



**Integrated Business Processes with SAP ERP**  
**Script 1: Purchase to Pay Business Process**  
**in SAP ERP**

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# 1 Purchase to Pay Business Process in SAP ERP

This teaching unit aims at giving you an understanding of the *Purchase to Pay* business process in SAP ERP.

## Educational objectives in this unit:

After this teaching unit, you will be able to:

- name the organizational levels and master data of the procurement process
- operate the procurement cycle for stock and consumable materials concerning
  - o purchase requisitions
  - o purchase orders
  - o goods receipt
  - o invoice receipt
  - o vendor payment
- identify different stock types
- record goods receipt in the quality inspection
- describe important interfaces with other SAP ERP processes and applications
- list tools for analyses and reporting in the procurement process

## Scenario for the Case Study

IDES Company is successfully operating worldwide with distinct products. To ensure the company's success in the future, the board of directors decided to further develop the segment leisure activities. After intensive market research and short development time, the product **Speedstar** is the first to be added to the range. Speedstar is a premium racing bike in the upper price segment. Thus, the company wants to reappear on course for growth regarding the stagnant bicycle sector.

You can find further information concerning the Speedstar at the applicable chapters in this script. However, we will first focus on the theoretical basics of the organizational units of the SAP ERP system.

In the following image, you can see the whole process, which you will be independently processing in the following chapters of practical application. The color-coded process steps show that all steps being processed belong to the material management (MM) functional area – except for the one red process steps. This step concerns to the financials functional area.

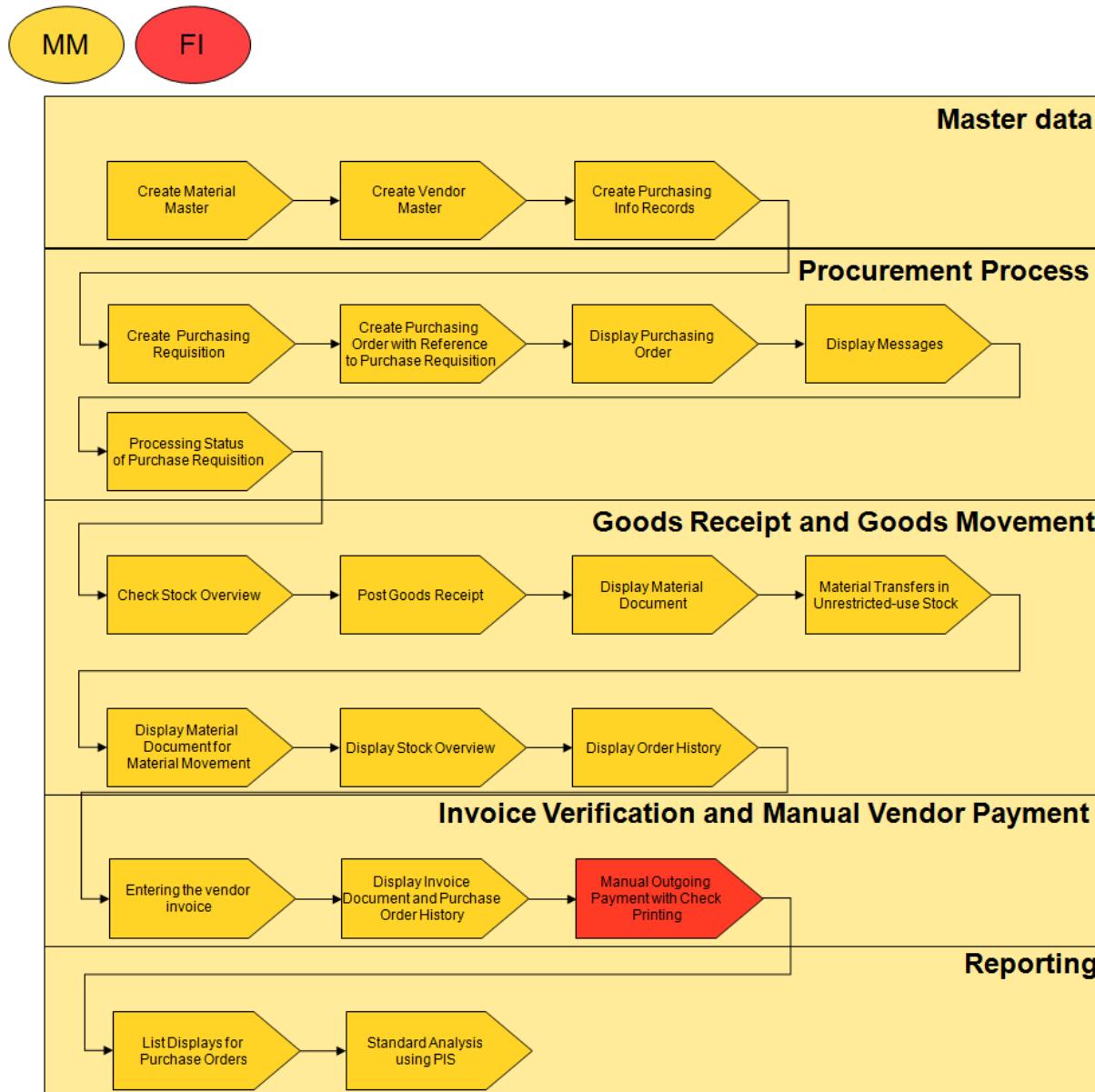


Figure 1: Process Overview Practical Application

## 2 Basic Data in the Purchase to Pay Business Process

This section explains the organizational levels of the SAP ERP system that are relevant for the Purchase to Pay business process and, thus, relevant to the procurement application of SAP ERP. Furthermore, master data of the procurement application are introduced.

### 2.1 Theory: Organizational Levels of SAP ERP Procurement



**Theory**

You have already become acquainted with the main organizational units in SAP ERP. For instance, these were the client, company codes, plants, sales organizations, etc. In the following, organizational units that are relevant for the procurement process are introduced. Note that there are organizational units like the client or company code, which are relevant to more than one functional area.

In SAP ERP, organizational levels represent the legal or organizational structures of a company. The determination of the organizational levels responsible is an important procedure in a project and it is an essential prerequisite for all subsequent activities. That is, you cannot run any business processes without specifying the organizational levels responsible.

The first step in the implementation process of a SAP ERP system is always to analyze the structural and process organizations in a company and then to reconcile them with the SAP structures. Once a company has decided on an organizational structure, considerable effort would be required to change it again.

The procurement process is assigned to the functional area Material Management (SAP MM) in SAP ERP. Correspondingly, all of its components are modeled in the material management area, which logically is part of logistics in SAP ERP (SAP LO).



**Note**

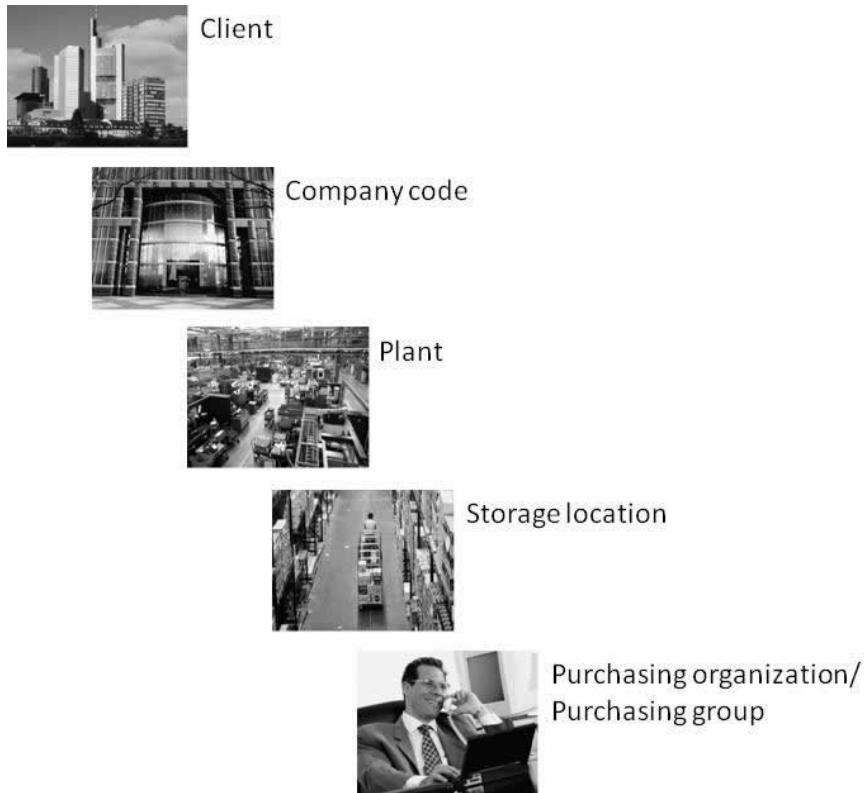
#### **What is Procurement?**

*Procurement in the sense of business management is the acquisition of goods and/or services to meet the needs of the purchasing company in terms of quality, quantity, time, location, and price. SAP ERP provides all the functions to ensure the seamless integration of all relevant company departments and external suppliers (vendors) in the procurement process.*

#### 2.1.1 Organizational Levels in the Procurement Process

The following figure displays the organizational levels relevant to the procurement process. You already know them from the introduction script part. Organizational Units represent the legal and/or organizational views of an enterprise. You can design your company structure based on your business processes.

Note that the organizational levels of client, company code and plant are listed because they have a wide range of functionality. Thus, they are also used in the procurement process.



**Figure 2: Relevant Organizational Levels in the Procurement Process**

### Client

A client is a self-contained unit in SAP with separate master records and an own set of tables (and table entries). It is on the highest level of organizational elements in SAP ERP. From a business point of view, the client could represent a corporate group, for example.

Since the client is the highest hierarchical level in a SAP system, data (such as master data) created at client level apply to all company codes and all other organizational units. Hence, you do not have to enter the specifications and data at client level more than once in the system. This ensures data integrity and prevents data redundancy.

The access authorization of a system user is always assigned on a client-specific basis. Your user master record is, e.g., created only for the client you are working in. All data input you make in the system is stored in the client you specified when logging into the system. Likewise, the processing and evaluation of data is carried out on a client-specific basis.

A SAP ERP System can host multiple clients. Thereby, each client is uniquely defined in the system by a three-digit numeric key.

### Company Code

A **company code** is the smallest organizational unit of **external accounting (SAP FI)**, which has a complete, self-contained bookkeeping system. This includes the entry of all events that require posting to the accounts and the creation of a complete audit trail for balance sheets and profit and loss statements. A company code represents an independent unit producing its own balance sheet: a company within a corporate group (client), for example.

Depending on size and structure of the company, it is possible to create multiple company codes for one client (N:1), e.g., to keep separate sets of accounting books.

A company code has a unique identification key by means of a four-character alphanumeric key ***within the client***.

### Plant

A **plant** is an organizational element within a ***logistics*** (operations). It subdivides the company in terms of production, procurement and materials planning. Within a plant, goods are procured, services rendered or goods are prepared for delivery.

A plant can represent a variety of objects within a firm such as:

- production facility
- central issuing storage location
- regional sales office
- corporate headquarters
- maintenance location

A plant is uniquely assigned to one company code; company codes can have multiple plants assigned (N:1).

A plant has a unique identification key by means of a four-character alphanumeric key ***within a client***.



*Since the identification key of a plant is unique within a client, and a plant can only belong to one company code, by specifying the plant, you simultaneously specify the company code.*

### Storage Location

A **storage location** is an organizational unit enabling local distinction of material stocks within a plant. Inventory management on a quantity basis is carried out in the plant at storage location level. The physical inventory is also carried out at this level.

A storage location is part of a plant; a plant can contain multiple storage locations (1:N).

A storage location has a unique identification key by means of a four-character alphanumeric key ***within a plant***.



*A plant can have multiple storage locations assigned, but a specific storage location can only belong to one plant. Storage locations are defined within a plant and are therefore assigned only to this plant. The key of a storage location thus need only to be unique within a plant. Within a client, the same key can be used for different storage locations, since when you specify a storage location you always have to specify the plant too. For instance, plant 1000 can have the storage location 0001 and plant 2000 can also have a storage location with the key 0001. Since these storage locations are defined within the plant and belong to different plants, they can have the same identification key (1000/0001 und 2000/0001).*

The organizational units **purchasing organization** and **purchasing group** are used in the procurement process only. That is, their main function is located in the procurement department and thus in the procurement application of SAP ERP.

### Purchasing Organization

The **purchasing organization** is an organizational unit within logistics that subdivides the enterprise according to the purchasing requirements. Thereby, purchasing organizations are structured to procure materials or services, negotiate procurement terms and conditions with vendors regarding one or multiple plants or company codes and assume responsibility for these transactions. **Pricing conditions** are set at purchasing organization level. Purchasing organizations are assigned to the **material management (SAP MM)** functional area.

### Purchasing Group

**Purchasing groups** are keys for buyers or groups of buyers responsible for particular buying activities. The purchaser group is internally responsible for the procurement of a material or a class of materials, and externally it usually supplies the contact person for vendors. Thus, they cannot be assigned to a purchasing organization (or any other organizational structure), since purchasing groups are assigned directly to the mentioned procurement objects (e.g., particular materials).



- A *purchasing organization* is an organizational level that negotiates conditions of purchase with vendors for one or more plants or companies. It is legally responsible for completing purchasing contracts.
- A *purchasing group* is the key for a buyer or group of buyers responsible for certain purchasing activities.

**Figure 3: Purchasing Organization/ Group**

### 2.1.2 Organizational Levels of Inventory Management

The **inventory management** is also relevant to the procurement process, although it is a distinct application of SAP MM. The inventory management is not part of the procurement application. However, it is still important to procurement process, since purchased goods sooner or later end up in a warehouse/storage location.

The following figure shows a distinct view of the organizational units, which focuses on inventory management in IDES.

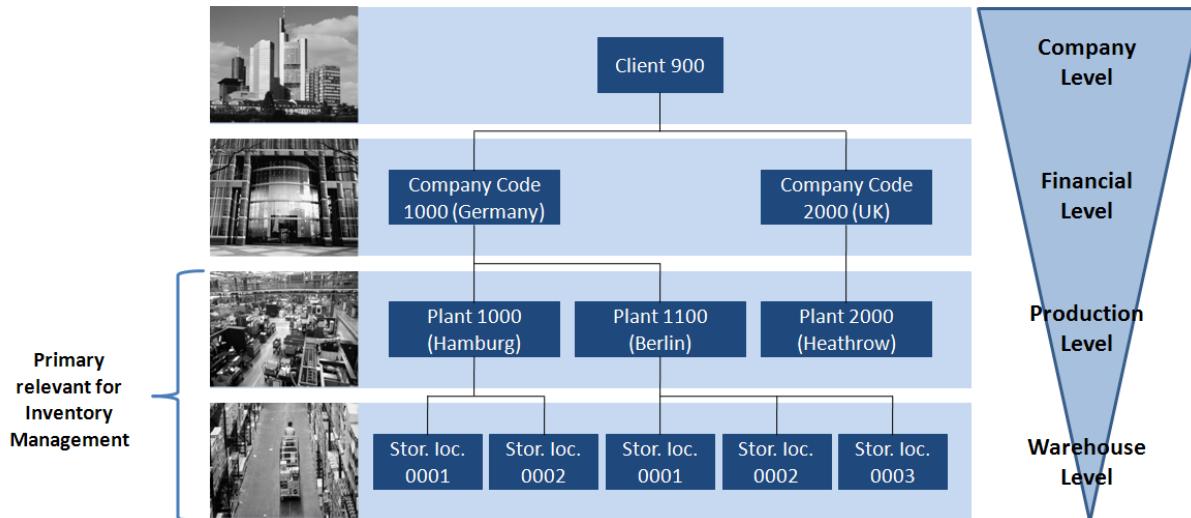


Figure 4: Organizational Levels of Inventory Management

The structure of a company is created by the assignment of organizational levels to each other. Therefore, a client may contain several company codes. In turn, a company code may contain several plants. However, a plant can only ever belong to one company code.

Organizational units have unique alphanumeric keys assigned. This makes it possible to identify them in the system. Each client (e.g., client 900) has a three-digit key. Additionally, the organizational levels company code, plant and storage location assigned to a client are defined uniquely by the means of a four-digit alphanumeric key (e.g., plant in Hamburg, unique key 1000).

The organizational structures are assigned to each other uniquely. Accordingly, multiple plants can, e.g., be assigned to a company code. However, a plant is only assigned to one company code in SAP ERP.

In the image displayed above, you can see a detail of the IDES model company in which the following cases are set. You can see that **company code 1000** IDES AG represents the corporate headquarters in Frankfurt. Amongst others, company code 1000 encompasses the **plants 1000** (Hamburg) and **1100** (Berlin). Multiple **storage locations (0001, 0002, etc.)** are assigned to each plant. Storage locations must have a unique four-digit alphanumeric key **within a plant**.

### 2.1.3 Purchasing Organization in the Purchasing Process

Once the “basic framework” of the enterprise structure (clients, company code, controlling area, plants) exists, the purchasing-specific organization levels must be introduced and incorporated into this structure. There are three variants of how purchasing organization (plant-specific, company-code-specific and cross-company-code) can be assigned to the company structure. Thereby, all three variants may occur within one enterprise.

The organizational incorporation of purchasing in the company’s structure can be represented by assigning purchasing organizations to company codes and plants. Thus, you can determine whether purchasing is organized centrally or locally in the company. You can also have a

combination of these two organizational forms. Thereby, you have to differentiate between plant-specific, cross-plant and cross-company code purchasing.

Regarding **company code** assignment of purchasing organizations, several purchasing organizations can be assigned to one company code. However, a specific purchasing organization can only belong to one company code. You can decide not to assign the purchasing organization to a company code (cross-company-code purchasing).

Regarding **plant** assignment of purchasing organizations: There is an M:N relationship between purchasing organizations and plants. In other words, you can assign several plants to one purchasing organization and one plant to several purchasing organizations.

### Plant-specific purchasing organization

Regarding plant-specific purchasing, a purchasing organization is in charge of purchasing (procurement) materials for **exactly one company code and to exactly one plant of this company code**. Thereby, a purchasing organization is assigned to exactly one plant in the **customizing** process.

The following figure displays an example where plant 1000 (Hamburg) and plant 1100 (Berlin) have their own purchasing organizations that handle their procurement needs.

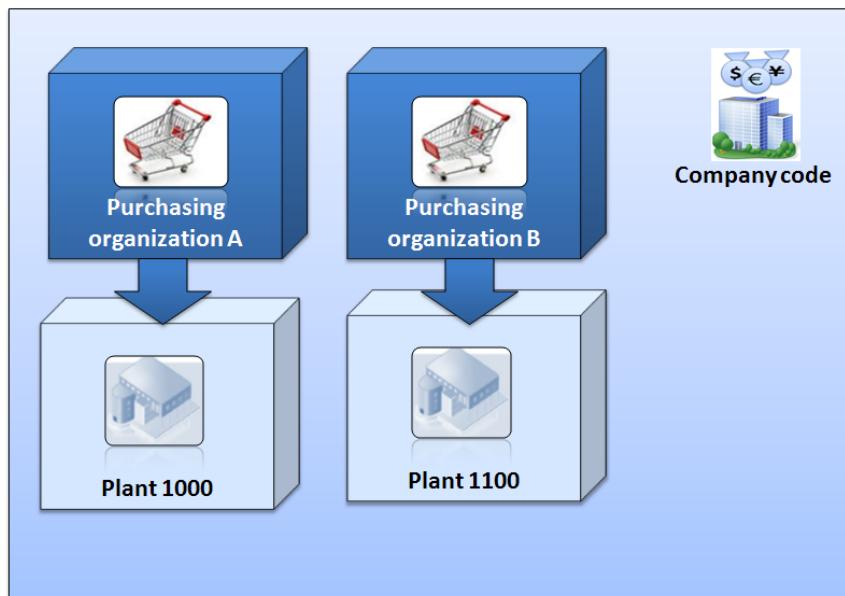


Figure 5: Plant-Specific Purchasing Organization

### Cross-plant purchasing organization

In case a purchasing organization is supposed to procure materials and services for multiple plants that belong to one company code, the purchasing organization must be first assigned to **exactly one company code** and then it must be assigned to those plants of this company code for which the purchasing organization should be responsible.

In the following figure you can see that **purchasing organization 1000** is in charge of procurement for the **plants in Hamburg and Berlin**.

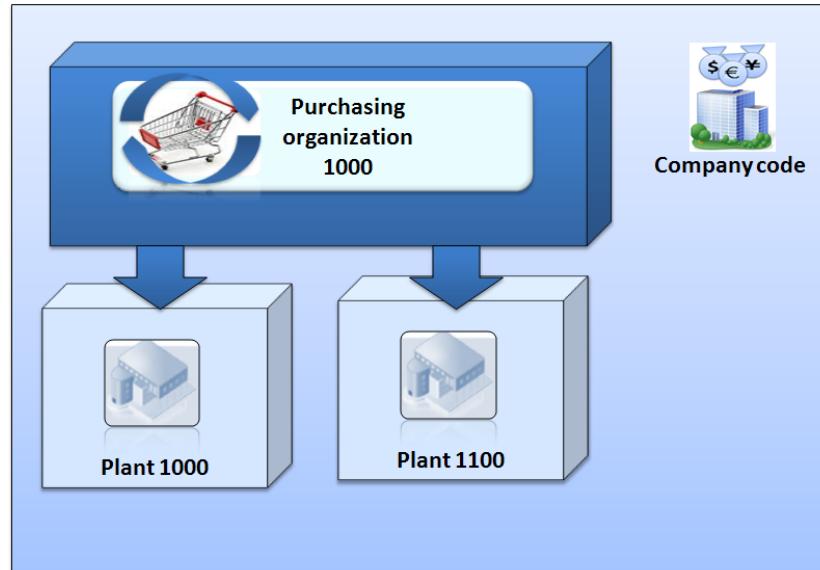


Figure 6: Cross-Plant Purchasing Organization

### Cross-company code purchasing organization

In case of a cross-company code purchasing organization, a purchasing organization is assigned neither to a plant nor to a company code in the customizing process. If an order is created in SAP ERP for which the particular purchasing organization is responsible, the system prompts you to enter the company code manually for which the order is processed.

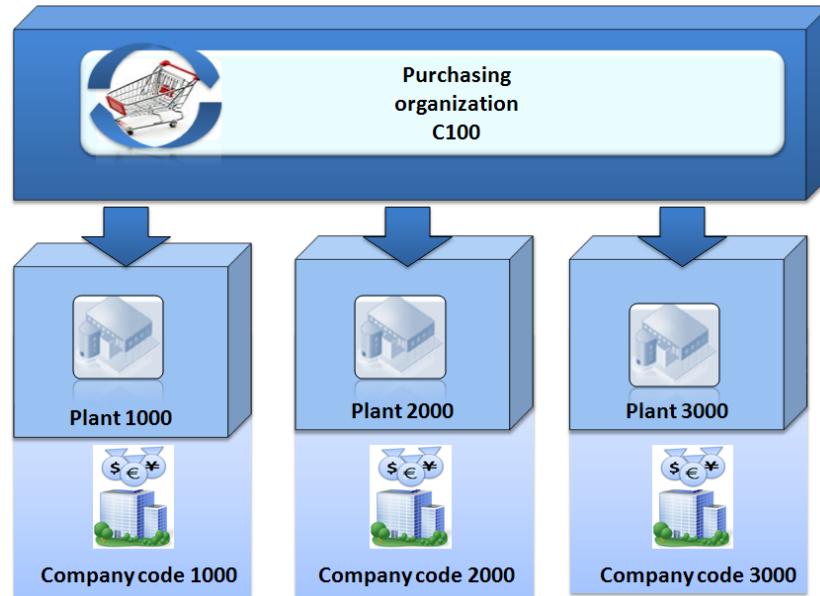


Figure 7: Cross-Company Code Purchasing Organization

For instance, purchasing organization **C100** in IDES is not assigned to a particular company code. Accordingly, this organizational unit can process procurement for each plant and each company code.

## 2.2 Excursus: Organizational Levels of IDES



This chapter will clarify aspects of the SAP ERP organizational model. Additionally, you will learn how organizational units and their interrelations are represented in SAP ERP. This section is not relevant to the final certification exam by SAP AG; however, it encourages in-depth understanding of the topic.

In SAP, the adjustment of standard software to company-specific requirements in the implementation process is referred to as customizing. In that process, the company's organizational structure needs to be translated (mapped) into SAP software. Additionally, business processes of a company are modeled in customizing.

Customizing is the technical layer below the application level (the every-day-work in the system) and is, thus, its foundation. The following case studies take place in a completely functional SAP ERP system. Therefore, the model company IDES AG was completely modeled and customized in SAP ERP. Only after completed customizing, SAP ERP can carry out routine tasks. The case studies you will work on represent those routing tasks in a company, which you need to carry out by using the SAP software.

For instance, you need to create the purchase order form, the company code, the purchasing organization, the material type, account determination, possible subsequent documents (e.g., invoices) before you can carry out a procurement process. That is, all these “objects” must have been created and the technical system settings must have been maintained prior to being able to “run” that process in a company.

At this point, you will (merely) get a quick insight in customizing of the company organization. If you are further interested in detailed information about customizing in SAP ERP, please refer to the courses “***Introduction in SAP ERP Customizing***“ and “***Advanced SAP ERP Customizing***” (at this moment, those courses are provided in German language only).

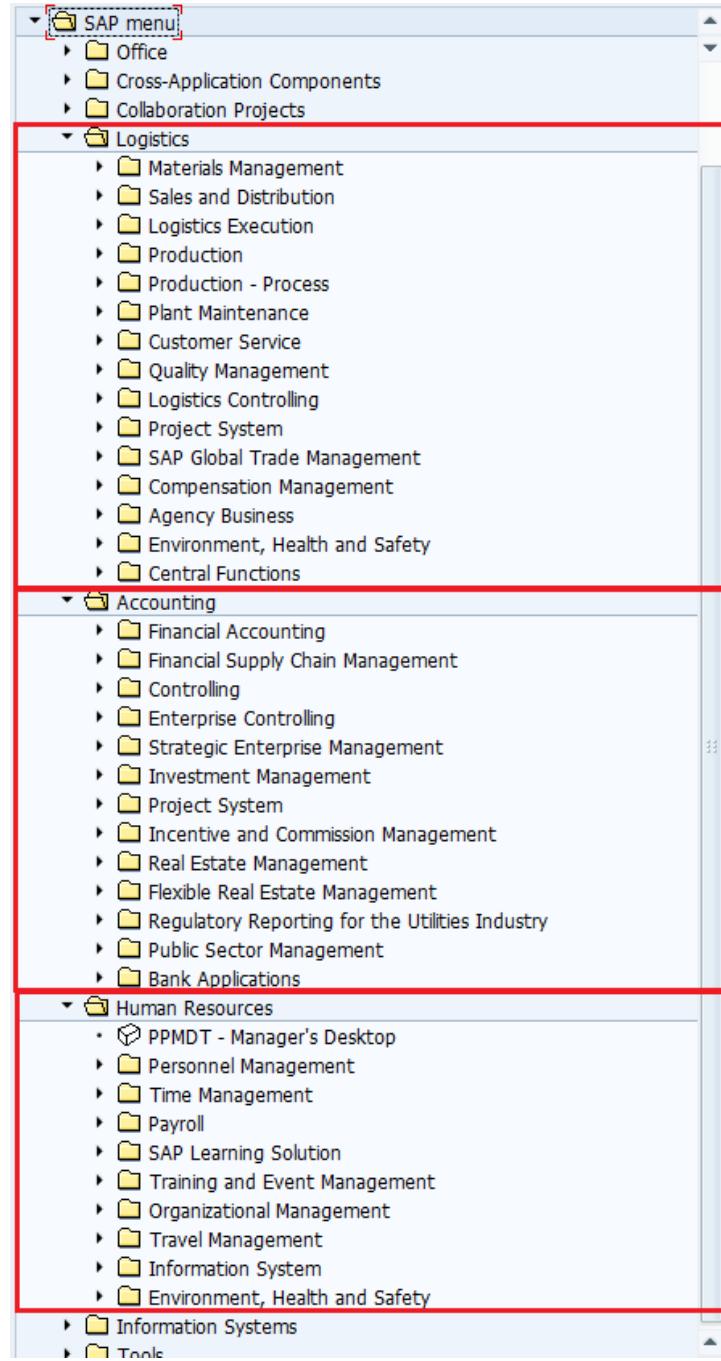
### 2.2.1 Implementation Guide

Customizing processes aim at:

- aligning the company-neutral and industry-specific functionalities of SAP ERP with the particular business requirements of a company
- extending SAP functionalities in a company
- implementing SAP solutions quickly, efficiently, and securely
- documenting and monitoring system settings with a user-friendly tool (Implementation Guide IMG) for project management and project execution

The SAP ERP system consists of an application layer and a technical layer. The application layer, which is used for carrying out routine tasks (e.g., starting production, arranging deliveries, creating invoices) by employees, contains three main areas – logistics, accounting, and human resources.

The technical layer is presented in the SAP Easy Access Menu in the tools-section. The technical layer contains all functionalities that the SAP ERP system needs for customizing, system development and system monitoring.



**Figure 8: SAP ERP Easy Access Menu: SAP-System-Screenshot**

You can run customizing in SAP ERP by using the IMG (Implementation Guide).

To open customizing, please choose

**Tools → Customizing → IMG → Execute Project (SPRO)**

in the SAP Easy Access Menu.

Next, click the  button to go to the SAP IMG (Implementation Guide).



Figure 9: SAP Reference IMG: SAP-System-Screenshot

You can see that the SAP Implementation Guide (IMG) follows the structure of the SAP application layer. Thus, the technical layer is structured in logistics, accounting as well as human resources. Under enterprise structure, you can define organizational structures (company codes, plants, purchasing organizations, etc.) and assign them to each other. The other IMG components deal with maintaining master data as well as process customizing.

## 2.2.2 SAP ERP Organizational Levels in Customizing

Next, you will learn about the organizational levels in SAP ERP. Thereby, the company's configuration and structure are modeled in customizing.

### 2.2.2.1 Definition of the organizational levels

Before you can operatively use organizational levels in SAP ERP, you need to define them.

#### Company Codes

Choose

**Enterprise Structure → Definition → Financial Accounting → Edit, Copy, Delete, Check Company**

and double-click the  button.

Double-click on the line **Edit company code data** and confirm the following message (no authorization to maintain data).

Next, you see a table with all company codes of IDES AG (e.g., 1000 IDES AG). By double-clicking the line 1000 IDES AG, you can see that IDES AG's domicile is Frankfurt and the company code currency is Euro.

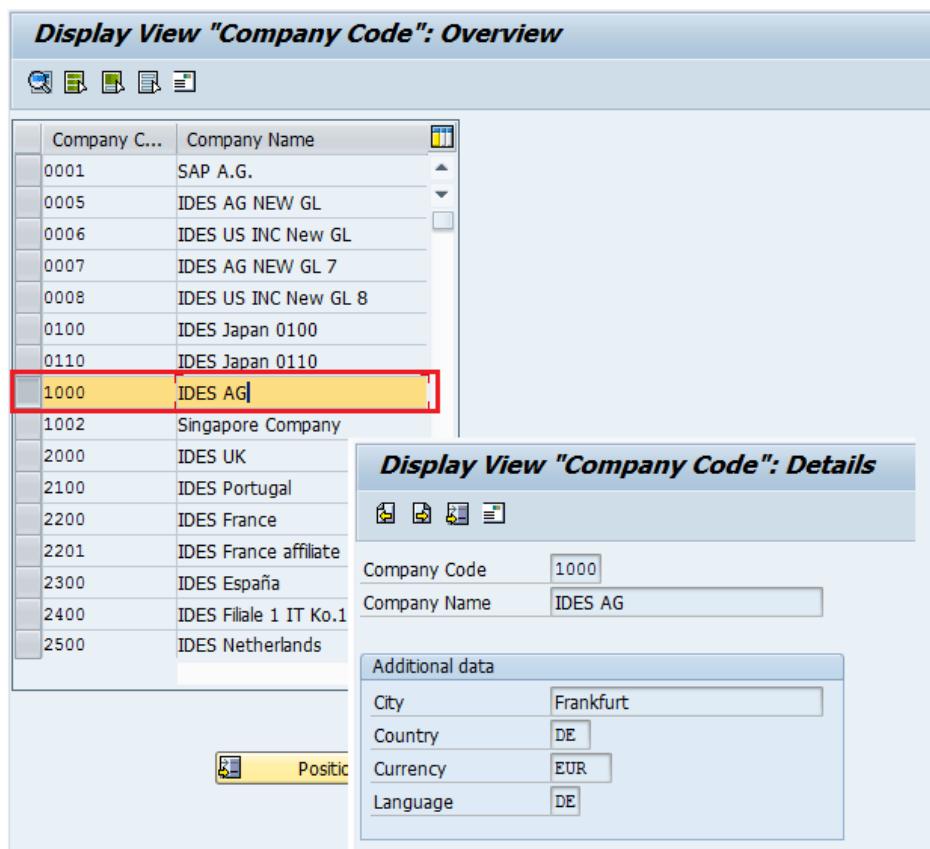


Figure 10: Company Code 1000: SAP-System-Screenshot

Leave the screen (2x ) and return to the SAP IMG.

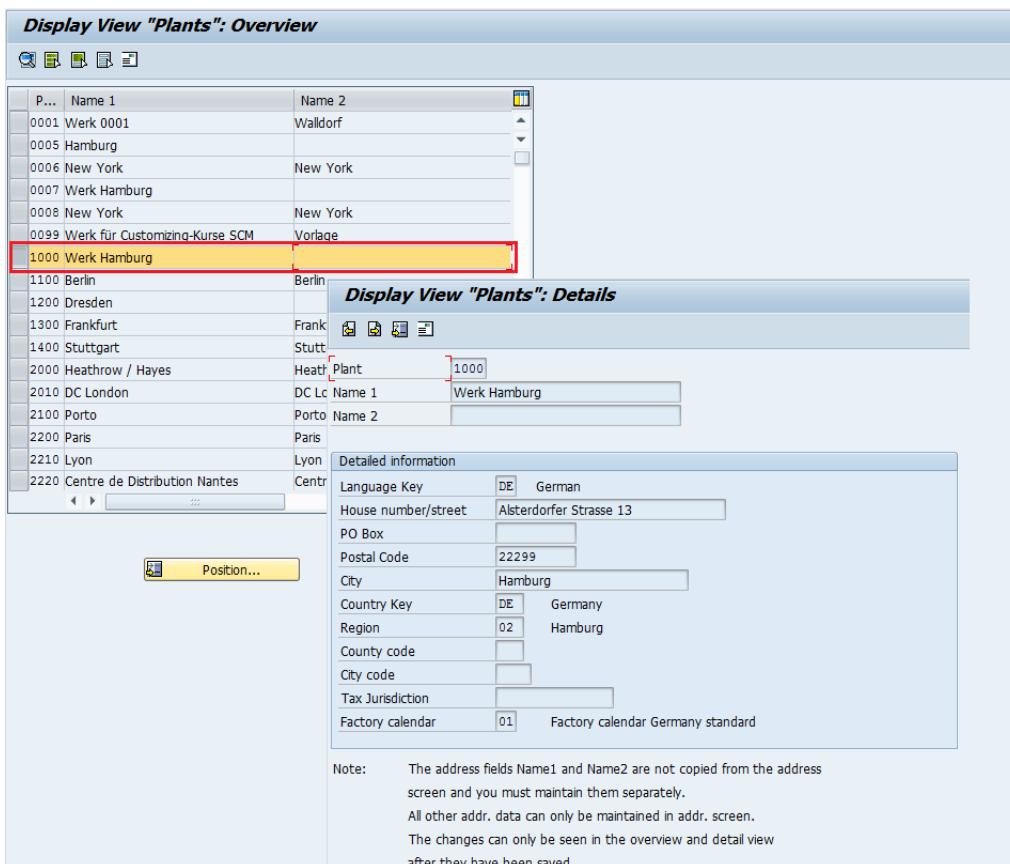
## Plants

Next, choose

**Enterprise Structure → Definition → Logistics-General → Define, Copy, Delete, Check Plant**

and click the  button.

Double-click on the line **Define plant** and accept the following notification. Again, you can see a table containing all plants of the IDES group. Plants 1000 and 1100 that were already described are defined here as well. Additionally, you can get further information about plants by double-clicking the corresponding line.



P...	Name 1	Name 2
0001	Werk 0001	Walldorf
0005	Hamburg	
0006	New York	New York
0007	Werk Hamburg	
0008	New York	New York
0099	Werk für Customizing-Kurse SCM	Vorlage
<b>1000</b>	<b>Werk Hamburg</b>	
1100	Berlin	Berlin
1200	Dresden	
1300	Frankfurt	Frank
1400	Stuttgart	Stutt
2000	Heathrow / Hayes	Heath
2010	DC London	Plant 1000
2100	Porto	DC Lc Name 1 Werk Hamburg
2200	Paris	Porto Name 2
2210	Lyon	Paris
2220	Centre de Distribution Nantes	Lyon

Figure 11: Plant 1000: SAP-System-Screenshot

Leave () the screen and return to the SAP IMG.

## Purchasing organization

You can find the purchasing organization by choosing

**Enterprise structure → Definition → Materials Management → Maintain Purchasing Organizations**

Display View "Purchasing Organizations": Overview	
Purch. Organization	Purch. Org. Descr.
0001	Einkaufsorg. 0001
0005	IDES Deutschland
0006	IDES USA
0007	IDES Deutschland
0008	IDES USA
1	Zentraleinkauf EU
1000	IDES Deutschland
2	EKORG 2
2000	IDES UK
2100	IDES Portugal
2200	IDES France
2300	IDES Spanien
2400	IDES Italien
2500	IDES Niederlande
2700	IDES Schweiz
3000	IDES USA
3001	IDES USA ED

Figure 12: Purchasing Organization: SAP-System-Screenshot

Leave () the screen and return to the SAP IMG.

### Storage locations

To define storage locations, please choose

**Enterprise structure → Definition → Materials Management → Maintain Storage locations**

Confirm the subsequent notification. Next, you need to enter the key of a particular plant in the pop-up window, since storage locations are defined on plant level, not on client level. Enter **plant 1000** and confirm.

Next, you can see a table containing all storage locations existent in plant 1000.

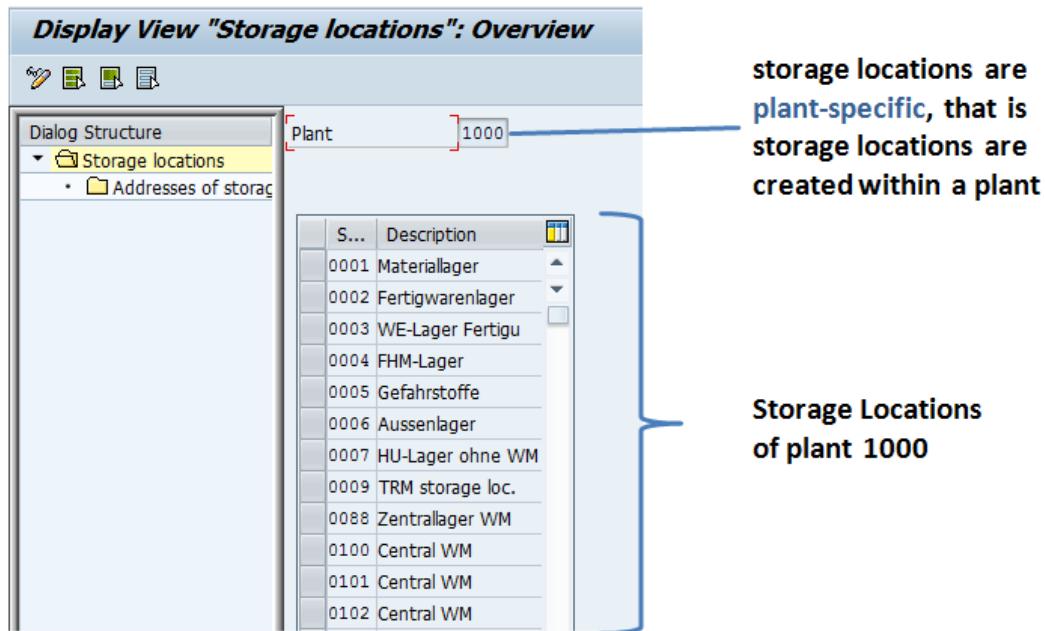


Figure 13: Storage Locations of Plant 1000: SAP-System-Screenshot

### 2.2.2.2 Integration of Organizational Levels

The integration of *organizational levels* is implemented under **Enterprise Structure → Assignment**. In integration, particular organizational units are assigned to each other according to the logic of the company structure.

#### Plants

Choose

**Enterprise Structure → Assignment → Logistics - General → Assign plant to Company Code**

You can see that plant 1000 in Hamburg is assigned to IDES AG (Frankfurt). Furthermore, the company code 1000 of IDES AG contains overall 15 plants for which it is responsible from an accounting point of view.

Display View "Assignment Plant - Company Code": Overview					
C...	P...	Name of Plant	Company Name	Status	
0008	0008	New York	IDES US INC New GL 8		
1000	0099	Werk für Customizing-Kurse SCM	IDES AG		
1000	1000	Werk Hamburg	IDES AG		
1000	1100	Berlin	IDES AG		
1000	1200	Dresden	IDES AG		
1000	1300	Frankfurt	IDES AG		
1000	1400	Stuttgart	IDES AG		
1000	CHD1	Werk Hamburg	IDES AG		
1000	CHD2	Werk Hamburg	IDES AG		
1000	CHD3	Werk Hamburg	IDES AG		
1000	CHP1	Berlin	IDES AG		
1000	CHP2	Berlin	IDES AG		
1000	CHP3	Berlin	IDES AG		
1000	CPC1	Werk Stuttgart	IDES AG		
1000	CPC2	Verteilzentrum München	IDES AG		
1000	PL04	TM: Deutsche Übersee AG	IDES AG		
1000	51	Walldorf; DON'T USE!!!!!!	IDES AG		
2000	2000	Heathrow / Hayes	IDES UK		
2000	2010	DC London	IDES UK		

Figure 14: Assignment of Plant to Company Code: SAP-System-Screenshot

Leave the screen and return to the SAP IMG.

### Purchasing organization

Next, choose

**Enterprise structure → Assignment → Materials Management → Assign Purchasing organization to Company Code**

You can see that **purchasing organization 1000** is in charge of purchasing in company code 1000 IDES AG. Scroll down the table until you can see purchasing organization **C100 (central purchasing)**. You will notice that this purchasing organization is not assigned to a particular company code. Correspondingly, cross-company code procurement is possible with this purchasing organization.

Assign Purchasing Organization -> Company Code				
P...	Description	C...	Company Name	Status
AC26	Purchase AC	AC26	IDES Training AC Gr. 26	
AC27	Purchase AC	AC27	IDES Training AC Gr. 27	
AC28	Purchase AC	AC28	IDES Training AC Gr. 28	
AC29	Purchase AC	AC29	IDES Training AC Gr. 29	
AC30	Purchase AC	AC30	IDES Training AC Gr. 30	
C100	Centraleinkauf	CPFO	Good Food	Company Code does
PF1	Purch. Org. US	0006	IDES US INC New GL	
P001	Purchase Org. 01	0006	IDES US INC New GL	
P002	Purchase Org. 02	0005	IDES AG NEW GL	
R100	Retail Deutschland			Company Code does
R300	Retail USA			Company Code does
S300	Service Provider	S300	IDES Services	
S330	Purchase Postal	S330	SP POST	
SL31	LSP Inc.			Company Code does
TM1	Purchasing US	3000	IDES US INC	
TM2	Purchasing Europe	1000	IDES AG	

Figure 15: Cross-Company Code Procurement: SAP-System-Screenshot

With it, this brief excursion is completed. Please bear in mind that this section is not relevant to the final SAP exam but encourages the understanding of SAP ERP. Take the chance and look at other organizational structures and their interrelations when mentioned in the course.

You can review the complete company structure of IDES AG by using the two mentioned points in SAP IMG (→ transaction: SPRO).

***Enterprise Structure → Definition***

***Enterprise Structure → Assignment***

## 2.3 Theory: Master Data in SAP ERP Procurement



You have already learned from the introduction section that master data is used on a long-term basis for business processes. They are created centrally, and all applications and authorized users can apply them. Master data include, e.g., customer data, material data, and vendor data.

### Theory

#### 2.3.1 Material Master Data

The material master file is a companies' central source for depositing and accessing material-related data. All logistical components of the SAP ERP system employ material master files for their processes. Information about a material, therefore, should be entered in a centrally administered data record and should also be "organized" in a way that different organizational units are able to maintain only the data that is important for their purposes. By the means of integration of all material data into one single database object, the issue of data redundancy is obviated.

Thereby, the following points should be considered:

- All the data about a material that is, e.g., independent of specific vendors, customers, or production routings should be stored in a central master record. Each user department does not have to create its own material master record as this would result in unnecessary data redundancy.
- To facilitate individual departments in accessing the data that is relevant to their needs, the data should be grouped according to user department. This may also mean that a piece of information (data field) is displayed in different views.

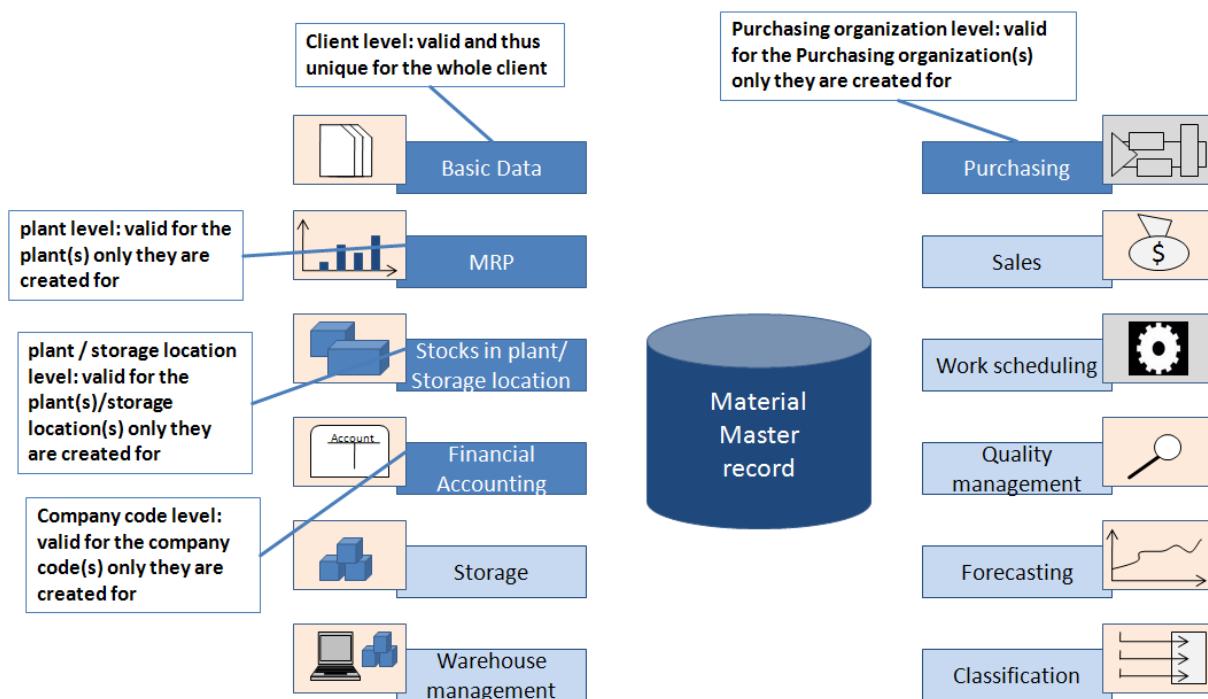


Figure 16: Material Master Record

### View Aspect of the Material Master

Data which is maintained within one of the above mentioned views may be valid for different organizational levels. This is, due to different requirements within the enterprise. Data of the master file can be utilized by all areas, e.g., purchasing department, inventory management, MRP, audit. Since different departments of a company may provide distinct information regarding a material, data of a master file can be categorized according to their affiliation with a particular department. Therefore, each department has its **own view** of a material master file and is, thus, responsible for the data's maintenance of this part of the material master. This applies, for example, to:

- purchasing data for order handling
- inventory management data for making a clearing posting and taking stock
- accounting data for material valuation regarding goods movement or audit
- MRP data for material requirements planning

### Organizational Aspect of the Material Master

As mentioned above, the material master contains material data that is valid for all organizational levels (client-level) and some data is valid for certain organizational levels only. To make sure that the material data is administered centrally and, thus, unnecessary load on the database due to redundant information is prevented, the material master is organized in a way that reflects the structure of a company. For example, a distinction is made for:

- **Data at client level:** General material data that is valid for the whole company is stored at client level.
- **Data at plant level:** All data that is valid within a plant and for all storage locations belonging to it is stored at plant level.
- **Data at storage location level:** All data that is valid for a particular storage location is stored at storage location level.

The above-mentioned organizational levels are relevant for the external procurement process. Client, plant and storage location play a role when you enter data for purchasing, inventory management and accounting. Other organizational levels can be relevant for other departments. For example, the sales and distribution data is entered depending on the sales organization and the distribution channel and you must specify a warehouse number and storage type for the warehouse management data.



#### Data that is valid for the whole enterprise:

For example, material no., material short text, material group, base and alternative units of measure, ...



#### Data that is valid within one plant:

for example, purchasing data, MRP data, forecasting data, work scheduling data ...



#### Data that is valid for one storage location:

For example, storage bin description, picking area, ...

Figure 17: Material Master: Organization Levels

### Examples:

- Data in the **MRP** view is maintained on the organizational level of plants, whereas, data of the view **Sales** is maintained for Sales Organizations.
- Materials planning: In plant 1000 a material is required for production. In plant 2000 the same material is only used as a spare part. As a result, different MRP procedures must be used, depending on the plant.
- Only the **Basic View** is maintained across (independent of) any organizational level and, thus, is valid for the whole client.

### Data Screens of Material Master Records

When maintain material data, you have to switch between different views. The data screens used to process material master records can be subdivided into the following types:

- Initial level: In the initial screen of the transaction, you maintain the client-wide unique material number (material name), the material type and the industry sector. Thus, these data are maintained on client level.
- Main work level: These are the screens for the individual user departments such as basic data, materials planning, and so on. Except of the basic data view (which is not affiliated with any organizational level), all other views and data are maintained for a specific organizational level (plant, storage location, etc.).
- Additional data level: On these screens you find additional information such as alternative units of measure, material short descriptions, and consumption values. You can access these data by pressing the additional data button.

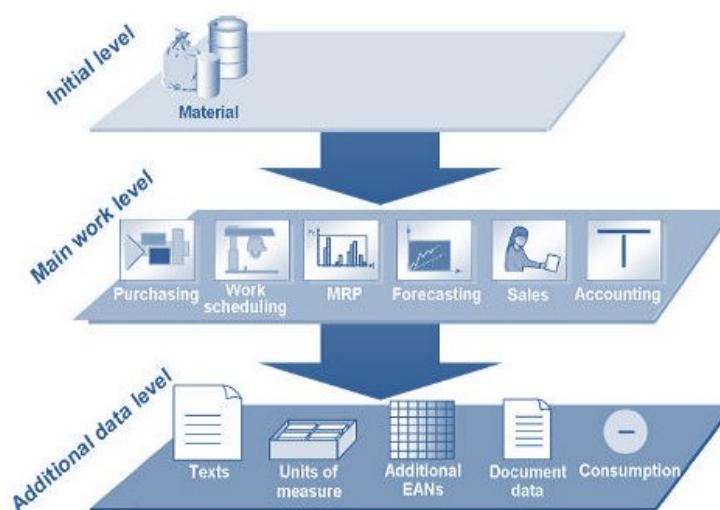


Figure 18: Data Screens in Material Master Record Maintenance

### 2.3.2 Vendor Master Data

The vendor master record contains all the data necessary to control how transaction data is posted and processed for a vendor. Furthermore, it contains all the data required to do business with a company's vendors.

The master record of a vendor is used in Materials Management (SAP MM) for procurement processes and the Financial Accounting (SAP FI) for billing/invoice processes. The vendor master record is stored centrally and, thus, can be shared throughout the organization without creating the vendor master record multiple times. This again prevents inconsistencies and redundancies in master data. If, e.g., one of the company's vendors changes her address, the change has only to be entered once and the company's accounting and purchasing departments will always have up-to-date information.

From an accounting perspective, a vendor equals the company's crediting business partner (creditor) and contains accounting data such as the reconciliation account from the general ledger. Therefore, the vendor master record is maintained both by **purchasing** and **accounting**. This is also the reason why the data in the vendor master record is subdivided into different categories.

- **General data** are valid on a cross-group basis (valid for the whole client). In addition to the vendor's name and address, this part of the vendor's master record among others contains the following data:
  - o tax data
  - o bank details
  - o names of important contacts (e.g., salespersons)These data are detached from the purchasing and accounting view.
- **Accounting data** are stored on company code level (company) and with the general data. This data among others contains:
  - o the currency used for transactions with the vendor
  - o terms of payment
  - o reconciliation account
  - o payment methods for automatic payment transactions
- **Purchasing data** about a vendor are managed separately for each purchasing organization, e.g., payment conditions for vendors, purchase order currency, Incoterms and various control data pertaining to the vendor. **General data** are also relevant to purchasing, e.g., address data.

There are other levels for purchasing data; however, those are optional (plant, vendor sub-range).

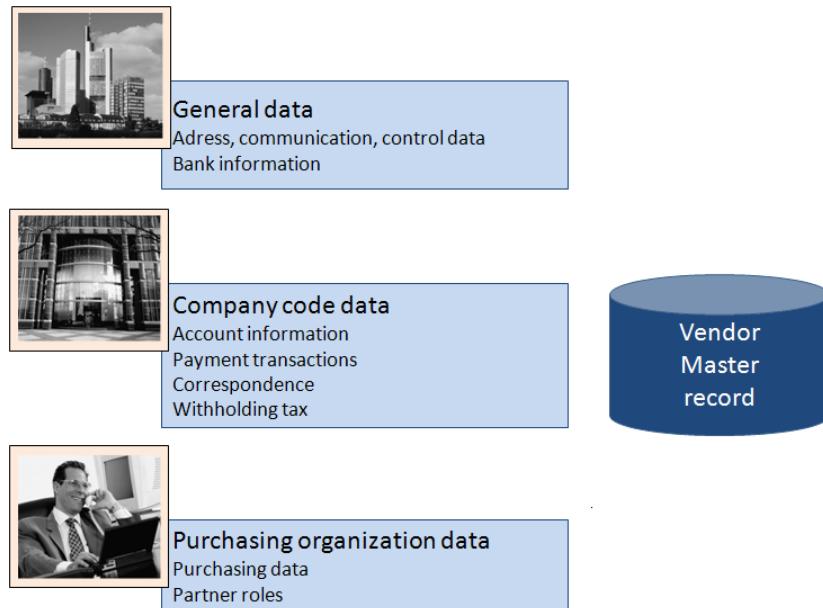


Figure 19: Vendor Master Data

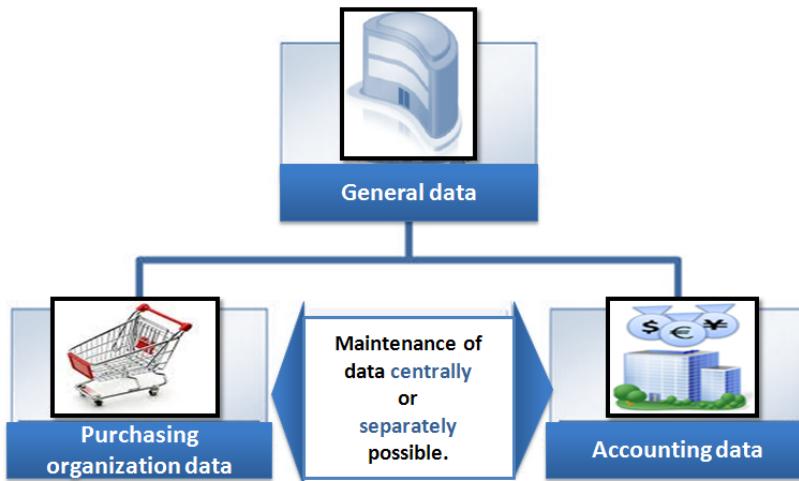
The authorization concept of the SAP ERP system can be used to define how data maintenance is organized in the vendor master record. **General data**, **purchasing data** and **accounting-specific data** can be either maintained **centrally** (i.e., all data is maintained together) or **locally** (i.e., the relevant departments each maintain their own data) by the corresponding department. **Purchasing** also frequently maintains data at corporate group level.

If, e.g., in a company the purchasing staff has authorizations for transactions **MK01**, **MK02** and **MK03** (*Logistics → Materials Management → Purchasing → Master Data → Vendor → Purchasing → Create/Change/Display*) only, then they will only be able to maintain the general address and control data, and the purchasing-specific data. Accounting personnel must enter the payment transaction data and the company-code-specific data.

If the staff has authorizations to maintain the vendor master data under the menu path *Logistics → Materials Management → Purchasing → Master Data → Vendor → Central → Create/Change/Display* (*transactions XK01, XK02, XK03*), then the staff can edit all the data (accounting and purchasing) in the vendor master record.



Before you can order anything from a vendor, you must have previously maintained the purchasing data. To enter invoices, you need to create the accounting data beforehand.

**Figure 20: Vendor Master Record: Organizational Levels**

### 2.3.3 Purchasing Info Records

A purchasing info record contains information about a vendor and a material, which can be procured from this particular vendor. The information is stored at purchasing organization level and plant level. The following information can be defined in a purchasing info record:

- current and future prices and conditions (e.g., freight and discounts)
- delivery data (e.g., planned delivery time, overdelivery and underdelivery tolerances)
- vendor data (e.g., contact person) and vendor-specific data about the material (such as the vendor subrange to which the material belongs and the description of material for the vendor)
- number of the last purchase order
- Texts: The following text types are stored in the purchasing info record:
  - o internal info record memo: This is an internal comment that is transferred to the purchase order item. This text is not printed.
  - o purchase order text in the purchasing info record: This text is used to describe the purchase order item. It is transferred to the purchase order item and printed.

Thus, purchasing info records are an important source of information for buyers. Using purchasing info records, buyers can find out at any time which vendors offer a particular material or which materials can be procured from which vendors. The SAP system provides data that were maintained in info records as default values when creating purchasing documents (e.g., purchase orders or contracts). In planning processes, purchasing info records can be referenced to pre-determine vendor-specific data

The data for a purchasing info record needs to be divided into

- generally applicable data, which is valid for a single client
- purchasing organization-specific data
- purchasing organization-specific and plant-specific data

In addition, the selected info category determines for which procurement process the data is used. You can differentiate between a standard process and the special procurement categories of subcontracting, pipeline and consignment.

The list displays for the info records can be used to determine which vendors offer a particular material or which materials can be procured from a particular vendor.



Figure 21: Purchasing Info Records

### 2.3.4 Conditions

A condition is an agreement with a vendor about prices, surcharges and discounts, and so on. The following figure displays the purchasing documents where conditions can be maintained. Conditions can be maintained when entering quotations, info records, outline agreements (contracts, scheduling agreements) and purchase orders. The net and effective prices in a purchasing document are determined on the basis of these conditions. You can also store general conditions at vendor level, for example. The system then uses these conditions for price determination.

Example: When you create a purchase order with reference to a contact or a purchasing info record, or if particular criteria defined in the extended conditions are applicable to purchase order entry, the SAP system automatically applies conditions to the purchase order. Thus, they determine the effective and the net order price.

A condition maintained in a purchasing info record applies to all purchase order items that contain the material and vendor, whereas, conditions maintained in a purchase order are specific only to that order.

Example: You have created a purchasing info record for vendor X and material Y. Now you create a purchasing order and enter vendor X and material Y. The SAP system proposes the condition (price, etc.) maintained in this info record as standard value in all purchase orders you create for this combination of vendor/material.

In case you did not create an info record and you enter the condition manually in the purchase order, then the condition only applies to this purchase order. When you create a new purchas-

ing order, you have to enter the price data, etc., once again, since there is no master data (purchasing info record) maintained.

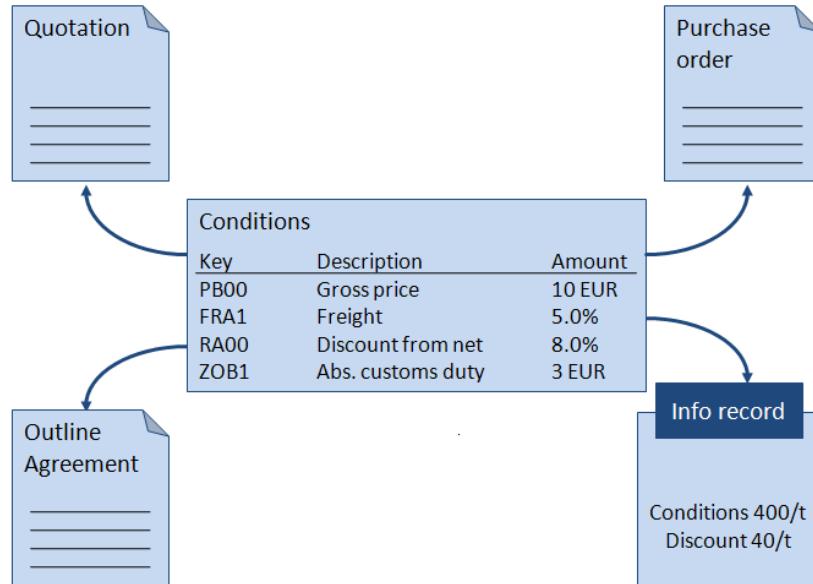


Figure 22: Conditions

There are different types of conditions used in purchasing:

- **Conditions in a contract** apply to all contract release orders created with reference to the particular contract.
- **Conditions in purchasing info records** apply to all purchase order items containing material or vendor of the purchasing info record.
- With “**general**” **conditions**, you can also display price agreements that do not only apply to individual quotations, outline agreements, purchase orders or info records, for example, if a vendor has a price reduction on all purchase orders as a two-month special offer. You enter general conditions in *Purchasing under Master Data → Conditions*.

## 2.4 Practice: Maintain Master Data in SAP ERP Procurement



At the beginning of this teaching unit, you learned about the situation of IDES and its attempts to roll into the bicycle market. In this chapter, you need to create the new IDES product Speedstar together with all materials required for its production in the system in order to use the Speedstar in your business processes. In SAP-wording, you need to maintain the **material master records** for the Speedstar in SAP ERP. In the figure below, you can see the process steps, which you need to execute in this section.

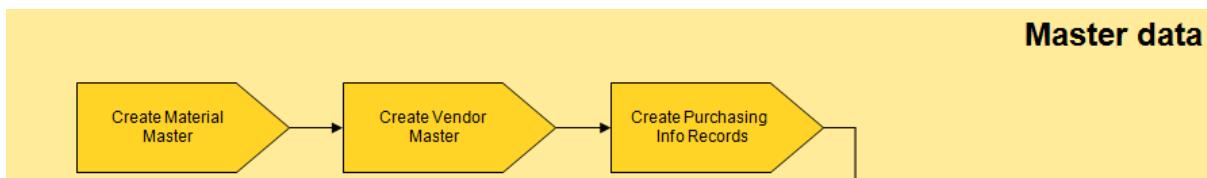


Figure 23: Process Overview – Maintaining Master Data



*It is vital for the successful completion of this case study that you are familiar with the navigation basics in SAP ERP systems (cf. unit [Introduction/Navigation](#)). This includes that you are able to handle the SAP Easy Access Menu as well as an understanding of the SAP transaction concept. Your knowledge about help options and further documentation is to enable you to mostly discover the complexity and potential of the system independently – albeit you have to study with given scenarios.*



*Please avoid merely **clicking through** the described steps of the case studies without thinking carefully about what you are doing to make sure you achieve **sustained learning success**. Try to clarify at each step what is done and why it is done. Therefore, you should regularly use the **F1 and F4 help functions** as well as the **SAP online library's help menu** (cf. introduction chapter, [Help](#)) to display further information and explanations regarding the particular processes. Since we arranged the case studies neatly, not all entries that you need to enter on the different screens can be explained in detail. Thus, you should try to get a profound knowledge by using the F1 and F4 keys regarding the meaning of the particular fields and entries.*

*Please unconditionally use the SAP Easy Access Menu instead to the transaction codes. Thus, you will quickly understand the structure and logic of SAP ERP. When you are a bit more experienced in using the SAP system, it is advisable to use the transaction codes. Please read the case studies and advises **carefully**, since careless mistakes causing huge problems happen quite often.*

### 2.4.1 Information about the Speedstar

The following describes the organizational and material master data that have to be maintained in the system.

#### 2.4.1.1 Structure of the Speedstar

First of all, you need to know which components the **Speedstar** consists of. The following figure displays a two-stage bill of materials provided by an employee from the production department.



**Figure 24: Bill of Materials – Speedstar**

The **Speedstar** consists of the following items:

- 1 x frame
- 2 x wheels
- 1 x chain
- 1 x gearing

These four components are combined in the first step of production, resulting in the **Basis-Module**. After mounting the Basis-Module, pedals (2x), brakes (2x), handlebar (1x) and a saddle (1x) are added.

An employee from warehouse management told you that pedals, brakes and saddles as raw materials are already available from the warehouse in quantity. Thus, you do not need to maintain material master records for these materials, since they are already in place.

#### 2.4.1.2 Organizational Data of the Speedstar

The Speedstar is going to be produced and sold in Germany (Hamburg). Therefore, the following organizational units and views are involved in the data maintenance:

- **General data:** General data of the material Speedstar are independent of all organizational units and, thus, are valid client-wide. These data are maintained in the views:
  - o *Basic Data 1*
  - o *Basic Data 2*

- **Sales & Distribution (SD) data:** The Speedstar is sold through the sales organization 1000 (Frankfurt) and the distribution channel 10 (final customer sales). These data are maintained in the views:
  - o Sales: Sales organization data 1
  - o Sales: Sales organization data 2
  - o Sales: General/plant data
- **Production Planning (PP):** The Speedstar is produced in plant 1000 (Hamburg). These data are maintained in the views:
  - o MRP 1-4
  - o Work scheduling
- **Financial Accounting (FI):** The accounting for plant 1000 and sales organization 1000 takes place in the German central office. Thus, company code 1000 is responsible for the financial accounting. These data are maintained in the views:
  - o Accounting 1-2
- **Controlling or Management Accounting (CO):** The controlling for company code 1000 takes place in controlling area 1000 (Europe). These data are maintained in the views:
  - o Costing 1-2



*Consider that there are many more views in a material master. In case of the Speedstar they are not relevant. For instance, one could maintain the Purchasing Data for the Speedstar. But the Speedstar is produced completely by the IDES Company and, thus, it is not purchased from a vendor.*

*Other materials like the chain or the gearing are purchased from a vendor. For these materials, e.g., the Material Management data (View Purchasing) are relevant, whereas the Sales and Distribution data are irrelevant, since the IDES Company does not sell them.*

The following figure summarizes the organizational units and views involved in the data maintenance:

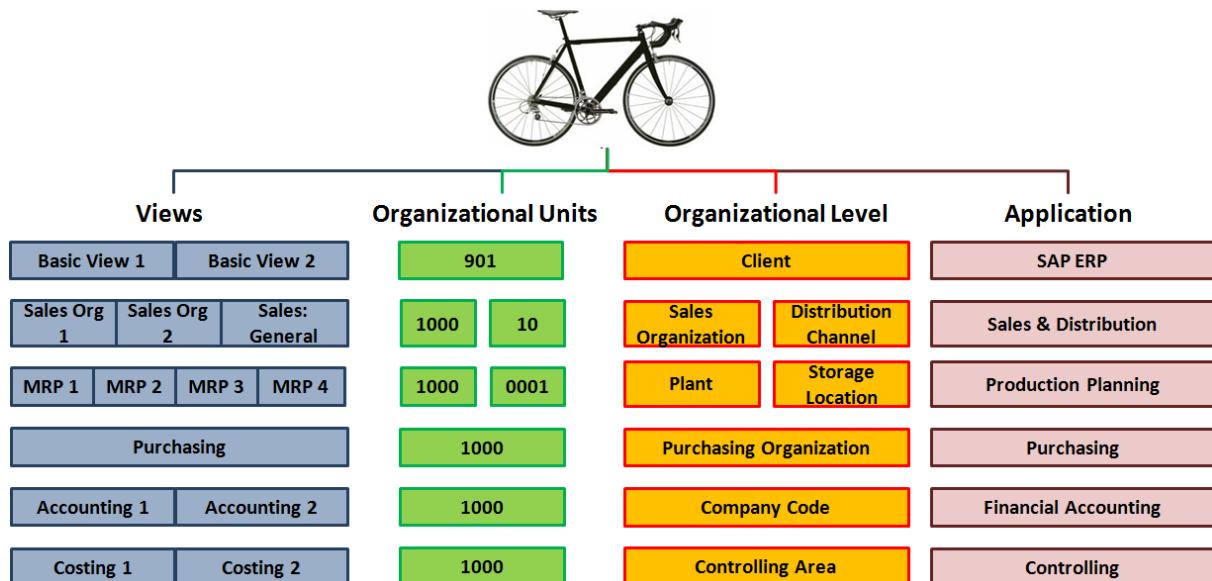


Figure 25: Views and Organizational Units for the Material Master

## 2.4.2 Creating Material Master Data

Your first task is to maintain master data of the new product. According to the information above, you need to create six material master records in the system (Basis-Module, frame, wheels, chain, gearing, Speedstar).



### Caution

*While processing the case studies, please replace the string **xxyy** by your user number. Your user number consists of the last four digits of your user name. If you are, for example, prompted to create a Speedstar with the reference Speedstar-**xxyy** and your user name is **WIP-99-99**, please label your Speedstar **Speedstar-9999**. This convention facilitates the tracing of created objects and problem solution for you and your tutor.*

*Furthermore, please carefully process the case studies and pay attention to all given specifications. Additionally, you should double-check your entries frequently and correct if needed – as exemplified below. Mistakes and errors, which you note not until later in the case studies are quite difficult to eliminate or may be **irreversible** at all.*

*Bear in mind that when completing a process-step, you hand over a plan, etc., to another department for further processing – and you wouldn't want to make a bad impression, right?*

### 2.4.2.1 Material Master Records: Speedstar

You will now be guided through the system step-by-step to create the master data of the Speedstar in SAP ERP. To create a master record for a **finished product** in SAP ERP, log on to the SAP ERP system and select the following transaction:

**Logistics → Materials Management → Material Master → Material → Create (Special) → Finished Product (MMF1)**

1. You can now see the *create finished product* screen. Enter **Speedstar-xxyy** in the **material field**. The material you choose and name is defined client-wide. Next, click on the match code (symbol:  ) to choose **mechanical engineering** as **industry sector**. No reference material is used. Go to the next dialogue by clicking  or pressing *Enter*.
2. The next step is **view selection**. The selection of views is necessary to enable the creation of detailed material records in different departments. Please select the following lines:
  - **Basic data 1**
  - **Basic data 2**
  - **SD: sales organization 1**
  - **SD: sales organization 2**
  - **Sales: general plant data**
  - **MRP 1**
  - **MRP 2**
  - **MRP 3**
  - **MRP 4**

- **Work scheduling**
- **Accounting 1**
- **Accounting 2**
- **Costing 1**
- **Costing 2**

Close the dialogue (click  or press **Enter**).

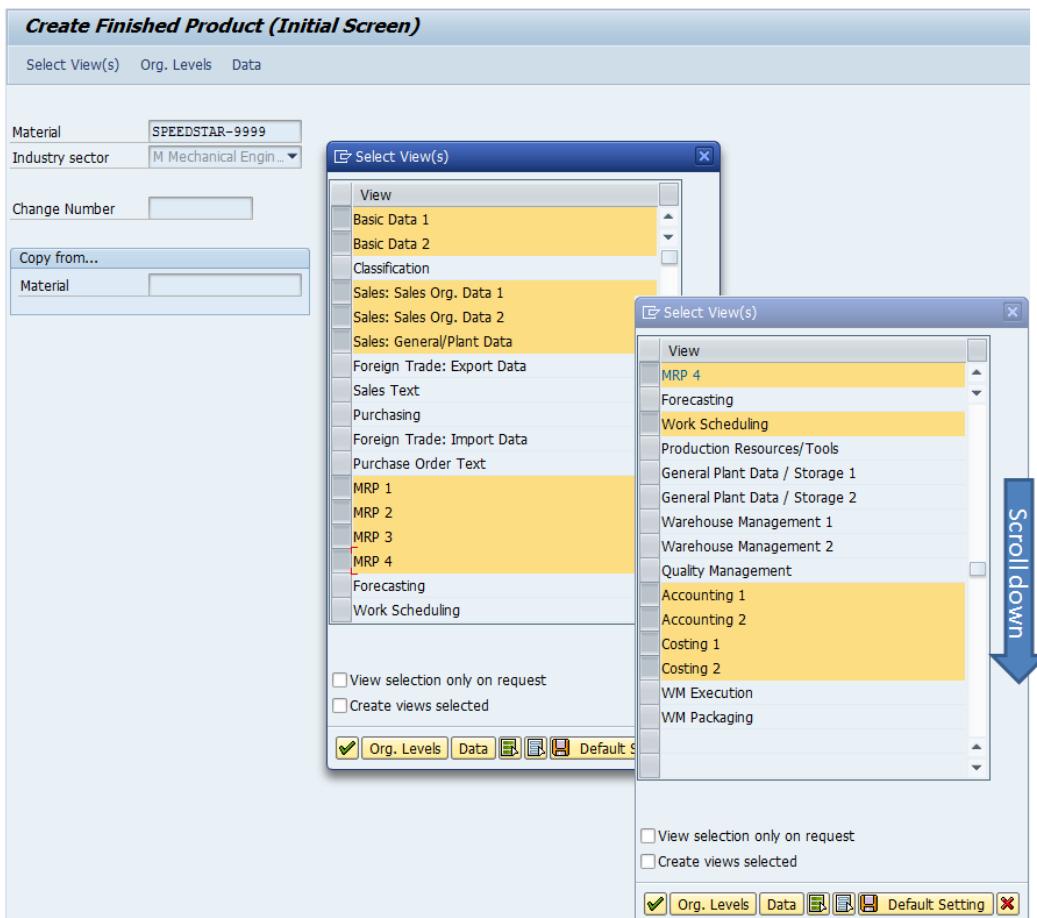


Figure 26: Create Speedstar Material Master: SAP-System-Screenshot



The different views are structured according to functional areas in SAP ERP and the corresponding departments maintain them. For this case study, you basically need to maintain the views of materials management (purchasing). However, at this point, you are going to maintain the material master data completely for all departments (purchasing, warehouse management, delivery, production, controlling, and accounting) to make the master data available later in this course.

At this point, you do not need to maintain the **Speedstar** at all (since we are in the procurement case study) because it is a fabrication product, which is not procured. Accordingly, the material does not feature a purchasing view and is mostly important for production. However, material management (MM includes procurement) is primarily in charge of maintaining material master records at least for client-wide and materials management-own views (e.g., basic data, purchasing). Other departments then complete these master data regarding their own views (e.g., work scheduling view by production employees). Thus, you act now in mul-

tiple roles. In the “real world” an employee of material management usually only sees his views and has no authorization to maintain the data for, e.g., the accounting view.

3. The following dialogue comprises information about the organizational unit, for which you are supposed to create the material. From the scenario description you already know the organizational units:

- **Plant** *1000 (Hamburg)*
- **Storage Location** *0001 (Material Storage)*
- **Sales Organization** *1000 (Germany, Frankfurt)*
- **Distribution Channel** *10 (final customer sales)*

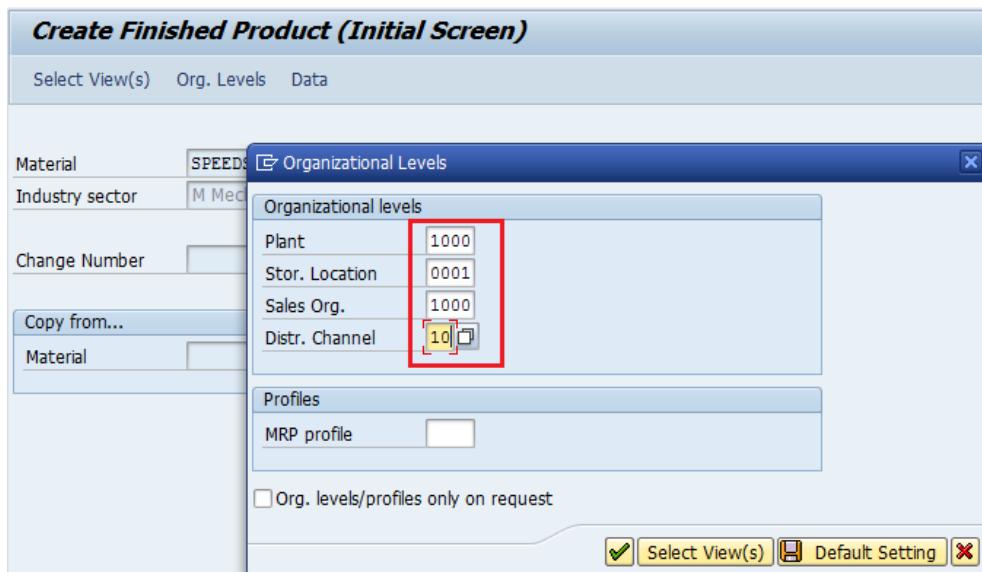


Figure 27: Organizational Units for Speedstar: SAP-System-Screenshot

- Complete the dialog with *Enter* or
4. You will now see the first view **basic data 1** for the newly created product. Enter the following data in the specified fields:
  - **Material Description** *Speedstar-xxyy*
  - **Unit of Measure** *PC (piece)*
  - **Division** *00 (cross-division)*
  - **Gross weight** *18 KG*
  - **Net weight** *15*
  - Proceed to the next view by pressing *Enter*.

**Create Finished Product SPEEDSTAR-9999**

Additional Data    Org. Levels    Check Screen Data   

Basic data 1    Basic data 2    Classification    Sales: sales org. 1

Material	SPEEDSTAR-9999	Speedstar-9999	<input checked="" type="checkbox"/>
<input type="button"/> <input type="button"/>			
<b>General data</b>			
Base Unit of Measure	PC	piece(s)	Material Group
Old material number			Ext. Matl Group
Division			Lab/Office
Product allocation			Prod.hierarchy
X-plant matl status			Valid from
<input type="checkbox"/> Assign effect. vals		GenItemCatGroup	NORM Standard item
<b>Dimensions/EANs</b>			
Gross Weight	18	Weight unit	KG
Net Weight	15	Volume unit	
Volume			
Size/dimensions			
EAN/UPC			EAN Category
<b>Packaging material data</b>			
Matl Grp Pack.Matl			
Ref. mat. for pckg			
<b>Basic Data Texts</b>			
Languages Maintained	0	<input type="button"/> Basic Data Text	Language:

Figure 28: Material Master – Basic data 1: SAP-System-Screenshot



Change views only by clicking or pressing *Enter*. A manual selection of the next view by clicking on the next tab can result in the loss of provided data in the data fields, which may in turn cause a transaction failure.

Additionally, please pay attention to fields marked with the symbol, since these fields are mandatory to be able to proceed to the next view or dialog,

respectively

5. Since you do not need to enter any data in the **basic data 2 view**, proceed to the next view by pressing *Enter*. The **classification** view was skipped automatically, since it was not selected previously.
6. In the **Sales: sales org. 1** view, you specify the plant from where the Speedstar is delivered and if it is relevant for taxation. Thus, enter the following data:
  - **Delivery plant** *1000 (Hamburg)*
  - **Tax classification** *1 (full taxes)*
  - Complete the dialog pressing *Enter*.



In the following, not every single field that is maintained can be explained. On the one hand this would go beyond the scope of this course and on the other hand many fields are explained in detail in later teaching units. Anyways, you can retrieve the meaning of each field by using the F1-Help.

Material: SPEEDSTAR-9999 [Speedstar-9999]

Sales Org.: 1000 Germany Frankfurt  
Distr. Chl: 10 Final customer sales

**General data**

Base Unit of Measure	PC	piece(s)	Division
Sales unit		<input type="checkbox"/> Sales unit not var.	
Unit of Measure Grp		Valid from	
X-distr.chain status		Valid from	
DChain-spec. status			
Delivering Plant	1000	Werk Hamburg	
Material Group			
<input checked="" type="checkbox"/> Cash discount			

**Tax data**

C..	Country	T...	Tax category	Tax classification
DE	Germany	MWST	Output Tax	1 Full Tax

Entry 1 of 1

Figure 29: Material Master – Sales: sales org. 1: SAP-System-Screenshot

7. Again, you do not need to enter any data in the view **Sales: sales org. 2**. Thus, skip that view with *Enter*.
8. The **Sales: General/Plant** view contains information about the transportation and loading of the Speedstar. This information is relevant for distribution of the bicycle. Enter the following data:
  - **Trans. Grp.** *0001 (on pallets)*
  - **LoadingGrp** *0002 (fork lift)*
  - Complete the dialog pressing *Enter*.

Material: SPEEDSTAR-9999 [Speedstar-9999]

Plant: 1000 Werk Hamburg

**General data**

Base Unit of Measure	PC	piece(s)	Replacement part
Gross Weight	18	KG	<input type="checkbox"/> Qual.f.FreeGoodsDis.
Net Weight	15		Material freight grp
Availability check	02	Individual reqmt	<input type="checkbox"/> Appr.batch rec. req.
<input type="checkbox"/> Batch management			

**Shipping data (times in days)**

Trans. Grp	0001	On palettes	LoadingGrp	0002	Forklift
Setup time		Proc. time	Base qty	PC	

Figure 30: Material Master – Sales: General/Plant: SAP-System-Screenshot

9. In the next view **MRP 1**, enter the following data:
  - **MRP type** *PD (Material Requirements Planning)*
  - **MRP controller** *001 (Disponent 001)*
  - **Lot size** *EX (Lot-for-lot order quantity)*
  - Press *Enter*.
10. In the **MRP 2** dialog, enter the following data:
  - **Procurement type** *E (in-house production)*
  - **In-house production** *5 days*
  - **SchedMargin key** *000*
  - **Prod.stor.location** *0001*
  - Press *Enter*.
11. Next, you see the **MRP 3** view. Enter
  - **Tot.repl. lead time** *15 days*
  - **Availability check** *02 (individual requirement)*
  - Press *Enter*.
12. You do not need to enter any data in the view **MRP4**. Thus, skip that view with *Enter*.
13. In the **Work Scheduling** view, enter
  - **Prod.stor.loc.** *0001*
  - Press *Enter*.
14. Within the view **Accounting 1**, enter
  - **Price control** *S (Standard price)*
  - **Standard price** *3000*
  - **Valuation class** *7920 (finished products)*
  - Press *Enter*.
15. You do not need to enter any data in the view **Accounting 2**. Thus, skip that view with *Enter*.
16. In the **Costing 1** view, check the -box **Material Origin** and **With Quantity Structure**. Press *Enter*.
17. Press the Button  to maintain the language key for Germany. Type in **DE** as Language key and **Speedstar-xxyy** in the description field in the **second** row. **Do not** overwrite the row with the language key EN. This step is necessary, since you are going to sell that product in Germany.
18. Save the newly created material by pressing the -button or CTRL+S. The system displays a message confirming that the material was created.

#### 2.4.2.2 Material Master Records: Basis-Module

The Basis-Module is a **semi-finished** product, i.e., a temporary product in the production process, which will be utilized for the production of a Speedstar. Since the Basis-Module derives from in-house production and is only used for internal purposes (i.e., not for delivery), there is no need for maintaining sales and distribution views as opposed to the Speedstar. Furthermore, there are no taxes involved, since temporary products originate from in-house production and will, thus, be reprocessed and not sold.

To create a semi-finished product in SAP ERP, run the following transaction:

**Logistics → Materials management → Material master → Material → Create (Special) → Semi-Finished Product (MMB1)**

1. You are now in the *create semi-finished product* dialog. Enter **Basis-Module-xxyy** under **material**. Select **mechanical engineering** under **industry sector** by clicking the match code symbol . Go to the next dialog by clicking  or pushing *Enter*.
2. The next step is **view selection**. The selection of views is necessary to enable the creation of detailed material records in different departments. Please select the following lines:
  - **Basic data 1**
  - **Basic data 2**
  - **MRP 1**
  - **MRP 2**
  - **MRP 3**
  - **MRP 4**
  - **Work scheduling**
  - **Accounting 1**
  - **Accounting 2**
  - **Costing 1**
  - **Costing 2**

Close the dialogue (click  or press *Enter*).

3. The following dialogue comprises information about the organizational unit, for which you are supposed to create the material. The organizational units are the same as for the Speedstar, except of the SD-departments, since sales is not involved for the basis-module:
  - **Plant** **1000 (Hamburg)**
  - **Storage Location** **0001 (Material Storage)**
  - Complete the dialog with *Enter* or .
4. In **basic data 1**, enter the following data in the specified fields:
  - **Material Description** **Basis-Module-xxyy**
  - **Unit of Measure** **PC (piece)**
  - **Division** **00 (cross-division)**
  - **Gross weight** **13 KG**
  - **Net weight** **11**
  - Proceed to the next view by *Enter*.
5. Since you do not need to enter any data in the **basic data 2** view, proceed to the next view by pressing *Enter*. The **classification** view was skipped automatically, since it was not selected previously.
6. In the next view **MRP 1**, enter the following data:
  - **MRP type** **PD (Material Requirements Planning)**
  - **MRP controller** **001 (Disponent 001)**

- **Lot size** *EX (Lot-for-lot order quantity)*
  - Press *Enter*.
7. In the **MRP 2** dialog, enter the following data:
- **Procurement type** *E (in-house production)*
  - **In-house production** *3 days*
  - **SchedMargin key** *000*
  - **Prod.stor.location** *0001*
  - Press *Enter*.
8. Next, you see the **MRP 3** view. Enter
- **Availability check** *02 (individual requirement)*
  - Press *Enter*.
9. You do not need to enter any data in the view **MRP4**. Thus, skip that view with *Enter*.
10. In the **Work Scheduling** view, enter
- **Prod.stor.loc.** *0001*
  - Press *Enter*.
11. Within the view **Accounting 1**, enter
- **Price control** *S (Standard price)*
  - **Standard price** *2000*
  - **Valuation class** *7900 (semi-finished products)*
  - Press *Enter*.
12. You do not need to enter any data in the view **Accounting 2**. Thus, skip that view with *Enter*.
13. In the **Costing 1** view check the -box **Material Origin** and **With Quantity Structure**. Press *Enter*.
14. Save the newly created material by pressing the -button or CTRL+S. The system displays a message confirming that the material was created.

#### 2.4.2.3 Material Master Records: Carbon Frame

The carbon frame is a raw material, which is procured externally. Correspondingly, it is the first material maintained from a materials management/purchasing point of view. On the other hand this material is not produced in the own company and, thus, does not need the view work scheduling.

To create the raw material, please run the following transaction:

**Logistics → Material Management → Material Master → Material → Create (Special) → Raw Material (MMR1)**

1. You are now in the **create raw material** dialog. Enter *carb-frame-xxyy* under **material**. Select **mechanical engineering** under **industry sector** by clicking the match code symbol . Go to the next dialog by clicking  or pushing *Enter*.

2. The next step is **view selection**. The selection of views is necessary to enable the creation of detailed material records in different departments. Please select the following lines:

- **Basic data 1**
- **Basic data 2**
- **Purchasing**
- **MRP 1**
- **MRP 2**
- **MRP 3**
- **MRP 4**
- **Accounting 1**
- **Costing 1**

Close the dialogue (click  or press *Enter*).

3. The following dialogue comprises information about the organizational unit, for which you are supposed to create the material. The organizational units are the same as for the Speedstar, except of the SD-departments, since sales is not involved for the basis-module:

- **Plant** **1000 (Hamburg)**
- **Storage Location** **0001 (Material Storage)**
- Complete the dialog with *Enter* or .

4. In **basic data 1**, enter the following data in the specified fields:

- **Material Description** **Carb-Frame-xxyy**
- **Unit of Measure** **PC (piece)**
- **Material group** **020 (vehicles)**
- Proceed to the next view by *Enter*.

5. Since you do not need to enter any data in the **basic data 2 view**, proceed to the next view by pressing *Enter*. The **classification** view was skipped automatically, since it was not selected previously.

6. In the **purchasing** view, you assign the material to the **purchasing group** of **000 (Chef, H)**. Press *Enter*.

7. In the next view **MRP 1**, enter the following data:

- **MRP type** **PD (Material Requirements Planning)**
- **MRP controller** **001 (Disponent 001)**
- **Lot size** **EX (Lot-for-lot order quantity)**
- Press *Enter*.

8. In the **MRP 2** dialog, enter the following data:

- **Procurement type** **F (external production –field is not editable!)**
- **Prod.stor.location** **0001**
- **Storage loc. For EP** **0001**
- **Planned Deliv. Time** **3 days**
- **SchedMargin key** **000**
- Press *Enter*.

9. Next, you see the **MRP 3** view. Enter

- **Availability check** **02 (individual requirement)**

- Press *Enter*.
10. You do not need to enter any data in the view **MRP4**. Thus, skip that view with *Enter*.
11. Within the view **Accounting 1**, enter
- |                          |                            |
|--------------------------|----------------------------|
| - <b>Price control</b>   | <b>S (Standard price)</b>  |
| - <b>Standard price</b>  | <b>750</b>                 |
| - <b>Valuation class</b> | <b>3000 (raw material)</b> |
| - Press <i>Enter</i> .   |                            |
12. In the **Costing 1** view, check the -box **Material Origin** and **With Quantity Structure**. Save the newly created material by pressing the -button or CTRL+S. The system displays a message confirming that the material was created.

#### 2.4.2.4 Material Master Record: Wheel

For routine reasons, the wheel is almost identical to the already created carbon frame. Only material description and price differ. The SAP ERP system facilitates creation, as you may use the master data of the already created frame as **reference**.

The wheel is procured from contractors as well. Therefore, select the following transaction:

**Logistics → Material Management → Material Master → Material → Create (Special) → Raw Material (MMR1)**

1. You are now in the **create raw material** dialog. Enter the following data:
 

- <b>Material</b>	<b>wheel-xxyy</b>
- <b>Industry sector</b>	<b>Mechanical engineering</b>
- <b>Copy from</b>	your material <b>carb-frame-xxyy</b>
- Press <i>Enter</i> .	
2. In the next step, select the following **views**:
  - **Basic data 1**
  - **Basic data 2**
  - **Purchasing**
  - **MRP 1**
  - **MRP 2**
  - **MRP 3**
  - **MRP 4**
  - **Accounting 1**
  - **Costing 1**

Close the dialogue (click  or press *Enter*).

3. The following dialogue comprises information about the organizational unit, for which you are supposed to create the material. Since you want to copy from a reference, you must enter **plant 1000** and **material storage 0001** and additionally enter the **same data** (since the material master of the reference was also created for these organizational units) in the corresponding fields on the right hand side below the reference.
  - **Plant** **1000 (Hamburg)**

- Storage Location **0001 (Material Storage)**
- Copy from Plant **1000 (Hamburg)**
- Copy from Storage Location **0001 (Material Storage)**
- Complete the dialog with *Enter* or

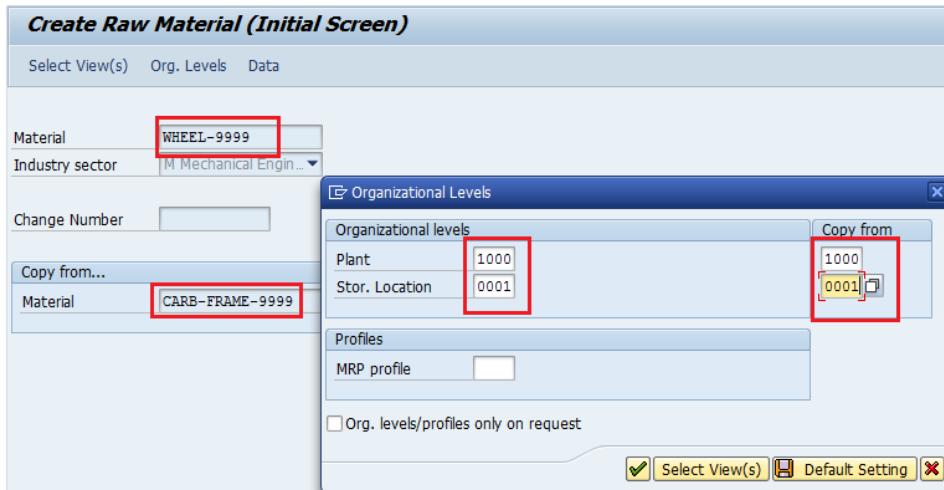


Figure 31: Material Master – Copy from Reference (1): SAP-System-Screenshot

Subsequently, you can see that the system fills in all required data from the reference in the current material master of wheel-xxxx. Click through all views pressing *Enter* to confirm them. Please pay attention to your manual entries in the **Material description** and **Standard price** fields.

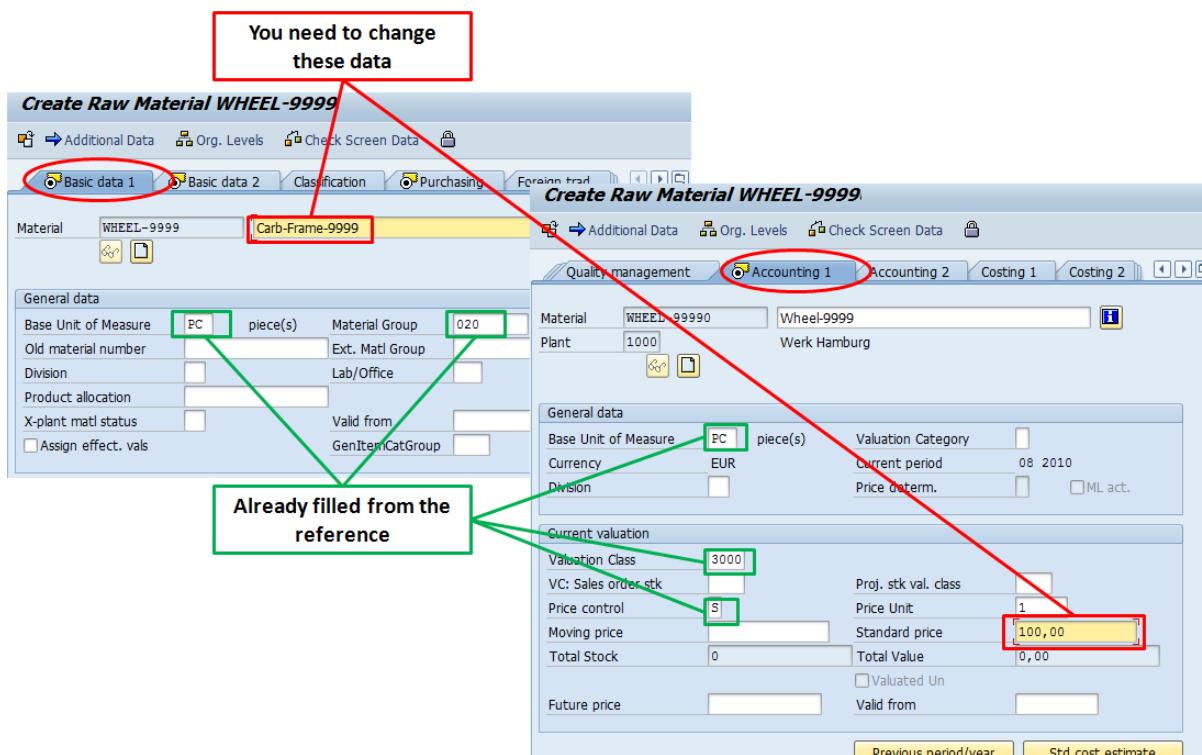


Figure 32: Material Master – Copy from Reference (2): SAP-System-Screenshot

#### 4. Basic data 1 view: Material Description      Wheel-xxxx – press *Enter*

5. **Basic data 2** view: no changes – press *Enter*
6. **Purchasing** view: no changes – press *Enter*
7. **MRP 1** view: no changes – press *Enter*
8. **MRP 2** view: no changes – press *Enter*
9. **MRP 3** view: no changes – press *Enter*
10. **MRP 4** view: no changes – press *Enter*
11. **Accounting 1** view: **Standard price** **100** – press *Enter*
12. **Costing 1** view: no changes – press -button

#### 2.4.2.5 Material master record: Chain

The chain is, concerning its data, quite similar to the already created raw materials. The only differences are the **description** **Chain-xxyy**, the **planned delivery time** of **4 days** and the standard price of **75**.

**Logistics → Material Management → Material Master → Material → Create (Special) → Raw Material (MMR1)**

1. You are now in the **create raw material** dialog. Enter the following data:
  - **Material** **chain-xxyy**
  - **Industry sector** **Mechanical engineering**
  - **Copy from** your material **carb-frame-xxyy**
  - Press *Enter*.
2. In the next step, select the following **views**:
  - **Basic data 1**
  - **Basic data 2**
  - **Purchasing**
  - **MRP 1**
  - **MRP 2**
  - **MRP 3**
  - **MRP 4**
  - **Accounting 1**
  - **Costing 1**

Close the dialogue (click  or press *Enter*).

3. The following dialogue comprises information about the organizational unit, for which you are supposed to create the material. Since you want to copy from a reference you must enter **plant 1000** and **material storage 0001** and additionally enter the **same data** (since the material master of the reference was also created for these organizational units) in the corresponding fields on the right hand side below the reference.

- **Plant** **1000 (Hamburg)**
- **Storage Location** **0001 (Material Storage)**
- **Copy from Plant** **1000 (Hamburg)**
- **Copy from Storage Location** **0001 (Material Storage)**
- Complete the dialog with *Enter* or .

4. **Basic data 1** view: **Material Description**      *Chain-xxyy* – press *Enter*
5. **Basic data 2** view: no changes – press *Enter*
6. **Purchasing** view: no changes – press *Enter*
7. **MRP 1** view: no changes – press *Enter*
8. **MRP 2** view: **Planned Deliv. Time**      *4 days* – press *Enter*
9. **MRP 3** view: no changes – press *Enter*
10. **MRP 4** view: no changes – press *Enter*
11. **Accounting 1** view: **Standard price**      *75* – press *Enter*
12. **Costing 1** view: no changes – press 

#### 2.4.2.6 Material master data: gearing

The last data set you need to create is for the **Basis-Module's gearing**. Please pay attention to the differences to the already created data sets as the gearing is a **trading good**. Trading goods are movable goods intended for commercial exchange. Correspondingly, you will commence running a different transaction.

Therefore, select:

**Logistics → Material Management → Material Master → Material → Create (Special) → Trading Good (MMH1)**

1. You are now in the **create trading good** dialog. Enter *gearing-xxyy* under **material**. Again, select **mechanical engineering** under **industry sector**. No **reference material** is used. Go to the next dialog by clicking  or pushing *enter*.
2. In the next step select the following views:
  - **Basic data 1**
  - **Basic data 2**
  - **Purchasing**
  - **MRP 1**
  - **MRP 2**
  - **MRP 3**
  - **MRP 4**
  - **Accounting 1**
  - **Costing 1**

Close the dialogue (click  or press *Enter*).

3. The following dialogue comprises information about the organizational unit, for which you are supposed to create the material. Enter
  - **Plant**                    *1000 (Hamburg)*
  - **Storage Location**      *0001 (Material Storage)*
  - Complete the dialog with *Enter* or .
4. In **basic data 1**, enter the following data in the specified fields:
  - **Material Description**    *Gearing-xxyy*
  - **Unit of Measure**          *PC (piece)*

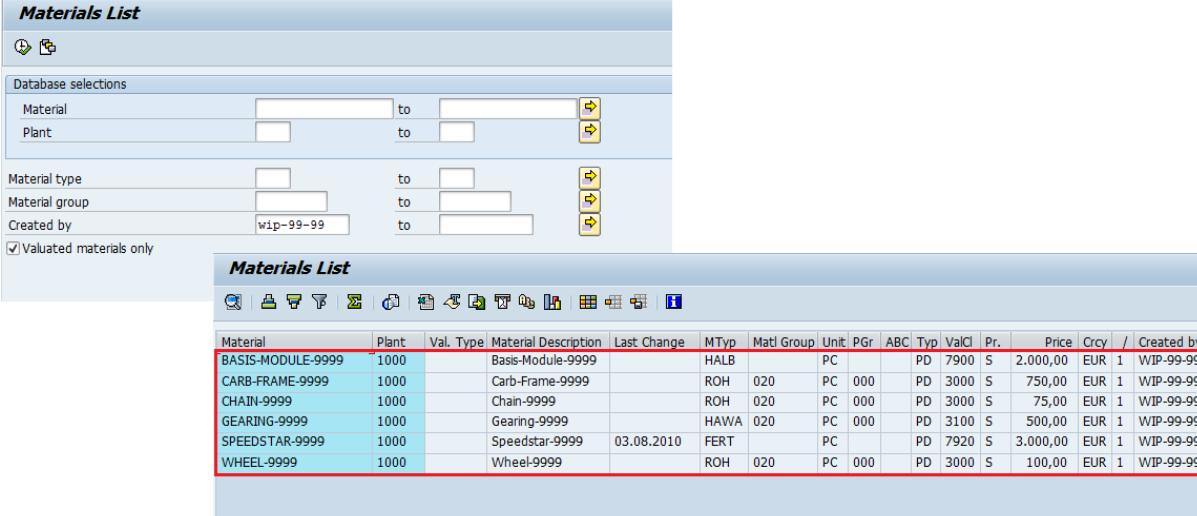
- **Material group** **020 (vehicles)**
  - Proceed to the next view by *Enter*.
5. Since you do not need to enter any data in the **basic data 2 view**, proceed to the next view by pressing *Enter*. The **classification** view was skipped automatically, since it was not selected previously.
6. In the **purchasing** view, you assign the material to the **purchasing group** of **000 (Chef, H)**. Press *Enter*.
7. In the next view **MRP 1**, enter the following data:
- **MRP type** **PD (Material Requirements Planning)**
  - **MRP controller** **001 (Disponent 001)**
  - **Lot size** **EX (Lot-for-lot order quantity)**
  - Press *Enter*.
8. In the **MRP 2** dialog, enter the following data:
- **Procurement type** **F (external production –field is not editable!)**
  - **Prod.stor.location** **0001**
  - **Storage loc. For EP** **0001**
  - **Planned Deliv. Time** **6 days**
  - **SchedMargin key** **000**
  - Press *Enter*.
9. Next, you see the **MRP 3** view. Enter
- **Availability check** **02 (individual requirement)**
  - Press *Enter*.
10. You do not need to enter any data in the view **MRP4**. Thus, skip that view with *Enter*.
11. Within the view **Accounting 1**, enter
- **Price control** **S (Standard price)**
  - **Standard price** **500**
  - **Valuation class** **3100 (trading goods)**
  - Press *Enter*.
12. In the **Costing 1** view, check the -box **Material Origin** and **With Quantity Structure**. Safe the newly created material by pressing the -button or CTRL+S. The system displays a message confirming that the material was created.

#### 2.4.2.7 Displaying Material List

In the following transaction, you can double-check all the materials you have created this far.

**Logistics → Material Management → Material Master → Other → Material List (MM60)**

Enter your user name **WIP-xx-yy** in the left field of **Created by** and press *Execute* (). You will see a material list with all the materials you (your user) created plus the main settings like plant, material type, valuation class or standard price.



The screenshot shows the SAP Materials List interface. At the top, there are several selection fields: 'Material' and 'Plant' with 'to' buttons; 'Material type' and 'Material group' with 'to' buttons; and 'Created by' with a 'to' button. Below these is a checkbox for 'Valuated materials only'. The main area is titled 'Materials List' and displays a grid of material data. The columns include: Material, Plant, Val. Type, Material Description, Last Change, MTyp, Matl Group, Unit, PGr, ABC, Typ, ValCl, Pr., Price, Crcy, /, and Created by. A red box highlights the first six columns of the data grid. The data grid contains the following rows:

Material	Plant	Val. Type	Material Description	Last Change	MTyp	Matl Group	Unit	PGr	ABC	Typ	ValCl	Pr.	Price	Crcy	/	Created by
BASIS-MODULE-9999	1000		Basis-Module-9999		HALB		PC			PD	7900	S	2.000,00	EUR	1	WIP-99-99
CARB-FRAME-9999	1000		Carb-Frame-9999		ROH	020	PC	000		PD	3000	S	750,00	EUR	1	WIP-99-99
CHAIN-9999	1000		Chain-9999		ROH	020	PC	000		PD	3000	S	75,00	EUR	1	WIP-99-99
GEARING-9999	1000		Gearing-9999		HAWA	020	PC	000		PD	3100	S	500,00	EUR	1	WIP-99-99
SPEEDSTAR-9999	1000		Speedstar-9999	03.08.2010	FERT		PC			PD	7920	S	3.000,00	EUR	1	WIP-99-99
WHEEL-9999	1000		Wheel-9999		ROH	020	PC	000		PD	3000	S	100,00	EUR	1	WIP-99-99

Figure 33: Material List: SAP-System-Screenshot



If you encounter any difference (except of the user number, of course) between your data and the screenshot above, please rectify the error before proceeding with the case study.

#### 2.4.2.8 Displaying Material Master Data

Additionally, you can display and change material master data in the system by selecting:

**Logistics → Materials Management → Material Master → Material → Change → Immediately (MM02)**

In the initial window, you can enter the following materials in the material field

- Speedstar-xxyy
- Basis-module-xxyy
- frame-xxyy
- wheel-xxyy
- chain-xxyy
- gearing-xxyy

Next, press **Enter**.

In the select views dialog, select the views you are interested in.

- **General Data**
  - o Basic data 1
  - o Basic data 2
  - o Classification
- **SD = Sales & Distribution**
  - o Sales: Sales org. data 1
  - o Sales: Sales org. data 2

- *Sales: General/plant data*
- *Foreign trade: Export*
- *Sales text*
- **MM = Material Management**
  - *Purchasing*
  - *Foreign trade: Import*
  - *Purchase order text*
- **LE-WM = Logistic Execution – Warehouse Management**
  - *General plant data/storage 1-2*
  - *Warehouse management 1-2*
  - *Quality management*
- **PP = Production Planning**
  - *MRP 1-4*
  - *Forecasting*
  - *Work scheduling*
  - *Production resources/tools*
- **FI = Financial Accounting**
  - *Accounting 1-2*
- **CO = Controlling/Management Accounting**
  - *Costing 1-2*

The organizational data for your materials are as follows:

<b>Plant</b>	<b>1000</b>
<b>Storage location</b>	<b>0001</b>
<b>Purchasing organization</b>	<b>1000</b>
<b>Sales organization</b>	<b>1000</b>
<b>Distribution channel</b>	<b>10</b>

Additionally, please look at the other materials required for bicycle production. These materials already exist in plant 1000. Correspondingly, you do not need to maintain these material master records anymore.

Another employee (your course supervisor) already created these materials and, thus, does not feature a **user name** containing **xxyy!**

**Pedal**  
**Brakes**  
**Handlebar**  
**Saddle**



*In case you forgot to create a view, you can change this by using the transaction **MM01** (**create** transaction). Do not use **MM02** (**change** transaction) in that case. **MM02** (**change** transaction) can only be used for views that already have been created in the system.*

### 2.4.3 Create Vendor Master Data

Now that you have maintained the material master data in the SAP system, you will focus on a master data record for a vendor. The vendor is your supplier for the materials you purchase. The **vendor master data record** is supposed to be valid for company code 1000 and purchasing organization 1000.

To create the vendor data, select the following transaction:

**Logistics → Materials Management → Purchasing → Master Data → Vendor → Central → Create (XK01)**

1. Enter the following data in the specific fields:
  - **Company Code** **1000**
  - **Purchasing Organization** **1000**
  - **Account Group** **KRED**
  - Please note the **Vendor** field remains **blank**, since the system automatically enters a description.
  - Press **Enter** and ignore a *possible* system warning regarding the account group by pressing **Enter** again.
2. Maintain the following data in the view *Create Vendor: Address fields*
  - **Name** **your name**
  - **Search term ½** **your name**
  - **Street** **University Street**
  - **House number** **9**
  - **Postal code** **45141**
  - **City** **Essen**
  - **Country** **DE**
  - Confirm by pressing **Enter** or clicking the -symbol.
3. Furthermore, enter in the *Create Vendor: Control* screen the following:
  - **VAT reg. no.** **DE987654321**
  - **Industry** **TRAD**
4. In the *Create Vendor: Payment Transaction* screen, select the **individual spec.** field under **alternative payee in document**.
5. Skip the *Create Vendor: Contact* screen with **Enter**.
6. In the next screen *Create Vendor: Accounting Information Accounting*, enter:
  - **Recon. Account** **160000**
  - **Sort key** **002**
  - **Cash mgmnt group** **A1**
  - **Release group** **1000**
  - **Interest indic.** **02**
  - **Interest freq.** **I**

7. In the view *Create Vendor: Payment Transactions Accounting*, enter:

- **Paymnt terms** **0001**
- **Tolerance group** **1000**
- **Chk double inv.** **select**
- **Payment methods** **SU**

8. You do not need to enter any data in the *Create Vendor: Correspondence* screen.

9. In the *Create Vendor: Purchasing Data* screen, enter:

- **Order currency** **EUR**
- **Terms of payment** **0001**
- **Incoterms** **EXW**
- **Salesperson** **Mr. Schneider**
- **Telephone** **010/32323**
- **GR based inv. verif.** **select**
- **ABC indicator** **A**
- **Automatic purchase order** **select**

10. Save your entries. The system provides you with a number for the **vendor account** in the status bar. Please list this number without the leading zeros.

 Vendor 0000100264 has been created for company code 1000 purchasing organization 1000

**Vendor account:** \_\_\_\_\_

Now that you have created the vendor, the next step is the creation of the purchasing info records.

#### 2.4.4 Creating Purchasing Info Records and Conditions

Next, you will create *purchasing info records* for materials required for the production of a Speedstar. At the same time, you will combine conditions and purchasing info records (cf. Theory – Conditions in the Purchasing Info Record).

The info records are supposed to hold the pricing conditions your vendor provides for the materials you want to purchase. The following table displays the prices for the materials and the rebate conditions you receive when ordering larger quantities. The info records are created with reference to the vendor you have just created. For instance, if you order 1 Carb-Frame, you have to pay 750 per piece. If you buy 500, you only have to pay 650 per piece.

Material	Vendor	Quantity	Price/Piece	From Quantity	From Price/Piece
Carb-Frame-xxyy	Your Vendor	1	750	500	650
Wheel-xxxx	Your Vendor	1	100	1000	80
Chain-xxxx	Your Vendor	1	75	500	65
Gearing-xxxx	Your Vendor	1	500	500	450

#### 2.4.4.1 Create Info Record: Carb-Frame

To create an info record, select the following transaction:

**Logistics → Materials Management → Purchasing → Master Data → Info Record → Create (ME11)**

1. In the first screen you determine the organizational units and the vendor you want to create the info record for:

- Vendor	number of your vendor
- Material	<i>Carb-Frame-xxyy</i>
- Purchasing Org.	<i>1000</i>
- Plant	<i>1000</i>

The info record is of type standard.

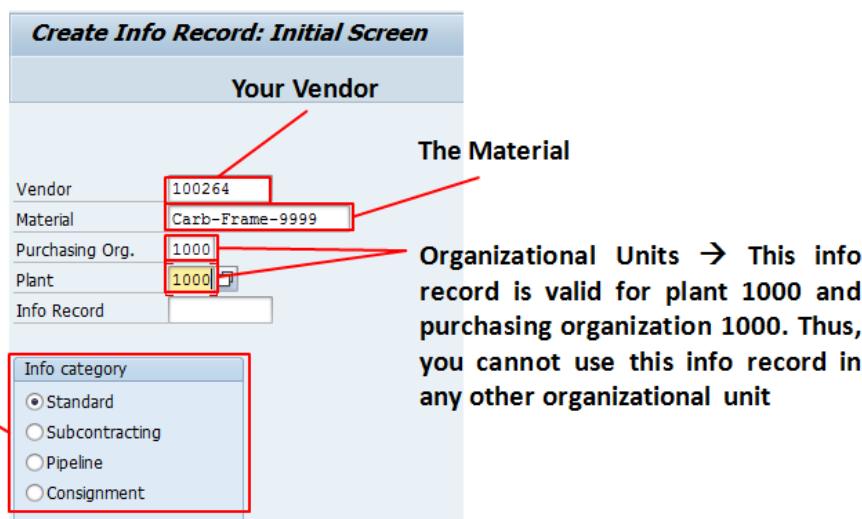


Figure 34: Info Record: SAP-System-Screenshot

2. You are prompted to the *Create Info Record: General Data* screen. You can see that some data from the material master were already transferred. You do not need to change these data. Conditions are subject to purchasing organizations. That means that you have to switch from that *general view* to the specific data of the *purchasing organization*. Click on the [Purch. Org. Data 1](#) icon.

Figure 35: Info Record – General Data: SAP-System-Screenshot

3. Enter the following data:
  - **Standard Quantity**      *100 pieces*
  - **Net price**                  *750 EURO*
  - Next, click the **Conditions** icon.
4. Select the line containing **Condition Type PB00** and click on the icon (**Scales**).
5. Enter the following data to configure the condition to the effect that the price is 750 EURO from a scale quantity of 1 piece and that the price is 650 EURO from a scale quantity of 500 pieces:
  - first row:      Scale Quantity = 1    Amount = 750
  - second row:      Scale Quantity = 500   Amount = 650

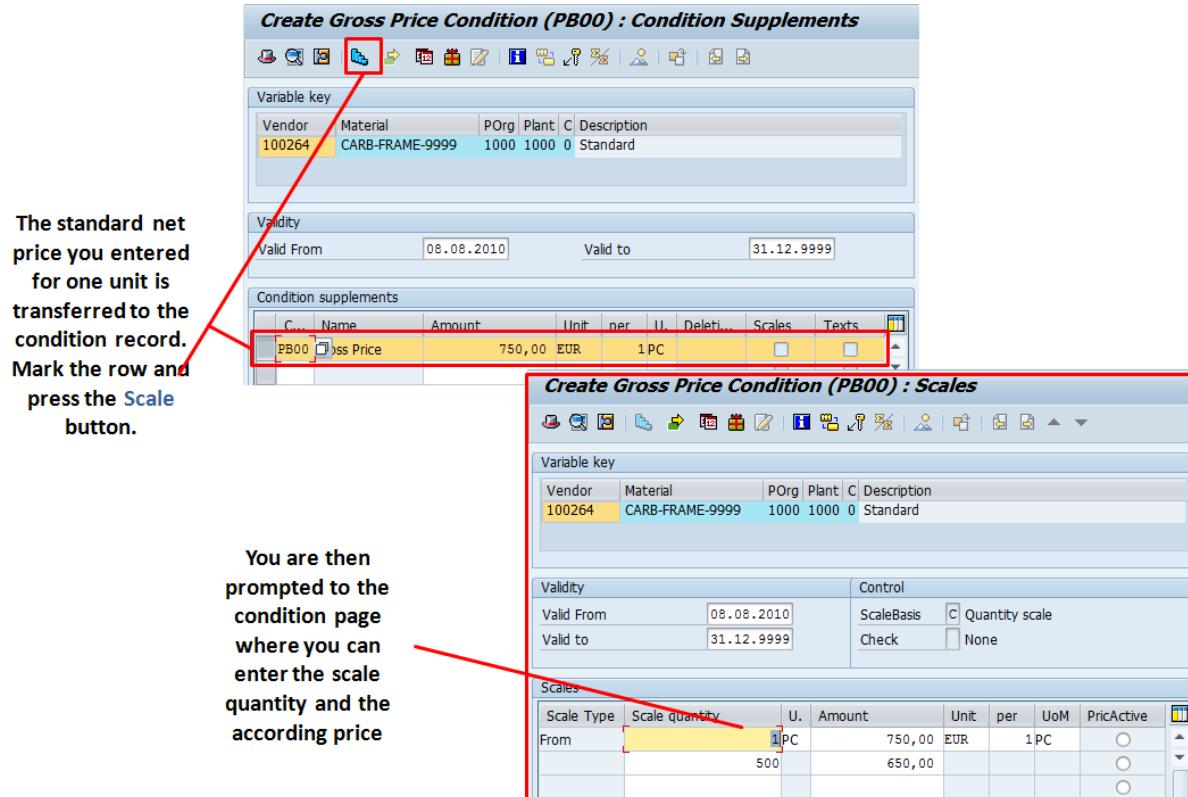


Figure 36: Purchasing Info Record - Conditions: SAP-System-Screenshot

- Safe your entries and list the number of the info record that is displayed in the status bar:

Purchasing info record 5300006190 1000 1000 created

Purchasing info record (Carb-Frame): \_\_\_\_\_

#### 2.4.4.2 Create Info Record: Wheel

- Next, enter material **Wheel-xxxx** in the *create info record* initial screen (transaction code **ME11**). The other entries are equivalent to the prior task. Press *Enter*.
- Once again, click the **Purch. Org. Data 1** icon. Enter
  - Standard quantity **200 pieces**
  - Net price **100 EURO**
  - Next, click the **Conditions** icon.
- Select the line containing **Condition Type PB00** and click on the icon (**Scales**).
- Enter the following data to configure the condition, enter **100 EURO** in the **price** field from a **scale quantity** of **1 piece** and from a **scale quantity** of **1000** enter a price of **80 EURO**:
  - first row: Scale Quantity = **1** Amount = **100**
  - second row: Scale Quantity = **1000** Amount = **80**
- Safe and list the info record number.

Purchasing info record number (Wheel): \_\_\_\_\_

#### 2.4.4.3 Create Info Record: Chain

1. Next, enter **material Chain-xxxx** in the *create info record* initial screen (transaction code **ME11**). The other entries are equivalent to the prior task. Press *Enter*.
2. Once again, click the **Purch. Org. Data 1** icon. Enter
  - **Standard quantity**      **100 pieces**
  - **Net price**                **75 EURO**
  - Next, click the **Conditions** icon.
3. Select the line containing **Condition Type PB00** and click on the  icon (**Scales**).
4. Enter the following data to configure the condition, enter 75 EURO in the price field from a scale quantity of 1 piece and from a scale quantity of 500, enter a price of 65 EURO:
  - first row:      Scale Quantity = **1**    Amount = **75**
  - second row:     Scale Quantity = **500**   Amount = **65**
5. Safe and list the info record number.

*Purchasing info record number (Chain):* \_\_\_\_\_

#### 2.4.4.4 Create Info Record: Gearing

1. Next, enter **material Gearing-xxxx** in the *create info record* initial screen (transaction code **ME11**). The other entries are equivalent to the prior task. Press *Enter*.
2. Once again, click the **Purch. Org. Data 1** icon. Enter
  - **Standard quantity**      **100 pieces**
  - **Net price**                **500 EURO**
  - Next, click the **Conditions** icon.
3. Select the line containing **Condition Type PB00** and click on the  icon (**Scales**).
4. Enter the following data to configure the condition, enter 500 EURO in the price field from a scale quantity of 1 piece and from a scale quantity of 500, enter a price of 450 EURO:
  - first row:      Scale Quantity = **1**    Amount = **500**
  - second row:     Scale Quantity = **500**   Amount = **450**
5. Safe and list the info record number.

*Purchasing info record number (Gearing):* \_\_\_\_\_

So far, you have created purchasing info records for those primary products and commodities being integrated into the production of the end product or intermediate goods, respectively. You may have observed that the system displayed only relevant views on the material master file for you in the role employee (purchasing). However, information originating from other departments' material master was already existent and visible to you.

From a materials management/purchasing point of view, you maintained all relevant master data (material, vendor, purchasing info records, conditions). Next, you will focus on the procurement process.

## 2.5 Elucidation



### What have we learned so far?

The major outcomes of this section were the organizational levels that are relevant for the procurement process in SAP ERP and the different types of master data used in SAP procurement.

### 2.5.1 Organizational Levels of SAP ERP Procurement

Like every other SAP application, SAP ERP Procurement has organizational units that are relevant for this functional area. Organizational units represent the legal and/or organizational views of an enterprise. You can design your company structure based on the company's business processes. That is, if your company has an organizational unit for purchasing goods and it is located in Berlin, you can map (customize) this in the SAP software.

In SAP, prior to use the ERP system in the everyday work, you need to implement it. The main step of this implementation is called **Customizing** (other steps are documentation, testing, going live, end user support, training, etc.). In customizing you define organizational units and processes and assign them to each other.

The Procurement process uses the following **organizational units**:

#### **Client**

- a self-contained unit in a SAP system with separate master records and its own set of tables
- Is the highest organizational element
- access authorization for users on client level
- system-wide unique three-digit alphanumeric key; e.g., 900

#### **Company Code**

- smallest organizational unit of external accounting
- Balance sheets and Profit & Loss Statements, required by law, are created at the company code level.
- You can create as many company codes as you need per client
- Client-wide unique four-digit alphanumeric key regarding all company codes; e.g., 1000. That is, if you have one company code with the ID 1000, you cannot create a second one with this ID.

#### **Plant**

- A plant produces goods, renders services or makes goods available for distribution.
- A plant can be a manufacturing facility, a warehouse or distribution center.
- Is uniquely assigned to a company code; a company code can have multiple plants assigned.
- Client-wide unique four-digit alphanumeric key regarding all plants; e.g., 1000. That is, if you have one plant with the ID 1000, you cannot create a second one with this ID.

## Storage Location

- Units that allow the differentiation of material stocks within a plant.
- Unit relevant for inventory management on quantity basis and physical inventory.
- Uniquely assigned to a plant; a plant can have multiple storage locations.
- Unique four-digit alphanumeric key within a plant; e.g., 0001. That is, if you have one storage location with the ID 0001 assigned to a plant, you cannot create a second one with this ID for this very same plant.

## Purchasing Organization

- Unit within logistics responsible for purchasing.
- Negotiates the general conditions with vendors for one or more plants or companies.
- Pricing conditions are set at the purchasing organization level.
- Client-wide unique four-digit alphanumeric key regarding all purchasing organizations; e.g., 1000. That is, if you have one purchasing organization with the ID 1000, you cannot create a second one with this ID.

## Purchasing group

- Key for a buyer or a group of buyers who is/are responsible for certain purchasing activities.
- It cannot be assigned to a purchasing organization. That is, a purchasing group is just a structuring element to manage, e.g., responsibilities like “purchasing group A is responsible for purchasing of material X”. Thus, it is valid across organizational units.
- Client-wide unique three-digit alphanumeric key regarding all purchasing groups; e.g., 000. That is, if you have one purchasing group with the ID 000, you cannot create a second one with this ID.

The following **assignments** can be made between the organizational units of the procurement process:

- A client is not assigned to any organizational unit. The client can be considered as some kind of container that contains all the organizational units.
- Company Code can have multiple plants assigned.
- Plants must be assigned to exactly one company code.
- A plant can have multiple Storage Locations.

Regarding **assignments** of purchasing organizations to company codes and plants you must consider whether purchasing is organized centrally or locally in the company. You have to differentiate between

- *plant-specific purchasing*: Purchasing organization is assigned to one plant and, thus, manages purchasing for only this plant.
- *cross-plant purchasing*: Purchasing organization is assigned to one company code and to multiple plants. Thus, it manages purchasing for these company code plants.
- *cross-company-code purchasing*: Purchasing organization is not assigned to any company code or plant. Thus, it can manage purchasing for every plant.

## 2.5.2 Master Data in SAP ERP Procurement

The main master data records used in the procurement process are

- Material Master Data
- Vendor Master Data
- Purchasing Info Records
- Conditions

### Material Master

- Materials are created centrally (on client level).
- The material master contains all data relevant for a material. For instance, the material-ID, the description, the unit of measure, material weight and volume, standard price, etc.
- The material master is organized in multiple views. Each view is relevant to certain SAP ERP applications. Views are, for instance, Basic Data, Purchasing, Sales, Accounting, MRP, Warehouse Management, etc.
- Data which are maintained within one of those views may be valid for different organizational levels. For instance, data in the **MRP** view is maintained on the organizational level of plants, whereas data of the view **Sales** is maintained for Sales Organizations. That is, if you maintain the MRP view of a material master for the plant 1000 only, then this MRP data of the material is only valid for the plant 1000. Plant 2000 cannot use this material; unless you create (extend) the material master data for this plant, too.
- The basic view data are valid across any organizational unit. That is, when creating a material, you specify general information like Material ID, etc., in the Basic view. These data are valid for the whole client. You cannot create two materials with the same ID in the same client.
- Data levels of the material master
  - o initial level
  - o main work level
  - o additional data level

### Vendor Master

- Information about a particular vendor (someone who sells material or services to your company) in the vendor master record.
- The vendor master is subdivided in a general, a purchasing and an accounting view.
  - o **General data** are valid on a cross-client basis (like the Basic view of material). This includes, e.g., communication data of a vendor. These data are detached from the purchasing and accounting view.
  - o **Accounting data** are stored on company code level (company) and with the general data. That is, like the material master, a vendor master is created for a certain company code (e.g., 1000 – Germany). If the very same vendor sells products to a different company part (e.g., 2000 – UK), the vendor master must be additionally created (extended to) for the company code 2000, considering

that the vendor wants to receive his money (Accounting view always has money involved).

- Purchasing data about a vendor are managed separately for each purchasing organization, e.g., payment conditions for vendors. Some **general data** are also relevant to purchasing, e.g., address data. That is, again like the material master, a vendor master is created for a certain purchasing organization (e.g., 1000 – Germany). If another purchasing organization (e.g., 2000 – UK) wants to purchase products from the same vendor, the vendor master must be additionally created (extended to) for the purchasing organization 2000.
- Users of the SAP ERP system may have distinct authorizations assigned regarding the maintenance of vendor data. These authorizations might be set in a way that, for instance, an employee of the procurement department can only maintain the purchasing data, whereas a company's accountant only can edit the accounting data.

### Purchasing Info Records

- Contains information about a vendor and a material, which is procured from the particular vendor. That is, you specify in an info record which material you can buy from a vendor at what price and at what time (what time period).
- Are an important source of information for a company, as buyer of materials and services; Using purchasing info records, buyers can find out at any time which vendors offer a particular material or which materials can be procured from which vendors.
- The following data can be stored and maintained in info records:
  - current and future prices and conditions (e.g., freight, discounts)
  - delivery data (e.g., planned delivery time, tolerances)
  - vendor data
  - number of the last purchase order
  - texts
- When creating a purchasing order in the SAP ERP system and you type in the material you want to purchase, the system fills in or proposes the data for fields like vendor, price, etc., according to the information in the info record.
- The data for a purchasing info record needs to be divided into
  - generally applicable data, which is valid for a single client
  - purchasing organization-specific data
  - purchasing organization-specific and plant-specific data

### Conditions

- are used for price determination in purchase orders.
- When you create a purchase order with reference to a contact or a purchasing info record, or if particular criteria defined in the extended conditions are applicable to purchase order entry, the SAP system automatically applies conditions to the purchase order.
- Conditions can be maintained (created) within an info record, a material master or a contract. They can also be created in a distinct transaction (extended condition) but they always refer to a material and/or vendor:

- **Conditions in a contract** apply to all contract release orders created with reference to the particular contract.
- **Conditions in purchasing info records** apply to all purchase order items containing material or vendor of the purchasing info record.
- With “**general**” **conditions**, you can also display price agreements that do not only apply to individual quotations, outline agreements, purchase orders or info records, for example, if a vendor has a price reduction on all purchase orders as a two-month special offer. You enter general conditions in *Purchasing under Master Data → Conditions*.

### 3 Procurement Process

The following section delivers insight into the procurement process (Purchase to Pay business process) of the SAP ERP system.

#### 3.1 Theory: Elements of the Procurement Process in SAP ERP



The procurement process in SAP ERP, like any other process in SAP ERP, has multiple integration points with different SAP ERP applications. This chapter names the elements of the procurement process in SAP ERP and points out some integration aspects that will be discussed in detail in the following sections.

##### 3.1.1 Purchase to Pay Business Process

The following figure illustrates the ideal flow of a model Purchase to Pay business process.

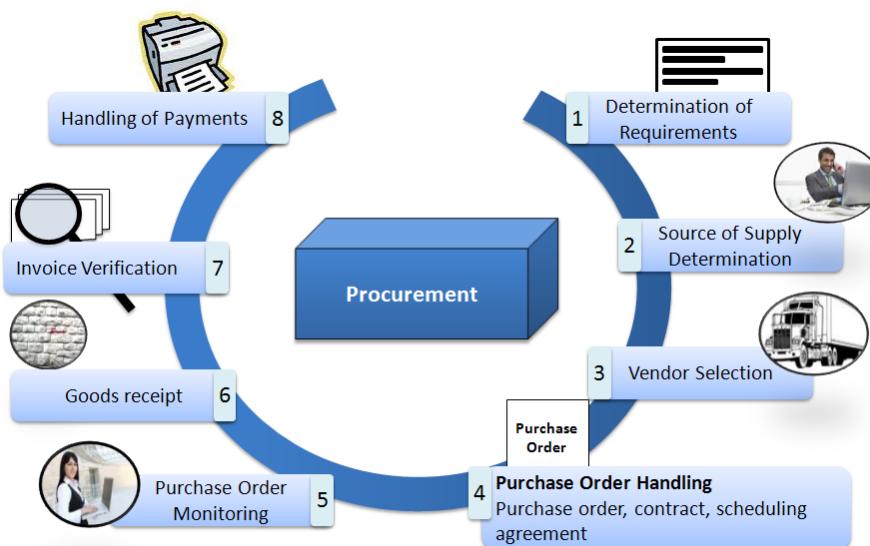


Figure 37: Purchase to Pay Business Process

The external procurement process requires the following process steps:

1. **Requirements determination:** In case of material requirements, the responsible department may manually hand a purchase request over to the purchasing department. If a MRP procedure is in place for a material in the material master data (*in our case always material requirements planning (PD in the material master) – however, other types are possible as well*), the SAP MRP module automatically generates a purchase requisition. The abbreviation MRP stands for Material Requirements Planning, which accounts for the in-line with demand allocation of materials.
2. **Determining the source of supply:** After a requirement for a certain material is determined, the SAP ERP system assists the responsible procurement agent (*for our materials: purchasing group 000 (raw materials) and 009 (trading goods)*) with the de-

termination of supply sources, e.g., vendors, in many ways. The determination of source of supply can be used to create requests for quotation (RFQ) and subsequently create the quotation.

3. **Vendor selection:** The SAP system allows for price comparisons and, thus, facilitates the vendor selection. A comparison of bids may, for example, disclose the cheapest vendor. Additionally, rejection letters may be processed automatically (*in our case studies, we already created a vendor, which will be used later on to procure materials from*).
4. **Purchase order processing:** Purchase orders, similarly to purchase requisitions, can be created manually or automatically by the system. When you create purchase orders, you can copy data from other documents (such as purchase requisitions or quotations) to reduce the amount of entries that need to be made. You also have the option of working with outline agreements.
5. **Order monitoring:** The purchaser in charge can monitor the order status online anytime and may intervene if necessary. Thus, the purchaser can determine whether goods receipt or invoice receipt processes are already completed. Additionally, the SAP ERP system features dunning procedures.
6. **Goods receipt:** When entering inbound deliveries in the system, the system refers the delivery document to the associated purchase order. This reduces the amount of entries that need to be made and allows checking whether the goods and quantities delivered match the purchase order. In case of deviations, the system can automatically issue warnings for the corresponding department. The system also updates the purchase order history of the purchase order.
7. **Invoice verification:** When entering invoices, the system refers to the previous purchase order or delivery. Thus, you can check the calculations and the general accuracy of the invoice. The availability of purchase order and goods receipt data means that you can be informed of quantity and price variances.
8. **Payment handling:** Vendor debts are paid by using the payment program. Usually, financial accounting application in SAP ERP is in charge of vendor payment.

### 3.1.2 Purchase Requisitions

A **Purchase requisition** is a SAP ERP document created in requirements planning. It is used to request the purchasing organization to purchase a particular quantity of a material or service for a particular date.

The purchase requisition can be created directly, that is, the department in that needs the material creates the purchase requisition manually.

Or the purchase requisition is created indirectly (automatically). Purchase requisitions can be created automatically, as follows:

- in MRP (material requirements planning)
- with maintenance orders
- with production orders
- with networks

The SAP system transfers data maintained in the material master to the purchase requisition when creating a purchase requisition. As of SAP ERP 6.0, you also have the option of selecting items from a Web-based catalog.

The purchasing department can create a **request for quotation** (RFQ), a **purchase order** or an outline agreement out of the purchasing requisition.

Besides the manual collection of purchase requisitions or the intra-system creation by MRP, SCM-(APO) – supply chain management (advanced planning and optimization) – and SRM-(EBP) – supplier relationship management (Enterprise Buyer Professional) – systems can create purchase requisitions as well. SAP AG sells both systems (SCM and SRM) separately.

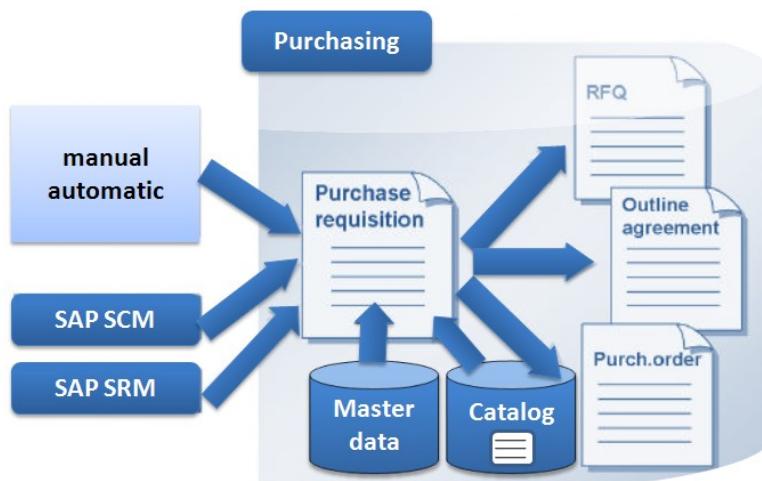


Figure 38: Purchase requisitions

As mentioned above, the purchase requisition can either be created manually by the requesting department or automatically through, e.g., materials planning. In the item view of the purchase requisition, you can use the **creation indicator** in the statistics data to see which procedure was used to create the purchase requisition. Furthermore, the requester can enter a source of supply for the relevant item or specify a desired vendor upon creation of the purchase requisition.

**Determination of the source of supply and the conversion of the purchase requisition into a purchase order or request for quotation** is the task of the purchasing department. The first step for the purchaser is to assign the purchase requisition; that is, he or she selects a valid source of supply. The system can be set to carry out the source of supply determination automatically. The second step is to convert the purchase requisition into a purchase order or request for quotation.

You can define release procedures for purchase requisitions. Release procedures contain rules resp. conditions that are checked by the system before the purchase requisition can be converted to a purchasing order or request for quotation. Thereby, you can let the system check that the content of a purchase requisition is correct, and to ensure that both the account assignment given and the source of supply are correct. The release procedures can be defined flexibly; according to item value, requester, or account assignment, for example.

After the release procedures were executed without any errors or warnings, the purchase requisition is converted into a purchase order manually by the buyer responsible or automatically by the system.

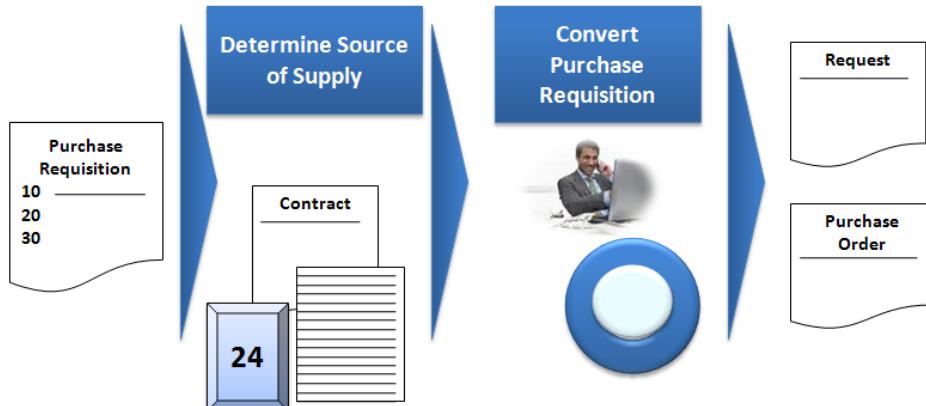


Figure 39: Processing Purchase Requisitions

### 3.1.3 Procurement Process for Consumable Materials

There are two different types of items (material type) that are relevant in the context of the purchasing scenario in this course. The first type of item is stock material. This material will be tracked in inventory. The second is consumable materials, also referred to as indirect or MRO items.

Consumable materials are treated specially in the SAP ERP system regarding the procurement process.

#### 3.1.3.1 Consumable Materials

In SAP terms a **consumable material** is a material that is used in a procurement process and whose value is posted directly in the cost element or asset accounts. That means that this type of material is purchased specifically for a particular account assignment object and is consumed without being put on stock. For instance, you buy computer systems (are assigned to assets) or office supplies (are assigned to cost centers). Thus, there is no value-based inventory management for consumable materials (not “in stock”), but they are offset against the corresponding cost object (asset, cost center), which consumes the material.

When a material is procured directly for consumption, no material master is required. In the context of consumable materials, you can distinguish the following cases:

- consumable material without master record
- consumable material with master record, which is not subject to inventory management (neither quantity-based nor value-based)
- consumable material with master record, which is subject to quantity-based inventory management but not to value-based inventory management

- **Consumable materials are materials or services that are procured directly for an account assignment object.**



- **Examples of consumable materials:**

- Office supplies: assigned to a cost center
- Computer systems: assigned to an asset

- **A material master record is not necessary.**

- **In the case of consumable material with a master record:**

- There is no-value-based inventory management
- Consumption is automatically updated in the material master record



Figure 40: Consumable Materials

### 3.1.3.2 Procurement for Consumption

When procuring consumable materials without material master record, along with the **account assignment category**, you need to enter the following data in the purchasing order document, since the material does not contain a material master record, from which these data could be taken:

- **Short text (description)**
- **Material group**
- **Purchase order unit**

In the case you want to purchase a material with a master record, the material type (FERT - Finished Goods, ROH - Raw Material, HALB - Semi-finished Goods etc.) controls whether inventory management for the material is to take place on a value-basis. Since consumable materials never are subject to value-based inventory management, the SAP system in standard configuration contains the following material types for consumable materials:

- **Material type: non-valuated material (UNBW):** Materials of type UNBW are subject to inventory management on a quantity basis (SAP MM) but not on a value basis (SAP FI). This material type is used for low-value materials that have stocks which still need to be monitored (e.g., operating manuals).
- **Material type: non-stock material (NLAG):** Inventory management is not possible for these materials; neither on a quantity (SAP MM) nor a value basis (SAP FI). For frequently required consumable materials, the use of this material type enables storing the information required to create purchasing documents (such as texts and units of measure).

Procurement for consumption is not restricted to consumable materials only. You can, of course, purchase stock materials not for stock but also directly for consumption. For instance,

you could purchase trading goods for a particular customer sales order or for a cost center directly (see practical part of this section).

In case you purchase a stock material for direct consumption, you have to enter an **account assignment** for **each item** of a purchasing document or a purchase requisition that is intended for direct consumption. In the following cases the account assignment entry is mandatory. You have to enter an account assignment for an item under the following circumstances:

- If you order a material that is not subject to value-based inventory management and post its value directly to consumption (“pure” consumable material).
- If you order an article that does not have a material master record.
- If you order a service.

### 3.1.3.3 Account Assignment Objects

When procuring a material as consumable, you have to enter the **account assignment category** along with other account assignment data in the document item of the purchase requisition or purchasing document. The account assignment category determines

- which type of account assignment objects (e.g. cost center, project etc.) is to be charged,
- which account assignment data must be provided by the user, and
- which accounts are debited when the goods receipt or the invoice is posted.

#### **Example: Account assignment object cost center (account assignment category K)**

When you make an account assignment to a cost center, you must enter the G/L account number of the consumption account and the cost center, for which the material is to be procured on the account assignment data screen. You can specify in customizing that the system automatically proposes the number of the G/L account to be charged.

#### **Example: Account assignment object asset (account assignment category A)**

If you use account assignment category A, you must enter the asset number on the account assignment data screen. The system automatically determines the G/L account to be charged from the asset number. You cannot enter it manually.

The following figure shows different account assignment objects.

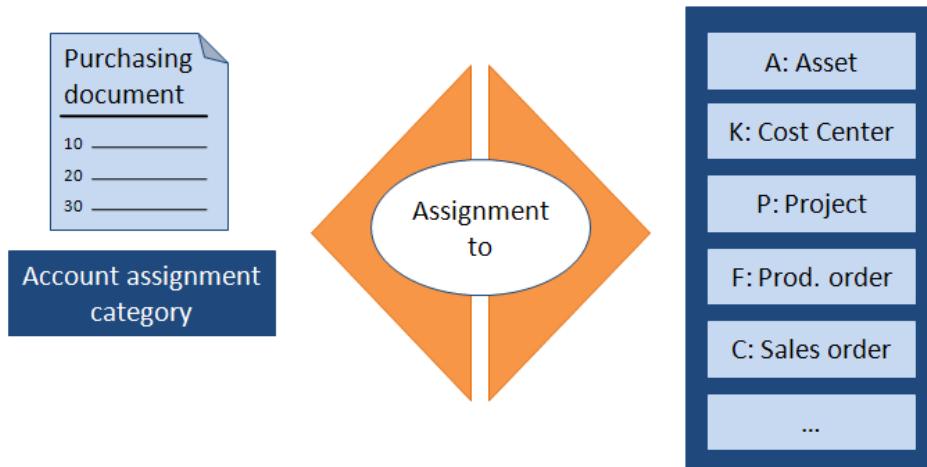


Figure 41: Account Assignment Objects

### 3.1.3.4 Consumable Materials versus Stock Materials

The following figure displays the procurement process for consumable materials contrasted to the procurement of a stock material. The differences center on the “purchasing view” and the “relevant accounts” and, thus, are in steps three and four where the account assignment takes place.

The figure displays three different cases:

- stock material that is procured on an account assignment basis
- consumable material without material master record
- consumable material with material master record

#### Stock material that is procured on an account assignment basis

Stock materials always have a material master record. When creating the material master, you enter the **valuation class** in the accounting view. Therefore, you do not need to enter an account assignment category in the purchase order, since it is derived from the valuation class assigned to the material master. The stock value is posted to a stock account during goods receipt. As a result, the stock value and stock quantity are updated in the material master record.

#### Consumable material with or without material master record

When procuring a consumable material, the material may be a special consumable material with a material master record or a material without a material master record. You can also procure stock material for consumption.

In all three cases, the **account assignment category** and other dependent account assignment data (such as an account assignment object and G/L account (consumption account) must be entered in the purchasing document (requisition or order).

At the time of **goods receipt and/or invoice receipt**, the consumption (G/L) account specified in the purchase order is debited with the procurement value. In addition, data for the account assignment object is updated.

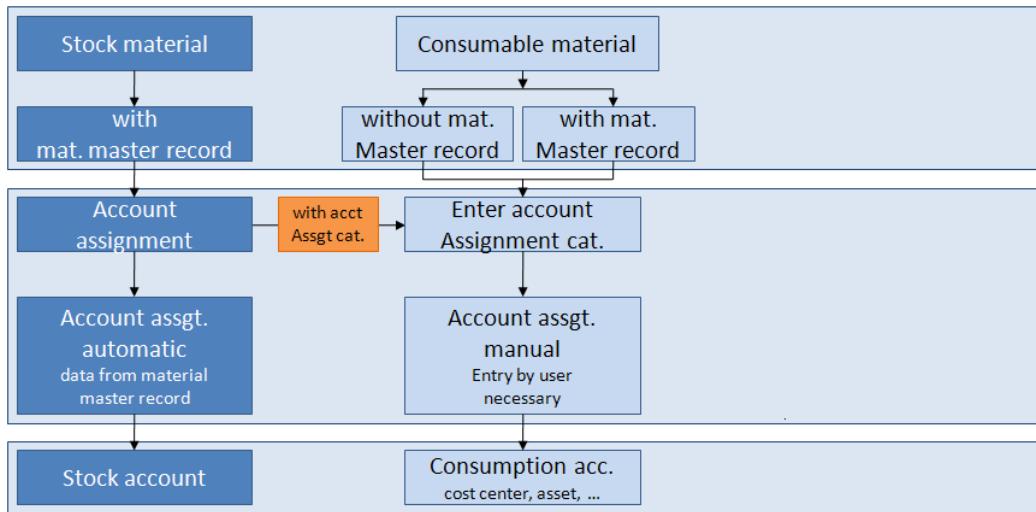


Figure 42: Procurement for Consumption (1)

The following figure summarizes the most important differences between the procurement of stock material and that of consumable material.

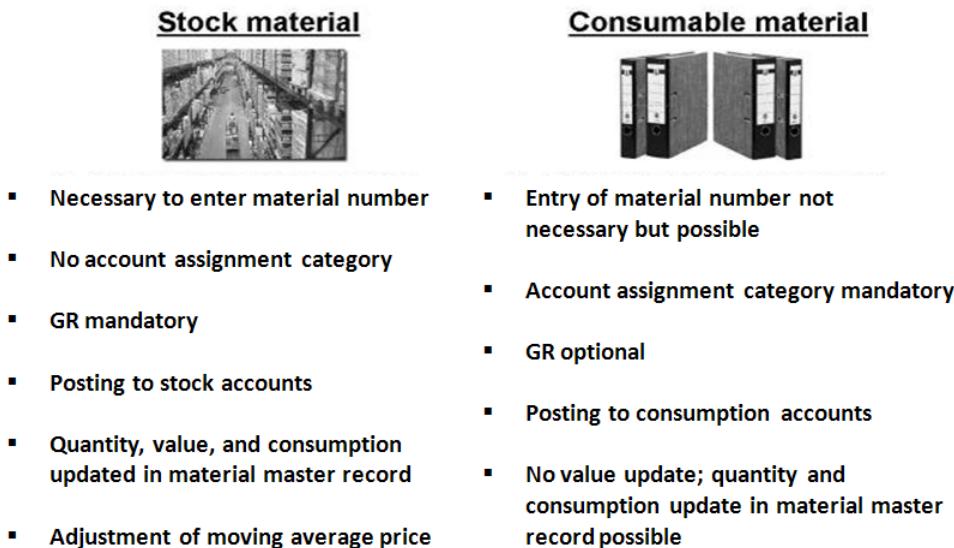


Figure 43: Stock Material and Consumable Material: Comparison

### 3.1.4 Purchase Order Processing

The following describes the elements of the purchase order and the process of creating a purchase order in SAP ERP.

#### 3.1.4.1 Purchase Order

A **purchase order** is defined as a formal demand to a vendor for supplying particular goods or services under the negotiated conditions stated in the purchase order. In the purchase order you specify whether the material is delivered for stock or for direct consumption (e.g., cost center, asset or project). The goods receipt and invoice verification are usually carried out on the basis of the purchase order.

When creating a purchase order, this can take place either **without reference** or **with reference** to a **purchase requisition**, a **request for quotation** or another document.

When entering order data, the ERP system suggests values for the particular fields:

- For instance, ordering address, terms of payment and freight (Incoterms) are suggested from the **vendor master** record.
- If a **material master** record for a particular material is maintained, the material short text or the material group is suggested amongst others.
- If a **purchasing info record** is already existent in the system, a default price is transferred to the purchase order.

A purchase order is then either sent to a vendor or a stock transport order is initiated in another plant of the company (see teaching unit 5). In case of a stock transport order, the resulting freight costs can be taken into account in the purchase order.

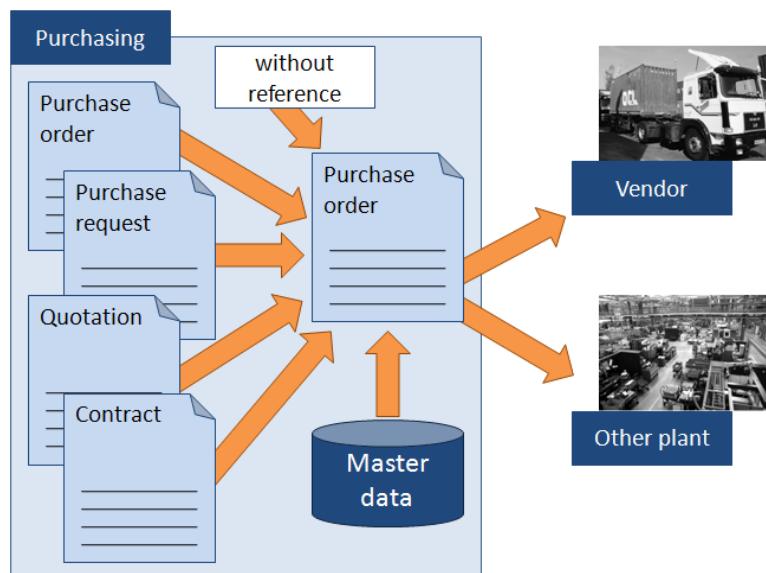


Figure 44: Purchase order

### Purchase Order Processing

You have already learned that a purchase order can be created as reference to an already existing **purchase requisition**, **RFQ**, or another **purchase order**. Referencing existing documents keeps data input work to a minimum, since you do not have to enter the same data (vendor, material, quantity, price, etc.) multiple times. Thus, already existing data is transferred (copied) from the preceding document into the purchase order. However, purchase order can, of course, be created without reference to preceding documents.

In case you do not know the responsible or preferable vendor when creating a purchase order, you can use **source determination**. Then, the system suggests possible vendors using pre-defined sources (outline agreements, info records, source list entries, quota arrangements).

You can determine the current **processing status** for each purchase order item. For instance, you can determine whether goods receipts and invoice receipts are already completed. You can display subsequent documents (material and invoice documents) from the purchase order history screen to monitor order progression.

In the purchase order, you can determine if material is delivered to a **plant** or procured directly for **consumption** (e.g., cost enter, asset, project; cf. consumable materials). Usually, the purchase order is the reference record for **goods receipt** (your company receives the ordered material) and **invoice verification** (you receive the bill for the material from the vendor).

### 3.1.4.2 Purchase Order Format

Purchase orders, like other documents in the SAP system, consists of a document header and one or more items.

The document **header** carries information that is valid for the entire purchase order. These data include, e.g., document currency, the document date and the terms of payment.

The **item** part of the document contains data describing the materials or services ordered. Here additional information (e.g., delivery schedules or item-based text) for each item is maintained.

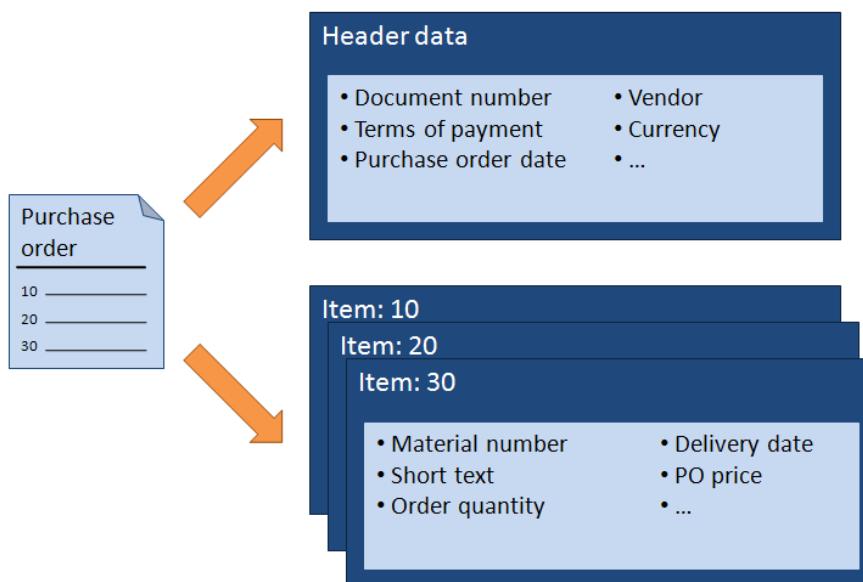


Figure 45: Purchase order format

The two following figures display the purchase order transaction interface in the SAP ERP system. The first figure highlights the individual screens areas and explains a few important buttons.

You access the purchase order transaction with the transaction codes ME21N (create purchase order), ME22N (change purchase order) or ME23N (display purchase order). Thereby, it does not matter which of the three transaction codes you use to access the purchase order. You can switch between functions by choosing Create or Display/Change. By choosing the Other Purchase Order icon, you can also branch directly to another purchase order or purchase requisition:

- Create a purchase order
- Display/Change an existing purchase order
- Select a different purchase order than the one displayed

The purchase order transaction (ME21N) is a single-screen transaction. That is, all the relevant data of a purchase order can be maintained on a central screen. The following screenshot displays the three screen areas of a purchase order: document header, the item overview and the item details. On the next screen, the forth screen area document overview is highlighted:

- The **document header** contains information valid for the whole document such as the vendor address, the organizational levels or overall status of the purchase order.
- The **item overview** shows the positions of the purchase order. Here you can enter the main data such as material, quantity, delivery date, price and plant. You can see that the purchase order has two items. The first item (line) contains 100 units of the material Gearing-9999, the second item contains 10 units of the same material. The difference between the two items is that the second item is procured as consumable material directly for a cost center. You can see that from the entry in the second column. The "K" indicates that the material is procured for a cost center. The first item in the purchase order is procured for stock.



*Since SAP ERP 6.0, it is also possible to integrate Web-based catalogs in purchasing. This means the item data can also be copied from a catalog. If you want to connect a catalog, the catalog needs to comply with the Open Catalog Interface (OCI) standard. You can integrate just one catalog*

- The **item details** area shows the details of an individual item. That is, when you mark a row in the item overview, you can display further information of the item in the item details. Here you enter additional data if desired or necessary for a particular item such as additional texts, account assignment specifications and confirmations.

Change/Display PO

Create PO Other PO

Standard PO 450001327 Created by WIP-99-99

Document Header

Item Overview

Item Details

Items = Positions of the Purchase Order

Account Assignment Category = K (Cost Center)

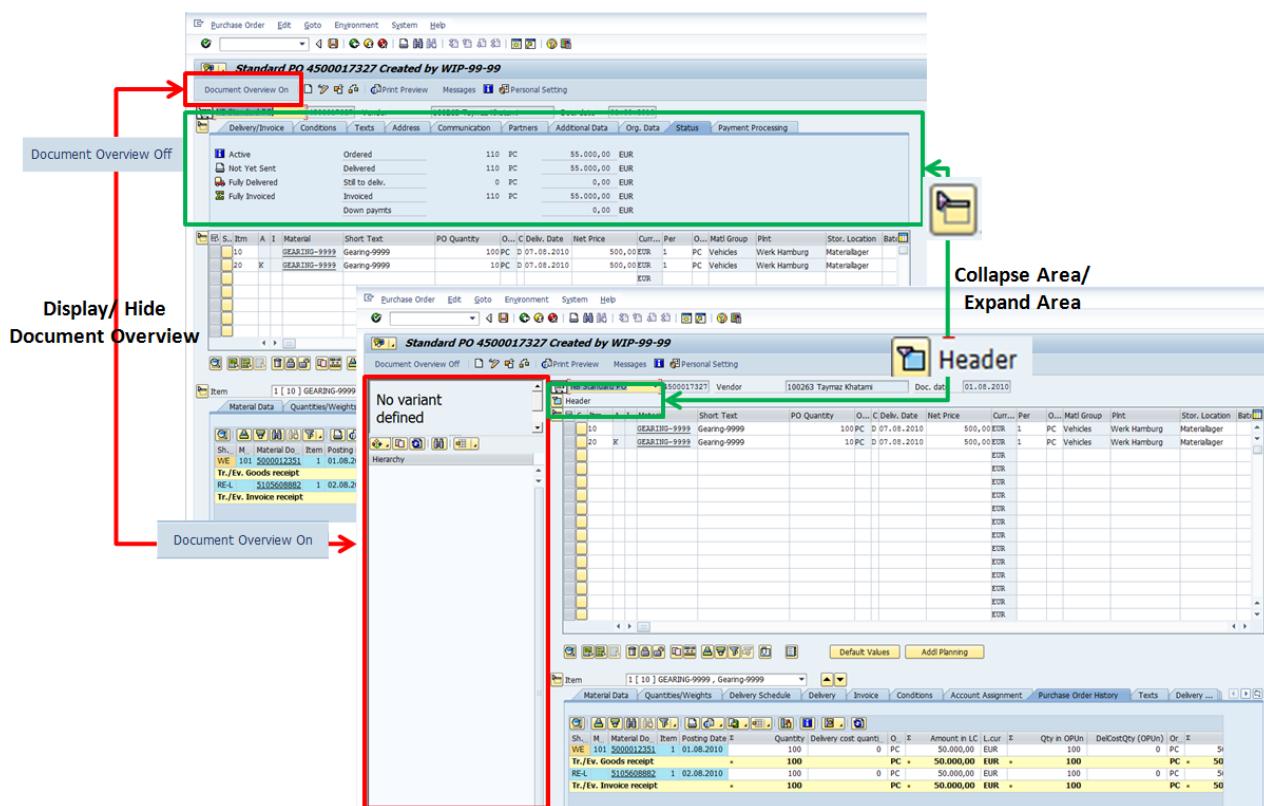
Figure 46: Purchase Order Transactions – ME21N, ME22N, ME23N

The next screenshot displays the forth screen area **Document overview**: In the document overview, you can display different purchasing documents such as purchase orders, requests for quotations and purchase requisitions.

Furthermore, you can see that all screen areas can be opened and closed individually and, thus, influence the size of these screen areas.

## Examples:

- If you close the header and item detail, the size of the item overview is then increased. The same goes for the purchase order header, item overview and the item details, and also for the document overview and the help function.
  - If you close and then reenter the purchase order transaction, the screen is in the same format as it was when you left it. If the document overview and the header were closed and the item overview and item detail were open, this same screen format is displayed.



**Figure 47: Purchase Order Transaction - Navigation**

With the button  **Personal Setting**, you can maintain the user-specific settings of the transaction. With this function, you can set your default settings and specify, e.g., that the document overview is set automatically when the transaction is started. In addition, a **help function** can be displayed like the document overview. You can display or hide this help area by choosing  Help. While the help area is open, you can keep working in the transaction at the same time.

## **Enter names instead of numbers**

Some fields in the purchase order screen allow the entry of both names (e.g., the name of the vendor) and keys (e.g., vendor account ID 100315). This is valid for the fields Vendor, Ma-

terial group, Plant and Storage location. If you enter a part of the name in these fields, the system proposes the corresponding data. If the system cannot determine the data uniquely, you will receive a list of the possible entries to choose from. If, for instance, you enter “khat” in the Vendor field, the system would propose vendors Taymaz Khatami, Pouyan Khatami, etc.

### 3.1.4.3 Issuing Messages

In order to transmit purchasing documents to a vendor, the system generates a message for each document created in the SAP system. A message is a document in output format for communication to vendors and should not be confused with, e.g., system messages. The generation of messages is based on the condition technique (same resp. similar like for conditions in the master data).

All purchasing documents created can be displayed and issued in this message format. That is, each time you create a RFQ, a purchase order, a contract or a scheduling agreement, the system creates a message from the document affected. The message is then stored in the message queue, which contains all messages that have not yet been transferred to the vendors. The output can then be send, e.g., via printer, fax or an EDI system to the vendor. To issue the message from the message queue, there are the following options:

- *Issue immediately*: The system issues the message directly from the queue, in other words, as soon as you **save** the document.
- *Issue later*: You either schedule a background job (for the program RSNAST00) that processes the message queue in determined intervals or you start the issue directly from the purchasing menu. As a rule, you issue the messages by using the background job and start the issue manually only as an exception (such as for rush orders).

In SAP ERP you can set which headers and item-based texts are issued. The header text is issued at the top of a purchase order and contains general applicable information, i.e., information valid for each purchase order item. Item texts describe a purchase order item more precisely. You can include and issue a standard text as well.

In the ordering transaction ME21N, you can use the button  **Print Preview** to display the document preview on your screen before you issue or print it.

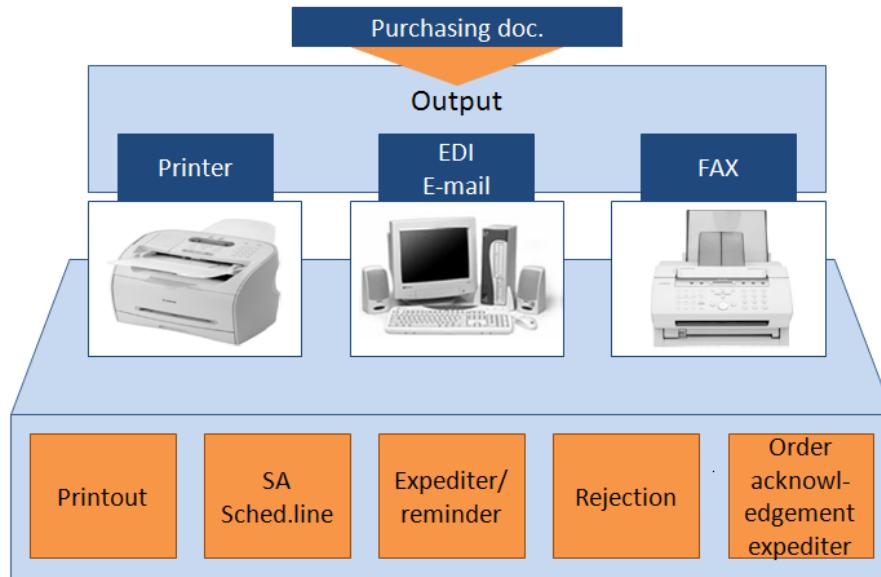


Figure 48: Issuing Messages

## 3.2 Practice: Accomplish Procurement Process



Practice

Now, you will create a purchase requisition for 110 pieces of your trading good Gearing-xxxx. Since the Speedstar features a new, high-value switchgear from a new vendor, one part (100) of the purchase order is supposed to be transferred to quality management for inspection. The rest (10 gearings) are transferred to the engineering department, where development engineers conduct several tests. In the following figure, you can see the particular process steps, which you need to complete in this section.

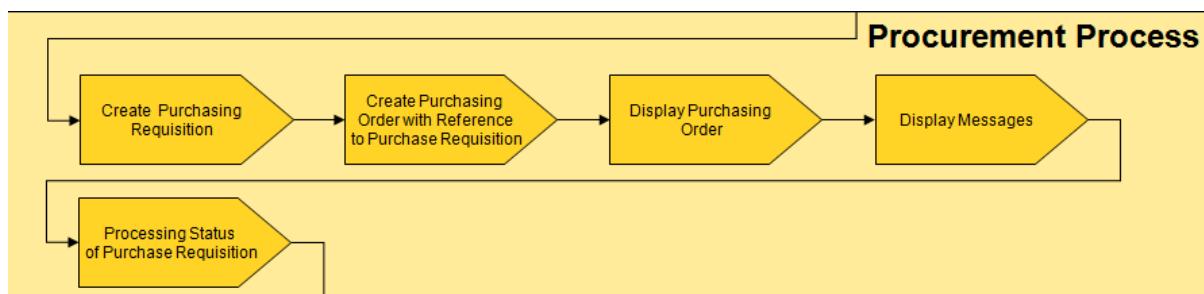


Figure 49: Process Overview – Procurement Process

### 3.2.1 Create Purchase Requisition

To manually create a purchase requisition, call up

**Logistics → Materials Management → Purchasing → Purchase Requisition → Create (ME51N)**



Note

When you call up the transaction to create a purchase requisition for the first time, the system displays the help function “Enjoy SAP – purchase requisition“. Click on the close button ( Close) to skip this system message.

1. If not opened already, press the button Item Overview to display the purchase requisition item area.
2. Enter the following data in the **first** line of the item overview:
 

- <b>A (Account Assignment Category)</b>	<i>leave empty</i>
- <b>Material</b>	<i>Gearing-xxxx</i>
- <b>Quantity</b>	<i>100</i>
- <b>Delivery date</b>	<i>current date + 1 week</i>
- <b>Plant</b>	<i>1000</i>
3. Next, enter the following data in the **second** line of the item overview
 

- <b>A (Account Assignment Category)</b>	<i>K (Cost Center)</i>
- <b>Material</b>	<i>Gearing-xxxx</i>
- <b>Quantity requested</b>	<i>10</i>
- <b>Delivery date</b>	<i>current date + 1 week</i>
- <b>Plant</b>	<i>1000</i>

- Press *Enter*

The system displays an error message prompting you to enter a cost center as account assignment type.

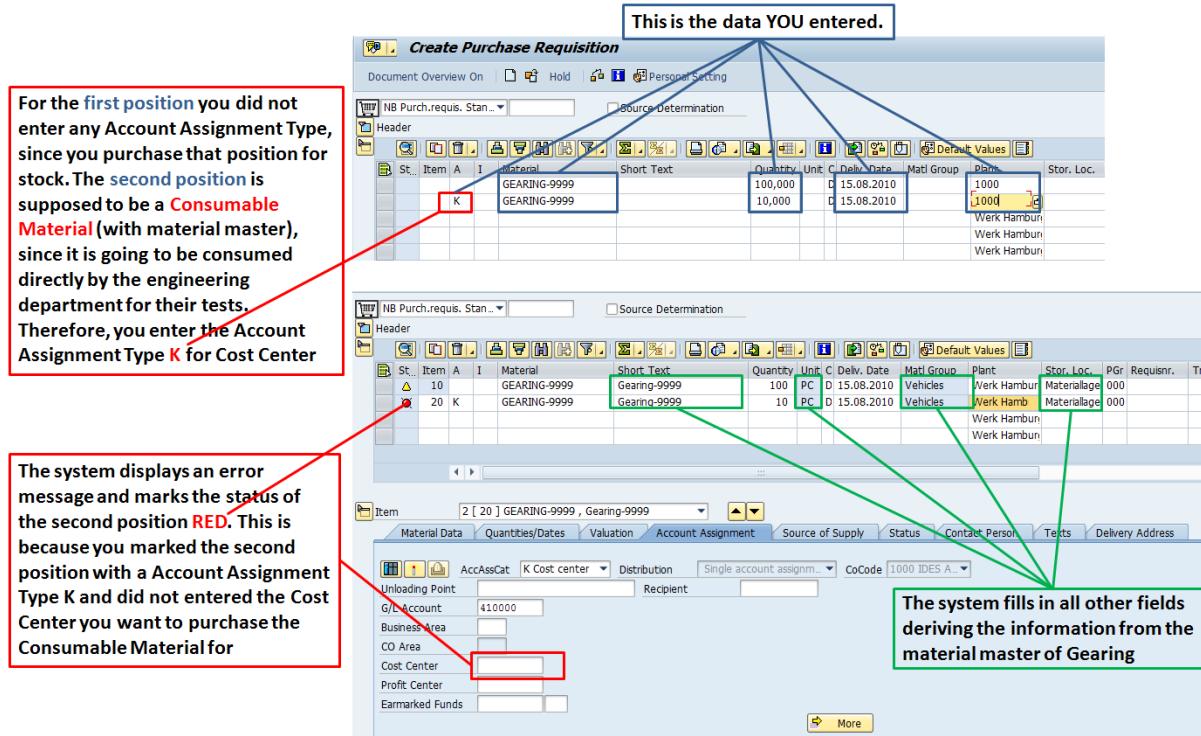


Figure 50: Create Purchase Requisition (1): SAP-System-Screenshot

- Therefore, enter **cost center 4298**. Cost center 4298 is part of the IDES group's engineering. Press *Enter* once again. The system automatically fills in the spare fields using the cost center's master data. Compare with the following figure:



*Like in the following figure, the system might warn you that the specified date is not a working day (07.08.2010 is a Saturday), skip these messages pressing Enter, since we also work on weekends.*



*In every document or transaction, warnings and error messages can occur. Error messages always have a RED status and prevent you from further processing until resolving the problem. Warnings in contrast have always a YELLOW status and can be skipped pressing Enter. Usually, warnings are only some system notification, suggesting you to be careful or pay attention to some issue.*

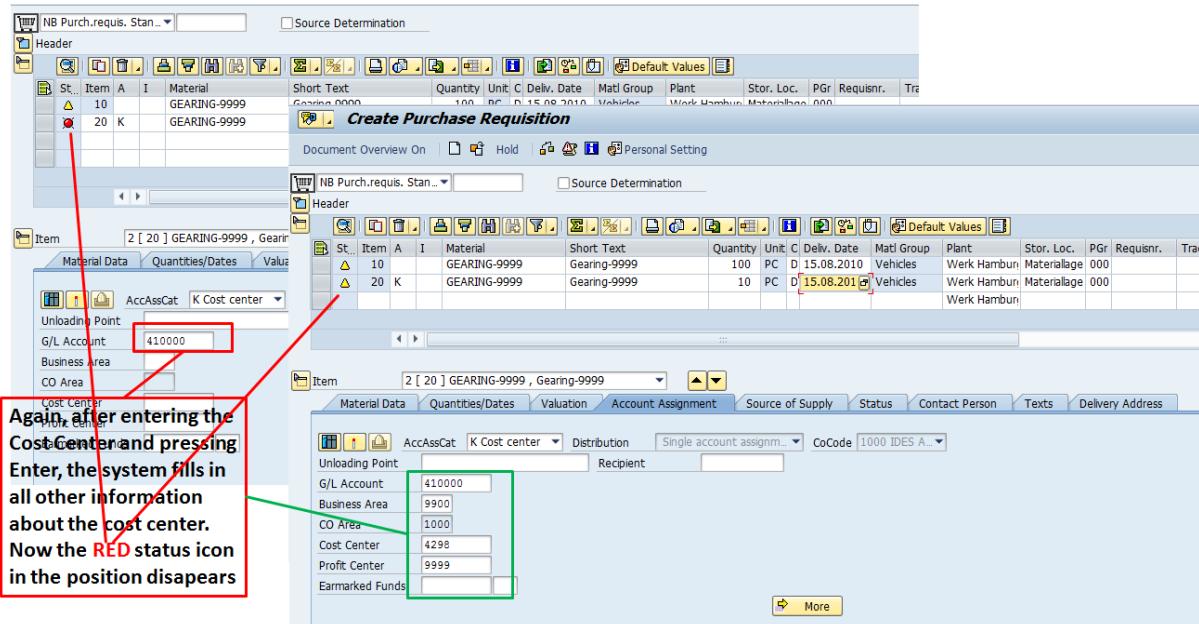


Figure 51: Create Purchase Requisition (2): SAP-System-Screenshot

5. Safe your created purchase requisition and list the number of the purchase requisition on your data sheet. Leave the transaction.

Purchase requisition number 0010013824 created

Purchase requisition (Gearing): \_\_\_\_\_

### 3.2.2 Create Purchase Order with Reference to Purchase Requisition

Since you created the purchase requisition in the system, you may now create a purchase order with reference to this particular purchase requisition.

Call up the following transaction (as you already created a vendor for the material):

**Logistics → Materials Management → Purchasing → Purchase Order → Create → Vendor/Supplying Plant Known (ME21N)**



When you call up the transaction to create a purchase requisition for the first time, the system displays the help function “Enjoy SAP – purchase requisition”.

Click on the close button ( Close) to skip this system message.

1. In case the left frame is not opened, please click the **Document Overview On** button. Click the selection variant → **my purchase requisitions** in the document overview (left hand side) to create your purchase order with reference to an already existing purchase requisition. Thereby, the purchase requisition you created earlier is displayed in the left window.

2. In the document overview (left window), select your purchase requisition number and click **adopt** (  ). Data from the purchase requisition is transferred into the fields of the purchase order (on the right hand side of the screen).

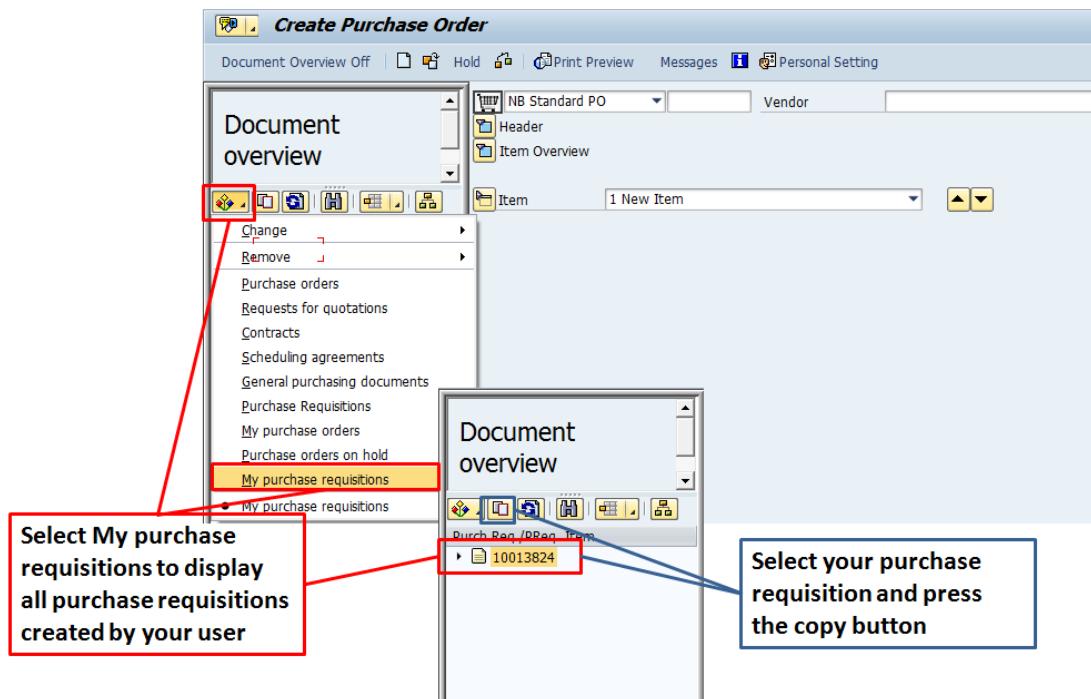


Figure 52: Copy Purchase Requisitions into Purchase Order (1): SAP-System-Screenshot

3. The system again displays an error and prompts you to fill in the following data in the order header:
  - a. **Vendor** *Your vendor number*
  - b. **(Purchasing organization 1000)**
  - c. Press *Enter*
4. The system issues a notification in the status bar (at the bottom of the screen) that you can reach a lower price from an ordered quantity of 500 pieces. Therefore, the system used information about price conditions regarding the combination vendor-material from the purchasing info record, which you have maintained earlier. Since we want to order merely 110 pieces, skip the message pressing *Enter*.

 Lower price obtained for quantities greater than 500 PC (item 00010, material GEARING-9999)

5. Now, expand the Item Overview (  ). You see that the data from the purchasing requisition was transferred into the purchase order. You do not need to enter the material, the quantity or anything else by yourself.

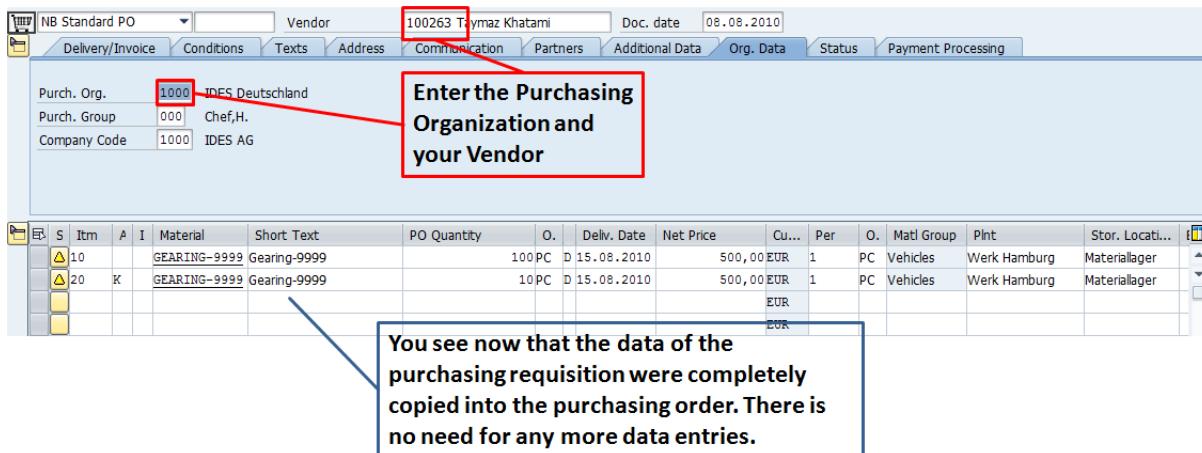


Figure 53: Copy Purchase Requisitions into Purchase Order (2); SAP-System-Screenshot

6. Save the purchase order and list the purchase order number.
7. Skip a possible notification regarding occurred messages with save. This is a warning concerning the possibility that a message was not issued. The reason for that is an incomplete SAP customizing

*Purchase order (Gearing):* \_\_\_\_\_

### 3.2.3 Display Purchase Order

To display the purchase order once again, call up

**Logistics → Materials Management → Purchasing → Purchase Order → Display (ME23N)**

1. In case your purchase order is not displayed, choose the selection variant → **my purchase orders** and double-click on the displayed purchase order number in the left frame. The fields of the purchase order on the right hand side of the screen are filled in with data from the selected purchase order.
2. In the **Purchase Req.** (purchase requisition) column on tab *Delivery Schedule*, you can see the reference of the purchase order to the preceding purchase order requisition. In the Header area on tab *Status*, you can see the current status of the purchase order.

In the Header area on tab Status, you can see the current status of your document.

The screenshot shows the SAP Purchase Order (PO) screen. At the top, there's a status bar with document number 4500017328, vendor information (100263 Taymaz Khatami), and date 08.08.2010. Below the status bar is a navigation bar with tabs like Delivery/Invoice, Conditions, Texts, Address, Communication, Partners, Additional Data, Org. Data, Status, and Payment Processing. The Status tab is currently selected. A red box highlights the status dropdown menu which includes options: Active, Ordered, Delivered, Still to deliv., Invoiced, and Down paymts. Another red box highlights a message box containing text: "Currently you have • ordered 110 Gearings, • 0 were delivered, • 110 are still to be delivered, • you did not receive any invoice yet". The main area shows a grid of purchase order items. The first item is for 10 units of GEARING-9999, quantity 100, price 500,00 EUR. The second item is for 10 units of GEARING-9999, quantity 10, price 500,00 EUR. Below the grid is a toolbar with icons for search, print, etc. At the bottom, there's a detailed view of an item row with columns for S, Delivery ..., Sched. Qty, Time, Stat. Deli..., GR Qty, Purchase..., Po..., N, Open Quantity, S..., P..., and a note column. A red box highlights the Purchase... field showing value 10013824. A callout box points to this field with the text: "Here you see the reference of the purchase order to ist preceding document the purchase requisition".

Figure 54: Reference Purchase Order Requisition to Order: SAP-System-Screenshot

### 3.2.4 Display Messages

You want to display the purchase order as message output on the screen. Therefore, call up the transaction as follows:

**Logistics → Materials Management → Purchasing → Purchase Order → Messages → Print/Transmit (ME9F)**

1. Enter your **purchase order number** in the **Document number** field and enter **Purchasing Organization 1000**. Choose



*In case you received the message control notification (cf. section 3.2.2,) the system now issues a message saying that no purchasing documents could be found, since a message was issued with reference to your purchase order. Skip this point and continue with 3.2.5 Processing status of the purchase order.*

2. In the overview, select your document and choose **Display Message**. (Depending on system configuration (customizing), it is possible that a vital method for generating messages was not implemented. In that case, your message will not be issued.)
3. You can find the purchase order text in the item data from the document printout. You see that a document in SAP ERP (e.g., like in this case a purchase order) can have standard message texts assigned. These texts can be, e.g., order confirmation.

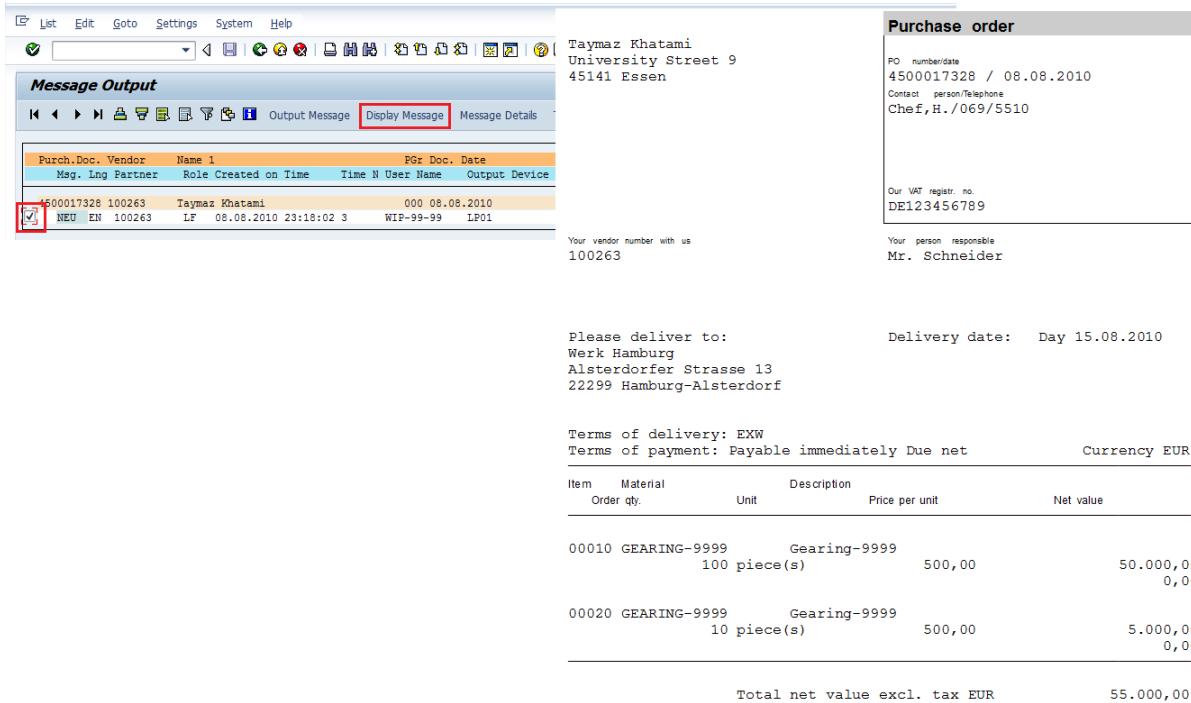


Figure 55: Text Message in Purchase Order: SAP-System-Screenshot

### 3.2.5 Processing Status of the Purchase Requisition

Finally, you will display the processing order status of both positions in the **purchase requisition**. Therefore, call up

**Logistics → Materials Management → Purchasing → Purchase Requisition → Display (ME53N)**

1. Double-click on your purchase requisition in the left frame to open it.
2. Open the **item detail data** ( Item Detail).
3. Select the **status tab**.
4. The processing status of both positions should say that both orders were created (PO created).

The status of all documents (purchase order, purchase requisition, order, etc.) is important in SAP ERP. Depending on the status, it is defined which subsequent functions are applicable. For instance, with the current status of the purchase requisition (PO created) the system avoids the creation of further purchase orders with reference to this purchase requisition.

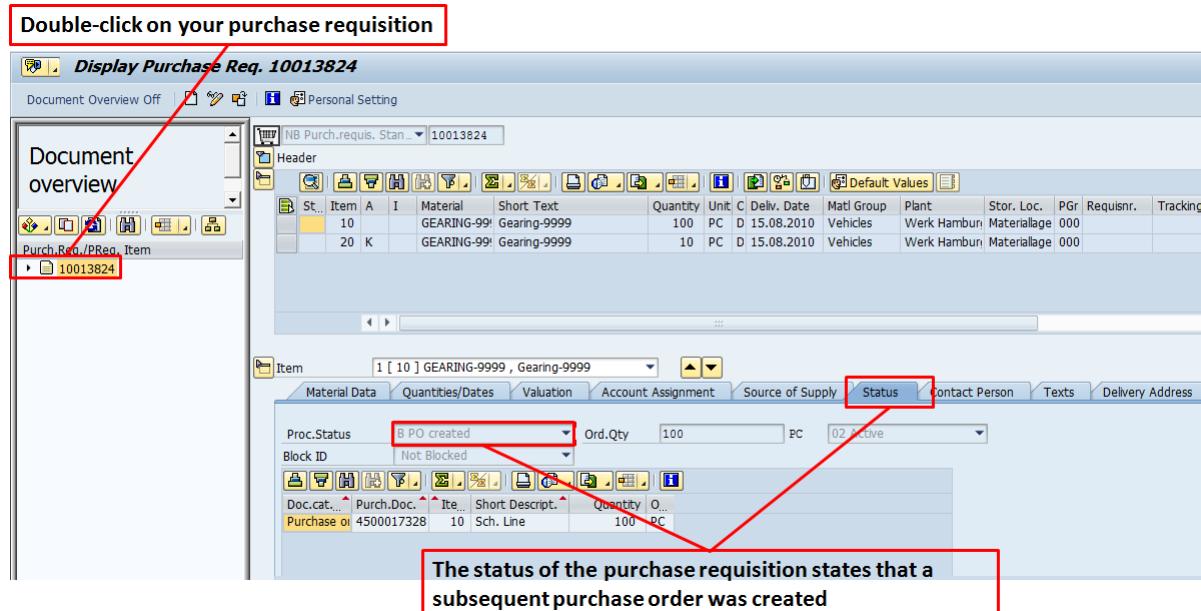


Figure 56: Processing Status of the Purchase Requisition: SAP-System-Screenshot

### 3.3 Elucidation



#### What have we learned so far?

You have learned how a standard purchasing process in SAP ERP looks like, what elements are involved in it and how master data records are used in a procurement process.

#### 3.3.1 Procurement Process in SAP ERP

A standard procurement process requires the following process steps:

##### 1. Requirements determination:

- You identify a requirement for material or service in your company and may manually transfer a purchase request to the purchasing department.
- In case that a MRP procedure is maintained in the material master data, SAP MRP module automatically generates a purchase requisition.

##### 2. Determining the source of supply:

- The responsible procurement agent is assisted by the system to identify sources of supply, e.g., vendors.
- The determination of source of supply can be used to create requests for quotation (RFQ) and subsequently create the quotation.

##### 3. Vendor selection:

- The SAP system provides price comparisons and, thus, facilitates the vendor selection.
- Rejection letters may be processed automatically.

##### 4. Purchase order processing:

- The system fills in data into documents automatically, deriving them from the master data maintained in the system or in preceding documents.

##### 5. Order monitoring:

- The order status can be displayed in the purchasing order document anytime. Thus, the person in charge can intervene if necessary.
- The purchaser can determine whether goods receipt or invoice receipt processes are already completed. Additionally, the SAP ERP system features dunning procedures.

##### 6. Goods receipt:

- When the purchased material arrives, the SAP system checks, for example, the quantity received in comparison to the quantity that was ordered.
- In case of deviations, the system can automatically issue warnings for the corresponding department.

##### 7. Invoice verification:

- The system checks vendor invoices regarding formal or logical errors (price and content check) in comparison to the preceding documents

##### 8. Payment handling:

- Vendor debts are paid by using the payment program.
- The payment handling is not the focus of the procurement process and is processed by financial accounting application in SAP ERP.

### 3.3.2 Purchase Requisitions

A **Purchase requisition** is a SAP ERP document created in requirements planning. It is used to request the purchasing organization to purchase a particular quantity of a material or service for a particular date.

- Purchase requisition can be created either manually by the department in charge or automatically, e.g.
  - o in MRP (teaching unit 2)
  - o with maintenance orders (teaching unit 10)
  - o with production orders (teaching unit 4)
  - o with networks (teaching unit 11)
- **Creation indicator** in the statistics data displays, which procedure was used to create the purchase requisition.
- System transfers data maintained in the material master to the purchase requisition when creating the purchase requisition.
- A **request for quotation** (RFQ), a **purchase order** or an **outline agreement** can be created out of the purchasing requisition.
- External systems like SCM (APO) and SRM (EBP) can create purchase requisitions as well.

#### Processing Purchase Requisitions

1. *Assign the purchase requisition:* Purchasing department selects a valid source of supply. Source of supply determination can be executed automatically.
2. Purchasing department converts the purchase requisition into a purchase order or request for quotation.  
→ *Release procedure for purchase requisitions:* Flexible rules or conditions that are checked (check for formal correctness, account assignment set, source of supply) by the system before the purchase requisition can be converted to a purchasing order or request for quotation.
3. After the release procedures were executed without any errors or warnings, the purchase requisition is converted into a purchase order manually by the buyer responsible or automatically by the system.

### 3.3.3 Procurement Process for Consumable Materials

#### Consumable Material

A consumable material is a material that is purchased specifically for a particular account assignment object and is consumed without being put on stock. An account assignment object, among others, can be of type Cost Center, Project, Asset. The value of the material is posted directly in the cost element or asset accounts.

*Example: When purchasing 10 units of stock material for let us say 100 € (e.g., any raw material) and the vendor delivers it to your company. Then the stock quantity is increased by 10 units and the value-based increasing in the inventory management is accounted for in the accounting department by booking the value, e.g., on the account 890000.*

In case you purchase a consumable material (e.g., office supplies for the secretary) for a cost center directly, you enter the cost center in the purchasing order and the costs are booked on the cost center's account. Thus, there is no value-based inventory management for consumable materials (not "in stock"), but they are offset against the corresponding cost object (asset, cost center), which consumes the material.

A material master is not required for a consumable material; the following cases can be distinguished:

- consumable material without material master record
- consumable material with material master record, which is not subject to inventory management (neither quantity-based nor value-based)
- consumable material with master record, which is subject to quantity-based inventory management, but not to value-based inventory management

### Procurement for Consumption

When procuring consumable materials **without** material master record, you need to enter the following data along with the account assignment category:

- short text (description)
- material group
- purchase order unit

The **material type** controls whether inventory management for a material is to take place on value basis. Since consumable materials are never subject to value-based inventory management, SAP ERP provides two material types for consumable materials **with** a master record:

- **material type: non-valuated material (UNBW)**: Non-valuated materials are managed on a quantity basis but not by value.
- **material type: non-stock material (NLAG)**: Non-stock materials are not held in stock because they are consumed immediately.

Procurement for consumption is also possible for stock materials.

In the following cases, the account assignment entry is mandatory. You have to enter an account assignment for an item under the following circumstances:

- If you order a material that is not subject to value-based inventory management and post its value directly to consumption ("pure" consumable material).
- If you order an article that does not have a material master record.
- If you order a service.

### Account Assignment Object

When procuring a material as consumable, you have to enter the **Account Assignment Category** along with other account assignment data in the document item of the purchase requisition or purchasing document. The account assignment category determines

- which type of account assignment objects is to be charged,
- which account assignment data must be provided by the user, and
- which accounts are debited when the goods receipt or the invoice is posted.

The account assignment category determines which type of account assignment object is to be debited and which account assignment data is necessary. The account assignment category (A, K, P etc.) needs to be recorded in the purchase requisition when purchasing those elements. Then the Account Assignment Objects, e.g., the cost center is debited with the costs according to the given account assignment category of the consumable material.

Account Assignment Categories:

- A Asset
- K Cost Center
- P Project
- F Production Order
- C Sales
- etc.

**Consumable Materials versus Stock Materials**

In the procurement process for consumable materials, contrastedly to the procurement of a stock material, the account assignment takes place manually and not automatically.

When creating a purchase order with account assignment, e.g., a cost center or an asset number must be entered depending on the account assignment category (A, K, P etc.).

Depending on the account assignment category, the system can suggest a G/L account number (e.g., the system filled in account 410000 after you entered the cost center 4298 in your purchase order) for the consumption account by using automatic account determination.

*Remember the following for the exam:*

For consumable materials **with** a material master record the following is true:

- No value-based inventory management is carried out.
- Consumption of the material is updated in the material master automatically.
- It must have an account assignment.

*...and learn the differences between Stock Materials and Consumable Materials:*

<u>Stock material</u>	<u>Consumable material</u>
	
<ul style="list-style-type: none"> <li>▪ Necessary to enter material number</li> <li>▪ No account assignment category</li> <li>▪ GR mandatory</li> <li>▪ Posting to stock accounts</li> <li>▪ Quantity, value, and consumption updated in material master record</li> <li>▪ Adjustment of moving average price</li> </ul>	<ul style="list-style-type: none"> <li>▪ Entry of material number not necessary but possible</li> <li>▪ Account assignment category mandatory</li> <li>▪ GR optional</li> <li>▪ Posting to consumption accounts</li> <li>▪ No value update; quantity and consumption update in material master record possible</li> </ul>

Figure 57: Stock Material and Consumable Material: Comparison

### 3.3.4 Purchase Order Processing

#### 3.3.4.1 Purchase Order

A **purchase order** is defined as a formal demand to a vendor for supplying particular goods or services under the negotiated conditions.

- A purchase order can be created **without reference or with reference to a purchase requisition, a request for quotation or another purchase order**.
- When entering order data, the ERP system suggests values for the particular fields from the **vendor master** record (ordering address, terms of payment and freight), the **material master** record (material short text, material group, etc.) or the **info record** (price).
- A purchase order is then either sent to a vendor or a stock transport order is initiated in another plant of the company. In case of a stock transport order, the resulting freight costs can be taken into account in the purchase order.

#### 3.3.4.2 Processing a Purchase Order

- Purchase order can be created as reference to an already existing **purchase requisition, RFQ or another purchase order**.
- Referencing existing documents keeps data input work to a minimum.
- Already existing data is transferred (copied) from the preceding document into the purchase order.
- Purchase order can also be created without reference to preceding documents.
- Source determination can be used in case you do not know the responsible or preferable vendor when creating a purchase order. The system suggests possible vendors using pre-defined sources (outline agreements, info records, source list entries, quota arrangements).
- Current **processing status** for each purchase order item can be displayed in the purchase order document (goods receipts, invoice receipts, payment).

- You can display subsequent documents (material and invoice documents) from the purchase order history screen to monitor order progression.
- In the purchase order, you can determine if material is delivered to a **plant** or procured directly for **consumption** (e.g., cost enter, asset, project; cf. consumable materials).
- Usually, the purchase order is the reference record for **goods receipt** and **invoice verification**.

### 3.3.4.3 Purchase Order Format

Purchase orders consist of a document **header** and one or more **items**.

Transactions to access the purchase order transaction: ME21N (create purchase order), ME22N (change purchase order) or ME23N (display purchase order). You can switch between functions by choosing Create or Display/Change. By choosing the Other Purchase Order icon, you can also branch directly to another purchase order or purchase requisition:

-  create a purchase order
-  display/change an existing purchase order
-  select a different purchase order than the one displayed
-  Personal Setting user-specific settings of the transaction
-  help function

The purchase order transaction (ME21N) is a single-screen transaction with four screen areas:

- The **document header** contains information valid for the whole document.
- The **item overview** shows the positions of the purchase order.
- The **item details** area shows the details of an individual item.
- The **document overview** displays different purchasing documents such as purchase orders, requests for quotations and purchase requisitions.
- All screen areas can be opened and closed individually and, thus, influence the size of these screen areas.
- Special new feature: Names can be entered instead of numbers.

### 3.3.4.4 Issuing Messages

- Purchasing documents can be displayed and issued as messages.
- Generation of messages is based on the condition technique. That is, "if condition (e.g., saving document, accomplishing order check) is fulfilled, execute action (e.g., send via mail or print).
- Message is stored in queue and issued on condition fulfillment:
  - o *Issue immediately*
  - o *Issue later*
- The output can be transmitted, e.g., via printer, fax or an EDI system to vendors.
- The header text of those messages is issued at the beginning of a purchase order and contains general applicable information, i.e., information valid for each purchase order item.

- Item texts describe a purchase order item more precisely. You can include and issue standard texts as well.

## 4 Goods Receipt and Goods Movement

This chapter elaborates on the distinct approaches to goods movement with respect to goods receipt in SAP ERP.

### 4.1 Theory: Goods Receipt and Goods Movement



The next step after purchase order creation in a simple external procurement process is the goods receipt. The latter results from the issue of a purchase order for the goods to a vendor. Like the purchase order process, the goods receipt process is mapped in the SAP system by means of a document.

**Theory** Goods receipt is particularly important for materials management and purchasing. And will be the focus of this section.

#### 4.1.1 Goods Movement

A process resulting in an inventory change is called **goods movement**. Goods movement refers to both external and internal movements of materials from one location to another.

In the SAP ERP system, you distinguish between

- **goods receipts**
- **goods issues**
- **stock transfers**
- **transfer posting**

A **goods receipt** is a goods movement to post both goods receipt from external procurement (from a vendor) and from internal production. A goods receipt normally (exception: consumable materials) results in an increased warehouse stock.

A **goods issue** is goods movements to post material withdraw or material issue, material consumption, or consignment of goods to a customer. Goods issue always results in a decreased warehouse stock.

A **stock transfer** refers to releasing material from a particular storage location and transferring it to a different stock. Stock transfer can be carried out both within the same plant and in between plants.

A **transfer posting** is the general term for stock transfers. A transfer posting changes stock identification or qualification of a material. That is independent of whether a physical movement of the material took place or not. Examples of transfer postings are:

- the release of stock for quality inspection
- the transfer postings from material to material or
- the transfers of consignment material into the company's own stock

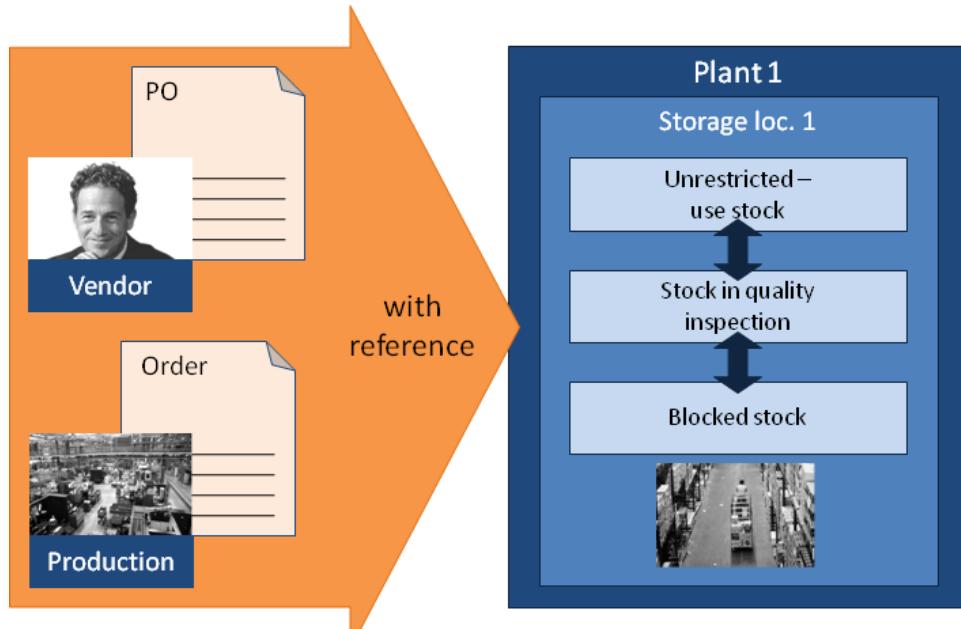


Figure 58: Goods Movements and Stocks

#### 4.1.2 Goods Receipt

When you receive a material you ordered from a vendor, the first step is to capture the goods receipt. A goods receipt is one type of *goods movement*. Thereby, it is important for all departments concerned that the goods receipt is entered in the system with reference to the purchase order. When recording this goods receipt, the system suggests all open items from the purchase order. This facilitates both the entry and checking of incoming goods. Goods receipt postings into a warehouse regarding an order allow, among others, for the following controls and entry transactions:

- The department that receives the material may double-check the ordered and actual delivered material quantities based on purchase order documents.
- The system may propose data resulting from **purchase orders** (e.g., ordered material, quantity) for entering in a goods receipt. Thus, **document entry** as well as **monitoring** under- und over-delivery within the purchase orders process is facilitated.
- Perishable goods are within their minimum shelf life (the shelf life expiration date check must be active in this case).
- The status of the **purchase order history** of the relevant purchasing document items are updated **automatically**. In case of late arrived shipments or shipments that were determined late in the purchase order documents, business partners may be **dunned** by the **purchasing department**.

The system creates a **material document** when posting goods receipt in the warehouse. This material document contains, among other things, information about the delivered material and the delivered quantity. Additionally, information like the storage location and the particular plant the material is put away (placed in storage) to are recorded.

If the goods receipt is valued, an **accounting document** is created, which records the effects the material movement has on the value of the stock.

You can enter several goods receipt items against a purchase order item in one operation. This is advisable if the material is delivered in several batches or if it is distributed to several storage locations.

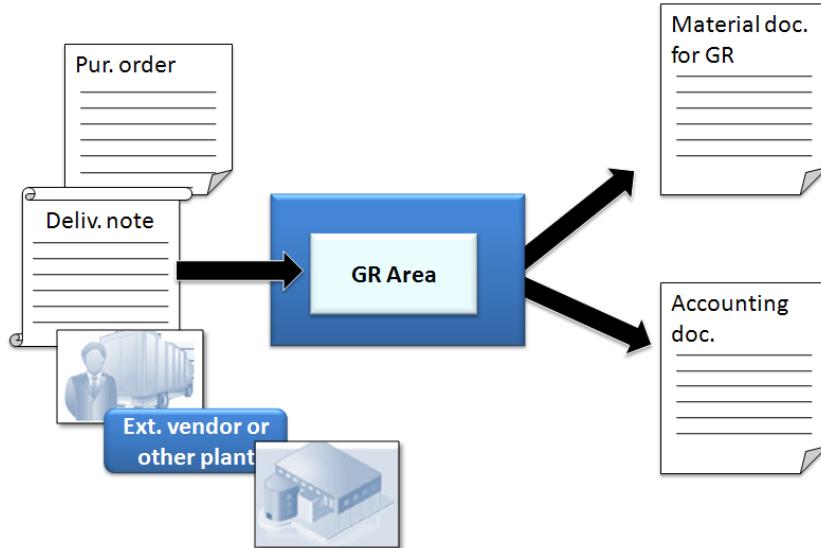


Figure 59: Goods Receipt Postings

#### 4.1.2.1 Movement Types

**Movement types** are three-digit keys for distinguishing goods movement types in SAP. When entering a goods movement in the system, you must indicate a movement type. Examples of goods movements are:

- goods receipts
- goods issues
- transfer postings

Among others, the movement type controls the type of goods movement (goods issue, goods receipt, or transfer posting). Furthermore, it is an important tool for account determination in the system. The SAP System has a vast variety of pre-defined movement types by standard. Those movement types cover the most frequent goods movements which occur in a company. Additional movement types can be customized if deemed necessary. Each movement type (e.g., 101 for goods receipt) has its respective cancellation movement type, which corresponds to the number of the movement type + 1 (e.g., 102 for goods receipt cancelation).

Movement types are very important regarding their control function in inventory management. For instance, according to the movement type used and other influencing factors, the system automatically determines the account that is used for value-based stock changes. Thereby, the system determines which stock or consumption accounts are updated in financial accounting (among other things). Furthermore, the screen layout of the input mask for document entry or for updating quantity fields is due to the used movement type.

Standard movement types in the SAP ERP system are

- goods receipt for purchase order (101)
- goods receipt for a cost center (201)
- transfer posting (301)
- transfer posting stock in quality inspection (321)
- goods receipt without purchase order (501)



Figure 60: Movement Types

#### 4.1.2.2 Valuated Goods Receipt

For a goods receipt, you decide to which **stock type** the received quantity of the material is posted to. The stock type determines the stock available in Materials Planning and is used for withdrawals in Inventory Management.

Thereby, a goods receipt for the warehouse can be posted into three stock types:

- **unrestricted-use stock** (no usage restrictions)
- **quality inspection stock** (available from an MRP perspective, but no withdrawals are possible for consumption)
- **blocked stock** (not usually available from an MRP perspective and no withdrawals are possible for consumption)

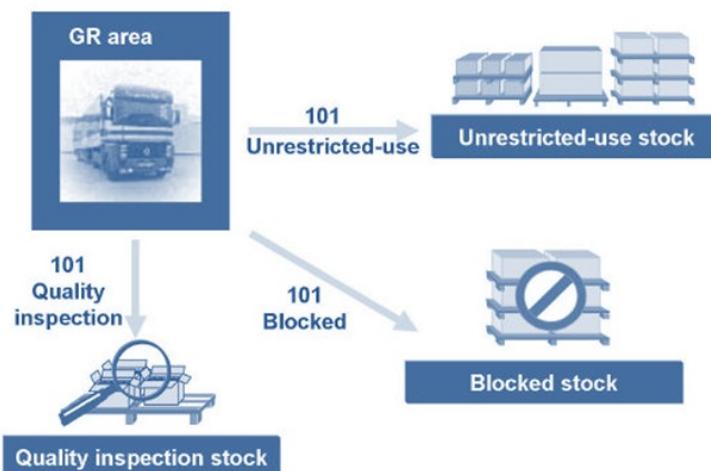


Figure 61: Valuated Goods Receipt

When creating the purchase order, you can store a default value for the stock type to be used during goods receipt. This default value can be changed when you post the goods receipt as long as you are not using the *Quality Management* component of SAP ERP.

In goods receipt, documents with reference to a purchase order, the movement type **101** is always used to post the material to valued stock. You can enter a stock indicator – such as the movement type – at item level for the goods receipt, enabling you to differentiate between different stock types.

If you want to withdraw materials from stock for consumption purposes, this can only be carried out from unrestricted-use stock. You can withdraw one sample, scrap a quantity, or post an inventory difference from quality inspection stock and blocked stock.



*The transaction type for an order item is located in the item detail section in the delivery tab. Regarding production orders, you can find the transaction type in the goods receipt tab.*

When you post a receipt into the warehouse, the quantity and value of the stock is increased irrespective of the stock type (except for material types without value updating).

#### 4.1.2.3 Stock Overview

Inventory Management in SAP ERP provides several functions and reports, which contain detailed information about all materials and their stock data.

The stock overview, for instance, is an analysis that delivers information about the stock situation of an individual material. You can see material stock in the stock overview on every organizational level (e.g., plant) relevant to inventory management. The stock overview totals the posted quantities according to the particular stock types (quality inspection, unrestricted-use, blocked) per organizational unit. You can display stock overviews for the following organizational units:

- client
- company code
- plant
- storage location

Along with this, you can display stock overviews for **batches/transaction types** and **special stock** (e.g., consignment material).

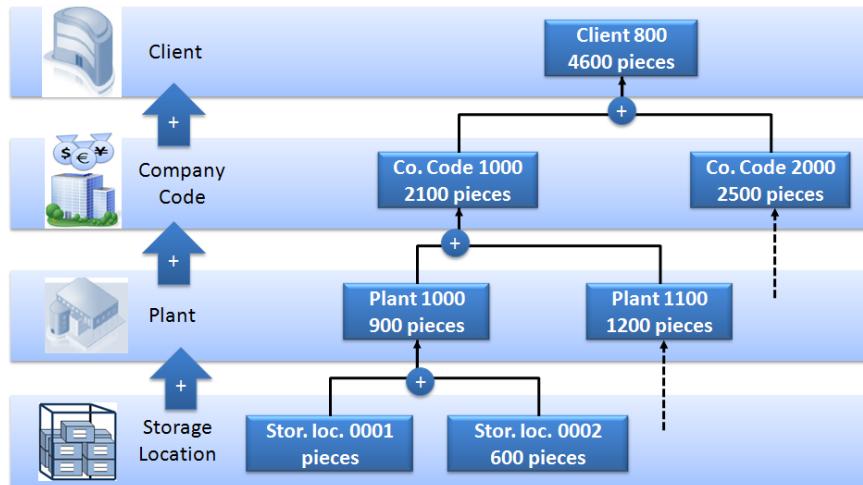


Figure 62: Stock Overview

#### 4.1.2.4 Transfer Posting

In order to be able to withdraw goods from blocked stock or quality inspection stock for consumption purposes, a transfer posting to unrestricted-use stock must be carried out first. The movement type, which is entered in the goods movement document, controls between which stock types a transfer posting occurs. A physical transfer posting between two storage locations may be linked with a “stock to stock” transfer posting.

The system creates, like for all type of goods movements, a material document during transfer postings to show the transaction in the system. If the transfer posting is relevant for valuation, an accounting document is created, too.

In case of a “Stock-to-stock” transfer posting, no accounting document is created, since this goods movement is not relevant for valuation.

In contrast, a “material-to-material” transfer posting (movement type 309) is generally linked with a stock value change and is, therefore, relevant for the update in Financial Accounting.

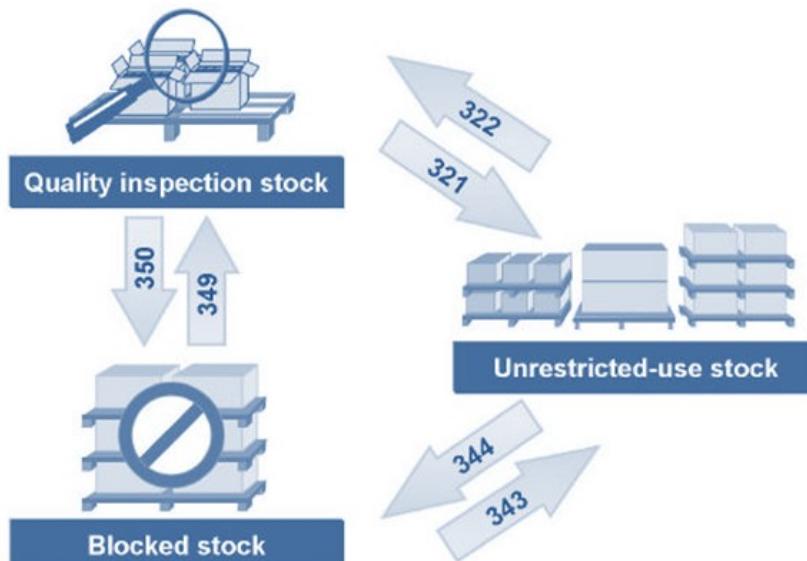


Figure 63: Transfer Posting

#### 4.1.3 Material and Accounting Documents

When a goods movement is posted in the system, that is, the goods movement document is saved, you cannot change the quantities, material, movement type and organization level any longer. The only option to correct errors is to create a new document to reverse the postings of the incorrect document. Thereby, you cancel the goods movement of the incorrect document in transaction MBST and then capture the goods movement once again in transaction MIGO.

The document principle also applies in IT-based Inventory Management. A document is the proof that a transaction involving stock changes has taken place. Documents are stored in the system. A material document is generated as proof of a process that has caused a change in stock. If the goods movement is relevant to valuation, the system creates at least **one accounting document** in addition to the material document.

Goods movements (goods receipts, goods issues or transfer postings) are relevant to valuation when your company's Accounting department is affected by them. For example, a goods receipt posting of a raw material usually results in an increase in the stock value of your current assets. If the raw material is only transferred within one plant, no postings are made in Financial Accounting (also see teaching unit 5).

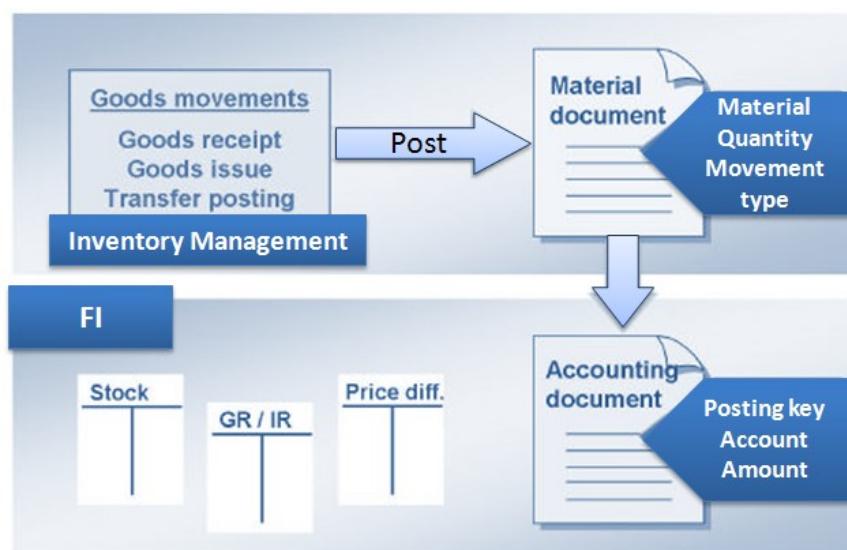


Figure 64: Documents for Goods Movements

Depending on the movement type and accordingly the type of the goods movement the system generates a material document (physical movement) and at least one accounting document (value-based movement).



*Consider that an accounting document is only created if a value-based change in the warehouse occurs. A goods receipt, for instance, usually (most times) involves the creation of an accounting document, since you usually receive material from an external source or from production. Other types of goods movements (e.g., a stock-to-stock transfer within a plant) do not necessarily include value-based changes in inventory. In those cases, no accounting document is created. However, at least one ma-*

*aterial document is always created in a movement processes, regardless of its type. This issue is very popular in SAP exam questions and will be discussed in great detail in teaching unit 5 – Inventory Management.*

**Material documents** consist of a header and at least one document item. The header contains general data, e.g., the posting date and the name of the creator. The document items (i.e., on item level) state which quantity of which material is posted to a particular storage location.

**Accounting documents** record accounting-related effects of material movements. Like the material documents, the accounting document's header contains general data, e.g., document date, posting date, posting period and document currency. The G/L account numbers and the corresponding amount are recorded at item level.

Both the material and accounting documents are independent documents.

The identification of the material document is conducted by using the **material document number** and the **material document year**.

You can identify an accounting document with the **company code**, the **accounting document number** and the **fiscal year**. The company code in which the accounting document is posted is deduced from the plant in which the material movement occurs.

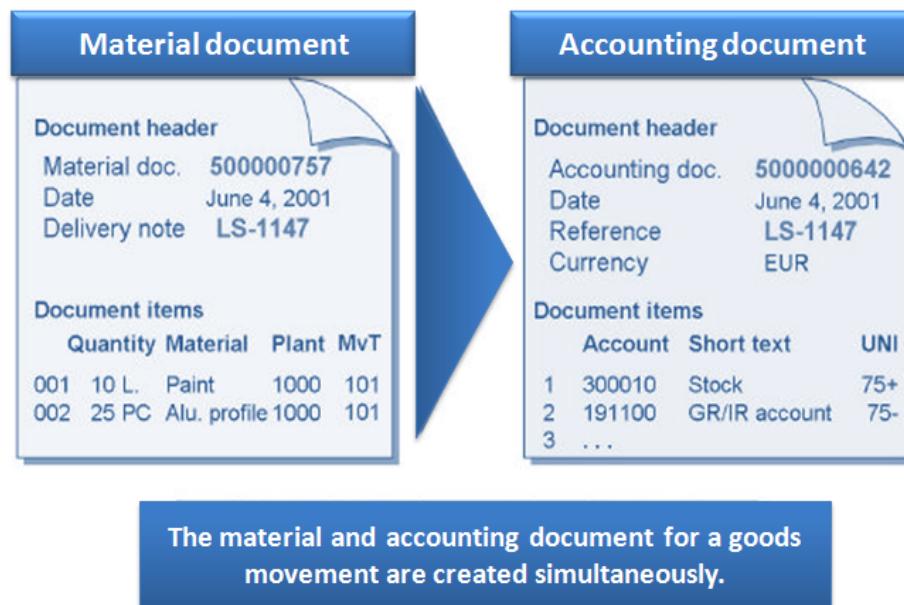


Figure 65: Material and Accounting Documents

#### 4.1.4 Effects of a Goods Receipt

The main effects of a goods receipt posting are:

- A **material document** is created to record the goods movement quantity (quantity-based changes).
- An **accounting document** is created for valued goods movements (value-based changes).
- The two documents update **stock quantities and values**.

- The **price** is updated in the material master record for materials with moving average price control.
- **G/L Accounts** are updated (debit to stock or consumption, credit to GR/IR clearing account).

Additionally, other areas in SAP ERP (i.e., in a company) are affected by a goods receipt:

- Procurement – **purchase order history** is updated (order status).
- Quality management (if active) – an inspection lot is created.
- Warehouse management (if active) – a transport requirement is created and goods are transferred into the warehouse.
- Output can be generated, e.g., a goods receipt document or a pallet label.

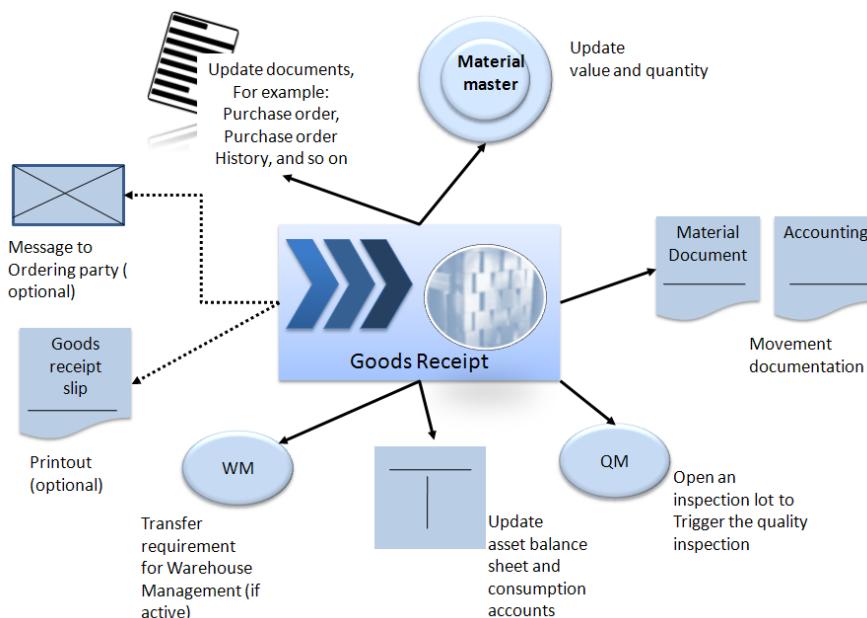


Figure 66: Effects of a goods receipt

## 4.2 Practice: Process Goods Movements



Practice

In this exercise, you will deal with the goods receipt and goods movement concerning the material of gearing-xxyy. In the previous section, you ordered 110 pieces of the material und now you want to check the stock prior to material delivery by the vendor. In the following figure, you can see the particular process steps you need to focus on in this section.

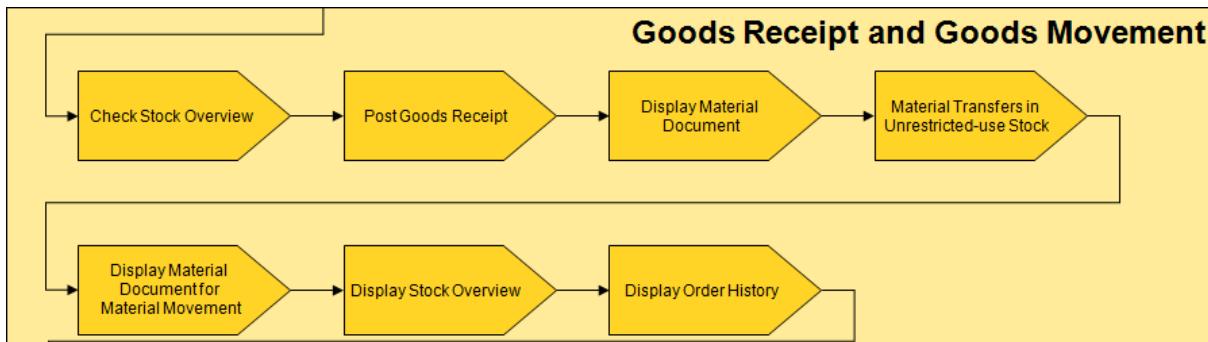


Figure 67: Process Overview – Goods Receipt and Goods Movement

### 4.2.1 Check Stock Overview

Now you want to check the current stock overview. To call up the stock overview, select

**Logistics → Materials Management → Inventory Management → Environment → Stock → Stock Overview (MMBE)**

1. Enter material **Gearing-xxyy** and plant **1000** in the appropriate fields.
2. Run the query pressing .
3. You can see that, obviously, no stock for this material has been posted yet (only as Open order quantity).

The screenshot shows the SAP Stock Overview: Basic List interface. The top left shows selection criteria: Material (GEARING-9999), Material Type (HAWA), Unit of Measure (PC). The top right contains a note about stock types: Quality inspection, Reserved, Receipt Reservation, On-Order Stock, and others. The bottom part shows a tree view of storage locations under 'Client/Company Code/Plant/Storage Location/Batch/Special Stock' (Full, 1000 IDES AG, 1000 Werk Hamburg, 0001 Materiallager). The bottom right shows a table of stock levels:

	Qual. inspection	Reserved	Rcpt reservation	On-Order Stock	C...
1000 IDES AG				110,000	
1000 Werk Hamburg				110,000	
0001 Materiallager				110,000	

Annotations highlight specific areas: a red box around the stock types note, another red box around the storage location tree, and a third red box around the detailed stock table.

Figure 68: Stock overview: SAP-System-Screenshot

## 4.2.2 Post Goods Receipt

Now, we assume that your vendor has completely delivered the ordered material. Thus, you have to post goods receipt now. To post goods receipt, select

**Logistics → Materials Management → Inventory Management → Goods Movement → Goods Receipt → For Purchase Order → PO Number Known (MIGO)**

1. You want to post a goods receipt for the purchase order you created earlier. Therefore, on the upper part of the screen select **A01 Goods Receipt** from the left drop-down menu and select **R01 Purchase Order** from the right drop down menu. Enter your **purchase order number** for *gearing-xxxx* in the field on the right hand side of the drop-down menu. Press *Enter*.
2. The system now fills in the position data for your order.

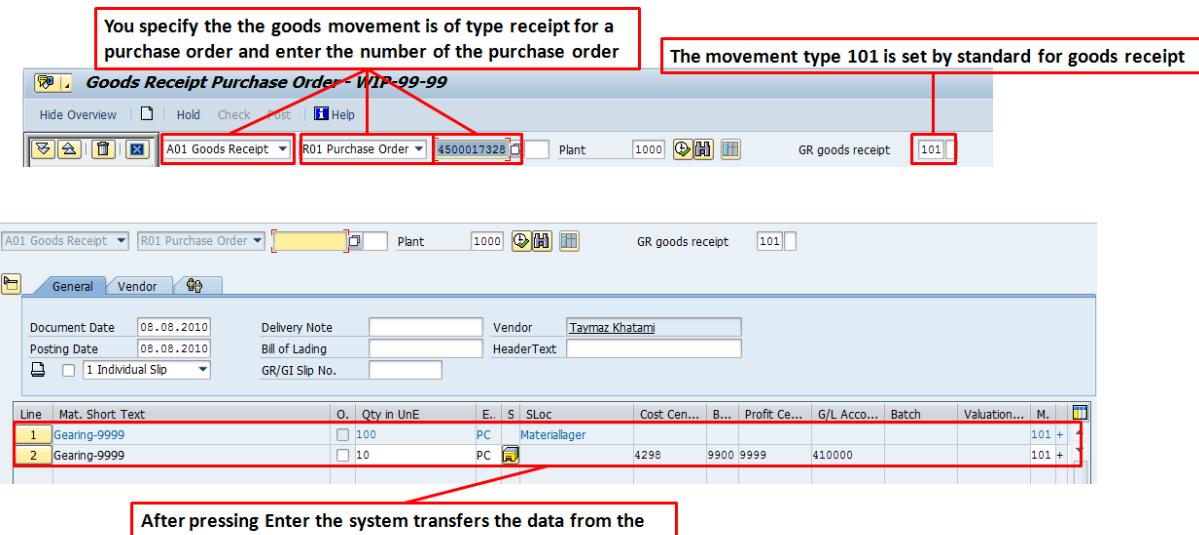


Figure 69: Goods Receipt for a Purchase Order (1): SAP-System-Screenshot

3. Enter in the fields **document date** and **posting date** the *current date* and in the **delivery note** field \* (an asterisk).
4. Next, click the field with the number 1 (1) in the first line and choose the **Where** tab in the detail data section. Change the stock type from **unrestricted use** to **quality inspection**. Thus, you make sure that the material is transferred to quality inspection stock.
5. Set the flag **Position OK** at the bottom of the screen and set the ok-flag in the second position line as well.
6. In the following figure, you can see how the material receipt document has to look like. The particular entries/buttons are highlighted red.

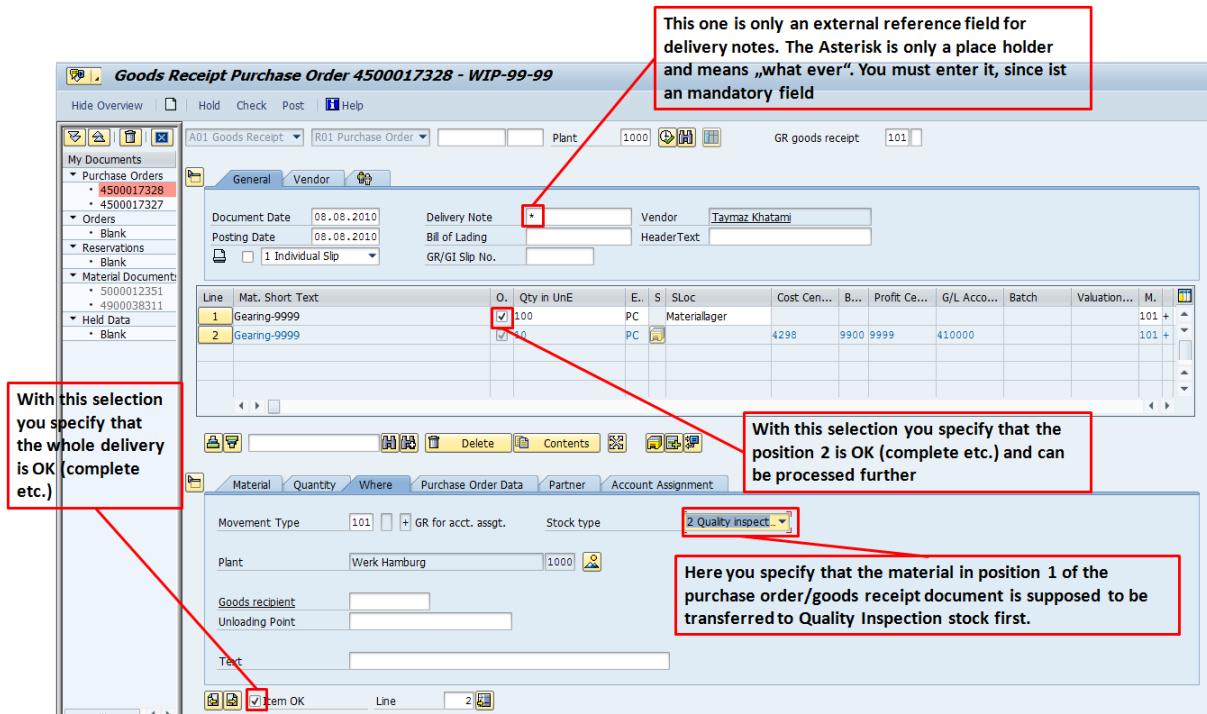


Figure 70: Goods receipt from an order: SAP-System-Screenshot

- Safe the document and list the document number from the status bar. **Do not** leave the transaction.

Document number goods receipt \_\_\_\_\_

#### 4.2.3 Display Material Document

Display the material document to ensure proper posting. Therefore, remain in the MIGO transaction.

- On the upper applications toolbar, choose **A04 Display** from the left dropdown menu and choose **R02 Material Document** from the right dropdown menu. The system should fill in your previously generated material document automatically. Choose **execute** (⊕).
- Select the **Doc. info** tab in the header data and then click the **FI Documents** button to branch into the payment document.
- Double-click on **accounting document** in the dialog box **documents in accounting**. Double-check the document's information.

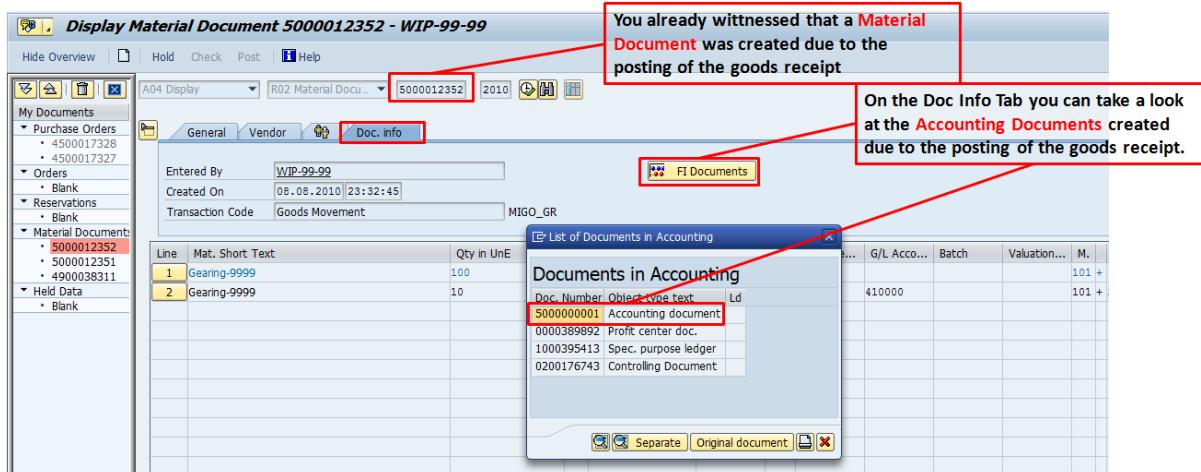


Figure 71: Accounting Document (1): SAP-System-Screenshot

4. You can see from the accounting document that 100 pieces of gearings were booked to account number 310000 and 10 pieces were posted directly as consumable materials. For the latter ones, the constructing division was specified as account assignment object. In doing so, consumption is not posted to material, i.e., to the stock of materials but to the cost center 4298. Costs of cost center 4298 were posted to account 410000. The account 191100 is an offset account type.

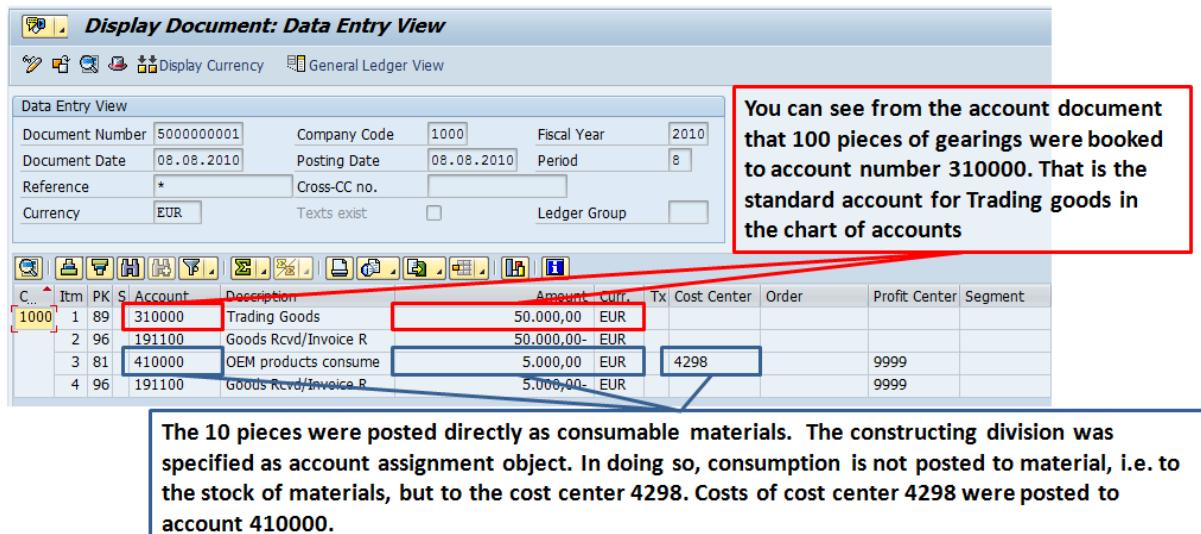


Figure 72: Accounting Document (2): SAP-System-Screenshot

5. Go back to your material document and select the **Where** tab. Click the -button to access the stock overview directly.
6. Now, you can see that 100 pieces of material gearing were added to the inspection stock. Since the 10 pieces for the construction division were posted to consumable materials as account assignment object and, thus, the stock is updated neither by quantity nor by value for the 10 pieces.

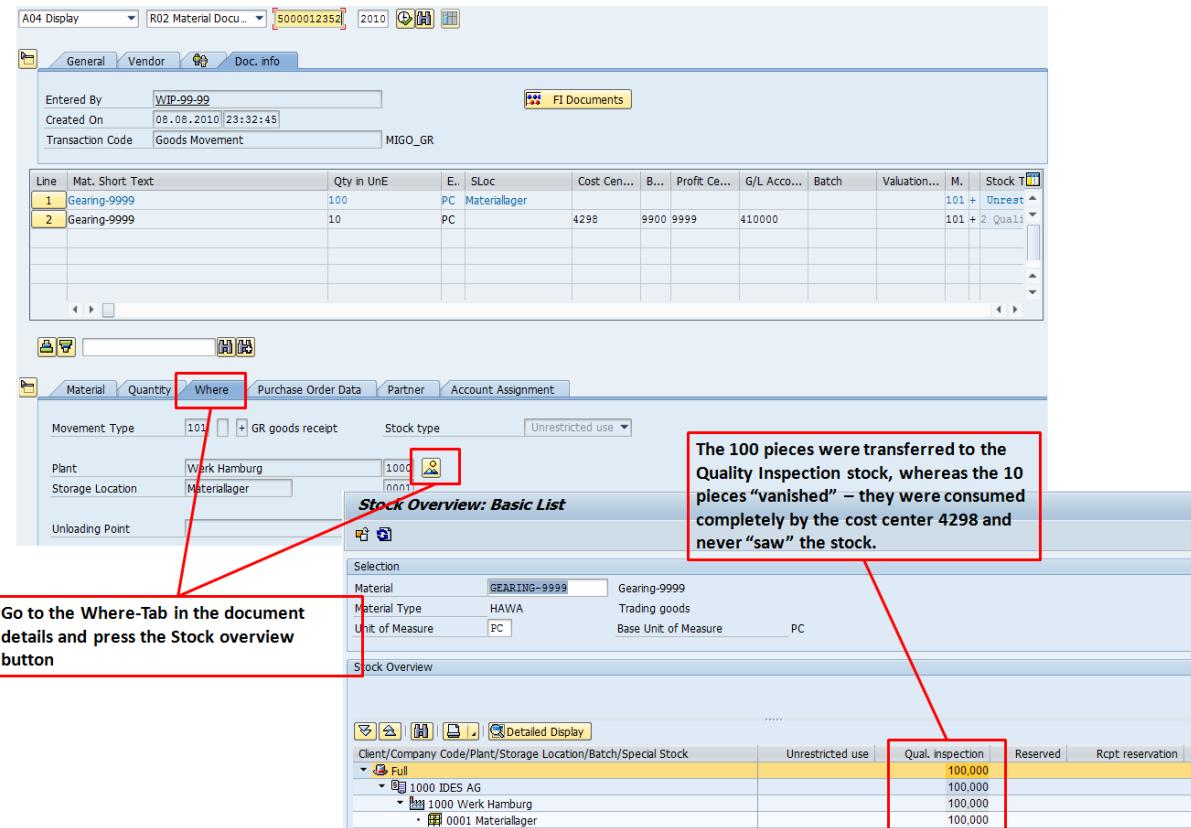


Figure 73: Stock Overview: SAP-System-Screenshot

#### 4.2.4 Material Transfer in Unrestricted-use Stock

After the inspection is completed, material can be released to the unrestricted-use stock. Now you may post the gearings to unrestricted-use stock. Therefore, choose

**Logistics → Materials Management → Inventory Management → Goods Movement → Goods Receipt → For Purchase Order → PO Number Known (MIGO)**

1. Choose **A08 Transfer Posting** from the left dropdown menu on the upper applications toolbar and choose **R10 Other** from the right dropdown menu.
2. Select movement type **321 Transfer posting quality inspection to unrestricted** by using the **F4-help**. Confirm your entry using **Enter**.



Figure 74: Quality Inspection to Unrestricted-Use (1): SAP-System-Screenshot

3. Enter the following data in the **Transfer Posting** tab page:

- **Material** *Gearing-xxyy*
- **Plant** *1000*
- **Storage Location** *0001*
- **Unit of Entry** *100*
- Press *Enter*

4. The system automatically fills in all remaining fields by using information from the material master. If the system does not fill in the destination plant (1000) and storage location (0001), do it manually.

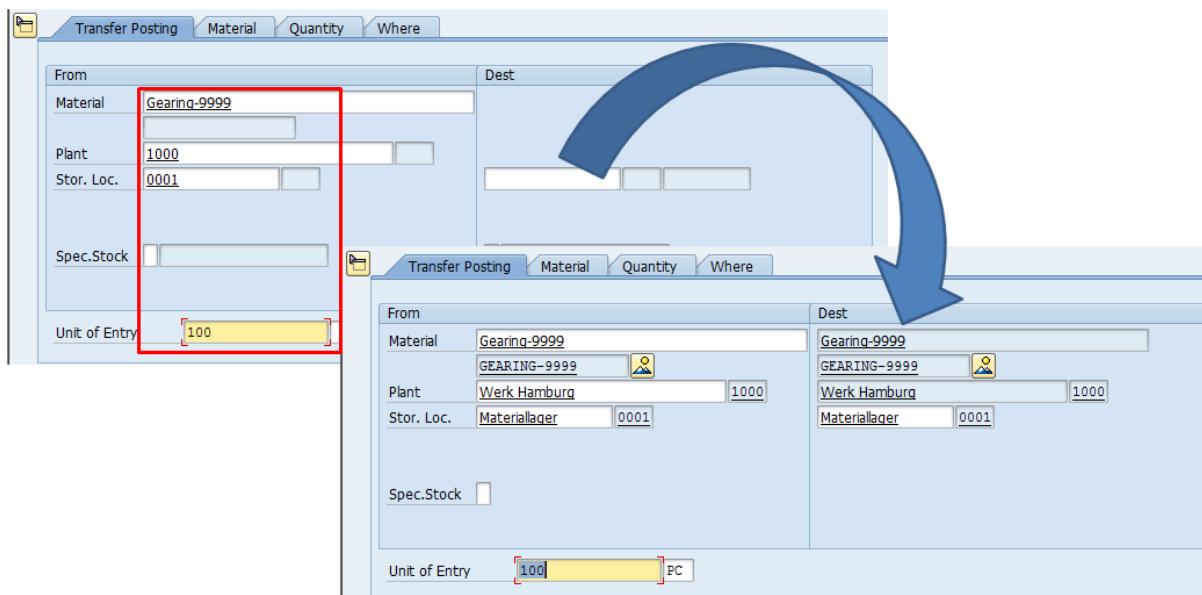


Figure 75: Quality Inspection to Unrestricted-Use (2): SAP-System-Screenshot

5. Press the **post** document button (**Post**) and list the number of the material document.

Material document for material movement: \_\_\_\_\_

#### 4.2.5 Display Material Document for Material Movement

Now, display the new document for the material transfer.

1. Select the **A04 Display** entry from the left drop-down menu and the **R02 Material Document** entry from the right drop-down menu.
2. The number of the material document of the material movement created earlier should be displayed as default value. Click *Execute*.
3. In the document header, select the **Doc.info** tab page and choose again **FI Documents** to go to the accounting documents.



Caution

*The system notifies you that no subsequent documents could be found in financial accounting. No accounting document was created at the time of material transfer because it was a material transfer within a plant and, thus, **no value-based changes** occurred in the inventory management. The quality inspection stock is*

already a part of the valued stock of the plant and, thus, there is again **no value-based change** in stock.

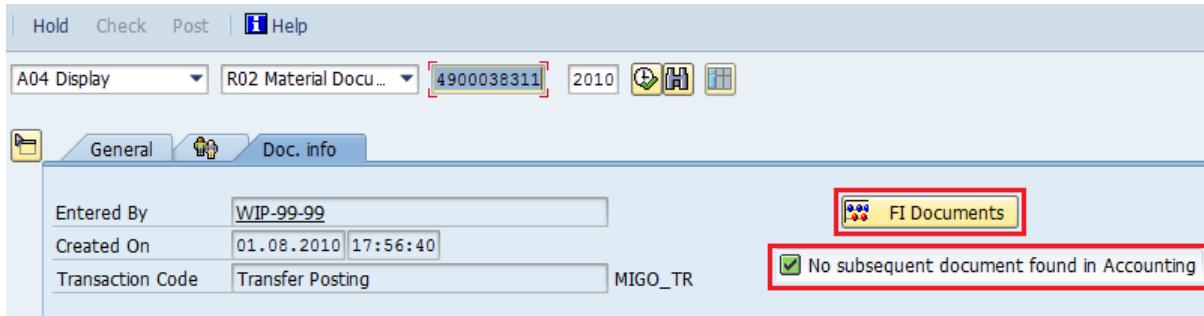


Figure 76: No Accounting Doc in for Intra-Plant Movement: SAP-System-Screenshot

- Close the material document by leaving the transaction ( or ).

#### 4.2.6 Display Stock Overview

To ensure that the system performed the material transfer correctly, check the stock overview once again. Therefore, call up the following transaction:

**Logistics → Materials Management → Inventory Management → Environment → Stock → Stock Overview (MMBE)**

Enter material **Gearing-xxyy** and plant **1000**. Choose *Execute*. You will now see that the system posted correctly and the material was transferred to unrestricted stock use.

Stock Overview: Basic List					
Selection					
Material	GEARING-9999	Gearing-9999			
Material Type	HAWA	Trading goods			
Unit of Measure	PC		Base Unit of Measure	PC	
Stock Overview					
Client/Company Code/Plant/Storage Location/Batch/Special Stock	Unrestricted use	Qual. inspection	Reserved	Rcpt reservation	
Full	100,000				
1000 IDES AG	100,000				
1000 Werk Hamburg	100,000				
0001 Materiallager	100,000				

Figure 77: Stock Overview: SAP-System-Screenshot

To display other stock types (reserved stock, planned receipts, available stock, etc.) in the stock overview, you can scroll to the right or double-click the line of the plant.

#### 4.2.7 Display Order History

Finally, you are supposed to check the order history and the order status of your order. Select

**Logistics → Materials Management → Purchasing → Purchase Order → Display (ME23N)**

Choose your order in the detail data of the order item in the **purchase order history** tab.

You can see that the order history for the goods receipt was updated correctly. You can also see information regarding the transaction (WE) with the corresponding material document, quantity and order value.

The screenshot shows the SAP ME23N interface. At the top, there's a grid for purchase order items. Below it, a toolbar with various icons. The main area has tabs: Item, Material Data, Quantities/Weights, Delivery Schedule, Delivery, Invoice, Conditions, Account Assignment, Purchase Order History, Texts, and Delivery... The 'Purchase Order History' tab is selected. A sub-table under this tab shows transaction details for a material document (WE 101). The last row, 'Tr./Ev. Goods receipt', is highlighted in yellow and shows a quantity of 100. The bottom part of the screen shows the detailed view of the purchase order, including the header and item list.

Figure 78: Order History: SAP-System-Screenshot

In the **status** tab page, in the header of the order document, you can see that the order status is characterized as **fully delivered**.

This screenshot shows the SAP ME23N interface with the 'Status' tab selected. In the header, there are several status indicators: Active, Not Yet Sent, Fully Delivered (which is highlighted with a red box), and Not Invoiced. A red arrow points from the 'Fully Delivered' status indicator to a callout box containing the text: 'The document status tells you that • you have ordered 110 units • your vendor delivered 110 units (Fully Delivered) • You did not receive any invoice yet (Not Invoiced) • You did not paid for the material received (Down paymts)'. Below this, the purchase order header and item list are visible.

Figure 79: Order Status: SAP-System-Screenshot

## 4.3 Elucidation



### What have we learned so far?

You have learned what happens when a purchase order is delivered. Additionally, further types of goods movement were discussed. Central terms of this section were movement types and stock types.

### 4.3.1 Goods Movement

A process resulting in an inventory change is called **goods movement**. Goods movement refers to both external and internal movements of materials from one location to another.

There are the following types of goods movement in the SAP ERP system:

- **goods receipts**
  - o used when delivered from external source (vendor) or when material is delivered from an internal production process
  - o normally (exception: consumable materials) results in an increase of warehouse stock
- **goods issues**
  - o used for material withdrawal, material consumption or goods shipment to customer
  - o always results in a decrease of warehouse stock
- **stock transfers**
  - o used for releasing and transferring a material from one storage location to another
  - o can be within a plant or between two different plants
- **transfer posting**
  - o changes stock identification or qualification of a material
  - o independent of whether a physical movement of the material took place or not
  - o Examples of transfer postings are:
    - the release of stock for quality inspection
    - the transfer postings from material to material
    - the transfers of consignment material into the company's own stock

### 4.3.2 Goods Receipt

- A goods receipt is one type of **goods movement**.
- When receiving material ordered from a vendor, the first step is to capture the goods receipt.
- Goods receipt postings with reference to a purchase order have the following benefits:
  - o Material received can be double-checked based on purchase order documents (quantity, price, etc.).
  - o Data from the purchase orders (ordered material, quantity, etc.) are suggested from the system when creating the goods receipt. This makes it easier to enter the goods receipt and check over-deliveries and under-deliveries when goods arrive.

- Perishable goods are within their minimum shelf life (the shelf life expiration date check must be active in this case).
- The purchase order history is automatically updated with the delivery. The Purchasing department can send a reminder about late deliveries.
- A **material document** is **always** created when posting goods receipt:
  - It contains information about the delivered material and the delivered quantity.
  - Information like the storage location and the particular plant are recorded.
- In transactions that are relevant for material valuation, at least one **accounting document** is created, which records the effects the material movement has on the value of the stock.
- An **account document** is **always** created for the goods receipt, if the goods receipt is **valuated**.
- Several goods receipt items can be entered against a purchase order item in one operation.

#### 4.3.2.1 Movement Types

- **Movement types** are three-digit keys and distinguish between the ways a material is moved from one place to another. Movement type entry in a goods movement is **mandatory**. Examples are
  - goods receipts (101)
  - transfer posting (301)
  - transfer posting stock in quality inspection (321)
  - goods receipt without purchase order (501)
  - blocked stock to unrestricted-use stock (343)
- Each movement type has a corresponding cancelation movement type
- Movement types are important regarding their control function in inventory management
  - Depending on the used movement type, the system automatically determines the account that is used for value-based stock changes (stock and consumption accounts in Financial Accounting).
  - The screen layout of the input mask for document entry or for updating quantity fields are due to the used movement type; that is, with selecting a movement type, the screen in transaction MIGO changes regarding to the fields you can enter data in.

#### 4.3.2.2 Valuated Goods Receipt

Materials received from a vendor are posted with a goods receipt to the company's stock. Thereby, you determine to which **stock type** the received quantity is posted to.

There are three different stock types that are relevant for a goods receipt:

- **Unrestricted-use stock** (no usage restrictions)
- **Quality inspection stock** (available from an MRP perspective, but no withdrawals are possible for consumption)
- **Blocked stock** (not usually available from an MRP perspective and no withdrawals are

possible for consumption)

Upon creation of the purchase order, you can enter a default value for the stock type to be used during goods receipt. You can change this default value when you post the goods receipt as long as you are not using the *Quality Management* component of SAP ERP. You have several options to pre-determine the stock type for the goods receipt. In case of the quality inspection stock type, you can, for instance, proceed as follows:

- A material is supposed to be inspected on a regular basis, prior to usage in a particular department. Therefore, you need to set the flag for **post to insp. stock** in the **purchasing or work scheduling** views of the **material master record**. Accordingly, the **stock type quality inspection** is applied to the production order.
- If the material is subject to quality inspection only once in a while, you need to enter the stock type **Stock in Quality Inspection** in the **relevant document** (production order or purchase order). One example for this is that a material is procured from a new vendor. In this case, no flag for quality inspection is set in the master record. By setting the flag in the corresponding (to the vendor) document, quality inspection is carried out.

In goods receipt, documents with reference to a purchase order always use the movement type **101**. The stock type indicator – such as the movement type – can be entered at item level for the goods receipt. This enables to differentiate between different stock types for each item in the purchasing order/ goods receipt. That is, you can post one item into quality inspection and another one into unrestricted-use stock.

You can only withdraw material for consumption purposes (e.g., you want to produce an assembly and you need materials from stock) from unrestricted-use stock. For unrestricted-use stock, you can withdraw

- one sample
- scrap a quantity
- post an inventory difference from quality inspection stock and blocked stock

When you post a receipt into the warehouse, the quantity and value of the stock is increased irrespective of the stock type (except for material types without value updating).

#### 4.3.2.3 Stock Overview

- The amount of a certain material in a storage location can be displayed in stock overview.
- Is displayable on every organizational level relevant to inventory management (client, company code, plant, and storage location).
- Posted quantities are displayed with regards to the particular stock types (quality inspection, unrestricted-use, blocked, batches/transaction types, special stock like consignment material, etc.) summed up per organizational unit.
- Stock overview is a **static** report of material stock.
  - o Only currently valid stock situation is displayed.
  - o Firm stock commitments are displayed.

- Future goods receipts and goods issues are not displayed.
- Additional information on material in stock can be called by using the menu bar

#### **4.3.2.4 Transfer Posting**

- Goods must be in stock type unrestricted-use stock if you want to withdraw material for consumption.
- If the material is in quality inspection or blocked stock type, you must post a transfer posting to remove the material from those stock types and to put it into unrestricted-use stock.
- The entered movement type determines the stock type from which the material is withdrawn and the stock type to which the material is put to. For instance, if you want to remove material from quality inspection and put it into unrestricted-use stock, you use the movement type 351. If you want to cancel this goods movement, you use the movement type 352.
- A physical transfer posting between two storage locations can be also executed with a transfer posting. Thereby, you remove the material from one storage location (e.g., storage location 0001 in plant 1000) and put it into another storage location of the same plant (e.g., storage location 0002 in plant 1000). A cross plant transfer posting is not supported. Therefore, different movement types are used (see teaching unit 5 for details).
- Posting a transfer posting always results in the creation of a material document.
- An accounting document is only created when changes to the material value occur. That is, if a monetary amount must be posted to a FI account:
  - An accounting document is not created in a stock-to-stock transfer posting.
  - An accounting document may be created in a material-to-material transfer posting.
  - For details and exceptions see teaching unit 5!

#### **4.3.3 Material and Accounting Documents**

Material document is a proof for a stock change: That is, your stock material was changed due to

- Increase of stock material: e.g., goods receipt → You receive material from a vendor. Thus, the quantity of this material increases on stock.
- Decrease of stock material: e.g., goods issue → You deliver material to your customer. Thus, the quantity of this material decreases on stock.
- Material ID change: e.g., transfer posting material-to-material → You change the material number of a material from myPhone3 to myPhone4.

In addition, an accounting document is created as a proof of value change. That is, the **value** of your stock material was changed due to

- Increase of stock material: e.g., goods receipt → For instance, you have 100 units of a material on stock that is valued with 100 € each. That is, you have a total value on

the material account (e.g. account 300000 - Raw Materials) in SAP FI of 10.000 €. Now you receive 10 extra units of this material from your vendor. Thus, the value of materials on that account increases to 11.000 €.

- Decrease of stock material: e.g., goods issue → For instance, you have 100 units of a material on stock that is valued with 100 € each. That is, you have a total value on the material account (e.g., account 300000 - Raw Materials) in SAP FI of 10.000 €. Now you deliver 10 units of this material to your customer. Thus, the value of materials on that account decreases to 9.000 €.

Way more details on this issue in teaching unit 5! That is, you do not need to learn it here ;-)

When you save a goods movement document, quantities, material, movement type and organization level cannot be changed any longer. Then you can only reverse (cancel) the incorrect document in transaction MBST.

Depending on the movement type, accordingly depending on the type of the goods movement, the system generated a material document (physical movement) and an accounting document (value-based movement).

- Consider that not all movement types result in the creation of an account document! Only if a value-based change in the stock occurs, an account document is created! Keep that in the back of your mind. In the SAP exam, questions regarding the creation of material and accounting documents are very popular. This issue will be discussed in greater detail in teaching unit 5.

## Material documents

- consist of a header and at least one document item.
- document header contains general data.
- Document items state which quantity of which material is posted to a particular storage location.
- Identification of the material document is done through the **material document number** and the **material document year**.
- Identification means in this context that the material document numbers in SAP systems are incremental. That is, when someone creates a material document, he might receive the doc number 4900000001, the next document created receives the doc number 4900000002. The number range is set in system customizing and is related to the fiscal year. That is, when a new year begins the document numbers again start at, e.g., 4900000001.

## Accounting documents

- records accounting-related effects of material movements.
- document header contains general data (posting date, posting period, and document currency).
- The G/L account numbers and the corresponding amount are recorded at item level. What a G/L account is, will be disclosed later.

- Identification of an accounting document is done through the **company code**, the **accounting document number** and the **fiscal year** (Identification means here the same as above, only that accounting document numbers are unique within a company code).
- company code in which the accounting document is posted, is deduced from the plant in which the material movement occurs.

Both the material and accounting documents are independent documents. That only means that the system creates two different documents. The account document is not a subpart of the material document. Although, you can access the account document from the material document and vice versa (catchword: Integration!).

#### 4.3.4 Effects of a Goods Receipt

A goods receipt always results in

- the creation of a material document (quantity)
- the creation of an accounting document (value) if the goods receipt is valued
- Quantity and value-based changes to the stock are recorded.
- Material price is updated in the material master for materials with moving average price control indicator V (material master accounting view).
- G/L Accounts are updated.
- Additionally, other areas in SAP ERP (again note the Integration aspect) are effected by a goods receipt:
  - o Procurement – Purchase order history is updated (order status).
  - o Quality management (if active) – An inspection lot is created.
  - o Warehouse management (if active) – A transport requirement is created and goods are transferred into the warehouse.
  - o Output can be generated, e.g., a goods receipt document or a pallet label.
  - o Notification of goods receipt can be created (optional).
  - o Material Master update regarding stock and value in the views Plant Stock, Storage location Stock, Accounting 1 Costing 2.

## 5 Invoice verification and Manual Vendor Payment

This section teaches you the process steps that are carried out after the purchased material was delivered and the goods receipt has been posted. At this point, the vendor sends the bill (invoice) and wants his money (payment).

### 5.1 Theory: Invoice Verification and Manual Vendor Payment



Theory

The last two steps of the Purchase-to-Pay business process are vendor receipt and vendor payment. Logistics Invoice Verification is part of Materials Management. It was developed to facilitate the entry of invoices relating to prior procurement processes. Although, it is possible to enter individual invoice items or complete invoices without referencing a purchase order, it is more typical to do so with reference to a purchase order.

Only by establishing the link to the purchase order, the invoice can be checked for correctness with regard to the material supplied (or service performed), the price charged and arithmetical accuracy. Likewise, the system can only determine variances from the expected values if there is a link to the purchase order.

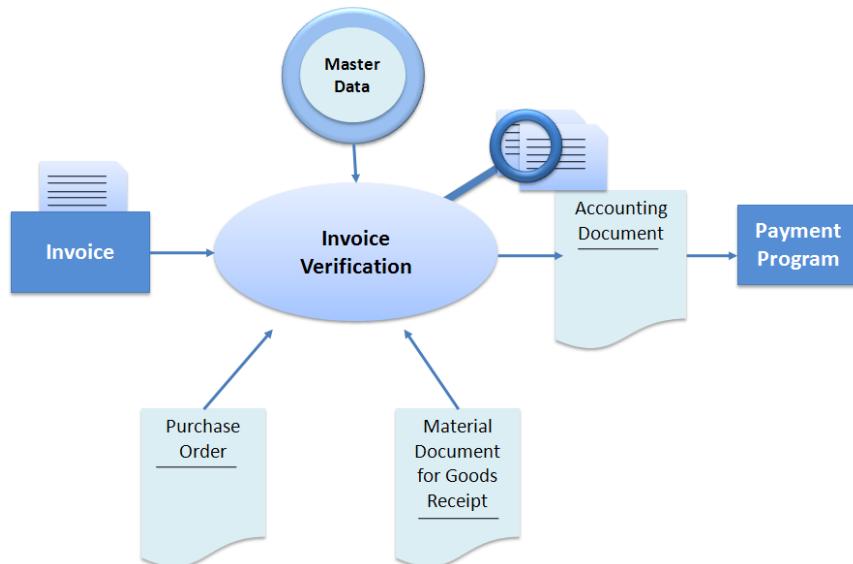
However, payment and evaluation of unpaid invoices is not part of invoice verification. Corresponding information are transferred to the departments in charge (e.g., financial accounting/controlling). Thus, invoice verification is the link between materials management (SAP MM) and external (SAP FI) and internal accounting (SAP CO).

#### 5.1.1 Invoice Processing

When entering an **invoice with reference to a purchase order**, the system suggests default data from the purchase order and the goods receipts for the purchase order, e.g., vendor, material, quantity yet to be invoiced and terms of payment, etc.

In case of **variances** between purchase orders or goods receipts, respectively, and invoice, the system issues a **warning** and, depending on system settings, **blocks** the invoice for payment.

**Posting of an invoice** completes the invoice verification process. Purchase order history is updated and **financial accounting (SAP FI)** can initiate payment of open invoice items.



**Figure 80: Invoice Processing**

#### **5.1.1.1 Invoice Verification with Reference to Purchase Order**

Invoice items can be posted **with reference to a goods receipt, a purchase order or a delivery note**. The invoice items can be assigned to a purchase order by using the number of the delivery note or bill of lading if these numbers were entered at the time of goods receipt.

If you post an invoice with **reference to the purchasing order**, you can post the invoice for **all positions** of the purchase order, regardless of having received all items of the purchase order or only a partial delivery.

If you post an invoice with **reference to the goods receipt**, you can only post the invoice for those purchase order positions that were actually received with the goods receipt. Quantities higher than the received quantities from the goods receipt cannot be posted in the invoice. This type of invoice verification must be set in the purchase order document.

If an invoice is entered with reference to a purchase order, the items from the PO are suggested together with their quantities that are still to be invoiced. The system determines the quantities that are still to be invoiced as the difference between the quantity delivered and the quantity already invoiced (e.g., if 100 pc have been delivered and 60 pc are already invoiced, 40 pc remain to be invoiced.). The system also suggests the expected value for the items. This is the product of the quantity to be invoiced multiplied by the order price.

If the vendor invoice values are different to the suggested values, the person entering the data must overwrite the suggested values with the figures from the original invoice. If the discrepancies between the invoice values and the expected values exceed specified tolerances, the invoice is automatically blocked for payment (e.g., if the invoice price varies from the PO price).

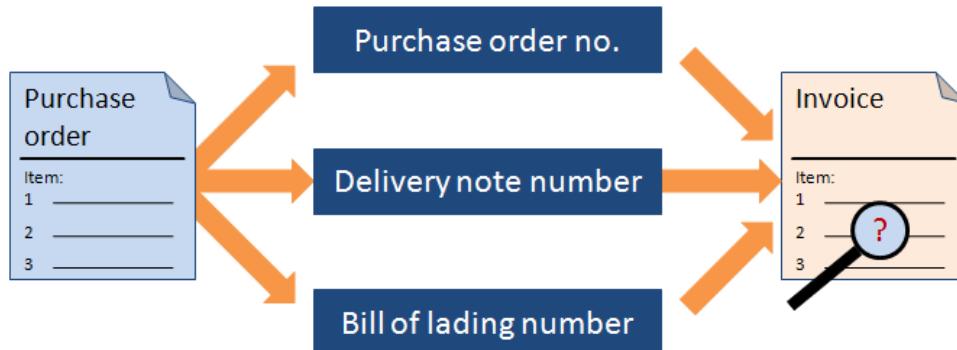


Figure 81: Invoice Verification with Reference to Purchase Order

### Documents in the Invoice Verification

The **invoice document**, like any other document in SAP ERP, consists of a document header and at least one item. The document header contains generally applicable data such as the vendor (invoicing party), the document date, the posting date, the posting period, the document currency, and the name of the person who created the document. The item data states which amount is charged for which quantity of a material.

The **accounting document** shows the bookkeeping effects of the entry of the invoice. The G/L account numbers and the associated amounts posted are recorded at item level. The corresponding G/L accounts in financial accounting are posted to automatically through the account determination procedure of SAP ERP. Posting of an invoice creates an open item on the vendor account.

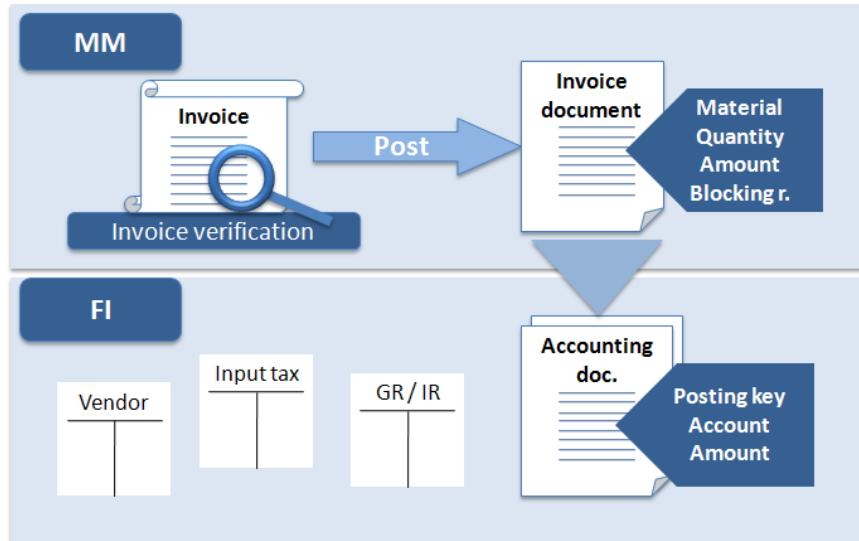


Figure 82: Documents in Invoice Verification

#### 5.1.1.2 Posting an Invoice

**Invoice receipt** initiates a **liability** towards the **vendor** in the system. The provision for this liability has already been created at the time of goods receipt on the GR/IR clearing account. Now the invoice receipt clears this liability. The offset entry is posted to the **vendor account**, creating an open item there.

The system completes the following steps when posting an invoice:

- An **accounting document** is created. The individual items are posted to the **corresponding accounts**.
- The **provisions on the GR/IR clearing account** are **canceled**.
- The **invoice document** is entered into purchase order history.
- In case of variances regarding invoice price and order price, recalculation of the current moving average price and update of the material master record is conducted for material valued with moving average price (all materials you created in the practical parts are valued with standard price not average price).

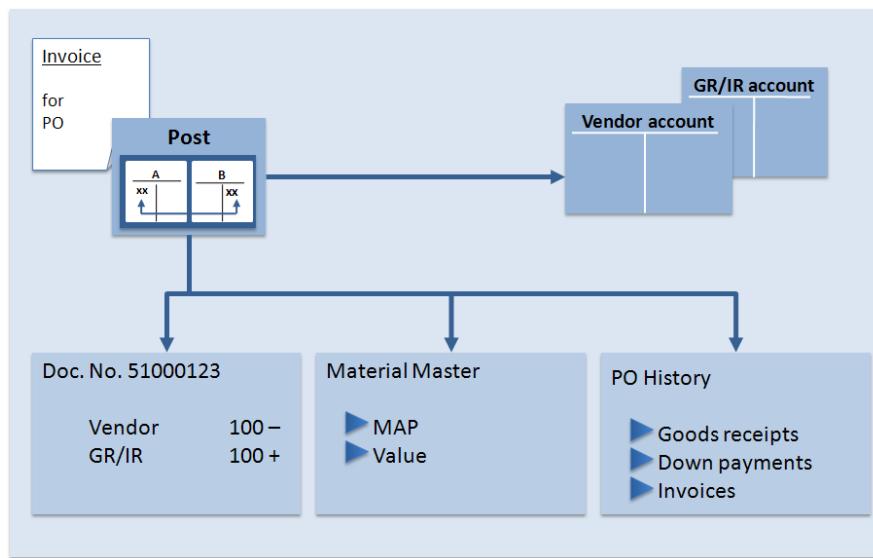
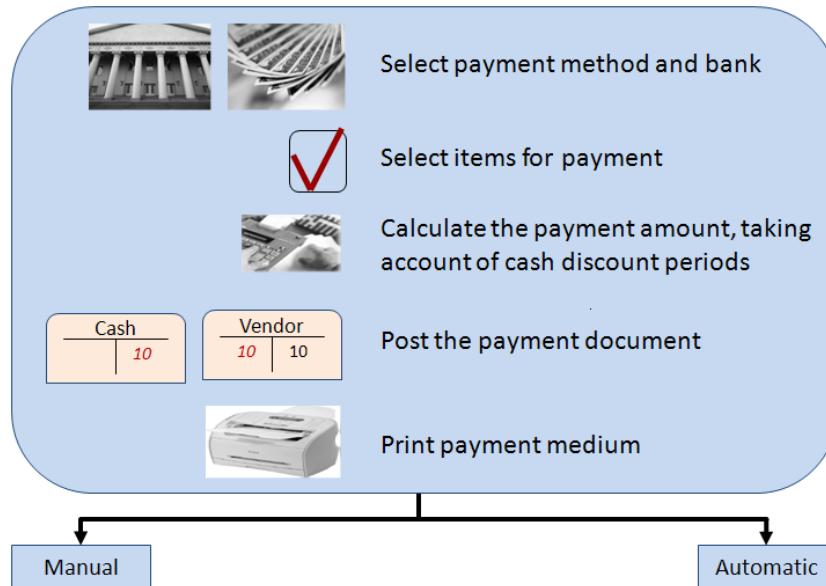


Figure 83: Posting an Invoice

### 5.1.2 Elements of a Payment Transaction

Payment transactions contain the elements that are displayed in the figure below. You can execute it in SAP ERP either manually (**Accounts Payable → Document Entry → Outgoing Payments...**) or automatically by using the payment program. The standard SAP ERP system includes payment transactions that are generally applicable (transfer, check) and the corresponding forms, which were created separately for each country.



**Figure 84: Elements of a Payment Transaction**

## 5.2 Practice: Verify Vendor Invoice and Carry out Payment



Now that your order was delivered to the warehouse, you merely need to clear the vendor claim. In this chapter, you will focus on invoice verification in the SAP ERP system. In the figure below, you can see the individual process steps you will deal with in this section.

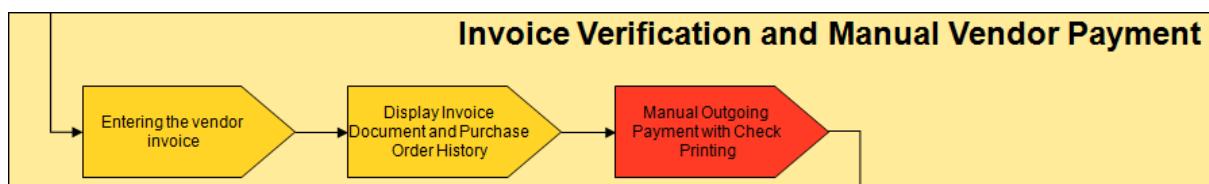


Figure 85: Process Overview – Invoice Verification

### 5.2.1 Entering the Vendor Invoice

The vendor sends you an invoice with reference to a purchase order. Since you are supposed to be an employee of logistics, use logistics invoice verification to enter the invoice.

The vendor's invoice amounts to 55.000 EURO (500 € \* 110 PC) plus 10.450 EURO (19 % VAT). Enter the invoice by calling up the following transaction:

**Logistics → Materials Management → Logistics Invoice Verification → Document Entry → Enter Invoice (MIRO)**

1. If you are prompted to enter a company code, provide company **code 1000**.
2. Enter the following in the **Basic data tab**:
 

a. Invoice date	<i>current date</i>
b. Posting date	<i>current date</i>
c. amount	<i>65.450 EUR</i>
d. calculate tax	<i>select</i>
e. tax code	<i>VA – domestic input tax 19%</i>
3. Choose the entry **1 Purchase Order/Scheduling Agreement** from the drop-down menu at the middle of the screen. Enter your **purchase order number** in the field right next to it (from chapter 3.2.2). Confirm your entries pressing *Enter*. The system automatically fills in the purchase order items and computes the tax amount.

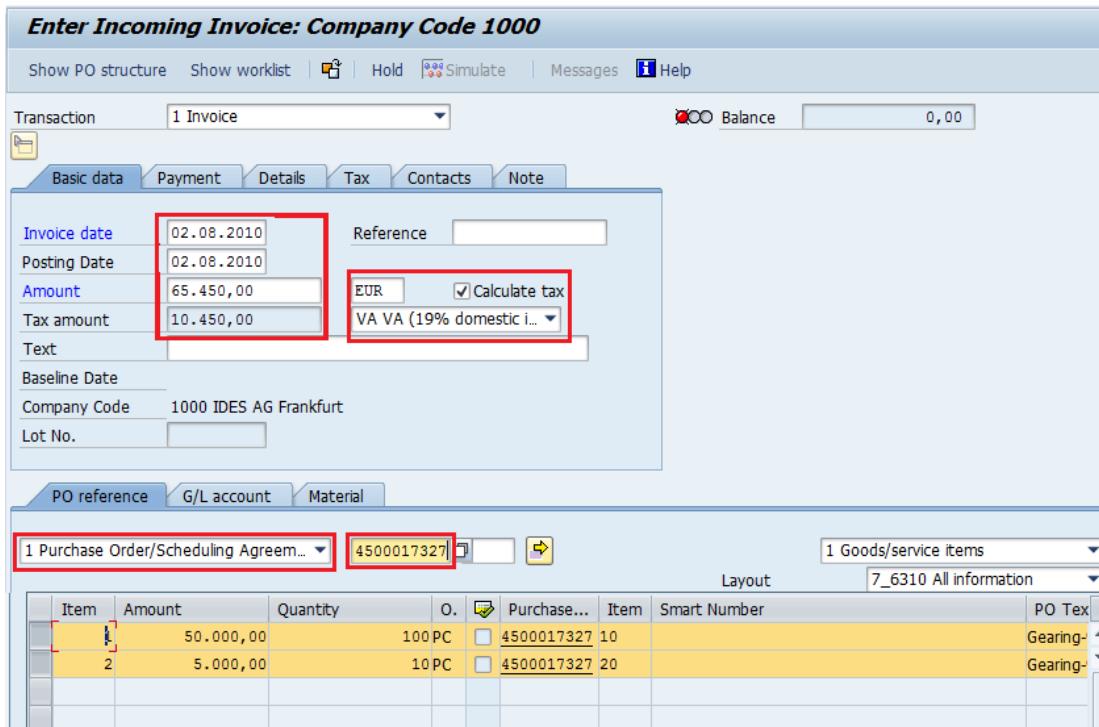


Figure 86: Invoice Verification: SAP-System-Screenshot

- Choose *safe* and list the document number from the status bar.

**Invoice document number:** \_\_\_\_\_

Remain in the **MIRO transaction**.

### 5.2.2 Display Invoice Document and Purchase Order History

Next, display the invoice document that was created when posting the invoice. Also, display the created accounting document.

- You can display the invoice directly by using the transaction *enter invoice* (**MIRO**) by choosing **Invoice Documents → Display** in the menu.
- Go to the accounting document by clicking [Follow-On Documents ...](#) and then double-click the **accounting document** line.

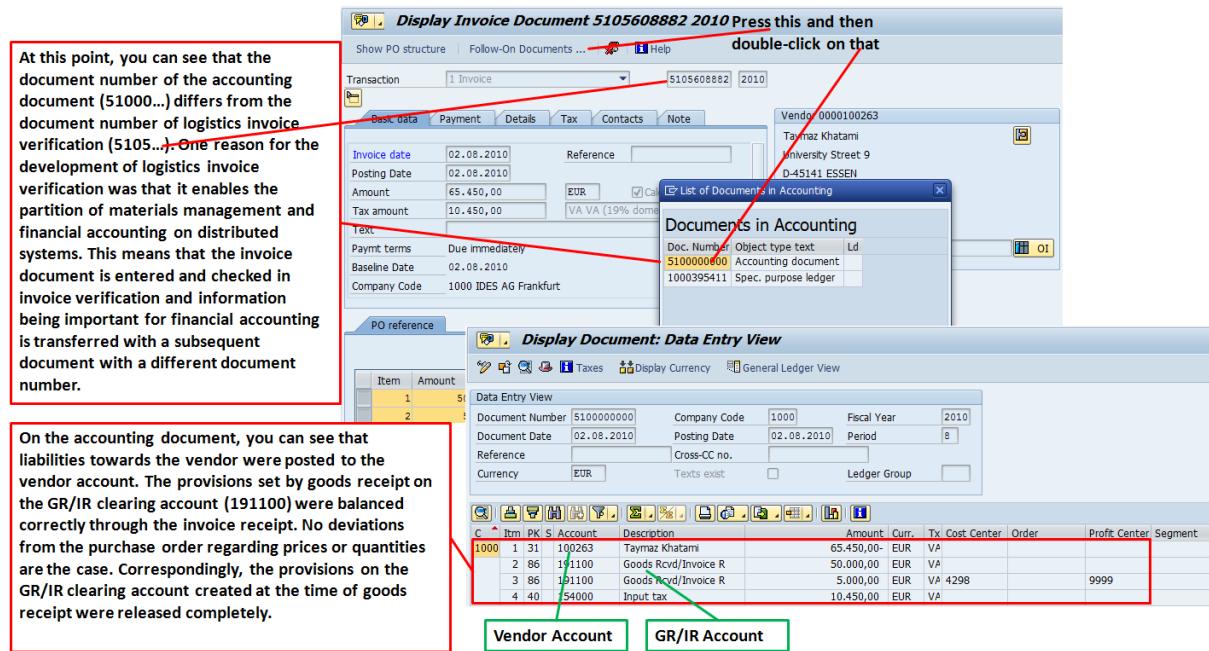


Figure 87: Accounting document: SAP-System-Screenshot

3. Leave the accounting document by pressing the ***back*** button. Close the dialog box *list of documents in accounting*.
4. In the item overview, select the purchase order number with *double-click* to display the purchase order history.

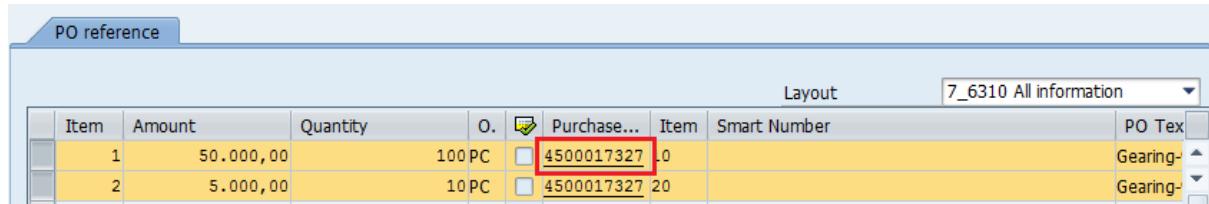


Figure 88: Accounting Document – Purchase Order: SAP-System-Screenshot

5. Then, select in the **order item detail** section ( **Item Detail**) the **purchase order history** tab. You can see that the invoice document is displayed together with the goods movement document due to invoice entry. Also check the status of the purchase order. It should be fully invoiced now.

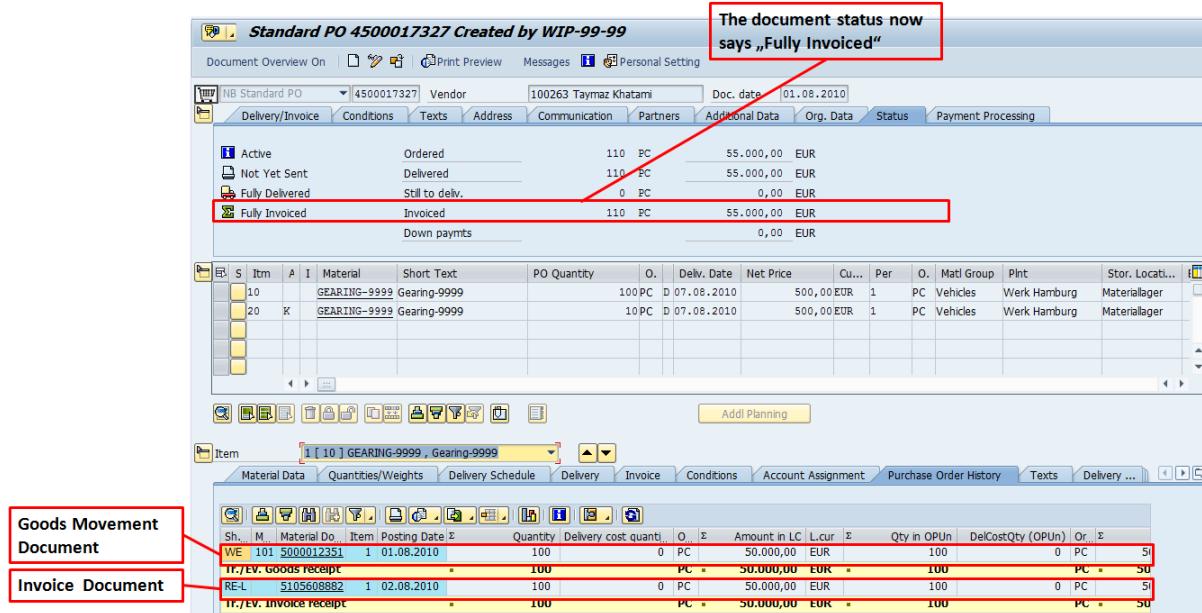


Figure 89: Purchase Order History: SAP-System-Screenshot

- Leave the purchase order history and the invoice document dialog.

### 5.2.3 Manual Outgoing Payment with Check Printing

To make sure you establish a good working relationship with the vendor, you do not want to wait for the weekly automatic payment processing. Thus, you want to issue a check manually. But first you have to check the vendors account.

Select:

*Accounting → Financial Accounting → Accounts Payable → Account → Display/Change Line Items (FBL1N)*

- Enter the following data:
  - **Vendor Account**      *Your vendor number*
  - **Company Code**      *1000*
  - Press *Execute*
- Now you see the balance of the vendor account. Note that the vendor number from the master data record is at the same time the number of the vendor account in the sub-ledger accounts payable.

Vendor Line Item Display																																																						
Vendor	100263	Name	Taymaz Khatami	Street	University Street 9	City	Essen	45141																																														
Telephone Number	+49																																																					
Company Code	1000 IDES AG																																																					
Clerk at vendor																																																						
Telephone Number																																																						
Clerk's internet																																																						
Acct w/ vendor																																																						
Payt Terms	0001																																																					
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Figure 90: Vendor Account Balance: SAP-System-Screenshot

Now, post the outgoing payment. Therefore, choose

**Accounting → Financial Accounting → Accounts Payable → Document Entry → Outgoing Payment → Post + Print Forms. (F-58)**

- Enter the following data in the **payment with printout: header data** screen:
  - Company code** *1000*
  - Payment method** *C (Check)*
  - House bank** *1000*
  - Check lot number** *0001*
  - Printer for forms** *LOCL (Local = standard printer of your OS)*
  - Print immediately** *select* (In case your printer is not installed, the system will display an error message that can be ignored).

Payment method and form specifications		Processing type
Company Code	1000	<input type="checkbox"/> Calculate pmnt amnt
Payment method	C	
House Bank	1000	
Check lot number	0001	
Alternative form		
Padding Character		

Output control		
Printer for forms	LOCL	<input checked="" type="checkbox"/> Print immediately
Pmnt advice printer		<input type="checkbox"/> Recipient's lang.
		<input type="checkbox"/> Currency in ISO code
		<input type="checkbox"/> Test printout
		<input type="checkbox"/> Do not Void any Checks

Figure 91: Manual Payment (1): SAP-System-Screenshot

2. Select **enter payments** ( ) button.
3. Enter the following data for creating the check:
  - **amount 65450**
  - **vendor number of the vendor you created**

Process open items					
Document Date	02.08.2010	Type	KZ	Company Code	1000
Posting Date	02.08.2010	Period	8	Currency/Rate	EUR
Document Number				Translatn Date	
Reference				Cross-CC no.	
Doc.Header Text				Trading part.BA	
Clearing text					

Bank posting details			
Amount	65450	Business Area	
Value date	02.08.2010	Assignment	
Text			

Payee			
Vendor	100263	Company Code	1000
Customer		Payee	
<input type="checkbox"/> Payment on acct	<input type="checkbox"/> Pmnt on acct		

Paid items		Additional selections
<input checked="" type="checkbox"/> Standard Ols		<input checked="" type="radio"/> None
Special G/L ind		<input type="radio"/> Amount
		<input type="radio"/> Others

Figure 92: Manual Payment (2): SAP-System-Screenshot

- Select the **process open items** ( ) button.

- The open position for your vendor is listed. Select *safe*. Confirm a possible system message.
4. List the number of the payment document from the pop-up window and confirm the pop-up.

**Payment document:** \_\_\_\_\_

Again, select:

**Accounting → Financial Accounting → Accounts Payable → Account → Display/Change Line Items (FBLIN)**

1. Enter the following data:
  - **Vendor Account**      *Your vendor number*
  - **Company Code**      **1000**
  - Press *Execute*
2. You receive the following message  *No items selected (see long text)*, since the account is balanced again.
3. You can select Cleared Items and press Execute again. Now you see that the invoice is cleared through the payment.

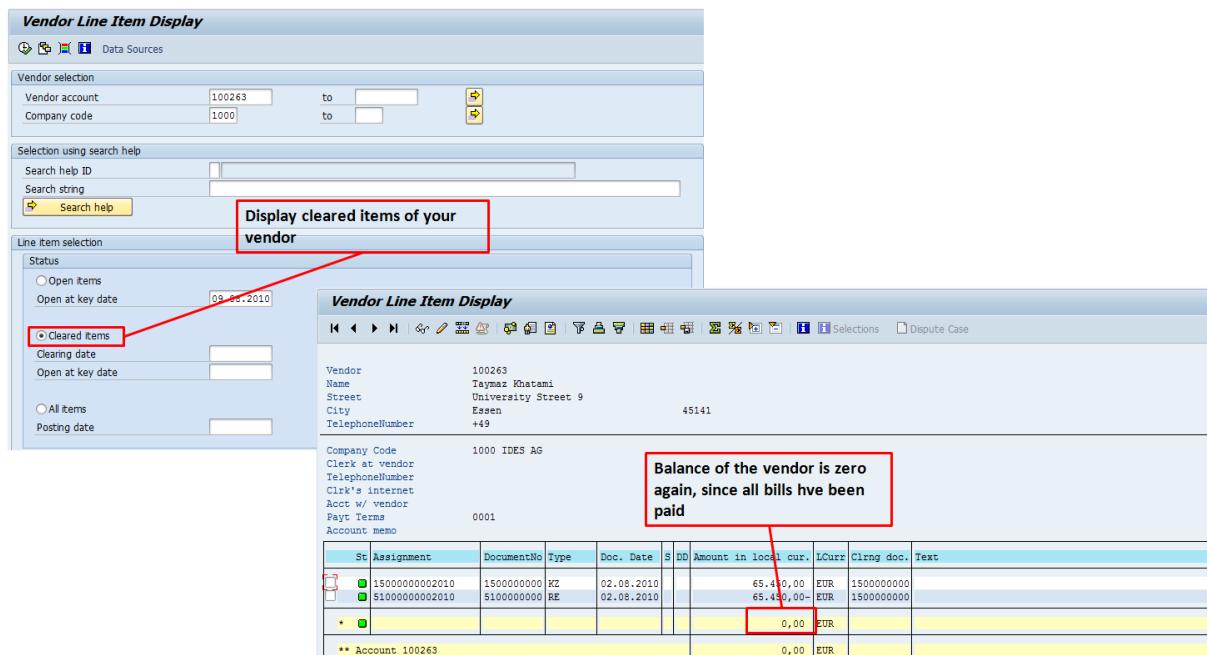


Figure 93: Cleared Vendor Account: SAP-System-Screenshot

## 5.3 Elucidation



### What have we learned so far?

You have learned how invoice verification works in SAP ERP, how payments are done and what effects the completion of the procurement process has on other applications.

### 5.3.1 Invoice Processing

- Invoice verification is the last step of the procurement process that takes place in the procurement application in SAP MM.
- Invoice verification checks the invoices and credit memos received from vendors for accuracy of content and price.
- Generally, payment of those invoices is the subsequent step to the invoice verification. Thus, payment and evaluation of unpaid invoices are not part of invoice verification but rather are transferred to the financial accounting and controlling department.
- Thus, invoice verification is the point of integration between materials management (SAP MM) and external (SAP FI) and internal accounting (SAP CO).
- An invoice can be created **with reference to a purchase order**. In that case, the system suggests default data from the purchase order and the goods receipts for the purchase order (vendor, material, quantity yet to be invoiced, terms of payment, etc.)  
→ OK, you know already that one benefit of an ERP system is that subsequent documents take over the entries from their preceding documents. This facilitates control functions (Are all quantities and figures correct?) and reduces man-made errors.
- If **variances** between purchase orders or goods receipts, respectively, and the corresponding invoice occur, the system issues a **warning** and **blocks** the invoice for payment where required. That is, you get one of those RED error messages that prevent you from proceeding or you receive a YELLOW warning message that you can skip with Enter. However, it depends on system settings what you get, but in most cases it should be RED, since we are talking about money here ;-)
- **Posting of an invoice** completes the invoice verification process. Purchase order history is updated and **financial accounting (SAP FI)** can initiate payment of open invoice items.

#### 5.3.1.1 Invoice Verification with Reference to Purchase Order

Invoice items can be posted **with reference to**

- a **goods receipt**
- a **purchase order**
- a **delivery note**

Thereby, the items from the purchase order are suggested together with their quantities that are still to be invoiced.

The system also suggests the expected value for the items that are still to be invoiced.

- Invoice posting with **reference to the purchasing order**: all positions of the purchase order can be invoiced, regardless of having received all items of the purchase order or only a partial delivery.
- Invoice posting with **reference to the goods receipt**: only those purchase order positions that were actually received with the goods receipt can be invoiced. Quantities higher than the received quantities from the goods receipt cannot be posted in the invoice. This type of invoice verification must be set in the purchase order document.

If the vendor invoice values are different to the suggested values, the person entering the data must overwrite the suggested values with the figures from the original invoice. If the discrepancies between the invoice values and the expected values exceed specified tolerances, the invoice is automatically blocked for payment

The **invoice document** consists of:

- a document header: generally applicable data
- at least one item: states which amount is charged for which quantity of a material.

The **accounting document** shows the bookkeeping effects of the entry of the invoice. That is, it records which accounts in SAP FI were debited and credited. The G/L account numbers and the associated amounts posted are recorded at item level.

*Posting of an invoice creates an open item on the vendor account:*

After the invoice has been created in the SAP ERP system – that is, the vendor sent you the bill and you posted it in the system – an open item (or position) is created on the vendor's account and the corresponding general ledger (G/L) account in financial accounting is posted to automatically as well. OK, that sounds a little complicated, so let us illustrate it by an example. Just follow the numbers:

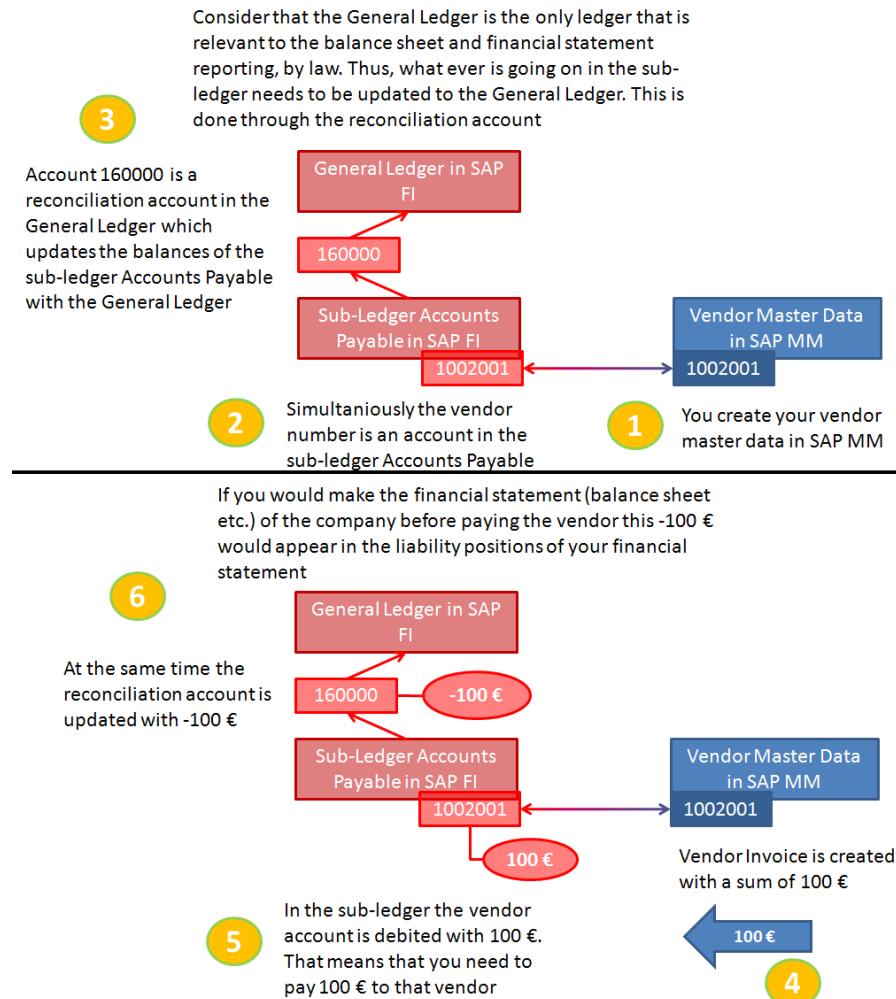


Figure 94: Account Integration between SAP FI and SAP MM

### 5.3.1.2 Posting an Invoice

- Invoice receipt initiates a liability towards the vendor in the system.
- The provision for this liability has already been created at the time of goods receipt on the GR/IR clearing account.
- Now, the invoice receipt clears this liability.
- The offset entry is posted to the **vendor account** by creating an open item there.

OK, that one was another complicated story. Again follow the numbers in the following figure.

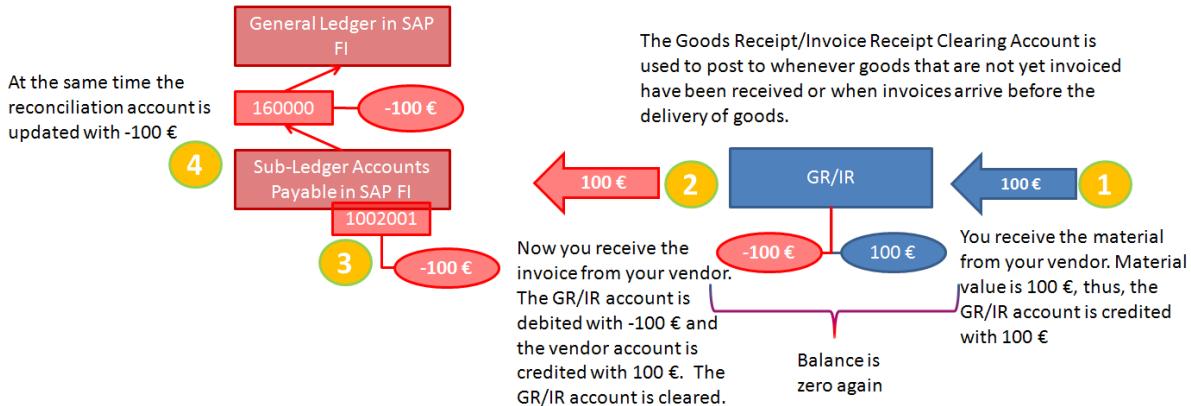


Figure 95: Effects of Invoice Verification

The system completes the following steps when posting an invoice (partially same like already posted above):

- An **accounting document** is created. The individual items are posted to the **corresponding accounts** (see figure above).
- The **provisions** on the **GR/IR clearing account** are **canceled** (see figure above).
- The **invoice document** is entered into purchase order history.
- Material Master: update of the current moving price (in case of variances between invoice price and order price) for material valued with moving average price.

### 5.3.2 Elements of a Payment Transaction

Payment transactions contain the following elements:

- Select payment method (cash, check, bank transfer) and bank.
- Select item for payment (position of an invoice to be paid or vendor account to be cleared).
- Calculate the amount to be paid to the vendor accounting for all rebates and discounts (from vendor master data and purchasing documents).
- Post the payment document.
- Print the payment document.

Payment transaction can be posted manually or automatically (on due via a payment program).

### 5.3.3 Integration of Materials Management in other Functional Areas

#### Integration in financial accounting:

- In the Procurement application, you maintain vendor master data. This master data contains three “views”: General data, Purchasing Organization data and Company Code data. The company code data, however, is data maintained for or from the finance department. Thus, you have an integration point between the two modules here.
- In the Financial accounting application, the **vendor master record** represents the **creditor account**. That is, the vendor number (1002....), you received when creating the vendor master record, represents simultaneously an account in one of the sub-

ledgers in Financial Accounting (Accounts Payable sub-ledger → will be discussed in great detail in teaching unit 8). When you owe money to a vendor, it is first posted on the vendor account 1002... in that sub-ledger and then transferred to the general ledger by using the reconciliation account. If you check your vendor master data in transaction XK03, you will find that G/L account – 160000.

#### Integration in sales and distribution:

- When a customer of your company orders a product from you, a requirement (you need material to produce that product, etc.) arises. This requirement is transferred from the Sales application to SAP MM and thus to procurement.
- On the other hand, a purchase requisition can be assigned directly to a sales order at the time it is created.
- When entering a **sales order**, a dynamic **availability check** regarding stock can be initiated. That is, the system checks whether the product that is to be sold is on stock or not. Availability check is a function of SAP MM.

#### Integration in production planning:

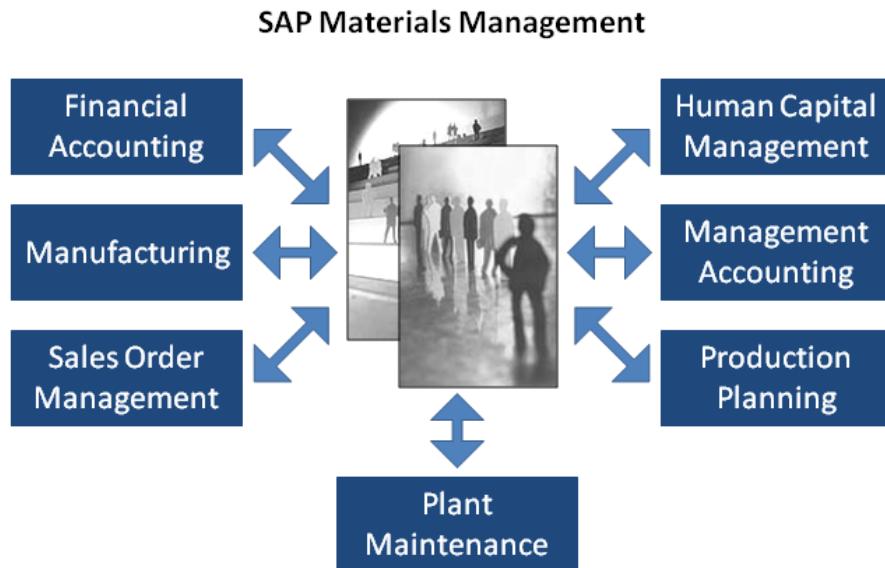
- Here you have more or less the same situation as with Sales integration. Purchase requisitions are created manually or automatically when through **production planning** a requisition for material arises. **Inventory management** is then in charge of making components for production available. That is, to have those materials on stock.

#### Integration in maintenance:

- Bills of materials are the link between material management and inventory management. Since equipments (that is an object used in maintenance management – see teaching unit 10) also can have BOMs, you can post a goods receipt with reference to an equipment.
- Additionally, you can withdraw a part for maintenance needs. Serial numbers are activated in materials management and used in inventory management.

#### Integration in logistics:

- **Inventory management** can be extended by the **warehouse management system (WMS)**, which manages storage location regarding complex warehouse structures. While inventory **management** manages stock quantity and stock value, **WMS** is occupied with handling and monitoring of warehouses.



**Figure 96: Materials Management Integration**

## 6 Reporting in SAP ERP Procurement

Reporting in SAP enables the evaluation of business processes. Thereby, each functional area owns individual information systems. In this chapter, you will learn about tools for displaying and formatting information by the means of list display, evaluations and the Logistics Information System of SAP ERP.

### 6.1 Theory: Standard Reports



Theory

A wide variety of different documents is created during a process in SAP ERP, e.g., a production process. In a production process, for example, purchasing documents, material documents, invoice documents and accounting documents are created. These documents are posted in the SAP system and stored in database tables. You can evaluate this information by using standard reports.

SAP information systems enable both document analyses as well as analyses of master data. You can, for example, output a list of all purchasing info records with reference to a particular material or vendor, or you can get an overview of the material master records of a company with reference to a particular material type.

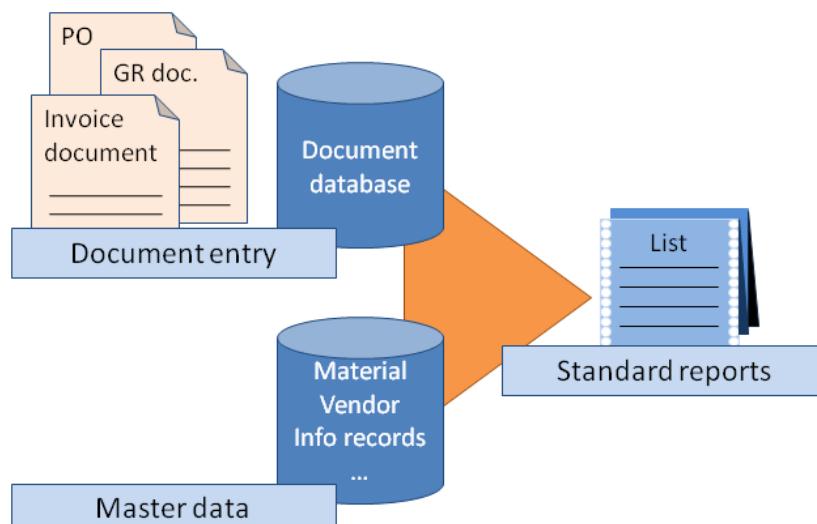


Figure 97: Standard Reports

#### 6.1.1 List Displays

Lists are a graphically formatted way of displaying results of reports or analyses. You can narrow down a report by using selection criteria to make your results clear and informative.

List appearance can be set by means of **scope of the list** and **selection parameters**.

- **Selection parameters** determine, for example, which purchasing documents are analyzed by a particular report. You can create reports containing only open purchase orders, e.g., purchase orders for which no invoice has been received or ones that have expired scheduling agreements.

- **Scope-of-list parameters** determine which data is displayed concerning a selected document (which lines appear in a report). The scope-of-list parameter is a feature that manages the data range displayed for evaluations.
- You can choose whether you want a list to be displayed in short form or if you want the list to contain more information (e.g., lines for quantity and value of open purchase orders or the period of outline agreements). Moreover, the purchase order history can be displayed in additional lines in the list.

Using scope-of-the-list parameters, you can determine whether the list is issued with **ALV Grid Control**



*The ALV Grid Control is a tool for displaying tabular data in different applications within SAP ERP – in case ALV Grid Control is not used for an output, you receive listed, not tabular data, which is a less flexible and less functional way of displaying information. However, the complete functionality of ALV Grid Control cannot be applied to all types of lists.*

In addition to the list displays for documents and master data, the purchasing menu contains general **analyses**, the **purchase order value analysis** and **goods receipt forecast reports**.

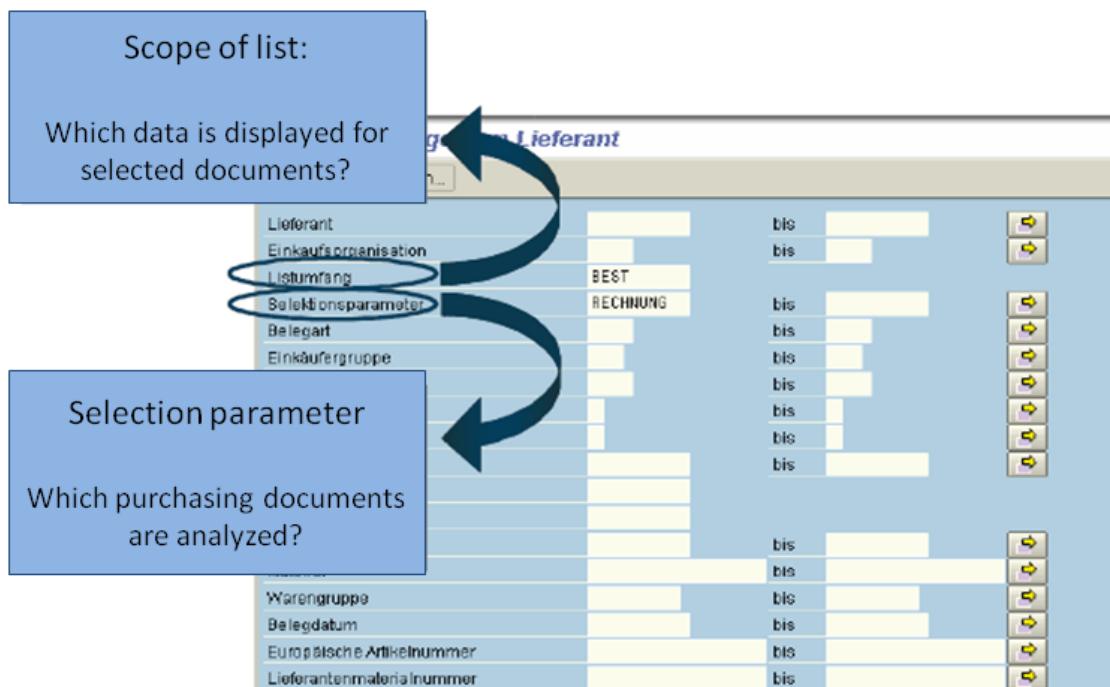


Figure 98: List Displays

#### 6.1.1.1 SAP List Viewer and ALV Grid Control

**SAP List Viewer** and **ALV Grid Control** are graphical displays of reports in the SAP system and they are used for standardization and simplification of list handling in SAP systems. There is a uniform interface and a uniform list format for lists. Thus, redundant functions can

be avoided. ALV Grid Control is not only used for list displays (e.g., the material document list in the following figure) but also in other transactions (e.g., purchase requisitions).

Not all lists can employ the complete functionality of ALV Grid Control. However, some lists feature special functions over and above the functionality of the List Viewers. They can modify appearance and content of lists by using the **layout** (display variant).

The key elements of **SAP List Viewer** and **ALV Grid Control** can be summarized as follows:

- identical appearance of all lists and tables
- inter-application, standardized functionality with homogeneous icons
- simple creation and change of layouts (display variants)

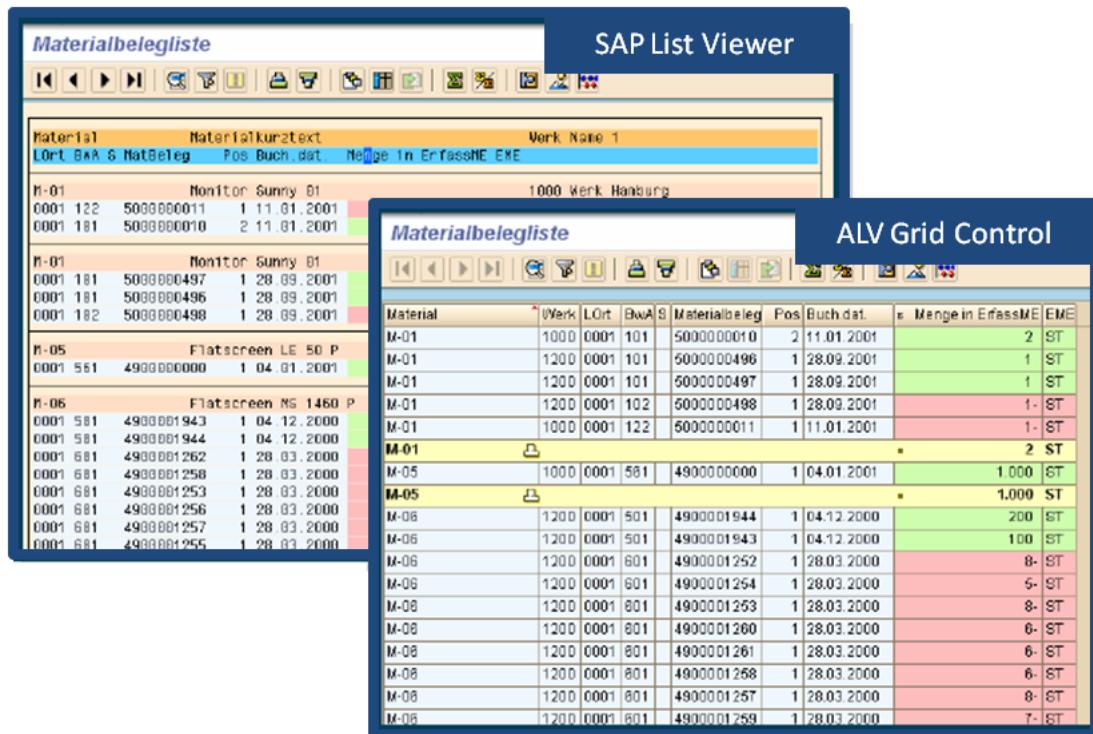


Figure 99: SAP List Viewer and ALV Grid Control

### 6.1.1.2 Functionality of the SAP List Viewers / ALV Grid Control

Amongst others, the functions of **SAP List Viewer** and **ALV Grid Control** are:

- **Choose detail:** This function provides further information regarding a selected line. Thereby, additional information is displayed that is not shown in the list.
- **Set filter:** Using filter functions, you can display only those lines meeting particular criteria in one or multiple columns. To set a filter, you need to select one or more columns by clicking on the column header. Then, you can use the **set filter** function to enable particular limitations regarding list display for the selected columns.
- **Sort:** You can sort lists in ascending or descending order. Therefore, you can choose selected columns with the desired sort criterion and pick a sort function (e.g., ascending alphabetically or in relation to order value).

- **Add values:** You can create sums of one or more columns within a list. Thereby, you can create sums of both value and quantity columns.
- **Create subtotals:** In case you create a sum for at least one column in a list, you can create subtotals in addition. Subtotals can be created for one or more selected columns without value or quantity columns.
- **Layout:** You can modify the appearance of a list by using layouts or display variants.  
*Note: The particular list determines whether you can use a layout or display variant.*

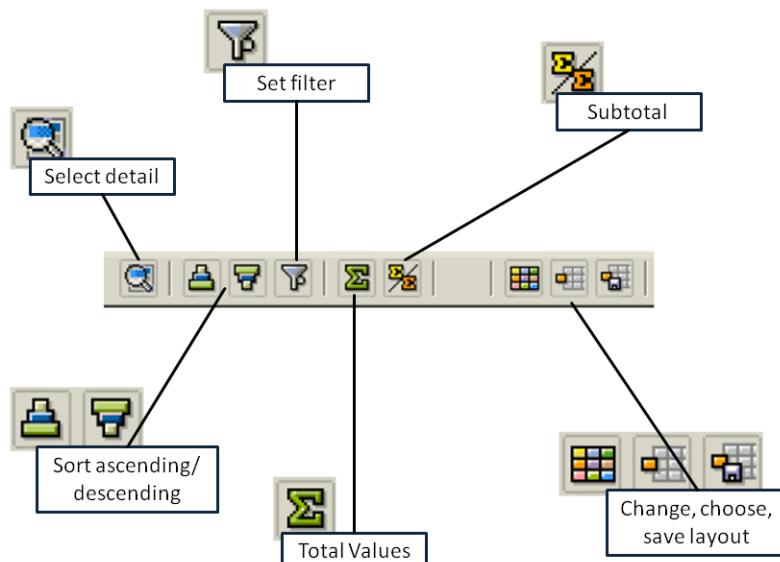
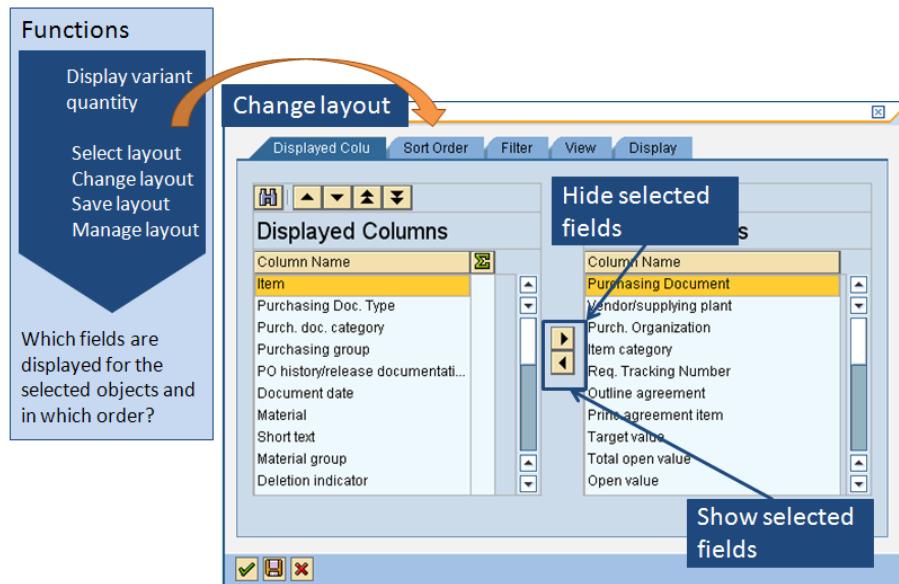


Figure 100: Functions of the SAP List Viewers/ ALV Grid Control

#### 6.1.1.3 Layout (Display Variant)

The appearance of many lists can be changed and adjusted to special requirements by using **layouts** or **change variants**:

- Additional fields of the column set can be displayed or you can hide unwanted fields from the column selection.
- You can arrange fields in any order and you can generate sums.
- You can adjust the width of columns.
- You can save modifications to a layout as user-specific layout.
- An individual layout can be created user-specific or for multiple users.
- SAP features standard layouts of some lists.

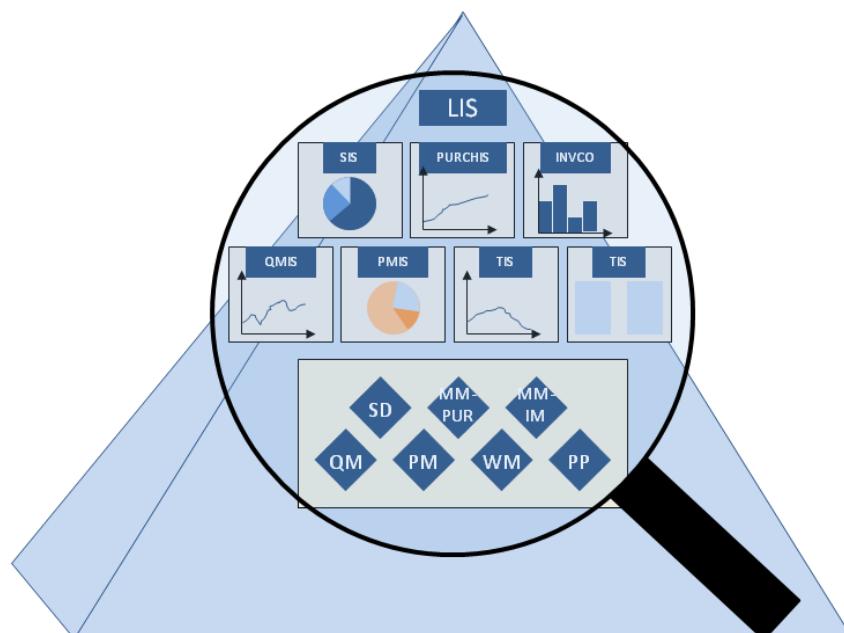


**Figure 101: Layout (Display Variant)**

### **6.1.2 Logistics Information System**

The **Logistics Information System** LIS is an OLAP system (Online Analytical Processing) and features advanced analyses techniques. In LIS, a series of application-specific information systems with a standardized layout and similar functions are available. The following information systems are available in logistics:

- **SIS** — **Sales Information System**
  - **PURCHIS** — **Purchasing Information System**
  - **INVCO** — **Inventory Controlling**
  - **TIS** — **Transportation Information System**
  - **SFIS** — **Shop Floor Information System**
  - **QMIS** — **Quality Management Information System**
  - **PMIS** — **Plant Maintenance Information System**



**Figure 102: Logistics Information System**

### 6.1.2.1 Organization of Information Structures

The **Purchasing Information System** (PURCHIS) is based on **information structures**. These are special statistical tables containing transactional data from the particular applications. The system regularly collects and updates these data.

**Information structures** contain three basic **information types**:

- **Characteristics** are criteria provided for data entry regarding a particular subject. **Statistical information** for characteristics, e.g., vendor, customer, material are updated in aggregated form. Organizational elements such as purchasing group, material group, valuation area, plant or storage location are used as characteristics in information structures as well.
- **Period units** are also criteria used in information structures. You can collect data for a particular period by using period units, e.g., within a day, a week, a month or a posting period.
- **Key figures** are used for performance measurement. Key figures are updated for each characteristic combination and periodicity. Key figures are quantitative numbers providing information about measurable facts. Key figures can be deduced for each classification key by accumulation (e.g., purchase or production order quantity). However, key figures can also be mere counters, e.g., the number of deliveries or purchase orders.

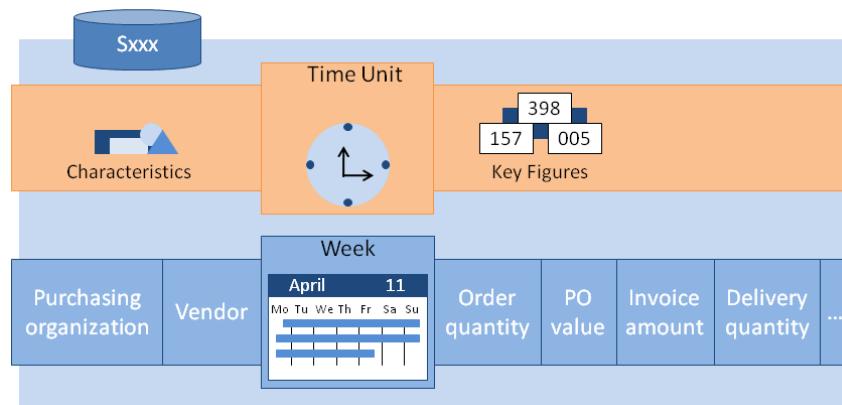


Figure 103: Organization of Information Structures

### 6.1.2.2 Reporting in Standard Analyses

**Standard analyses** offer extensive functions to create presentations and analyses based on the data basis in the LIS.

A data basis for a standard analysis is determined by establishing an **object of analysis** (e.g., purchasing group, vendor, material group) and by specifying **selections**. Then, you can display this data set structurally by using the **initial list** (displayed after executing a report) and different **drill-down lists** (elements of the initial list can be extended by double-clicking in them; thus, further information about a particular element can be displayed). The particular analyses are achievable.

Each complete master record or document information regarding the standard transaction can be displayed by the system through distinct **explosion levels**.

There is a set of functions in place for the in-depth analysis of key figures and characteristic attributes. All functions are based on graphics.

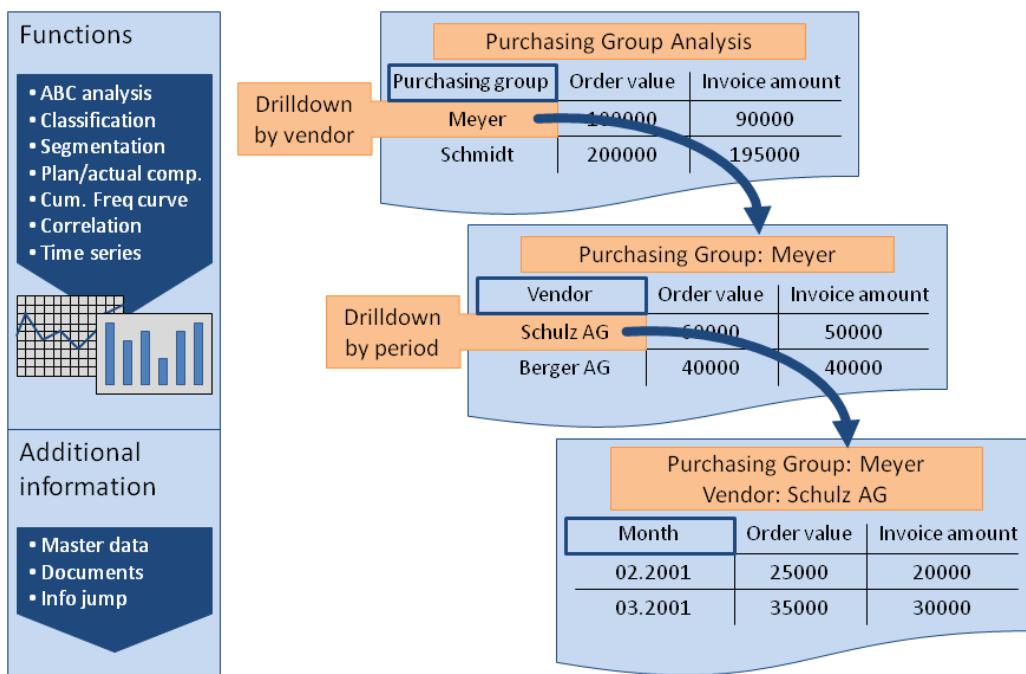


Figure 104: Reporting for Standard Analyses

### 6.1.2.3 Flexible Analyses

**Flexible analyses** in the Logistics Information System (LIS) allow for the unfettered combination of data in one single report.

Contents and appearance can be customized with the appropriate menu. The required program will be executed in the background. The resulting list offers several options for interactive online processing.

This procedure offers:

- a combination of characteristics and key figures resulting from different information structures of a particular list
- the use of own formulas for calculating new key figures based on already given key figures
- the choice of available layouts

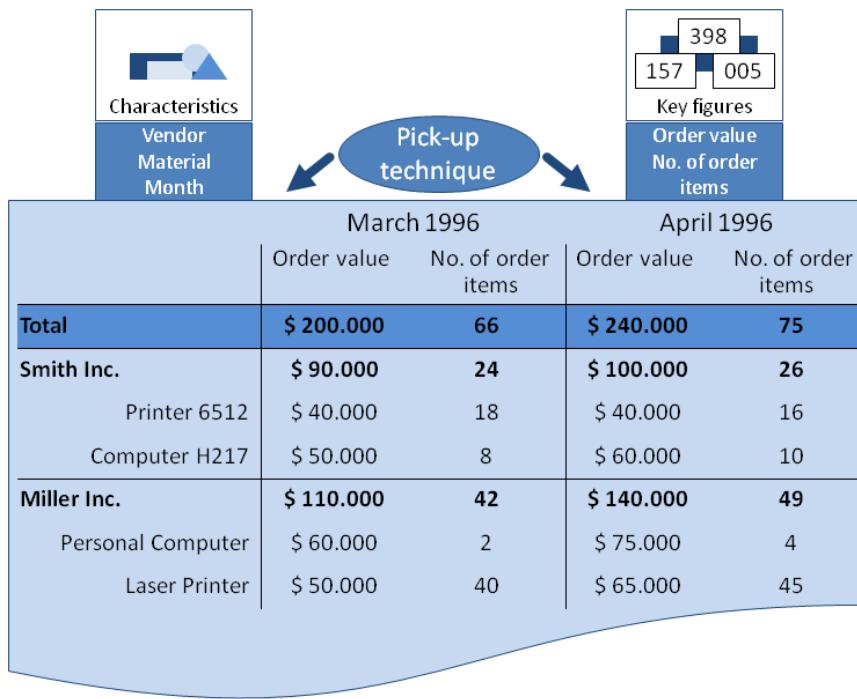


Figure 105: Flexible Analyses

## 6.2 Practice: Create a Standard Report



To conclude the procurement process, you want to run several analyses in the logistics information system to gain an insight into issued purchase orders of the past years. Additionally, you want to test the SAP List Viewer, create an own layout and learn about the sort function.

In the following figure, you can see the process step you will deal with in this section:

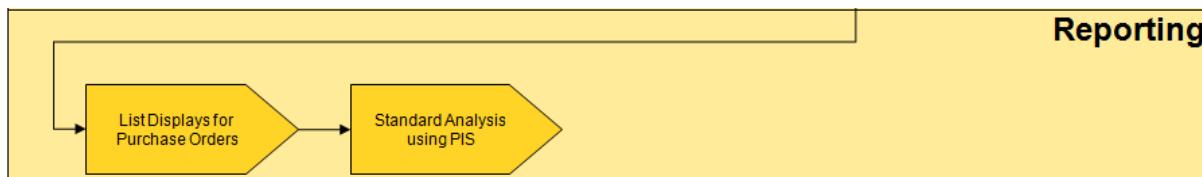


Figure 106: Process Overview – Reporting

### 6.2.1 List Displays for Purchase Orders

First of all, display all purchase orders of the past years for **purchasing organization 1000** and for **plant 1000**. Therefore, choose

***Logistics → Materials Management → Purchasing → Purchase Order → List Display → By Vendor (ME2L)***

1. Enter the following data on the initial screen:

- <b>Vendor</b>	<i>no entry</i>
- <b>Scope of list</b>	<i>BEST_ALV</i>
- <b>Purchasing group</b>	<i>no entry</i>
- <b>Plant</b>	<i>1000</i>
- <b>Purchasing organization</b>	<i>1000</i>
- <b>Document date</b>	<i>01.01.2003 until current date</i>

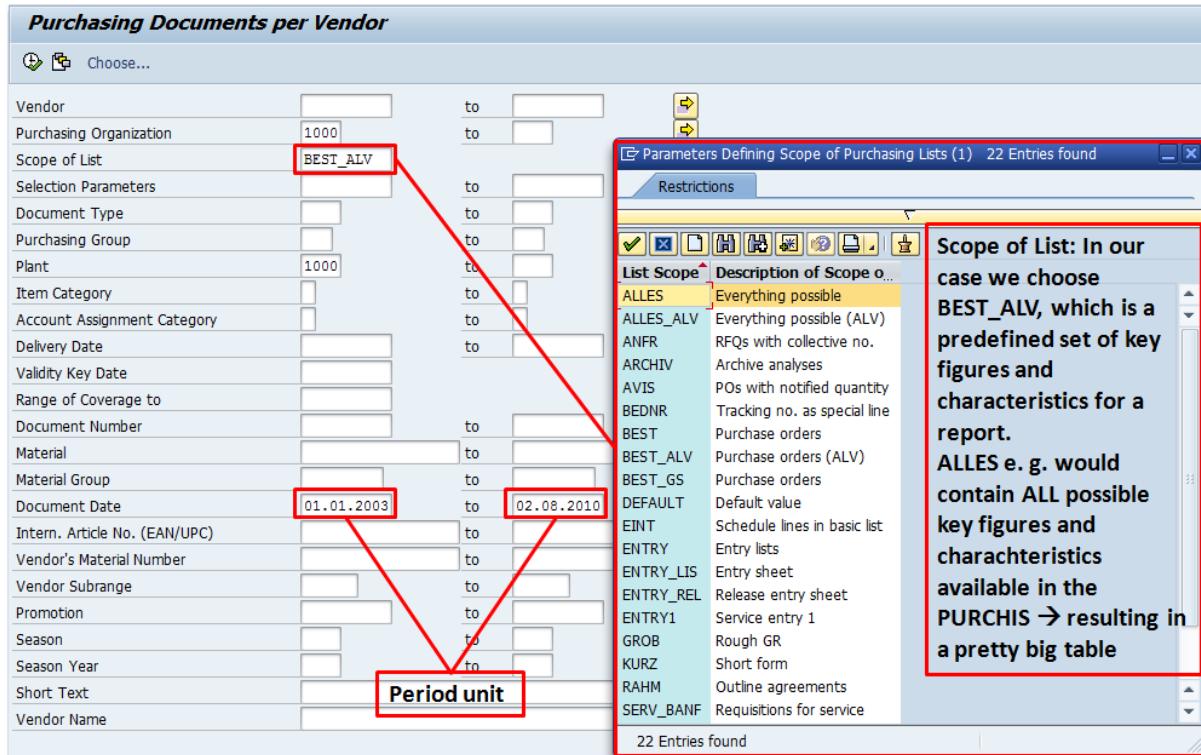


Figure 107: Selection Criteria for the Report: SAP-System-Screenshot

2. Select *Execute*.
3. You get a figure like this (or similar) with the list of all purchasing order documents of the past years.

Figure 108: Report for Purchase Orders

The list is sorted by vendor and purchasing document, but you want to create an output of the list sorted by vendor and material. Change the sort sequence and save this setting as user-specific layout **Layout-xxxy**.

1. Therefore, choose **Settings → Layout → Change**. Note that you must click in the header of the page once to have the menu displayed.
2. Choose the **sort order** tab.

3. Position your cursor on the purchasing document on the left hand side of the screen and choose **remove sort criterion** (►).

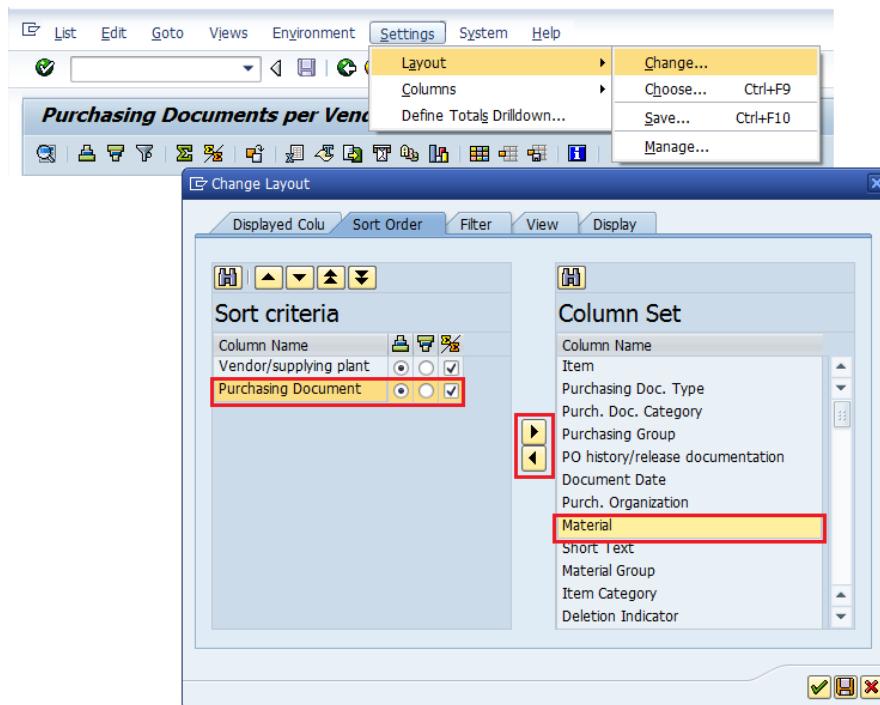


Figure 109: Remove Sort Criteria: SAP-System-Screenshot

4. Position the cursor on material in the right half of the screen and choose **add sort criterion** (◀).

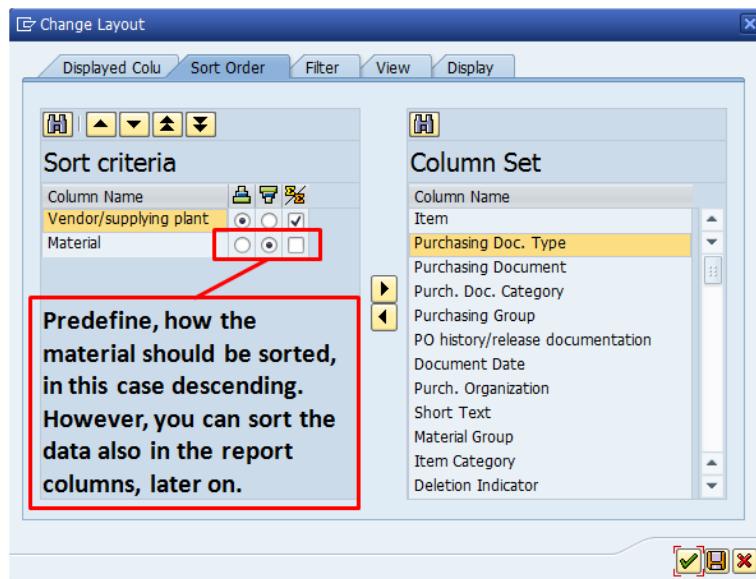


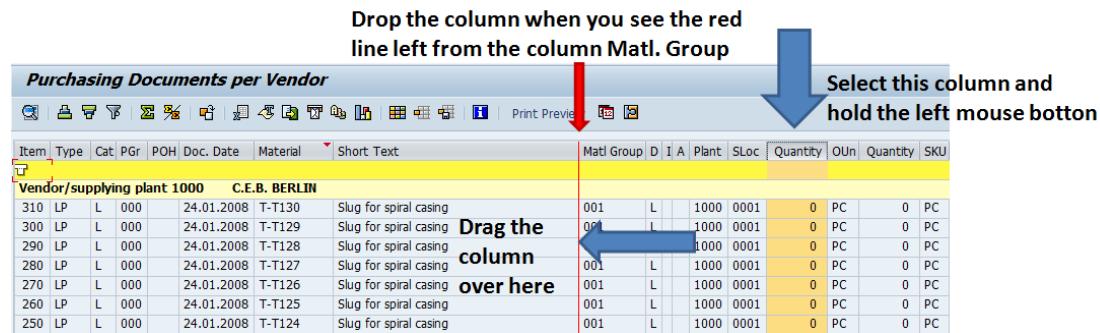
Figure 110: Add Sort Criteria: SAP-System-Screenshot

5. Choose **save layout** (□).
6. Enter the following data in the dialog box (save layout):
  - Save layout *Layout-xxxx*
  - Name *Layout-xxxx*

- Client-specific      *indicator selected*
  - Default-set      *indicator not selected*
7. Confirm two times with .

Furthermore, display the columns **order quantity** and **to be delivered** for each position left from the column **material group**.

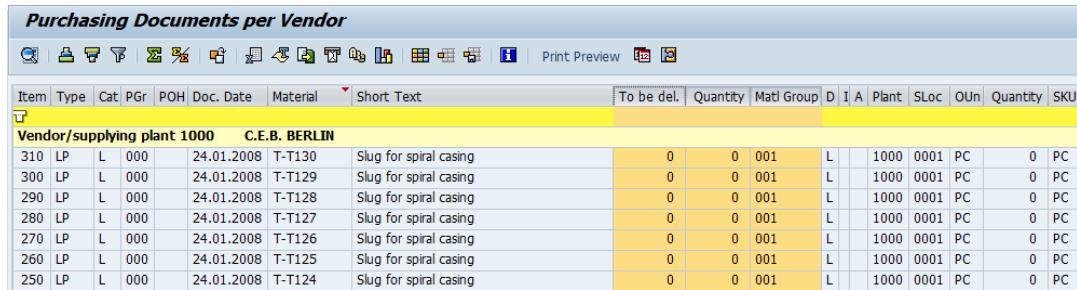
1. Choose the column Purchase Order Quantity (**Quantity**) and drag & drop it to the left, next to the column Material group (**Matl. Group**).



Item	Type	Cat	PGr	POH	Doc. Date	Material	Short Text	Matl Group	D	I	A	Plant	SLoc	Quantity	OUn	Quantity	SKU
<b>Vendor/supplying plant 1000 C.E.B. BERLIN</b>																	
310	LP	L	000	24.01.2008	T-T130	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		
300	LP	L	000	24.01.2008	T-T129	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		
290	LP	L	000	24.01.2008	T-T128	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		
280	LP	L	000	24.01.2008	T-T127	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		
270	LP	L	000	24.01.2008	T-T126	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		
260	LP	L	000	24.01.2008	T-T125	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		
250	LP	L	000	24.01.2008	T-T124	Slug for spiral casing	001	L	1000	0001	0	PC		0	PC		

Figure 111: Column Configuration (1): SAP-System-Screenshot

2. Repeat the last step for the column to be delivered (**To be del.**). The outcome should look like this:



Item	Type	Cat	PGr	POH	Doc. Date	Material	Short Text	To be del.	Quantity	Matl Group	D	I	A	Plant	SLoc	OUn	Quantity	SKU
<b>Vendor/supplying plant 1000 C.E.B. BERLIN</b>																		
310	LP	L	000	24.01.2008	T-T130	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		
300	LP	L	000	24.01.2008	T-T129	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		
290	LP	L	000	24.01.2008	T-T128	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		
280	LP	L	000	24.01.2008	T-T127	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		
270	LP	L	000	24.01.2008	T-T126	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		
260	LP	L	000	24.01.2008	T-T125	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		
250	LP	L	000	24.01.2008	T-T124	Slug for spiral casing	0	0	001	L	1000	0001	PC		0	PC		

Figure 112: Column Configuration (2): SAP-System-Screenshot

3. Choose **Settings → Layout → Save**. Choose your layout **Layout-xxyy** and choose  to save the changes in your layout.
4. In the next dialog box, choose **Yes**. Leave the report without further saving.

## 6.2.2 Standard Analyses using PIS

Finally, you will perform another analysis by the means of the purchasing information system (using the path **Logistics → Logistics Controlling**, you can find all info systems, which were explained in the theory chapter earlier in this section). You will now determine the vendors' volume of procurement in the company for the purchasing organization 1000. Therefore, choose

**Logistics → Logistics Controlling → Purchasing Information System → Standard Analyses  
→ Vendor (MCE3)**

- Enter the following data on the selection screen:

- **Purchasing organization** *1000*
- **months** *01.2004 – current date (e. g. 08.2010 for August)*
- Choose *Execute*.

- You get the following initial list (or similar to this one):

**Vendor Analysis (PURCHIS): Basic List**

No. of Vendor: 38

Vendor	PO value	Invoice Amount	Order quantity
Total	1024827.630,75 EUR	17.833.993,29 EUR	100289.026,400 ***
	0,00 EUR	0,00 EUR	1 KG
Tiedemeier Entsorg.	540,00 EUR	1.469,00 EUR	5.400 TO
KBB Schwarze Pumpe	92.343,82 EUR	59.991,40 EUR	1.844 PC
SMP	165.090,60 EUR	104.074,40 EUR	20.133 PC
AluCast	5.632,00 EUR	3.584,00 EUR	2.200,00 M2
C.E.B. BERLIN	418.267,46 EUR	406.100,00 EUR	661.000 ***
SKF Kugelmeier KGa	592.008,46 EUR	384.723,30 EUR	33.015 PC
Müller KG	9.700,00 EUR	0,00 EUR	1 AU
Gusswerk US	185.193,25 EUR	121.409,96 EUR	10.058 PC
Jones Ltd.	8.261,40 EUR	0,00 EUR	17.000 ***
PAQ Deutschland Gm	6.998.282,59 EUR	4.372.135,80 EUR	73.002 PC
Blacks AG	168.669,49 EUR	12.997,20 EUR	853.000 ***
Sunny Electronics	1.125.251,94 EUR	556.517,60 EUR	1.882 PC
SKF Americas	12.842.502,89 EUR	8.026.172,18 EUR	98.818.000 ***
Wollner AG	2.383.291,01 EUR	1.335.032,50 EUR	3.688 PC
Grosshandel-Baden	1.299.541,76 EUR	675.297,80 EUR	2.484 PC
Noe Tech Company A	0,00 EUR	0,00 EUR	0 PC
SEC System SA	1.102.031,81 EUR	524.876,40 EUR	1.463 PC
Jotachi Deutschlan	1.930.002,93 EUR	1.071.173,50 EUR	2.694 PC
ABC Dienstleistung	138.754,71 EUR	123.438,25 EUR	19 AU
Suppliers Inc.	14,86 EUR	0,00 EUR	4 PC
K.F.W. Berlin	237,65 EUR	0,00 EUR	2.450 PC
K.F.W. London	970.000.431,65 EUR	0,00 EUR	100004.450,000 ***
Schmalenbach	0,00 EUR	0,00 EUR	0 PC
Morel	1.815,00 EUR	0,00 EUR	136.000 ***
Antoni	550,00 EUR	0,00 EUR	95.000 ***
IDES Lieferrant	13.320,00 EUR	0,00 EUR	60 PC
Detroit Supplier I	228.949,47 EUR	0,00 EUR	12.298 PC
TOP Metallverarbei	2.007.592,00 EUR	0,00 EUR	285 PC
Metall Factory Inc	737.257,00 EUR	0,00 EUR	122 PC
High Tech Metall G	8.035.800,00 EUR	0,00 EUR	16.005,000 ***
IDES US Inc.	104.700,00 EUR	0,00 EUR	111 PC
Thomas	97,00 EUR	0,00 EUR	10 PC
<b>Taymaz Khatami</b>	<b>55.000,00 EUR</b>	<b>55.000,00 EUR</b>	<b>110 PC</b>
Attound Services	14.170.000,00 EUR	0,00 EUR	12.000
ISG Innovative Ser			
TP EU Supplier 1	240,00 EUR	0,00 EUR	20 KG
TP EU Supplier 02	240,00 EUR	0,00 EUR	20 KG

Figure 113: Purchase Order Values of Vendors: SAP-System-Screenshot

- In addition to the vendor name, you want to display the key for this attribute. Select the corresponding characteristic display by choosing **Settings → Characteristic Display → Key and Text**.

In case the column width is not sufficient, you can extend it by double-clicking the column header and entering a larger value for the column width.

The screenshot shows a table titled "Vendor Analysis (PURCHIS): Basic List". A context menu is open over the first column, with the option "Change column width" highlighted. A red box labeled "Key and Text displayed" points to the menu item. The table lists various vendors with their details like PO value, Invoice Amount, and Order quantity.

No. of Vendor: 38	Vendor	PO value	Invoice Amount	Order quantity
Total		29 EUR 100289.136,400 ***		
15	Tiedemeier Entsorgung GmbH	00 EUR 5,400 TO		
111	KBB Schwarze Pumpe	40 EUR 1.844 PC		
200	SMP	40 EUR 20.133 PC		
300	AluCast	00 EUR 2.200,00 M2		
1000	C.E.B. BERLIN	00 EUR 661,000 ***		
1001	SKF Kugelmeier KGaA	80 EUR 33.015 PC		
1002	Müller KG	9.700,00 EUR 0,00 EUR 1 AU		
1003	Gusswerk US	185.193,25 EUR 121.409,96 EUR 10.058 PC		
1004	Jones Ltd.	8.261,40 EUR 0,00 EUR 17,000 ***		
1005	PAQ Deutschland GmbH	6.998.282,59 EUR 4.372.135,80 EUR 73.002 PC		
1006	Blacks AG	168.689,49 EUR 12.997,20 EUR 853,000 ***		
1010	Sunny Electronics GmbH	1.125.251,94 EUR 556.517,60 EUR 1.882 PC		
1011	SKF Americas	12.842.502,89 EUR 8.026.172,18 EUR 98.818,000 ***		
1015	Wollner AG	2.383.291,01 EUR 1.335.032,50 EUR 3.688 PC		
1020	Großhandel-Baden USA	1.299.541,76 EUR 675.297,80 EUR 2.484 PC		
1021	Noe'Tech Company AG	0,00 EUR 0,00 EUR 0 PC		

Figure 114: Key and Text: SAP-System-Screenshot

4. Next, you need information about the **number of purchase order items** and the **number of deliveries**. Add these two key figures to the initial list. Therefore, choose **Edit → Choose Key Figures** from the menu.
- Select the key figures **PO items** and **Deliveries** and choose execute. Confirm your selection with **Enter**.

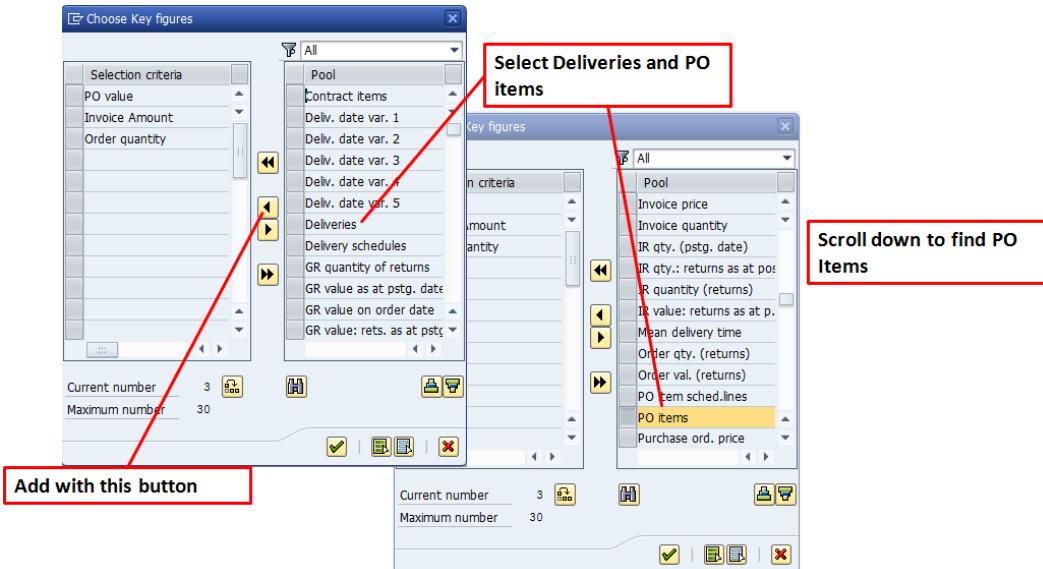


Figure 115: Key Figures Selection (1): SAP-System-Screenshot

- The **orders** and **deliveries** columns are displayed additionally in the initial list.

Vendor Analysis (PURCHIS): Basic List							
Vendor		PO value	Invoice Amount	Order quantity	Deliveries	Order items	
<b>Total</b>		1024882.630,75 EUR	17.833.993,29 EUR	100289.136,400 ***	1.723	1.884	
15	Tiedemeier Entsorgung GmbH	0,00 EUR	0,00 EUR	1 KG	1	1	
111	KBB Schwarze Pumpe	540,00 EUR	1.469,00 EUR	5,400 TO	1	2	
200	SMP	92.343,82 EUR	59.991,40 EUR	1.844 PC	22	22	
300	AluCast	165.090,60 EUR	104.074,40 EUR	20.133 PC	22	23	
1000	C.E.B. BERLIN	5.632,00 EUR	3.584,00 EUR	2.200,00 M2	22	22	
1001	SKF Kugelmeier KGaA	418.267,46 EUR	406.100,00 EUR	661,000 ***	5	16	
1002	Müller KG	9.700,00 EUR	0,00 EUR	1 AU	0	1	
1003	Gusswerk US	185.193,25 EUR	121.409,96 EUR	10.058 PC	132	132	
1004	Jones Ltd.	8.261,40 EUR	0,00 EUR	17,000 ***	2	4	
1005	PAQ Deutschland GmbH	6.998.282,59 EUR	4.372.135,80 EUR	73.002 PC	398	403	
1006	Blacks AG	168.689,49 EUR	12.997,20 EUR	853,000 ***	8	4	
1010	Sunny Electronics GmbH	1.125.251,94 EUR	556.517,60 EUR	1.882 PC	88	92	
1011	SKF Americas	12.842.502,89 EUR	8.026.172,18 EUR	98.818,000 ***	551	554	
1015	Wollner AG	2.383.291,01 EUR	1.335.032,50 EUR	3.688 PC	154	157	
1020	Grosshandel-Baden USA	1.299.541,76 EUR	675.297,80 EUR	2.484 PC	66	69	
1021	Noe'Tech Company AG	0,00 EUR	0,00 EUR	0 PC	0	0	
1025	SEC System SA	1.102.031,81 EUR	524.876,40 EUR	1.463 PC	44	46	
1030	Jotachi Deutschland AG	1.930.002,93 EUR	1.071.173,50 EUR	2.694 PC	88	92	
1101	ABC Dienstleistungen GmbH	138.754,71 EUR	123.438,25 EUR	19 AU	22	20	
1111	Suppliers Inc.	14,86 EUR	0,00 EUR	4 PC	0	1	
1234	K.F.W. Berlin	237,65 EUR	0,00 EUR	2.450 PC	9	3	
1235	K.F.W. London	970.000.431,65 EUR	0,00 EUR	100004.450,000 ***	6	5	

Figure 116: Key Figures Selection (2): SAP-System-Screenshot

Determine the most important **vendor** as measured by **order value**. For your strategy of analysis, please consider the percentage sum of the order value. Therefore, please perform an **ABC analysis** for the key figure **purchase order value**. Segment A is 70 %, segment B 20 % and segment C is 10 %. Check the complete list for the ABC analysis of the purchase order value. Which vendor has the highest purchase order value? List the answer on you data sheet.

- Position your cursor on the purchase order value (**PO Value**) column and choose **Edit → ABC analysis**.
- Choose the strategy **total PO value (%)** and confirm your selection with **enter**.
- Accept the proposed segment size.
- Choose **total list** in the graphical display **Graphic** to display the entire list of the ABC analysis.

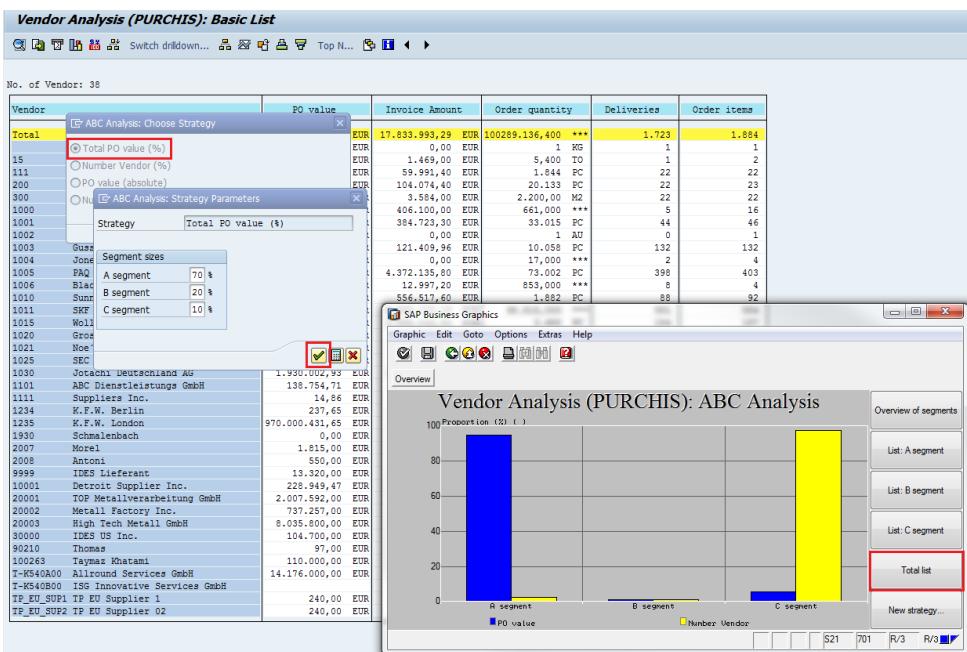


Figure 117: Purchasing Information System – ABC Analysis: SAP-System-Screenshot

Most important vendor: \_\_\_\_\_



*When you want to comprehend the results of your analysis, it is important to know the selection criteria of the analysis. This is why you should take a closer look at the selection protocol of the ABC analysis. If you want to display the selection log, you have to leave the ABC analysis dialog and return to the initial list. After that, choose Extras → Select Log.*

*A dialog window with the selection values is displayed. The **info structure** is S012 – purchasing. A vendor analysis was conducted in the purchasing information system.*

**Info structures** are database tables in which period-dependent data from the operative applications is updated. They consist of characteristics, which are suited for summarization (e.g., purchasing organization) and of key figures (e.g., revenue).

Exit the analysis without saving.

## 6.3 Elucidation



### What have we learned so far?

In this section you became acquainted with SAP's Logistics Information System and its subsidiary information systems. You have learned what a Report is, how it is created and adapted.

### 6.3.1 Standard Reports

- Each functional area has its own information system(s).
- Reporting in SAP enables the evaluation of business processes.
- During business processes (e.g., production process) documents (e.g., purchasing documents, material documents, invoice documents, accounting documents) are created and stored. These documents (the information in the documents) can be analyzed by using standard reports.
- SAP information systems enable both document analyses as well as analyses of master data.

#### 6.3.1.1 List Displays

- Lists are a graphically formatted way of displaying results of reports or analyses
- Using selection criteria like time period, etc., a report can be narrowed down to make results clear and informative
- List appearance can be set by means of **scope of the list** and **selection parameters**.
  - o **Selection parameters** determines what is analyzed, e.g., report containing only open purchase orders. Open purchase order would be a selection criterion in this case.
  - o **Scope-of-list parameters** determine which data is displayed. That means what key figures (the columns of a report) are analyzed according to the selection criteria selected.
  - o You can choose a list to be displayed in short form or a list to contain more information.

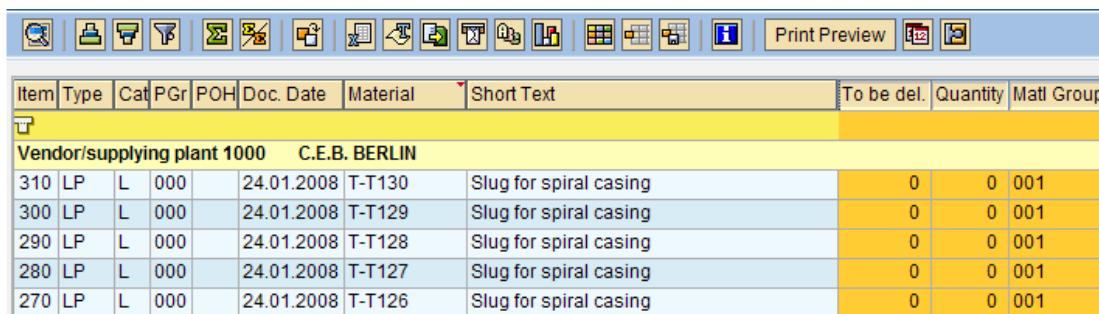
#### 6.3.1.2 SAP List Viewer and ALV Grid Control

- Two graphical display layout standards are available in reports:
  - o simple: SAP List Viewer
  - o more complex: ALV Grid Control
- A list in List Viewer format looks like the following (not many functions integrated in the table cells, still you can branch to details when double-clicking on a cell)

ABC ind.	Vendor		PO value
A	1235	K.F.W. London	970.000.431,65 EUR
C	T-K540A00	Allround Services GmbH	14.176.000,00 EUR
C	1011	SKF Americas	12.842.502,89 EUR
C	20003	High Tech Metall GmbH	8.035.800,00 EUR
C	1005	PAQ Deutschland GmbH	6.998.282,59 EUR
C	1015	Wollner AG	2.383.291,01 EUR

Figure 118: SAP List Viewer List: SAP-System-Screenshot

- A list with ALV Grid Control looks like this (way more functions like building the sum, etc., integrated):



The screenshot shows a SAP application window with a toolbar at the top containing various icons for navigation and printing. Below the toolbar is a header row with columns labeled: Item, Type, Cat, PGr, POH, Doc. Date, Material, Short Text, To be del., Quantity, and Matl Group. The main area displays a list of material documents. Each row contains information such as item number, type, category, purchase order header (POH), document date, material number, short text, quantity, and material group. The data rows show multiple entries for 'Slug for spiral casing' from different suppliers and dates.

Item	Type	Cat	PGr	POH	Doc. Date	Material	Short Text	To be del.	Quantity	Matl Group
<b>Vendor/supplying plant 1000 C.E.B. BERLIN</b>										
310	LP	L	000		24.01.2008	T-T130	Slug for spiral casing	0	0	001
300	LP	L	000		24.01.2008	T-T129	Slug for spiral casing	0	0	001
290	LP	L	000		24.01.2008	T-T128	Slug for spiral casing	0	0	001
280	LP	L	000		24.01.2008	T-T127	Slug for spiral casing	0	0	001
270	LP	L	000		24.01.2008	T-T126	Slug for spiral casing	0	0	001

Figure 119: SAP List with ALV Grid Control: SAP-System-Screenshot

- ALV Grid Control is not only used for list displays (e.g., the material document list in the figure above) but also in other transactions (e.g., purchase order – remember the display of the purchase order in transaction ME23n).
- Not all lists can employ the complete functionality of ALV Grid Control.
- Some lists feature special functions over and above the functionality of the List Viewers. They can modify appearance and content of lists by using the **layout** (display variant).

The key elements of **SAP List Viewer** and **ALV Grid Control** can be summarized as follows:

- identical appearance of all lists and tables
- inter-application, standardized functionality with homogeneous icons
- simple creation and change of layouts (display variants)

### 6.3.1.3 Functionality of the SAP List Viewers / ALV Grid Control

Main functions of **SAP List Viewer** and **ALV Grid Control** are:

- **Choose detail:** Double-clicking on an entry in a list cell leads you to details of that position.
- **Set filter:** A filter is used if you are only interested in particular data. For instance, filtering all purchase orders that have status *open* (filter: purchase order status = open).
- **Sort:** You can sort lists in ascending or descending order.
- **Add values:** You can create sums of one or more columns within a list.

- **Create subtotals:** In case you create a sum for at least one column in a list, you can create subtotals.
- **Layout:** You can modify the appearance of a list by using layouts or display variants.

#### 6.3.1.4 Layout (Display Variant)

The appearance of many lists can be changed and adjusted to special requirements by using **layouts** or **change variants**:

- display additional fields of the column or hide unwanted fields
- arrange fields in any order and can generate sums
- adjust the width of columns
- save modifications to a layout as user-specific layout or for multiple users
- SAP features standard layouts of some lists

### 6.3.2 Logistics Information System

- OLAP system (Online Analytical Processing): System used for analytical reporting only. Not a transactional system, thus, it features only reading of data, not writing.
- LIS features advanced analyses techniques.
- LIS contains a series of application-specific information systems with a standardized layout and similar functions:
  - o SIS – **Sales Information System**
  - o PURCHIS – **Purchasing Information System**
  - o INVCO – **Inventory Controlling**
  - o TIS – **Transportation Information System**
  - o SFIS – **Shop Floor Information System**
  - o QMIS – **Quality Management Information System**
  - o PMIS – **Plant Maintenance Information System**

#### 6.3.2.1 Organization of Information Structures

The **Purchasing Information System (PURCHIS)** is based on **information structures**.

- Information structures are special statistical tables containing transactional data from the particular applications.
- The system regularly collects and updates these data.

**Information structures** contain three basic **information types**:

- **Characteristics** are criteria that are interesting for an analysis, e.g., vendor, customer, material.
- **Period units** are criteria of type within a day, a week, a month or a posting period.
- **Key figures** are columns of the report and thus represent the values (quantitative numbers) in the cells analyzed for each characteristic combination and periodicity. They provide information about measureable facts.

### 6.3.2.2 Reporting in Standard Analyses

- **Standard analyses** are predefined reports that you can use without creating your own one.
- They feature extensive functions to create presentations and analyses based on the data basis in the LIS.
- A data basis for a standard analysis is determined by establishing an **object of analysis** (e.g., purchasing group, vendor, material group) and by specifying **selections (scope of list)**.
- Initial list is displayed after executing the report.
- List entries can be **drilled-down** (elements of the initial list can be extended by double-clicking them) to gather further information about a particular element.
- Set of functions including graphics available for in-depth analysis of key figures and characteristic attributes.

### 6.3.2.3 Flexible Analyses

- **Flexible analyses** in LIS allow you to determine the way in which data should be combined in an individual report.
- Contents and appearance can be customized with the appropriate menu.
- The resulting list offers several options for interactive on-line processing.

Key features:

- Combination of characteristics and key figures resulting from different information structures of a particular list.
- Use of own formulas for calculating new key figures based on already given key figures.
- Choice of available layouts.

## 7 Data Sheet

Congratulations! You completed the **procurement** case study.

The subsequent case studies are based on the results of this case study. In case your data differs from the description in the script, please contact your tutor prior to processing another case study.

Finally, please **submit the carefully completed data sheet** to your tutor (use support email address from the welcome mail) for the case study **procurement**.

Please comply with the naming rules. Non-compliant data sheets will not be accepted; i.e., rename the document that you downloaded from this course's download area as follows:

**01-procurement-xxyy-zzz-surname.doc**

Thereby, you need to replace **xxyy** with your user number **without** the “**WIP**“ and without the hyphen (WIP-xx-yy) and replace **zzz** with the number of the client you are working on.

Example:

Your name is **Max Mustermann**, you are working on **client 901**, and your **user number is WIP-99-99**. Then, name the document as follows:

**01-procurement-9999-901-Mustermann.doc**

## 8 Reflexion



Test your knowledge. In this section you are confronted with some question regarding the theoretical chapters of this teaching unit. Try to answer the questions on your own before taking a look at the standard solutions.

### 8.1 Questions

#### General questions concerning organizational levels in procurement processes

1. List the organizational levels that are relevant to the procurement process.

---

---

2. Can a plant belong to more than one company code?

---

---

3. Can you use the same storage location number in more than one plant?

---

---

4. You already know that vendor master data is maintained on the basis of different organizational levels. For which organizational levels do you enter data in the vendor master record?

---

---

#### True or False?

5. A purchasing organization can procure material or services for only one plant.

---

6. A purchasing organization is always assigned to exactly one plant.

---

7. A purchasing group is always responsible for only one purchasing organization.

---

8. Creating a master record for a vendor requires the immediate entry of all relevant data for purchasing and accounting in one single step.

---

9. A company code has to be assigned to a purchasing organization.

---

10. What field in the Vendor Master Data facilitates the integration from the Vendor Master record to Financial Accounting?

---

**Close text**

11. Without specifying a \_\_\_\_\_, no goods movements can be entered.

12. Clients, \_\_\_\_\_ and \_\_\_\_\_ are examples of organizational levels being important for maintaining material master records.

**Multiple Choice Questions**

13. What are the effects of entering a goods receipt against a purchase order?

(3 correct answers)

- a. The purchase order is deleted.
- b. An accounting document can be generated.
- c. For each item, a material document is created.
- d. The purchase order history is updated for each order item.
- e. A material document is created.
- f. A credit item is created automatically for the vendor on the amount of the delivery value.

14. Which of the following statements about Purchasing Organization are correct?

(2 correct answers)

- a. Negotiates Conditions of purchase with vendors.
- b. Must only purchase for one Company.
- c. Can purchase for multiple plants.
- d. Identifies a buyer or group of buyers.

15. What organization elements control(s) the entry of the financial data view for a vendor?

(1 correct answers)

- a. Client
- b. Client and Company Code
- c. Client and Purchasing Organization
- d. Client, Company Code and Purchasing Organization
- e. Company Code

16. What information can be maintained on a Purchasing Info Record?

(3 correct answers)

- a. Freight and Discounts

- b. Vendor Material Number
  - c. Vendor Address
  - d. Texts
17. Which item category would you use to have the vendor ship the goods directly to a customer?
- (1 correct answer)
- a. Standard
  - b. Consignment
  - c. Third Party
  - d. Stock Transfer
  - e. Services
18. Which statements about Purchase Order based Invoice Verification are true?
- (2 correct answers)
- a. Invoices for quantities greater than the goods receipt quantity cannot be posted.
  - b. Invoices for purchases orders with no receipts may be posted.
  - c. A Delivery note must be posted prior to the invoice is settled
  - d. A purchase order with 3 lines and only one line received can be fully paid.
19. Which of the following are Material Types?
- (5 correct answers)
- a. Equipment
  - b. Trading Good
  - c. Raw Material
  - d. Finished Good
  - e. Intra Material
  - f. Asset
  - g. Semi-finished Good
20. What are required assignments of organizational data for a purchase order (header/item)?
- (4 correct answers)
- a. Company Code (**Header**)
  - b. Purchasing Organization (**Header**)
  - c. Purchasing Group (**Header**)
  - d. Plant (**Item**)
  - e. Storage Location (**S. loc. Is not required for PO but is for GR**)
21. Which of the following Organizational Units are used in purchasing?
- (3 correct answers)
- a. Purchasing Group
  - b. Plant
  - c. Business Area
  - d. Cost Center
  - e. Purchasing Organization

22. Which of the following are item categories?

(3 correct answers)

- a. Subcontracting
- b. Consignment
- c. Network PO
- d. Third Party

23. Which kind of Business Process follows Invoice Verification?

(2 correct answers)

- a. Goods Receipt is deleted
- b. Moving average price is updated
- c. Vendor Master updated
- d. Invoice document is in PO history

24. What are the impacts of a Goods Receipt?

(3 correct answers)

- a. Posts material document
- b. Always result in the creation of a transfer order for WM
- c. Has an integration FI
- d. Updates the PO History

25. Purchase requisition can be created by the following:

(3 correct answers)

- a. Automatically via MRP
- b. Automatically via Goods Verification
- c. Automatically via other internal logistics orders
- d. Manually

26. For which of the following scenarios can you have a cross-plant purchasing organization buy materials?

(Choose the correct answer)

- a. All plants in one company code
- b. Only one plant
- c. All plants in all company codes

27. What accounts are impacted in FI as the result of a GR?

(2 correct answers)

- a. Account Payable Reconciliation
- b. Inventory Account
- c. Goods Receipt/Invoice Receipt Account
- d. Vendor Account

## 8.2 Standard Solution

### General questions concerning organizational levels in procurement processes

1. List the organizational levels that are relevant to the procurement process.

- *client*
- *company code*
- *plant*
- *storage location*
- *purchasing organization*

2. Can a plant belong to more than one company code?

No!

3. Can you use the same storage location number in more than one plant?

*Yes, despite of identical storage location number or storage location name, respectively, the storage locations are independent organizational units with individual inventory management.*

4. You already know that vendor master data is maintained on the basis of different organizational levels. For which organizational levels do you enter data in the vendor master record?

*Answer: You enter data for the organizational levels client, company code, purchasing organization in the vendor master record.*

### True or False?

5. A purchasing organization can procure material or services for only one plant.

*False → cross-plant and cross-company code purchasing!*

6. A purchasing organization is always assigned to exactly one plant.

*False → cross-plant and cross-company code purchasing!*

7. A purchasing group is always responsible for only one purchasing organization.

*False!*

8. Creating a master record for a vendor requires the immediate entry of all relevant data for purchasing and accounting in one single step..

*False → SAP ERP additionally offers the possibility of de-central vendor master record maintenance. Purchasing and accounting views can be maintained separately.*

9. A company code has to be assigned to a purchasing organization.

*False → cross-company code purchasing!*

10. What field in the Vendor Master Data facilitates the integration from the Vendor Master record to Financial Accounting?

**Reconciliation Account**

### Close text

11. Without specifying a **transaction type**, no goods movements can be entered.

12. Clients, **plant** and **storage location** are examples of organizational levels being important for maintaining material master records.

### Multiple Choice Questions

13. What are the effects of entering a goods receipt against a purchase order?

(3 correct answers)

- a. The purchase order is deleted.
- b. An accounting document can be generated.
- c. For each item, a material document is created.
- d. The purchase order history is updated for each order item.
- e. A material document is created.
- f. A credit item is created automatically for the vendor on the amount of the delivery value.

**Answers:** b, d, e,

14. Which of the following statements about Purchasing Organization are correct?

(2 correct answers)

- a. Negotiates Conditions of purchase with vendors.
- b. Must only purchase for one Company.
- c. Can purchase for multiple plants.
- d. Identifies a buyer or group of buyers.

**Answers:** a, c

15. What organization elements control(s) the entry of the financial data view for a vendor?

(1 correct answers)

- a. Client
- b. Client and Company Code
- c. Client and Purchasing Organization
- d. Client, Company Code and Purchasing Organization
- e. Company Code

**Answer:** b

16. What information can be maintained on a Purchasing Info Record?

(3 correct answers)

- a. Freight and Discounts
- b. Vendor Material Number
- c. Vendor Address
- d. Texts

**Answers: a, b, d**

17. Which item category would you use to have the vendor ship the goods directly to a customer?

(1 correct answer)

- a. Standard
- b. Consignment
- c. Third Party
- d. Stock Transfer
- e. Services

**Answer: c**

18. Which statements about Purchase Order based Invoice Verification are true?

(2 correct answers)

- a. Invoices for quantities greater than the goods receipt quantity cannot be posted.
- b. Invoices for purchases orders with no receipts may be posted.
- c. A Delivery note must be posted prior to the invoice is settled.
- d. A purchase order with 3 lines and only one line received, can be fully paid.

**Answers: b, d**

19. Which of the following are Material Types?

(5 correct answers)

- a. Equipment
- b. Trading Good
- c. Raw Material
- d. Finished Good
- e. Intra Material
- f. Asset
- g. Semi-finished Good

**Answers: b, c, d, e, g**

20. What are required assignments of organizational data for a purchase order (header/item)?

(4 correct answers)

- a. Company Code (**Header**)
- b. Purchasing Organization (**Header**)
- c. Purchasing Group (**Header**)
- d. Plant (**Item**)
- e. Storage Location (**S. loc. Is not required for PO but is for GR**)

**Answers: a, b, c, d**

21. Which of the following Organizational Units are used in purchasing?

(3 correct answers)

- a. Purchasing Group
- b. Plant
- c. Business Area
- d. Cost Center
- e. Purchasing Organization

**Answers: a, b, e**

22. Which of the following are item categories?

(3 correct answers)

- a. Subcontracting
- b. Consignment
- c. Network PO
- d. Third Party

**Answers: a, b, d**

23. Which kind of Business Process follows Invoice Verification?

(2 correct answers)

- a. Goods Receipt is deleted
- b. Moving average price is updated
- c. Vendor Master updated
- d. Invoice document is in PO history

**Answers: b, d**

24. What are the impacts of a Goods Receipt?

(3 correct answers)

- a. Posts material document
- b. Always result in the creation of a transfer order for WM
- c. Has an integration FI
- d. Updates the PO History

**Answers: a, c, d**

25. Purchase requisition can be created by the following:

(3 correct answers)

- a. Automatically via MRP
- b. Automatically via Goods Verification
- c. Automatically via other internal logistics orders
- d. Manually

**Answers: a, c, d**

26. For which of the following scenarios can you have a cross-plant purchasing organization buy materials?

(Choose the correct answer)

- a. All plants in one company code
- b. Only one plant
- c. All plants in all company codes

**Answer: a**

27. What accounts are impacted in FI as the result of a GR?

(2 correct answers)

- a. Account Payable Reconciliation
- b. Inventory Account
- c. Goods Receipt/Invoice Receipt Account
- d. Vendor Account

**Answers: b, c**