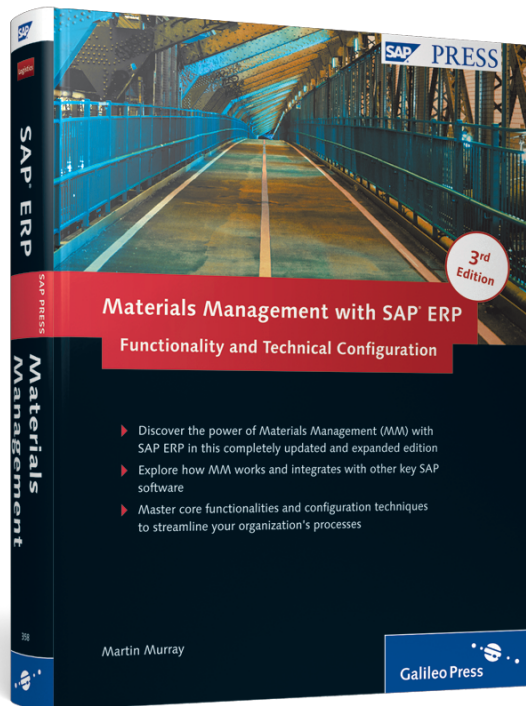


Martin Murray

Materials Management with SAP® ERP: Functionality and Technical Configuration



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The Materials Management functionality includes a number of important master data files. The Material Master and Vendor Master files are at the core of Procurement, Inventory Management, and Invoice Verification.

3 Master Data in Materials Management

A number of master data files in Materials Management require a significant amount of understanding, not only on the part of the SAP consultant but also on the part of the SAP customer. When implementing SAP, customers are generally transitioning from one or more legacy systems. A key aspect of any implementation is the conversion of data to the master data files in SAP.

A fundamental indicator of a successful implementation is the level to which the data has been correctly converted into the SAP master data files. In this chapter, we will examine the master data files that are integral to the practice of materials management.

3.1 Material Master

The Material Master is the repository of the data used for a material. The Material Master is more than a single file for each material, it is where all information on a material is entered and accessed from. It is used throughout the SAP system.

3.1.1 Material Master Overview

When customers implement SAP, they are often overwhelmed by the information contained in the Material Master file. When customers examine their existing systems, such as BPICS, JDEdwards, or Lawson, they find that their product or material files contain a fraction of the data contained in the Material Master in the SAP system.

3.1.2 Material Master Tables

The Material Master transaction allows the users to enter all of the information relevant to a particular item of material into the correct tables. The Material Master isn't just a single file but a number of tables of information that combined reflect all of the information for that material.

Many tables are updated when information is entered into the Material Master transaction. The Material Master transaction is structured so that there are entry screens for different functional information such as Purchasing, Sales, or Accounting, but there is also an organizational dimension to data entry. The material information can be entered at each level of the organization, for example, at the levels of plant, storage location, or sales organization.

3.1.3 Material Numbering

An issue that SAP customers can face when converting their item files over to the Material Master is whether to keep their legacy numbering scheme. This means they would continue entering their own material numbers. They have the option of allowing SAP to automatically assign material numbers.

Often, legacy systems have meaningful material numbering. This numbering has usually been in place for some time, and staff members are familiar with the numbering. For the simplicity of maintenance, automatic assignment of material number is the best choice. When working with your client, be aware that there are arguments to use and not to use a meaningful numbering scheme in SAP.

The material number field is defined in configuration. Use Transaction OMSL or the navigation path IMG • LOGISTICS – GENERAL • MATERIAL MASTER • BASIC SETTINGS • DEFINE OUTPUT FORMAT FOR MATERIAL NUMBERS.

Figure 3.1 shows the configuration screen for defining the output format for material numbers.

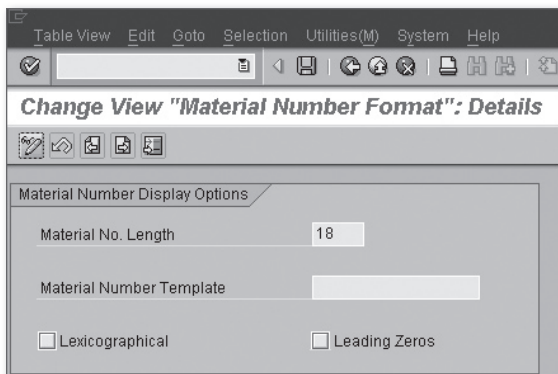


Figure 3.1 Configuration Screen for Defining Output Format

This configuration screen does not have many input fields but is extremely important when initially defining the Material Master. After your customer has decided upon the Material Master numbering scheme, you can first enter the length of the material number.

Then the customer may decide that it needs the automatically assigned material numbers in a certain format that can be defined. In this case, you can define the template and the special characters required. Figure 3.2 shows the template defined for internally assigned material numbers.

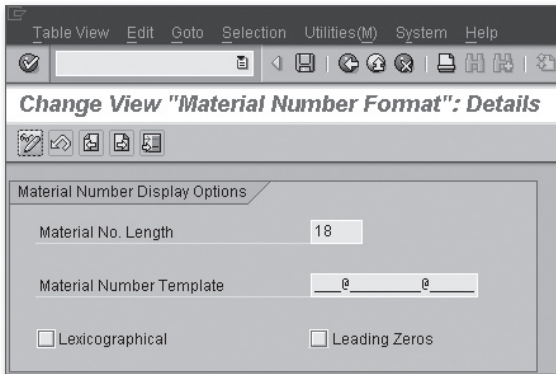


Figure 3.2 Template for Internally Assigned Material Number.

In this case, the customer requires the material numbers to appear as this example 123@45678901@23456. The only character that cannot be used in the template is the underscore because that is used to signify a non-template field.

The two other fields in the OMSL transaction have to do with how the material number is stored and how SAP determines what the number is.

The LEXICOGRAPHICAL indicator is only relevant for numeric material numbers, either internally or externally defined. In Figure 3.2, the indicator is not set, which means that the numbers are stored with leading zeros that are right-justified. For example, if a user enters the number 12345678, the number will be stored as 00000000012345678, for example, with 10 leading zeros.

If the indicator is set, then the numeric number is not right justified and not padded with zeros. The field acts more like a character string, where a leading zero becomes as valid character.

In the following example, the indicator is now set. A user entering material 12345678 would find that the material number would be stored as 12345678,

with no padding. If the user then entered 0012345678, it would be stored in that way, and this would be a different material number in SAP. However, an internally assigned material number would be padded with the leading zeros, 000000000012345678. Therefore, there would be three separate material numbers.

Remember that this indicator cannot be changed after there are numeric material numbers in the system, so it must be defined before any tests are run in the system.

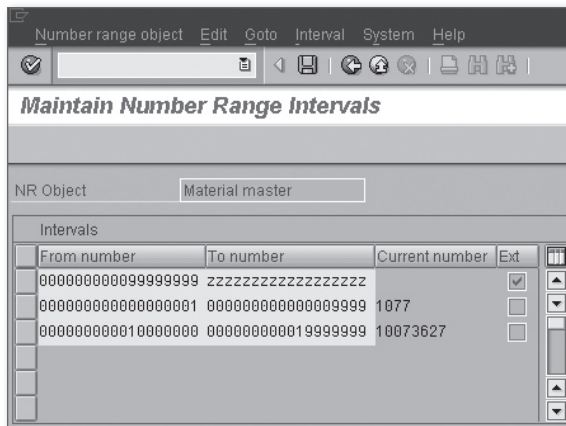
The other field in Transaction OMSL is the LEADING ZEROS indicator. If this indicator is set, then the material number is shown with the leading zeros. However, if the LEXICOGRAPHICAL indicator is set, then the LEADING ZEROS indicator is ignored by the system.

3.1.4 Material Number Range

When the definition of the material number has been decided upon, the configuration for the material number range can be completed.

The material number ranges can be configured in Transaction MMNR or via the navigation path IMG • LOGISTICS – GENERAL • MATERIAL MASTER • BASIC SETTINGS • MATERIAL TYPES • DEFINE NUMBER RANGES FOR MATERIAL TYPES.

The transaction allows a range of numbers to be entered and the option to make that range either external or internally assigned. Figure 3.3 shows the number ranges defined for internal and external number assignment.



From number	To number	Current number	Ext
000000000099999999	zzzzzzzzzzzzzzzzzz		<input checked="" type="checkbox"/>
000000000000000001	0000000000009999	1077	<input type="checkbox"/>
000000000100000000	0000000001999999	10073627	<input type="checkbox"/>

Figure 3.3 Defined Internal and External Number Ranges

3.1.5 Material Type

A material type is a definition of a group of materials with similar attributes. A material type must be assigned to each material record entered into the Material Master.

The transaction for the material type definition is OMS2. The transaction can be accessed using the navigation path, IMG • LOGISTICS – GENERAL • MATERIAL MASTER • BASIC SETTINGS • MATERIAL TYPES • DEFINE ATTRIBUTES OF MATERIAL TYPES.

The material type is configured so that fields in the Material Master are predefined for the materials assigned to that material group, as shown in Figure 3.4. For example, you can configure the price control for a material type to be Standard Price, and all materials assigned to that material type will be standard price.

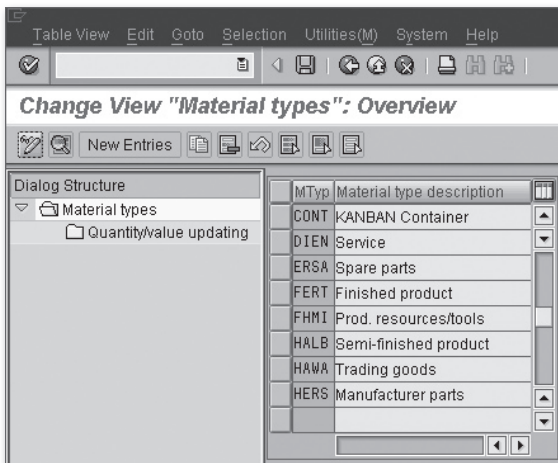


Figure 3.4 Material Types and Descriptions

After the material type has been created, the attributes can be defined. Figure 3.5 shows the attributes that can be assigned to each material type. After the material type has been defined, then the number range can be assigned.

Now we have looked at the details that go into making up the Material Master. The next section will explain the functionality of another important element in the Materials Management functionality, the Vendor Master.

The screenshot displays the SAP Material Master configuration interface. At the top, the material type is identified as 'DIEN' and the service as 'Service'. The 'General data' section includes fields for 'Field reference' (DIEN), 'SRef. material type' (ROH), and 'Authorization group'. It also features checkboxes for 'X-plant matl status', 'Item category group' (LEIS), 'With Qty Structure', 'Initial Status', and 'External no. assignment w/o check'. The 'Special material types' section contains checkboxes for 'Material is configurable', 'Material f. process', 'Pipeline mandatory', and 'Manufacturer part'. The 'Internal/external purchase orders' section shows 'Ext. Purchase Orders' set to 2 and 'Int. purchase orders' set to 0. The 'Classification' section includes 'Class type' and 'Class' fields. The 'Valuation' section shows 'Price control' set to 'Standard price' and 'Acct cat. reference' set to 0006, with a checkbox for 'Price ctrl mandatory'. The 'User departments' section is a list box containing: Status description, Work scheduling, Accounting, Classification, MRP, Purchasing, Production resources/tools, Costing, Basic data, Storage, and Forecasting.

Figure 3.5 Attributes Assigned to Material Types

3.2 Vendor Master

The Vendor Master is an important master file that contains the information on a supplier required for purchasing any material or service.

3.2.1 Definition of a Vendor

We define a vendor as a person or company who supplies materials or services to the person or company requiring those materials or services. For SAP customers, every supplier that they need to convert from their legacy systems will require a Vendor Master record in SAP.

3.2.2 Vendor Master in SAP

The Vendor Master in SAP holds details about each vendor used by the customer. The Vendor Master has three distinct sections. These are discussed in some detail in the following subsections.

General Data

The general data is, as the name suggests, general information about the vendor that can be entered into the system by the group identified to create vendor records. The basic data entered at this level includes name, search terms, address, telephone, and fax. After this data is entered, further information can be added to the Vendor Master record by Accounting and Purchasing. This data can be entered using Transaction XK01.

Accounting Data

The accounting data is the financial data that is entered at the company code level. This data includes tax information, bank details, reconciliation account, payment terms, payment methods, and dunning information. The transaction used in Financial Accounting to enter this information is FK01.

Purchasing Data

The purchasing data is entered for the vendor at a purchasing organizational level. We will discuss the purchasing organization later in the book. The data entered is relevant for one purchasing organization and may be different between purchasing organizations. The data entered includes control data required in purchasing, partner functions, purchasing default fields, and Invoice Verification indicators. This data can be entered using Transaction MK01.

3.2.3 Vendor Account Groups

When you create a vendor, you must assign an account group to that vendor. Therefore, these account groups must be defined in configuration before vendor creation.

The account group is defined using the navigation path IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • DEFINE ACCOUNT GROUPS WITH SCREEN LAYOUT (VENDORS).

In Figure 3.6, you can see the existing account groups. If you need to define another account group, click on the New Entries icon. The screen shown in Figure 3.7 will appear.

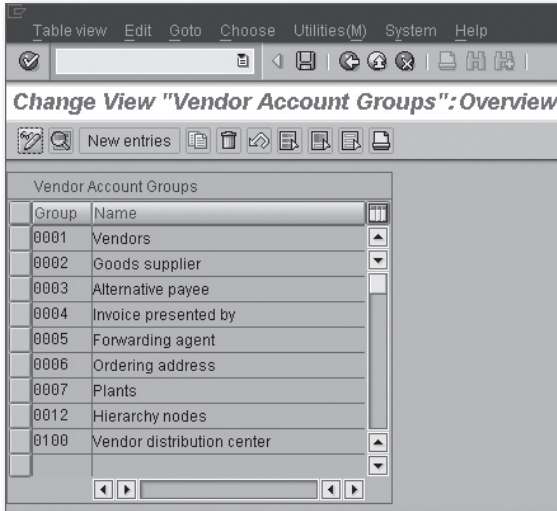


Figure 3.6 Account Group with Description

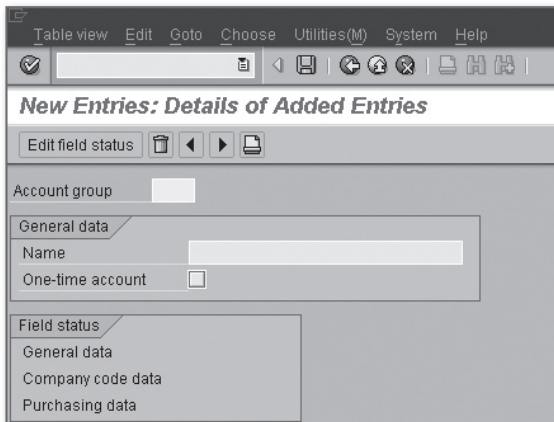


Figure 3.7 Field Entry for Account Group and Description

On this screen, you can specify whether an account group is just for one-time vendors. For vendors that you only deal with once, their data is entered into the document and not as master data. After you have entered the account group and description, you can then modify the field status as needed. This transaction allows you to configure the system to show or to not allow users to enter information into certain fields. Highlight the field status for the general, company code, or purchasing data, and then click on the EDIT FIELD STATUS icon.

Figure 3.8 shows the specific field groups that are available to configure. For the general data screen, these are the ADDRESS, COMMUNICATION, CONTROL, PAYMENT TRANSACTIONS, and CONTACT PERSON groups. Double-click on the group you want to configure.

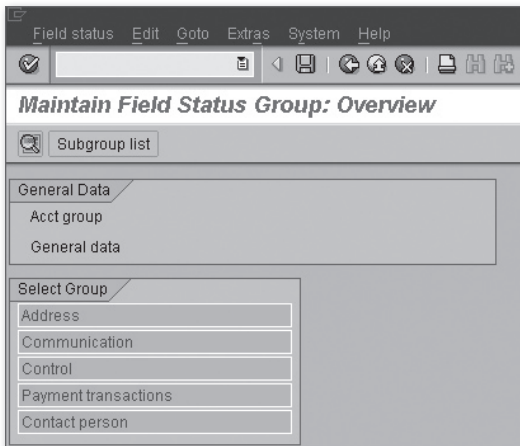


Figure 3.8 Field Groups for the General Data Screen

This configuration screen, shown in Figure 3.9, allows you to make certain fields either a required entry or an optional entry because they all are in this figure; display only, or suppressed. This configuration becomes specific to the account group that is entered when a Vendor Master record is created.

The screen layouts can also be modified for company code using the navigation path, IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • DEFINE SCREEN LAYOUT PER COMPANY CODE.

The screen layout can also be modified by the particular activity. In other words, the screen for creating a vendor can be modified to appear different from the screen for modifying a vendor. The transaction is accessed using the navigation path, IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • DEFINE SCREEN LAYOUT PER ACTIVITY.

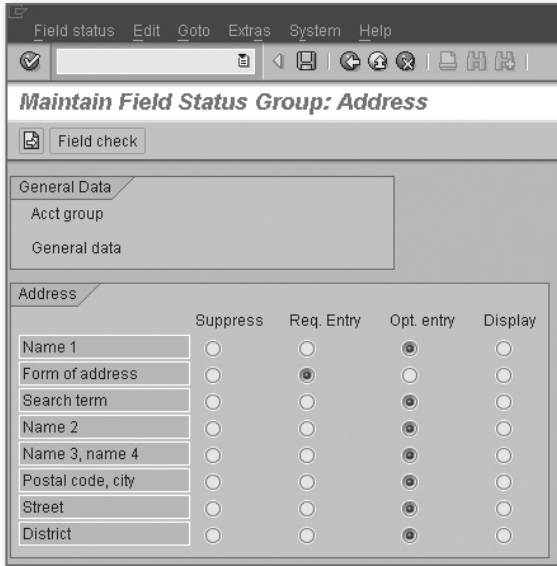


Figure 3.9 Some Fields Used to Configure Address Field Group

3.2.4 Vendor Number Range

When defining the vendor number range, it is important to remember that vendor numbers, like material numbers, can be externally or internally assigned. Many SAP customers decide to create different number ranges for each of their account groups. This requires careful consideration when defining number ranges to prevent the number ranges from overlapping.

The transaction to create vendor number ranges is XKN1, or you can use the navigation path, IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • CREATE NUMBER RANGES FOR VENDOR ACCOUNTS. Figure 3.10 shows the configuration for vendor number ranges.

For this transaction, you should enter a unique number for the range, defined by a two-character field, and then the range for the numbers for your defined number range. The CURRENT NUMBER field allows you to define the current number. The EXT. field allows you to define whether the number range is externally, or user, defined.

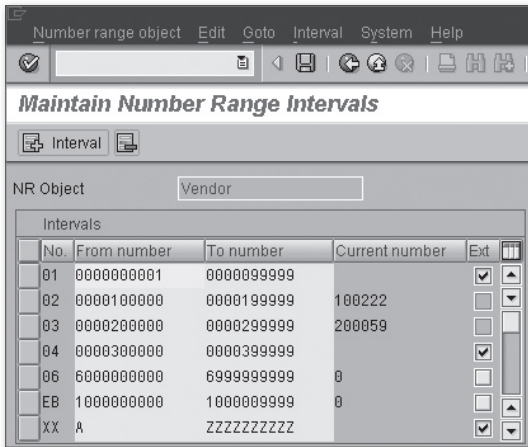


Figure 3.10 Configuration for Vendor Number Ranges

After the number range is defined, it can be assigned to a vendor account group using the navigation path, IMG • FINANCIAL ACCOUNTING • VENDOR ACCOUNTS • MASTER DATA • PREPARATIONS FOR CREATING VENDOR MASTER DATA • ASSIGN NUMBER RANGES TO VENDOR ACCOUNT GROUPS.

The number range can be assigned to many vendor account groups, as shown in Figure 3.11. Therefore, if your SAP customer decides to use just one number range for all its vendors, the configuration would show one number range assigned to all account groups.

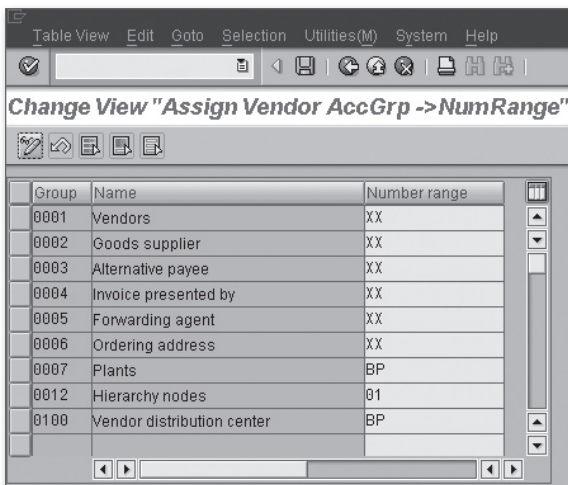


Figure 3.11 Vendor Account Groups and Assigned Number Ranges

3.3 Purchasing Information Data

The purchasing information record allows additional information to be held on a specific material that is purchased from a specific vendor.

3.3.1 Purchasing Information Record

The purchasing information record is where information specific to a material and a vendor is held. This can then be further specified for a particular purchasing organization.

The purchasing information record is used in the purchase order (PO) where information from the record is defaulted into the PO. Information such as purchasing group, net price, Invoice Verification indicators, and delivery tolerances all can be entered into the purchasing information record.

Four categories of purchasing information records can be created:

- ▶ Standard
- ▶ Pipeline
- ▶ Consignment
- ▶ Subcontracting

It is important to identify the correct category before creating a purchasing information record.

3.3.2 Purchasing Information Record for a Non-Stock Material

The purchasing information record usually applies to a vendor and a specific material that it supplies. However, the vendor occasionally may be supplying a service to a non-stock material. For example, there may be an operation in a production order where material is sent out for a treatment. There is no material number at that point for the material in the production order, but there is a purchase information record for a group of materials, that is, a specific material group such as certain raw materials or semi-finished non-stock items. In the system, it is possible to create a purchasing information record for a vendor and a material group. This contains the same information that a vendor/material purchasing information record would have.

3.3.3 Purchasing Information Record Numbering

The fact that there are different types of purchase information records makes number ranges necessary. The number ranges for the purchase information record can be assigned either externally or internally.

The number ranges for the purchase information records can be predefined in SAP ERP, and SAP recommends that the customer accept the given number ranges. The system does allow the number ranges to be changed if the customer requires it.

The transaction to define the purchasing information record number ranges is OME0, or you can use the navigation path, IMG • MATERIALS MANAGEMENT • PURCHASING • PURCHASING INFORMATION RECORD • DEFINE NUMBER RANGES.

The predefined number ranges for the purchase information records are the following:

- ▶ Stock material – internally assigned 5300000000 to 5399999999
- ▶ Stock material – externally assigned 5400000000 to 5499999999
- ▶ Non-stock material – internally assigned 5500000000 to 5599999999
- ▶ Non-stock material – externally assigned 5600000000 to 5699999999

3.3.4 Purchasing Information Record-Screen Layout

The screens in the purchasing information record transactions can be modified to allow field changes. The navigation path for this transaction is IMG • MATERIALS MANAGEMENT • PURCHASING • PURCHASING INFORMATION RECORD • DEFINE SCREEN LAYOUT.

The screen shown in Figure 3.12 allows you to choose the modifications for each transaction. To select a transaction, double-clicking on the transaction will take you to a screen where you can modify the screen layout, found in Table T162. You then can select one of the field-selection groups to modify the individual fields.

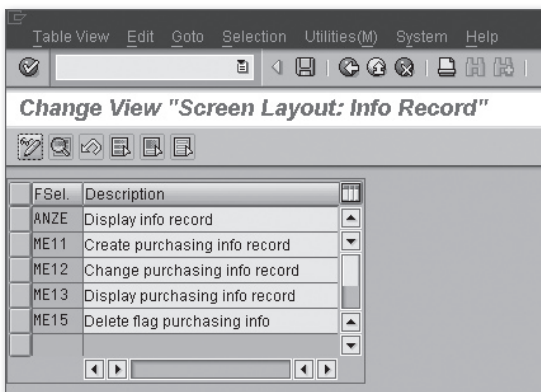


Figure 3.12 Record Transactions and Screen-Layout Modifications

Figure 3.13 shows the field selection groups available to select from for the purchasing information record transaction. Figure 3.14 shows the individual fields of the QUANTITIES field selection group for Transaction ANZE.

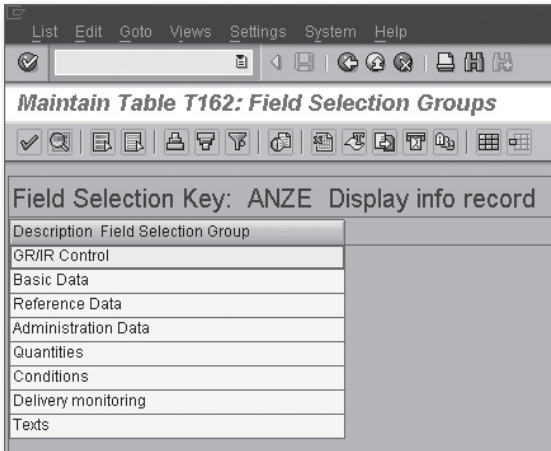


Figure 3.13 Field Selection Groups Available for the Purchasing Information Record Transaction

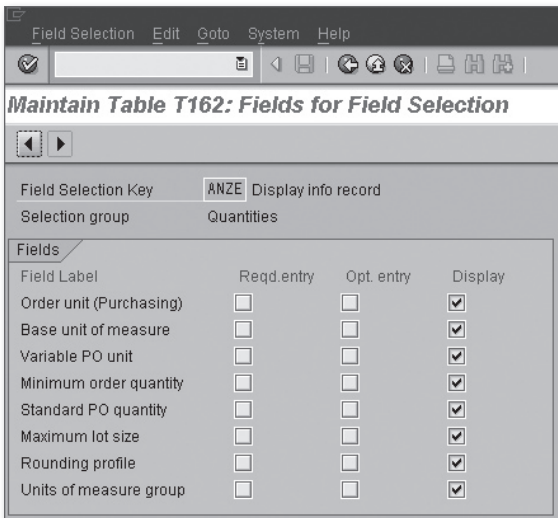


Figure 3.14 Quantities Field-Selection Group for Transaction ANZE

3.4 Batch Management Data

A batch of material is an important feature that allows a group of one material to have the same characteristics, identified by the batch number. This may be due to production or purchasing.

3.4.1 What Is a Batch?

A batch is a quantity of material that is grouped together for various reasons. It is often determined that the materials have the same characteristics and values. For instance, in the chemical industry, a certain number of containers of a certain product may be considered a batch because they were produced at the same time and have the same physical and chemical characteristics. These characteristics may differ from those of another batch of material produced on the same day.

The pharmaceutical industry is one sector where material batches are extremely important. Each batch of material is recorded throughout the product and distribution process. In the case of product recall, the batch number stamped on the pack or bottle of material is the identification that is needed.

To understand how important batch recording has become, consider the regulations within the European Union. The EU requires that each batch of pharmaceutical material imported into the EU must be accompanied by a batch certificate. This must contain the testing specifications of the product, analytical methods and test results, statements that indicate that it conforms to current Good Manufacturing Procedures (cGMP), and sign-off by a company official.

3.4.2 Batch Level

In the SAP system, the batch number can be determined at different levels. This determination needs to be made early in any implementation project. Batches can be determined at client level, plant level, and material level.

Client Level

If the batch level is configured at the client level, then the batch number can only be assigned once throughout the whole client. One batch number will exist for one batch regardless of material or location. There is no issue when batches are moved from plant to plant because the batch number would not exist in the receiving plant. This is a level where, in some countries, batch numbers are unique to a company and not to a material.

Plant Level

Batch level at the plant level is the SAP default. This means that the batch is unique to a plant and material but not applicable across the company. Therefore, a batch of material at a different plant within the company could have the same batch number with different characteristics. When transferring batch material from one plant to another, the batch information is not transferred, and the batch information needs to be re-entered at the receiving plant.

Material Level

Batch level at the material level means that the batch number is unique to a material across all plants. Therefore, if a batch of material is transferred to another plant, the batch information will be adopted in the new plant without re-entering the batch information because that batch number could not have been duplicated for that material in the receiving plant.

3.4.3 Changing the Batch Level

The batch level should be decided on early in any implementation. However, due to unforeseen circumstances, you may need to change the batch level.

The batch level can be changed using Transaction OMCE. The navigation path is IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • BATCH LEVEL.

In this transaction, the level can be changed between client, plant, and material. When changing the batch level, and prior to configuration, be aware of the following:

- ▶ To change the batch level from plant level to material level, the material has to be batch-managed in all plants.
- ▶ Any change in batch level requires significant testing before transporting the change to a production system.
- ▶ Batch-level configuration affects batch-status management functionality.

3.4.4 Batch-Status Management

Batch-status management is simply the ability to make a batch either restricted or unrestricted. The transaction for this configuration is OMCS, or you can use the navigation path, IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • BATCH STATUS MANAGEMENT.

The configuration is simply an option to make batch-status management active or not active. However, the batch-level configuration does affect the way in which batch-status management works, as described here:

- ▶ If the batch-level configuration occurs at the material or client level, then the batch-status management is effective for all plants in the client
- ▶ If the batch-level configuration is at the plant level, then you can configure the system to determine at which plant you require batch-status management to be active. The transaction to configure this is OMCU and can be accessed using the navigation path, IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • PLANTS WITH BATCH STATUS MANAGEMENT

3.4.5 Initial Batch Status

After defining the batch-status management, there is additional configuration that may be important to an SAP customer. If you have configured that batch-status management is active and that each batch will have a restricted or an unrestricted status, it is possible to configure the system to set the initial status when a batch is created.

This transaction code to set the initial status of a batch to restricted or unrestricted status is OMAB. The navigation path is IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • SPECIFY BATCH LEVEL AND ACTIVATE STATUS MANAGEMENT • INITIAL STATUS OF NEW BATCH.

The configuration for this is based on the material type. For example, it is possible to configure for all semi-finished goods, material type HALB, to have a batch status of restricted when the batches are created for materials with that material type.

3.4.6 Batch-Number Assignment

The batch number range is predefined in SAP. The predefined range 01 is defined as 0000000001 to 9999999999. The number range object for this is BATCH_CLT. This can be changed in configuration using Transaction OMAD or by using the navigation path IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • BATCH NUMBER ASSIGNMENT • MAINTAIN INTERNAL BATCH NUMBER ASSIGNMENT RANGE.

There are two configuration steps that can be carried out if the customer requires it. First, you can allow the batch number to be assigned internally using the internal number range. To configure this, use Transaction OMCZ or the navigation path, IMG •

LOGISTICS - GENERAL • BATCH MANAGEMENT • BATCH NUMBER ASSIGNMENT • ACTIVATE INTERNAL BATCH NUMBER ASSIGNMENT • ACTIVATE BATCH NUMBER ASSIGNMENT.

Second, you can configure the system to allow the automatic numbering of batches on a goods receipt with account assignment. The navigation path for this transaction is IMG • LOGISTICS - GENERAL • BATCH MANAGEMENT • BATCH NUMBER ASSIGNMENT • ACTIVATE INTERNAL BATCH NUMBER ASSIGNMENT • INTERNAL BATCH NUMBER ASSIGNMENT FOR ASSIGNED GOODS RECEIPT.

3.5 Serial Number Data

As we have just discussed, some materials are grouped in batches. If we want to identify a single unit of material uniquely, then the unit would have to be identified by a serial number.

3.5.1 What Is a Serial Number?

A serial number is given to a unique item to identify it and to record information about it. The serial number is different from a batch number: While a batch number is given to a number of items, a serial number is unique to one. The serial number is most often found to refer to equipment, such as motors, lathes, drills, or vacuums. For the SAP customer, there may be many areas where serial numbers need to be addressed. If the SAP customer produces items that should be uniquely defined, then serial numbers may be used. If that customer uses machines in production, it may regularly purchase maintenance items that are serialized. The Plant Maintenance functionality frequently uses serial numbers because the functionality includes use data for equipment that is most often serialized.

3.5.2 Serial Number Profile

The serial number profile is created to define attributes for the serial number. The serial number profile is a four-character alphanumeric field defined in Transaction OIS2. The transaction can also be accessed using the navigation path, IMG • PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • SERIAL NUMBER MANAGEMENT • DEFINE SERIAL NUMBER PROFILES • SERIAL NUMBER PROFILE.

The fields in Figure 3.15 show what is needed for configuring serial number profiles. The first field is the PROFILE, the four-character field, followed by a profile description. The EXISTREQ indicator, when not set, allows the user to create the serial number master record during a business transaction. If the indicator is set, the serial number master record must exist before the transaction can take place.

Prof.	Profile text	ExistReq	Cat	Equipment category des...	StkCk
0001	Serial profile 01	<input type="checkbox"/>	S	Customer equipment	
0002	Serial profile 02	<input type="checkbox"/>	S	Customer equipment	
0003	Inventory	<input type="checkbox"/>	S	Customer equipment	2
AM01	Automotive	<input checked="" type="checkbox"/>	S	Customer equipment	
CMR1	SN Profile	<input type="checkbox"/>	M	Machines	
COMP	Tools	<input type="checkbox"/>			1
DH01	HProfile	<input type="checkbox"/>	B	Machines with Serial Num	2
FR-1		<input type="checkbox"/>	M	Machines	
IAD1	Aerospace	<input type="checkbox"/>	M	Machines	2

Figure 3.15 Configuration Screen for Serial Number Profiles

The CAT field is for the equipment category, a Plant Maintenance item, which defines the type of equipment for which this serial number profile is used. For example, A is for machines, while S is for customer equipment.

The STKCHK field is used to indicate whether the system should perform a stock check when the serial number is assigned.

The configuration of the serial number profile should be performed with the aid of a Plant Maintenance consultant, who will ensure that the customer's requirements for Plant Maintenance are taken into account.

3.5.3 Serializing Procedures

Serial numbers are used in many areas of SAP. Using Transaction OIS2, you can define whether a serial number is optional, required, or automatic for a number of serializing procedures. The navigation path for this transaction is IMG • PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • SERIAL NUMBER MANAGEMENT • DEFINE SERIAL NUMBER PROFILES • SERIALIZING PROCEDURES.

In Figure 3.16, the serial number profile 0001 is assigned a number of procedures. For each of these procedures, there are configuration items for serial number usage. The SERUSAGE field can be configured to be none, optional, obligatory, and automatic. The other field, EQREQ, enables serial numbers to be allowed with or without Plant Maintenance equipment.

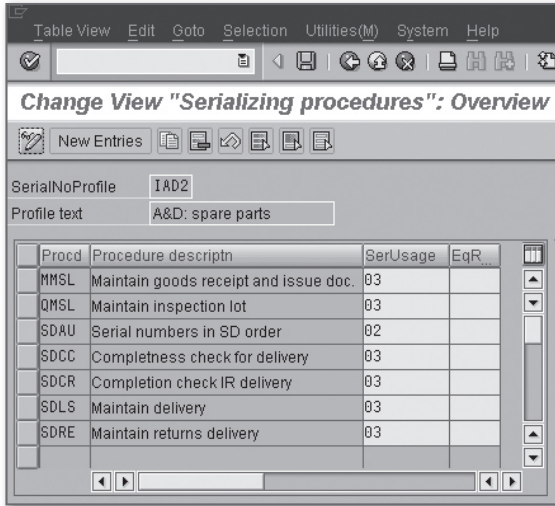


Figure 3.16 Serializing Procedures for Serial Number Profile 0001

The procedures that can be assigned to each serial number profile are defined in SAP. Table 3.1 identifies the procedure and its business meaning with relation to serial numbers (SN).

Procedure	Business Meaning
HUSL	Enables SN to be assigned in Handling Unit Management
MMMSL	Enables SN to be assigned in Goods Receipt, Goods Issue, Stock Transfers, Stock Transport Orders, and Physical Inventory
PPAU	Enables SN to be assigned in Production & Refurbishment orders
PPRL	Enables SN to be assigned in Production & Refurbishment orders when they are released
QMSL	Enables SN to be assigned when entering the original value in a QM Inspection Lot
SDAU	Enables SN to be assigned in Sales Orders, Inquiries, and Quotations
SDCC	Enables SN to be assigned when performing completeness checks for deliveries
SDCR	Enables SN to be assigned when performing completeness checks for return deliveries
SDLS	Enables SN to be assigned for deliveries
SDRE	Enables SN to be assigned for return deliveries

Table 3.1 Business Procedures and Meaning for Serial Number Profiles

3.6 Business Examples – Master Data in Materials Management

In MM, there are a number of master data files that are fundamental to the functionality. The Material Master contains all of the information that is required for a material with regards to each area the material is used, for example, sales, finance, manufacturing, quality, and so on. The Vendor Master contains the information that is required for purchasing any item or service. The purchasing information record is used when purchasing specific items for a vendor. Batch data is held for each batch of material that is defined in the system. That data can be used to determine which batch is used or sold. Serial number data is used for items that need to be uniquely identified, for example, if each piece is purchased with a warranty.

3.6.1 Material Master Data

The Material Master data is comprised of data that relates to a number of different areas. For materials to be used successfully, the data has to be collected and entered into the Material Master record. Not only does the data have to be entered for those areas but also for the specific organizational areas: plants, storage locations, sales organizations, and so on. For example, a material cannot be purchased without the relevant purchasing data being entered.

Example

Prior to its SAP ERP implementation, an Irish beverage company had developed a process for creating new materials. When a finished good was developed, it had to be approved by a product board. After approval, the finished good then passed on to a product manager who collected all of the relevant information required for the manufacturing, inventory, sales, and finance systems. This process often took longer than expected, and goods had to be shipped without being recorded in all of the systems because information was still missing. When SAP ERP was implemented, the process was changed as management realized the product would not be shipped until the Material Master was created and that the current process was too slow. The company kept the role of the product board for approvals, but instead of the product manager entering the data, the individual departments entered the data relevant to their areas. Using this method, the departments became responsible if data was missing and the product could not be shipped.

3.6.2 Vendor Master Data

The Vendor Master record contains data that is used in purchasing. The Vendor Master has three distinct sections: general data, purchasing data, and accounting data. The general data has basic information on the vendor such as name, address,

and telephone number. The purchasing data is entered for the vendor at a purchasing organizational level and includes control data required in purchasing, partner functions, and purchasing defaults. The accounting data is the financial data that is entered at the company code level. This data includes tax information, bank details, and payment methods.

Example

A specialty chemicals manufacturer in New Mexico operated a simple production process where it produced five finished goods. The purchasing process was also simple with fewer than 50 items purchased. There were fewer than 40 vendors, and each vendor's information was kept on an index card in the purchasing clerk's office. The purchasing process was not automated, and POs were handwritten on carbonated preprinted forms. A larger specialty chemicals company from Alabama purchased the New Mexico manufacturer. As an SAP customer, the company deployed its standard functionality at the New Mexico location, which meant that the purchasing data had to be re-created in SAP ERP. The information on the index cards was so sparse that the company sent a questionnaire to vendors to get enough basic information to create Vendor Master records in the SAP ERP system.

3.6.3 Purchasing Data

The Material Master will contain some purchasing data at the purchasing organization level, which means that the material data may be different for one purchasing organization to the next. However, it is the purchasing information record that contains data to a unique combination of vendor and material. This means that the same material can be purchased from two different vendors, and the price offered by each vendor may be different.

Example

The headquarters for an oil company in Texas implemented only the Finance and Purchasing components, rather than the full suite that was deployed at the oil facilities. At the head office, the majority of purchases were for services, office equipment, and office supplies. Before the SAP ERP implementation, the purchasing function at the head office was performed by two purchasing clerks who filled in POs once a week after collecting requisitions from employees. Vendors offered no price incentives, and purchasing clerks made no attempt to shop around different vendors for better prices. As part of the implementation, the purchasing clerks were asked to review every material purchased at the head office and identify whether it was a material that could be offered out for a competitive bid. The review found that 80% of items purchased at the head office could be put out to bid. Over the next six months, the company sent out RFQs and then selected the

top two vendors for each item. The company created purchase information records with pricing information for the vendor and material combination, including price discounts and scale discounts.

3.6.4 Batch Management

Batch Management is used when items of the same material number have the same attributes and can be identified using those attributes. For example, for a chemical company, a batch of chemicals will be made at one time and that batch will have values for a number of attributes that will be different from a different batch. The batch values can determine whether a batch is suitable to be used, sold, or stored in a certain way.

Example

A New Jersey manufacturer of paint additives had used a desktop-based program to record information about the batches. As a part of the SAP ERP implementation, the company moved the information from the desktop program to Batch Master records as the product was produced. The additives manufacturer won business with a new customer and started supplying product to the customer. However, the product was returned because the company failed to identify an expiry date for the batch. This was one data element that had never been recorded for each batch, so to keep the new customer, the company had to develop a formula to determine an expiry date for each batch. The company developed the formula, which was calculated and entered by production personnel at the end of each batch run.

3.6.5 Serial Numbers

A serial number is used to uniquely distinguish items of the same material number. This is important for companies that use materials that are purchased with a warranty or materials that must be uniquely identified. For example, aircraft parts are serialized so that maintenance personnel can record data against that serialized part and replace it when it has performed a certain number of cycles.

Example

A Spanish vacuum cleaner manufacturer used a motor in its machines that was made by a subsidiary company. The vacuum cleaners were of good quality and had a high level of customer satisfaction for many years. The company implemented SAP ERP in its Spanish plants, and a year later, sold its motor manufacturing plant to a Chinese company who moved production overseas. The vacuum cleaner manufacturer continued to source its motors from China because the price per unit was less than 50% of what it was costing from its own subsidiary. After

a few months, the company found that customer complaints had increased dramatically. Consumers complained that the vacuum would lose suction and then stop completely. The vacuum manufacturer examined the returned machines and found that the motors were defective. After contacting the vendor, the company found that motors within a certain serial number range could be subject to overheating. The problem for the vacuum manufacturer was that it did not serialize the motor in its system, so the manufacturer could not identify which vacuum had the defective motor. After this incident, the company started to serialize a number of key components to ensure that if it had defective parts in the future, the company would be able to quickly pass on the information to consumers.

3.7 Summary

This chapter has described the major elements that define the master files of the Material Master. Many companies use batch management and serial numbers, so it is important that if you are involved with these that you understand how each works. Both batches and serial numbers are important to industries such as pharmaceutical and chemical, where each batch or serial number may have very different characteristics.

Let's move on to Chapter 4, Part 1 of the Material Master Data coverage.

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