sales document, you can make sure that the employee specifies in the first line whether the customer has taken advantage of a sales promotion in his purchase order and in the second line, how (newspaper, radio etc.) he found out about the promotion.

Proposals from the Master Records

The standard text above must first of all be created and then included in a text in the customer master. You can define in Customizing whether this text is automatically proposed from the customer master record in the header note of the document header when you create a sales document.

Standard texts can be proposed in the documents at header and item level in the same way from the material master record.

Create

To create a standard text, proceed as follows:

1. Select *Tools* → *S**A**Pscript* → *Standard text* on the main menu screen.

2. Enter a name for the text to be created in the field Text name, the indicator ST in the field Text-ID, and the abbreviation for the language in which you want to create the text in the field Language.

3. Select Create/Change.

   You switch to the SAPscript editor. If no standard text has been created with this name, the following message is displayed: Text <text name> language <language indicator> is new

4. Enter your text and select Save to save the text.

5. Select Back to return to the Standard Text: *Initial Screen.*

Using the Menu to Include Text

To include an existing standard text in a text in a sales and distribution document using the menu, proceed as follows:

1. Select Include → Text → Standard in the SAPscript editor .

   A dialog box appears in which you can enter the name of the standard text to be included. At this point, you can use the search function Find to find the standard text.

Using Standard Texts

Mark the field Include/Expand if you wish the standard text to appear as text in the editor and you do not want the SAPscript command syntax to be included. Otherwise, the standard text can only be read in the print preview or once it has been printed.

2. If you have entered the name of the standard text in the field Text name, press ENTER.

The system enters the standard text as an include in the editor at the point where the cursor is positioned.

Manual INCLUDEs

You can also include standard texts manually. You use the INCLUDE command with the following syntax in the SAPscript editor:

/: INCLUDE <SN> OBJECT TEXT ID ST LANGUAGE <SK>

<SN> is the placeholder for the name of the required standard texts and <SK> stands for the language indicator with which you control the language of the standard text. The line in which you make these entries must have the formatting key /: (paragraph format for a command line) in the format column.

Calling Up At the Time of Issue

In Customizing any number of standard texts can be included in the definition of a sales and distribution forms. The texts then appear in the appropriate place in the form when each output is issued.

Further Information

You will find additional information on the SAPscript editor and on INCLUDEs as well as examples online in the hypertext system under the text module name STXD_ED. Proceed as follows:

1. Select Tools → Hypertext → Structures on the main menu screen.

2. Enter the text module name in the Structure field and in the Language field the abbreviation for the required language.

3. Select Structure → Display.

You reach the Display Structure screen.

4. Place the cursor on the entry that you want to read and select Goto → Document → Read.

The content of the text module is displayed on the screen.

Select Back to return to the initial screen.