

ERP[®]
STUDENTS

Script 1: Source-to-Pay Business Process

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1 Source-to-Pay Business Process

This teaching unit explains the Source-to-Pay business process in the Material Management Application (SAP MM). We will show how SAP has implemented the central functionalities that are required to accomplish organizational purchasing. Thereby, we will focus on the Source-to-Pay business process that integrates different application areas of SAP MM. First, the organizational units and master data that are relevant to SAP MM are explained. Then we will focus on the Source-to-Pay business process and explain how purchasing is implemented in SAP MM. Furthermore, integration points to other SAP applications are illustrated.

Educational Objectives in this Unit:

After this teaching unit, you will be able to:

- explain the organizational levels that are relevant for the Source-to-Pay business process
- explain the master data that is used by the Source-to-Pay business process including the following elements:
 - o material master data
 - o vendor master data
 - o purchasing info records and conditions
- run the Source-to-Pay business process for stock and consumable materials including the following elements:
 - o purchase requisitions
 - o purchase orders
 - o goods movement (with quality inspection)
 - o invoice receipt
 - o vendor payment
- identify different stock types
- describe important interfaces with other SAP processes and applications
- list tools for analyses and reporting in the Source-to-Pay business process

Scenario for the Case Study

GBI is a worldwide successfully operating company 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 product range. The 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 system.

In the following figure, you can see the entire end-to-end business process, which you will independently accomplish in the practice chapters of this teaching unit. The color-coded process steps show that the main part of the Source-to-Pay business process takes place in the Materials Management (MM) application of the SAP system (blue = SAP MM; blue/grey = Logistics

Information System). The only exceptions are the red-colored process steps, which are subject to Financial Accounting (SAP FI) and the Accounts Payable Information System (APIS).

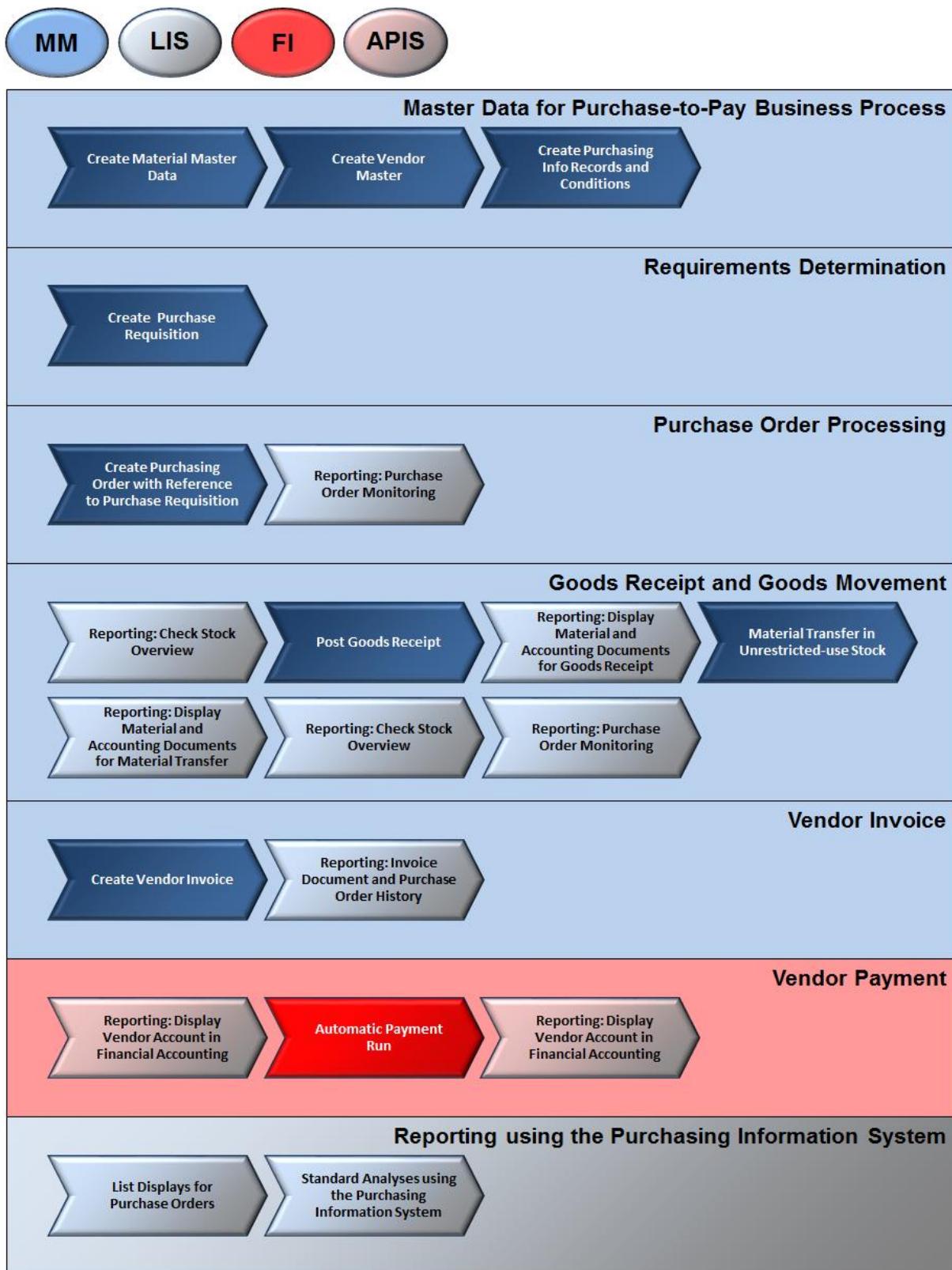


Figure 1: Process Overview: Source-to-Pay Business Process

2 Basic Data of Source-to-Pay Business Process

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

2.1 Theory: Organizational Levels in the Source-to-Pay Business Process

**THEORY**

In the introductory teaching unit of this course, you have already become acquainted with the main organizational units of the SAP system. For instance, these were the client, company codes, plants, sales organizations, etc. In the following, organizational units that are relevant for the Source-to-Pay business 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 systems, 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 a business processes without specifying the organizational levels responsible for the business activities.

The first step in the implementation process of an SAP 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 Source-to-Pay business process is part of the functional area Material Management (SAP MM) of SAP, which is a sub-component of the logistics application in the SAP system.

**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 MM provides all the functions to ensure the seamless integration of all relevant company departments and external suppliers (vendors) in the procurement process.

This section gives you an overview of the organizational model of SAP MM. There are several organizational levels that are relevant for SAP MM but primarily belong to other applications of the SAP system. Those organizational levels are explained first. Thereafter, the organizational levels that are only relevant for Materials Management and particularly belong to the SAP MM component Purchasing are described.

2.1.1 Source-to-Pay: General Organizational Levels for Purchasing

As mentioned before, the Source-to-Pay business process takes place in the SAP application SAP MM (Material Management). Correspondingly, all of its components are modeled in the material management area, which logically is part of logistics in the SAP system. The following organizational levels are relevant for the Source-to-Pay business process but do not belong to

SAP MM but to other SAP application. This constitutes one integration aspect of the SAP system as data created in one application (e.g., SAP MM) has also impact on other SAP application (e.g., SAP FI - Financial Accounting).

The following figure displays the organizational levels that are relevant to the Source-to-Pay business process but do not primarily belong to the SAP MM application. You already know them from the introduction script part. 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 Source-to-Pay business process.

For instance, the company code is relevant for any value-based postings that occur in the Source-to-Pay business process. For instance, when a goods receipt for a purchase order is posted, the value increase is booked on specific accounts of the general ledger in **Financial Accounting**. **Inventory Management** is also relevant to the Source-to-Pay business 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.

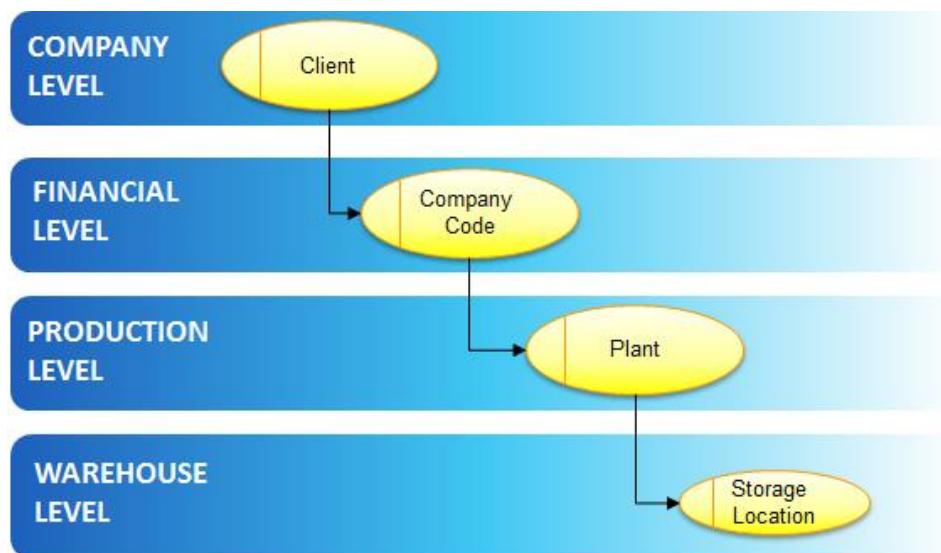


Figure 2: Source-to-Pay: Relevant Organizational Levels

Client

A **Client** is the highest-level organizational unit in the organizational hierarchy of a SAP system and depicts an independent environment with its own set of tables and data, which are separate from other clients. Each SAP system can host multiple clients. Clients are identified through their three-digit client number (e.g., 700). Each client represents the enterprise, company, or business depending on the size. Thus, a client is an organizationally, legally, and data model-wise distinct unit.

For instance, the GBI Company is mapped within a client. All other organizational units (such as company code, plant, sales organization, etc.) are mapped within the client, making the client a self-contained entity in legal and organizational terms. Data-wise the client is also self-contained as all business data (master data and transactional data) is stored in client-specific database tables that are separated from other clients of the SAP system and cannot be accessed from other clients. Thus, all data that is created on client-level applies to all other organizational units in the client (e.g. company code or plant). This ensures data integrity and prevents

duplicate data in the client. For instance, a customer (customer master data) can only exist once in a client.

You log on to a SAP system with a user and password and by specifying the client you want to access. Users and access authorizations are maintained on client level. The authorizations that are assigned to a user determine which applications and transactions a user can access. For instance, a user (employee) from the financial accounting department may not access transactions of the human resources application (SAP HCM).

Company Code

Company structure determines whether a self-contained set of accounts is required for external reporting purposes or not. Therefore, SAP features the **Company Code** as an organizational level. It is the smallest organizational unit for which a self-contained set of books (balance sheet) is possible according to commercial law. A complete profit and loss statement can be issued. If a business organization consists of more than one company (i.e., a group), company codes depict the individual companies of the group from accounting point of view.

The company code is the central organizational element of **Financial Accounting**. However, it is relevant to almost any process in an SAP system, since most processes influence the accounting of the company. Thus, the company code is also relevant for **SAP MM**. For instance, in the Source-to-Pay process you purchase materials from a vendor. Upon receiving the materials, a goods receipt is posted. The goods receipt updates the inventory stock of this material on a quantity basis and a value basis. While the quantity update is posted on plant/storage location level, the value update occurs on accounts in financial accounting that are subject to the responsible company code.

You can create multiple company codes within an SAP client, if the organizational model of the company requires that. Each company code possesses its own set of accounting books (so called ledgers: general ledger and sub-ledgers). Company codes are identified through their client-wide unique four-character alpha-numeric key (e.g., US00, DE00).

The GBI, for instance, has two company codes – one for the US headquarters (US00) and one for the German subsidiary (DE00). It is necessary to separate the two company parts from the point of view of financial accounting since each country has its own laws regarding financial statements and taxes.

Plant

From a logistical point of view, **Plants** structure a company in organizational terms, i.e., it distinguishes between different operating areas. A plant is used as a manufacturing facility for procurement, maintenance, planning locations, and/or distribution centers. From a commercial point of view, a plant is a branch.

The plant is the central organizational unit in logistics. In **SAP MM**, plants are particularly used for material planning purposes. For instance, consumption-based planning takes place on the level of a plant. Furthermore, as a warehouse distribution center, a plant is in charge of preparing goods for sales and distribution and, thus, relevant for goods issue postings of SAP MM. You can create multiple plants within an SAP client, if the organizational model of the company requires that. A plant has a client-wide unique identification key by means of a four-character alphanumeric key (e.g. HH00, HD00).

A plant must be assigned to a company code for financial accounting relevant processes (e.g., material valuation, production activity costing, etc.). Thereby, a plant is assigned to exactly one company code, while a company code can be responsible for multiple plants (**1:N**).

The GBI, for instance, has three plants in the USA and two plants in Germany. Thereby, each plant has multiple Storage Locations assigned for different purposes.



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 in a business transaction, you simultaneously specify the company code.

NOTE

Storage Location

A **Storage Location** is an organizational unit that enables differentiation between various material stocks within a plant. Thereby, storage locations can differentiate the stocks according to a location within a plant (storage locations FG00, TG00, etc.) and stock type (quality inspection stock, unrestricted-use stock, blocked stock, etc.). Quantitative inventory management, which is a function of **SAP MM**, is conducted on the storage location level. That is, inventory management and the physical inventory are carried out on a quantity basis within a plant at the level of a storage location.

You can create multiple storage locations **within a plant** (1:N), if the organizational model of the company requires that. A storage location has a unique identification key by means of a four-character alphanumeric key (e.g., FG00, TG00) **within a plant**. However, different plants (e.g., DL00, SD00) can contain storage locations with the same key (e.g. FG00).

Each GBI plant, for instance, contains several storage locations. Each storage location is used for a certain purpose within its plant. For instance, in plant DL00 (Dallas), storage location FG00 is used to store materials under the category of Finished Goods.

GBI Example: General Organizational Model

The following figure displays the organizational levels relevant to the procurement process using the example of our model company GBI.

Organizational units represent the legal and/or organizational views of the enterprise. When a SAP system is implemented in a company, the company structure is mapped into the SAP system based on the organizational model and the business processes of the company. The structure of a company is created by defining the individual organizational units and assigning them 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 700) 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 Dallas, unique key DL00). 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.

In the image, you can see a fraction of the GBI model company in which, among others, the following cases are set:

- **Company code US00** Global Bike Inc. represents the corporate headquarters of GBI USA in Dallas.
- Company code US00 encompasses the **plants DL00** (Dallas), **MI00** (Miami), and **SD00** (San Diego).
- Multiple **storage locations** (**FG00**, **TG00**, etc.) are assigned to each plant. Storage locations must have a unique four-digit alphanumeric key **within a plant** but the same storage location name can be used in several plants.

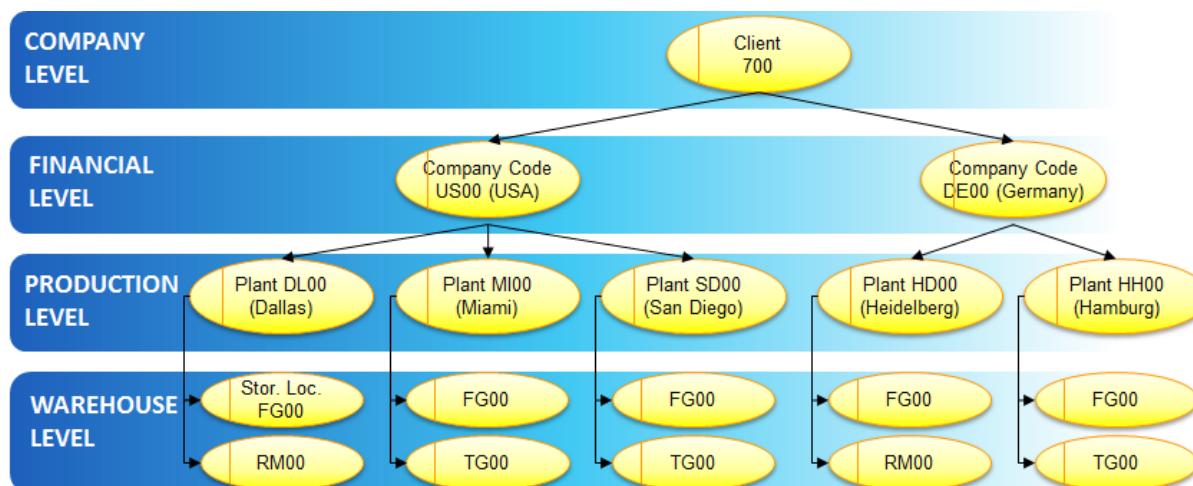


Figure 3: Relevant Organizational Levels in the Source-to-Pay Business Process

2.1.2 Source-to-Pay: Specific Organizational Levels for Purchasing

Besides the before mentioned organizational levels, there are two organizational levels that are only relevant for the Purchasing component of SAP MM: **Purchasing Organization** and **Purchasing Group**. That is, their main function is located in the procurement department and thus in the procurement application.

Purchasing Organization

A **Purchasing Organization** is an organizational unit of logistics that is responsible for procuring materials or services for one or multiple plants or company codes and, thus, subdivides the enterprise according to the purchasing requirements. It is the central instance for negotiating general conditions of purchase and procurement terms with vendors (suppliers). Thereby, purchasing organizations assume legal responsibility for all external purchase transactions.

Purchasing Group

A purchasing organization can logically be further subdivided into purchasing groups (buyer groups). Purchasing groups are then responsible for certain purchase activities on day-to-day basis. Thereby, the purchasing group can be seen as a communication channel to suppliers. For instance, a purchasing group can be internally responsible for procuring a material or a class of materials. Externally the group acts as the contact person for vendors that sell the materials or class of materials.

Consider that purchasing groups are not organizational units in the narrow sense. It is rather a label that is assigned to particular materials or material classes. Consequently, in the organizational model purchasing groups are not assigned to other organizational units. For instance, a purchasing group like N00 (North America) can be assigned to the material tire by entering N00 in the material master of this material. With this setting, the specified purchasing group is then responsible for all purchasing activities for this material. Since purchasing groups are assigned to materials directly, they can also act for several purchasing organizations and no assignment to a specific purchasing organization is established.

Setting up Enterprise Purchasing

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.

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. SAP provides three different variants of how purchasing organization can be assigned to the company structure. All three variants may occur within one enterprise at the same time. The three variants can be differentiated as plant-specific, cross-plant and cross-company code purchasing:

1. Plant-specific Purchasing Organization

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

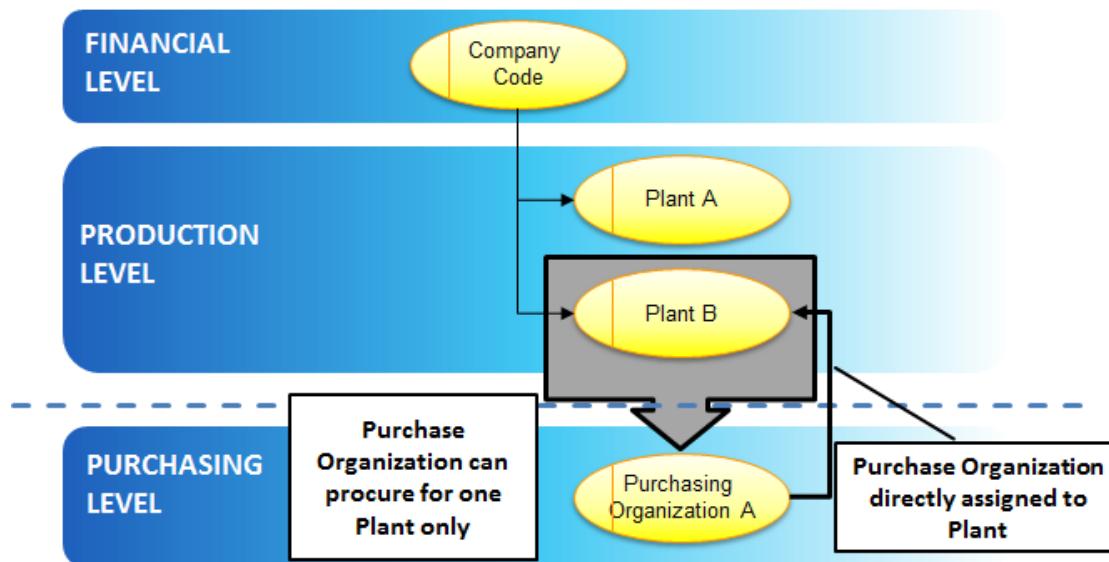


Figure 4: Plant-Specific Purchasing Organization

2. 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 first be assigned to **exactly one company code**. Then the company code is assigned to the plants for which the purchasing organization should be responsible.

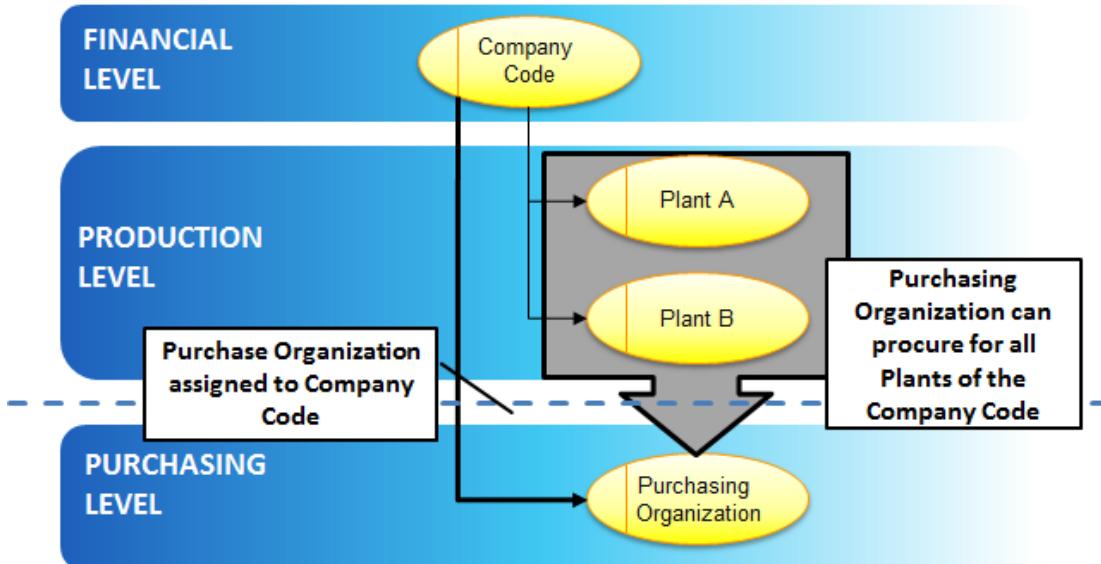


Figure 5: Cross-Plant Purchasing Organization

3. 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 for which the particular purchasing organization is to be used, the system prompts you to enter the company code manually for which the order is processed.

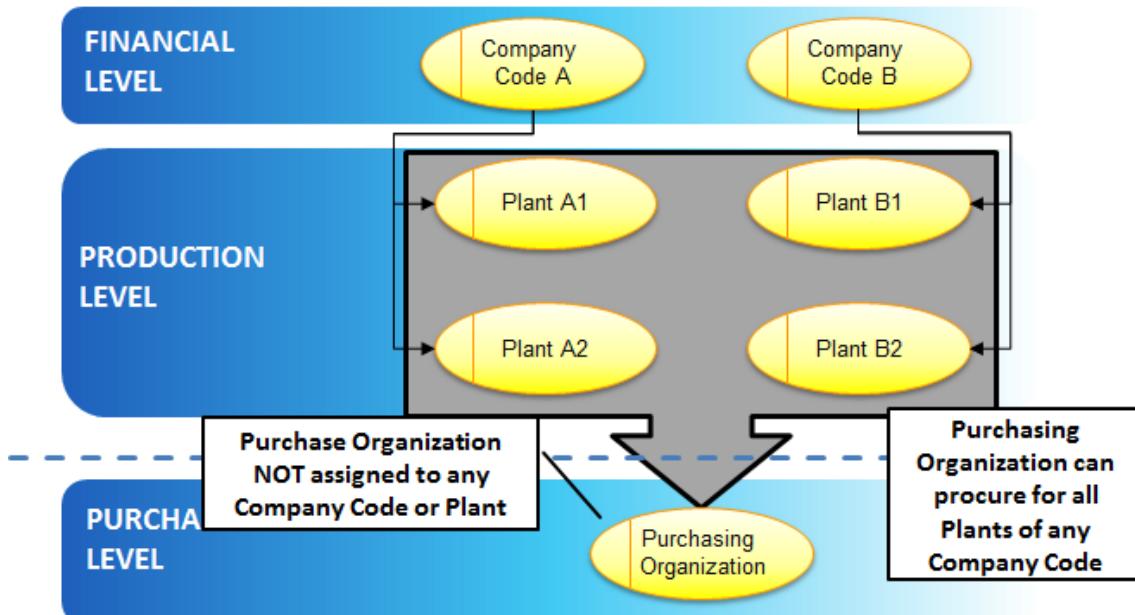


Figure 6: Cross-Company Code Purchasing Organization

GBI Example: Organizational Model in Purchasing

The following figure displays the GBI organizational model for USA. You can see that the GBI has three purchasing organizations:

- Purchasing organization **US00** is used in a *cross-plant* purchasing scenario. Thereby, plants DL00 (Dallas), MI00 (Miami), and SD00 (San Diego) are all assigned to the purchasing organization US00.

- Purchasing organization **US00** is also used in a *cross-plant* purchasing organization scenario. Therefore, the purchasing organization US00 is uniquely assigned to the company code US00 and thus, can purchase for all plants of this company code. Since, company code US00 has only the three above listed plants, both scenarios are identical in this case.
- Purchasing organization **GL00** (Global) is not assigned to any company code nor to any plant. It can, therefore, accomplish purchasing activities world-wide and, thus, for all company parts (Germany and USA).

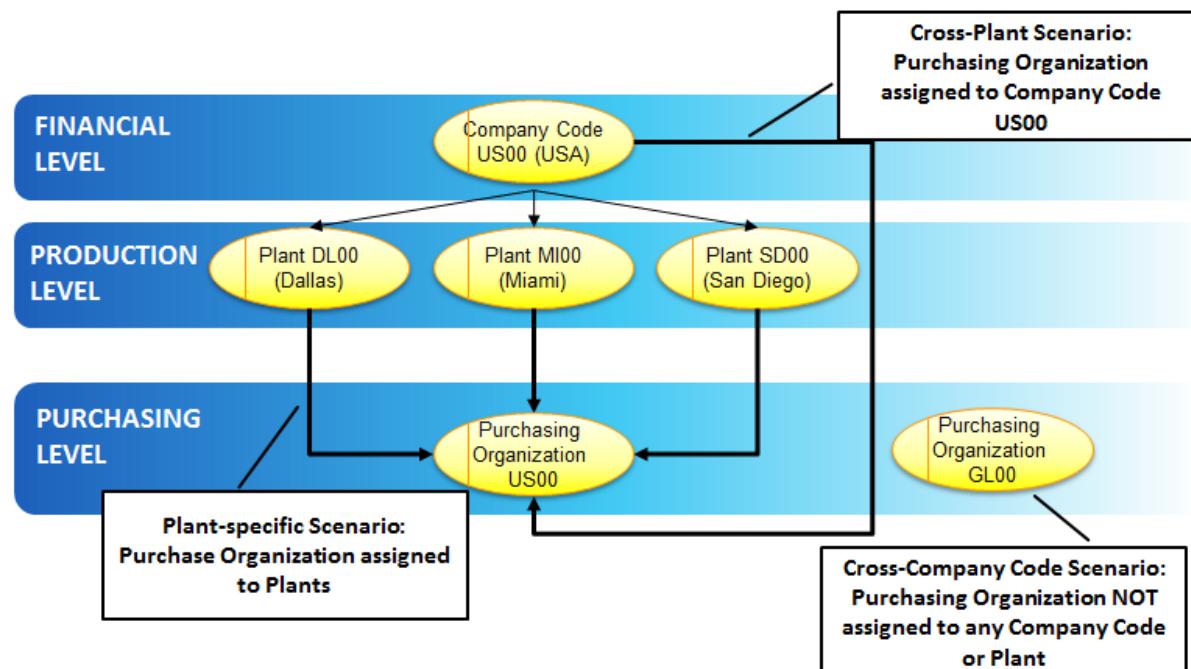


Figure 7: Organizational Model in Materials Management

2.2 Excusus: Organizational Levels of GBI

**EXCUSUS**

This chapter will clarify aspects of the SAP organizational model. Additionally, you will learn how organizational units and their interrelations are represented in SAP. This section is not relevant to the final certification exam by SAP SE; 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 system. Therefore, the model company GBI was completely modeled and customized in an SAP system. Only after customizing is complete the SAP system can carry out routine tasks. The case studies you will work on represent those routine 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 of these "objects" must have been created and the technical system settings must have been maintained prior to "running" that process in a company.

At this point, you will (merely) get a brief introduction into customizing of the company organization. If you are further interested in detailed information about customizing in the SAP system, please refer to the courses "***Introduction in SAP S/4HANA Customizing***" and "***Advanced SAP S/4HANA Customizing***".

2.2.1 Implementation Guide

Customizing processes aim at:

- aligning the company-neutral and industry-specific functionalities of SAP 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 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 system needs for customizing, system development and system monitoring. The following figure displays the Easy Access Menu in the classic SAP GUI and the new SAP Fiori UX.

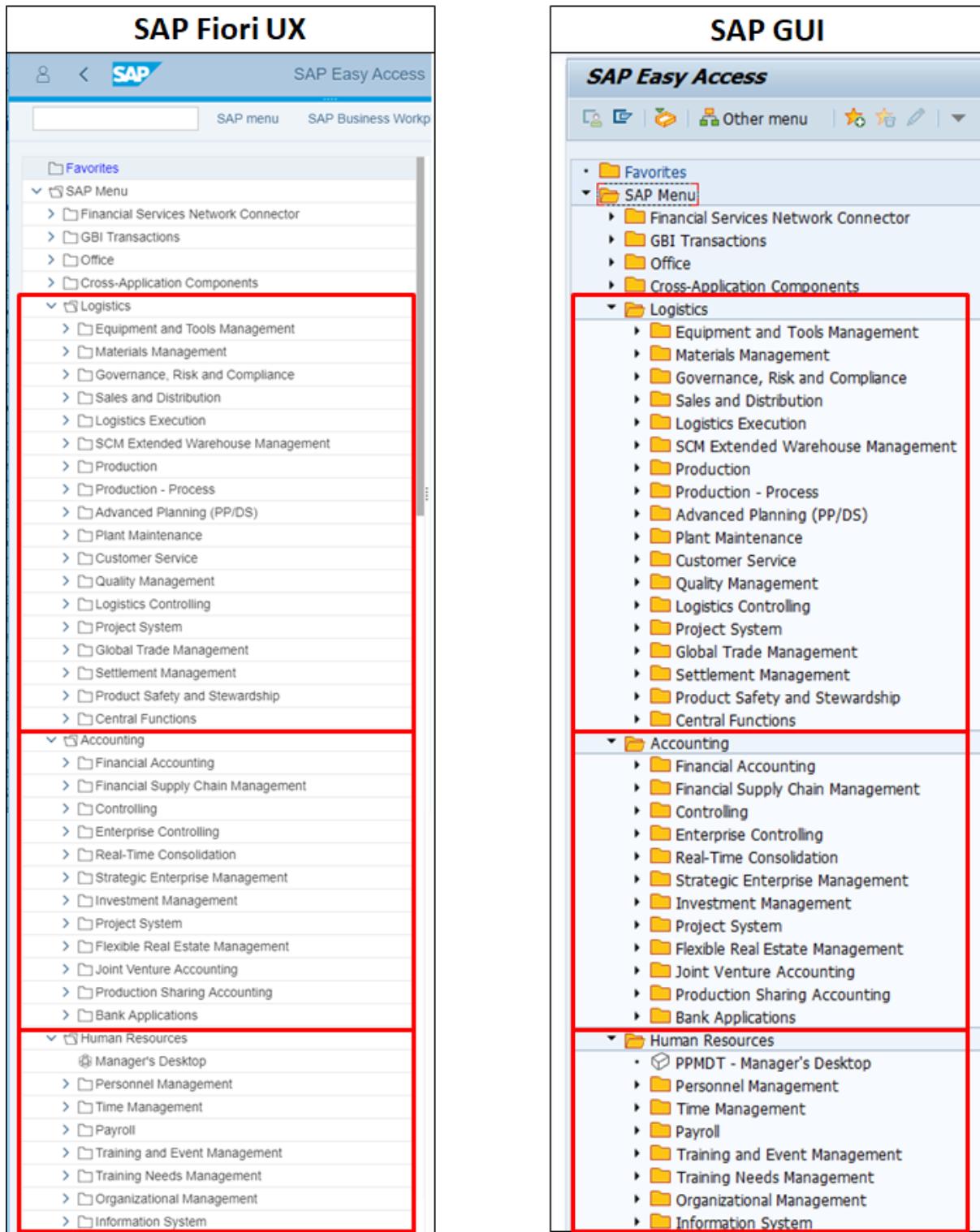


Figure 8: Easy Access Menu: SAP-System-Screenshot



CAUTION

You can complete the following exercise in both the **SAP GUI** and **Fiori**. However, please note that the Easy Access Menu in Fiori is disabled. Accordingly, you must execute the transaction code (**SPRO**) directly from the command line, if you use Fiori.

The customizing of an SAP system takes place in the **IMG** (Implementation Guide).

To open this customizing menu, please choose

Tools → Customizing → IMG → Execute Project (SPRO)

in the SAP Easy Access Menu.

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

The screenshot shows the SAP Reference IMG interface. On the left, there is a tree view of the organizational structure. The structure is divided into four main sections, each highlighted with a red border:

- Organizational Structure:** Contains items like SAP Customizing Implementation Guide, Activate Business Functions, Migration to SAP S/4HANA Finance, SAP NetWeaver, Enterprise Structure, and Cross-Application Components.
- Accounting:** Contains Financial Accounting (New), Financial Supply Chain Management, Financial Services Network Connector, Strategic Enterprise Management/Business Analytics, Controlling, Planning and Consolidation, Investment Management, Enterprise Controlling, and Flexible Real Estate Management (RE-FX).
- Logistics:** Contains Logistics - General, Environment, Health and Safety, Product Safety and Stewardship, Sales and Distribution, Materials Management, Governance, Risk and Compliance, Logistics Execution, SCM Extended Warehouse Management, Quality Management, Plant Maintenance and Customer Service, Customer Service, Production, Production Planning for Process Industries, Advanced Planning, Project System, Commercial Projects and Project-Based Services.
- Human Resources:** Contains Personnel Management, SAP E-Recruiting, Time Management, Payroll, Training and Event Management, and Management of Internal Controls.

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 Organizational Levels in Customizing

Next, you will learn about the organizational levels in an SAP system. 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 an SAP system, you need to define them.

Company Codes

Choose

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

and click on the  button.

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

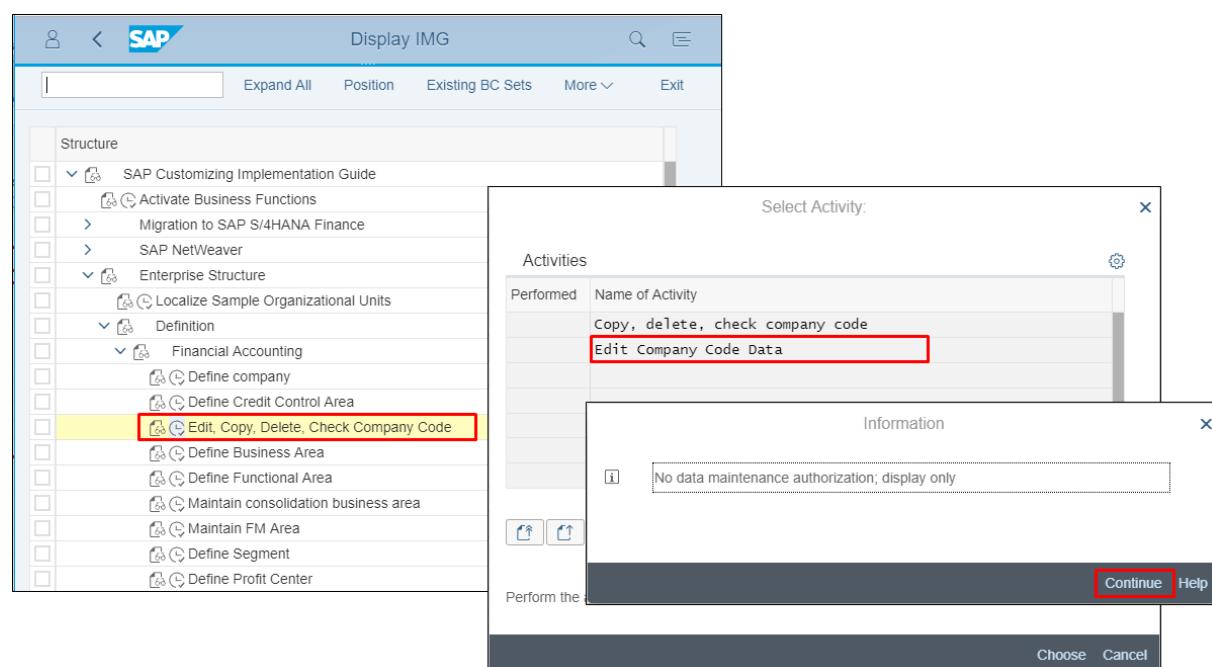


Figure 10: Customizing Activity Edit Company Code Data: SAP-System-Screenshot

Next, you see a table with all company codes of Global Bike Inc. (e.g., US00). By double-clicking the line US00 Global Bike Inc., you can see that Global Bike Inc's domicile is Dallas and the company code currency is the US Dollar.

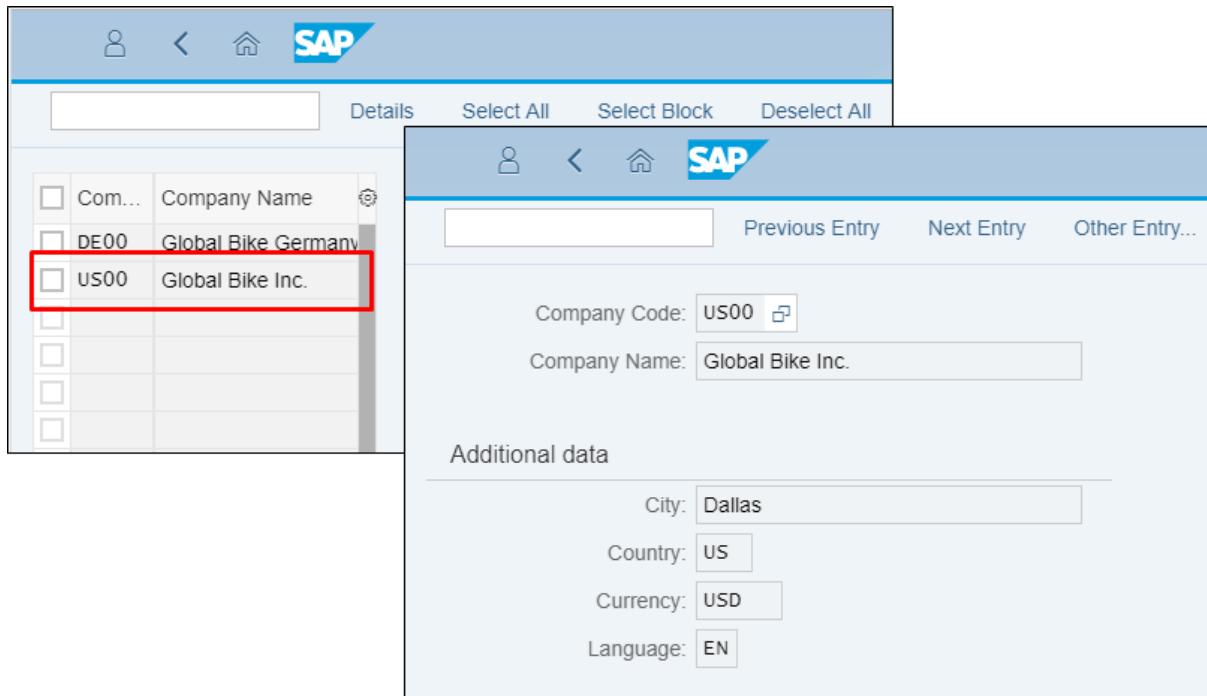


Figure 11: Company Code US00: SAP-System-Screenshot

Leave the screen (2x) and return to the SAP IMG then press **Cancel** to close the pop-up screen.

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 GBI. Plants DL00 and MI00 that were already described are defined here as well. Additionally, you can get further information about plants by double-clicking the corresponding line.

The figure consists of two side-by-side SAP Fiori screenshots. The left screenshot shows a list of plants with a red box around 'DL00 Plant Dallas'. The right screenshot shows the details for plant 'DL00', with 'Name 1' set to 'Plant Dallas' and 'Name 2' empty. The 'Detailed information' section includes address fields like Street and House No., City, and Country Key.

Figure 12: Plant DL00: 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

The screenshot shows a table with two columns. The first column contains checkboxes and organization codes: DE00, GL00, US00. The second column contains descriptions: GBI Germany, GBI Global, GBI US. At the top of the table are buttons for 'Select All', 'Select Block', 'Deselect All', 'Print', and 'More'.

	Purch. organization	Purch. org. descr.	
<input type="checkbox"/>	DE00	GBI Germany	
<input type="checkbox"/>	GL00	GBI Global	
<input type="checkbox"/>	US00	GBI US	
<input type="checkbox"/>			

Figure 13: 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 DL00** and confirm.

Next, you can see a table containing all storage locations existent in plant DL00.

The screenshot shows a table with two columns: 'SLoc' and 'Description'. The entries are: FG00 (Finished Goods), MI00 (Miscellaneous), RE00 (Returns), RM00 (Raw Materials), SF00 (Semi-Fin. Goods). A callout box points to the table with the text: 'Storage Locations of plant DL00'. Another callout box points to the 'Plant: DL00' field with the text: 'storage locations are plant-specific, that is storage locations are created within a plant'.

SLoc	Description
FG00	Finished Goods
MI00	Miscellaneous
RE00	Returns
RM00	Raw Materials
SF00	Semi-Fin. Goods

Figure 14: Storage Locations of Plant DL00: 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

Confirm the subsequent notification. You can see that plant DL00 in Dallas is assigned to Global Bike Inc. (Dallas). Furthermore, the company code US00 of Global Bike Inc. contains overall 3 plants for which it is responsible from an accounting point of view.

CoCd	Plnt	Name of Plant	Company Name	Stati
US00	DL00	Plant Dallas	Global Bike Inc.	
DE00	HD00	Plant Heidelberg	Global Bike Germany GmbH	
DE00	HH00	DC Hamburg	Global Bike Germany GmbH	
US00	MI00	DC Miami	Global Bike Inc.	
US00	SD00	DC San Diego	Global Bike Inc.	

Figure 15: 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

Confirm the subsequent notification. You can see that **purchasing organization US00** is in charge of purchasing in company code US00 Global Bike Inc. You can also see that the purchasing organization GL00 (*central purchasing*) is not assigned to a particular company code. Correspondingly, cross-company code procurement is possible with this purchasing organization.

POrg	Description	CoCd	Company Name	Status
DE00	GBI Germany	DE00	Global Bike Germany GmbH	
GL00	GBI Global			Company Code
US00	GBI US	US00	Global Bike Inc.	

Figure 16: 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 improves the understanding of the SAP system. Take the opportunity to look at other organizational structures and their interrelations when mentioned in the course.

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

Enterprise Structure → Definition

Enterprise Structure → Assignment

2.3 Theory: Master Data in the Source-to-Pay Business Process



THEORY

You already have become acquainted with the concept of master data in SAP. You have already learned from the introduction section that master data is used on a long-term basis for business processes. Master data records are created centrally, and all applications and authorized users can apply them in their relevant business processes. In the purchasing scenario different master data types are of particular interest. These are Material Master Data, Vendor Master Data, as well as Purchasing Information Records and Conditions.

2.3.1 Material Master Data

Material master data is the central source for storing material-specific data that is required to manage all aspects of a material in the SAP system. Particularly, this data includes all material-related data that is independent of specific vendors, customers, or production routings and that should be stored in a central master record. Examples for data stored in a material master record are the material-ID, the description, the unit of measure, material weight and volume, standard price.

View and Organizational Aspects of the Material Master

Consider that the data stored in a material master is relevant for and is used by most of SAP applications. It is, particularly, important for the logistical components of the SAP system as these applications (SAP MM, PP, SD, LE, etc.) use materials in almost any of their business processes. Examples are:

- Sales and Distribution: material master is used in sales orders and delivery documents
- Materials Management: material master is used in material planning
- Production: material master is used in production orders
- Plant Maintenance: material master is used for spare parts
- Accounting: material master is used for value updates
- Controlling: material master is used for product cost calculations
- Quality Management: material master is used in quality control of, e.g., goods receipts

Consequently, information about a material should be entered in a centrally administered data record and also should be “organized” in a way that different organizational units are able to maintain only the data that is important for their purposes.

On the one hand, the central maintenance of a master data record allows integrating all material data into one single database object (the material master data record) and as a consequence preventing data redundancies. On the other hand, the way the material master is implemented in SAP facilitates access for individual departments as they only maintain that part of the material master and, thus, only the data that is relevant to the department’s needs. Therefore, the data is grouped application-specific and according to user departments, whereby, a piece of information (data field) may be displayed in different views.

In order to fulfill these requirements, the material master in SAP implements two different aspects: a **view** aspect and an **organizational** aspect.

2.3.1.1 View Aspect of the Material Master

The material master in SAP is divided into multiple views. Each view is relevant for a different SAP application and, thus, it is relevant for a different company department and different business processes.

When a material master data is created in SAP ERP (transaction MM01) or S/4HANA (*Create Material App*) you first select the views to be created. Depending on the system configuration (customizing), multiple views are available that you can select from. Not all views are relevant for each material.

Examples:

- If a material is of type Raw Material (ROH) then it is generally purchased from a vendor and is not manufactured. Consequently, the **Purchasing** view should be created for this material but not the **Work Scheduling** view.
- If a material is of material type Finished Goods (FERT) then it is generally sold to customers. Consequently, the **Sales** views should be created for this material.

The following screenshot displays the view selection when creating a new material in the SAP system (*Create Material App* in Fiori UX).

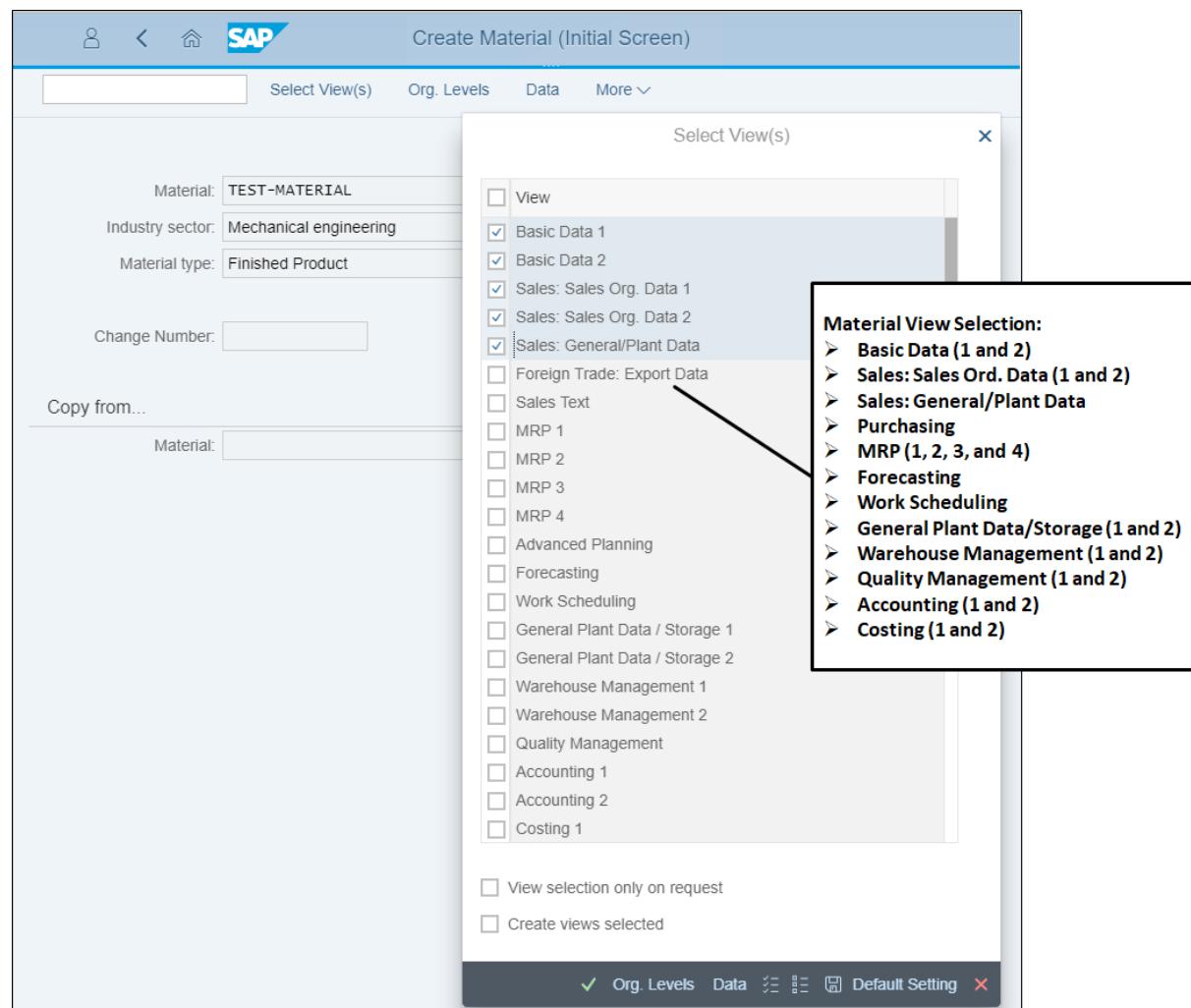


Figure 17: Create new Material: Views: SAP-System-Screenshot

Each view is relevant for a different SAP application and, thus, is generally maintained by a different department. For instance, the MRP views are required when a material is subject to material planning in the SAP MM and SAP PP applications. In general, the department responsible for running material or production planning will maintain these views for a material. The only exceptions are the **Basic Data** views and the **Classification** views. These views do not belong to a specific SAP application and are maintained centrally. Consequently, the Basic Data and Classification views contain material data that is valid for the whole client. Consequently, a material cannot be created twice in the system with the same material number. This prevents duplicates and data inconsistencies.

For all other views, material data is maintained on the level of a specific organizational unit (see next: *Organizational Aspect of the Material Master*).

2.3.1.2 Organizational Aspect of the Material Master

Data that is maintained within one of the above-mentioned views may be valid for different organizational levels. Some of the material data is valid for all organizational levels (client-level) and some data is valid for certain organizational levels only. This is due to different requirements within the enterprise.

The following figure shows the material master creation screen after the view selection. Depending on the views that were selected for creation, the system requests relevant organizational units for which the views should be maintained.

For instance, a material might be produced in plant DL00 (Dallas). In this case, the material master data in the *MRP* and *Work Scheduling* views must be maintained for the organizational levels of plant DL00 and storage location FG00. If the material is also to be produced in plant SD00 these views must also be maintained for the plant SD00 and storage location FG00 in a separate step. The data entered in those views for plant SD00 does not need to be the same as for plant DL00. For example, the production strategy in that plant can be different.

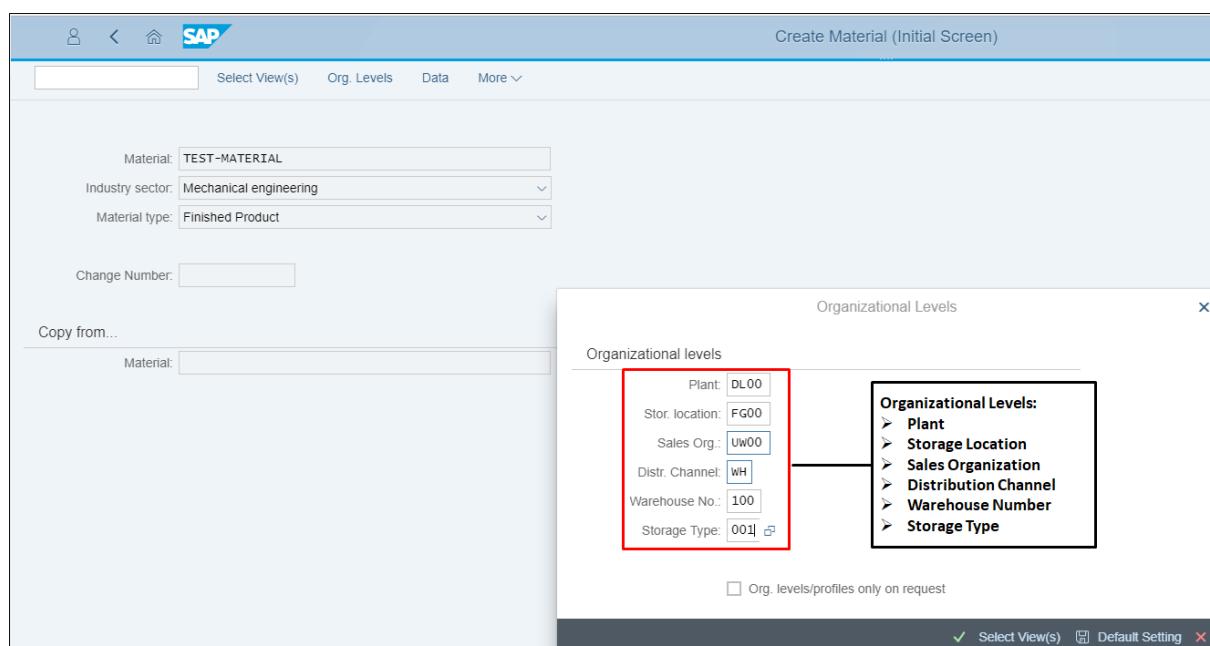


Figure 18: Create new Material: Organizational Levels: SAP-System-Screenshot

As mentioned above, each view is created for different organizational levels. For instance,

- Sales views are created for specific sales organizations and distribution channels
- MRP views are created for specific plants and storage locations
- Work scheduling is created for specific plants
- Accounting views are created for specific company codes

The following figure summarizes the views, the corresponding organizational levels and the SAP applications (resp. departments) that are mainly responsible for the specific view. Note that a clear distinction between SAP MM and SAP PP is hardly possible as these two applications are very closely integrated.

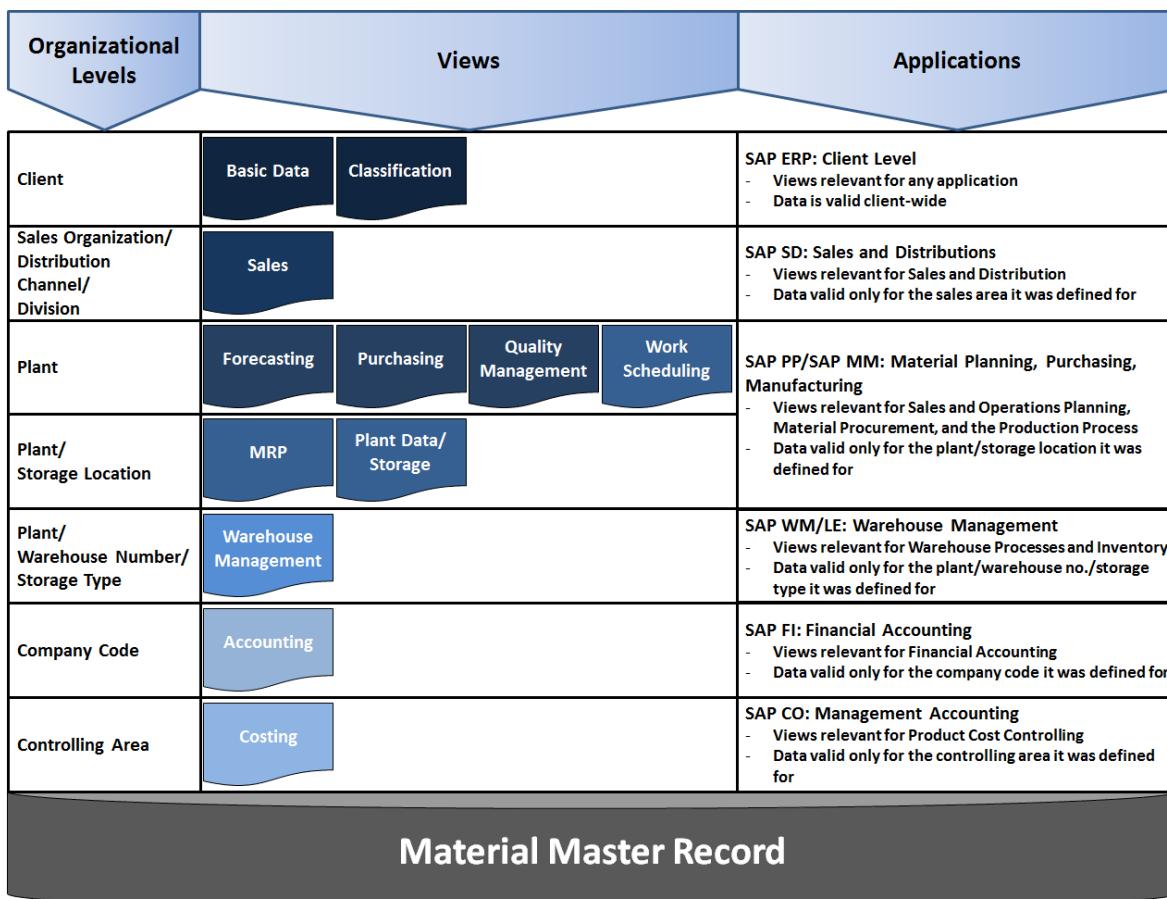


Figure 19: View and Organizational Aspects of the Material Master

2.3.1.3 View and Organizational Aspect in Source-to-Pay Business Process

For the Source-to-Pay business scenario only certain views and organizational units are relevant. The following table contains the views and organizational levels that are relevant for the Source-to-Pay business process and that are created by the department responsible for the material and production planning.

The Basic Data views are always created as they contain general material data that is valid on client level. Also note that the Accounting view data – even though belonging to the SAP FI application – should also be created when a material is defined which is purchased externally. Consider that many process steps within the Source-to-Pay business process are relevant for Financial Accounting. For instance, posting goods receipts, invoice creation, and vendor payments directly influence postings in Financial Accounting.

View	Organizational Level	Data
Basic Data 1 Basic Data 2	Client	General material data that is valid for the entire company is stored at client level. Examples are material number, material short text, material group, base unit of measure, weight, volume, etc.
Purchasing	Plant	All data that is valid within a plant and for all storage locations of that plant is stored at plant level. Examples for purchasing-relevant data are purchasing group, batch management, order unit, etc.
MRP 1-2	Plant and Storage Location	All data that is valid for a particular storage location is stored at storage location level. Examples for MRP-relevant data are procurement type, MRP type, lot size, etc.

The following figure again illustrates the connections between the Material Master, the organizational units, and the views. Data 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 DL00 (Dallas) only, then this MRP data of the material is only valid for the plant DL00. Plant MI00 (Miami) cannot use this material; unless you create (extend) the material master data for this plant, too.

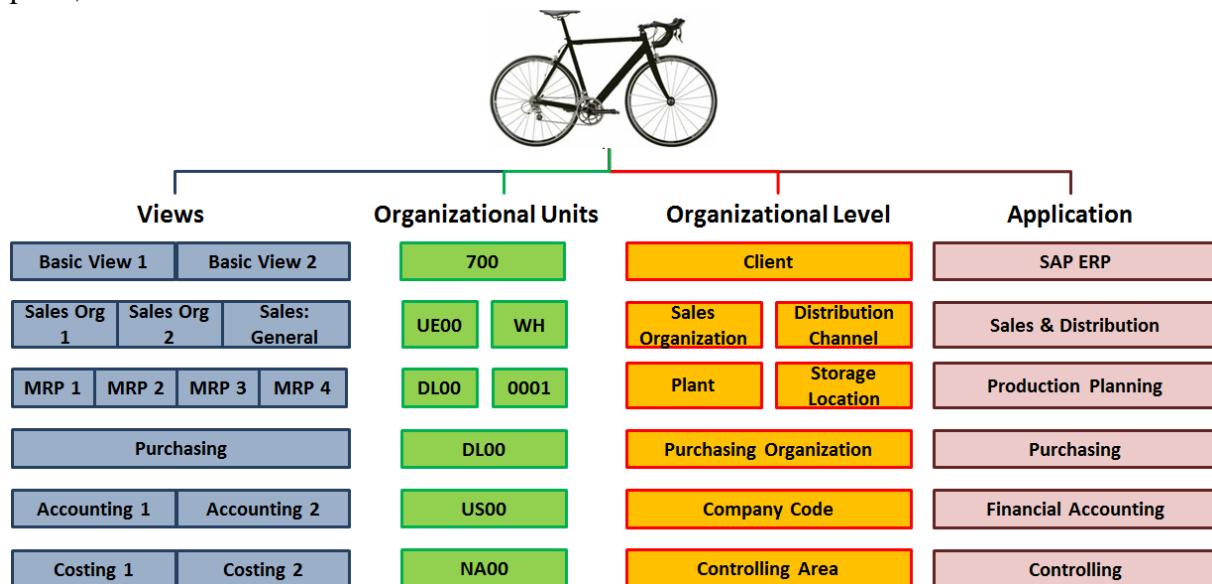


Figure 20: Material Master Data: Views, Organizational Levels, and Applications

For the Materials Management scenario in general and the Purchasing component in particular, the views that are displayed in the following figure are relevant. The highlighted fields in the figure below are particularly important in the Materials Management scenario:

- In the **Purchasing** view, you can enter the responsible Purchasing Group.
- In **MRP 1** view, you can enter how the material should be planned in MRP and how the lot sizes should be determined.
- In **MRP 2** view, you can enter how the material is to be procured (Procurement type). “F” is the indicator for External Procurement (= purchasing), while “E” is the indicator for Internal Procurement (=production). By entering “X” in that field, the material can be both – purchased externally or manufactured internally.

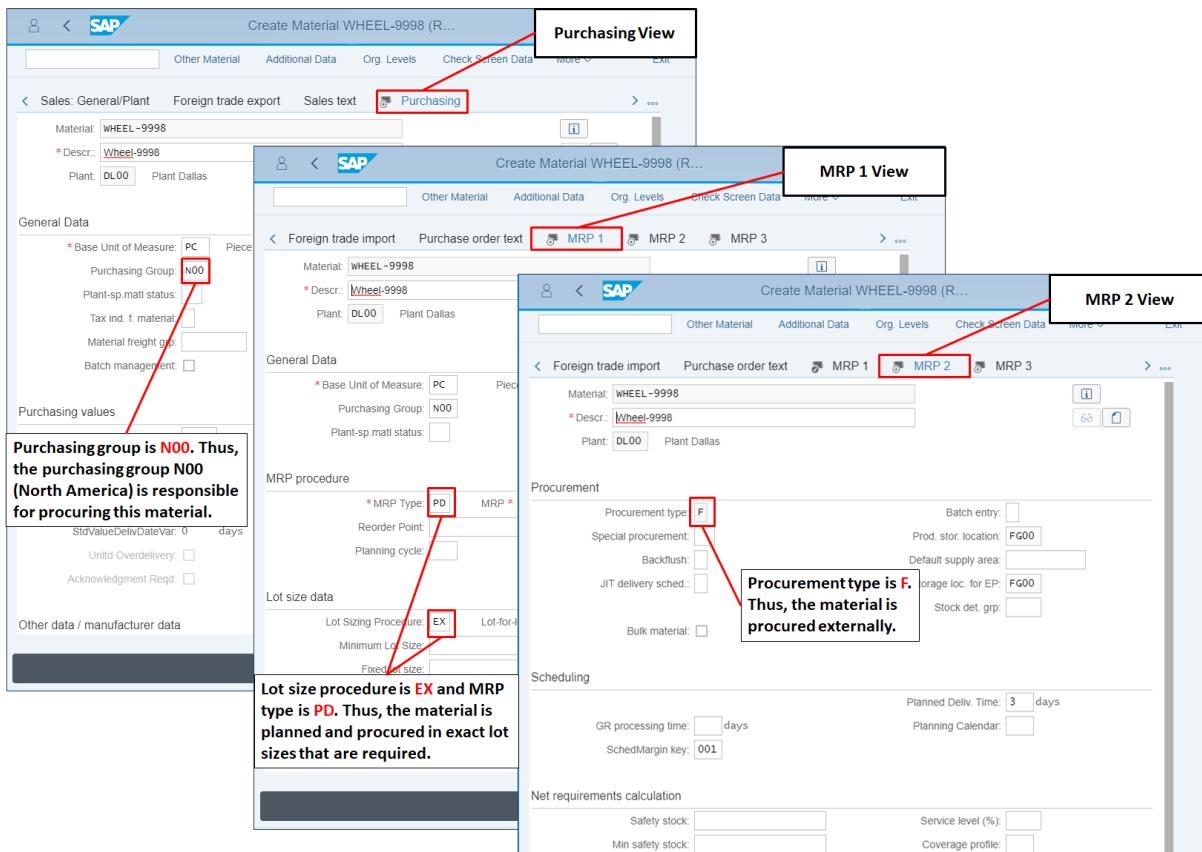


Figure 21: Material Master Views for Materials Management: SAP-System-Screenshot

2.3.2 Supplier Master Data

A supplier is a business partner of the company from which the company purchases materials or services. For the interaction between the supplier and the company, a **business partner master data record** must be defined for every supplier (also called **vendor**). This master data record provides all information that is required to do business with the supplying company and to control how transaction data is posted and processed for the supplier.

The interaction with a supplier, in general, involves the purchasing (purchasing, sourcing, contracting, goods receipt) and accounting departments (invoicing, payment) of a company, and the vendor master data is usually maintained by the same. Accordingly, vendor master data is subject to the applications Materials Management (SAP MM) for procurement processes and the Financial Accounting (SAP FI) for billing/invoice processes.

As already discussed in the introductory script, the classic supplier and customer master data from the SAP ERP system were finally and completely migrated to the new business partner concept with the S/4HANA system.

2.3.2.1 Relevant Business Partner Roles and Organizational Units in SAP MM

If a business partner acts as a supplier to the company, at least the following three business partner roles are necessary. Each of these BP roles (except of the General BP role) is created on a certain **Organizational Level** (e.g., Company Code US00):

- The Business Role **Business Partner General** is created automatically for any business partner defined in SAP S/4HANA. In this role, all general information on the business partner such as Name, Address, Contact etc. is entered. This data is stored and available

on ***Client level***, and, also ensures that the same business partner can exist only once in the system (preventing data redundancy).

- From an **accounting perspective**, a vendor equals the company's crediting business partner. The *accounting data* is entered in the business role **FI Vendor** and is relevant for Financial Accounting (FI). Accordingly, this data is stored on ***Company Code level***. Like the material master, a vendor master can be created for a certain company code (e.g., US00). If the very same vendor sells products to a different company part (e.g., DE00), the business role FI Vendor must be additionally created (extended to) for the company code DE00.
- From a **purchasing perspective**, a vendor is a supplier of goods. The *purchasing data* is entered in the business role **Vendor** and is relevant for Materials Management (MM). Accordingly, the data is managed separately for each **Purchasing Organization**. Again, like the material master, a vendor master is created for a certain purchasing organization (e.g., US00). If another purchasing organization (e.g., DE00) wants to purchase products from the same vendor, the business role Vendor must be additionally created (extended to) for the purchasing organization DE00.

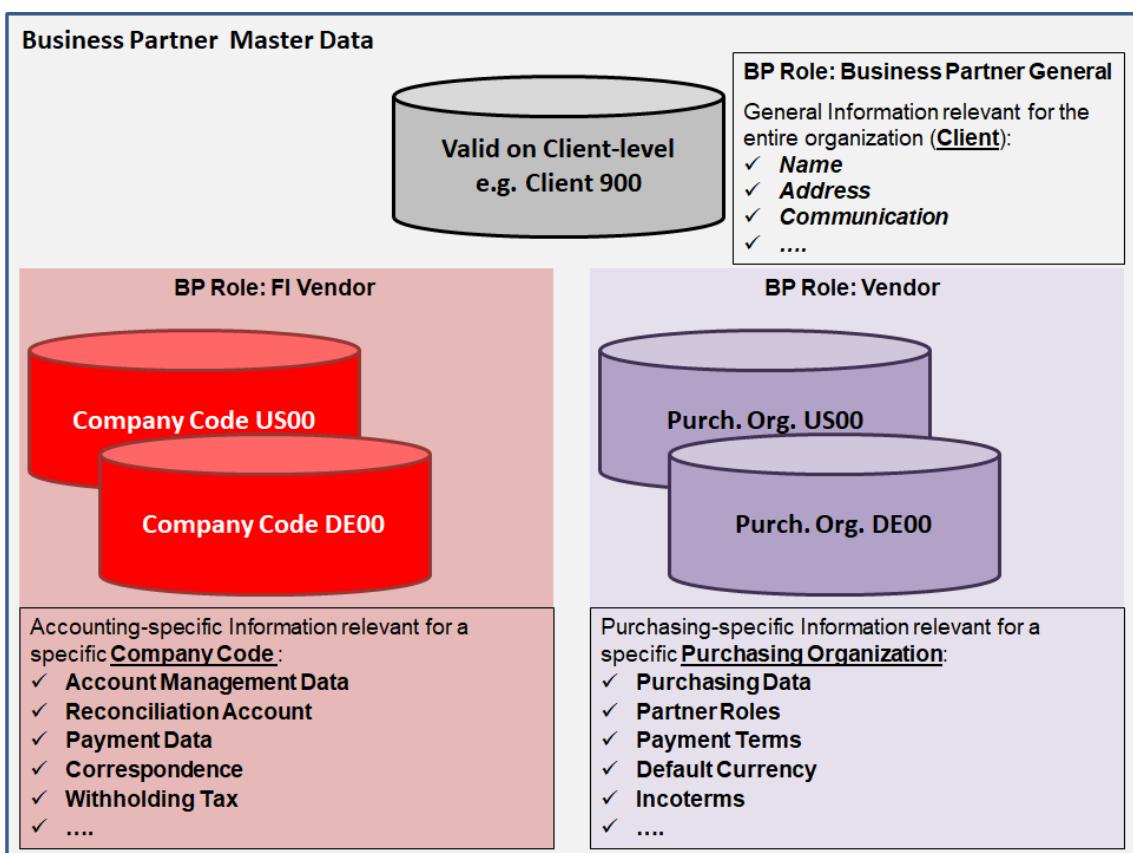


Figure 22: Vendor Master Data: Business Roles and Organizational Assignment

2.3.2.2 Creating a Business Partner as Supplier in SAP S/4HANA

On the initial screen of transaction BP or the Fiori UX App *Maintain Business Partner* you first select the category for the new business partner (Person, Organization, Group). The system will then create the general BP role **Business Partner (Gen.)** which corresponds to the general view of the traditional vendor master data in SAP ERP. For this role, you enter application-independent data such as name, address etc. This general information of a business partner has

to be stored only once in the master data record and is then available to any other BP role that the business partner uses.

By selecting other BP roles from the drop-down-menu **Create in BP role** you can assign other BP roles to control the usage of that business partner in specific transactions and business processes in a certain organizational level.

For instance, if you want to create a business partner of type vendor in S/4HANA that corresponds to the vendor of an SAP ERP system then you create the business partner with the following three roles:

- **Business Partner General Role:** This role is created automatically upon creation of a business partner and holds all the *application-independent data* such as name, address communication, control data, bank data etc. This part of the business partner master data is defined on *client level*.

The screenshot shows the SAP 'Create Person' interface. At the top, there are tabs for 'Person', 'Organization', and 'Group'. A red box highlights the 'Person' tab. To the right, there's a 'Business Partner Category' dropdown set to 'General Business Partner Role', which is also highlighted with a red box. Below that, a field for 'Create in BP role' contains 'Business Partner (Gen.)', also highlighted with a red box. Further down, there are tabs for 'Address', 'Address Overview', 'Identification', 'Control', 'Payment Transactions', 'Status', and 'No Title'. A red box highlights the 'Address' tab. The main area contains sections for 'Name' (with fields for Title, First name, Last name) and 'Standard Address' (with fields for Street/House number, Postal Code/City, Country, Region, and Time zone). A 'Print Preview' button is visible above the address section.

Figure 23: Business Partner: General Data: SAP-System-Screenshot

- **Vendor:** This role corresponds to the purchasing-organization-specific view of the ERP vendor master data and is created on the level of *purchasing organizations*. This BP role then controls the business partner's behavior in the purchasing process. In this BP role, you enter data such as
 - o default currency,
 - o payment terms,
 - o or incoterms.

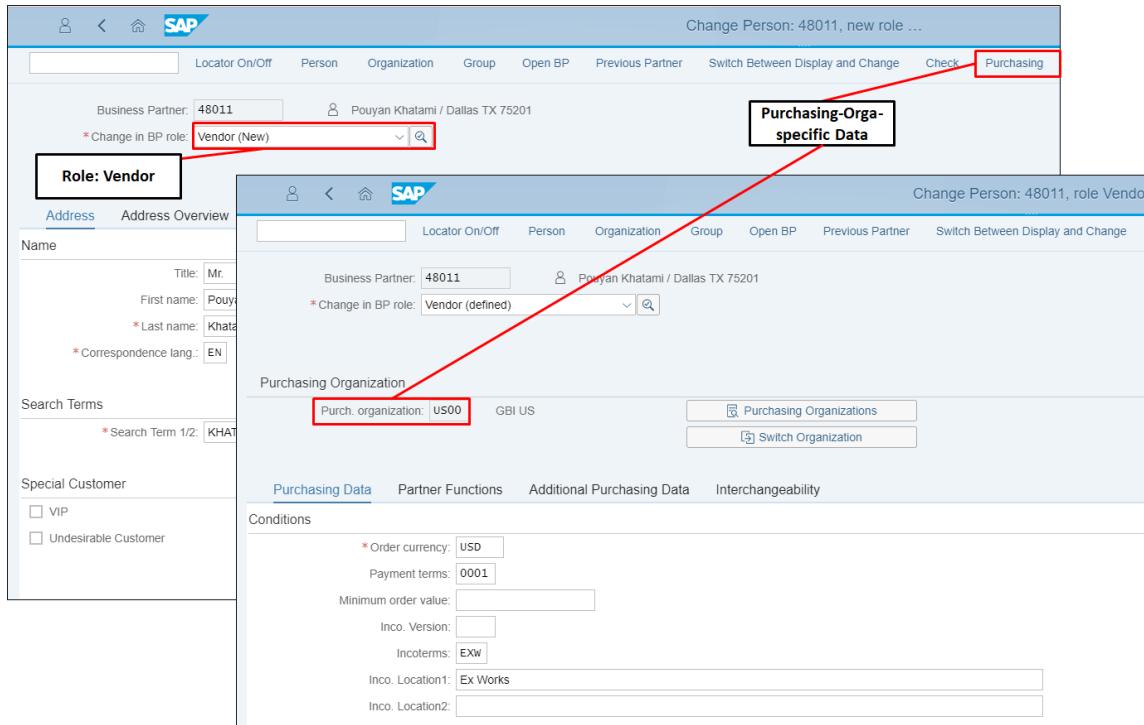


Figure 24: Role: Vendor: SAP-System-Screenshot

- **FI-Vendor:** This role corresponds to the company-code-specific view of the ERP vendor master data and is created on the level of *company codes*. This BP role then controls the business partner's behavior in the invoicing and payment process. In this BP role, you enter data such as
 - reconciliation account,
 - payment terms and methods,
 - tolerance groups,
 - or name of important contacts related to the vendor (e.g., sales people)
 In the FI-Vendor BP role you also assign a different **vendor number** or **customer number** to the business partner. This ID corresponds to the classic SAP ERP vendor and customer IDs and is later used in processes such as creating a sales order (customer) or a purchase order (vendor).

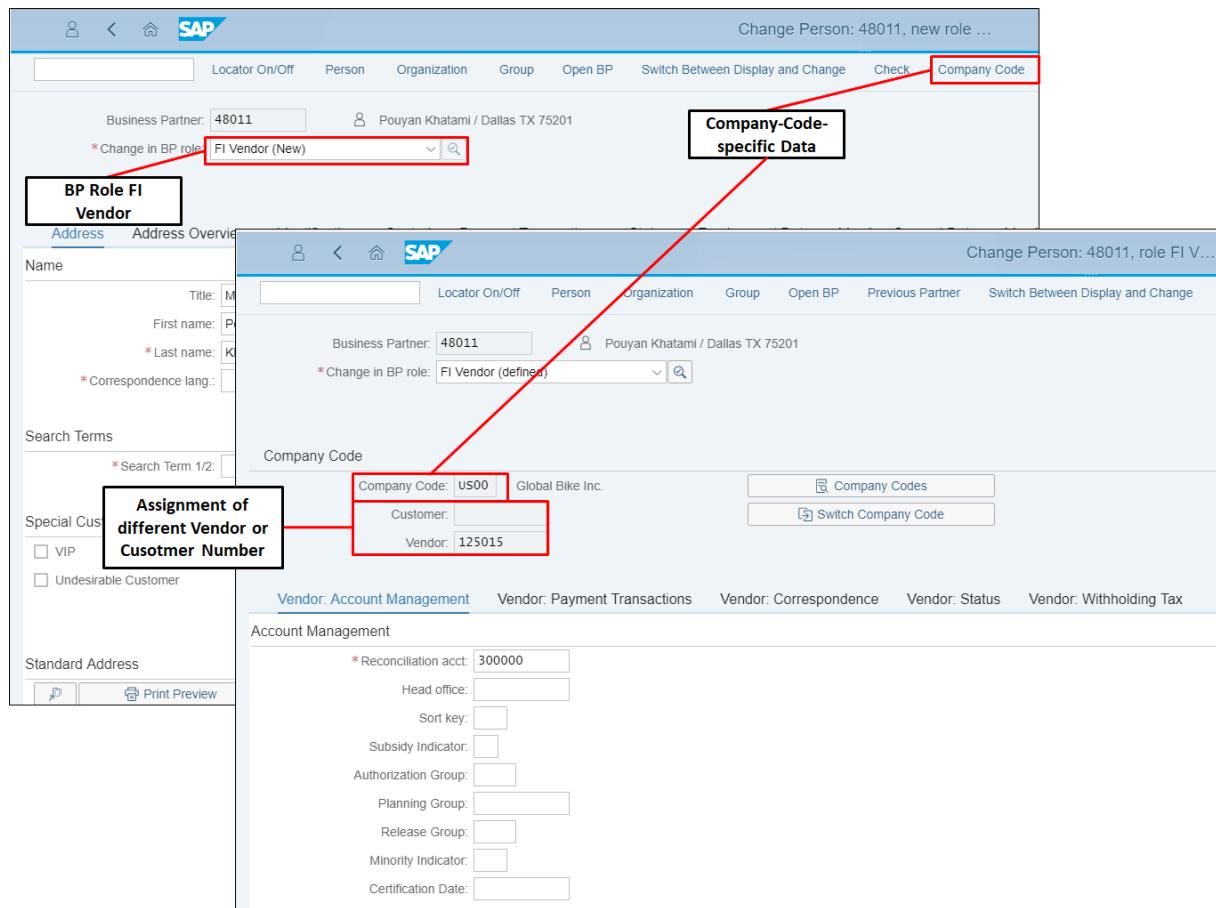


Figure 25: Role: FI-Vendor: SAP-System-Screenshot

2.3.3 Purchasing Information Records

A **purchasing information record** is a master data document that combines information about a **vendor** and a **material** and assigns purchasing conditions for this combination. Thus, a purchasing information record constitutes the purchasing price and further purchasing terms (e.g., quantity-based scales) that a company has negotiated with a specific vendor for a specific material. This means that you define in an info record the specific material (e.g., Gearing) that you will buy from a particular vendor (e.g. vendor 101000 – Olympic Protective Gear), at a specific price (e.g. 500 \$ per unit), and for a specific period in time (e.g. from 11.12.2015 – 31.12.9999).

Hence, purchase info records are an important source of information for a company, as buyer of materials and services. By using purchasing info records, buyers can find out at any time which vendors offer a particular material or what materials can be procured from which vendors. By integrating information from the material master and the vendor master in the purchasing information record buyers are able to quickly determine the best vendor that offers the best purchasing conditions for a specific material.

Therefore, the purchasing information record contains the following information:

- Current and future prices and conditions (e.g., freight, discounts)
- delivery data (e.g., planned delivery time, over-delivery and under-delivery tolerances)
- vendor data (e.g., contact person) and vendor-specific data about the material (such as the vendor sub-range to which the material belongs and the description of material for

the vendor)

- Vendor Evaluation
- Availability periods
- 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.

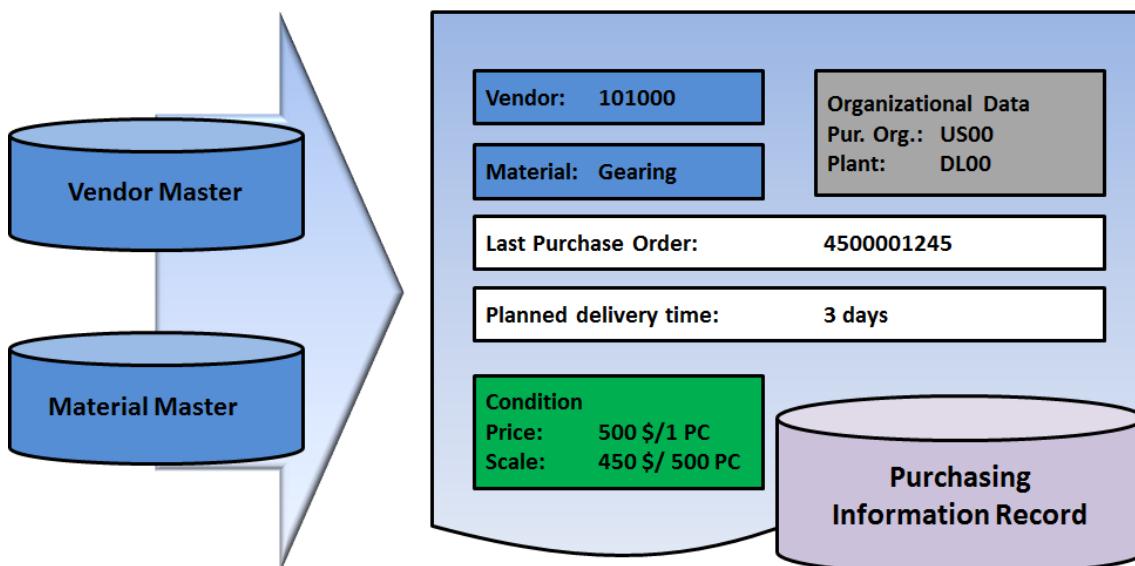


Figure 26: Purchasing Information Record: SAP-System-Screenshot

2.3.3.1 View and Organizational Aspects of Purchasing Information Records

Like material and vendor master data, the purchasing information record is also divided into different views which are maintained for different organizational units. A purchasing information record can be created manually or automatically, either from a quotation or a purchase order.

When you create a purchasing information record, you must enter the following information in the initial screen of the transaction (ME11) or Fiori UX App:

Vendor The vendor for which you want to create the information record.

Material The material for which you create the information record.

Purchasing Organization In this field you enter the purchasing organization to which the information record should relate. Certain data, such as planned delivery times, standard quantities, tolerances, etc. are **purchasing-specific** and can only be entered if the purchasing organization has been specified. You must consider that the specified purchasing organization must be responsible for the particular vendor. In addition, if the info record is to be related to a plant, it is necessary to enter the purchasing organization.

- Plant** In this field you enter the plant within the *company code* that is related to this purchasing information record and which is used, for instance, as receiving location for the ordered goods. If you enter the plant key, you must also enter the purchasing organization. The purchasing organization must be responsible for the specified plant and, thus, be assigned to the plant in the system's customizing.
- Info Category** The category of the purchasing information record determines in which processes the info record can be used. You can differentiate between the *standard* process and the special *procurement categories* of *subcontracting*, *pipeline* and *consignment*.

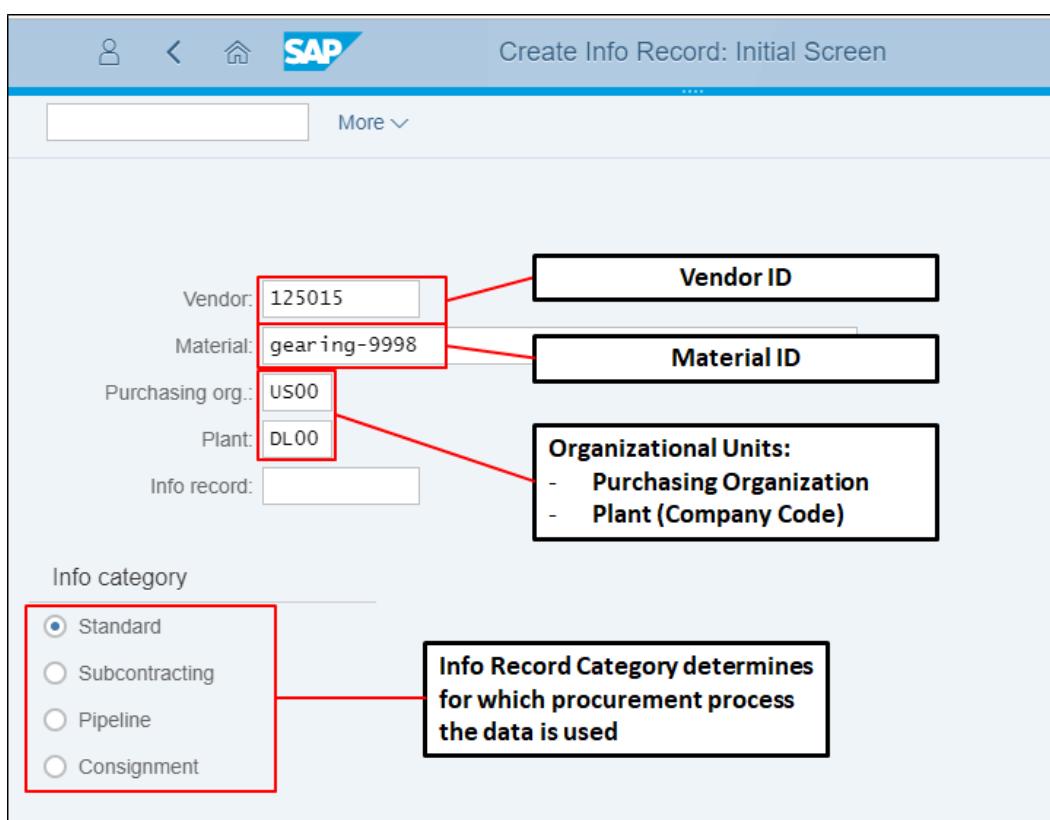


Figure 27: Creating Purchasing Information Records (1): SAP-System-Screenshot

On the data entry screens you can enter data that is

- generally applicable and is valid for the entire client such as
 - vendor data (e.g., reminder, expediter data, supplier material number)
 - original documents
 - purchase order unit and unit conversions
 - texts (info record memo)
 - administration data
- purchasing organization-specific data such as
 - control data (e.g., delivery time, minimum quantity)
 - prices and conditions (e.g., gross price, discount, freight)
 - statistics (e.g., price history, purchase history statistics)
 - text (purchase order text)

- purchasing organization-specific and plant-specific data such as
 - o control data (e.g., delivery time, minimum quantity)
 - o prices and conditions (e.g., gross price, discount, freight)
 - o statistics (e.g., price history, purchase history statistics)
 - o text (purchase order text)

The figure consists of two side-by-side SAP Fiori application screenshots. The left screenshot is titled 'Create Info Record: General Data'. It shows fields for 'Info record:', 'Vendor' (125015), 'Material' (GEARING-9998), and 'Material Group' (RAW). Below these are sections for 'Supplier Data' containing fields like '1st Rem./Exped.', '2nd Rem./Exped.', '3rd Rem./Exped.', 'Supp. Mat. No.', 'Suppl. Subrange', 'SSR Sort No.', 'Suppl. Mat. Grp.', 'Points', 'Salesperson', 'Telephone', 'Return Agmt.', and 'Prior Supplier'. The right screenshot is titled 'Create Info Record: Purch. Organ...'. It shows fields for 'Purchasing org.' (US00) and 'Plant' (DL00). Below these are sections for 'Control' (including 'Pl. Deliv. Time', 'Purch. Group', 'Standard Qty', 'Minimum Qty', 'Rem. Shelf Life', 'Shippng Instr.', 'Procedure', 'Max. Quantity', 'Rndg Prof.', 'UoM Group', 'RMA Req.', and 'Auto.Srcg') and 'Conditions' (including 'Net Price', 'Effective Price', 'Qty Conv.', 'Pr. Date Cat.', 'Inco. Version', and 'Incoterms'). Both screenshots have a blue header bar with the SAP logo and navigation icons.

Figure 28: Creating Purchasing Information Records (2): SAP-System-Screenshot

The data that you enter in a purchasing information record is later used as default values when creating purchasing documents (e.g., purchase orders or contracts):

- In the purchasing process, a purchasing information record serves as default information source for purchase orders.
- In material planning processes, purchasing info records can be referenced to pre-determine vendor-specific data.
- The list displays for the info records (e.g., transaction ME1L, ME2L, etc. or corresponding Fiori UX Apps) can be used to determine which vendors offer a specific material or which materials can be procured from a specific vendor.

Example

You create a purchasing order in the SAP system, and you type in the material you want to purchase, the system then either automatically fills in or proposes the default data for fields like

vendor, standard quantity, delivery dates, contact person at the supplier, etc., according to information available in the purchasing information records.

2.3.3.2 Conditions

A **condition** is an agreement between the vendor and your company and includes prices for the specific material. In addition, further purchasing terms such as discounts, surcharges, scales, etc. can be determined.

Conditions are not only used in purchasing information records but also in other document types in SAP systems. You can distinguish three different types of conditions that are used in the purchasing application:

- **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.
- **General conditions** can be used to 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*.

Conditions in Purchasing Documents

In the purchasing process, you can maintain conditions in different purchasing documents:

- Quotations
- Outline agreements (contracts, scheduling agreements)
- Purchase orders
- and purchasing information records

The net and effective prices in the purchasing document are determined based on these conditions. You can also store general conditions at the vendor level, for example. The system then uses these conditions for price determination.

Example: When you create a purchase order with reference to a contract 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.

Conditions in Purchasing Information Records

In a purchasing information record the **condition** depicts the central information (price). You maintain conditions on the level of purchasing organization (and plant) by pressing the **Condition** button within a purchasing information record. The conditions maintained in a purchase information record are applied each time the vendor and material combination is entered in a purchase order. If you maintain a condition directly in a purchase order, the condition data is only valid for that specific document, only.

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

The following figure displays an example for a pricing condition within a purchasing information record. Here, we have entered a price of 500 \$ for 1 unit of Gearings. In addition, we have maintained a scale which determines that the price of a Gearing will be 450 \$ if the order size equals 500 units or more.

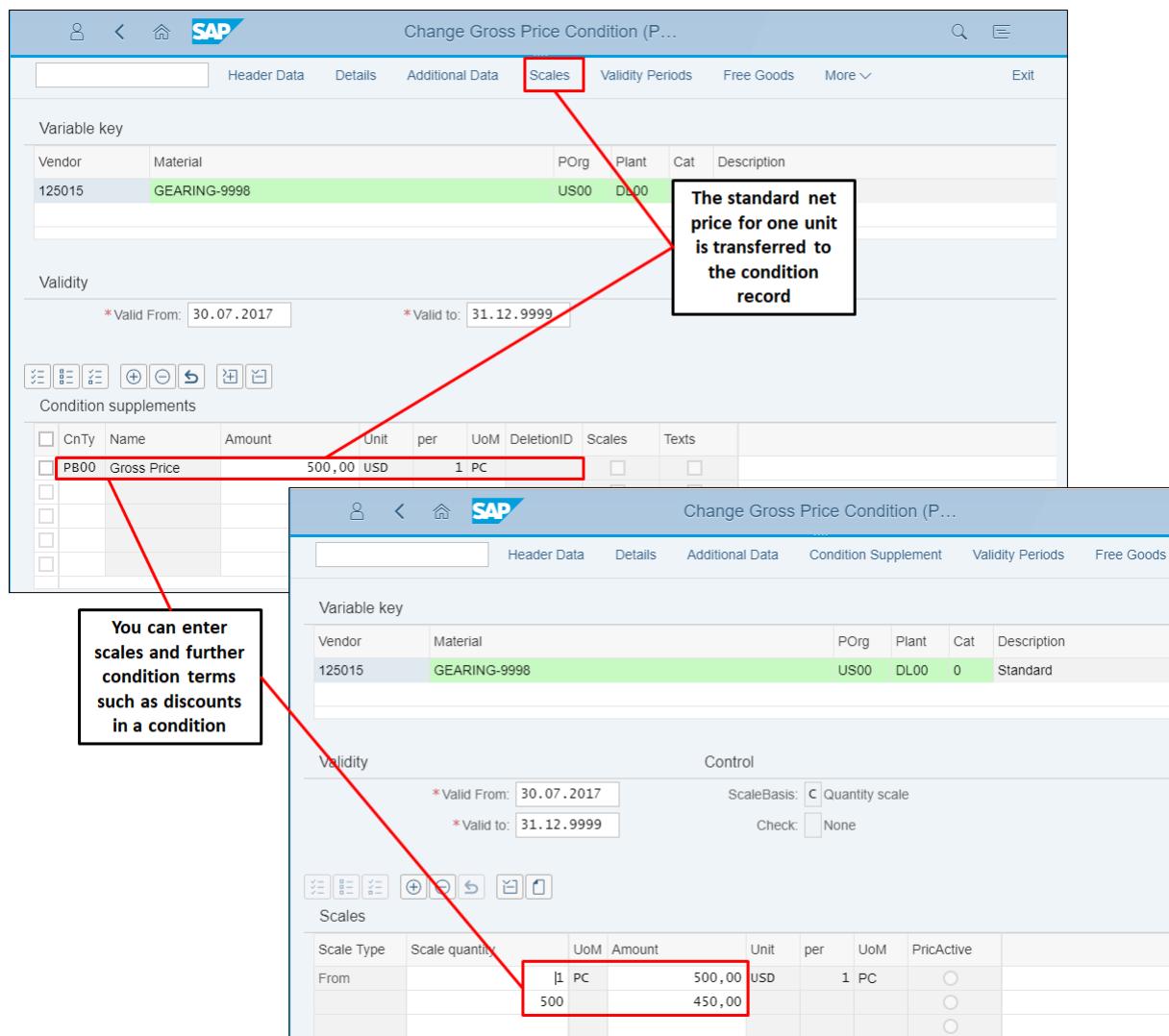


Figure 29: Condition in Purchasing Information Record: SAP-System-Screenshot

2.4 Practice: Master Data in the Source-to-Pay Business Process



PRACTICE

At the beginning of this teaching unit, you learned about the situation of GBI and its attempts to roll into the bicycle market. In this chapter, you need to create the new GBI 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 S/4HANA. In the figure below, you can see the process steps, which you need to execute in this section.

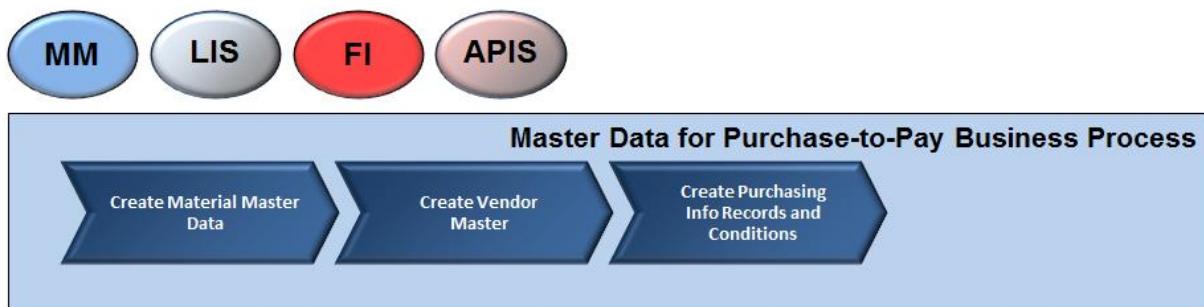


Figure 30: Process Overview: Master Data for Source-to-Pay Business Process



NOTE

It is vital for the successful completion of this case study that you are familiar with the navigation basics in SAP S/4HANA systems (cf. unit [Introduction/Navigation](#)). This includes that you are able to handle the SAP Fiori Launchpad, 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 discover the complexity and potential of the system independently – albeit you have to study with given scenarios.



NOTE

*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**. At each step try to clarify 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, to enhance your knowledge, use the F1 and F4 keys for information on the meaning of particular fields and entries.*

*Please unconditionally use the SAP Easy Access Menu rather than the transaction codes. Thus, you will quickly understand the structure and logic of SAP S/4HANA. When you have more experience 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. For learning purposes, you will be working throughout the case studies with a simplified version of a bicycle that includes only part of the components involved in the production of a real bicycle. The following figure displays a two-stage bill of materials provided by an employee from the production department.

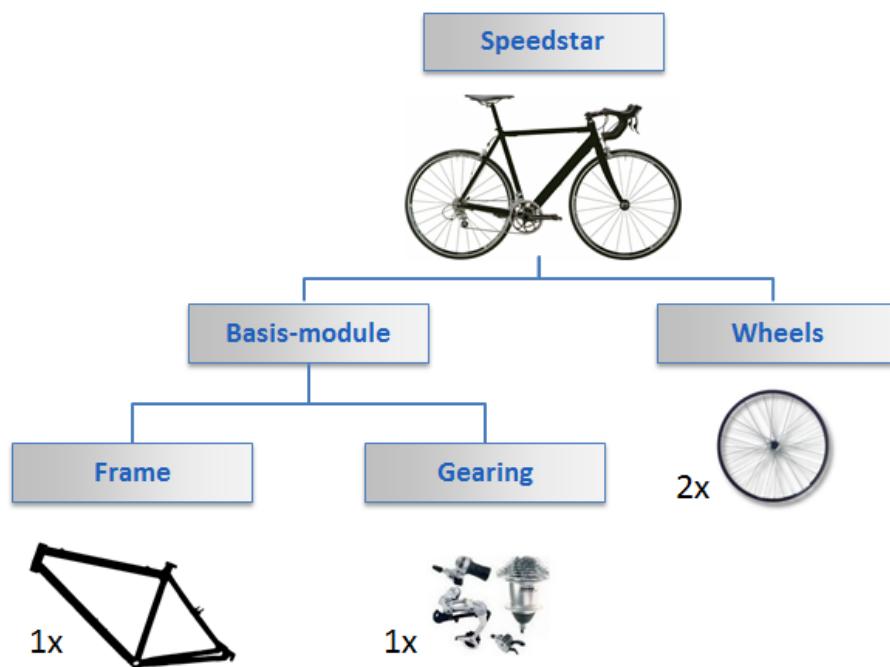


Figure 31: Bill of Materials – Speedstar

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

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

The first two components are combined in the first step of production, resulting in the **Basis-Module**. After mounting the Basis-Module the wheels (2x) are added.

2.4.1.2 Organizational Data of the Speedstar

The Speedstar is going to be produced and sold in the United States (Dallas). 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 UW00 (US West) and the distribution channel WH (wholesale). 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 DL00 (Dallas). These data are maintained in the views:
 - o MRP 1-4
 - o Work scheduling
- **Financial Accounting (FI):** The accounting for plant DL00 and sales organization UW00 takes place in the American central office. Thus, company code US00 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 US00 takes place in controlling area NA00 (North America). These data are maintained in the views:
 - o Costing 1-2

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

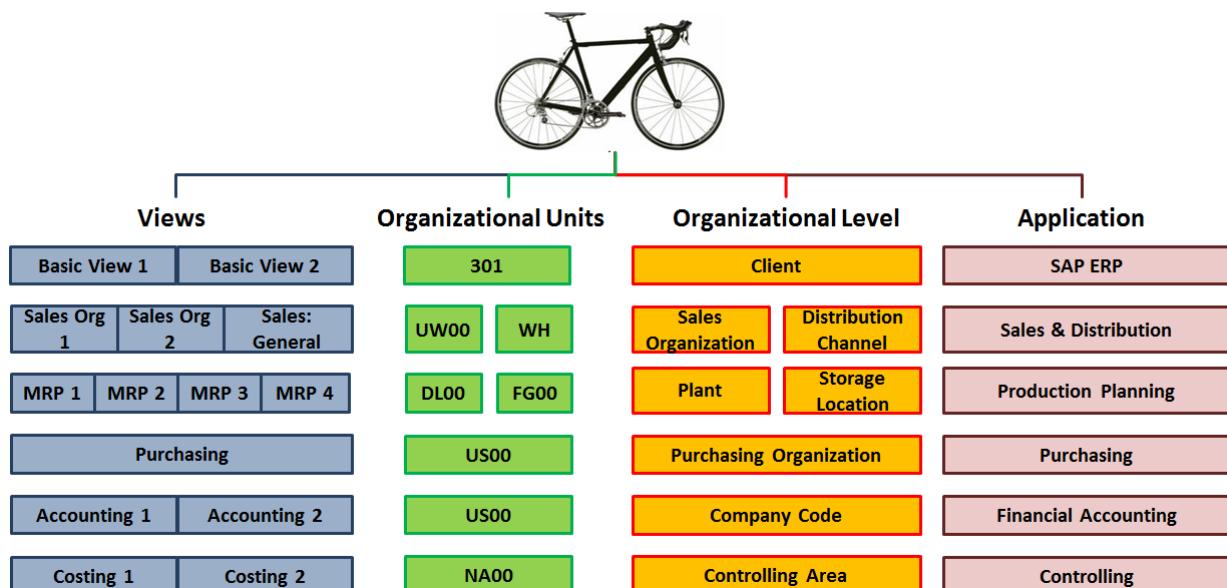


Figure 32: Views and Organizational Units for the Material Master



NOTE

Consider that there are many more views in a material master. In the 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 GBI Company and, thus, it is not purchased from a vendor.

Other materials like the wheels 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 GBI does not sell them.

2.4.2 Create Material Master Data

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



*While processing the case studies, please replace the string **xyyy** by your user number. Your user number consists of the last four digits of your user name.*

CAUTION

Example:

*If you are, for instance, prompted to create a Speedstar with the reference Speedstar-**xyyy** and your user name is WIP**9-995**, please label your Speedstar Speedstar-**9995**. 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 in the case studies, if left uncorrected, can be quite difficult to eliminate and may be **irreversible**.*

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 S/4HANA. Individual steps of the study cases will be clarified with Screenshots. The example uses the imaginary user WIP9-995, therefore it is used the code 9995. Now, log in to SAP Fiori Launchpad using your login data from the welcome mail and the password, you have changed in script 0.



In this course, you will work within the SAP Fiori Launchpad primarily with tiles, which represent apps. The tiles, you need for performing the tasks, were grouped by your tutor in tile groups in order to increase clarity.

NOTE

In case of any errors your tutor will maybe recommend you to use the SAP Easy Access Menu, which you have met in script 0, in order to make the corrections. This is due to increase the clarity the Launchpad (in other words: too much apps would disturb a clarity of the Launchpad).

In addition, the SAP Easy Access Menu is used for some transactions, where no apps are available, yet (and maybe there will never be an app, because only power user or admins will use them).

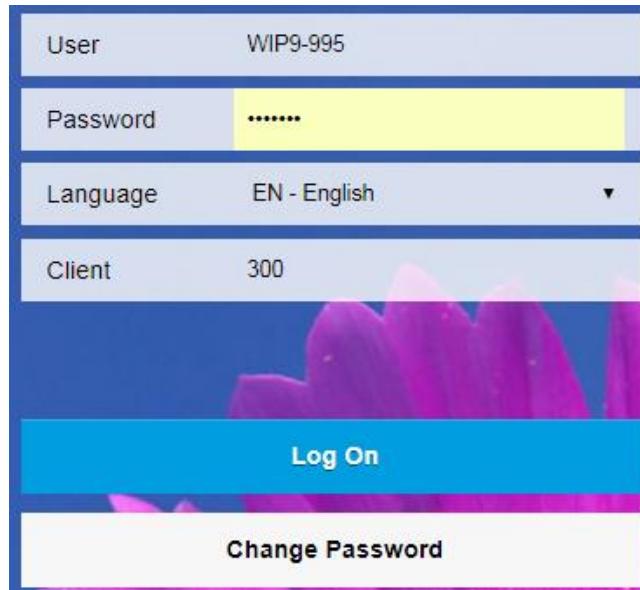


Figure 33: Login to SAP Fiori Launchpad: SAP-Easy-Access-Menu



You already should have saved the SAP Fiori Launchpad link in your browser's favorites. If not, make this setting, now.

To create a master record in SAP S/4HANA, scroll down to the tile group **Script 1 – Source-to-Pay** and open the app **Create Material**:

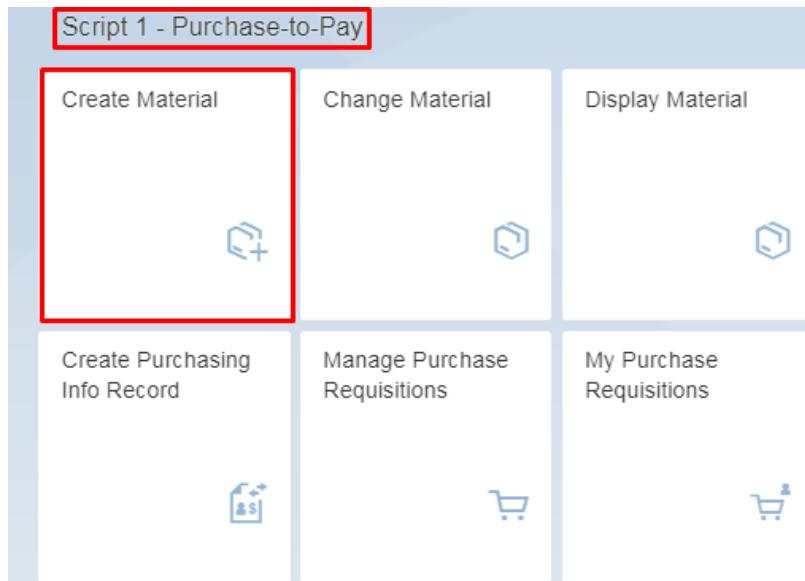


Figure 34: Create Material: SAP-Easy-Access-Menu



If the app does not open, check in your browser settings, whether the popup blocker for this page is deactivated.

1. You can now see the **Create Material** screen. Enter *Speedstar-xxxx* 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** and **Finished Product** as **Material type**. No reference material is used. Go to the next dialogue by clicking **Select View(s)** 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. Select the following lines:
 - **Basic Data 1**
 - **Basic Data 2**
 - **Sales: Sales Org. Data 1**
 - **Sales: Sales Org. Data 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**).



NOTE

The different views are structured according to functional areas in SAP S/4HANA 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 multiple 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.

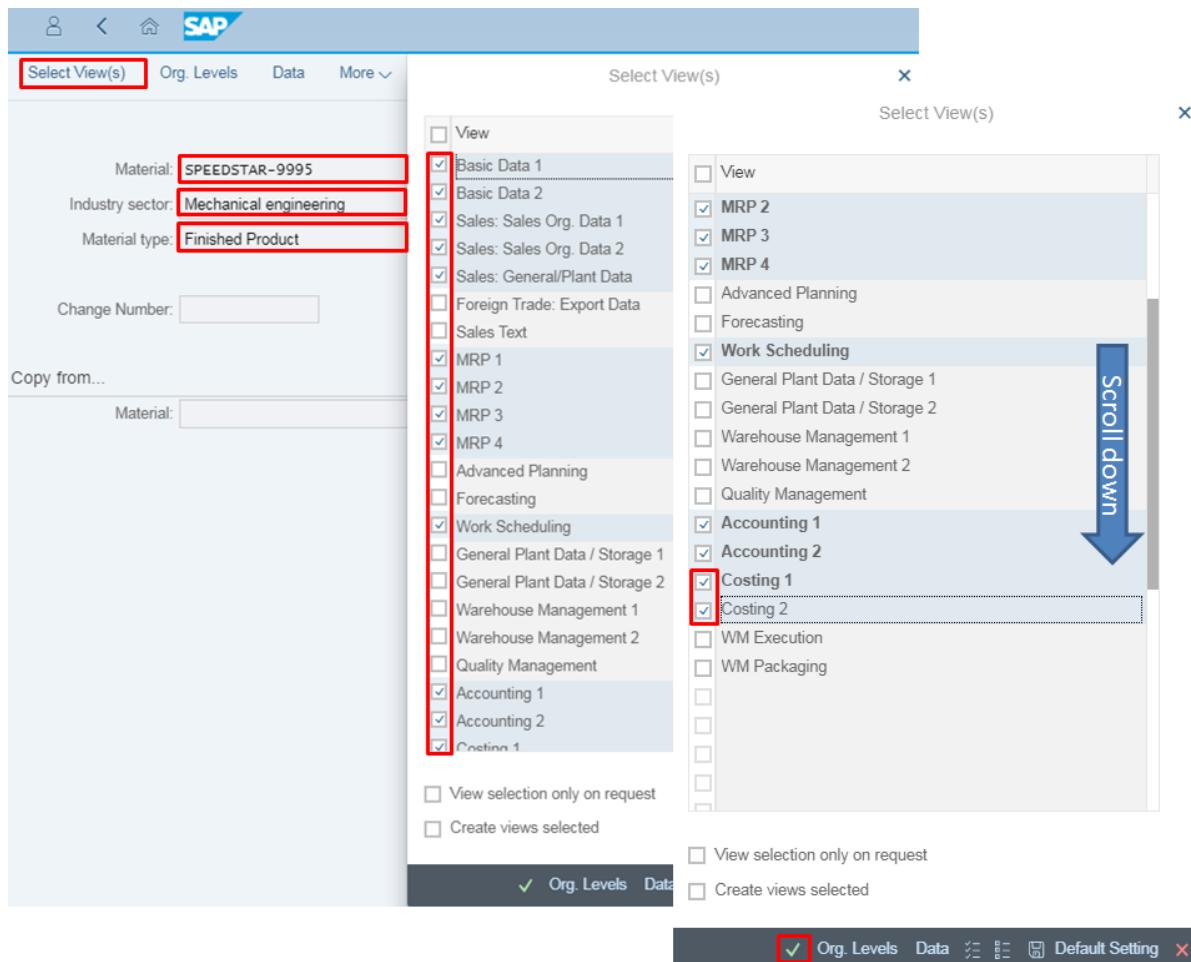


Figure 35: Create Speedstar Material Master: SAP-System-Screenshot

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** ***DL00 (Dallas)***
 - **Storage Location** ***FG00 (Finished Goods)***
 - **Sales Organization** ***UW00 (US, Dallas)***
 - **Distribution Channel** ***WH (Wholesale)***

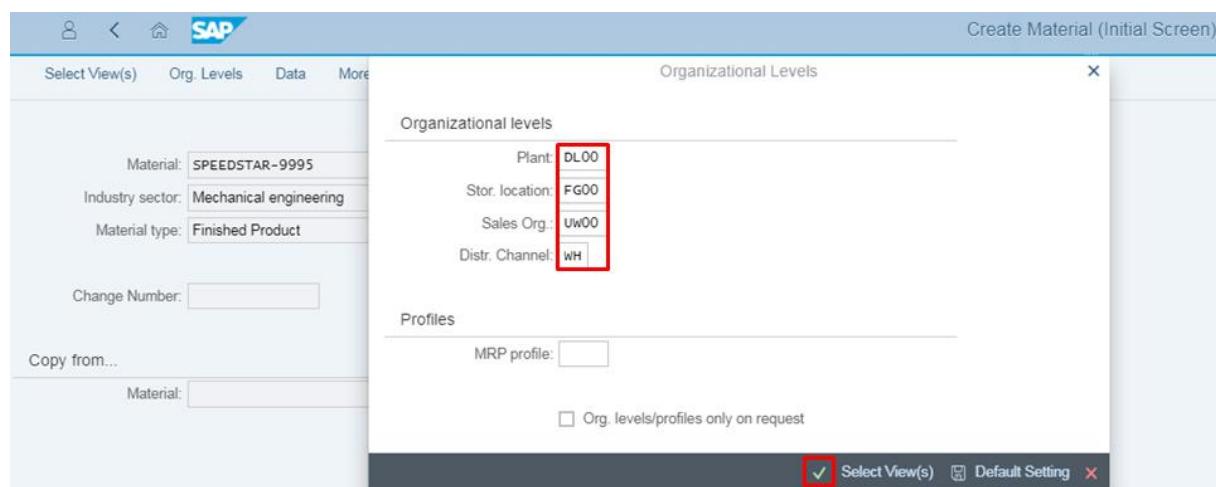


Figure 36: Organizational Units for Speedstar: SAP-System-Screenshot

- 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-xxxx*
- **Base Unit of Measure** *EA (each)*
- **Division** *BI (Bicycles)*
- **Gross Weight** *18 KG*
- **Net Weight** *15*
- Proceed to the next view by pressing *Enter*. If the next view does not open, make sure, that you have positioned your cursor in any field before confirming.

General Data	
* Base Unit of Measure: EA	each
Old material number:	
Division: BI	
Product allocation:	
X-plant matl status:	
Assign effect. vals:	<input type="checkbox"/>
Material Group:	
Ext. Matl Group:	
Lab/Office:	
Prod.hierarchy:	
Valid from:	
GenItemCatGroup:	NORM
Standard iter	

Dimensions/EANs	
Gross weight:	18
Net weight:	15
* Weight unit: KG	

Figure 37: Material Master – Basic Data 1: SAP-System-Screenshot



NOTE

Change views only by 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, pay attention to fields marked with the * symbol, since these fields are mandatory to be able to proceed to the next view or dialog.

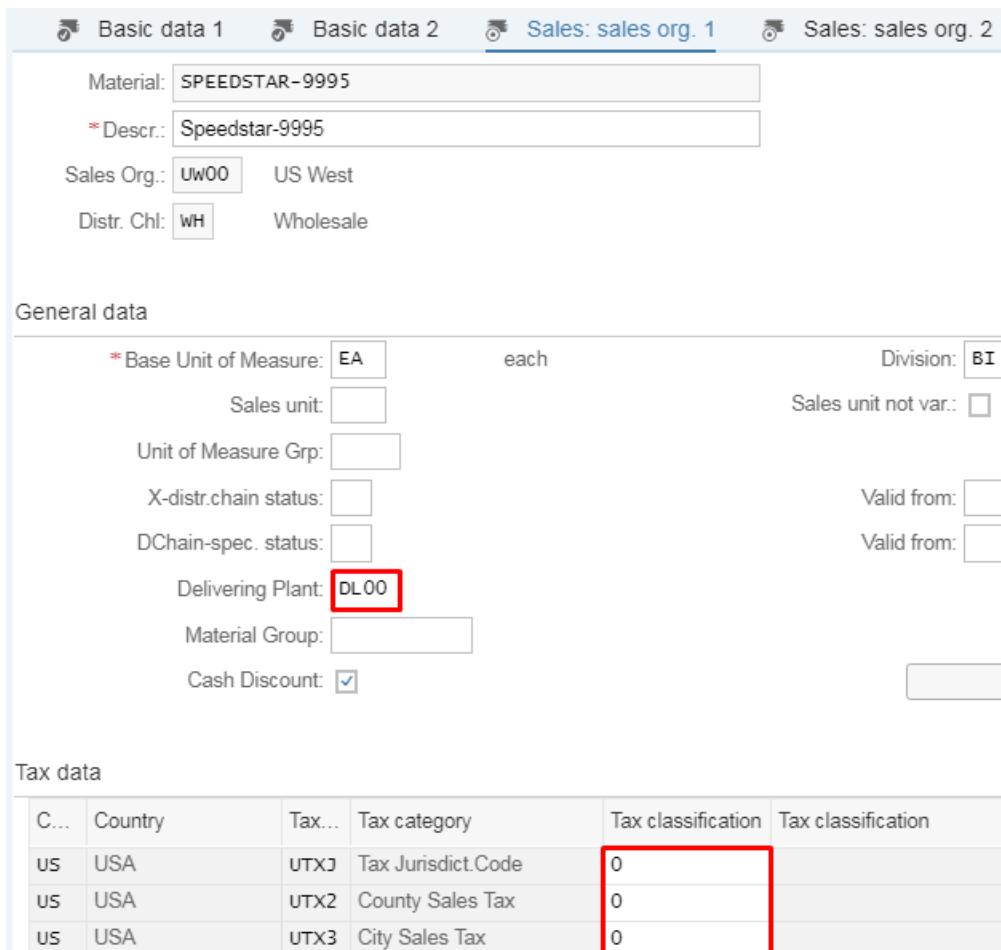
- Since you do not need to enter any data in the **Basic data 2 view**, proceed to the next view by pressing *Enter*. The **classification** view was skipped automatically, since it was not selected previously.
- In the **Sales: sales org. 1** view, you specify the plant from where the Speedstar is delivered and if it is relevant for taxation. Thus, enter the following data:
 - **Delivering Plant** *DL00 (Dallas)*

- **Tax Jurisdict. Code** *0 (Exempt)*
- **County Sales Tax** *0 (Exempt)*
- **City Sales Tax** *0 (Exempt)*
- Complete the dialog pressing *Enter*.



NOTE

In the following, not every single field that is maintained can be explained. This would not only go beyond the scope of this course, but many fields are explained in detail in later teaching units. Regardless, you can retrieve the meaning of each field by using the F1-Help.



C...	Country	Tax...	Tax category	Tax classification	Tax classification
us	USA	UTX1	Tax Jurisdict.Code	0	
us	USA	UTX2	County Sales Tax	0	
us	USA	UTX3	City Sales Tax	0	

Figure 38: 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:
 - **Availability check** *02 (Individual requirement)*
 - **Trans. Grp.** *0001 (On pallets)*
 - **LoadingGrp** *0002 (Hand lift)*
 - Complete the dialog pressing *Enter*.

Figure 39: 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** *000 (DL MRP Controller)*
 - **Lot Sizing Procedure** *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** *001*
 - **Prod.stor.location** *FG00 (Finished Goods)*
 - Press *Enter*.
11. Next, you see the **MRP 3** view. Enter
 - **Tot.repl. lead time** *15 days*
 - 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.** *FG00 (Finished Goods)*
 - Press *Enter*.
14. Within the **Accounting 1** view, enter
 - **Valuation Class** *7920 (Finished products)*
 - **Standard price** *3000*
 - **Price Control** *S (Standard price)*
 - Press *Enter* (any system notification regarding local currency conversion can be confirmed with *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. Finally, press the button **Additional Data** and add a second line for German:

- **Language** **DE**
- **Material description** **Speedstar-xyyy**

Other Material	Main Data	More ▾	
Descriptions		Units of measure	Additional EANs
Material: SPEEDSTAR-9995			
* Language	* Material description		
EN	Speedstar-9995		
DE	Speedstar-9995		

Figure 40: Material Master – Language Key: SAP-System-Screenshot

18. **Save** the newly created material by pressing **Save** in the lower screen area. The system displays a message confirming that the material was created. Close the app tab by pressing **Exit** to return to the Fiori Launchpad.



You can adjust material master records via, if available, the respective app or via the SAP Easy Access Menu. You have learned in script 0, how to use it. In addition, the following figure shows how to open it.

NOTE

The most frequent adjustments regarding material master records are:

- In case you forgot to create a view, you can change this by using the app **Create Material** (or transaction code **MM01**). Do not use **Change Material** app in that case. **Change Material** app (**MM02**) can only be used for views that already have been created in the system.
- If you want to change the Standard price, use the app **Material Price Change (MR21)**. Enter **US00 (Global Bike Inc.)** as Company Code and **DL00 (Plant Dallas)** as Plant and confirm. Enter the respective material and the new price in the specific fields, confirm and save your data.

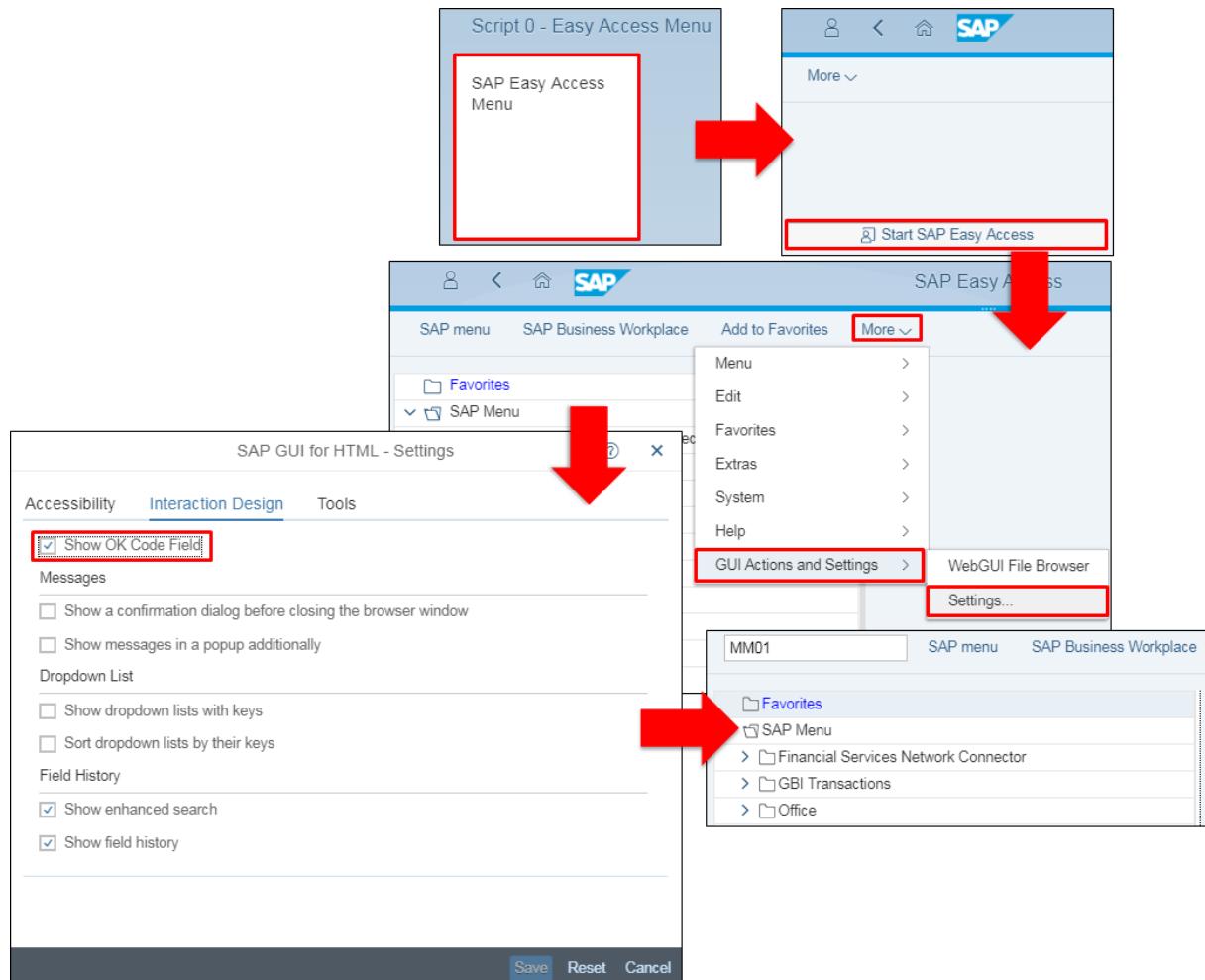


Figure 41: Using SAP Easy Access Menu: SAP-System-Screenshot

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 S/4HANA, scroll down to the tile group **Script 1 – Source-to-Pay** and open the app **Create Material**.

1. You are now in the *Create Material* dialog. Enter **Basis-Module-xxxx** as **Material**. Then, select **Mechanical engineering** as **Industry sector** and **Semifinished Product** and **Material type** by clicking the match code symbol . Go to the next dialog by clicking **Select View(s)** 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** *DL00 (Dallas)*
 - **Storage Location** *FG00 (Finished Goods)*
 - Complete the dialog with *Enter* or .
4. In **Basic data 1**, enter the following data in the specified fields:
 - **Material Description** *Basis-Module-xyyy*
 - **Unit of Measure** *EA (each)*
 - **Division** *BI (Bicycles)*
 - **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** *000 (DL MRP Controller)*
 - **Lot Sizing Procedure** *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** *001*
 - **Prod.stor.location** *FG00 (Finished Goods)*
 - Press *Enter*.
8. Next, you see the **MRP 3** view. Enter
 - **Availability check** *02 (Individual requirements)*
 - 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.** *FG00 (Finished Goods)*

- Press *Enter*.
11. Within the **Accounting 1** view, enter
- **Valuation Class** **7900 (Semifinished products)**
 - **Standard price** **2000**
 - **Price Control** **S (Standard price)**
 - Press *Enter* (any system notification regarding local currency conversion can be confirmed with *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 **Save**. The system displays a message confirming that the material was created. Close the app by pressing **Exit** and return to the Fiori Launchpad.

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 within the company and, thus, does not need the view work scheduling.

To create the raw material, remain in the current view or open the app **Create Material** again.

1. You are now in the *Create Material* dialog. Enter **Carb-Frame-xxxx** as **Material**. Then, select **Mechanical engineering** as **Industry sector** and **Raw materials** as **Material type** by clicking the match code symbol . Go to the next dialog by clicking **Select View(s)** 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. 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 for the SD-departments, since sales is not involved for the basis-module:
 - **Plant** **DL00 (Dallas)**

- **Storage Location** *FG00 (Finished Goods)*
 - Complete the dialog with *Enter* or .
4. In **Basic data 1**, enter the following data in the specified fields:
- **Material Description** *Carb-Frame-xxxx*
 - **Base Unit of Measure** *EA (each)*
 - **Material Group** *RAW (Raw Materials)*
 - **Gross weight** *8 KG*
 - 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 *N00 (North America)*. Press *Enter*.
7. In the next view **MRP 1**, enter the following data:
- **MRP Type** *PD (Material Requirements Planning)*
 - **MRP controller** *000 (DL MRP Controller)*
 - **Lot Sizing Procedure** *EX (Lot-for-lot order quantity)*
 - Press *Enter*.
8. In the **MRP 2** dialog, enter the following data:
- **Procurement type** *F (External procurement -field is not editable!)*
 - **Prod.stor.location** *FG00 (Finished Goods)*
 - **Storage loc. for EP** *FG00 (Finished Goods)*
 - **Planned Deliv. Time** *3 days*
 - **SchedMargin key** *001*
 - Press *Enter*.
9. Next, you see the **MRP 3** view. Enter
- **Availability check** *02 (Individual requirements)*
 - Press *Enter*.
10. You do not need to enter any data in the view **MRP4**. Thus, skip that view with *Enter*.
11. Within the **Accounting 1** view, enter
- **Valuation Class** *3000 (Raw materials 1)*
 - **Standard price** *750*
 - **Price Control** *S (Standard price)*
 - Press *Enter* (any system notification regarding local currency conversion can be confirmed with *Enter*).
12. In the **Costing 1** view, check the -box **Material origin** and **With Quantity Structure**. **Save** the newly created material by pressing the **Save** button. The system displays a message confirming that the material was created. Close the app by pressing **Exit** and return to the Fiori Launchpad.

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 S/4HANA 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. In order to create the material, scroll down to the tile group **Script 1 – Source-to-Pay** and open the app *Create Material*.

1. You are now in the *Create Material* dialog. Enter the following data:

- **Material** *Wheel-xyyy*
- **Industry sector** *Mechanical engineering*
- **Material type** *Raw materials*
- **Copy from** your material *Carb-Frame-xyyy*
- 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 DL00** and **Storage Location FG00** 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** *DL00 (Dallas)*
- **Storage Location** *FG00 (Finished Goods)*
- **Copy from Plant** *DL00 (Dallas)*
- **Copy from Storage Location** *FG00 (Finished Goods)*
- Complete the dialog with *Enter* or .

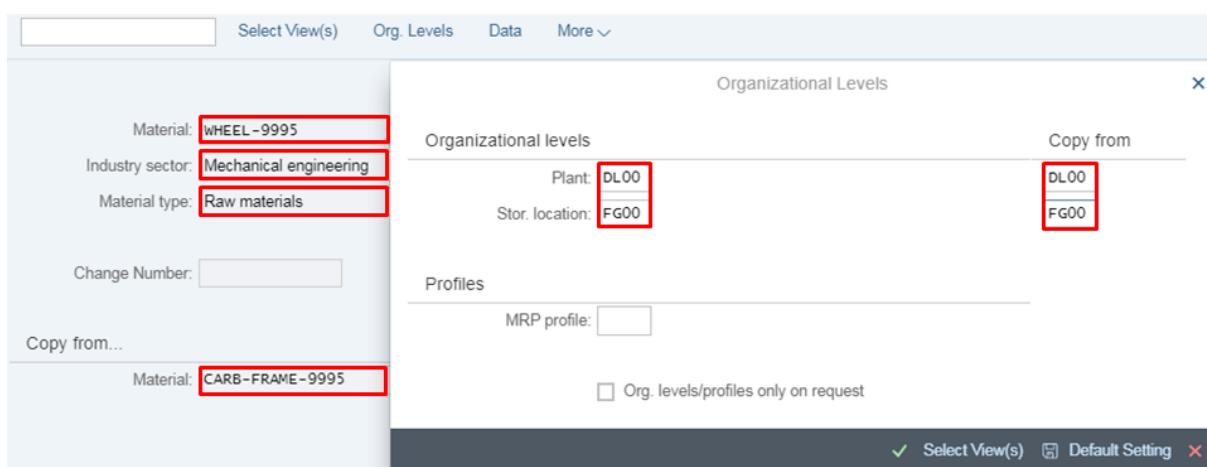


Figure 42: Material Master – Copy from Reference (1): SAP-System-Screenshot

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

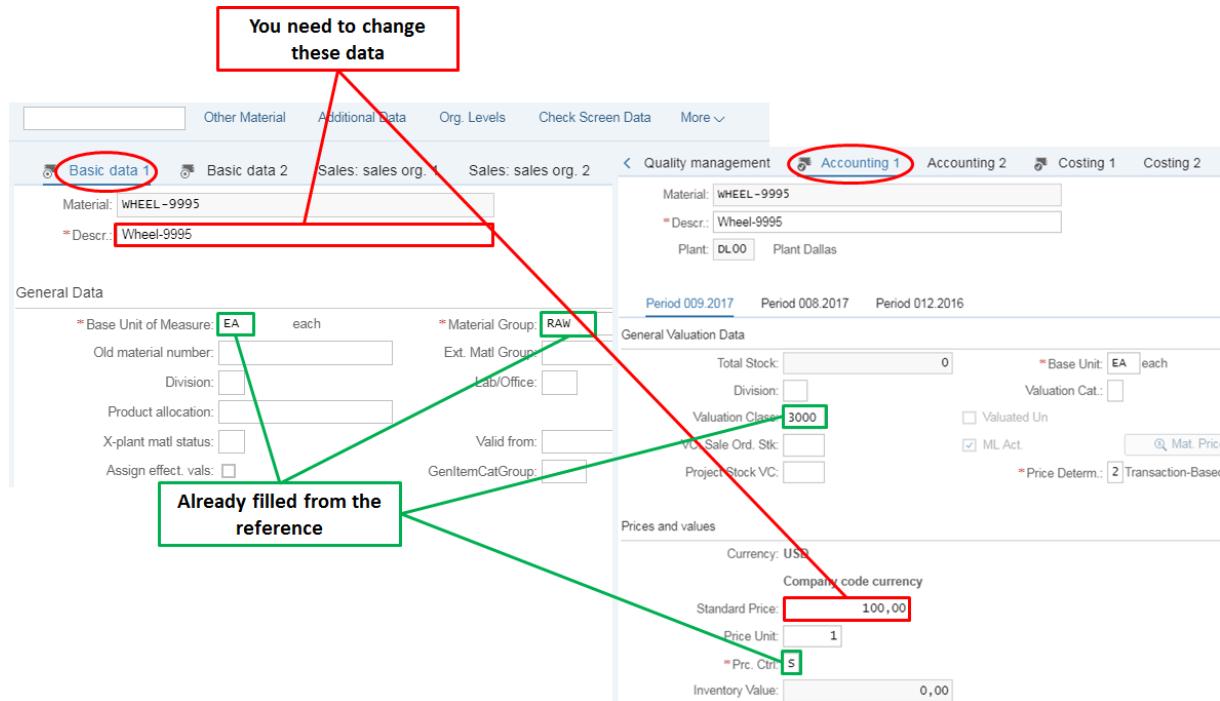


Figure 43: Material Master – Copy from Reference (2): SAP-System-Screenshot

4. **Basic data 1 view:** **Material Description** *Wheel-xyyy*
Gross weight *2 KG*
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* and confirm
12. **Costing 1 view:** no changes – press **Save** and then, click on **Exit**.

2.4.2.5 Material Master Record: Gearing

The last data set you need to create is for the **Basis-Module's gearing**. This component is also a raw material quite similar to the ones you already created. Therefore, repeat the procedure you have used for wheel. Open the *Create Material* app.

1. You are now in the *Create Material* dialog. Enter the following data:

- Material	<i>Gearing-xyyy</i>
- Industry sector	<i>Mechanical engineering</i>
- Material type	<i>Raw materials</i>
- Copy from	your material <i>Carb-Frame-xyyy</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***

Confirm with *Enter* or .

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 DL00** and **Storage Location FG00** 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. Enter

- **Plant** *DL00 (Dallas)*
- **Storage Location** *FG00 (Finished Goods)*
- **Copy from Plant** *DL00 (Dallas)*
- **Copy from Storage Location** *FG00 (Finished Goods)*

- Complete the dialog with *Enter* or .

4. **Basic data 1 view:** **Material Description** *Gearing-xxxx*
Gross weight *1 KG*
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** *6 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** *500* – press *Enter* and confirm
12. **Costing 1 view:** no changes – press **Save** and then, click on **Exit**.

2.4.2.6 Displaying Material List

Within the list overview, double-check all the materials you have created thus far. Therefore, scroll down to the tile group **Script 1 – Source-to-Pay** and open the app **Materials List**.

Enter your **user name WIPx-yyy** in the left field of **Created by**. If necessary, delete possible entries in all the other fields like **Material**, **Plant** etc. and press **Execute** (**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 two instances of the SAP Materials List interface. The top instance is the search screen with fields for Material, Plant, Material type, Material group, and Created by (which is set to 'WIP9-995' and highlighted with a red box). The bottom instance shows the resulting material list with several rows of data, also filtered by 'WIP9-995' (highlighted with a red box around the entire list area). A large red arrow points from the search screen down to the list screen.

Material	Plant	Val. type	Material description	Last Chg	MTyp	Matl Group	BUn	PGr	ABC	Typ	ValCl	Pr.	Price	Crcy	/ Created by
BASIS-MODULE-9995	DL00		Basis-Module-9995		HALB		EA			PD	7900	S	2.000,00	USD	1 WIP9-995
CARB-FRAME-9995	DL00		Carb-Frame-9995		ROH	RAW	EA	N00		PD	3000	S	750,00	USD	1 WIP9-995
GEARING-9995	DL00		Gearing-9995		ROH	RAW	EA	N00		PD	3000	S	500,00	USD	1 WIP9-995
SPEEDSTAR-9995	DL00		Speedstar-9995		FERT		EA			PD	7920	S	3.000,00	USD	1 WIP9-995
WHEEL-9995	DL00		Wheel-9995		ROH	RAW	EA	N00		PD	3000	S	100,00	USD	1 WIP9-995

Figure 44: Material List: SAP-System-Screenshot



If you encounter any differences (other than the user number, last change etc.) between your data and the screenshot above, please rectify the error before proceeding with the case study.

CAUTION

Close the register tab and turn back to the tab with the tile groups and apps by pressing **Exit**.

2.4.2.7 Displaying Material Master Data

Additionally, you can display and change material master data in the system. Therefore, within the tile group **Script 1 – Source-to-Pay** open the app **Display Material**.

In the initial window, you can enter the following materials in the material field (**only one material at the same time**):

- Speedstar-xyyy
- Basis-Module-xyyy
- Carb-Frame-xyyy
- Wheel-xyyy,
- Gearing-xyyy

Next, press **Enter**.



Of course, you can only display views, which you have maintained beforehand for a particular material. For example, if you did not create the **Classification** view, the entry will not be displayed in the **Display** view.

NOTE

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
 - o Sales: General/Plant Data
 - o Foreign Trade: Export Data
 - o Sales Text
- **MM = Material Management**
 - o Purchasing
 - o Foreign Trade: Import
 - o Purchase Order Text
- **LE-WM = Logistic Execution – Warehouse Management**
 - o General Plant Data/Storage 1-2
 - o Warehouse Management 1-2
 - o Quality Management
- **PP = Production Planning**
 - o MRP 1-4
 - o Forecasting
 - o Work Scheduling
 - o Production Resources/Tools
- **FI = Financial Accounting**
 - o Accounting 1-2
- **CO = Controlling/Management Accounting**
 - o Costing 1-2

The organizational data for your materials are as follows:

Plant	DL00
Storage Location	FG00
Purchasing Organization	US00
Sales Organization	UW00
Distribution Channel	WH

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 US00 and purchasing organization US00.

Therefore, create a business partner, first, and then, assign vendor-specific data regarding company code and purchasing organization to it.



NOTE

In the S/4HANA system vendors and customers are created as business partners, first. Then, they are declared as vendors and/or customers by assigning business partner roles.

Later in script 3 – Lead-to-Cash, you will create a business partner with customer-specific data.

To create a vendor master record, scroll down to the tile group **Script 1- Source-to-Pay** and open the app **Maintain Business Partner**.

1. In the *Maintain Business Partner* view, click on **Person** button and make sure, that within **Create in BP role** field the entry **Business Partner (Gen.)** is available.

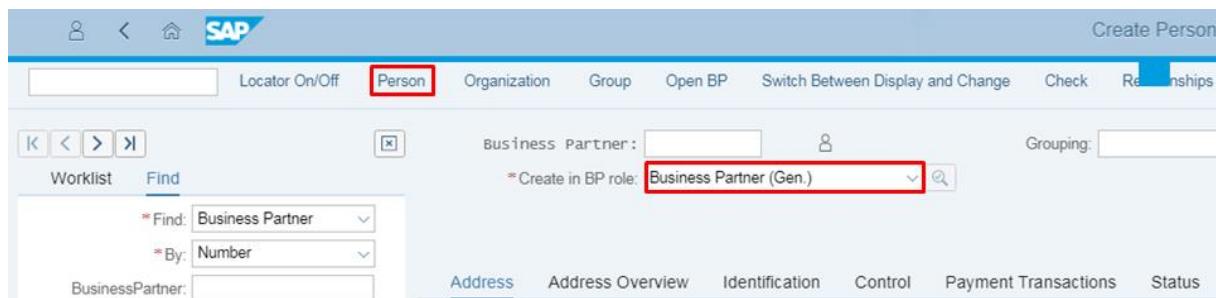


Figure 45: Create Vendor (1): SAP-System-Screenshot

2. In the *Create Person* view enter the following data within the **Address** tab:

- | | |
|--|------------------------|
| - First name | <i>your first name</i> |
| - Last name | <i>your last name</i> |
| - Search term ½ | <i>your last name</i> |
| - Street | <i>Long Street</i> |
| - House number | <i>77</i> |
| - Postal code | <i>75201</i> |
| - City | <i>Dallas</i> |
| - Country | <i>US</i> |
| - Confirm by pressing Enter on your keyboard or Enter in the lower right area. | |
| - Save by selecting the respective button (Save). | |



NOTE

Pay attention to create the vendor data completely and correctly (e.g. entering of City, later terms of payment etc.). Otherwise, incomplete business partner data will cause errors at later steps.

3. The system provides a number regarding **Business Partner**. Write down this number in your data sheet, but do not leave the current view.



NOTE

Consider, that your own business partner number will differ from the following figure. Also consider, that while further processing you only are allowed to use your own data.

 Success



Business partner 48025 created

Figure 46: Create Vendor (2): SAP-System-Screenshot

Business Partner:

Now, the general business partner data is created. Next, create the vendor-specific data.

4. In the upper screen area, select the **Switch Between Display and Change** in order to create further business partner roles and then, select from the **Change in BP role** dropdown menu the entry **FI Vendor**.

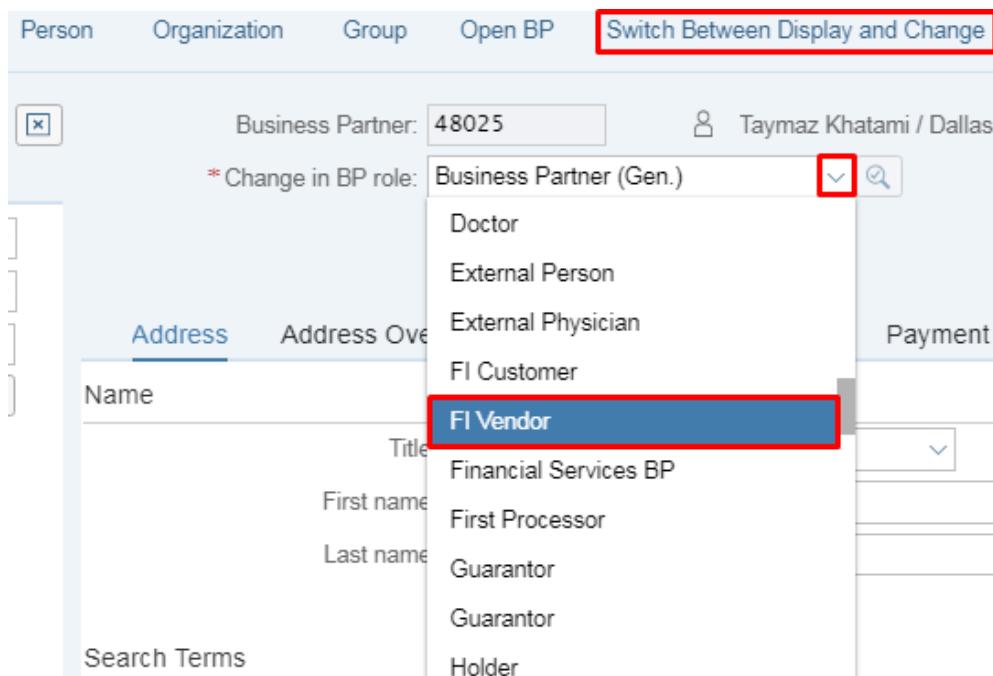


Figure 47: Create Vendor (3): SAP-System-Screenshot

5. As you can see, the information you just entered, was taken from the general business partner data for this business partner role. Now, enter the further information required in this view and start with enter **EN** as **Correspondence language**.
6. Click on the **Company Code** button in the upper area (if your browser is not executed in full screen mode, you probably have to select **More →, first**) and enter **US00** as **Company Code**. Again, confirm with **Enter** or select **Enter**.

7. Now, within the **Vendor: Account Management** tab, enter the following data and confirm with *Enter*:

- Recon. Account	300000
- Sort key	002
- Planning Group	A1
- Release group	0001
- Interest indic.	02
- Interest cycle	01

Account Management	
* Reconciliation acct:	300000
Head office:	
Sort key:	002
Subsidy Indicator:	
Authorization Group:	
Planning Group:	A1
Release Group:	0001
Minority Indicator:	
Certification Date:	

Interest Calculation	
Interest indicator:	02
Interest Cycle:	1

Figure 48: Create Vendor (4): SAP-System-Screenshot

8. Switch to the **Vendor: Payment Transactions** tab and enter the following data:

- Payment Terms	0001
- Tolerance Group	GBI
- Check Double Invoice	select
- Payment methods	CD

9. Confirm with *Enter* and *save* your data bei selecting the respective button (**Save**) in the lower right screen area.

10. While saving the SAP system generates a vendor number in the Company Code area.
Write down this number in your data sheet, too.

Company Code	
Company Code:	us00
Customer:	
Vendor:	125020

Figure 49: Create Vendor (5): SAP-System-Screenshot

Vendor Account:

11. Next, maintain the information relevant for purchasing. Therefore, select **Vendor** from the **Change in BP role** dropdown menu (if there are two entries available, select the second one).

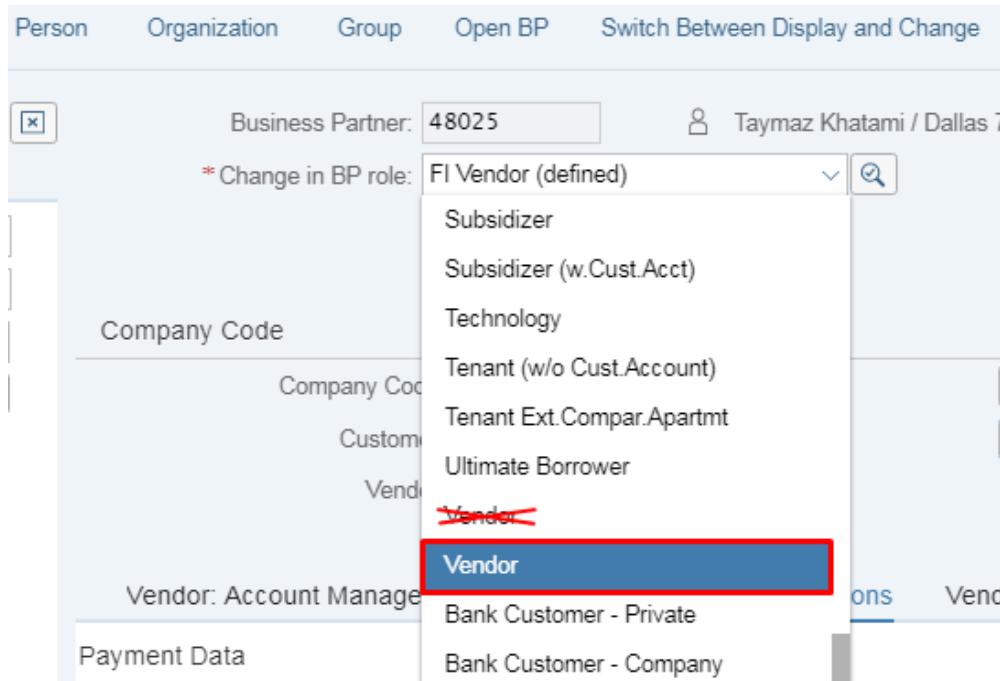


Figure 50: Create Vendor (6): SAP-System-Screenshot

12. Again, you can see that all required fields have been taken from the previously created fields. Therefore, directly select **Purchasing** (if your browser is not executed in full screen mode, you probably have to select **More →**, first).
 13. Enter **US00** as **Purchasing Organization** and confirm with *Enter*.
 14. Now, maintain the respective:

- Order currency	USD
- Payment terms	0001
- Incoterms	EXW
- Inco.Location1	*
- Salesperson	Mr. Jones
- Telephone	923-32323
- ABC indicator	A (scroll down)
- GR-Based Inv. Verif.	select
- Automatic PO	select

15. **Save** your entries and then, press **Exit**.

Now, you have created a business partner and declared it as vendor with the respective data regarding company code and purchasing organization. The next step is the creation of the purchasing info records.

2.4.4 Create 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-xyyy	Your Vendor	1	750	500	650
Wheel-xyyy	Your Vendor	1	100	1000	80
Gearing-xyyy	Your Vendor	1	500	500	450

2.4.4.1 Create Info Record: Carb-Frame

To create an info record, scroll down to the tile group **Script 1- Source-to-Pay** and open the app *Create Purchasing Info Record*.

- 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** *Carb-Frame-xyyy*
 - **Purchasing Org.** *US00*
 - **Plant** *DL00*

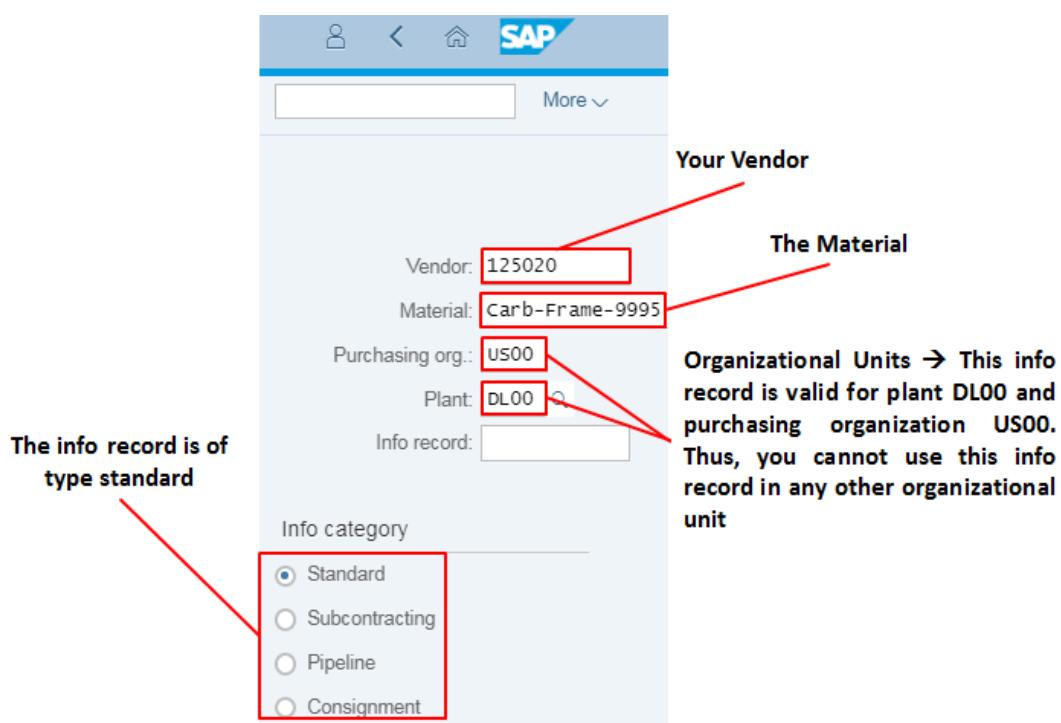


Figure 51: Info Record: SAP-System-Screenshot

2. Confirm with **Enter**. You are prompted to the *Create Info Record: General Data* screen. You can see that some data from the material master was already transferred. You do not need to change this 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.

Info record:		Texts	Classify	Services for Object	More																																				
Vendor:	125020	Taymaz Khatami																																							
Material:	CARB-FRAME-9995 Carb-Frame-9995																																								
Material Group:	RAW	Raw Materials																																							
Supplier Data <table border="1"> <tr><td>1st Rem./Exped.:</td><td></td><td>Days</td></tr> <tr><td>2nd Rem./Exped.:</td><td></td><td>Days</td></tr> <tr><td>3rd Rem./Exped.:</td><td></td><td>Days</td></tr> <tr><td>Supp. Mat. No.:</td><td colspan="2"></td></tr> <tr><td>Suppl. Subrange:</td><td colspan="2"></td></tr> <tr><td>SSR Sort No.:</td><td colspan="2"></td></tr> <tr><td>Suppl. Mat. Grp.:</td><td colspan="2"></td></tr> <tr><td>Points:</td><td></td><td>/ 1 EA</td></tr> <tr> <td>Salesperson:</td> <td colspan="2">Mr. Jones</td> <td colspan="3">Supply Option</td> </tr> <tr> <td>Telephone:</td> <td colspan="2">923-32323</td> <td colspan="3">Available from:</td> </tr> </table>						1st Rem./Exped.:		Days	2nd Rem./Exped.:		Days	3rd Rem./Exped.:		Days	Supp. Mat. No.:			Suppl. Subrange:			SSR Sort No.:			Suppl. Mat. Grp.:			Points:		/ 1 EA	Salesperson:	Mr. Jones		Supply Option			Telephone:	923-32323		Available from:		
1st Rem./Exped.:		Days																																							
2nd Rem./Exped.:		Days																																							
3rd Rem./Exped.:		Days																																							
Supp. Mat. No.:																																									
Suppl. Subrange:																																									
SSR Sort No.:																																									
Suppl. Mat. Grp.:																																									
Points:		/ 1 EA																																							
Salesperson:	Mr. Jones		Supply Option																																						
Telephone:	923-32323		Available from:																																						
Origin Data <table border="1"> <tr><td>Certif. Cat.:</td><td></td></tr> <tr><td>Certificate:</td><td></td></tr> <tr><td>Valid to:</td><td></td></tr> <tr><td>Ctry of Origin:</td><td>US</td></tr> <tr><td>Region:</td><td></td></tr> <tr><td>Number:</td><td></td></tr> <tr><td>Manufacturer:</td><td></td></tr> </table>						Certif. Cat.:		Certificate:		Valid to:		Ctry of Origin:	US	Region:		Number:		Manufacturer:																							
Certif. Cat.:																																									
Certificate:																																									
Valid to:																																									
Ctry of Origin:	US																																								
Region:																																									
Number:																																									
Manufacturer:																																									

Figure 52: Info Record – General Data: SAP-System-Screenshot

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

		Header Data	Details	Additional Data	Scales	Validity Periods	Free Goods																																																																																								
Variable key																																																																																															
Vendor	Material		POrg	Plan	Cat	Description																																																																																									
125020	CARB-FRAME-9995		US00	DL00	0	Standard																																																																																									
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You are then prompted to the condition page where you can enter the scale quantity and the according price

Figure 53: Purchasing Info Record – Conditions Carb-Frame: SAP-System-Screenshot

- Save your entries and list the number of the info record displayed in the lower screen area.

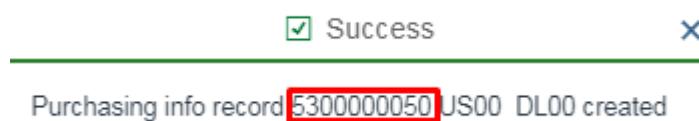


Figure 54: Info record number: SAP-System-Screenshot

Purchasing Info Record (Carb-Frame):



Subsequent changes to the Info Record can be made selecting **More → Info Record → Change** within the **Creating Purchasing Info Record** app. However, delete possible entries in the **Info Record** field.

NOTE

2.4.4.2 Create Info Record: Wheel

1. Next, create the info record for material **Wheel-xyyy**. The other entries are equivalent to the prior task. If necessary, delete possible entries in the **Info Record** field. Press **Enter**.
2. Once again, click the **Purch. Org. Data 1** icon. Enter
 - **Standard Quantity** **200 pieces (EA)**
 - **Net Price** **100 USD**
 - Next, click the **Conditions** icon.
3. Select the line containing **Condition Type PB00** and click on **Scales**.
4. Enter the following data to configure the condition, enter **100 USD** in the **price** field from a **scale quantity** of **1 piece** and from a **scale quantity** of **1000** enter a price of **80 USD**:
 - first row: **Scale Quantity = 1** **Amount = 100**
 - second row: **Scale Quantity = 1000** **Amount = 80**

Variable key		POrg	Plant	Cat	Description
Vendor	Material	US00	DL00	0	Standard
125020	WHEEL-9995				

Validity

*Valid From: 24.09.2017 *Valid to: 31.12.9999

Condition supplements

CnTy	Name	Amount	Unit	per	UoM	DeletionID	Scales	Texts
<input checked="" type="checkbox"/>	PB00	100,00	USD	1	EA		<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Loss Price						<input type="checkbox"/>	<input type="checkbox"/>

You are then prompted to the condition page where you can enter the scale quantity and the according price

Variable key		POrg	Plant	Cat
Vendor	Material	US00	DL00	0
125020	WHEEL-9995			

Validity

*Valid From: 24.09.2017 *Valid to: 31.12.9999

Control

Scale Basis: Quantity scale Check: None

Scales

Scale Type	Scale quantity	* ...	Amount	* Unit	* per	* UoM	PricActive
From	1 EA		100,00	USD	1 EA		<input type="radio"/>
	1000		80				<input type="radio"/>

Figure 55: Purchasing Info Record – Conditions Wheel: SAP-System-Screenshot

5. **Save** and list the info record number.

Purchasing Info Record (Wheel):

2.4.4.3 Create Info Record: Gearing

1. Next, create the info record for **Gearing-xxxx**. The other entries are equivalent to the prior task. If necessary, delete possible entries in the **Info Record** field. Press *Enter*.
2. Once again, click the **Purch. Org. Data 1** icon. Enter
 - **Standard Quantity** *100 pieces (EA)*
 - **Net Price** *500 USD*
3. Next, click the **Conditions** icon.
4. Select the line containing **Condition Type PB00** and click on **Scales**.
5. Enter the following data to configure the condition, enter 500 USD in the price field from a scale quantity of 1 piece and from a scale quantity of 500, enter a price of 450 USD:
 - first row: **Scale Quantity = 1** **Amount = 500**
 - second row: **Scale Quantity = 500** **Amount = 450**
5. **Save** and list the info record number. Finally, press **Exit**.

Purchasing Info Record (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.

3 Source-to-Pay Business Process

In this unit we will discuss the Source-to-Pay business process in detail.

3.1 Theory: Source-to-Pay Business Process in S/4HANA



THEORY

In this theory chapter you will become acquainted with the Source-to-Pay business process and the objects involved in the individual steps of the process. Since the Source-to-Pay business process in SAP, like almost any other process in an SAP system, is integrated with different SAP applications, we will also point out some integration aspects in this chapter.

3.1.1 Overview of the Source-to-Pay Business Process

The following figure displays the standard **Source-to-Pay** business process in SAP. The process and its individual steps may vary significantly between different companies depending on the company procedures, the products or services that are purchased and other factors. Therefore, SAP provides all tools and customizing settings to tailor this process to the particular business needs of a company.

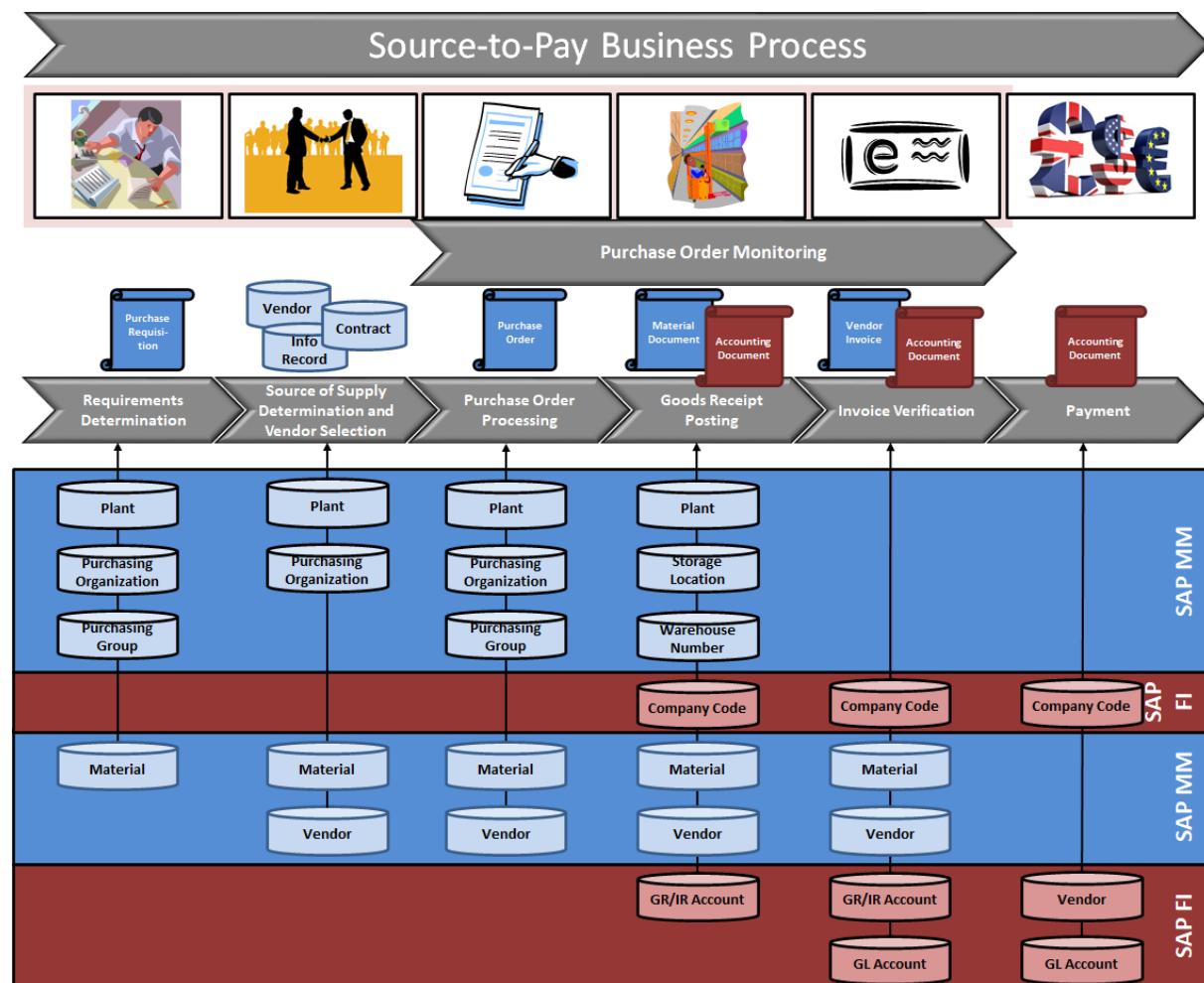


Figure 56: Source-to-Pay Business Process

The steps ideally performed in the Source-to-Pay business process are as follows:

1. **Requirements determination:** The Source-to-Pay business process is initiated by procurement requirements, which are documented as **purchase requisitions** in the SAP system. A purchase requisition is a demand from a department within the company towards the purchasing department to procure a specific material. Purchase requisitions are then transferred to the purchasing department and build the starting point of the Source-to-Pay business process. Thereby, purchase requisitions can arise from multiple sources (processes and departments) within the company and can be created manually as well as automatically by the SAP system.

Examples:

- The material requirements planning (MRP) triggered by the manufacturing department automatically creates purchase requisitions for raw materials that are needed in the manufacturing process. Therefore, a MRP procedure must be entered in the material master data record (*e.g., in our practice scenarios we use the MRP procedure PD in the material master – however, other types are possible as well*).
 - The responsible department (e.g., a service department) manually creates purchase requisitions for spare parts and hand them over to the purchasing department for further processing.
2. **Determining the source of supply:** The purchase requisition specifies when a particular material need must be satisfied and with what quantity. The next step in processing these purchase requisitions is to find an appropriate source of supply. The SAP system assists the responsible procurement agent (*in our practice scenario this is purchasing group N00 (North America)*) with the determination sources of supply, e.g., vendors, in many ways. The determination of source of supply can be used to create *requests for quotation* (RFQ) that are sent to different vendors and subsequently create the quotation.

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 or the vendor with the best overall conditions. Additionally, rejection letters may be processed automatically (*in our case studies, we will create a vendor, which will be used later on to procure materials from*). Once vendors are identified and evaluated, the purchase order processing can start.

3. **Purchase order processing:** Purchase orders, similarly to purchase requisitions, can be either created manually by an employee or created automatically by the system. If a preceding document already exists in the system, it is recommended to copy it into the purchase order. This is referred to as **copying control** in SAP systems and is applied whenever possible in SAP processes to reduce manual data entries.

For instance, if a *purchase requisition*, *quotation*, or *outline agreement* have been created in the previous process steps, then the purchase order should reference that document to copy relevant data into the purchase order. This reduces the number of entries that need to be made. A purchase order is, thereby, a document that contains all information required to process all purchasing activities. It usually includes the vendor, prices, quantities, terms, and other pertinent information. Once the purchase order is created, the involved vendor is notified by the document output generated from the purchase order.

4. **Goods receipt:** The next step is the shipment of the purchased material by the supplier. When the materials arrive, a goods receipt must be posted. Thereby, you enter a goods receipt with reference to the associated purchase order. This, again, reduces the number of entries that need to be made and allows checking whether the goods and quantities delivered match the numbers stated in the purchase order. In case of deviations, the system can automatically issue warnings for the corresponding department. After the goods receipt is saved, the system updates the purchase order history in the purchase order document by assigning the material document number of the goods receipt to the involved purchase order items.
5. **Invoice verification:** If the delivered materials pass potential quality inspections, the vendor invoice can be created. With an invoice, the vendor bills the delivered goods or services. Therefore, the invoice document is, again, created with a reference to the purchase order or the delivery (goods receipt). This reference, again, allows checking the amounts, prices, quantities, and the general accuracy of the invoice. If differences to the numbers in the purchase order and goods receipt are detected, the system automatically notifies the employee by issuing warnings or error messages and, if necessary, blocks the document for further processing. After invoice verification, the vendor can be paid. Also note that an invoice can also be sent by the vendor before the goods receipt is posted in the system. In that case, invoice verification compares amounts and quantities with the purchase order and not the goods receipt.
6. **Order monitoring:** Order monitoring is a superordinate process component and refers to the monitoring of the process steps *purchase order processing*, *goods receipt*, and *invoice verification*. Order monitoring takes place directly within the purchase order document. The purchase order document, therefore, encompasses two different components that allow monitoring the status of a purchase process:
 - **Status tab:** The status tab on the header level of the purchase order document displays the overall status of the material positions (items) in the purchase order. There are three numbers that are monitored here, which refer to the documents purchase order (*order quantity*), goods receipt (*delivered quantity*), and the invoice (*invoiced quantity*). For instance, when the ordered material is received and posted with the goods receipt, the status of delivered quantity is updated.
 - **Purchase Order History tab:** The purchase order history is available for each item (material position) in the purchase order as soon as the invoice or goods receipt is posted for that item. When a goods receipt is posted, the material document number of the goods receipt is displayed in this tab. When the invoice document is posted for an item, the invoice document number is displayed in this tab. The information displayed on this tab allows performing different control functions such as directly jump to the assigned documents.

These order monitoring functions allow the purchaser in charge to monitor the order status online anytime and to intervene if necessary. Thus, the purchaser can determine whether goods receipt or invoice receipt processes are already completed or if dunning procedures must be triggered (manually) if not already done automatically by the system. Note that there are also several LIS reports that can be used for reporting on and monitoring purchase orders. The information these reports use are mainly derived from the statuses of the purchase orders.

7. **Payment handling:** Finally, the vendor debts are paid by creating a payment manually or using an automatic payment program. The payment refers to the vendor account (company-code-specific part of the vendor master data) and the open amounts stated there. The payment can reference a specific invoice but does not have to. It can also settle multiple invoice amounts posted to the vendor account.

This process step is not part of the SAP MM application but is performed using the financial accounting application (SAP FI).

SAP S/4HANA Intelligent Spend Management

The above-described business process encompasses all the process steps that take place in the digital core of the system landscape: the SAP S/4HANA system. This digital core is the system of record, and handles all operational transactions for production planning, procurement, sales and distribution including Available-to-Promise (ATP) and connecting into the shop floor. However, SAP offers a series of solutions that extend the scope of the business processes and seamlessly integrates them with supplier and maintenance applications. This includes:

- SAP Fieldglass (solution for external workforce management)
- SAP Concur (solution for automated management of financial operations)
- SAP Ariba (solution for business marketplace and supplier integration)
- SAP Integrated Business Planning (solution for demand planning across the entire supply chain)

With SAP Intelligent Spend Management comprehensive management of all supplier relationships and company purchasing is provided that allows identifying all funds spent and the result achieved from it. Spend management best practices integrate and automate all spend-related activities from source to settle so that buying happens as planned and suppliers get paid in compliance with contracts. Intelligent Spend Management provides

- Embedded Intelligence (e.g., Machine Learning) and Insights (e.g., Analytics) across the central Source-to-Pay business process
- Seamless connection and integration of the SAP S/4HANA procurement application with the entire supply chain and asset management including the integration of suppliers into the company's supply chain and maintenance operations
- Management of all spends, all buying channels, all suppliers on a common end-to-end platform

For the procurement scenario **SAP Integrated Business Planning** and **SAP Ariba** are of specific relevance.

SAP Integrated Business Planning (IBP) is part of the SAP S/4HANA solution and depicts an extension of the digital core into the world of planning by building the bridge to the transactional world in S/4HANA with response planning. IBP provides short and long-term demand planning as well as supports Sales and Operations planning (SOP) for procurement and production processes. Furthermore, it provides end-to-end visibility, analytics and alerting across all your internal and external planning and execution systems. We will deal with IBP in the next teaching unit.

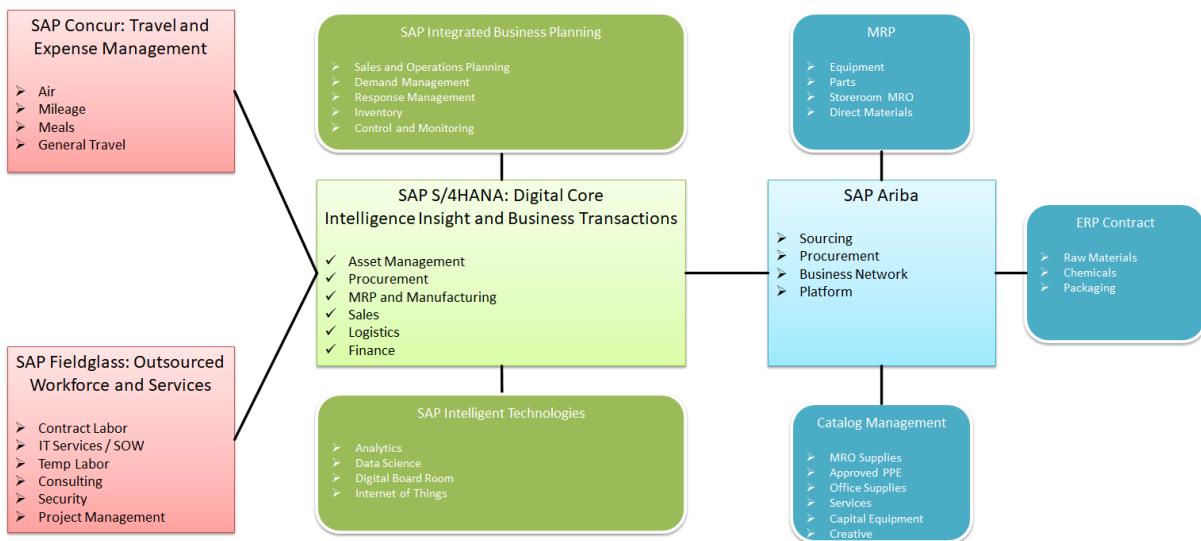


Figure 57: SAP S/4HANA: Planning and Sourcing

SAP Ariba is the connection to the business network of a company and provides several crucial functionalities. It provides a collaboration platform that allows a company's business partners to logon to a single system and exchange trade information with every other company. Beyond that it is growing and fostering an ever-growing business network, onboarding new partners to allow all involved parties to do business with each other.

Ariba is a company that was founded in 1996 and specialized on business-to-business procurement processes. It developed the world's leading cloud-based trading platform and facilitates the inter-company business processes within this network. In 2012, SAP acquired Ariba for \$4.3 billion and integrated it in its own product portfolio.

Companies that use Ariba can identify and locate new suppliers, streamline transaction processes with suppliers, and realize savings with cloud-based procurement software. The Ariba network supports the entire source-to-pay process. The following table summarizes the features of the Ariba Network and how a company can use it:

Summary	Details
Collaborate immediately with trading partners	<ul style="list-style-type: none"> - Access enabled network suppliers - Trade with new suppliers with unlimited supplier onboarding - Select from 15+ collaboration processes
Transform paper into electronic transactions	<ul style="list-style-type: none"> - Automatically accept electronic POs and invoices - Convert paper with conversion services - Easily allow sellers to transform POs into invoices
Catch and prevent potential errors	<ul style="list-style-type: none"> - Enforce policy and compliance rules in real-time - Receive notifications and alerts based on transaction data - Ensure global invoice compliance
Reduce the cost of goods, beyond sourcing efficiencies	<ul style="list-style-type: none"> - Ensure visibility into fulfillment and supply chain - Optimize working capital with discounting - Manage cloud catalog and contract compliance
See opportunities and participate worldwide	<ul style="list-style-type: none"> - Receive notification of sales growth opportunities - Promote your organization's offerings with ease - Identify new sources of supply

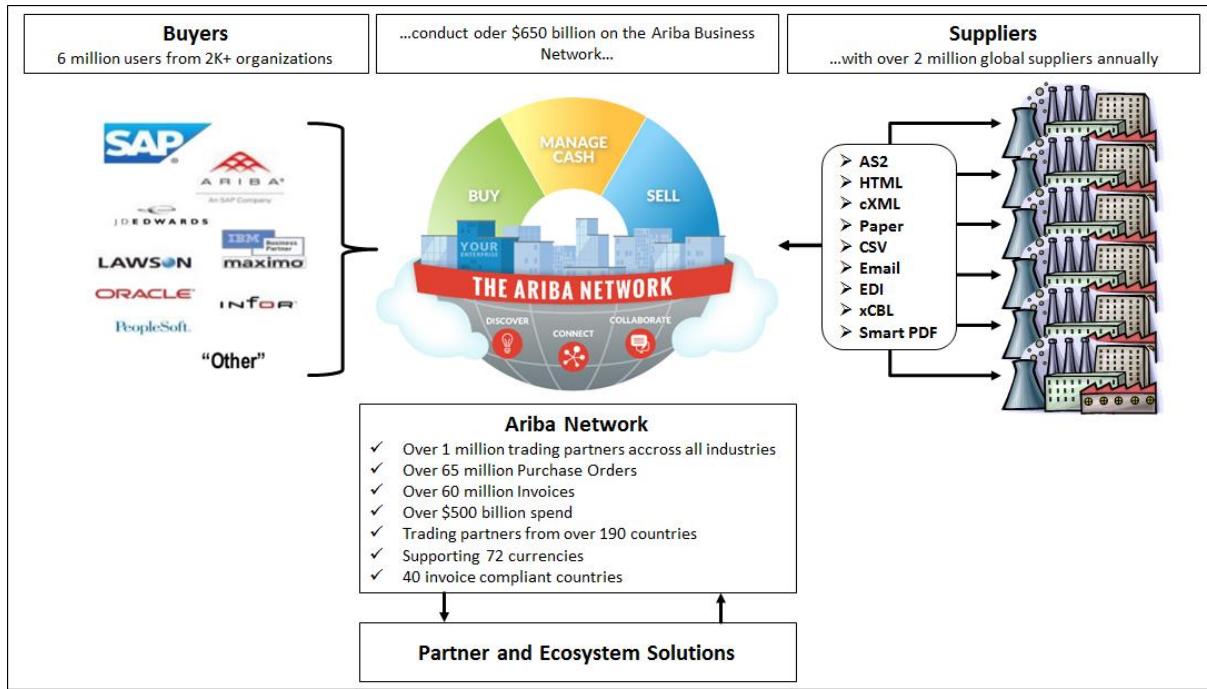


Figure 58: Ariba Network (www.sap.com)

Integration between SAP Business Suite and the Ariba Network includes the following:

- Purchase order and invoice automation
- Discount management
- Ariba procurement content (catalog integration)

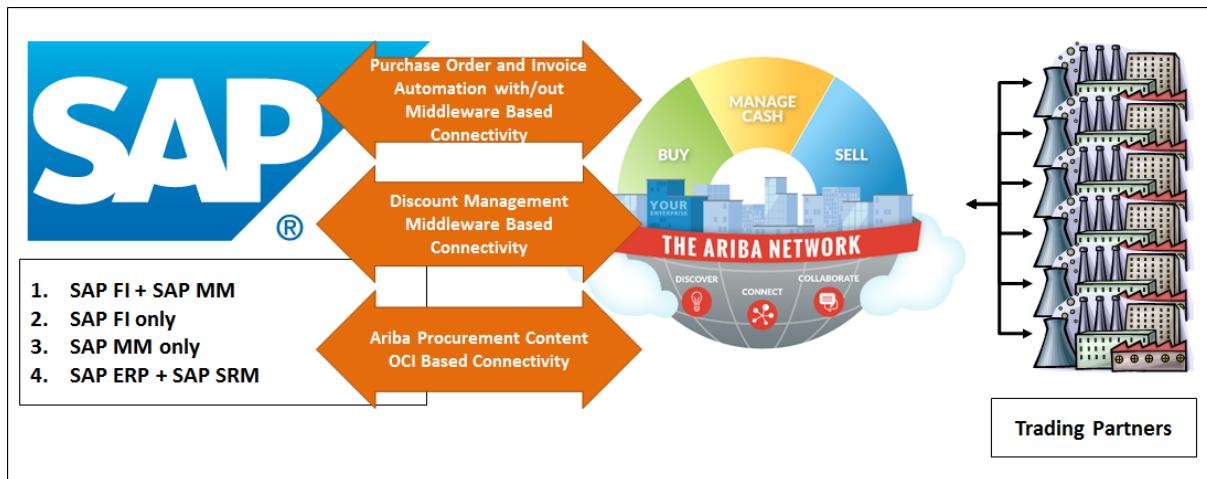


Figure 59: Integration between SAP Business Suite and Ariba (www.sap.com)

3.1.2 Requirements Determination

When a requirement for a material or service is detected in a company the procurement of the required material or service must be initialized. This is done by an internal request from a user department by creating a purchase requisition. In this chapter we will introduce purchase requisitions in detail and elaborate the following aspects:

- Creation of purchase requisitions
- Material master and consumable materials in the purchasing process
- Follow-up documents created from a purchase requisition.

3.1.2.1 Purchase Requisitions

The **purchase requisition** is an internal document that instructs the purchasing department to request a specific quantity of a specific product (good or service) for a specific point in time. It can be created either directly (manually) or indirectly (automatically).

For the manual creation the responsible employee must determine the needed good or service, the point of time, and the quantity of material required. The employee then creates a purchase requisition document manually and enters this data in the purchase requisition document for further processing.

In contrast, the automatic creation is initiated by another SAP application and can base on project networks or orders (e.g., production orders, maintenance orders, and service orders). The requirements created from these applications influence MRP in the following ways:

Material Requirements Planning (from the component <i>MM Materials Management</i>)	The component <i>Consumption-based Planning</i> suggests materials that need to be ordered on the basis of past consumption or usage figures and existing stock levels. The order quantity and the delivery date are determined automatically.
Networks (from the component <i>PS Project System</i>)	Requisitions are generated automatically from networks if a material component with non-stock material or an external service component has been assigned to an operation and the indicator allowing <i>automatic generation of requisitions immediately when the network is saved</i> has been set in the network.
Maintenance Orders (from the component <i>PM Plant Maintenance</i>)	Requisitions are automatically generated from maintenance orders: <ul style="list-style-type: none"> - If a material component with non-stock material has been assigned to an operation, or - If an operation with the control key for external services has been created.
Production Orders (from the component <i>PP Production Planning and Control</i>).	Requisitions are generated automatically from production orders if: <ul style="list-style-type: none"> - They contain an external processing operation (e.g., subcontracting work). A precondition is that the control key for the operation allows or prescribes external processing. - They contain non-stock components.

In addition, purchase requisitions can also be automatically created in the SAP system by requirements determined and transferred in connected **SAP Supply Chain Management** (SAP SCM) or **SAP Supplier Relationship Management** (SAP SRM) system – given an integrated system landscape that involves these systems.

Within a purchase requisition document, the **creation indicator** in the statistics data of the purchase requisition item (tab Contact) you can determine which procedure was used to create the purchase requisition.

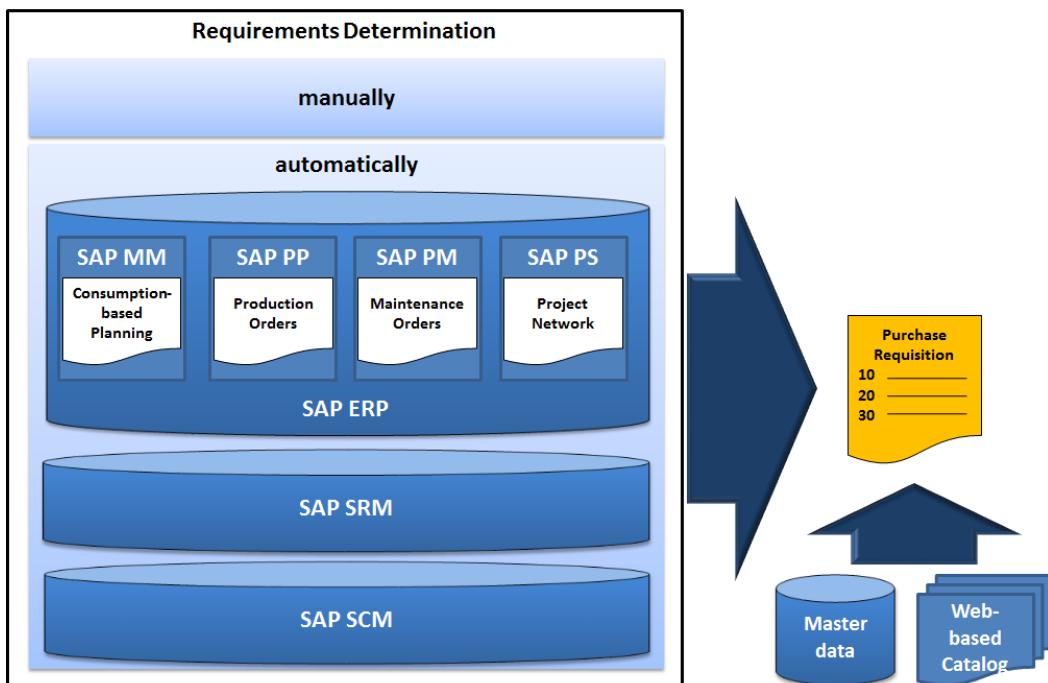


Figure 60: Creation of Purchase Requisitions

The material (material or service) that is to be purchased is the main entry within a purchase requisition. A purchase requisition consists (like most documents in SAP systems) of three levels:

- **Header level:** The document header contains general data about the document. In case of purchase requisition this is only a text field.
- **Item level:** The item area of the document contains the material positions. Each material that is to be procured with this purchase requisition is entered in a separate row (item) of the document. On item level important information about the document position are entered, such as material ID, quantity, plant, delivery date, etc.
- **Item details:** The item details contain detailed information on each item of the document. Here you can enter further material data, quantities and dates, account assignments, sources of supply, etc. on different tabs.

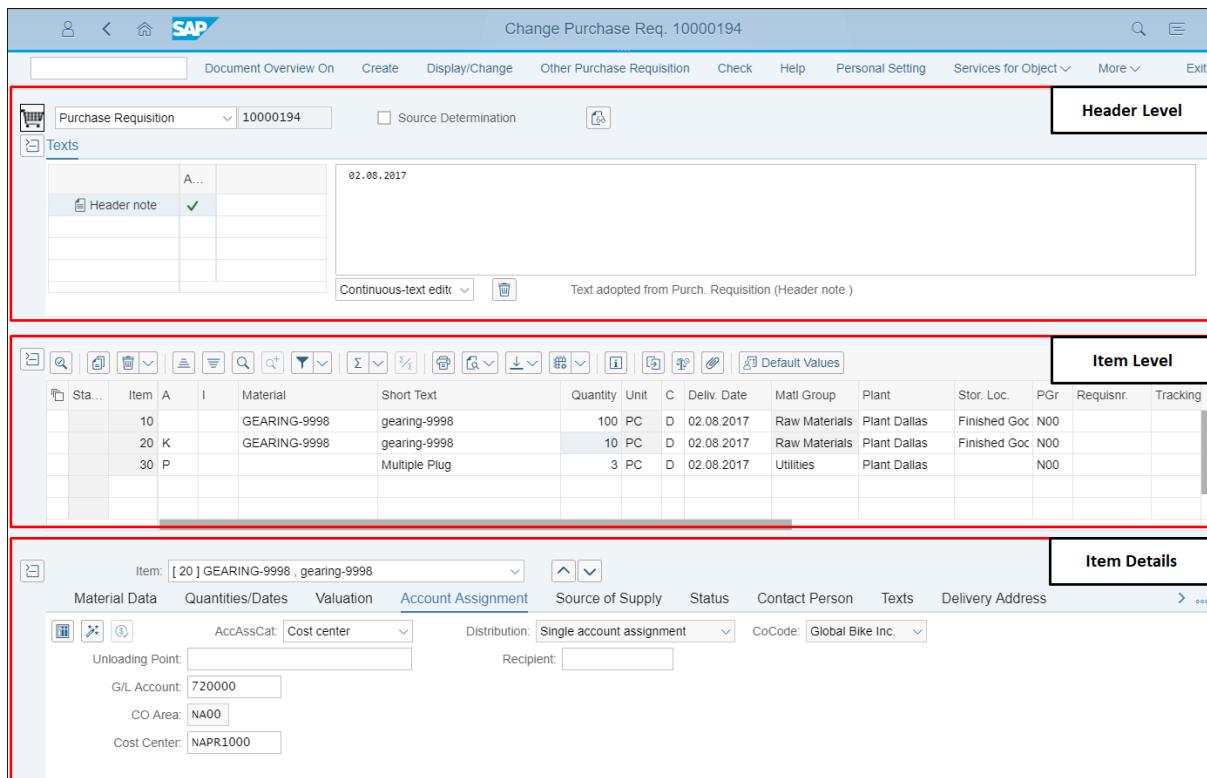


Figure 61: Creating Purchase Requisition (manually): SAP-System-Screenshot

When a purchase requisition is created automatically, it already contains the materials that are to be procured. If it is created manually, the employee enters the materials manually. As of SAP ERP 6.0, you also have the option to select items from a **web-based catalog**. In both cases, the system copies all information relevant for the procurement of the materials from the material **master data records** stored in the SAP system into the purchase requisition. This information includes, for instance, purchasing group, material group, weights, volume, unit of measures, etc. However, there are also cases where materials are procured that either do not have a material master in the SAP system or have a material master but are procured for direct consumption. In the next chapter, we will outline these use cases.

3.1.2.2 Procurement Process for Consumable Materials

There are two different types of items that can be used in a purchasing scenario and, thus, be entered in a purchase requisition:

- **Stock material:** This type of material is tracked in inventory management (on the level of plant/storage location). Procuring materials for stock depicts the standard procurement scenario.
- **Consumable material:** This type of material is procured for direct consumption and requires the entry of an explicit account assignment object. They are also referred to as indirect or MRO items (maintenance, repair, operations). Consumable materials are treated specially in the SAP system regarding the procurement process.

3.1.2.2.1 Consumable Materials

A **consumable material** is a material that is purchased specifically for a particular **account assignment object** and is consumed without being put on stock. Therefore, it is called “consumable” as from the perspective of the SAP system it is registered neither on stock

(inventory) nor on a stock balance account (accounting). Instead it is treated as if it was consumed immediately upon goods receipt and its value (price) is settled to an accounting object using cost element accounts or asset accounts.

Example

The following example clarifies the difference to the regular procurement process for stock materials:

- **Stock material:** You purchase 10 units of stock material (e.g. Gearings for the bike production) for 500\$ each and the vendor delivers it to your company (goods receipt posting). With the goods receipt two values in the SAP system are influenced, each documented in a separate document:
 - o **Stock quantity:** The goods receipt posting generates a **material document (SAP MM)**. The material document documents the increase of quantity for gearings on stock (storage location) by 10 units. For instance, after the goods receipt posting your stock quantity on storage location FG00 increases from 1000 to 1010.
 - o **Stock value:** The goods receipt posting generates at the same time an **accounting document (SAP FI)**. The accounting document documents the value-based increase in the company's inventory and posts this value increase (5000\$) on a particular balance sheet account (e.g., on the account 720000). For instance, after the goods receipt posting your stock value on storage location FG00 increases from 500.000\$ to 505.000\$.
- **Consumable material:** You buy office supplies such as paper, pens, etc. for a department in your company. Since these low-value (bulk) goods are not listed on stock but directly delivered to the department, where the office supplies are consumed in the daily work, you purchase the material as consumable material and post the costs directly to the cost center of that department. Thus, there is neither a quantity-based (SAP MM) nor a value-based inventory management (SAP FI) for the materials. The offset (costs) is posted against the corresponding cost object (cost center of the department), which consumes the material. Therefore, the account assignment category C (Cost Center) is entered for the item in the purchase requisition.

3.1.2.2 Account Assignment Categories

As mentioned above, procuring a material as a consumable material requires the entry of an **Account Assignment Category** along with other account assignment data in the document item of the purchase requisition (or other purchase documents). That is, you enter an account assignment category (e.g., C, K, A, etc.) in the specific column of each item in the purchase document that is to be procured as a consumable material. The account assignment category, thereby, 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.

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 any material (regular or consumable material) that is **not** subject to **value-**

based inventory management and post its value directly to **consumption**.

- If you order an article that does **not** have a **material master record**.
- If you order a **service**.

Examples of account assignment categories are:

- A Asset
- K Cost Center
- P Project
- N Project Network
- F Production Order
- C Sales Order
- G Maintenance Order

The following figure displays the creation of a purchase requisition in the SAP system (transaction ME51n or corresponding Fiori UX App) which contains different purchasing items (consumable and stock materials):

- The first item contains the material Gearing which is a regular material **with a material master**. It is entered **without** any account assignment category and, thus, is procured to be put on stock once the material is received. Note that when purchasing a material on stock, the **valuation class** in the material master data record of the specific **material type** (e.g., ROH - Raw Material, HALB - Semi-finished Goods etc.) controls all aspects of value-based inventory management (e.g. which accounts to be posted to). These settings are made in the system's customizing. For instance, all Trading Goods of valuation class 3000 are posted to account 720000.
- The second item also contains the material Gearing. However, in this case the account assignment category **K** (cost center) is entered for the item making it a **consumable material**. For instance, the gearings could be purchased for the quality inspection department for testing purposes and, thus, are directly accounted for that department. Therefore, you must enter the **G/L account number** of the consumption account (e.g., 720000) and the **cost center** (e.g., NAPM1000), for which the material is to be procured on the account assignment tab in the item details. You can also specify in the system's customizing that the system automatically proposes the number of the G/L account.
- The third item (Multiple Plug) contains a **consumable material** which does **not** possess **material master data** in the SAP system. We have assigned this item to the account assignment category **P** (Project) in order to post the expenses on a specific project (WBS-Element) of the SAP PS application and a specific G/L account.

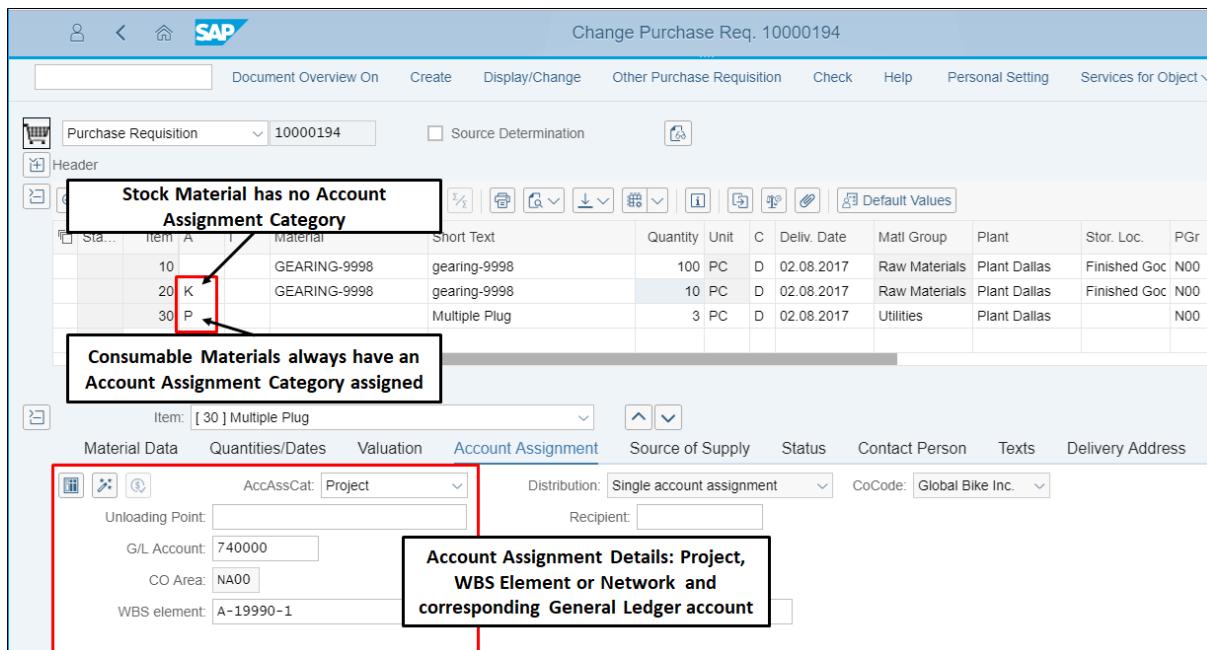


Figure 62: Purchase Requisition with Consumable Materials (1): SAP-System-Screenshot

3.1.2.2.3 Material Types in Procurement for Consumption

As already indicated in the previous figure, there are different scenarios for consumable materials in purchase documents. The following cases can be distinguished:

- Consumable material without master data record are never subject to **quantity-based** inventory management nor **value-based** inventory management
- Consumable material with master data record, which is neither subject to **quantity-based** inventory management nor **value-based** inventory management
- Consumable material with master data record, which is subject to **quantity-based** inventory management but not to **value-based** inventory management

In addition, you can also purchase **regular materials** (ROH, HALB, HAWA, DIEN etc.) which possess a material master record – and are subject to quantity-based and value-based inventory management – for direct consumption.

Consumable material without master data record (**no quantity; no value**)

When a material is procured directly for consumption, no material master is required. This is often the case for low-valued materials that are particularly purchased **randomly** and always directly for consumption. For instance, a multiple plug does not need a material master in a company as it is relatively cheap, procured seldom and consumed as office supplies. In such a scenario, it makes no sense to create an extra material master data record for the material as it can be entered directly in the purchase document.

When this type of material is procured, you have not the option to use the Material ID field in a purchase document. That is, since there is no master data record in the SAP system, you cannot enter the material name into that specific field. However, in order to be able to procure materials that have no master data record you must provide the following information in the purchase document, since the material does not contain a material master record, from which these data could be taken

- **Account assignment category:** The account assignment category determines the costing object (e.g. cost center, order, etc.) and the G/L account that is debited with the cost of the materials.
- **Short text (description):** In this field, you enter the name or a short description of the material that is purchased.
- **Material specific data:** **Material group** as well as the **Unit of Measure**
- **Organizational data:** responsible **plant** and **purchasing group** must be entered in the item line.

This procedure is also used for **services** that are purchased from external suppliers (e.g. consulting company). Naturally, services are never subject to quantity-based inventory as you cannot “store” services. Hence, when ordering services in this way, you also enter the service name in the *Short Text* field and specify information such as purchasing group and unit of measure directly in the purchase document.

The screenshot shows the SAP Purchase Requisition interface (Change Purchase Req. 10000194) with the following details:

Item	A	I	Material	Short Text	Quantity	Unit	C	Deliv. Date	Matl Group	Plant	Stor. Loc.	PGr
10			GEARING-9998	gearing-9998	100	PC	D	02.08.2017	Raw Materials	Plant Dallas	Finished Goc	N00
20 K			GEARING-9998	gearing-9998	10	PC	D	02.08.2017	Raw Materials	Plant Dallas	Finished Goc	N00
30 P				Multiple Plug	3	PC	D	02.08.2017	Utilities	Plant Dallas		N00

Annotations on the screen:

- Consumable Materials always have an Account Assignment Category assigned** (points to the Account Assignment tab in the footer)
- Further entries required for Consumable Material without Material Master** (points to the Material Data tab in the footer)

Footer tabs: Material Data, Quantities/Dates, Valuation, **Account Assignment**, Source of Supply, Status, Contact Person, Texts, Delivery Address.

Figure 63: Purchase Requisition with Consumable Materials (2): SAP-System-Screenshot

Consumable material with master data record (quantity; no value)

Consumable materials are never subject to value-based inventory management. However, there might be cases where a material is procured for consumption but quantity-based inventory should be performed in order to know the available stocks of that material. Therefore, the standard delivery of the SAP system contains a special **material type** for **non-valuated materials (UNBW)**. Consumable materials of type UNBW are subject to inventory management on a quantity basis (SAP MM) but not on a value basis (SAP FI).

For instance, you might have low-value materials (such as screws or operation manuals) in your company that are procured regularly and that have stocks (quantity-based inventory management), but their value should only be posted to the specific costing object for which they are procured.

Here, it makes sense to create a material master with the special type UNBW in order to avoid entering all the material specific data (e.g., plant, purchasing group, material group, unit of measure, etc.) each time you purchase this material. Thus, in the purchasing document, you only enter the material ID and the material specific data is derived from the material master of the consumable good. The material master of this material then allows monitoring the stock quantities, as these are recorded directly **in the master data record** of the material (Plant/Storage Location view). As a further benefit, also setup automatic purchase requisition generation once the stock falls below a certain safety quantity (e.g. quantity-based consumption).

Note that entering an **account assignment category** is **always** mandatory for consumable materials. That is, in this case you also must specify it in the purchase document item.

Consumable material with master data record (no quantity; no value)

SAP also provides another material type which updates neither the **quantity-based (SAP MM)** nor the **value-based (SAP FI)** inventory. This standard material type for consumable materials is **non-stock material (NLAG)**. This material type is used for low-value materials that are procured regularly, but which do not need any stock monitoring.

For instance, you could use this material type to define a material such as screws, which are procured after a certain interval (e.g. monthly) in a high number. In the material master, you can then store all specification such as length, weight, etc. that then do not need to be entered every time you procure the material. Note that this material type could, generally, also be used to purchase **services** as no quantity-based inventory is performed.

Note, again, that entering an **account assignment category** is **always** mandatory for consumable materials. That is, in this case you also must specify it in the purchase document item.

Procure regular materials (Stock Materials) for Consumption

Procurement for consumption is not restricted to consumable materials only. You can, of course, purchase regular stock materials that have a regular master data record not for stock but also directly for consumption.

In the case that you want to purchase a material with a master record, the **material class** in the material master data record of the specific material type (ROH - Raw Material, HALB - Semi-finished Goods etc.) controls whether inventory management for the material is to take place on a value-basis, or not. As mentioned before, the material type (such HAWA) is setup in the system's customizing in a way that it determines, among other things, to which account (e.g. 720000) the value of the material is posted once the goods receipt has been saved.

However, in case you purchase a stock material for direct consumption, you also have to enter an **account assignment** for that item in the purchasing document as well as the costing object (cost center, order, etc.) and eventually the G/L account (if not automatically derived due to customizing settings).

In our example, we have procured the regular material gearing, which possesses a master data record in the SAP system for direct consumption. The gearings are, for instance, required (and

requested) by the quality inspection department for testing purposes. Thus, we assigned the cost center account assignment category (K) and entered the specific cost center of the department in the account assignment details. The material is neither posted to stock (quantity-based) nor on any consumption account (value-based) upon goods receipt, but is directly “consumed” by the department. The costs are posted to the department’s cost center.

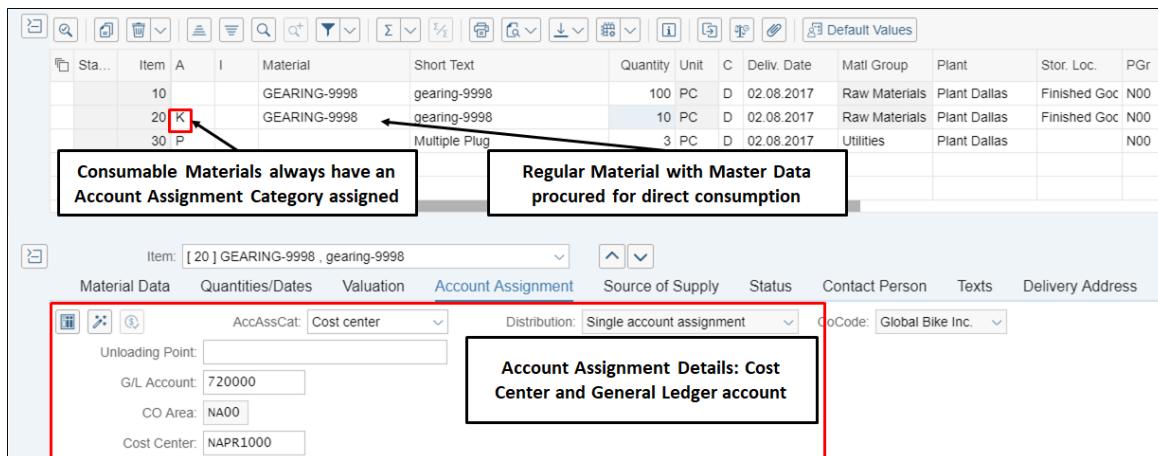


Figure 64: Purchase Requisition with Consumable Materials (3): SAP-System-Screenshot

Note that there is also a material type for **services (DIEN)** which can also be used for procuring services that require a material master for specific advanced settings. This material type is also, naturally, not subject to quantity-based inventory management as you cannot “store” services. Thus, it **always** must have an account assignment category assigned in a purchase document. You use this material type in purchasing in the same way as you use regular materials with a master data record for direct consumption. That is, you enter the material ID of the service (all other relevant information is derived from the material master record) and specify the account assignment category as well as the costing object (cost center, order, etc.).

Note, again, that entering an **account assignment category** is **always** mandatory for consumable materials. That is, even when you purchase a regular material for **direct consumption**, you also must specify the account assignment category in the purchase document item, otherwise the material is procured for stock.

3.1.2.2.4 Procuring Consumable Materials versus Stock Materials

The following figure summarizes the procurement process for consumable and stock materials. The figure displays four different cases:

- stock material that is procured for stock
- stock material that is procured for consumption using an account assignment category
- procurement of consumable material without material master record
- procurement of consumable material with material master record

Stock material that is procured for stock

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.

Stock material that is procured for consumption

After entering the material ID you specify the **account assignment category** and the costing object (cost center, order, asset, etc.) for which the stock material is purchased. If necessary, the consumption account of the General Ledger must also be entered. Depending on the customizing settings in the system, the account might be derived automatically.

Consumable material and Services with or without material master record

When procuring a consumable material (with or without material master) 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).

Upon *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 (cost center, order, asset, etc.) is updated.

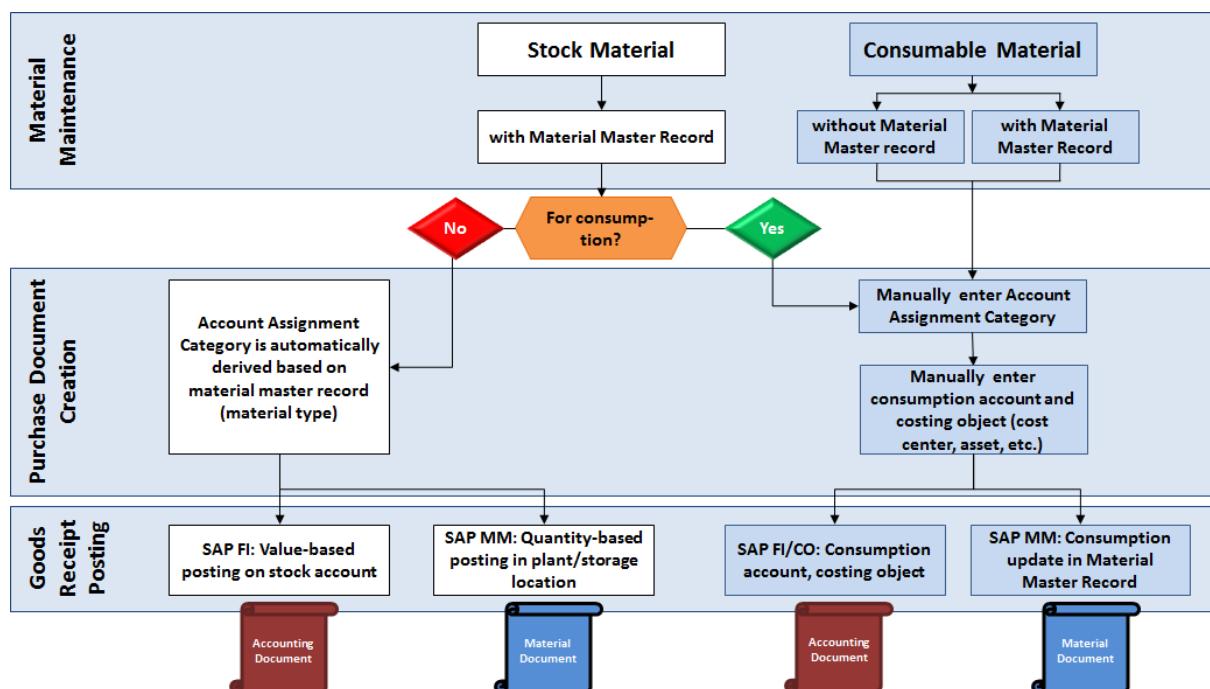


Figure 65: Procurement for Consumption

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

Stock Materials	Consumable Materials
Material Master available and must be entered in purchasing document	Entry of material master not necessary but possible (if a material master data record exists)
Account assignment category derived from valuation class in master data record if procured for stock	Account assignment category mandatory
Goods receipt posting is mandatory	Goods receipt posting is optional
Value-based posting to stock accounts in General Ledger	Value-based posting to consumption accounts

Quantity, value, and consumption updated in material master record	No value update on stock or material master data; Quantity and consumption update in material master record possible (if a material master data record exists)
Adjustment of moving average price	Not possible, since there is no value-update in the material master

3.1.2.3 Purchase Requisitions Processing

The processing of purchase requisitions can – and generally does – include the determination of sources of supply. Alternatively, the vendor selection can be performed in the purchase order document that is created as a subsequent document to the purchase requisition. SAP supports the purchasing department with multiple function that facilitates the determination of vendors from which the required materials can be purchased. We will introduce the individual source determination options in the next chapter.

The following figure illustrates the further processing of a purchase requisition. The purchaser can assign the vendor from whom the materials in the purchase requisition can be procured by either using existing sources of supply or create follow-up documents with which a new source of supply can be determined.

Existing sources of supply can be

- Purchasing info records
- Source lists
- Outline Agreements
- Other plants within the company

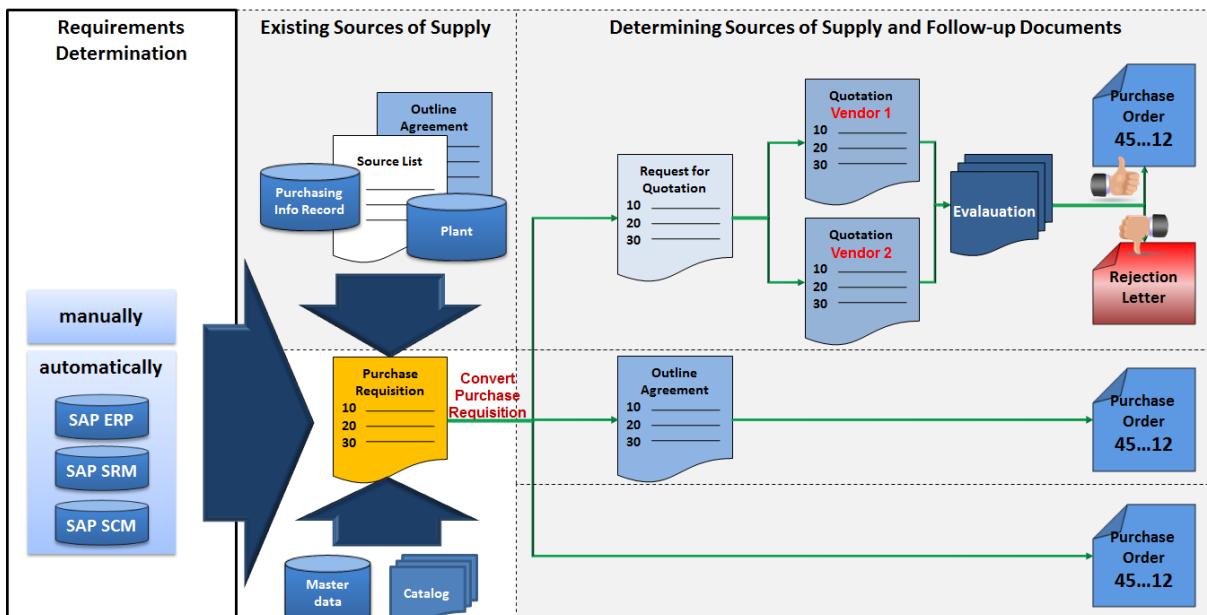


Figure 66: Processing Purchase Requisitions

If any source of supply for a material already exists, the system can be set in a way (in customizing) that it automatically proposes them in the purchasing requisition once the material was entered.

If no sources of supply exist in the SAP system for the specified material, the purchaser has the following options:

- **manually** enter a specific vendor as well as prices and conditions into the purchase requisition
- create a **request for quotation** from the purchase requisition and send them to selected vendors to receive quotations from these suppliers
- create an **outline agreement** that specifies conditions for procuring the material from a vendor

Once the source of supply has been determined and entered into the purchase requisition, the purchaser converts it manually into a **purchase order** document or the system does it automatically if release procedures are implemented.

It is also possible to define **release procedures** for purchase requisitions if you want to install approval procedures for purchase requisitions and other purchasing documents. Thereby, you define rules or conditions that the system checks before the purchase requisition can be converted to a purchasing order or request for quotation. The release procedures can be defined flexibly with regards to, e.g., item values, requester (purchaser), or account assignment. This allows, for instance, setting up particular limits for buyers in a company. For instance, you could set up a rule that a purchasing requisition created by a purchaser that exceeds 10.000\$ requires special approval from a higher-level purchasing manager before it is processed further.

When release procedures are implemented for particular materials or purchasing groups, the system can also check if the content of a purchase requisition is correct and ensure that the account assignment and the source of supply are correctly entered in the document.

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

3.1.3 Purchase Order Processing

In this chapter, we will describe the elements of the purchase order and the process of creating a purchase order.

3.1.3.1 Purchase Order

A purchase order is a formal request of a company to a vendor for a specific material or service containing the agreed prices and conditions for the specific material.

Purpose of Purchase Orders

A purchase order can be used for a variety of procurement purposes, such as procuring materials for **direct consumption** (e.g., cost center, asset or project) or for **stock** (plant/storage location) or for procuring **services**.

Furthermore, the **special procurement** types *subcontracting*, *third-party* (involving triangular business deals and direct-to-customer shipments) and *consignment* are possible. This is determined by the item category that is entered in the positions (item) of a purchase order. The item category defined in the purchase order will dictate the use of the order and the process that the order will follow:

- Standard (Stock or Consumption)
- Services
- Subcontracting
- Third-Party
- Consignment

Besides using purchase orders to cover requirements from external sources (i.e., a vendor supplies a material or performs a service), a purchase order can be used to procure a material that is needed in one of the company's plants from an internal source, i.e., from another plant. For this ***internal sourcing*** scenario, you use the order type of **stock transport orders**.

Creating and Processing Purchase Orders

A purchase order can be created either **automatically** by the system or **manually** by an employee. It can be created **with a reference** to preceding documents or **without any reference** to other documents. Automatically created purchase orders are always based on a preceding document. If created manually, it can be created without any reference to a preceding document or it may reference:

- one or multiple purchase orders
- one or multiple purchase requisitions
- one or multiple quotations
- one or multiple outline agreements (contracts, schedule agreements)

When referencing a preceding document, all information that is available in that document and is relevant for the purchase order is copied into the purchase order. For instance, when referencing a quotation, information like vendor ID, vendor name, material, quantities, agreed prices, etc., are copied into the purchasing order. Thus, it is not necessary to enter this data again, and by reducing the amount of data that needs to be entered in a purchase order, not only the efficiency in the process is increased, but also data entry errors are prevented (e.g. misspellings, typos, wrong quantities or prices, etc.)

When a purchase order is created manually, you still do not need to enter all relevant data yourself, as long as corresponding master data exist. When entering master data records in a purchase order the SAP system suggests values for associated fields. Examples:

- **Vendor master data:** When entering the vendor ID into the vendor field of the purchase order, data such as address, terms of payment and freight (Incoterms) are suggested from the vendor master data record.
- **Material master data:** When entering a material into the item area of a purchase order, data such as the material short text, the material group, purchasing group, weight, volume, delivering plant etc. are suggested from the material master data record.
- **Purchasing info record:** If a purchasing info record for the combination of entered vendor and material in the purchase order already exists in the system, the default price and purchasing conditions are transferred to the purchase order. Same is true for other sourcing records such as outline agreements, source lists, etc.

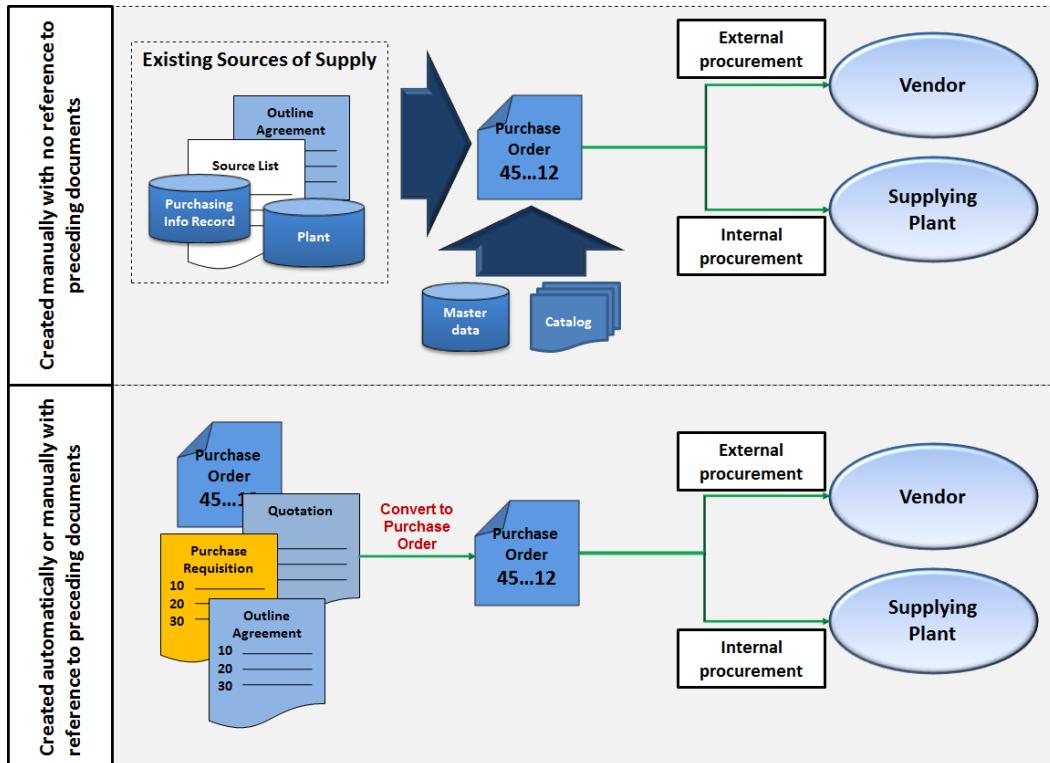


Figure 67: Creating and Processing Purchase Orders

If sourcing was not performed in a preceding document and, thus, no vendor has been copied into the purchase order, or if the purchase order is created manually, then the step *determination of source of supply* must take place within the purchase order processing. The source determination in purchase orders works in the same way as described in the previous chapters. If corresponding data already exists in the system, you can use **source determination** to let the system suggest possible vendors using these pre-defined sources (outline agreements, info records, source list entries, quota arrangements).

Once the purchase order creation is completed, it is sent to the specified **vendor** as a **standard purchase order** or to the specified **plant** as a **stock transport order**. In case of a stock transport order, the resulting freight costs can be taken into account in the purchase order.

Finally, when the ordered materials are delivered by the vendor the **goods receipt** (your company receives the ordered material) and **invoice receipt** (you receive the bill for the material from the vendor) are usually posted with reference to the purchase order.

3.1.3.2 Purchase Order Document

Purchase orders, like other documents such as purchase requisitions in the SAP system, are structured in different areas. Generally, all document types in SAP systems have a document header and one or more items, while each item has its own item details area.

The two following figures display the purchase order interface in the SAP system. The first figure highlights the individual screen 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) or with the corresponding Fiori UX Apps (Create Purchase Order, Change 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 the corresponding buttons from the **Function Bar**, e.g. *Create* or *Display/Change*. By choosing the *Other Purchase Order* icon, you can also branch directly to another purchase order.

The purchase order application 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.

In the following figure, you can also see the general structure of a purchase order document. It consists of:

- The **document header** contains information that is valid for the whole document, such as the vendor address, the organizational levels, or the 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.

**NOTE**

As of 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

Our example purchase order was copied from the previously created purchase requisition. Thus, we did not have to enter much data except of the vendor. The order, thus, contains the same three items as the purchase requisition. The first item (line) contains 100 units of the material Gearing-9998 that are procured for stock; the second item contains 10 units of the same material that are procured for direct consumption by a cost center (account assignment category "K"). The third item contains our *consumable material without master data* (multiple plug), which is procured on project basis.

- 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.

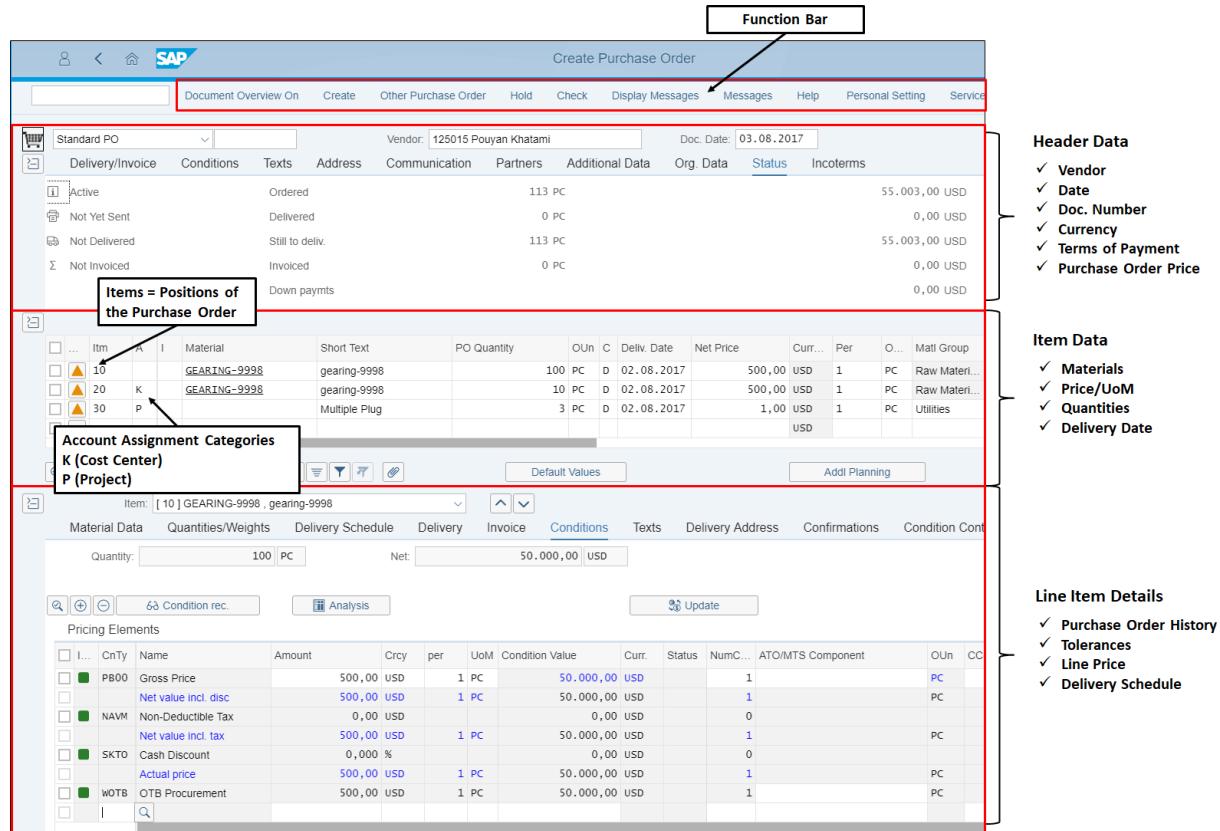


Figure 68: Maintaining Purchase Orders: SAP-System-Screenshot

3.1.3.3 Message Processing

In order to transmit purchasing documents to a vendor, the system can generate a message (output) for each document created in the SAP system. A message is a document in an 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 as 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 an RFQ, a purchase order, a contract or a scheduling agreement, the system creates a message from the document in the form of a letter or fax or email. The message is then stored in the message queue, which contains all messages that have not yet been transferred to the vendors.

Over the course of time, several output management tools have been established in SAP systems and different applications use different tools from that toolset. For instance, the determination of the output form (along with other parameter) in the SAP SD and SAP MM applications are based on the message determination procedure (NAST – ‘NAchrichtenSTEuerung’), while the SAP FI application uses the output management technology FIN. The output management for NAST supports the following print and communication channels as well as print formats that are directly integrated in the specific document screen (e.g. purchase order):

- Print Channels
 - o Print output
 - o Fax
 - o Telex
 - o External send
 - o EDI

- Simple Mail
- Special function
- Events and Tasks (SAP Business Workflow)
- Distribution (ALE)
- Print Technologies
 - SAP Script
 - Smart Forms
 - Adobe Forms and Adobe Forms using Fragments

For SAP S/4HANA the new modern Output Management by Design has been developed which includes cloud qualities such as extensibility enablement, multi tenancy enablement, and modification free configuration. The configuration and customizing of the new output management differs greatly from NAST and is based on BRF+ (Business Rule Framework). The target architecture is based on Adobe Document Server and only uses Adobe Forms. The determination rules for these forms (and their parameters) that determine which message and form should be used for the output of a document utilize BRF+ functionalities.

In the new output management, the forms, specifically the footer and logos are maintained using the standard SAP Script Repository (Transactions: SO10 and SE78) to allow customers to maintain texts and logos centrally. The determination rules can be accessed via Customizing. The access is available for Customers on Premise (and for Service Center in the Cloud Edition).

3.1.3.4 Purchase Order Monitoring

As mentioned earlier, a purchase order also provides different functionalities for purchase order monitoring. These are the *processing status* on the **Status** tab of the document header and the **Purchase Order History** tab on the document item level.

- **Status Tab:** The Status tab displays the overall status of a purchasing document (e.g. active and message sent) and the processed quantities and values of all items.
 - When a purchase order is created, the quantity and value of all items is stated in the status bar under **Ordered**.
 - When a goods receipt is posted for a purchase order, the quantity and value of all items for which the goods receipt was posted is updated in the status bar under **Delivered**. Those quantities that have not been received, yet, are stated under **Still to Deliver**.
 - When an invoice receipt is posted for a purchase order, the quantity and value of all items for which the invoice receipt was posted is updated in the status bar under **Invoiced**.
- **Purchase Order History Tab:** Once a goods receipt or invoice receipt was posted for one of the items of a purchase order, the tab **Purchase Order History** appears next to the Conditions tab on the *Item Details Level* of the affected items. On this tab, you can see any subsequent documents (material and invoice documents) created for a purchase order and you can directly navigate to these documents by clicking on them.

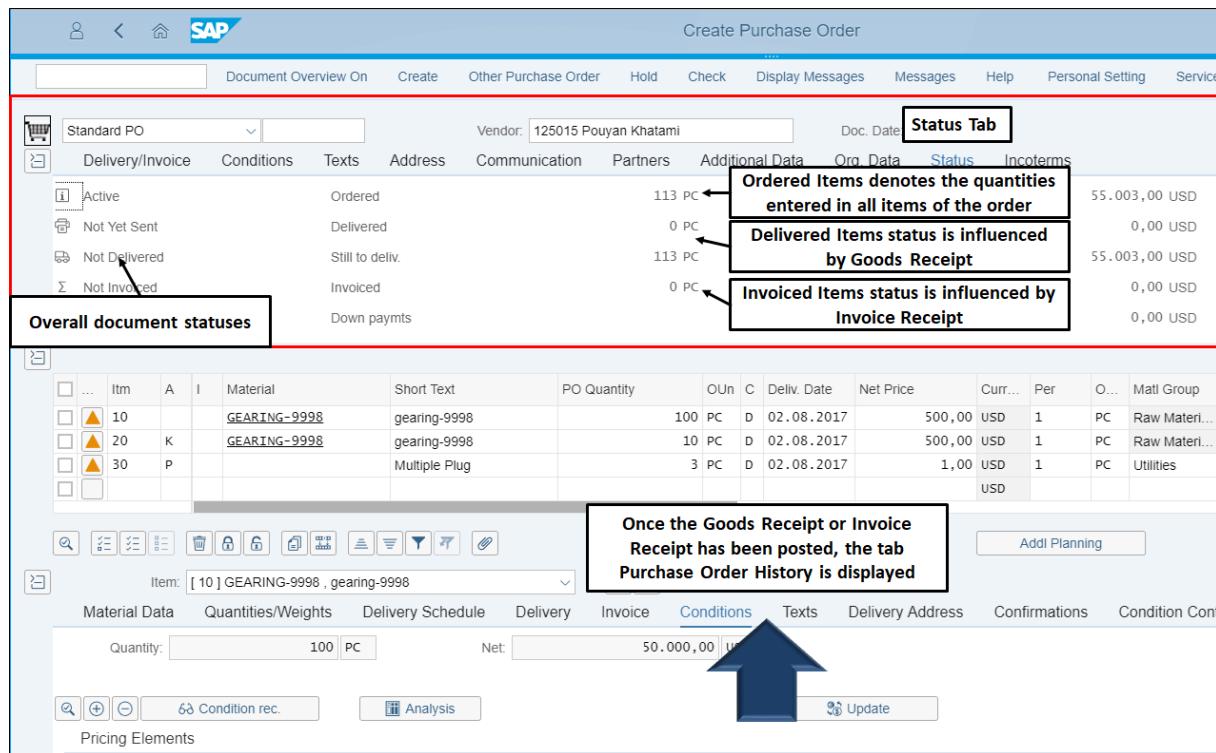


Figure 69: Navigation in Purchase Order Documents (2): SAP-System-Screenshot

3.1.4 Goods Receipt and Goods Movement

The company has released the purchase order and sent it in form of an output message (order document) to the vendor. After the vendor has processed the purchase order, provided the material (or service) requested, and shipped the goods to the company the incoming goods must be accepted at and introduced to the company's SAP system. Correspondingly, the next step after purchase order creation in the Source-to-Pay business process is the goods receipt posting in the SAP system. The goods receipt is a subtype of different goods movement types available in the SAP system that are used to capture material movements in or out of the company or between company facilities. In the following we will introduce the available goods movement types in the SAP system and discuss the details of goods receipts.

3.1.4.1 Goods Movement

A **goods movement** describes a process that results in an inventory change for a material. Thereby, goods movements can refer to both, external and internal movements of materials from one location to another. In the SAP system, you distinguish between four types of goods movements:

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

The following figure shows the four different goods movement types and three stock types relevant for goods receipts in the SAP system.

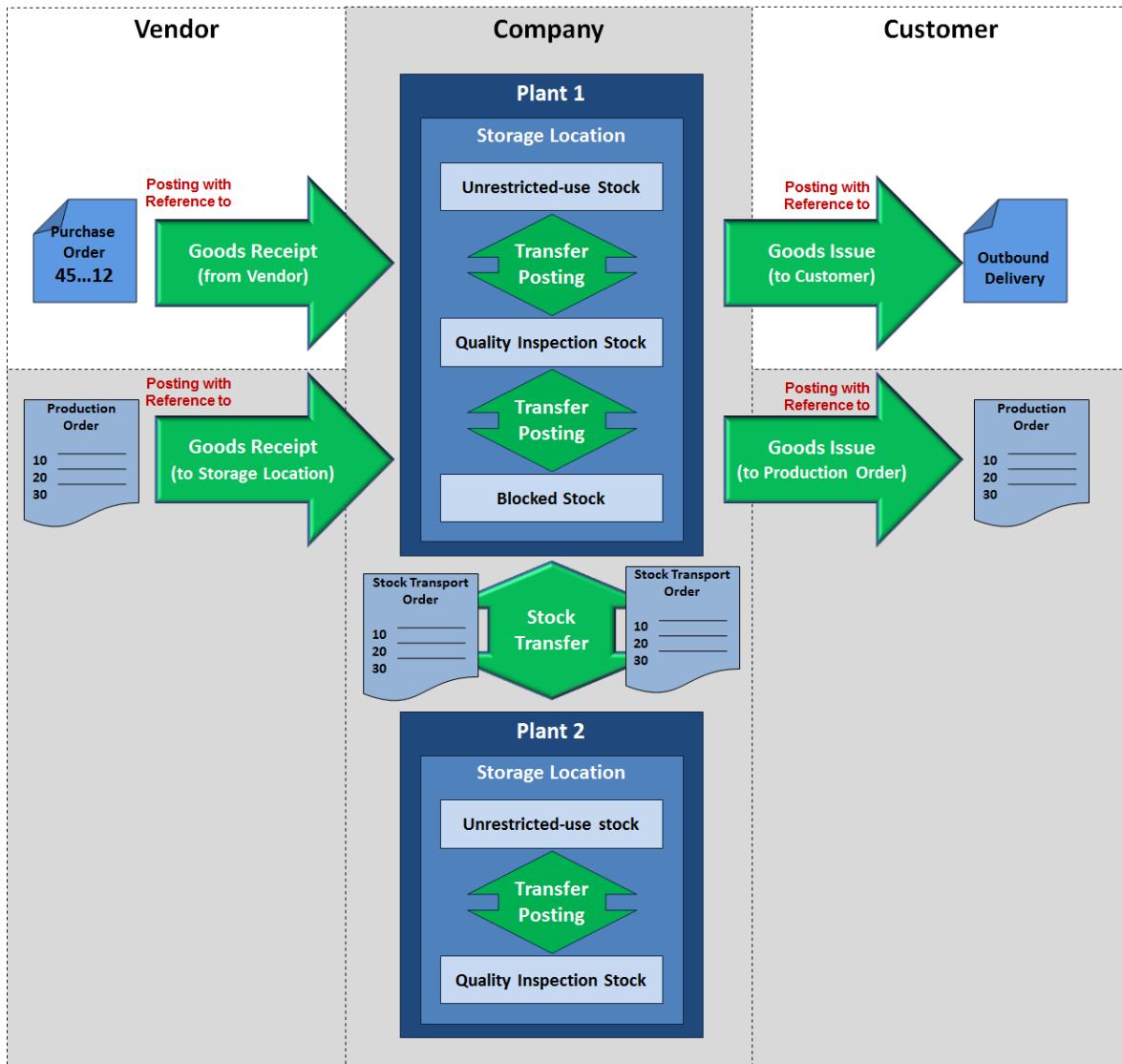


Figure 70: Goods Movements and Stock Types

A **goods receipt** is a goods movement that is used to book both, goods receipts from external procurement (from a vendor outside the company) and from internal procurement (production, stock transfer). A goods receipt for stock materials always results in an increased stock quantity (plant/storage location level). However, the only exception is the goods receipt of stock materials that were procured for direct consumption or goods receipts for consumable materials and services.

A **goods issue** is a goods movement that is used to book a material withdraw or material issue, material consumption, or consignment of goods to a customer. Goods issue postings always result in a decreased stock quantity (plant/storage location level).

A **stock transfer** is a goods movement that is used to transfer materials from a particular storage location to another storage location. Stock transfer can be carried out between storage locations within the same plant and between storage locations between different plants.

A **transfer posting** is a goods movement that is used to change the stock identification (e.g., material ID) or qualification (e.g., stock type) of a material. A transfer posting is independent of whether a physical movement of the material took place, or not. Examples are:

- *Stock-to-stock*: the release of stock for quality inspection to unrestricted-use stock
- *Material-to-material*: Transfer of stocks of one material ID to another material ID

3.1.4.1.1 Stock Types and Stock Overview

Stock types are qualification of material stocks on the level of plants/storage locations and determine the processes in which material stocks can be used. There are three general stock types in SAP:

- **Unrestricted-use stock**
- **Quality inspection stock**
- **Blocked stock**

In addition, the stock type **restricted stock** is available for a material, if the *batch management* status is set to active in the material master of a material. In that case the material can only be managed with reference to a batch of that material in goods movement processes.

Furthermore, there are **special stock types** that are used for specific business processes, e.g. if a certain material quantity is reserved for a particular production order, it is put qualified as reserved stock. Special stock types in SAP are:

- *Reserved stock*
- *Receipt reservation stock*
- *On-order stock*
- *Consignment ordered stock*
- *Stock transfer stock*
- *Transfer (storage location) stock*
- *Goods receipt blocked stock*
- *Scheduled for delivery stock*
- *Returns stock*

SAP provides several special functions and reports that can be used to display material stocks in Inventory Management (SAP MM-IM). One central and frequently used report in Inventory Management is the **Stock Overview**. In this report, you can display the material stocks for each material on *organizational levels* relevant to Inventory Management and for each of the above-mentioned **stock types**. The following organizational levels that are relevant for Inventory Management are displayed in the stock overview in hierarchical form:

- client
- company code
- plant
- storage location
- batch (if batch status management is active for a material)
- special stock

The stock quantities for each material are summed up according to this hierarchy for each of the different stock types. For instance, if you have 100 units of gearings in plant DL00 (Dallas)

and 100 units of gearings in plant SD00 (San Diego) for a specific stock type (e.g. unrestricted use stock), then the hierarchy level of company code will display 200 units of gearings for company code US00 to which both plants are assigned.

Example

The following figure displays the *Stock Overview* for our material gearing. On the Y-axis you can see the organizational levels that the material stocks are assigned to. On the X-axis, you can see to which particular stock type the material stocks are assigned.

In our example, we can see that we have stocks for gearing in storage location FG00 of plant DL00. The numbers are summed up on company code level (US00) and client-level (Full) to which the plant belongs. The quantities on *storage location/plant level* do not differ from the quantities on higher level, as we only have stocks in one storage location in our example.

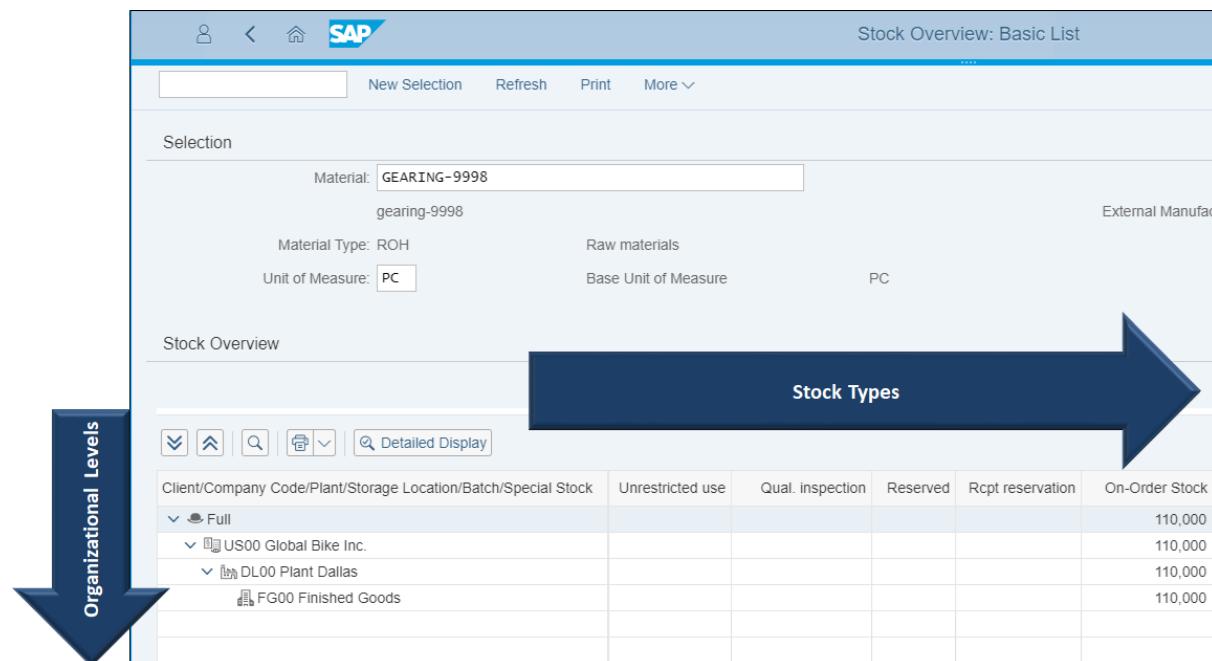


Figure 71: Stock Overview: SAP-System-Screenshot

You can see that we have 0 units of gearings in *Unrestricted Use Stock*. Materials with this stock type qualification can be freely used in any business process. In addition, there are 110 units of gearings on *On-Order Stock*. These are the materials that we have requested with the purchase order that we have created in the previous step. Materials with the *on-order stock* qualification are planned future receipts and are “waiting” for a goods receipt posting once they have been delivered by the supplier (internal: plant or external: vendor).

3.1.4.1.2 Movement Types

The central control key for goods movements is the **movement type**. A Movement type is a three-digit identification key that is used to determine the goods movement type that is to be performed in the particular process. The movement type is a **mandatory** entry for any goods movement in the SAP system and must be entered either manually or is automatically set by the system depending on the particular process when a goods movement transaction (goods

receipt, goods issue, transfer posting, stock transfer) is processed. For instance, if you want to post a goods receipt with reference to a purchase order, the movement type 101 is used.

Purpose of Movement Types

Movement types are very important regarding their control function in inventory management. Among others, the movement type controls

- *Determining the type of goods movement:* The movement type determines in a transaction what type of goods movement is performed (goods issue, goods receipt, stock transfer, or transfer posting).
- *Updating of quantity fields:* The movement type controls the quantity-based inventory management when a goods movement transaction is executed and determines from which stock type the quantities of materials are withdrawn and to which stock type they are added.
- *Updating of stock and consumption accounts:* According to the movement type that is used in a goods movement transaction (and some other influencing factors) the system automatically determines the accounts that are used for value-based stock changes. Thereby, the system determines which stock or consumption accounts are updated in financial accounting
- *Determining the screen layout of the goods movement transaction:* The specified movement type determines which fields are available on the screen layout and which fields are mandatory for the goods movement transaction.

Standard Movement Types in SAP

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 cancellation).

Standard movement types in the SAP system are

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

The following figure highlights (red ovals) some of the most frequently used movement types for the particular goods movement types.

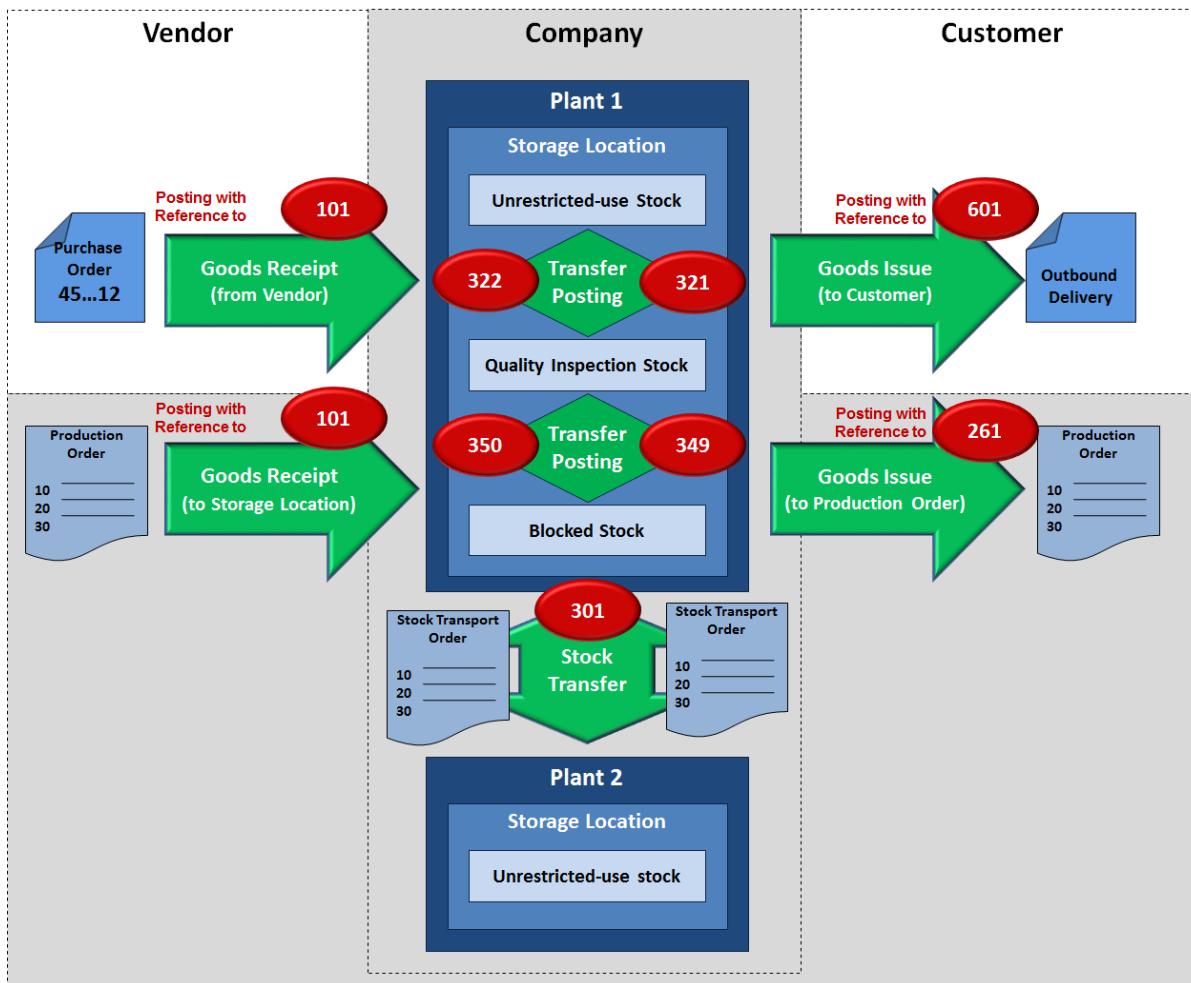


Figure 72: Frequently used Movement Types in SAP ERP

3.1.4.1.3 Material and Accounting Documents

Another very important aspect of goods movements in SAP is the form of documentation of these transactions in the system.

Goods movements generally lead to quantity-based changes in the system (and the company) and, what is even more important regarding legal aspects, generally, lead to value-based changes in the system (and the company). Therefore, a clear and transparent documentation of each goods movement must be guaranteed in an SAP system.

This document principle applies to many areas of the SAP software, such as controlling and financial accounting processes where value-based postings are made to specific accounts or costing objects. Generally speaking, a document is the proof that a transaction took place and the document stored in the SAP database depicts the transactional data that was created and that documents all information (dates, involved objects, values, quantities, etc.) regarding the accomplished business process.

When a goods movement is posted in the SAP system two types of documents are generally created: **material document** and **accounting document**

Material Document

A **material document** is generated as proof of a process that has caused a change in stock (quantity or stock type qualification). It consists of a header and at least one document item (one item per material position in the document). 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 specific storage location and stock type.

After a goods movement was posted in the SAP system and the goods movement document is saved, no further changes can be made to the data in the generated documents. That is, you cannot change the quantities, material, movement type or involved organization level any longer. The only option to correct errors is to reverse the postings of the incorrect document. When cancelling (reversing) a goods movement, the system generates new documents that reverse the quantities and amounts of the original documents:

- For the generated material document, a new material document is created that reverses the quantity posted in the original document. For instance, if the stock quantity was increased by 10 units, the cancelation material document posts the quantity of -10 to Inventory Management.
- If an accounting document was created with the original goods movement posting, a cancelation accounting document is simultaneously created upon goods movement reverse. Thereby, again, the value change posted with the original accounting document is posted in value-based Inventory Management (that is in Financial Accounting) with an opposite sign. For instance, if the stock value was increased by 100\$, the cancelation material document generates a cancelation accounting document that posts the value of -100\$ to the specific account in Financial Accounting.

This document principle is utterly important in ERP systems and, mandatory by law for all aspects in financial accounting. Specifically, in financial accounting (and all transactions that influence value-based changes) it is **not possible to completely delete** any document from the database. This ensures the transparency required by most national laws regarding book keeping.

Accounting Document

An **accounting document**, which is created in a goods movement process, records all accounting-related effects of a goods movement. Same as the material document, the accounting document consists of a header and one or multiple items. The header contains general data, e.g., document date, posting date, posting period and document currency. The specific G/L account numbers that the values are posted to and the corresponding amounts are recorded at item level.

Not all goods movement postings lead to the generation of an accounting document. Whether an accounting document is created in a goods movement process, or not, depends on the particular business process (and accordingly to the involved movement type) that is performed. If the goods movement is relevant to valuation – that is, it involves value-based changes in accounting – the system creates **at least one** accounting document in addition to the material document.

Examples:

- A goods receipt posting for stock materials always increases the inventory stocks for the material on a quantity and on a value basis. Thus, a goods receipt for stock materials always creates an accounting document along with the material document.

- If the material is transferred (stock transport order) within one plant, generally, no changes to its value occur. Hence, no postings are made in Financial Accounting and no accounting document is created.

The following figure illustrates the creation of material and accounting document for goods movement posting.

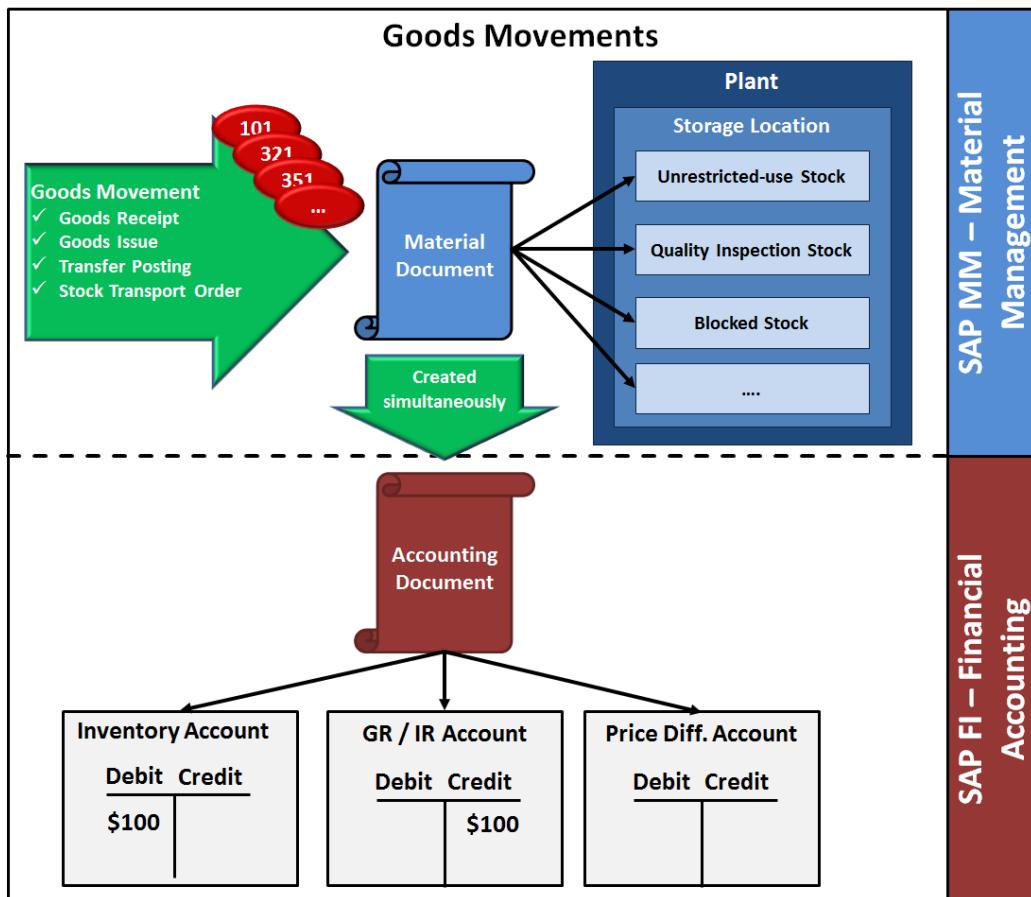


Figure 73: Documents in Goods Movement Processes



CAUTION

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 material document is always created in a movement process, regardless of its type.

Both the material and the accounting document are individual documents that can be displayed in separate transactions. But since they are associated with the same goods movement process, it is possible to jump from the material document into the accounting document:

- **Material Document:** The material document is accessed in transaction **MIGO** (or corresponding Fiori UX App). For identifying a particular material document, the **material document number** and the **material document year** must be entered.

- **Accounting Document:** The accounting document is accessed in transaction **FB03** (or corresponding Fiori UX App). For identifying a particular accounting document, the *accounting document number*, the *company code*, and the *fiscal year* must be entered. When the goods movement is processed, and the documents are generated, the company code to which the accounting document is posted is derived from the plant in which the material movement occurs.

The following figure displays the material document of a goods receipt posting in transaction MIGO. It contains the material items, the plant and storage locations as well as the particular movement types. It documents the increase in stock in inventory management (+-signs). By pressing the button , you can directly navigate to the accounting documents associated with this goods movement process.

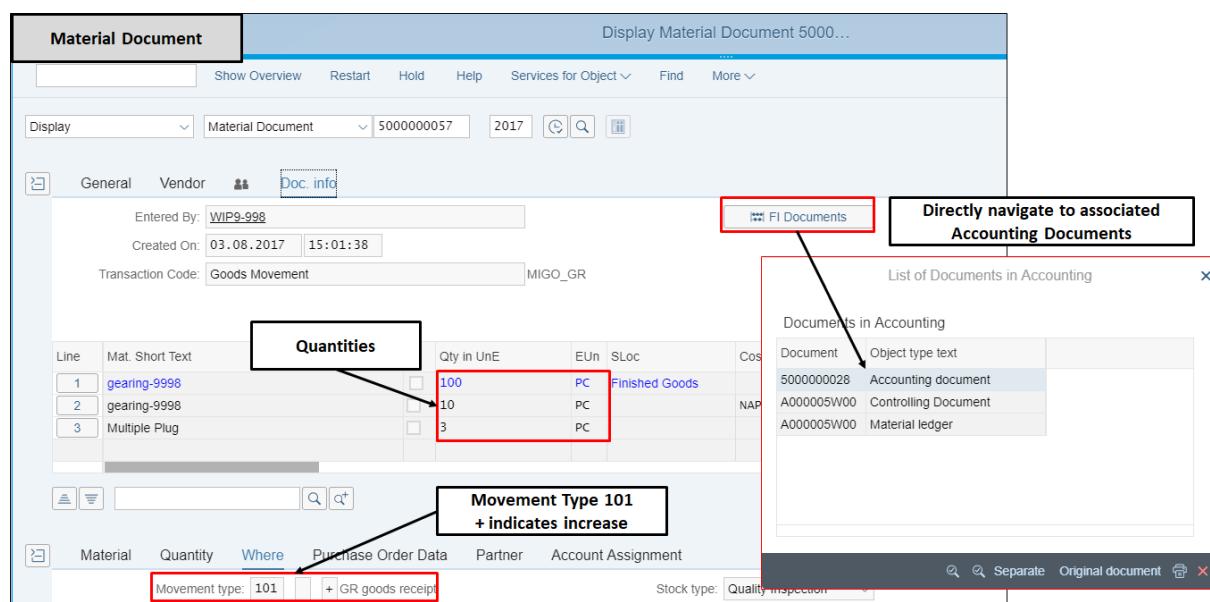


Figure 74: Material Document for Goods Receipt: SAP-System-Screenshot

As you can see in the figure above and in the following figure, the goods receipt for the purchase order has created **two** accounting documents. The accounting document for financial accounting is always generated, if the goods movement is valued. However, a controlling document is created, if the goods movement involves the posting of costs to a specific costing object. This is the case for our consumable material (Multiple Plug), which was procured for and posted on a project and for our stock material gearing, which was procured for and posted on a cost center. Both costing objects with their cost elements 720000 and 740000 as well as the amounts they were debited with (5000\$ and 3\$) are documented in the controlling document. All value-based postings – independent of whether or not a controlling object was involved – are documented in the accounting document.

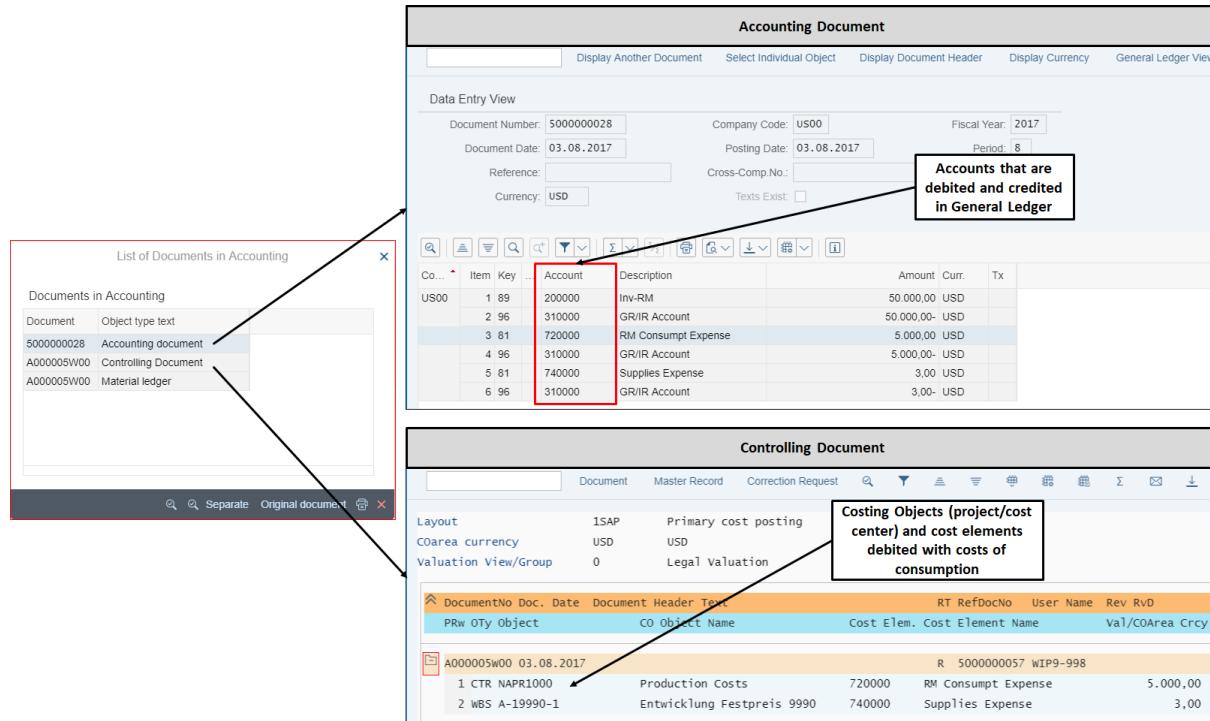


Figure 75: Accounting Documents for Goods Receipt: SAP-System-Screenshot

3.1.4.2 Goods Receipt

When you receive a material that you have ordered from a vendor, the first step is to capture the **goods receipt** in the system. As already elaborated, a goods receipt is a special form of a *goods movement*. 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.

3.1.4.2.1 Posting a Goods Receipt with reference to a Purchase Order

When the goods receipt is posted in the system it is important to do this with reference to the purchase order with which the materials were ordered. On the one hand, referencing the purchase order allows all involved departments to be informed about the status of the purchase order and the material arrival. On the other hand, the system suggests all open items from the purchase order, when the goods receipt transaction is executed in the system. This facilitates both the entry and monitoring of incoming goods. Goods receipts to a storage location with reference to a purchase order allow running the following controls and entry transactions:

- The system proposes (copies) data from the **purchase order** (e.g., ordered material, quantity) as entries for the goods receipt document. Thus, **data entry** as well as **monitoring** under- and over-deliveries within the purchase order process is facilitated.
- The department that receives the material can double-check the ordered and actually received material quantities based on the purchase order document.
- Check whether perishable goods are within their minimum shelf life, or not. The shelf life expiration date check must be active in this case.
- 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**. Dunning processes can be automated in the SAP system.
- The status of the purchase order is **automatically** updated on

- the **status tab** of the purchase document header and
- on the **purchase order history tab** of the purchase document item.

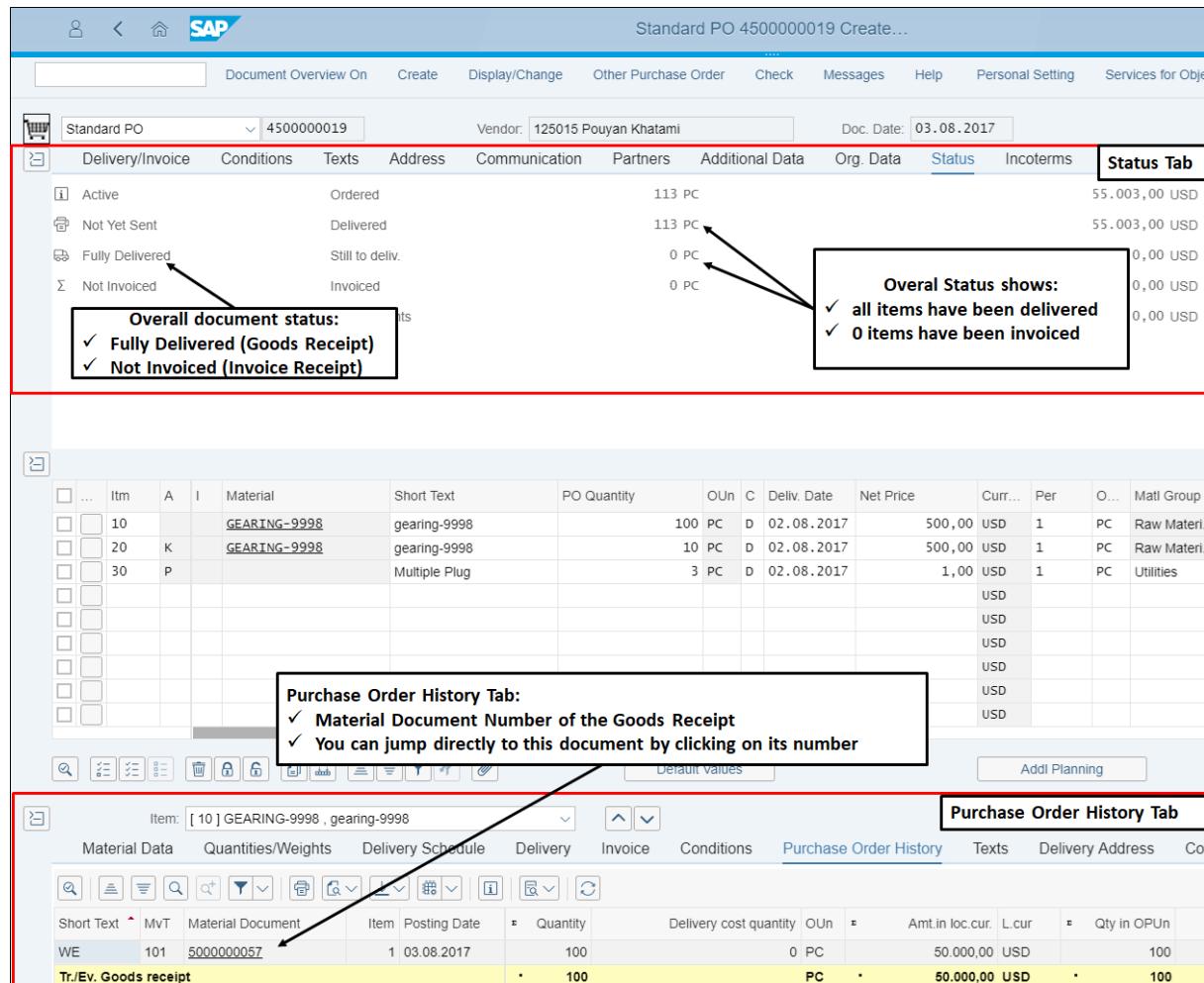


Figure 76: Status and Purchase Order History Tabs: SAP-System-Screenshot

Documents created for a Goods Receipt Posting

When a goods receipt is posted with reference to a purchase order, the system creates the following documents:

- A **material document** is always created when posting a goods receipt. The *material document* records the quantity-based changes on stock. This document contains, among others, information about:
 - delivered materials
 - delivered quantities
 - storage location and plant
- An **account document** is always created for the goods receipt, if the goods receipt is valuated. The *accounting document* records the effects the goods receipt has on the value of the stock. This document contains, among others, information about
 - Value of the material
 - Accounts these values are posted to
 - Company code (derived from the plant assigned in the material document)

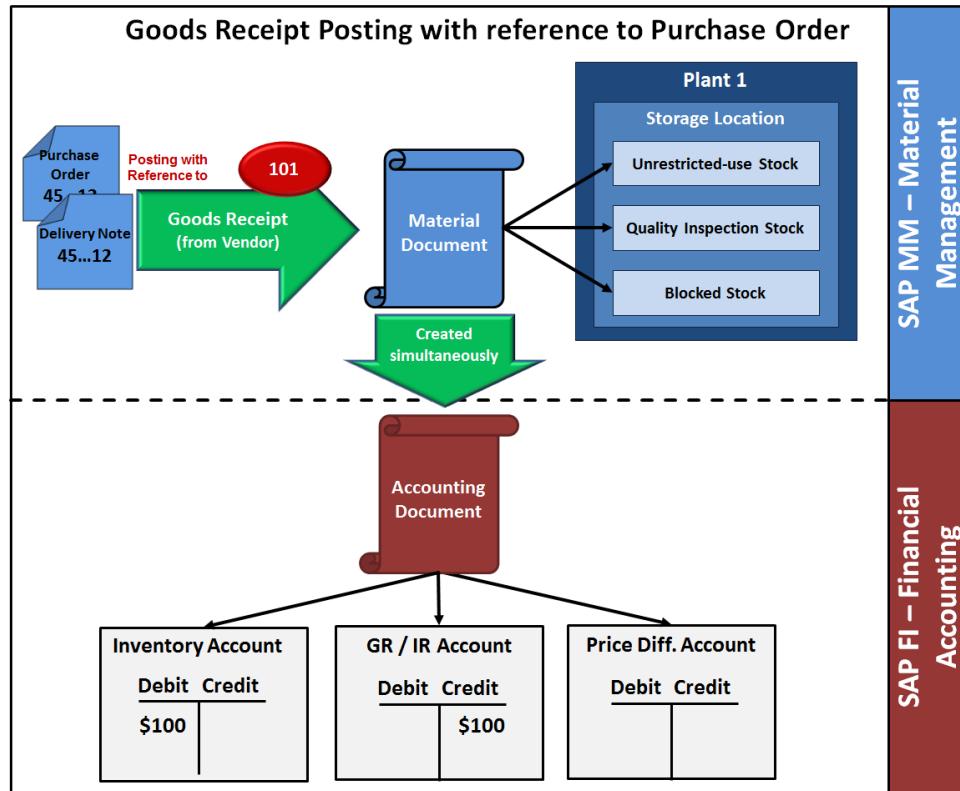


Figure 77: Goods Receipt Postings

3.1.4.2.2 Goods Receipt and Stock Types

When the materials arrive at the company, they do not need necessarily to be posted directly into the unrestricted-use stock. In many cases, materials are, for instance, received in the quality inspection stock in order to evaluate the quality of the goods. Thus, upon goods receipt, the warehouse employee can decide which **stock type** the received quantity of the material should be posted to.

We have already introduced the concept of stock types in SAP and mentioned that it depicts a qualification of stocks available in Materials Management and that they are relevant for goods withdrawals in Inventory Management. Of the available stock types in SAP, goods receipts can only be posted to the three (or fours) general stock types:

- **Unrestricted-use stock:** Materials that are posted into this stock type upon goods receipt can be immediately used in any business process (for production orders, stock transfers, stock transport orders, etc.) without any restrictions. Consider that material withdrawals from stock for consumption purposes can only be carried out from unrestricted-use stock.
- **Quality inspection stock:** Materials that are posted to quality inspection stock are available from a Material Management perspective and are considered in MRP runs. However, it is not possible to withdraw from this stock type for consumption. For instance, you cannot withdraw raw materials from this stock type and use it in a production process. But it is possible to withdraw one sample, scrap a quantity, or post an inventory difference from quality inspection stock.
- **Blocked stock:** Materials that are posted to blocked stock are not available from a Material Management perspective and are, consequently, not considered in MRP runs. It is also not possible to withdraw from this stock type for consumption. For instance, you cannot withdraw raw materials from this stock type and use it in a production

process. But it is possible to withdraw one sample, scrap a quantity, or post an inventory difference from blocked stock.

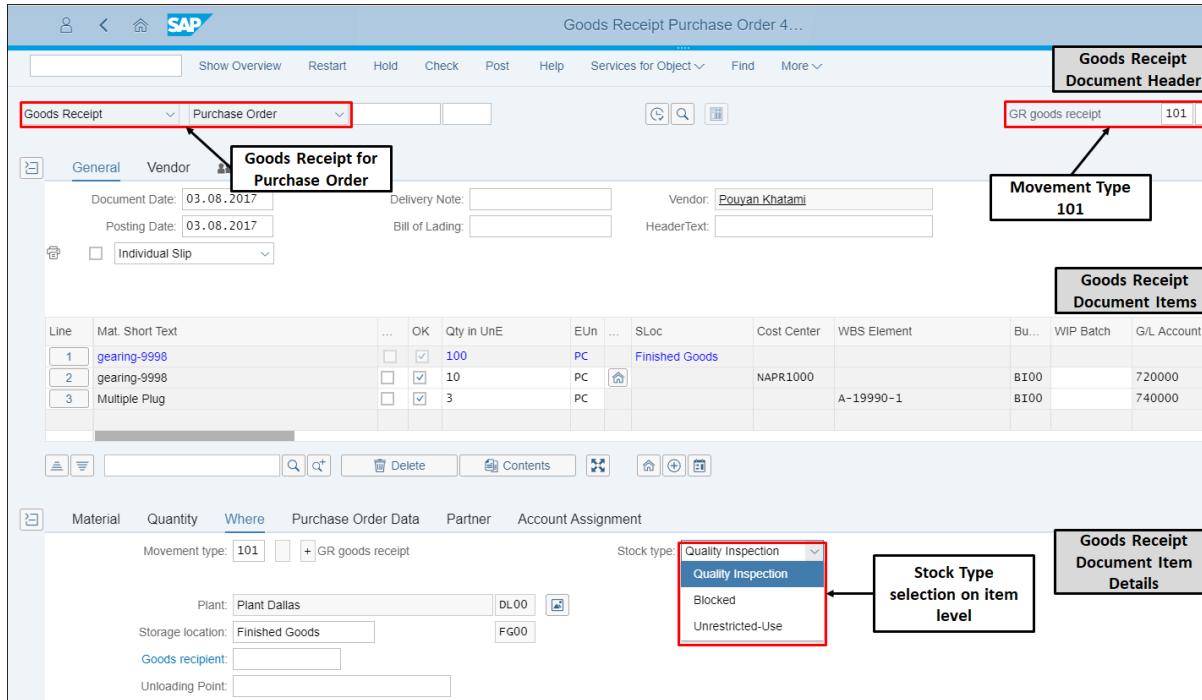


Figure 78: Valuated Goods Receipt with reference to a Purchase Order: SAP-System-Screenshot

Goods receipt postings with reference to a purchase order always use **movement type 101** to post the received materials into valued stock. This movement type is assigned on the **header level** of the goods receipt document.

The **stock type** to which each of the items is to be posted can be selected on **item level** for each item individually. That is, you can post one position of the purchase order into unrestricted-use stock, another one to quality inspection, and a third one to blocked stock. This stock type indicator is selected on the **Where** tab.

It is also possible to enter a default value for the stock type directly in purchase orders or production orders when these documents are created:

- For purchase orders the setting is done on the **Delivery** tab of the items details for each item separately.
- For production orders the setting is done on the **Goods Receipt** tab.

The stock type set here is then proposed as default for the item when performing the goods receipt. However, in the goods receipt, the value can still be changed manually as long as the **Quality Management** component of the SAP system is not active.

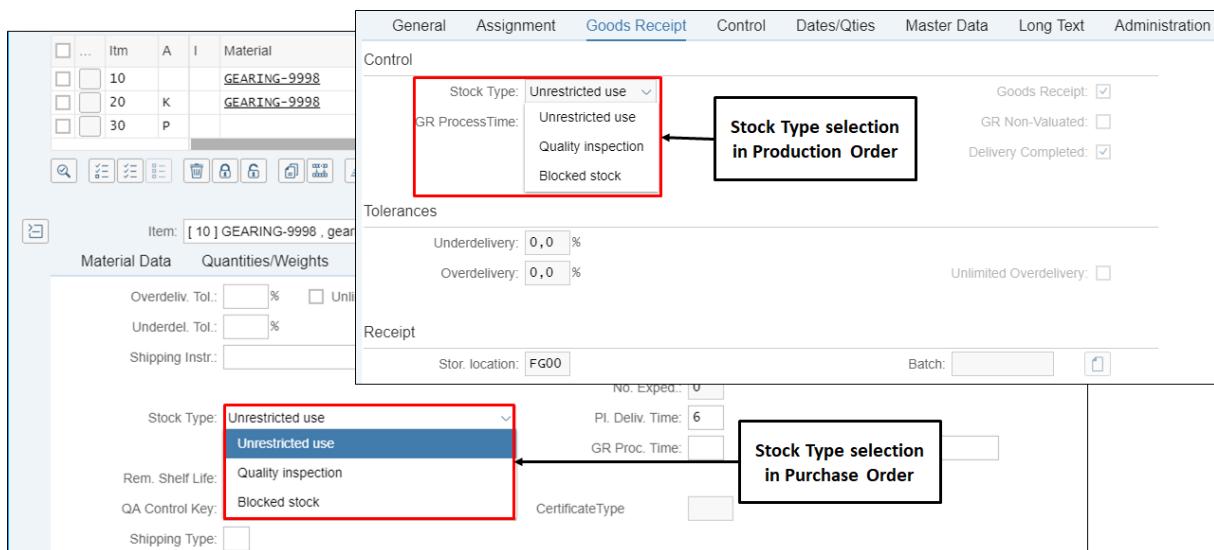


Figure 79: Stock Type Default Value: SAP-System-Screenshot

Another option for stock type selection is available in the material master. Here you can set only a quality inspection indicator. If this field is set, for goods receipts of this material the quality-inspection stock is proposed as default value:

- For manufactured materials (finished goods, semi-finished goods) the setting is done on the **Work Scheduling** tab of the material master.
- For purchased materials (raw materials, trading goods, etc.) the setting is done on the **Purchasing** tab of the material master.

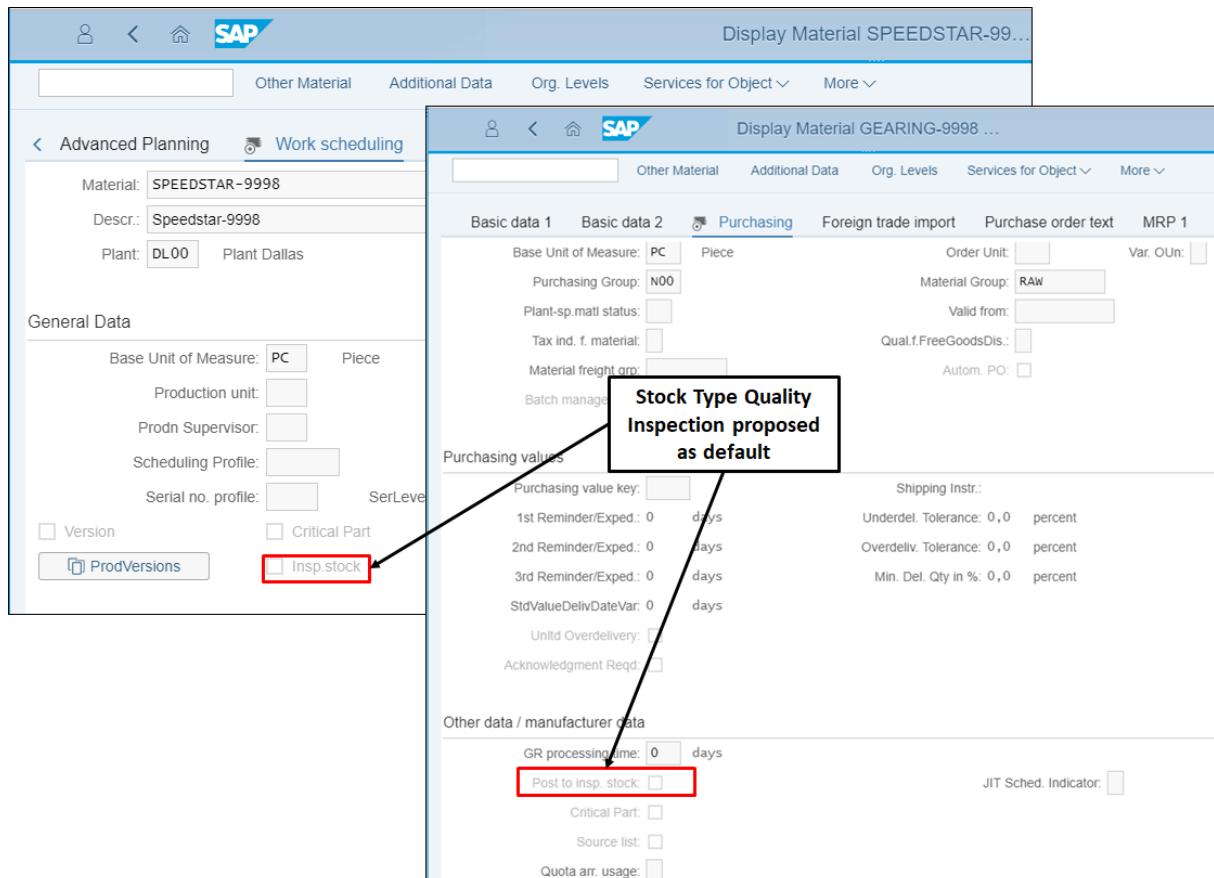


Figure 80: Quality Inspection Indicator in Material Master: SAP-System-Screenshot

3.1.4.2.3 Summary: Results 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**.
- A **controlling document** is created, if costs of consumption occur.
- The **price** is updated in the material master record for materials with moving average price control.
- **G/L Accounts** are updated (stock accounts, consumption accounts, and GR/IR clearing account).
- **Output documents** can be generated, e.g., a goods receipt slip or a pallet label.

Additionally, a goods receipt can affect other areas of the SAP system (i.e., in a company):

- SAP MM-PUR – Purchasing: *Purchase order history* and *order status* are updated.
- SAP QM – Quality Management (if active): An inspection lot is created.
- SAP WM: Warehouse Management (if active): A transfer requirement is created and goods are transferred into the warehouse.

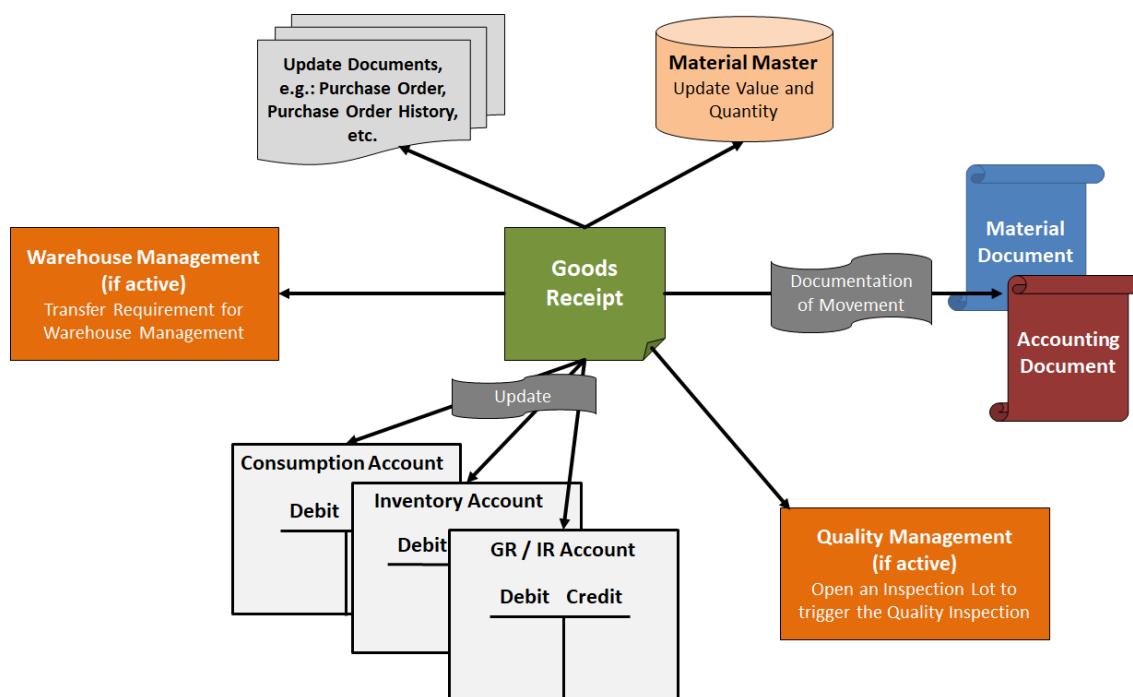


Figure 81: Results of a Goods Receipt

3.1.4.3 Elucidation: Goods Receipt Integration with Financial Accounting (FI)



ELUCIDATION

As already mentioned in the Goods Receipt chapter, each goods receipt posting (or any valued goods movement) creates an accounting document along with the material document. The accounting document posts the value changes to the corresponding accounts in Financial Accounting (SAP FI). The accounting document of the goods receipt leads to the following Financial Accounting (SAP FI) entries in the SAP system:

- A credit posting to Goods Receipt/Invoice Receipt (GR/IR) account
- A debit posting on the General Ledger (FI-GL) account for material stocks.

The GR/IR account is an auxiliary account used in the SAP system that is credited or debited whenever a goods receipt or an invoice receipt is posted in the SAP system. Also consider that it does not matter if the invoice is received first or the purchased goods.

Example:

You order materials from the same vendor in two different purchase orders, which are then received (Material Document 1: 100 PC; Material Document 2: 90 PC) and invoiced separately (Invoice 1: 50.000\$; Invoice 2: 45.000\$). As you can see from the following figure, each goods receipt that you post with reference to the purchase orders leads to the creation of a separate material document, and with each material document a separate accounting document is created:

- The accounting documents of the goods receipt create an open **credit** item on the **GR/IR** account (310000). These items are closed with a corresponding **debit** posting to the **GR/IR** account, when the invoice is posted with reference to the same purchase order.
- If the invoices are posted first, then the invoices create open **debit** items on the **GR/IR** account, which are then closed by corresponding goods receipt **credit** postings to the **GR/IR** account.

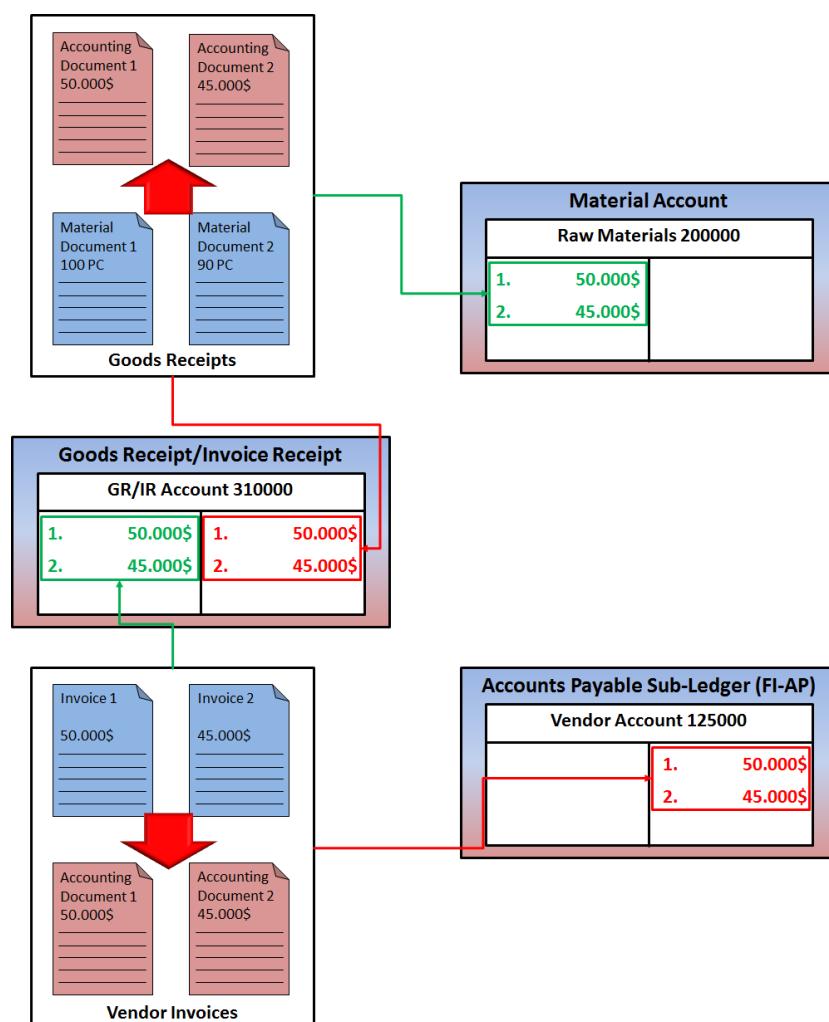


Figure 82: Integration with Financial Accounting

In that way, the GR/IR account helps to monitor open items for

- Goods receipts that are still to be invoiced
- Invoiced purchase orders items that still needs to be delivered

3.1.5 Vendor Invoice

The last step of the Source-to-Pay business process that belongs to the Material Management application (SAP MM) is invoice receipt and verification.

Note that the last step of the Source-to-Pay business process (vendor payment) is not part of the SAP MM application and is completely processed in SAP FI. Therefore, SAP MM and the invoice verification function automatically transfer all the required information to the departments in charge (e.g., financial accounting/controlling). Thus, invoice verification depicts an interface function between SAP MM and SAP FI (and SAP CO) as the function is part of and generates documents for both applications.

3.1.5.1 Invoice Processing

Even though invoicing and the later payment logically belong to Financial Accounting, invoice verification was implemented in SAP MM as well to facilitate the entry of invoices with reference to the preceding procurement process. Although, it is possible to enter individual invoice items or complete invoices without referencing any purchase order, it is generally done so with reference to a purchase order. Only by establishing the link to the purchase order, the invoice can be checked for correctness with regards to the material supplied (or service performed), the price charged and formal correctness. Likewise, the system can only determine variances from the expected values if there is a link to the purchase order.

3.1.5.1.1 Referencing Preceding Documents

An invoice is generally created with reference to a purchase order. SAP provides the following options to create an invoice with reference to preceding documents:

- a purchase order
- a goods receipt
 - o delivery note number
 - o bill of lading number

When creating a vendor invoice in the SAP system you can enter the **purchase order number** as reference document. In that case, you can assign ***all items*** or ***selected items*** of the purchase order in the invoice document. Thereby, it does not matter if you have already received all purchase order items, only a few purchase order items (partial delivery) or no purchase order items, at all. As mentioned before, invoices can be posted prior to goods receipt and vice versa. You can also enter the **goods receipt number** as reference document when creating the invoice. In that case, you can only assign those purchase order items to the invoice document, which you actually received with the goods receipt posting. Quantities higher than the received quantities from the goods receipt cannot be posted in an invoice that references a goods receipt document. The Invoice Verification process will then issue a warning or error message. However, the type of invoice verification is set in the purchase order document (see next chapter).

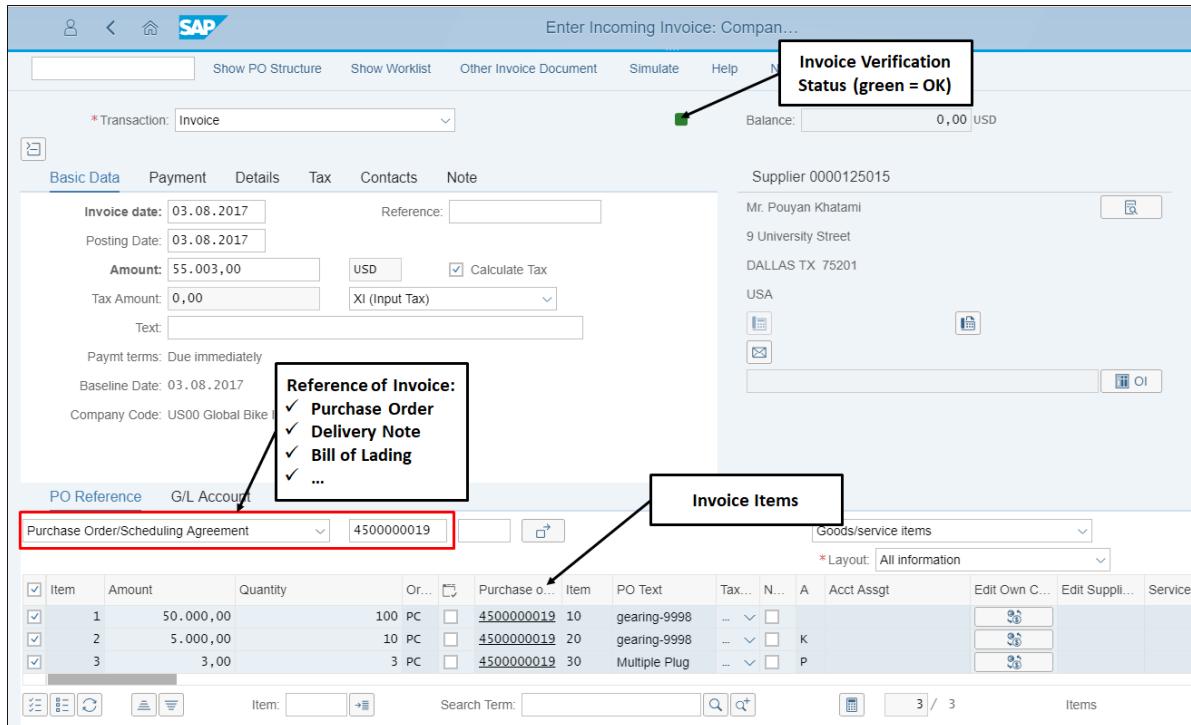


Figure 83: Invoice Verification with Reference to Purchase Order: SAP-System-Screenshot

It is also possible to enter a **delivery note number** or a **bill of lading number** when creating an invoice to create the reference to the preceding purchase order. In order to be able to do so, a delivery note number, or a bill of lading number must have been entered in the goods receipt document when the material is received. Both, delivery note, and bill of lading are used, if Inventory Management is integrated with Warehouse Management (activated SAP LE functions with a warehouse number) and the goods receipt is processed in a warehouse number using an inbound delivery posting.

3.1.5.1.2 Invoice Verification

Logistics Invoice Verification (LIV) is part of the Material Management (SAP MM) application and depicts the process of verifying an invoice or credit memo for its form and content. This includes checks if the correct materials or services were received and if the price and quantity of the received materials are correct. The system runs these checks automatically based on the settings in the SAP system. Note that invoice verification does not cover payment or invoice evaluation. The system sends the invoice verification information to other departments (financial accounting or controlling department) to complete those steps. Hence, invoice verification links SAP MM with external or internal accounting.

The accuracy of the invoice document and incorrect values can only be detected by the system, if a reference to a preceding document has been established when creating the invoice document. When creating the invoice, you can enter the purchase order number in the invoice creation screen to create the invoice document with reference to a purchase order. The system will (like in other copy control situations in the process) copy a set of data from the purchase order, possibly posted goods receipts and involved master data into the invoice document. This includes, among others, data such as:

- Vendor ID from the purchase order
- Materials, quantities, and prices from the purchase order items

- Payment terms from the vendor master data

If an invoice is entered with reference to a purchase order, the items from the purchase order that are yet to be invoiced are suggested by the system along with their quantities and prices. The system determines the quantities that are still to be invoiced as the difference between the quantity delivered (goods receipt posted) and the quantity already invoiced. For instance, if 190 PC have been delivered and 90 PC are already invoiced, 100 PC remain to be invoiced. The expected value of the invoiced items is calculated as the quantity to be invoiced multiplied by the order item price. If the values entered in the vendor invoice document differ from these suggested values, the system will issue a warning or error message based on the settings in the system's customizing for invoice verification:

- In case of a **warning** (yellow exclamation mark), the person entering the data in the invoice document, generally, can overwrite the suggested values with the numbers from the original invoice or skip the message by pressing enter. However, 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 purchase order price).
- If formal errors occur, e.g. erroneous data is entered in the invoice document or the format of dates, amounts or currency is not correct, the system will issue an **error** message (red X). In this case, the invoice document cannot be saved until the wrong entries are rectified in the document.

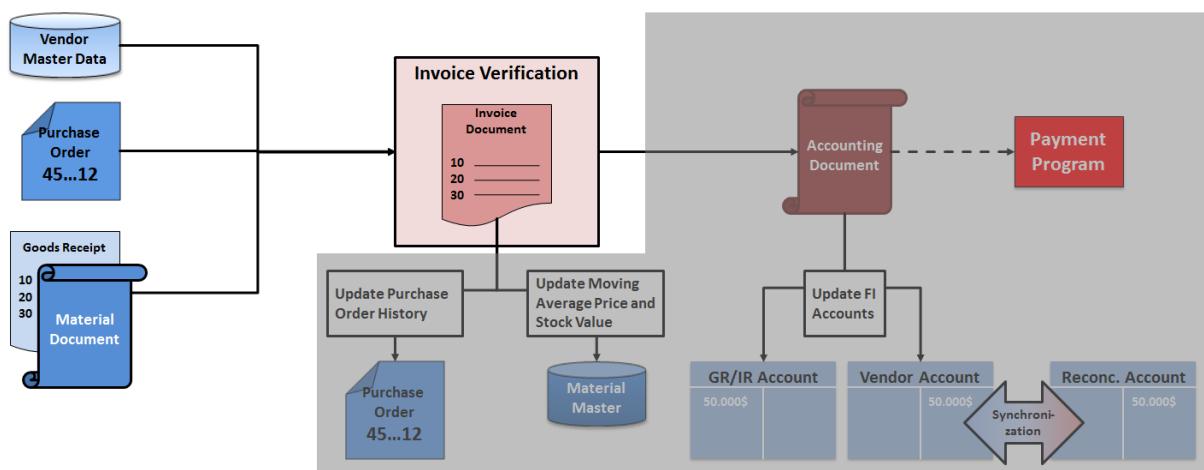


Figure 84: Invoice Processing

3.1.5.1.3 Effects of Posting an Invoice

With the posting of an invoice document, the invoice verification process is completed and several objects are updated in the SAP system. The following explains the effects of the invoice document posting:

- Documents created in Invoice Verification
 - o Invoice Document
 - o Accounting Document
- Postings in Financial Accounting
 - o Provisions on GR/IR Clearing Account is cleared
 - o Open item is created on vendor reconciliation account

- Purchase Order Update (Invoice Document Number in Purchase Order History)
- Material Price Update (Stock Value and Moving Average Price)
- Output Tax Account is updated in FI

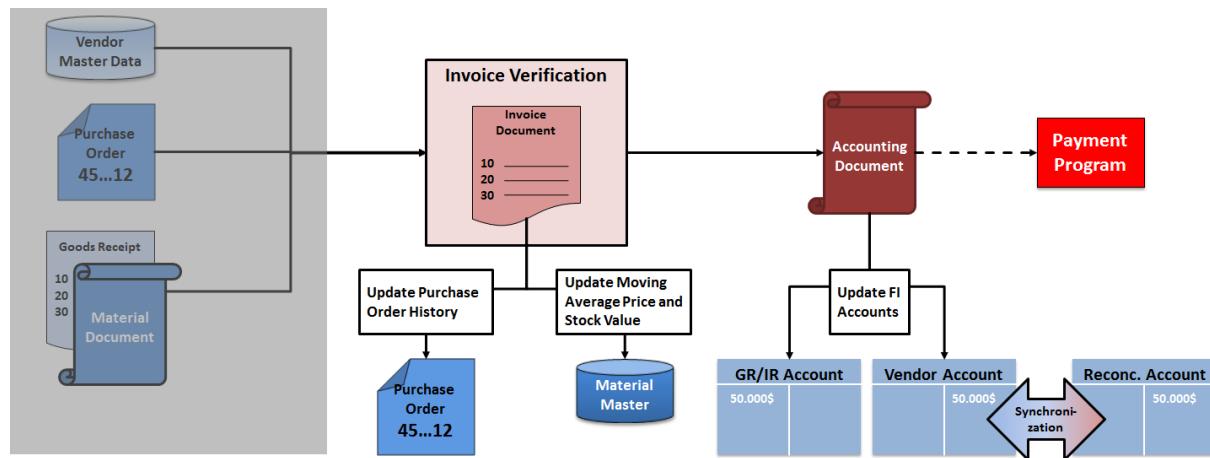


Figure 85: Effects of Posting an Invoice

Documents created in Invoice Verification

The invoice verification process results in the creation of two separate documents that are linked to one another:

- The **invoice document**, like any other document in the SAP system, 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 the amount charged for a given quantity of the material.
- The **accounting document** holds the bookkeeping effects of the invoice document creation. The document header contains the document date, the posting date, the posting period, and the document currency. The G/L account numbers and the associated amounts posted with the invoice are recorded at the item level. The corresponding G/L accounts in financial accounting are automatically posted through the account determination procedure of the SAP system.

Postings in Financial Accounting

The **accounting document** that is created with the invoice document posting, records the corresponding credit and debit postings on the accounts of Financial Accounting:

- A **debit** posting to the **GR/IR account**
- A **credit** posting on the vendor account simultaneously creating an open item in the **vendor account/liabilities account** in the sub-ledger Accounts Payable (FI-AP) and in the **liabilities** in the General Ledger (FI-GL)

While the posting on the GR/IR account is only an offset posting to a previously or later booked credit posting from the goods receipt, the open item on the *vendor account/liabilities account* is the starting point of the last step in the Payment-to-Pay business process (vendor payment). We will discuss this in greater detail in chapter *Invoice Receipt Integration with Financial Accounting*

Purchase Order Update

As mentioned earlier, a purchase order provides different functionalities for purchase order monitoring. These are the *processing status* on the **Status** tab of the document header and the **Purchase Order History** tab on the document item level. Once the invoice has been saved, the header and item statuses in the purchase order are updated.

- **Status tab:** When an invoice receipt is posted for a purchase order, the quantity and value of all items for which the invoice receipt was posted is updated in the status bar under **Invoiced**.
- **Purchase Order History tab:** Once the invoice receipt was posted, the corresponding invoice document number is displayed on this tab for the affected items. You can directly navigate to the invoice documents by clicking on it.

The screenshot shows the SAP S/4HANA interface for a purchase order. At the top, the title bar reads "Standard PO 4500000019 Create...". Below the title bar, there is a toolbar with various buttons like Document Overview On, Create, Display/Change, etc. The main area is divided into two tabs: "Status Tab" and "Purchase Order History Tab".

Status Tab: This tab displays the overall document status. It shows four categories: Active, Ordered, Delivered, and Invoiced. Arrows point from the "Fully Delivered" and "Fully Invoiced" status descriptions to a callout box labeled "Overall Status shows: ✓ all items have been delivered ✓ all items have been invoiced". Below this, a table lists purchase order items with their details like Item Number, Description, Quantity, and Unit Price. A callout box over this table says "Purchase Order History Tab: ✓ Material Document Number of the Goods Receipt ✓ Invoice Document Number of Invoice Receipt ✓ You can jump directly to those documents by clicking on their number".

Purchase Order History Tab: This tab shows a history of document entries. It lists entries for "Tr/Ev. Goods receipt" and "Tr/Ev. Invoice receipt" with their respective document numbers (5000000057 and 5105600131) and posting dates (03.08.2017). Arrows point from these entries to the same callout box in the Status Tab area.

Figure 86: Status and Purchase Order History Tabs: SAP-System-Screenshot

Material Price Update

Finally, when posting an invoice document, the material price on stock can be affected. If variances regarding invoice price and order price occur, the system recalculates and updates the current **moving average price** and the **stock value** in the material master record of the purchased materials.

3.1.5.2 Elucidation: Invoice Receipt Integration with Financial Accounting



As already mentioned previously, each invoice posting creates an accounting document along with the invoice document. The accounting document posts the value changes to the corresponding accounts in Financial Accounting (SAP FI). The accounting document of the invoice receipt leads to the following Financial Accounting (SAP FI) entries in the SAP system:

- A **debit** posting to ***Goods Receipt/Invoice Receipt*** (GR/IR) account: As mentioned afore, the posting to the GR/IR account clears the open credit item that is created if the goods receipt was already posted.
- A **credit** posting on the ***vendor account*** in the sub-ledger FI-AP and simultaneously on the General Ledger (FI-GL) account for ***liabilities (reconciliation account for accounts payables)***.

Example:

You have received materials from the same vendor from two different purchase orders. You have created two separate invoices (Invoice 1: 50.000\$; Invoice 2: 45.000\$). As you can see from the following figure, for each invoice an accounting document was created that records the following accounting processes:

- The accounting documents of the invoice receipt create **debit** items (Invoice 1: 50.000\$; Invoice 2: 45.000\$) in the ***GR/IR*** account (310000). These items clear the corresponding **credit** postings (Goods Receipt 1: 50.000\$; Goods Receipt 2: 45.000\$) to the ***GR/IR*** account, when the goods receipts were posted with reference to the same purchase order.
- The accounting documents of the invoice receipt create **credit** items (1: 50.000\$; 2: 45.000\$) on the ***vendor account*** (125000) in the sub-ledger FI-AP. The balance (95.000\$) of the vendor account in the sub-ledger is synchronized with the ***reconciliation account*** for accounts payables in the General Ledger (300000).

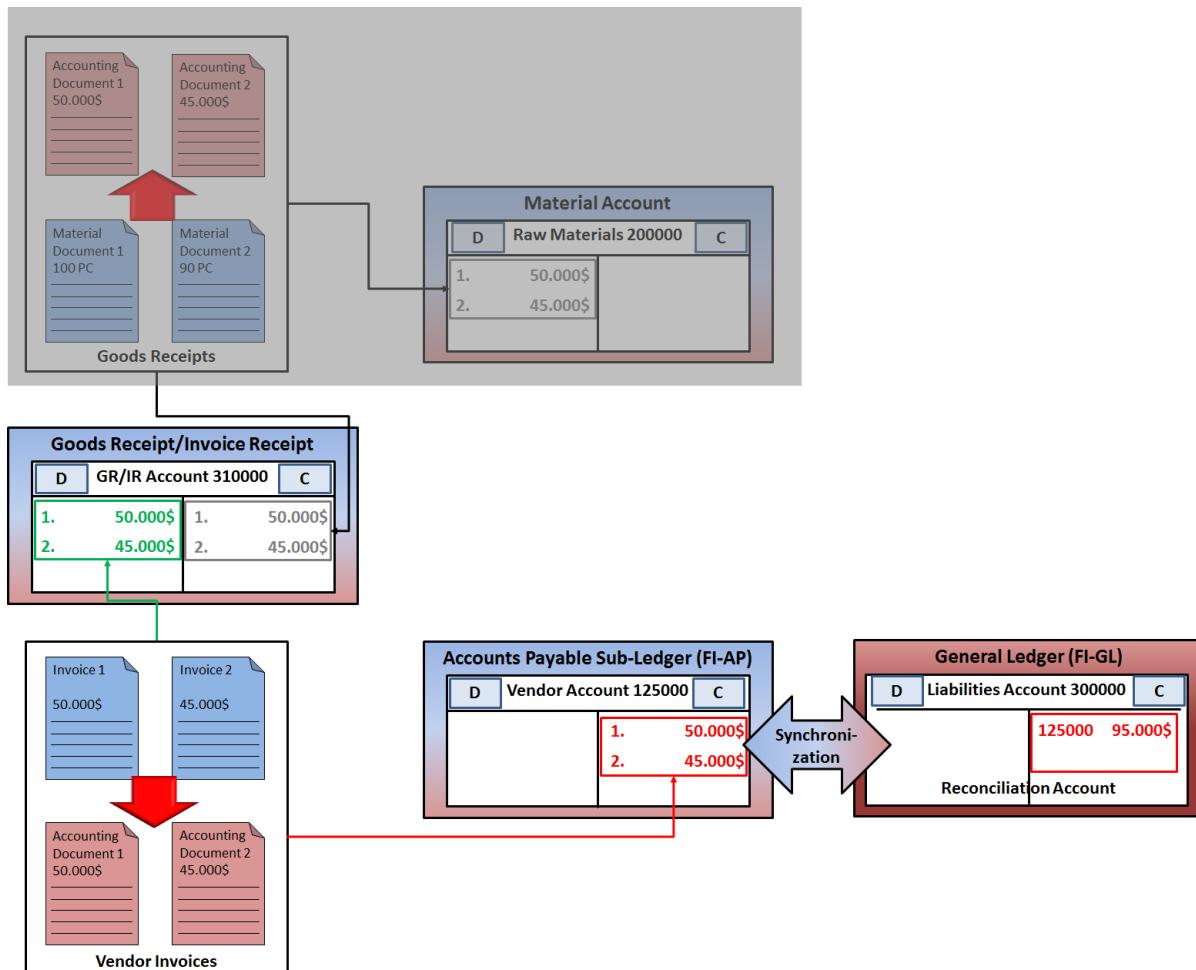


Figure 87: Integration with Financial Accounting

Consider that the entry on the vendor account (here: 125000) and the entry on the reconciliation account (here: 300000) refer both to the **same posting** but from two different perspectives: Sub-ledger FI-AP vs. General Ledger FI-GL. The value of the posting is debited and credited only once in the books.

In an accounting document that involves a sub-ledger such as accounts receivables (customers) or accounts payables (vendors), there is always a;

- **Data entry view** that shows the posting from the point of view of the sub-ledger and contains the sub-ledger accounts (e.g. vendor accounts) and a,
- **General ledger view** that shows the same posting from the point of view of the General Ledger and contains the reconciliation account.

The following figure illustrates this using the example from our purchase order process.

- In the **data entry view** the posting is made as debit GR/IR 310000 with 55003\$ and credit **vendor account 125000** in the sub-ledger FI-AP with 55003\$
- In the **general ledger view** the posting is made as debit GR/IR 310000 with 55003\$ and credit **reconciliation account 300000** in the General Ledger FI-GL with 55003\$

The figure consists of two SAP system screenshots. The top screenshot shows the 'Display Document: Data Entry View' screen. It includes fields for Document Number (5105600131), Company Code (US00), Fiscal Year (2017), Document Date (03.08.2017), Posting Date (03.08.2017), Period (8), Reference, Cross-Comp.No., Texts Exist, and Ledger Group. Below these are various toolbar icons. A table displays transaction details:

Co...	Item	Key	Account	Description	Amount	Curr.	Tx
US00	1	31	125015	Pouyan Khatami	55.003,00-	USD	XI
	2	86	310000	GR/IR Account	50.000,00	USD	XI
	3	86	310000	GR/IR Account	5.000,00	USD	XI
	4	86	310000	GR/IR Account	3,00	USD	XI

A red box highlights the 'General Ledger View' button in the top right. A blue arrow points up to a box labeled 'Data Entry View = Sub-Ledger Perspective Vendor Account 125015'. A red box highlights the 'Entry View' button in the second screenshot's top right. A blue arrow points down to a box labeled 'General Ledger View = General Ledger Perspective Reconciliation Account 300000'.

The bottom screenshot shows the 'Display Document: General Ledger...' screen, which is identical to the top one except for the title. It also has a 'General Ledger View' button highlighted by a red box.

Figure 88: One Posting; Two Points of Views: SAP-System-Screenshot

3.1.6 Vendor Payment

Payment of the vendor is the last step of the Source-to-Pay business process. It is part of the Financial Accounting application and involves postings to the vendor accounts (company-code-

specific vendor master data) in the sub-ledger Accounts Payable (SAP FI-AP) and the corresponding postings in the General Ledger (SAP FI-GL).

3.1.6.1 Processing Vendor Payments

Once the Source-to-Pay business process has been completed up to the last step and the vendor invoice has been created, the vendor can be paid. The system performs the following actions during the payment run:

- Posts payment documents
- Clears open items
- Prepares data for printing the payment media

The payment of a vendor either can be processed manually (e.g., transaction F-53) by an employee or take place automatically (transaction F110) using a payment program that is run regularly. In both cases, the payment transactions consist of the following elements:

- **Payment method:** The standard system contains common payment methods and corresponding forms defined by country. This includes check, bank transfer or exchange. Which payment method is available for a specific vendor, is determined in the vendor master data record.
- **Bank account:** You must select the bank account from which the vendor gets paid. For the automatic payment run the determination of the bank account is set in the system's customizing.
- **Items to be paid:** You must specify which items from the vendor account should be cleared with the payment. If no specific references are set, the entire open amount on the vendor account will be settled including all open items on the vendor account (see previous chapter).
- **Calculate Payment Amount:** When the payment amount is calculated, the system takes into account all possible discounts and rebates that have been agreed upon with the vendor. Therefore, the system uses the payment terms assigned to a vendor in the vendor master data (e.g. within 14 days 3% cash discount).
- **Posting the Payment Document:** In the previous figure you can see that the payment process will again create a financial accounting document to record the transaction. Thereby, the vendor account is credited with the specified amount and the bank account is debited with the same amount.
- **Print Payment Medium:** Finally, the payment medium (e.g., check) can be printed.

When using the payment program, the following steps must be performed:

1. **Maintain Parameters:** On the parameters tab of the automatic payment transaction, you enter the following data:
 - o *Posting date:* The date at which the payment run is executed.
 - o *Next payment run date:* The next date at which the payment run is executed (generally, this is after 1 month).
 - o *Company code:* The involved company code for the accounting document posting.
 - o *Payment method:* The payment method (e.g. check) to be used.
 - o *Accounts:* One or multiple vendor or customer accounts to be considered in the payment run.

2. **Start Proposal Run:** By pressing the button **Schedule** then **Proposal**, the system analyzes the vendor (or customer) accounts specified in the parameters and generates payment proposals for these accounts.
3. **Edit Proposals:** The generated payment proposals can be viewed, edited, and deleted manually, if they e.g., contain errors.
4. **Start Payment Run:** By pressing the button **Schedule** then **Payment**, the system posts the payment documents for the payment proposals and clears all open items. If the payment proposal step is skipped, and the payment run is executed directly, business transactions that clear the open items are posted directly after entering the parameters.
5. **Start Print Out:** Depending on the specified payment output media the printout of the required documents (e.g., check) or transmission (e.g., EDI) is started. One of the following can occur here:
 - Payment media, such as cheques, are printed
 - IDocs are generated for the Electronic Data Interchange (EDI)
 - A data file is created as part of the data medium exchange (DME)
 SAP S/4HANA uses the Payment Medium Workbench, which is a generic payment medium program for all payment medium formats, in order to create payment media.

The screenshot shows the SAP S/4HANA 'Manage Automatic Payments' interface. The top section is titled 'Payment Run Parameters'. It contains fields for 'Company Code' (US00), 'Payment Method' (C), 'Supplier' (125015), 'Customer' (1000004 or 1000004...3000009), 'Posting Date' (03.08.2017), 'Docs Entered Up To' (03.08.2017), 'Customer Items Due By' (dd MM yyyy), 'Next Payment Date' (03.09.2017), and 'Payment Run Date' (Next Payment Run Date). Below this is a 'Free Selection' section with a summary table:

Run Date:	Identification:	Created By:	Company Code:
27.07.2017 - 03.08.2017	P9998	WIP9-998	US00 (Global Bike Inc.)

The summary table below shows the results of the automatic payment run:

Parameters Created	Proposals Processed	Payments Processed
0	0	1

Items (1) Standard

Run Date	Identification	Status	Created By	Posting Date	Company Code	Payment Method	Log	Payme...	Open
03.08.2017	P9998	Payment Posted	WIP9-998	03.08.2017	US00 (Global Bike Inc.)	C (Check)			

Figure 89: Automatic Payment Program

3.1.6.2 Elucidation: Vendor Payment Integration with Financial Accounting



ELUCIDATION

As you have learned in the previous chapter, the vendor invoice leads to the following Financial Accounting (SAP FI) entries in the SAP system:

- A debit posting to GR/IR account
- A credit posting on the vendor account in SAP FI-AP sub-ledger and the corresponding posting on the reconciliation account in the General Ledger (liabilities)

The later creates an open item in SAP FI-AP and SAP FI-GL and needs to be cleared with the vendor payment. At this point, note that payments of a vendor can be posted **against the vendor account** or **against individual open items** on the vendor account. If you want to pay a certain purchase order with a payment, then you must enter the corresponding invoice number as reference into the payment transaction.

Example:

You order materials from the same vendor in two different purchase orders, which are then received and invoiced separately (Invoice 1: 50.000\$; Invoice 2: 45.000\$). Now you have two open items on the vendor account in the sub-ledger, one for each invoice and want to process the payment in SAP. If you do not enter a reference number (e.g. invoice document number) in the payment transaction, then the payment references the total amount on the vendor account and you need to enter 95.000\$ as payment amount.

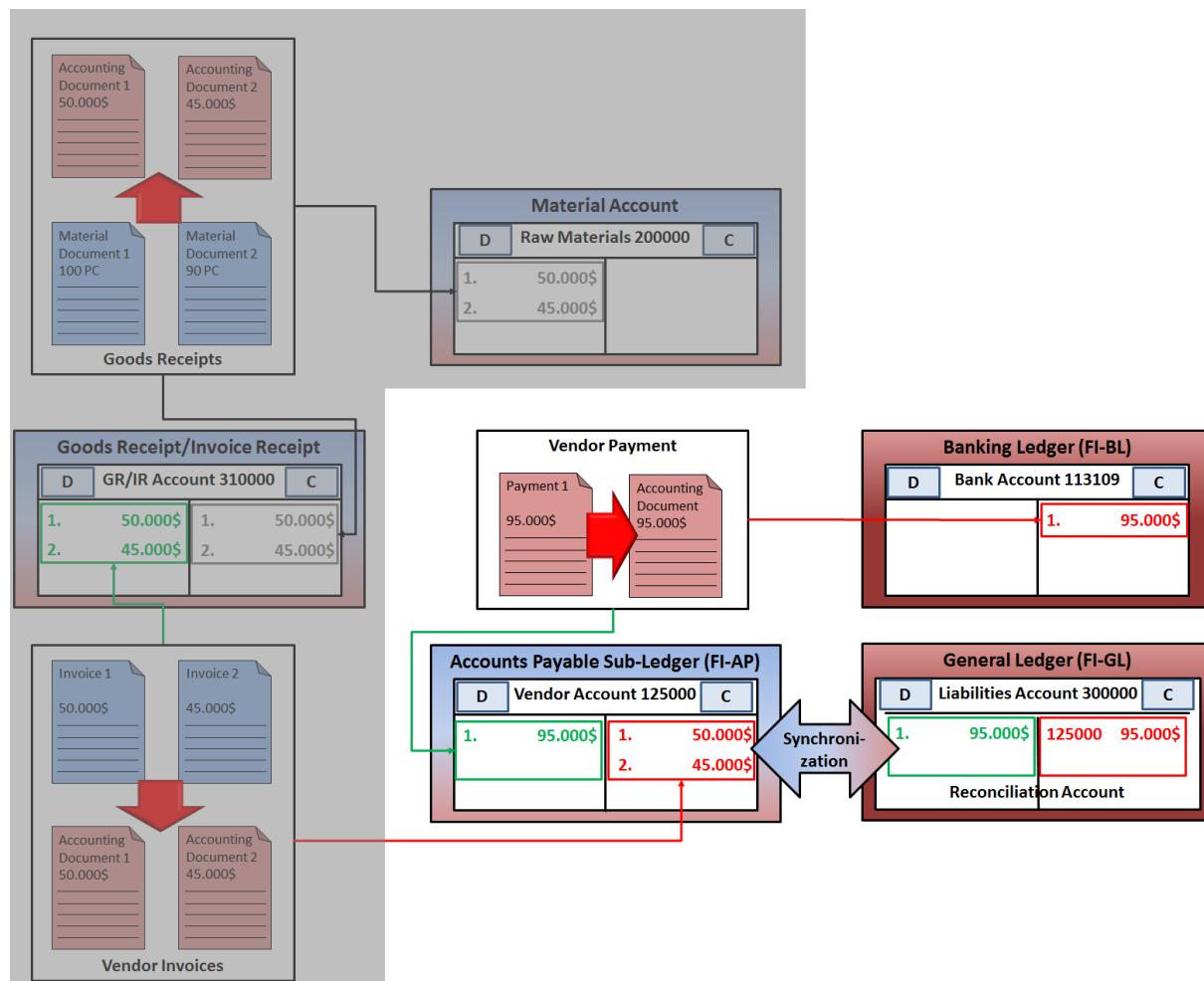


Figure 90: Vendor Payments

3.1.7 Integration with other Applications

The following figure summarizes the various integration points of the Source-to-Pay Business Process with other applications of the SAP system.

Requirements Determination

Requirements determination and the creation of **purchase requisitions** is closely integrated with **Sales and Distribution** (SAP SD) as well as **Production Planning** (SAP PP).

When a customer of a company orders a product from the company, a requirement (materials needed to produce that product, etc.) arises. This requirement is transferred from the SAP SD application to SAP MM and, thus, to procurement (SAP MM-PUR). In other cases, a purchase requisition can be assigned directly to a sales order at the time it is created.

In Production Planning you have more or less the same situation as with sales integration. Purchase requisitions are created manually or automatically when – due to *production planning* and *material requirements planning* – a requirement for material arises.

A purchase requisition could also be relevant to **Management Accounting** (SAP CO). If an item in a purchase requisition is a consumable material or purchased for consumption, and if *Commitment Management* is active in Management Accounting, the purchase requisition item will create a commitment in Management Accounting for the assigned cost object.

Purchase Order Processing

A purchase order could also be relevant to **Management Accounting** (SAP CO). If an item in a purchase order is a consumable material or purchased for consumption, and if *Commitment Management* is active in Management Accounting, the purchase order item will create a commitment in Management Accounting for the assigned cost object.

Goods Receipt Posting

The goods receipt posting has several integration points with other SAP applications. Posting a goods receipt leads to:

- quantity-based update of the inventory (in **Inventory Management**) for stock materials that is recorded with a material document.
- value-based update of the inventory accounts (in **Financial Accounting**) for stock materials that are recorded with an accounting document.
- the creation of a controlling document (in **Management Accounting**) – along with the accounting document, if the referenced purchase order contains an item with consumable materials.
- the creation of a transfer requirement (in **Logistics Execution**), if Warehouse Management is active for the receiving plant-storage-location-combination.
- an update of the purchase order status and the purchase order history.

Invoice Verification

The invoice receipt posting also has several integration points with other SAP applications. Posting an invoice receipt leads to:

- the creation of an accounting document (in **Financial Accounting**) that record the liability towards the vendor in the General Ledger and on the vendor account in the sub-ledger FI-AP.
- the creation of a controlling document (in **Management Accounting**), if the referenced purchase order contains an item with consumable materials and the invoice amount is different than the purchase order amount.
- an update of the purchase order status and the purchase order history.

Payment

When the vendor invoice is paid, an accounting document is created to record the decrease in cash (on the bank account) and the increase in accounts payables. The open item on the vendor account is cleared with this posting

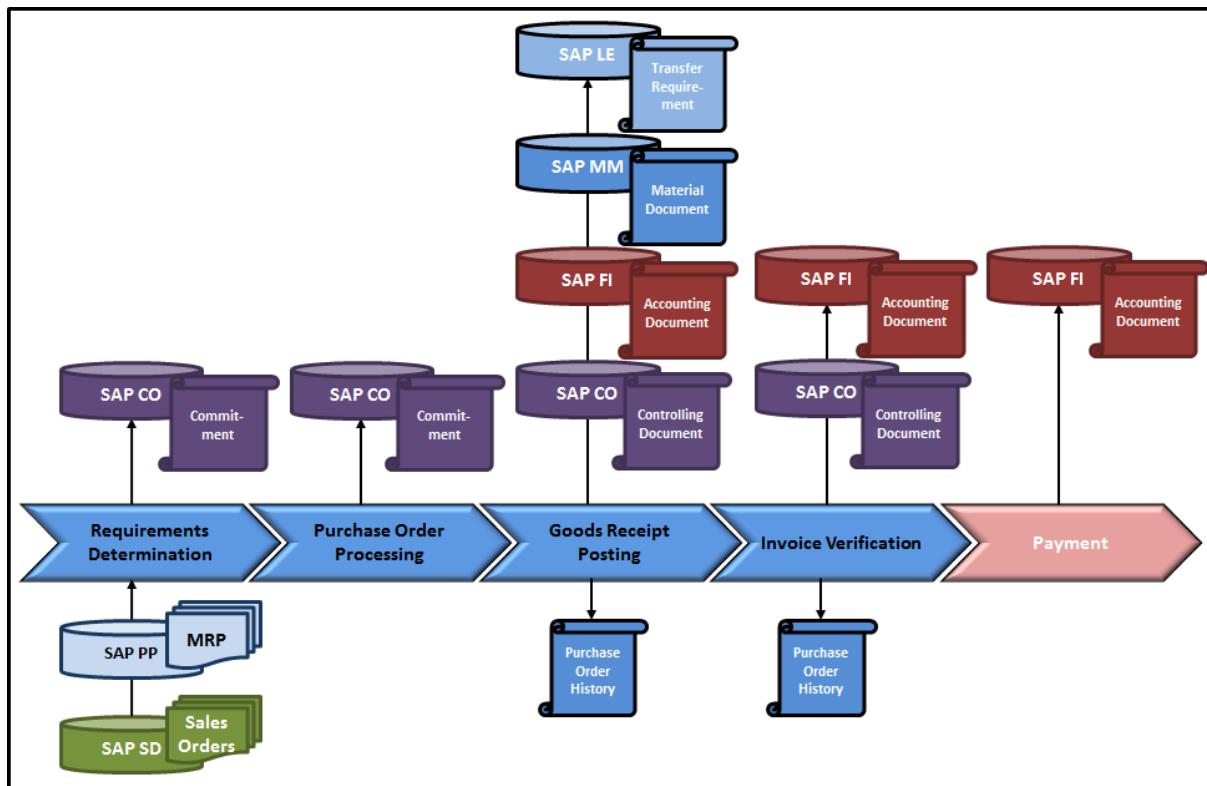


Figure 91: Integration Points of Source-to-Pay Business Process

3.2 Practice: Source-to-Pay Business Process



PRACTICE

The GBI's development department has requested a new gearing type from one of the company's vendors. Before the new gearings can be implemented in the Speedstar, the quality inspection department must run a few tests on the new material. Therefore, the purchasing department initiates a procurement process and purchases these gearings for stock and quality inspection purposes.

The following figure illustrates the individual steps that you must perform to accomplish the Procure-to-Pay business process.

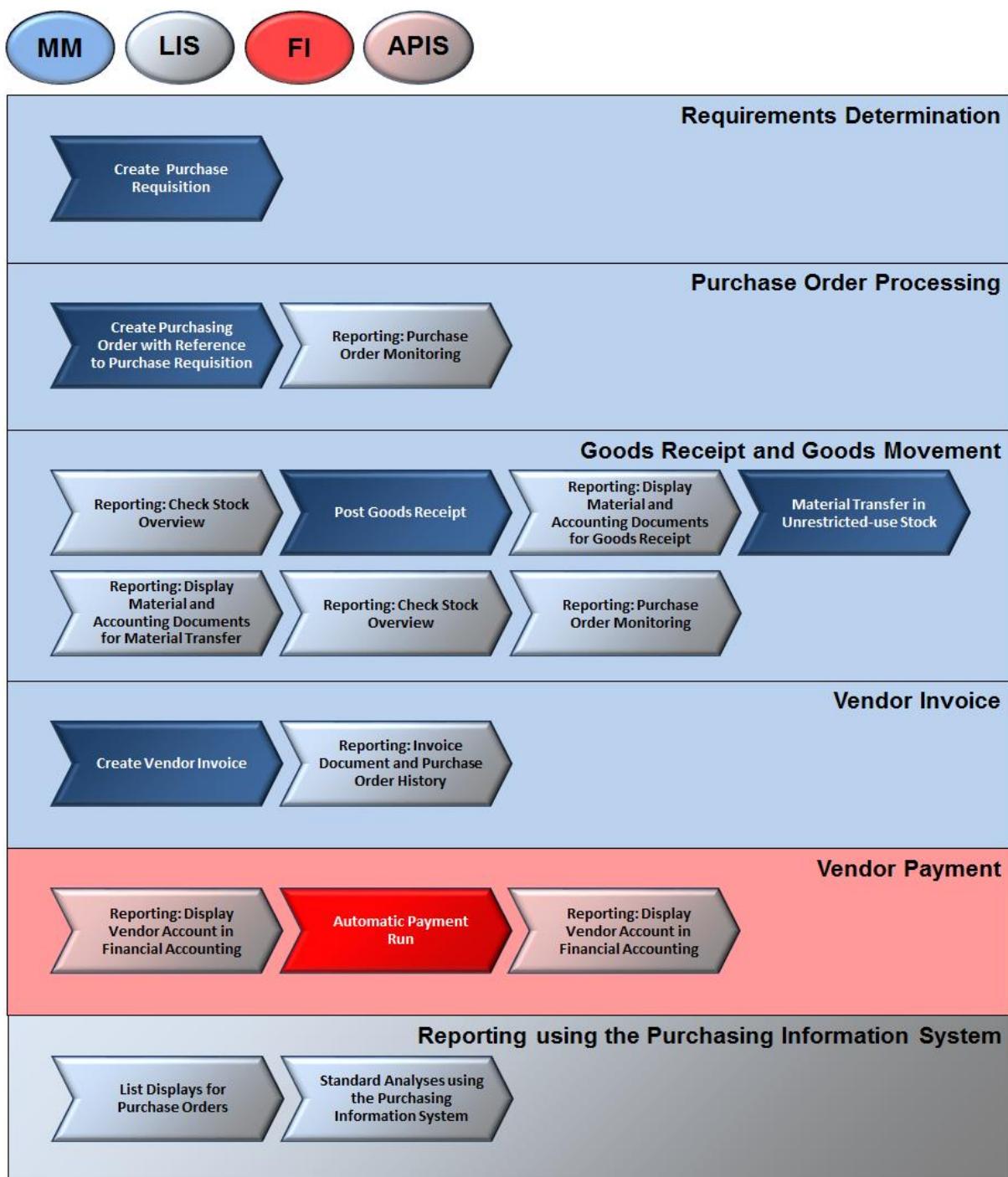


Figure 92: Process Overview: Procure-to-Pay Business Process

3.2.1 Requirements Determination

Now, you will create a purchase requisition for 110 pieces of your trading good Gearing-xyyy. 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 chapter.

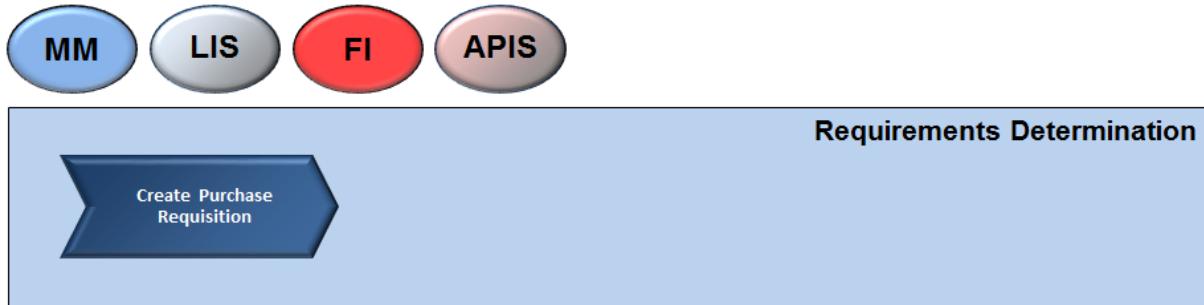


Figure 93: Process Overview: Requirements Determination

Create Purchase Requisition

Within the tile group **Script 1 – Source-to-Pay** select the app **Create Purchase Requisition – Advanced** in order to create a purchase requisition manually.



When you call up the App to create a purchase requisition for the first time, the system displays the help function “User Interface for the Purchase Requisition“. Click on the close button (Close) to skip this system message.

NOTE

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:

- A (Account Assignment Category)	<i>leave empty</i>
- Material	<i>Gearing-xyyy</i>
- Quantity	<i>100</i>
- Delivery Date	<i>current date + 1 week</i>
- Plant	<i>DL00</i>
 3. Next, enter the following data in the **second** line of the item overview

- A (Account Assignment Category)	<i>K (Cost center)</i>
- Material	<i>Gearing-xyyy</i>
- Quantity requested	<i>10</i>
- Delivery date	<i>current date + 1 week</i>
- Plant	<i>DL00</i>
- Press *Enter*

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

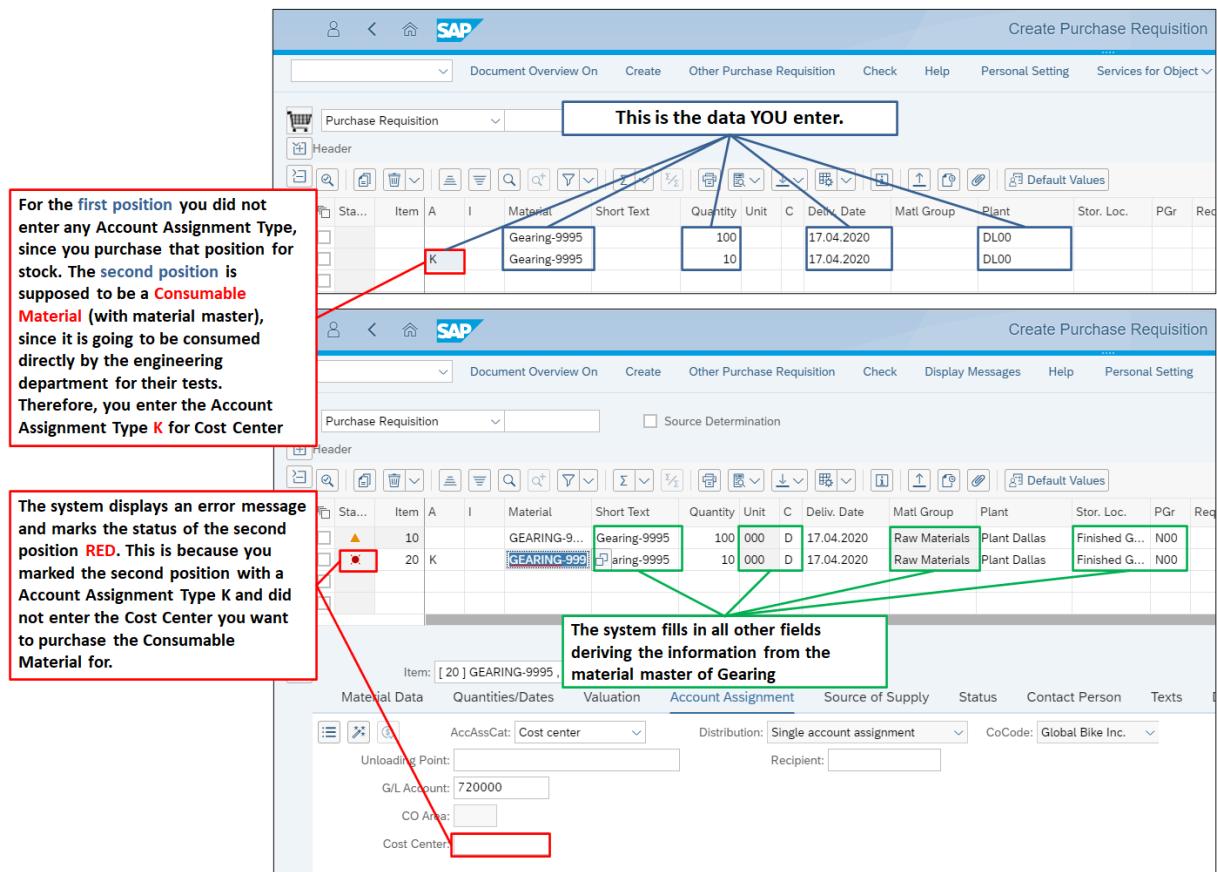


Figure 94: Create Purchase Requisition (1): SAP-System-Screenshot

- Therefore, enter **Cost Center NAPM1000**. Cost center **NAPM1000** is part of the GBI engineering. Press *Enter* once again. The system automatically fills in the spare fields using the cost center's master data. Confirm any warning message (yellow) with *Enter*. Compare with the following figure:



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

NOTE



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 for you to be careful or pay attention to some issue.

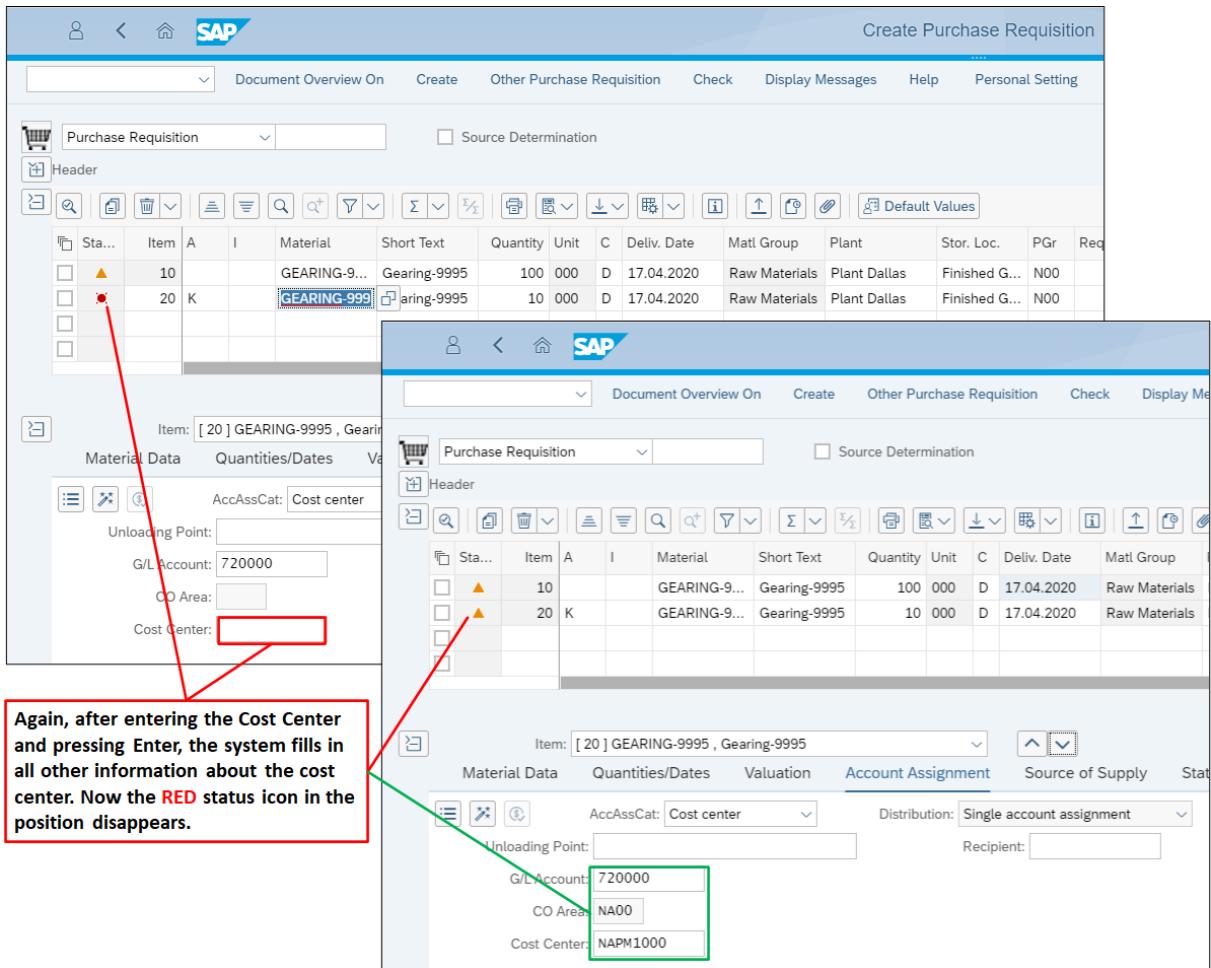


Figure 95: Create Purchase Requisition (2): SAP-System-Screenshot

- Save your created purchase requisition and list the number of the purchase requisition on your data sheet. Leave the transaction.

Purchase requisition number 0010236804 created

Purchase Requisition (Gearing):



Subsequent changes to the purchase requisition be made via the transaction ME52N (Change Purchase Requisition).

NOTE

3.2.2 Purchase Order Processing

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

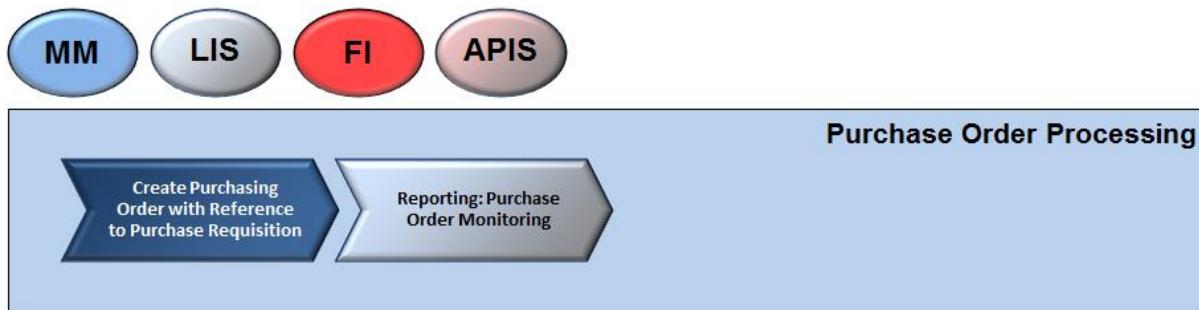
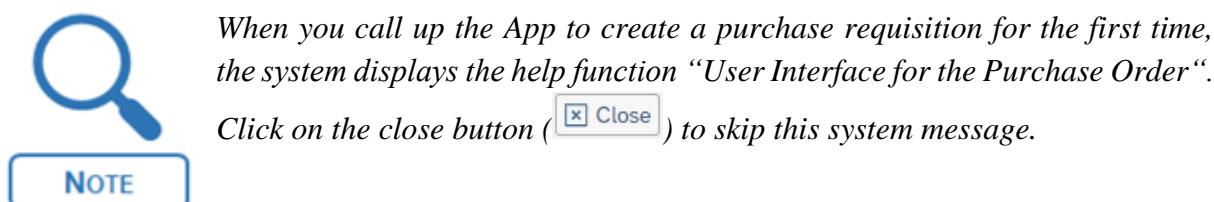


Figure 96: Process Overview: Purchase Order Processing

3.2.2.1 Create Purchase Order with Reference to Purchase Requisition

The following purchase order is created with reference to the purchase requisition you have just created. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app *Create Purchase Order - Advanced*.



1. In case the left frame is not opened, 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.

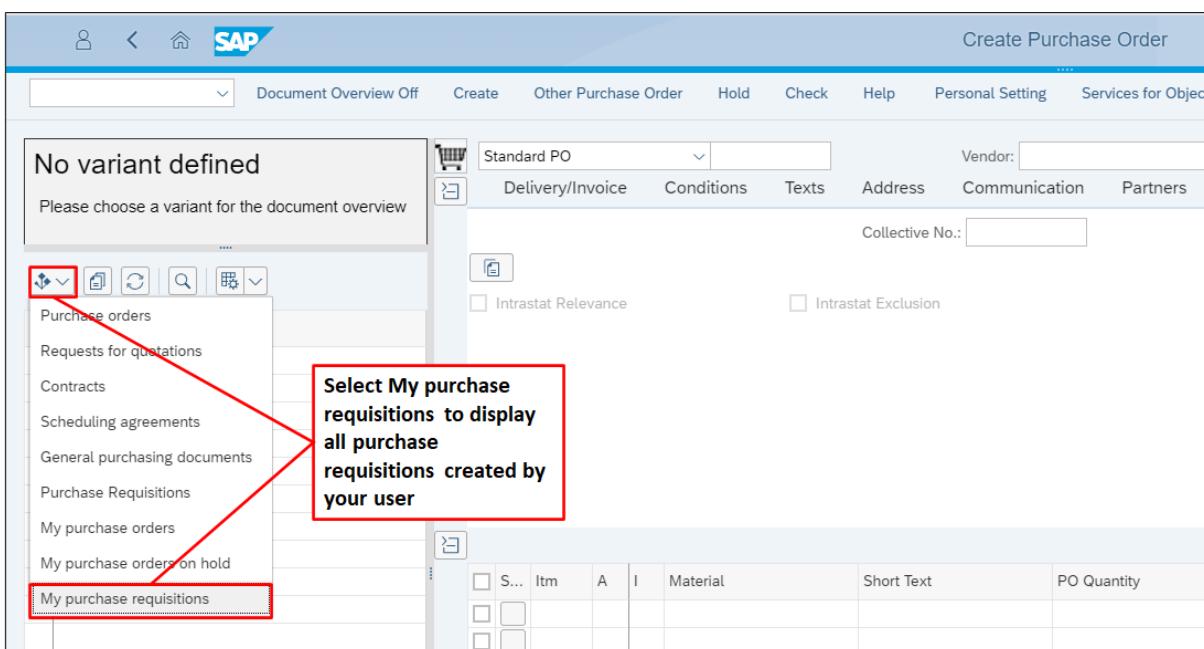


Figure 97: Copy Purchase Requisitions into Purchase Order (1): SAP-System-Screenshot

2. In the document overview (left window), select your **Purchase Requisition** number and click on *Adopt* ().

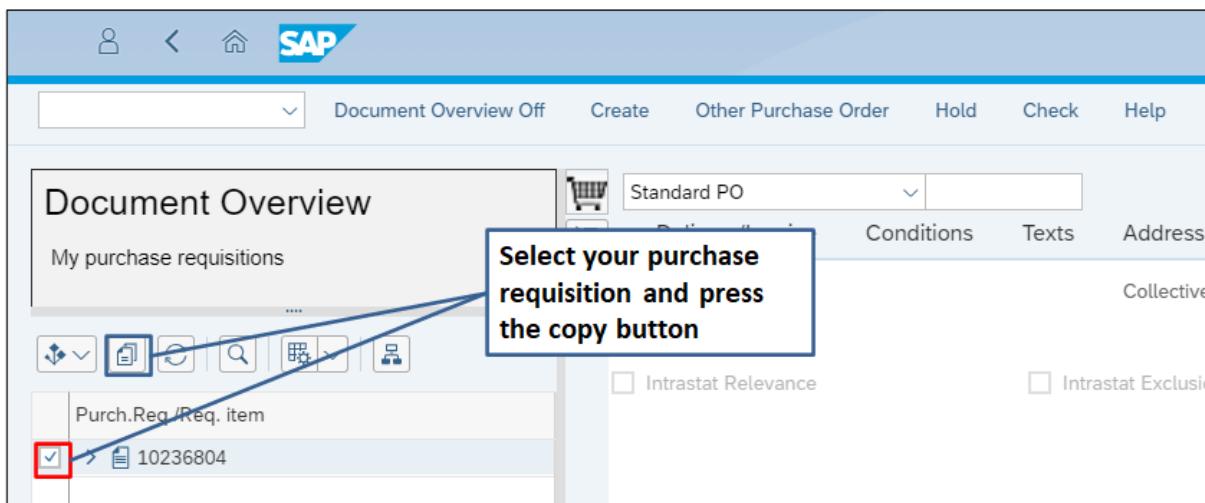


Figure 98: Copy Purchase Requisitions into Purchase Order (2): SAP-System-Screenshot

3. The system again displays an error and prompts you to fill in the following data in the order header:

- **Vendor** *your Vendor number*
- **Purchasing Organization** *US00*
- Press *Enter*



Check, whether the data of your purchase requisition was adopted. If necessary, click on the Item Overview button to display the purchase order item area. If the data was not adopted, mark your purchase requisition number again and click on the button a second time.

4. Now, data from the purchase requisition is transferred into the fields of the purchase order (on the right hand side of the screen). 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 by pressing *Enter*. You can also skip any messages regarding the date with *Enter*.

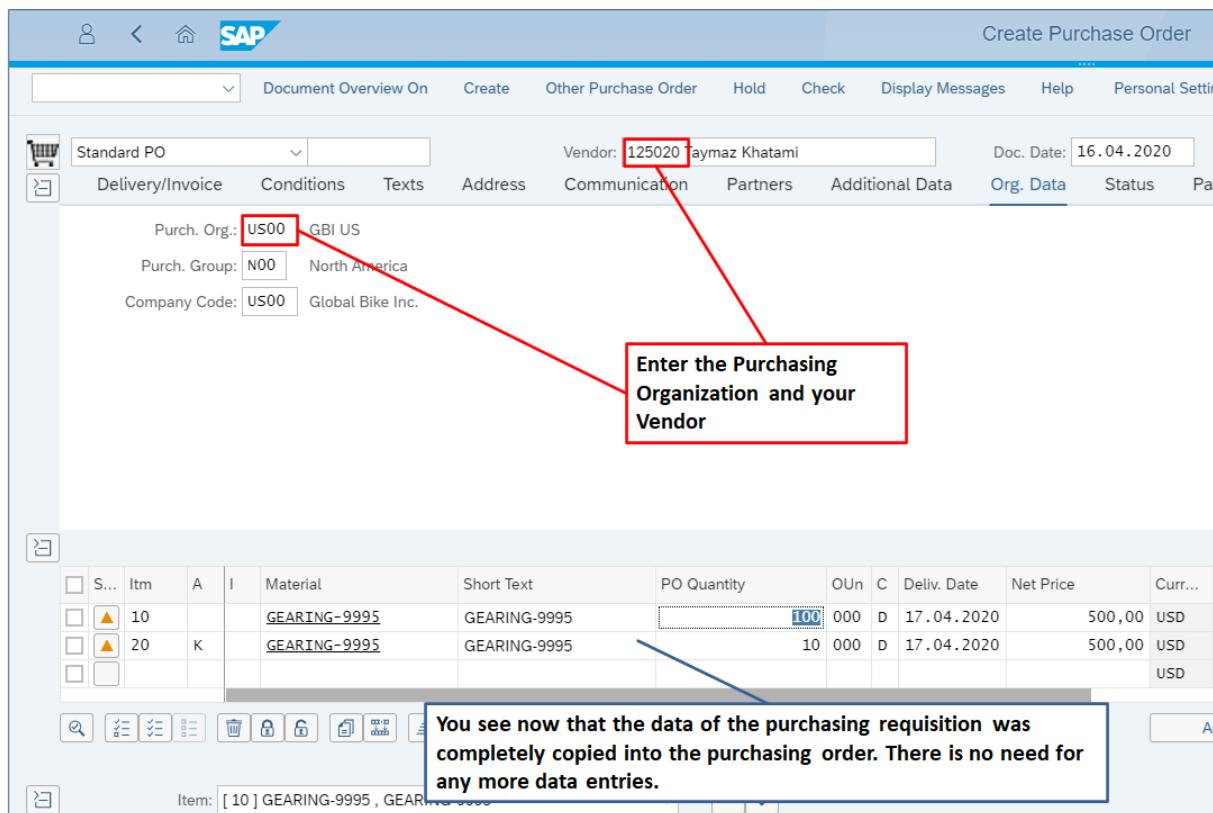


Figure 99: Copy Purchase Requisitions into Purchase Order (3): SAP-System-Screenshot

5. **Save** the purchase order and list the purchase order number.
6. 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):

NOTE

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 for you to be careful or pay attention to some issue.

3.2.2.2 Reporting: Purchase Order Monitoring

Once you have created the purchase order and sent it to your vendor, you would like to evaluate different reports with the information about your order (quantity, value, etc.). For this purpose, you need to know how to use specific reports of LIS and the purchase order monitoring within a purchasing document.

3.2.2.2.1 Evaluate Purchasing Documents

You can run a general evaluation for your vendors and purchasing documents. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Display Purchasing Documents by Supplier**.

- Enter the following data:

- Supplier: *your vendor account*
- Press *Execute* (**Execute**).

- Select the column *Quantity (Order quantity)* and press the *Total* (Σ) button.

Item	Type	Cat	PGr	POH	Doc. Date	Material	Short Text	Matl Group	D	I	A	Plnt	SLoc	Quantity	OUn	Quantity	SKU	
Supplier																		
10	NB	F	N00		25.09.2017	GEARING-9995	Gearing-9995	RAW				DL00	FG00	100	EA	100	EA	
20	NB	F	N00		25.09.2017	GEARING-9995	Gearing-9995	RAW				K	DL00	FG00	10	EA	10	EA

Figure 100: Display Purchasing Document (1): SAP-System-Screenshot

- Now select the column *Net Price* and select *Total* again.

- Finally, select *Save Layout* () to save your data.

- Enter the following data

Save Layout *PurchD-xxxx*

Name *PurchD xxxx*

- Select *User-specific* and uncheck *Default Setting*. Press *Continue*.

Figure 101: Display Purchasing Document (2): SAP-System-Screenshot

3.2.2.2 Display Purchase Order

Display the purchase order. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Change Purchase Order**.

- In the initial screen of the transaction, click on the **Other Purchase Order** icon, enter the previously noticed **Purchase Order** number and confirm by selecting **Other Document**.

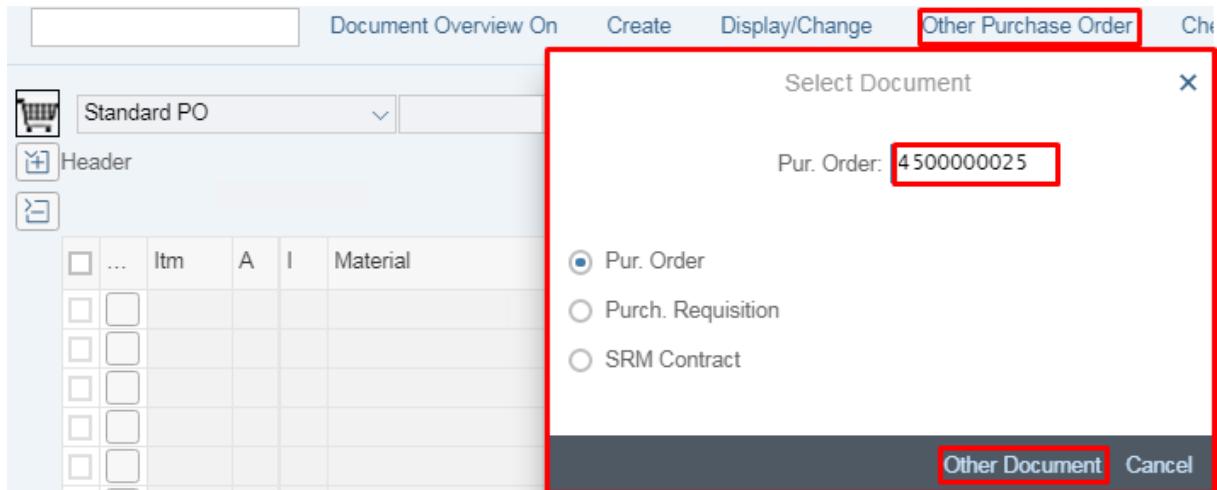


Figure 102: Reference Purchase Order Requisition to Order (1): SAP-System-Screenshot

- Within the header () you can see in the *Status* tab the current status of your purchase order.

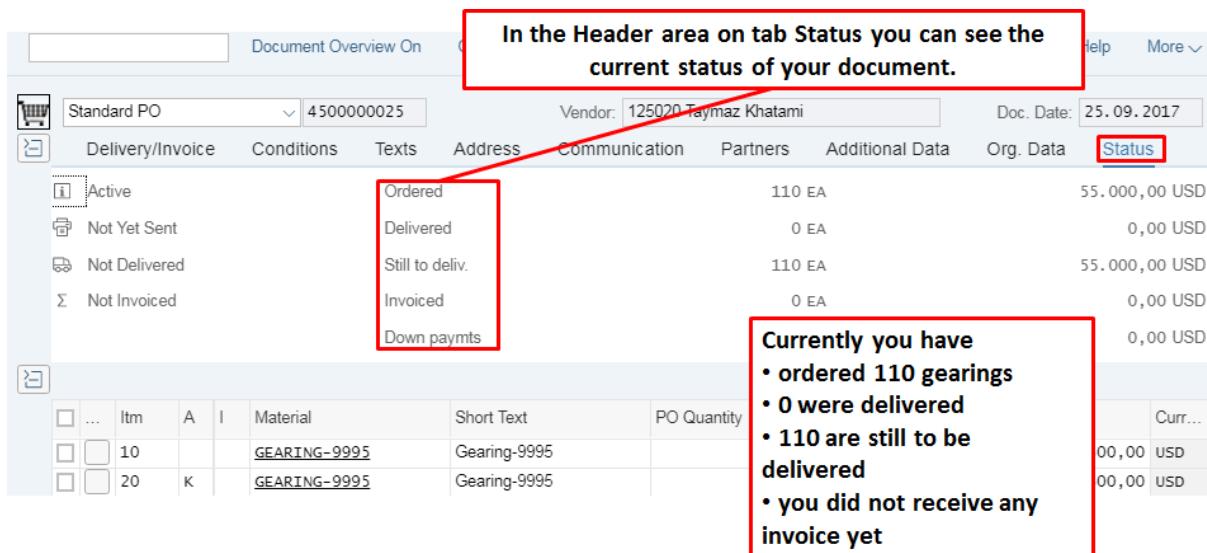


Figure 103: Reference Purchase Order Requisition to Order (2): SAP-System-Screenshot

- Within the Item Details (), 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.

The screenshot shows a table with two rows of material data. The first row has item numbers 10 and 20, material descriptions 'GEARING-9995', and short text 'Gearing-9995'. The second row also has item numbers 10 and 20, material descriptions 'GEARING-9995', and short text 'Gearing-9995'. Below the table is a toolbar with various icons. To the right of the table is a sub-table titled 'Delivery Schedule' with one row. This row contains delivery date '01.10.2017', scheduled quantity '100', and planned completion date '01.10.2017'. A red box highlights the 'Delivery Schedule' tab. A callout box with the text 'Here you see the reference of the purchase order to ist preceding document' points to this tab.

Figure 104: Reference Purchase Order Requisition to Order (3): SAP-System-Screenshot

3.2.2.2.3 Processing Status of the Purchase Requisition

Finally, you will display the processing order status of both positions in the **purchase requisition**. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Change Purchase Order** again.

1. In the initial screen of the transaction, click on the **Other Purchase Order** icon.
2. First, select **Purch. Requisition**.
3. Then, enter the number of your **Purchase Requisition** (see data sheet) and confirm by selecting **Other Document**.

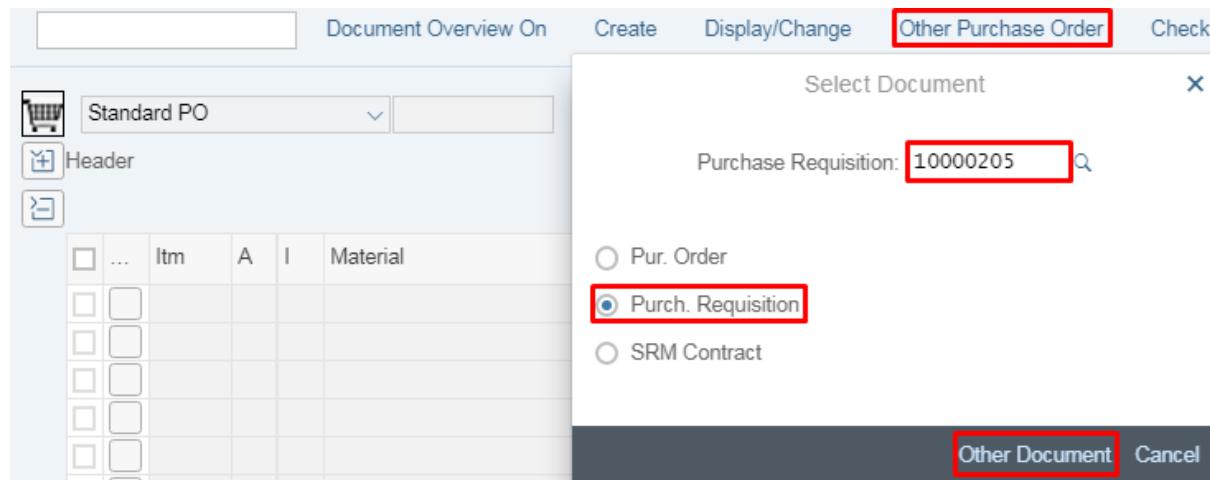


Figure 105: Display Purchase Requisition: SAP-System-Screenshot

4. If necessary, open the **Item Detail data** ().
5. Select the **Status** tab.
6. The processing status of both positions should say that both orders were created (**PO created**).
7. Leave the view by pressing **Exit**.

The status of all documents (purchase order, purchase requisition, order, etc.) is important in SAP S/4HANA. 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.

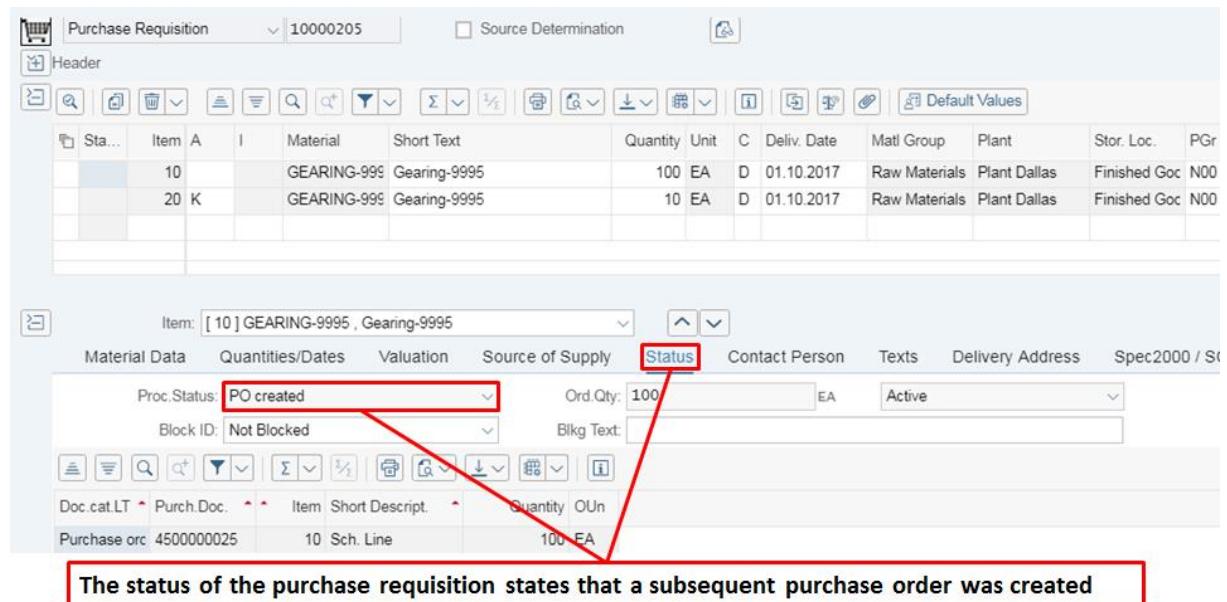


Figure 106: Processing Status of the Purchase Requisition: SAP-System-Screenshot

3.2.3 Goods Receipt and Goods Movement

In this exercise, you will deal with the goods receipt and goods movement concerning the material of Gearing-xxxx. In the previous section, you ordered 110 pieces of the material and 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.

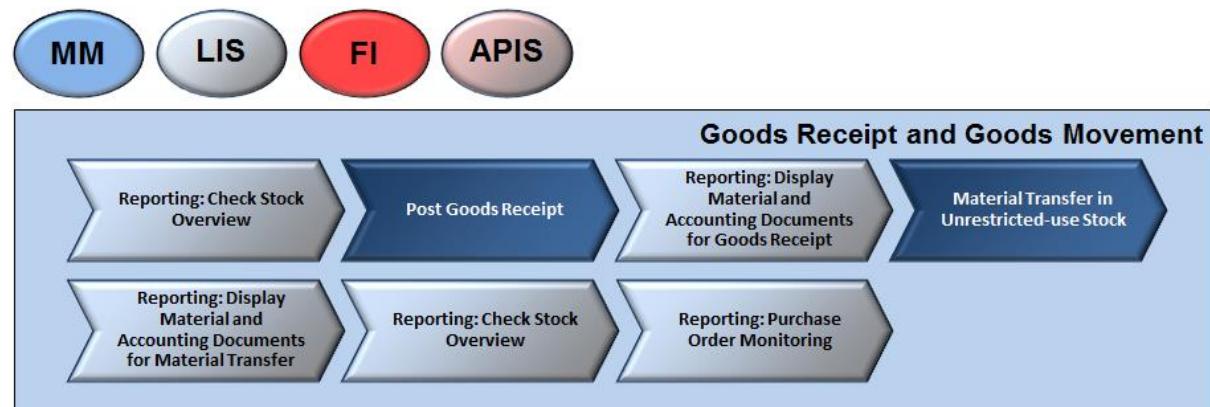


Figure 107: Process Overview: Goods Receipt and Goods Movement

3.2.3.1 Reporting: Check Stock Overview

Now you want to check the current stock overview. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Stock Overview**.

1. Enter material **Gearing-xxxx** and plant **DL00** in the appropriate fields and select **Execute**.
2. You can see that, obviously, no stock for this material has been posted yet (only as Open order quantity). If necessary, that is in order to see all columns, switch to full screen mode.

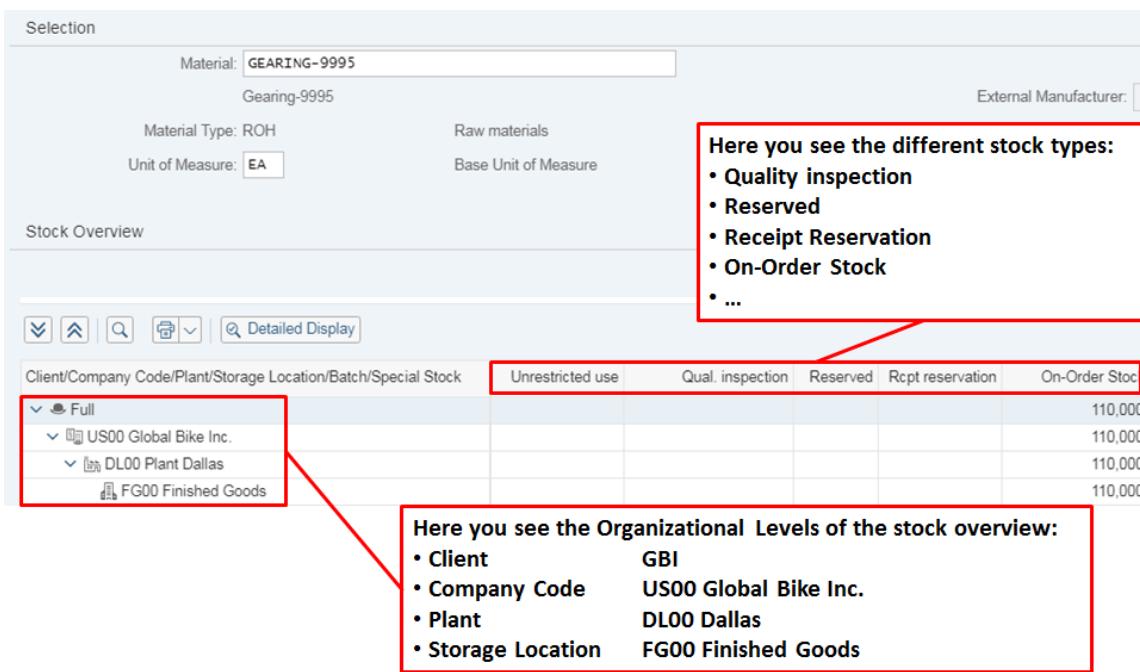


Figure 108: Stock Overview: SAP-System-Screenshot

3.2.3.2 Post Goods Receipt

Now, we assume that your vendor has completely delivered the ordered material. Thus, you have to post goods receipt now. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Post Goods Movement**.

1. You want to post a goods receipt for the purchase order you created earlier. Therefore, on the upper part of the screen select **Goods Receipt** from the left drop-down menu and select **Purchase Order** from the right drop down menu. Enter your **Purchase Order** number (see datasheet) for *Gearing-xyyy* in the field on the right hand side of the drop-down menu. Press *Enter*.

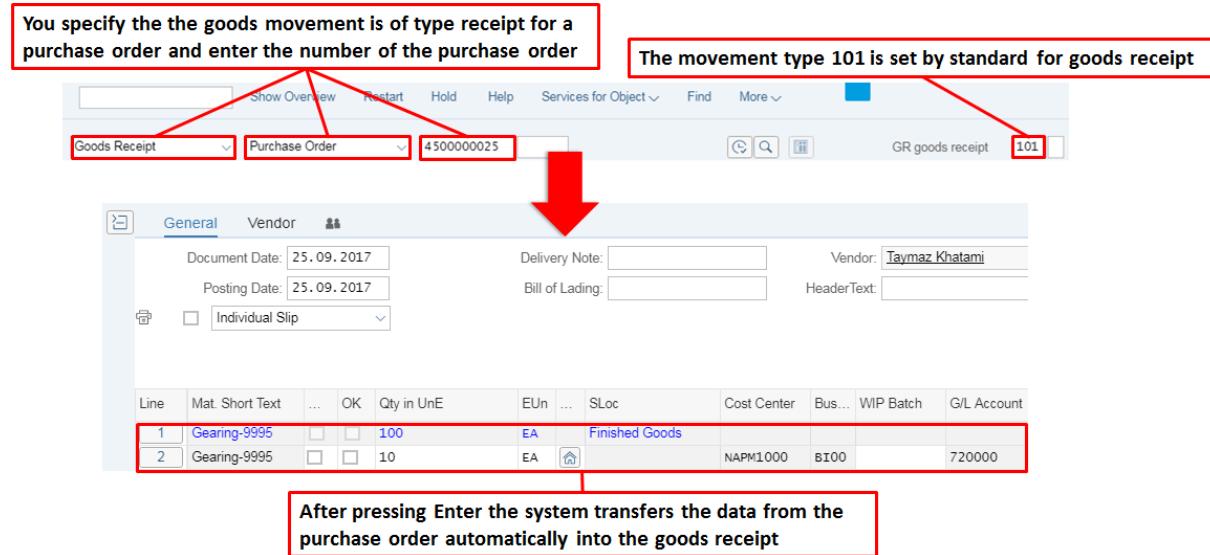


Figure 109: Goods Receipt for a Purchase Order (1): SAP-System-Screenshot

2. Enter in the fields **Document Date** and **Posting Date** the *current date* and in the **Delivery note** field * (an asterisk).

3. Next, within the row containing the 100 gearings, click on the number at the beginning of the row (in our example on 1).

- 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.
- Set the flag **Item OK** at the **bottom of the screen**
At the same time the **OK** field in the selected row will be set, too (since it is the same field!)

4. Click on the number of the other row (in our example this is 2)

- Check the **OK** field at the bottom of the screen for this item, too.
- Now the **OK** fields for **both** rows should be set.

In the following figure, you can see what the material receipt document looks like after you completed all steps. The particular entries/buttons are highlighted red.



NOTE

*Consider again, that order of items may differ again. Independent of which row contains the 100 / 10 gearings, you finally have to make sure that 100 gearings are transferred into Quality Inspection and for both rows the **OK** field is checked with the item overview.*

Line	Mat. Short Text	...	OK	Qty in UnE	EUn	...	SLoc	Cost Center	Bus...	WIP Batch	G/L Account	Batch
1	Gearing-9995		<input checked="" type="checkbox"/>	100	EA		Finished Goods					
2	Gearing-9995		<input checked="" type="checkbox"/>	10	EA			NAPM1000	BI00		720000	

This one is only an external reference field for delivery notes.
The Asterisk is only a place holder and means „what ever“.

With this selection you specify that the position 2 is OK (complete etc.) and can be processed further

Here you specify that the material in position 1 of the purchase order/goods receipt document is supposed to be transferred to Quality Inspection stock first.

This OK field is the same field as in the row above. The individual tabs at the bottom of the screen display the same fields as the selected row in a clearer view.

Figure 110: Goods Receipt for a Purchase Order (2): SAP-System-Screenshot

- Save (**Post**) the document and list the document number from the status bar on your data sheet. Turn back to the Home page ().

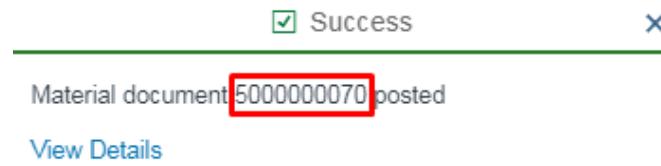


Figure 111: Goods Receipt for a Purchase Order (3): SAP-System-Screenshot

Document Number Goods Receipt:

3.2.3.3 Reporting: Display Material and Accounting Documents for Goods Receipt

Display the material document to ensure proper posting. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Post Goods Movement**.

- On the upper applications toolbar, choose **Display** from the left dropdown menu and choose **Material Document** from the right dropdown menu. Next to the **Material Document** field enter the document number you have just noticed and select **Execute**.
- Select the **Doc. info** tab in the header data and then click the  button to branch into the payment document.
- Double-click on **Accounting document** in the dialog box **List of Documents in Accounting**. Double-check the document's information.

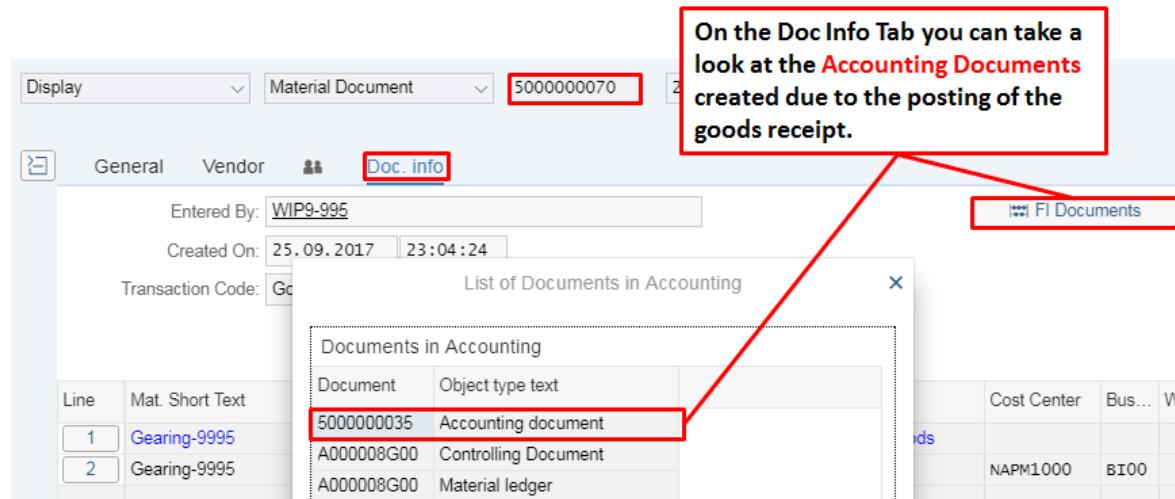


Figure 112: Accounting Document (1): SAP-System-Screenshot

- Make the cost center visible in the Accounting Document by following these steps:

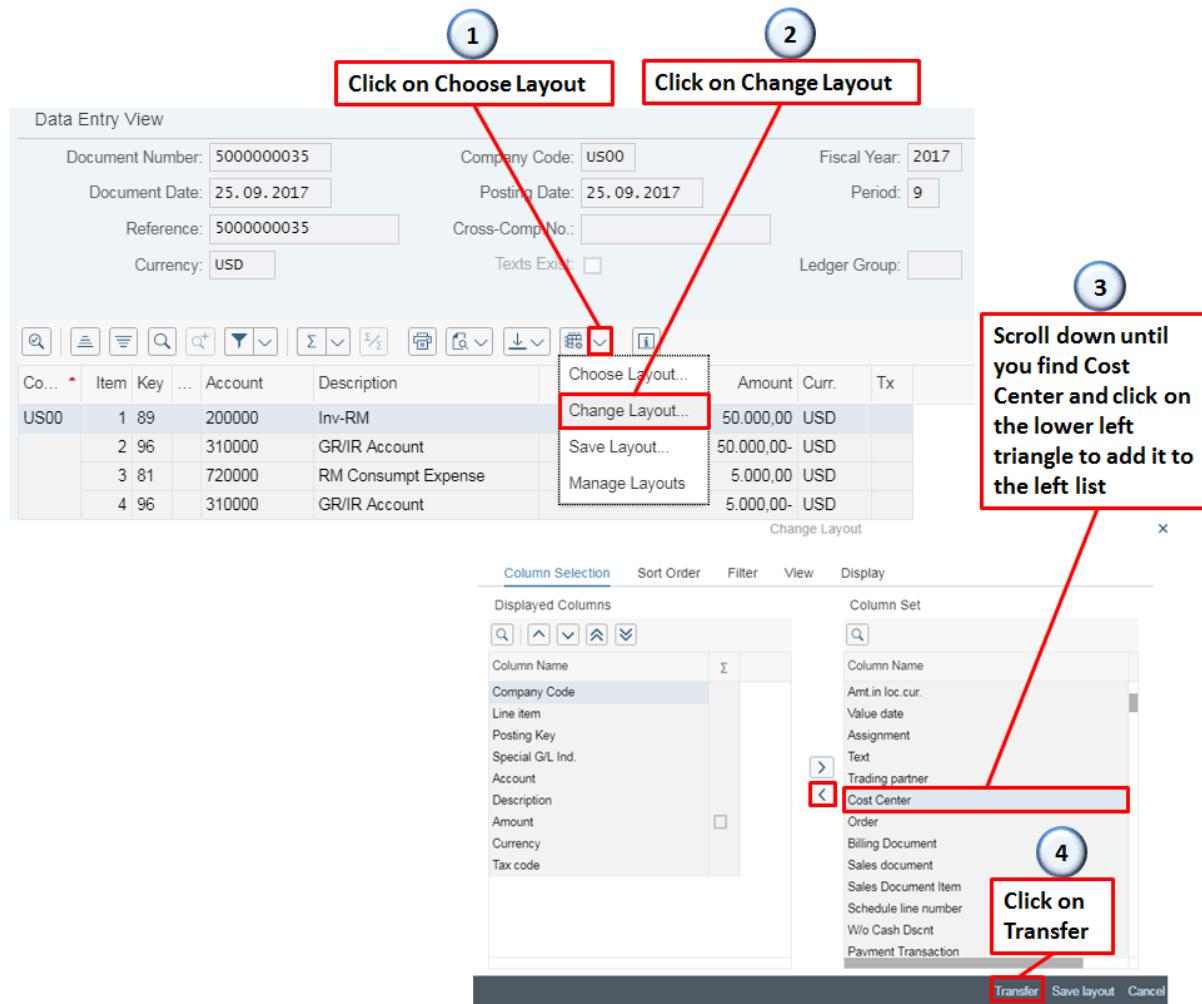


Figure 113: Cost Center Display: SAP-System-Screenshot

5. You can see from the accounting document that 100 pieces of gearings were booked to account number 200000 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 NAPM1000. Costs of cost center NAPM1000 were posted to account 720000. The account 310000 is an offset account type.

You can see from the account document that 100 pieces of gearings were booked to account number 200000. That is the standard account for raw materials in the chart of accounts.

Data Entry View

Document Number:	5000000035	Company Code:	US00	Fiscal Year:	2017		
Document Date:	25.09.2017	Posting Date:	25.09.2017	Period:	9		
Reference:	5000000035	Cross-Comp.No.:		Ledger Group:			
Currency:	USD	Texts Exist:	<input type="checkbox"/>				
<input type="button"/>							
Co...	Item Key	Account	Description	Amount	Curr.	Tx	Cost Center
US00	1 89	200000	Inv-RM	50.000,00	USD		
	2 96	310000	GR/IR Account	50.000,00	- USD		
	3 81	720000	RM Consumpt Expense	5.000,00	USD	NAPM1000	
	4 96	310000	GR/IR Account	5.000,00	USD		

The 10 pieces were posted directly as consumable materials. 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 NAPM1000. Costs of cost center NAPM1000 were posted to account 720000.

Figure 114: Accounting Document (2): SAP-System-Screenshot

6. Go back to your material document () , close the *List of Documents in Accounting* window and select the **Where** tab. Click the -button to access the stock overview.
7. 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.

Material Quantity **Where** Purchase Order Data Partner Account Assignment

Movement type:	101	<input type="checkbox"/>	+ GR goods receipt	Stock !
Plant:	Plant Dallas	DL00		
Storage location:	Finished Goods	FG00		
Unloading Point:				

Go to the Where-Tab in the document details and press the Stock overview button

The 100 pieces were transferred to the Quality Inspection stock, whereas the 10 pieces "vanished" – they were consumed completely by the cost center NAPM1000 and never "saw" the stock.

Selection

Material:	GEARING-9995	
Gearing-9995		
Material Type:	ROH	Raw materials
Unit of Measure:	EA	Base Unit of Measure

Stock Overview

Client/Company Code/Plant/Storage Location/Batch/Special Stock	Unrestricted use	Qual. inspection
Full	100.000	100.000
US00 Global Bike Inc.	100.000	100.000
DL00 Plant Dallas	100.000	100.000
FG00 Finished Goods	100.000	100.000

Figure 115: Stock Overview: SAP-System-Screenshot

3.2.3.4 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, within the tile group **Script 1 – Source-to-Pay** select the app **Post Goods Movement**, again.

1. Choose **Transfer Posting** from the left dropdown menu on the upper applications toolbar and choose **Other** from the right dropdown menu.
2. Select movement type **321 Transfer posting quality inspection to unrestricted** by using the **F4-help** (do not enter the number manually but pay attention to use F4). Confirm your entry by pressing **Enter**.

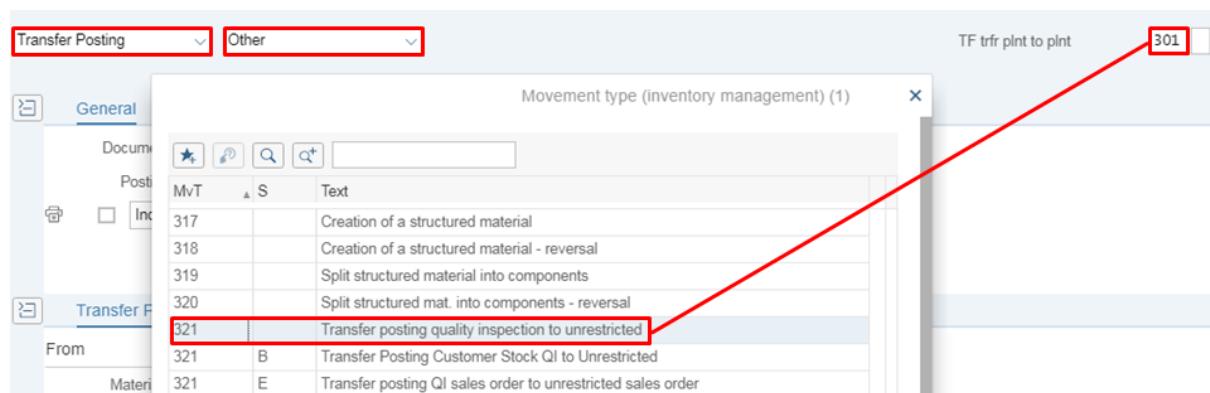


Figure 116: Quality Inspection to Unrestricted-Use (1): SAP-System-Screenshot

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

- Material	<i>Gearing-xxxx</i>
- Plant	<i>DL00</i>
- Storage Location	<i>FG00</i>
- Spec. Stock	<i>leave empty</i>
- Qty in UnE	<i>100</i>
- Press <i>Enter</i>	

You can ignore a notification regarding Change to Default Values by selecting Skip this in future and then, confirming the popup.



NOTE

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 (DL00) and storage location (FG00), do it manually.

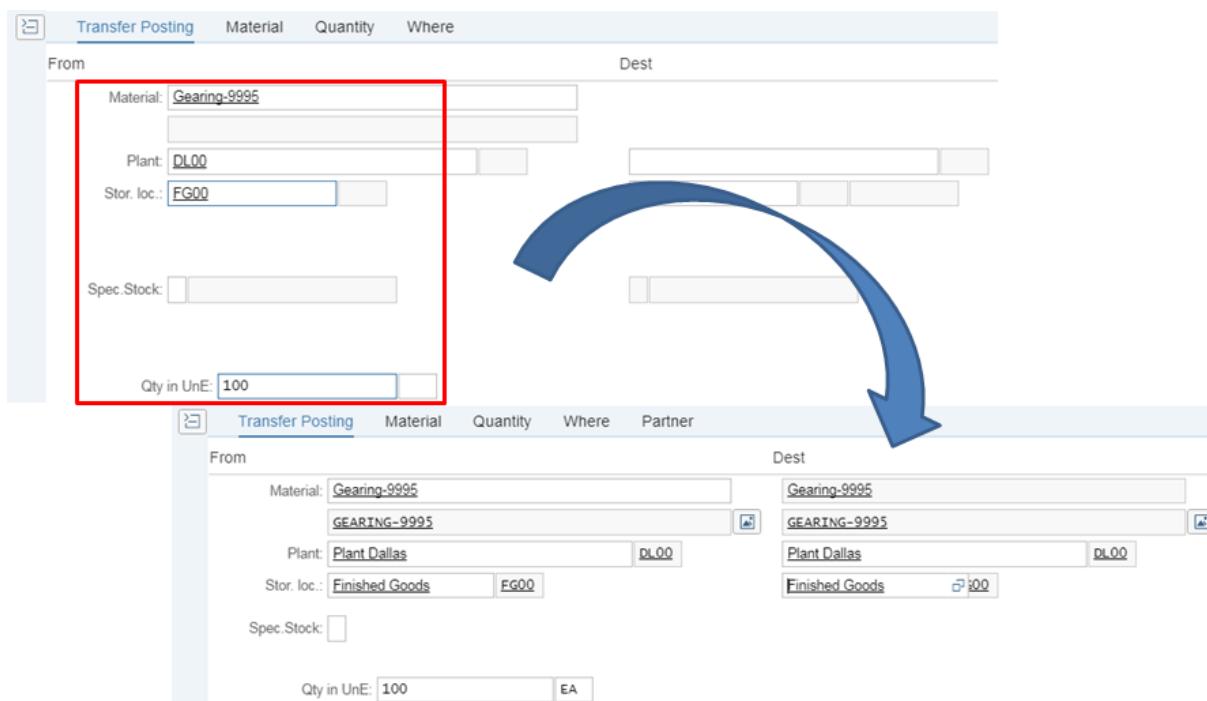


Figure 117: Quality Inspection to Unrestricted-Use (2): SAP-System-Screenshot

5. Press **Post**, confirm any system notifications and list the number of the material document.

Material Document for Material Movement:

3.2.3.5 Reporting: Display Material and Accounting Documents for Material Transfer

Now, display the new document for the material transfer.

1. Select the **Display** entry from the left drop-down menu and the **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 on *Execute*.
3. In the document header, select the **Doc.info** tab page and choose again **FI Documents** to go to the accounting documents.

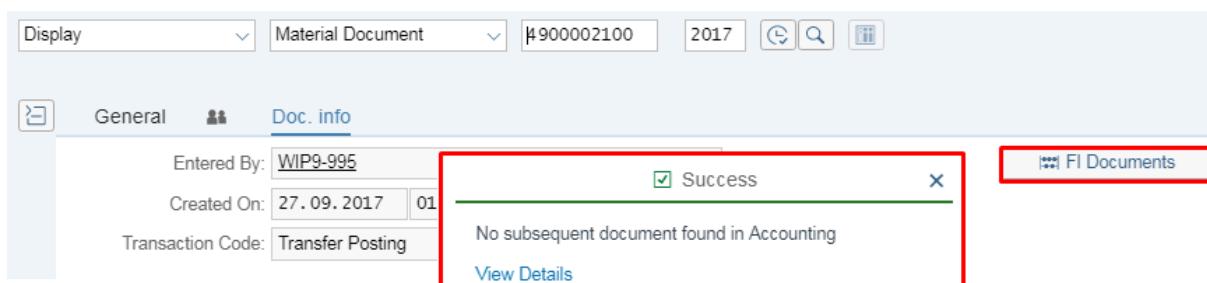


Figure 118: No Accounting Doc in for Intra-Plant Movement: SAP-System-Screenshot



CAUTION

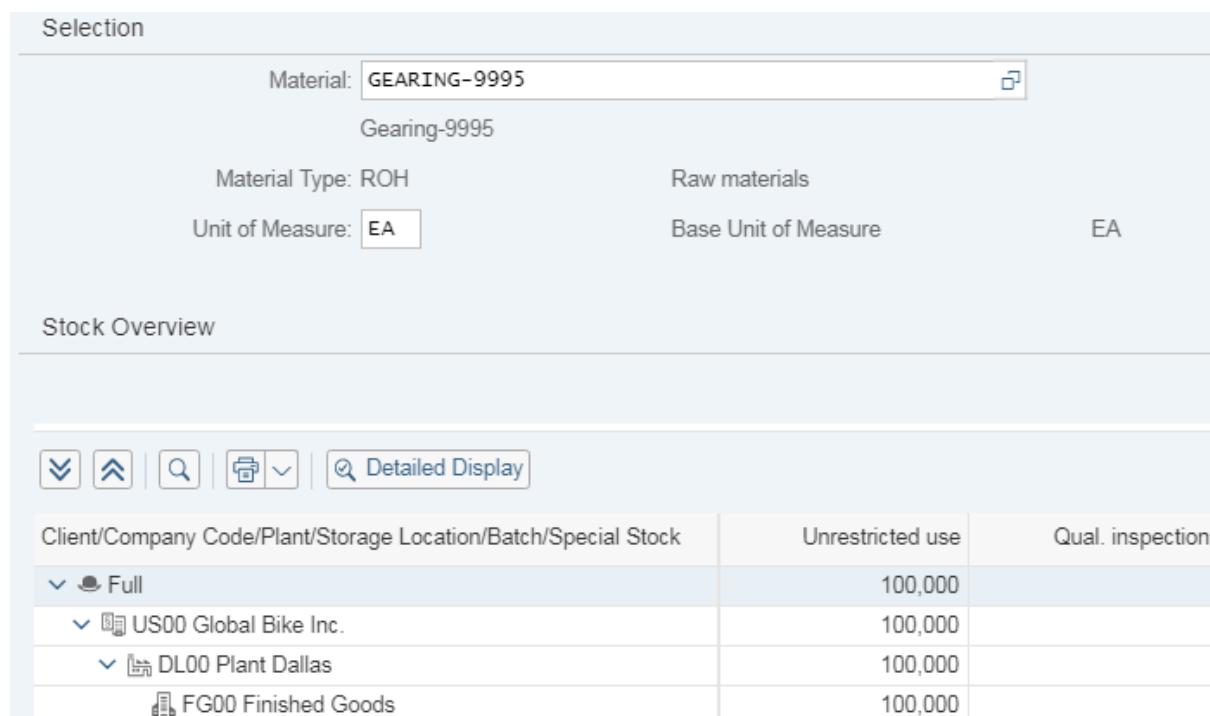
The system notifies you that no subsequent documents could be found in financial accounting. No accounting document was created at the time of material transfer because it was a material transfer within a plant and, thus, **no value-based changes** occurred in the inventory management. The quality inspection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

- Close the tab by pressing **Exit** and turn back to the Home page.

3.2.3.6 Reporting: Check Stock Overview

To ensure that the system performed the material transfer correctly, check the stock overview once again. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Stock Overview**.

Enter material **Gearing-xyyy** and plant **DL00**. Choose **Execute**. You will now see that the system posted correctly and the material was transferred to unrestricted stock use.



The screenshot shows the SAP Stock Overview screen. At the top, under 'Selection', the material is set to 'GEARING-9995'. Below this, the material type is 'ROH' and the unit of measure is 'EA'. The 'Stock Overview' section displays a table with columns for Client/Company Code/Plant/Storage Location/Batch/Special Stock, Unrestricted use, and Qual. inspection. The table shows four entries: 'Full' (Unrestricted use: 100,000), 'US00 Global Bike Inc.' (Unrestricted use: 100,000), 'DL00 Plant Dallas' (Unrestricted use: 100,000), and 'FG00 Finished Goods' (Unrestricted use: 100,000). Navigation icons for sorting and filtering are visible at the bottom of the table.

Client/Company Code/Plant/Storage Location/Batch/Special Stock	Unrestricted use	Qual. inspection
Full	100,000	
US00 Global Bike Inc.	100,000	
DL00 Plant Dallas	100,000	
FG00 Finished Goods	100,000	

Figure 119: 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.

3.2.3.7 Reporting: Purchase Order Monitoring

Finally, you are supposed to check the order history and the order status of your order. Within the tile group **Script 1 – Source-to-Pay** select the app **Change Purchase Order**.

In the initial screen of the transaction, click on the **Other Purchase Order** icon, enter the previously noticed **Purchase Order** number and confirm by selecting **Other Document**.

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 Purchase Order History screen. At the top, it displays the order number (Standard PO 4500000025), vendor (125020 Taymaz Khatami), and document date (25.09.2017). Below this is a table of purchase order items. The second item, a quantity of 10 of material GEARING-9995, has a transaction row highlighted with a red box. This row shows a transaction type (WE) and a document number (5000000070), with a quantity of 100 and a unit price of 500,00 USD. The table also includes columns for material data, quantities/weights, delivery schedule, delivery, invoice, conditions, purchase order history (which is currently selected), texts, and delivery address.

Figure 120: Order History: SAP-System-Screenshot

In the **Status** tab page, in the header (maybe you have to click on first) of the order document, you can see that the order status is characterized as **fully delivered**. Close the tab and turn back to the SAP Fiori Launchpad Home page.

The screenshot shows the SAP Order Status screen. At the top, it displays the order number (Standard PO 4500000025), vendor (125020 Taymaz Khatami), and document date (25.09.2017). Below this is a table of document statuses. The 'Fully Delivered' status is highlighted with a red box. The table also includes tabs for delivery/invoice, conditions, texts, address, communication, partners, additional data, org. data, status (which is currently selected), and incoterms. A red arrow points from the 'Fully Delivered' status box down to a callout box containing the following 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 the status table is another table of purchase order items, identical to the one in Figure 120.

Figure 121: Order Status: SAP-System-Screenshot

3.2.4 Vendor Invoice

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 S/4HANA system. In the figure below, you can see the individual process steps you will deal with in this section.

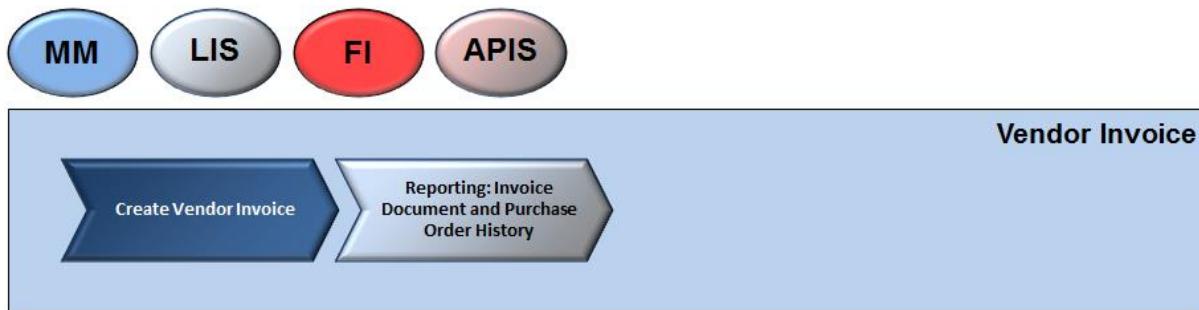


Figure 122: Process Overview: Vendor Invoice

3.2.4.1 Create 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 USD (500 \$ * 110 items). Enter the invoice by calling up the app **Create Supplier Invoice** within the tile group **Script 1 – Source-to-Pay**.

1. If you are prompted to enter a company code, provide company code **US00**.
2. Enter the following in the **Basic data** tab:

- Invoice date	<i>current date</i>
- Posting Date	<i>current date</i>
- Amount	55000 USD
- Calculate tax	<i>select</i>
- Tax Code	XI –Input Tax
3. In the middle screen of the area, go to **PO Reference** tab and choose the entry **Purchase Order/Scheduling Agreement** from the drop-down menu. Enter your **Purchase Order** number (see data sheet) in the field right next to it. Confirm your entries pressing *Enter*. The system automatically fills in the purchase order items and computes the tax amount.

This screenshot shows the SAP Fiori interface for creating a supplier invoice. The top navigation bar indicates the transaction is "Invoice". The main area has tabs for "Basic Data", "Payment", "Details", "Tax", "Contacts", and "Note". Under "Basic Data", fields are filled with: "Invoice date" (28.09.2017), "Posting Date" (28.09.2017), "Amount" (55.000,00), "Tax Amount" (0,00), "Currency" (USD), and "Tax Code" (XI (Input Tax)). A red box highlights the "Purchase Order/Scheduling Agreement" dropdown in the "PO Reference" tab, which is set to "4500000025". Another red box highlights the error icon (a red circle with a white exclamation mark) in the top right corner. A callout box with the text "Double-click on this icon to display the error message" points to the error icon. The bottom part of the screen shows a table of purchase order items with two rows: Item 1 (Amount 50.000,00) and Item 2 (Amount 5.000,00), both linked to Purchase Order 4500000025.

Figure 123: Invoice Verification (1): SAP-System-Screenshot

4. As you can see, your document still contains an error. Double-click on the error icon to receive the error message.



NOTE

If there is no error icon (red) next to Balance, you can skip the next point and continue by selecting **Post**.

- Enter **TX0000000** as **Jurisdict.Code** (confirm with **Enter** after entering it in each row).

<input checked="" type="checkbox"/>	Supplier Mat./Sheet No.	Promotion	Bus...	Activity	Region	Distribut.	Jurisd. Code
<input checked="" type="checkbox"/>							TX0000000
<input checked="" type="checkbox"/>							TX0000000

Figure 124: Invoice Verification (2): SAP-System-Screenshot

- The red marked error message should change into green, now.

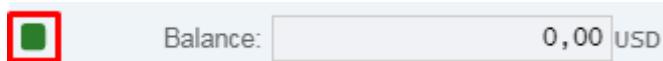


Figure 125: Invoice Verification (3): SAP-System-Screenshot

- Finally, switch to the **Payment** tab and make sure that **current date** is set as **BaselineDt**.
- Press **Post** and write down the document number. Leave the view by pressing **Exit**.

Invoice Document Number:

3.2.4.2 Reporting: Invoice Document and Purchase Order History

Next, display the invoice document that was created when posting the invoice. Also, display the created accounting document. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Display Supplier Invoice**.

- Close any popups and enter the previously noticed Invoice Document Number into the respective field. Confirm with **Enter**.
- Go to the accounting document by selecting [Follow-On Documents ...](#).

The screenshot shows the SAP Accounting Document interface. At the top, there are tabs: 'Show PO Structure' (disabled), 'Follow-On Documents ...' (highlighted with a red box and arrow), 'NF', 'Services for Object', and 'More'. Below this, the transaction is set to 'Invoice' and the year is '2017'. A large red arrow points from the 'Follow-On Documents ...' tab down to the 'Display Another Document' button. The main area is titled 'Data Entry View' and contains fields for Document Number (5105600142), Company Code (US00), Fiscal Year (2017), Document Date (28.09.2017), Posting Date (28.09.2017), Period (9), Reference, Cross-Comp.No., Currency (USD), Texts Exist, and Ledger Group. Below these are various search and filter icons. The accounting table lists three entries:

Co...	Item Key	Account	Description	Amount	Curr.	Tx
US00	1 31	125020	Taymaz Khatami	55.000,00-	USD	XI
	2 86	310000	GR/IR Account	50.000,00	USD	XI
	3 86	310000	GR/IR Account	5.000,00	USD	XI

Two specific rows are highlighted with green boxes: 'Vendor Account' (row 1) and 'GR/IR Account' (row 2). A callout box with a red border contains the following text:

On the accounting document, you can see that liabilities towards the vendor were posted to the vendor account. The provisions set by goods receipt on the GR/IR clearing account (310000) were balanced correctly through the invoice receipt. No deviations from the purchase order regarding prices or quantities are the case. Correspondingly, the provisions on the GR/IR clearing account created at the time of goods receipt were released completely.

Figure 126: Accounting Document: SAP-System-Screenshot

- Leave the accounting document by pressing the **Back** () button. In the item overview, select the purchase order number with *double-click* to display the purchase order history.

	Item	Amount	Quantity	Or...	Purchase o...	Item	PO Text
<input checked="" type="checkbox"/>	1	50.000,00		100 EA	<input type="checkbox"/>	4500000025	10 Gearing-9995
<input checked="" type="checkbox"/>	2	5.000,00		10 EA	<input type="checkbox"/>	4500000025	20 Gearing-9995

Figure 127: Purchase Order: SAP-System-Screenshot

- Then, select in the **Item Detail** section () 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.

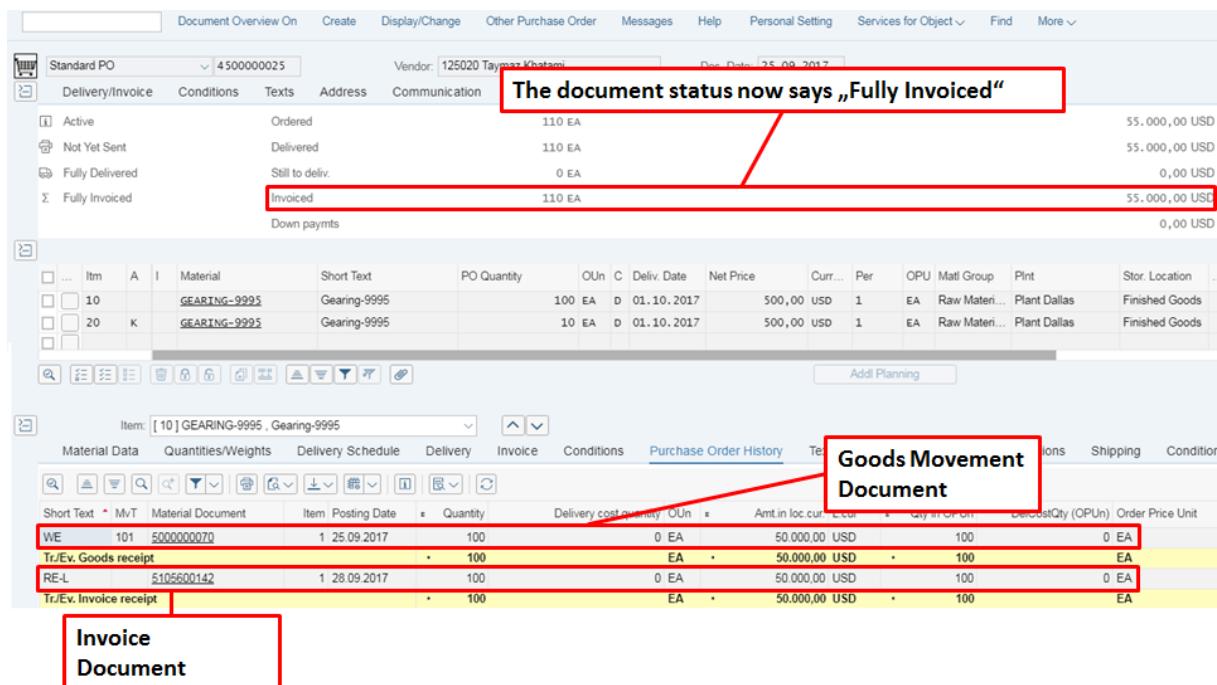


Figure 128: Purchase Order History: SAP-System-Screenshot

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

3.2.5 Vendor Payment

After receiving and verifying the vendor invoice you are going to pay your company's debts and settle the vendor account.

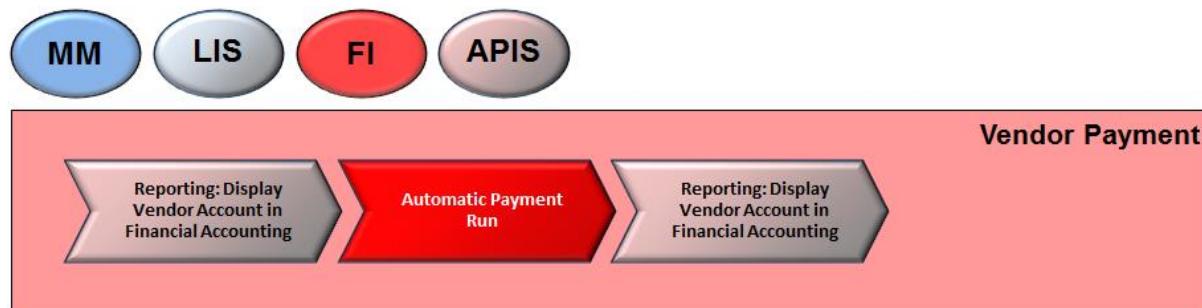


Figure 129: Process Overview: Vendor Payment

3.2.5.1 Reporting: Display Vendor Account in Financial Accounting

Now to pay the vendor, you want to create an automatic payment process. But first you have to check the vendors' account.

Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Manage Supplier Line Items**.

- Enter the following data:
 - **Supplier** *your Vendor number*
 - **Status** *All Items*
 - Press **Go**
- Now you see the balance of the vendor account. Note that the vendor ID from the master data is also the number of the vendor account in the sub-ledger accounts payable.

Standard * <input type="radio"/>										
Supplier:	Company Code:	*Status:	Posting Date:	*Item Type:						
=125020 <input type="button" value="X"/>	<input type="button" value="..."/>	<input type="button" value="..."/>	All Items <input type="button" value="..."/>	Date Range <input type="button" value="..."/>	01.01.2017 - 28.09.2017 <input type="button" value="..."/>	Normal Items <input type="button" value="..."/>				
Items (1) Standard * <input type="radio"/>										
<input type="checkbox"/> Supplier	Company Code	Clearing Status	Assignment	Journal Entry Date	Journal Entry	Journal Entry Type	Special G/L Ind	Due Net (Symbol)	Amount (CoCd Cur.)	
<input type="checkbox"/> 125020	US00	X	51056001422017	28.09.2017	5105600142	RE			-55.000,00 USD	
									-55.000,00 USD	

Figure 130: Vendor Account Balance: SAP-System-Screenshot

3.2.5.2 Automatic Payment Run

Now, create your own payment run. You can select the vendor (supplier) to create the payment. In the tile group **Script 1 – Source-to-Pay** select the app **Manage Automatic Payments**.

1. Click on in order to create new data.
2. Then, enter **current date** as **Run Date** and **Pxyyy** as **Identification**. Confirm by selecting **Create**.

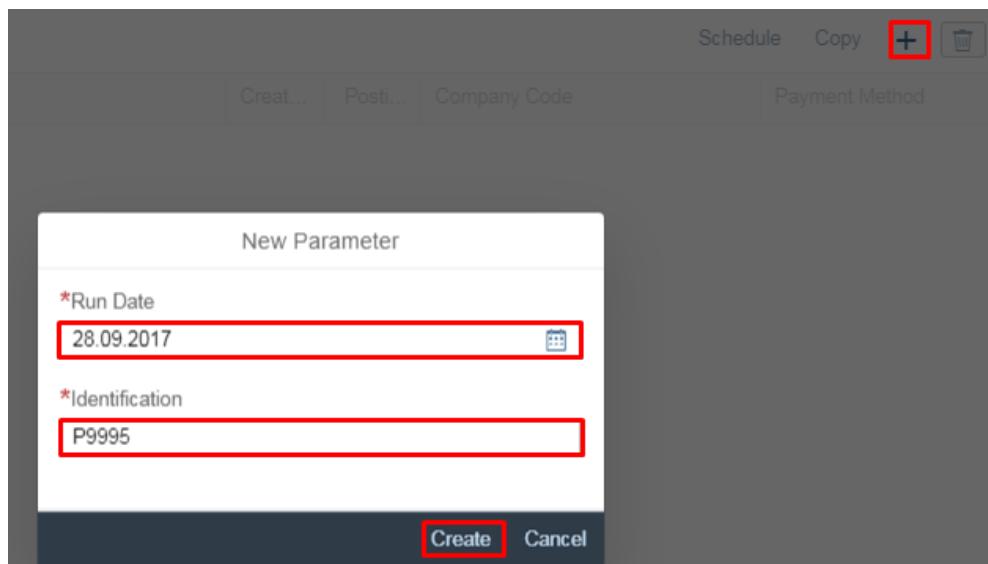


Figure 131: Automatic Payment (Identification): SAP-System-Screenshot

The payment run selects all the documents of your vendor in the company code US00 until the next month. All the payments in this run will be carried out using the payment method C. You must also enter the posting date of the next payment run, this way, the system should decide whether the payment is performed in this payment run or can wait until the next payment run in a month.

3. Within the **Parameter** view, enter the following data:

- | | |
|-----------------------------|-------------------------------|
| - Posting Date | <i>current date</i> |
| - Company Code | <i>US00</i> |
| - Supplier | <i>your Vendor number</i> |
| - Docs Entered Up To | <i>current date</i> |
| - Next Payment Date | <i>current date + 1 month</i> |
| - Payment Method | <i>C</i> |

Figure 132: Automatic Payment (Parameter): SAP-System-Screenshot

4. **Save.**

The second step is to prepare the payment run, for that the system has to create a payment proposal. Based on the used parameters the system will search all the open items that need to be paid. In your case, you will just see an outstanding item of your vendor.

5. Next, select **Schedule → Proposal**.

6. Enter current date as start date, select **Start Immediately** and confirm by selecting **Schedule**.
7. Enter **Pxyyy** as **Identification** and press **Go**. As you can see, 1 processed proposal is displayed.
8. Click on **Pxyyy** and then, select **Schedule** to schedule the payment.
9. Select **Start Immediately** and click on **Schedule**.

Figure 133: Schedule Payment: SAP-System-Screenshot

3.2.5.3 Reporting: Display Vendor Account in Financial Accounting

Within the tile group **Script 1 – Source-to-Pay** select the app **Manage Supplier Line Items** again.

- Enter the following data:

- **Supplier** *your Vendor number*
- **Status** *All Items*
- Press **Go**

- Now, you see that the invoice is cleared through the payment.

Items (2) Standard *										Edit Line Items		Create Correspondence		Bills		Payment		Create Single Payment	
Supplier	Company ...	Clearing...	Assignment	Journal Entry Date	Journal Entry	Journal	Amount (CoCd Curr)	Clearing Entry											
<input type="checkbox"/> 125020	US00		<input checked="" type="checkbox"/> 51056001422017	28.09.2017	5105600142	RE	-55.000,00	2000000005											
<input type="checkbox"/> 125020	US00		<input checked="" type="checkbox"/> 20000000052017	28.09.2017	2000000005	ZP	55.000,00	2000000005											
							0,00	USD											

Figure 134: Cleared Vendor account: SAP-System-Screenshot



CAUTION

If no payments are displayed or only appear an exceptions list, you have made a mistake somewhere. Open transaction code F110 via SAP Easy Access Menu (script 0), enter the current date and your identification. Delete the payment proposal (More → Edit → Proposal → Delete) and the Parameters (More → Edit → Parameters → Delete). If payment proposal is greyed out, you have to delete the payment, first (More → Edit → Payment → Delete Output). Then, check your business partner via the **Maintain Business Partner** app. Probably here you will find the error, e.g. missing entry in the City field). Correct the error and repeat the automatic payment run again.

3.2.6 Reporting using the Purchasing Information System

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:

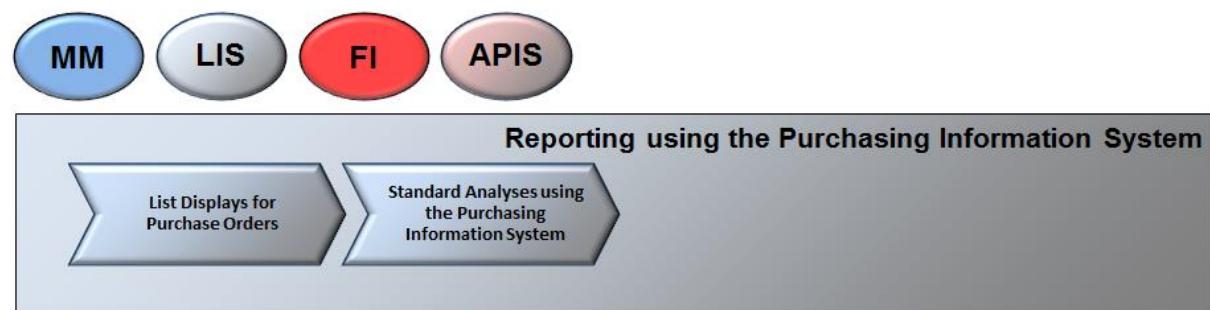


Figure 135: Process Overview: Reporting using the Purchasing Information System



NOTE

Note that the following figures and numbers will differ from what you might receive in your analyses. This depends on how many course participants have already started working on the case studies and, thus, have generated transactional data that you are going to analyze in this chapter. For instance, if you are the first to start with the case studies, you will find only your own vendor in the following reports.

3.2.6.1 List Displays for Purchase Orders

First of all, display all purchase orders of the past years for **purchasing organization US00** and for **plant DL00**. Within the tile group **Script 1 – Source-to-Pay** select the app **Display Purchasing Documents by Supplier**.

1. The system automatically shows a table with all purchasing documents available in the system. Select the Back (icon in order to enter specific selection criteria.
2. Enter the following data on the initial screen:
 - **Supplier** *no entry*
 - **Purchasing Organization** *US00*
 - **Purchasing Group** *no entry*
 - **Plant** *DL00*
 - **Document Date** *01.01.2013 to current date*

The screenshot shows the SAP Fiori launchpad interface for the "Display Purchasing Documents by Supplier" app. The search bar contains "Choose...". The "Purchasing Organization" field is set to "US00" and the "Plant" field is set to "DL00". A red box highlights the "Period unit" field, which is empty. Red arrows point from the "Period unit" label to the "Document Date" field and the "to:" field of the "Period unit" row. The "Document Date" field is set to "01.01.2013" and the "to:" field is set to "29.09.2017". Other fields like "Supplier", "Selection Parameters", "Document Type", "Purchasing Group", "Item Category", "Account Assignment Category", "Delivery Date", "Validity Key Date", "Range of Coverage to", "Document Number", "Material", "Material Group", and "to:" fields for the other rows are empty or not highlighted.

Figure 136: Selection Criteria for the Report: SAP-System-Screenshot

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

Vendor and purchase order are characteristics		Key figures of the report		Values of the Key figures of the report													
Item	Type	Cat	PGr	POH	Doc. Date	Material	Short Text	Mati Gr...	D	I	A	Print	SLoc	Quantity	OU		
Supplier/Supplying Plant 125005	Taymaz Khatami					SCHALTUNG-9990	Schaltung-9990	RAW	L		DL00	FG00		100	PC		
Purchasing Document 4500000004						20 NB	F N00		13.06.2017	SCHALTUNG-9990	Schaltung-9990	RAW	L	K	DL00	FG00	
						10 NB	F N00			13.06.2017	SCHALTUNG-9998	Schaltung-9998	RAW	L	K	DL00	FG00
Supplier/Supplying Plant 125007	Taymaz Khatami					20 NB	F N00			01.06.2017	SCHALTUNG-9998	Schaltung-9998	RAW	L	K	DL00	FG00
Purchasing Document 4500000001						10 NB	F N00			01.06.2017	SCHALTUNG-9998	Schaltung-9998	RAW	L	K	DL00	FG00
Purchasing Document 4500000002						20 NB	F N00			01.06.2017	SCHALTUNG-9998	Schaltung-9998	RAW	L	K	DL00	FG00
						10 NB	F N00			01.06.2017	SCHALTUNG-9998	Schaltung-9998	RAW	L	K	DL00	FG00
						20 NB	F N00			01.06.2017	SCHALTUNG-9998	Schaltung-9998	RAW	L	K	DL00	FG00

Figure 137: Report for Purchase Orders: SAP-System-Screenshot

The list is sorted according to the 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-xxxx*.

1. Therefore, choose **Change Layout**
2. Choose the **Sort Order** tab.
3. Mark the **purchasing document** entry on the left hand side of the screen and choose *remove sort criterion* ().

Column Selection	Sort Order	Filter	Display
Sort criteria	<input type="checkbox"/> <input type="button" value="^"/> <input type="button" value="v"/> <input type="button" value="^"/> <input type="button" value="v"/> Column Name <input type="radio"/> <input type="radio"/> <input checked="" type="checkbox"/> Supplier/Supplying Plant <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="checkbox"/> Purchasing Document <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="checkbox"/>	Change Layout	x
Column Set	<input type="checkbox"/> <input type="button" value="^"/> <input type="button" value="v"/> Column Name Item Purchasing Doc. Type Purch. doc. category Purchasing Group PO history/release documentation Document Date		

Figure 138: Remove Sort Criteria: SAP-System-Screenshot

4. Position the cursor on **Material** in the right half of the screen and choose *Add Sort Criterion* ().

Sort criteria

Column Name	Sort Order
Supplier/Supplying Plant	<input checked="" type="radio"/>
Material	<input type="radio"/> <input checked="" type="radio"/> <input type="checkbox"/>

Column Set

Column Name
Item
Purchasing Doc. Type
Purchasing Document

Predefine, how the material should be sorted, in this case descending. However, you can sort the data also in the report columns, later on.

Figure 139: Add Sort Criteria: SAP-System-Screenshot

5. Then, choose *Save layout* within the popup.
6. Enter the following data in the dialog box (Save Layout):
 - **Save Layout** *Layout-xxxx*
 - **Name** *Layout-xxxx*
 - **User-specific** *indicator selected*
 - **Default setting** *indicator not selected*
7. Confirm two times (*Continue + Transfer*).

Furthermore, display the column *order quantity*) for each position left from the column **material group**.

8. Choose the column *Quantity (Order 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	Plnt	SLoc	Quantity	OUn	
Supplier/Supplying Plant 125005																
10	NB	F	N00		13.06.2017	SCHALTUNG-9990	Schaltung-9990	RAW	L		DL00	FG00		100	PC	
20	NB	F	N00		13.06.2017		Schaltung-9990	RAW	L	K	DL00	FG00		10	PC	
Supplier/Supplying Plant 125007																
10	NB	F	N00		01.06.2017	SCHALTUNG-	Drag the column over here	RAW	L	K	DL00	FG00		100	PC	
20	NB	F	N00		01.06.2017			RAW	L		DL00	FG00		100	PC	
10	NB	F	N00		01.06.2017			RAW	L		DL00	FG00		100	PC	
20	NB	F	N00		01.06.2017			Schaltung-9998	RAW	L	K	DL00	FG00		10	PC
10	NB	F	N00		03.06.2017			Schaltung-9998	RAW			DL00	FG00		100	PC
20	NB	F	N00		03.06.2017			Schaltung-9998	RAW		K	DL00	FG00		10	PC

Figure 140: Column Configuration (1): SAP-System-Screenshot

9. Choose *Save Layout* () from the menu and choose your layout *Layout-xxxx* in the upper area. **Select User-specific** and **uncheck Default Setting**. Press *Continue* and confirm, that your previously saved layout is overwritten with the current settings.

3.2.6.2 Standard Analyses using Purchasing Information System

Finally, you will perform another analysis by the means of the purchasing information system (using the path SAP Easy Access Menu 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 US00. Therefore, within the tile group **Script 1 – Source-to-Pay** select the app **Standard Analysis Vendor**.

1. Enter the following data on the selection screen:

- **Purchasing organization** *US00*
- **Month** *01.2013 – current date*
- Choose *Execute*.

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

If the column vendor should not be displayed, press the button **Switch Drilldown** and select **Vendor** from the displayed pop-up screen.

No. of vendor: 8						
Vendor	PO value		Invoice Amount		Order quantity	
Total	4.939.383,00	USD	275.753,00	USD	18.780,000	***
101999	0,00	USD	0,00	USD	1.100	PC
125005	5.250,00	USD	5.250,00	USD	210	EA
125007	0,00	USD	0,00	USD	0	PC
125008	55.000,00	USD	55.000,00	USD	110	PC
125010	2.408.630,00	USD	50.000,00	USD	8.606	PC
125015	2.360.500,00	USD	55.500,00	USD	8.531	PC
125020	55.003,00	USD	55.003,00	USD	113	PC
125020	55.000,00	USD	55.000,00	USD	110	EA

You should also see your own vendor in this list

Figure 141: Purchase Order Values of Vendors: SAP-System-Screenshot

3. In addition to the vendor name, you want to display the key for this attribute. Select the corresponding characteristic display by choosing **More** → **Settings** → **Characteristic display** → **Key and description** from the menu.

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 with columns: Vendor, PO value, Invoice Amount, and Order quantity. A context menu titled 'Change column width' is open over the 'PO value' column, with the input field set to '35'. Red boxes highlight the 'Vendor' column header and the 'PO value' column header.

Vendor	PO value	Invoice Amount	Order quantity
Total	4.939.383,00 USD	275.753,00 USD	18.780,000 ***
101999 Olympic Protective Gear	0,00 USD	5.250,00 EA	0 PC
125005 Taymaz Khatami	0,00 EA	55.000,00 PC	PC
125007 Taymaz Khatami	55.000,00 PC	2.408.630,00 PC	PC
125008 Taymaz Khatami	2.408.630,00 PC	2.360.500,00 PC	PC
125010 Taymaz Khatami	2.360.500,00 PC	55.003,00 PC	PC
125015 Pouyan Khatami	55.003,00 PC	55.000,00 EA	PC
125020 Taymaz Khatami	55.000,00 EA		EA

Figure 142: 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 **More → Edit → Choose key figures** from the menu.
 - Select the key figures **PO items** and **Deliveries** and move them to the left area. Confirm your selection with **Enter**.

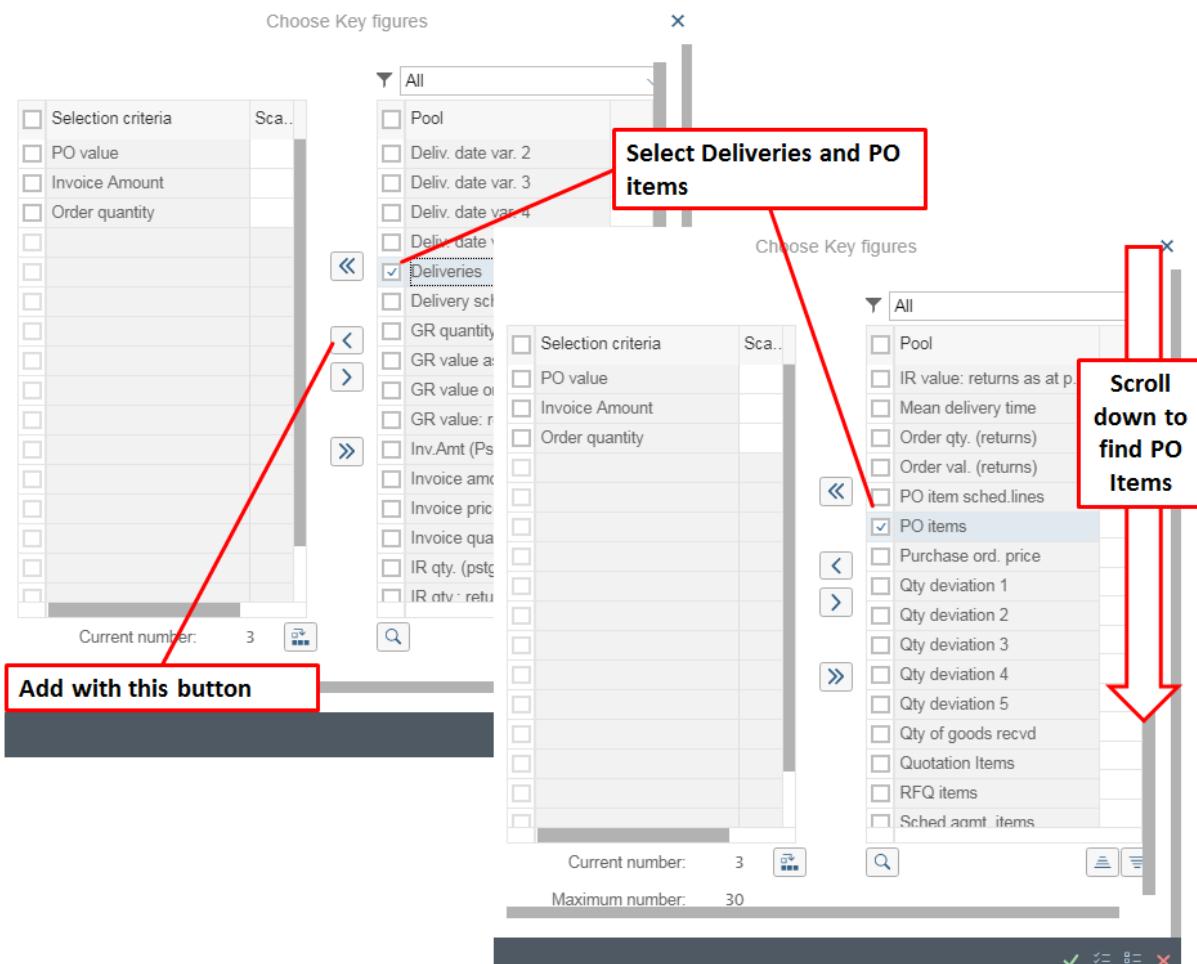


Figure 143: Key Figures Selection (1): SAP-System-Screenshot

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

No. of vendor: 8						
Vendor		PO value	Invoice Amount	Order quantity	Deliveries	Order items
Total		4.939.383,00 USD	275.753,00 USD	18.780,000 ***	37	30
101999	Olympic Protective Gear	0,00 USD	0,00 USD	1.100 PC	3	3
125005	Taymaz Khatami	5.250,00 USD	5.250,00 USD	210 EA	2	2
125007	Taymaz Khatami	0,00 USD	0,00 USD	0 PC	0	0
125008	Taymaz Khatami	55.000,00 USD	55.000,00 USD	110 PC	7	2
125010	Taymaz Khatami	2.408.630,00 USD	50.000,00 USD	8.606 PC	10	10
125015	Pouyan Khatami	2.360.500,00 USD	55.500,00 USD	8.531 PC	8	8
125020	Taymaz Khatami	55.003,00 USD	55.003,00 USD	113 PC	5	3
		55.000,00 USD	55.000,00 USD	110 EA	2	2

Figure 144: Key Figures Selection (2): SAP-System-Screenshot

Determine the most important *vendor* as measured by *order value*. List the answer on your data sheet.

5. Position your cursor on the *PO value* column and select *Sort in descending order* (or *More → Sort in descending order*).

Most Important Vendor:

6. Exit the analysis **without** saving.

Data Sheet

*Congratulations! You completed the **Source-to-Pay Business Process** 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 **Source-to-Pay Business Process**.

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-Source-to-Pay-xyyy-zzz-lastname.doc

Thereby, you need to replace **xyyy** with your user number **without** the “**WIP**“ and without the hyphen (WIPx-yyy) and replace **zzz** with the number of the client you are working on.

Example:

Your name is **Max Mustermann**, you are working on **client 700**, and your **user number is WIP9-999**. Then, name the document as follows:

01-Source-to-Pay-9999-700-Mustermann.doc

List of Literature

The content of this teaching unit is partially based on the following references:

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