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First Steps in the SAP[®] Production Processes (PP)

Second Edition

- ▶ Compact handbook for discrete production in SAP
- ▶ Comprehensive example with numerous screenshots
- ▶ Processes in SAP PP explained clearly and understandably
- ▶ Master data, resource planning and production orders in context

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2 Design and work scheduling

During the design and work scheduling phase, you define the master data required for subsequent production planning and control.

In this chapter, I explain in detail the master data required for planning, and the importance of this data. Firstly, I outline the material master and bill of material (the design data) to create the basis for explaining the work center and routing (the production data).

2.1 Material master

In our example (see Section 1.3), we designed a new bicycle and the design department will now provide a more detailed design. This includes creating the material master data and all new components for the product in SAP ERP to enable entry of further master data.

The material master contains basic information to describe the material, as well as parameters for controlling the company processes. It consists of several views that group values into their areas of application (design, sales and distribution, production, etc.). Some views are valid across the group of companies, while others relate to specific organizational units; for example, a plant or a purchasing organization. The sales and distribution view contains data that is important for the sales and distribution process, such as discount groups. These details are only valid for the corresponding sales organization. The accounting view contains valuation classes for correctly classifying the material for book-keeping, for example, and these valuation classes are valid only for the corresponding company code. Four views are interesting for production planning:

- ▶ Basic data view (across the group)
- ▶ MRP view (plant-specific)
- ▶ Work scheduling view (plant-specific)
- ▶ Forecasting view (plant-specific)

Initially, the designer is only able to create the basic data view. The remaining views are created and filled during the course of work scheduling. The BASIC DATA 1 view contains basic information about the materials (see Figure 2.1). In addition to the material number and the material text, this information includes:

- ▶ the base unit of measure ❶,
- ▶ identification code for the design group responsible ❷,
- ▶ information about the weight ❸,
- ▶ information about the size/dimensions ❹,
- ▶ and much more.

Change Material ET-F-WT500 (Finished product)

Additional Data Org. Levels Check Screen Data

Basic data 1 Basic data 2 MRP 1 MRP 2 MRP 3 MRP 4 Forecas...

Material: ET-F-WT500 Bicycle WT500

General Data

Base Unit of Measure	PC ❶	piece(s)	Material Group	
Old material number			Ext. Matl Group	
Division			Lab/Office	KB1 ❷
Product allocation			Prod. Hierarchy	
X-plant matl status			Valid from	
<input type="checkbox"/> Assign effect. vals			GenItemCatGroup	NORM Standard item

Dimensions/EANs

Gross Weight		Weight Unit	KG ❸
Net Weight	16.500		
Volume		Volume Unit	
Size/dimensions			❹
EAN/UPC		EAN category	

Packaging material data

Matl Grp Pack.Matls	
Ref. mat. for pkg	

Basic Data Texts

Languages Maintained: 0 Basic Data Text Language: [dropdown]

Figure 2.1: Material master—Basic data 1 view

For our example, the designer now creates the material masters for the complete bicycle *ET-F-WT500*, the new frame, the new gears, and the new component “complete bicycle frame”. To do this, in SAP ERP, transaction MM01 is called up: SAP MENU • LOGISTICS • PRODUCTION • MASTER DATA • MATERIAL MASTER • MATERIAL • CREATE (GENERAL). The following initial screen appears (see Figure 2.2):

Figure 2.2: Creating a material (initial screen)

The designer enters the material for the finished bicycle (*ET-F-WT500*) and selects the industry sector for the bicycle (*Mechanical Engineering*), and the material type (*Finished Product*).

Next, this information is confirmed by pressing , the first basic data view opens again (see Figure 2.1. Here, the engineering group *KB1* is selected in the LAB/OFFICE field ②; *PC* (for “piece”) is entered in the BASE UNIT OF MEASURE field ① and in the NET WEIGHT ③ and DIMENSIONS ④ fields, and the values from the design documentation are adopted. On the BASIC DATA 2 tab, the material is entered (e.g., *Aluminum*) for the frame, and references to the already-stored design documentation are created.


All other components in our example are transferred from existing bicycles and therefore do not need to be created. The designer can only create the *bill of material* when all the material masters have been created in the SAP system.

The remaining three views are either created now and filled with standard values that are to be made more specific later, or are set up entirely

at a later time by the work schedulers or responsible MRP controllers. However, I will present them briefly here.

The MRP VIEW offers four tabs on which you can set all parameters for procuring the material. The values it contains define the production planning and control for the article. Here, for example, you enter settings for the following criteria:

- ▶ external procurement or in-house production,
- ▶ planning-driven or consumption-driven materials planning,
- ▶ size of the procurement batch,
- ▶ individual customer production or anonymous make-to-stock production,
- ▶ safety stock, etc.

Let's now create these views for the material ET-F-WT500 together. To do this, we call up transaction MM01 via: SAP MENU • LOGISTICS • PRODUCTION • MASTER DATA • MATERIAL MASTER • MATERIAL • CREATE GENERAL MATERIAL, and enter the material number. Because the basic data for this material has already been created, the SAP ERP system adds the data for the industry sector and material type. In the dialog box that appears, we select the views *MRP 1*, *MRP 2*, *MRP 3*, *MRP 4*, and *Work Scheduling* by clicking the relevant button to the left of the designation. After clicking the green checkmark  to confirm our selection, in the next dialog box we select plant 1200, and confirm again.

MRP profiles



MRP profiles enable users to group the settings for the *MRP view* and save them as default values. When a new material is created, the fields defined in the profile are then filled with the default values. This simplifies the process of creating and maintaining materials.

The transactions for maintaining the MRP profiles can be found under: SAP MENU • LOGISTICS • PRODUCTION • MASTER DATA • MATERIAL MASTER • PROFILE • MRP PROFILE.

When creating the MRP view, you then select the profile in the ORGANIZATIONAL LEVELS dialog box (see Figure 2.3).

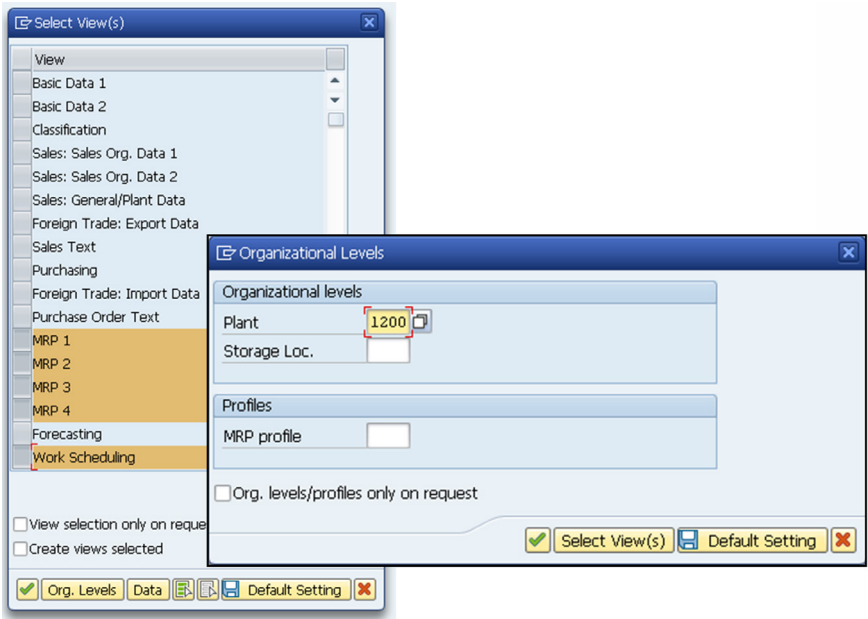


Figure 2.3: View selection and organizational levels

The first tab that we see now is MRP 1 (Figure 2.4). In addition to the GENERAL DATA area, the tab contains the areas MRP PROCEDURE and LOT SIZE DATA, where you can define parameters.

MRP TYPE is a mandatory field; because we receive planned requirement quantities for the finished product, the material should be planned on a consumption basis. Therefore, we select *PD* here. In the MRP CONTROLLER field, to ensure that the controller responsible can subsequently analyze the planning, we enter the relevant key, here *000*. The procurement proposal should always cover one week, and we therefore select *WB* in the LOT SIZE field. We do not need any further settings for the lot size data for our product.

When we confirm with , the SAP ERP system checks whether we have entered information in all mandatory fields and, if so, jumps to the next tab. If entries are missing from mandatory fields, a warning message or error message appears in the lower part of the SAP system window.

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