

Reading Sample

In the selection from this book, you'll get information on the different maintenance functions that are often used. This chapter outlines each function, and gives you details on how to configure them to your business needs.

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Configuring SAP Plant Maintenance

639 Pages, 2014, \$69.95/€69.95

ISBN 978-1-59229-932-4

 www.sap-press.com/3487

This chapter introduces you to generic functions, such as status management and partners; both of which are used in several locations within SAP Enterprise Asset Management. You'll learn how to configure your tools as well as obtain numerous tips in relation to configuring Customizing settings for these functions.

4 Generic Functions

In SAP Enterprise Asset Management (SAP EAM), some functions are used in several locations or by several objects. For example, you can use status management not only to document the condition of technical objects (functional location, equipment, and serial number), but also to manage notification and order processes. The field selection control that you use to hide fields or to force entries can also be used with each SAP object.

Table 4.1 shows which generic functions can be used for which SAP object.

Function	Functional Location	Equipment	Material Number	Notification	Order	Task List	Maintenance Plan
Object information	X	X		X	X		
Status management	X	X		X	X		
Number assignment		X	X	X	X	X	X
Warranties	X	X		X	X	X	
Measuring points/counters	X	X			X	X	X
Permits	X	X			X		
Partners	X	X		X	X		

Table 4.1 Generic Functions: Overview

Function	Functional Location	Equipment	Material Number	Notification	Order	Task List	Maintenance Plan
Documents	X	X	X	X	X	X	
Field selection	X	X	X	X	X	X	X
List variants	X	X	X	X	X	X	X
Multilevel lists	X	X		X	X		

Table 4.1 Generic Functions: Overview (Cont.)

4.1 Object Information

When you receive a new notification from a requester and need to decide whether the maintenance task is to be performed or not, it's very useful to find out concise information about the object by using *object information*.

Define Object Information Keys

You can use this Customizing function to configure a dialog box that contains concise information about the reference object (known as object information).

You can call object information in the following locations within the system:

- ▶ Equipment and serial numbers
- ▶ Functional locations
- ▶ Notifications
- ▶ Orders

Prerequisites

There are no special prerequisites.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • DEFINE OBJECT INFORMATION KEYS

Transaction

OIMD

Settings

You use the object information key to define which technical object data is displayed in the object information window (see Figure 4.1). The object information also contains historical data from the information system as well as data from the notifications and orders processed in the system.

Figure 4.1 Object Information

In the REFERENCE FOR NOTIFICATION AND CLASS SELECTION area, you define which notification and order information is to be displayed:

- ▶ For a technical object (OBJECT)
- ▶ For the superior object (SUPOBJECT)
- ▶ For the entire structure (STRUCTURE)

If you've selected object information for the object specified, you use the **AUTOMATICALLY** indicator to define whether this object information is displayed automatically (e.g., immediately after you call a notification or order). If you don't set this indicator, you can use the  button to call the object information.

In the **INFO. SYSTEM – TIME FRAME AND THRESHOLD VALUES** area, you can define the following:

- ▶ The period to be selected in the information system (highest value is 9,999 days; that is, approximately 27 years)
- ▶ Threshold values, which, when exceeded, are indicated by  in the **OBJECT INFORMATION** window

In the **NOTIFICATIONS – SELECTION AND AUTOMATIC DISPLAY** area, you can define the following:

- ▶ The period to be selected in the notification list (highest value is 9,999 days; that is, approximately 27 years)
- ▶ The notification status to be considered in the selection (outstanding and/or completed)

In the **CLASSIFICATION – VIEWS AND DISPLAY** area, you essentially define whether the characteristics of the object are to be displayed (by setting the **CHARACTERISTICS** indicator).

[+] Object Information Can Be Very Useful

You should define object information keys in your SAP system because they will enable you to obtain a clear and concise overview of the technical object's situation in master data and in processing. However, you should only display this object information when you actually need it. In other words, don't set the **AUTOMATICALLY** indicator.

4.2 Status Management

Both the technical objects themselves, as well as complete notification and order processing, are associated with general SAP status management. Here, you have to distinguish between the system status and the user status.

For certain business processes, the system sets the *system statuses* both internally and automatically as part of its general status management. This happens, for example,

in the equipment master **INST** when the equipment is installed at a functional location or in the order **CONF** when an order receives a final confirmation. The system status is displayed on the left-hand side of the status screen (see Figure 4.2).

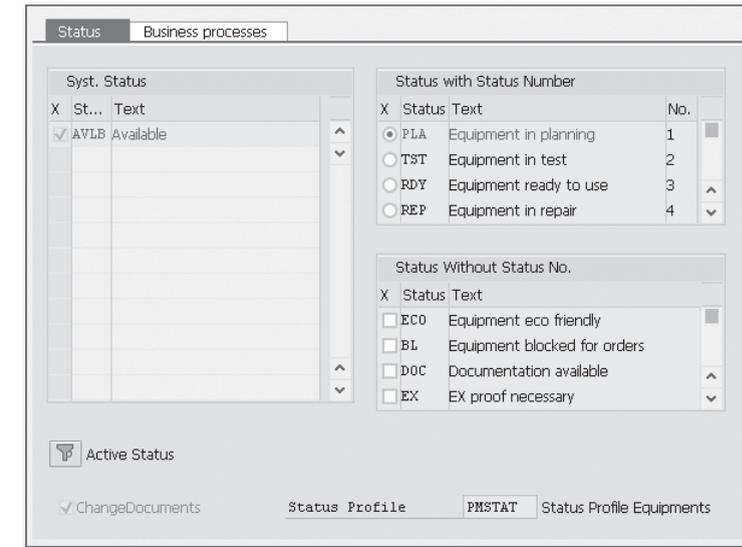


Figure 4.2 System Status and User Status

Define User Status

In addition to the predefined system statuses, you can freely define *user statuses* that fulfill your requirements. The user status is set and displayed on the right-hand side of the status screen (see Figure 4.2). SAP distinguishes between two types of user statuses:

- ▶ **STATUS WITH STATUS NUMBER** (upper half of the screen)
You can select only one radio button here.
- ▶ **STATUS WITHOUT STATUS NO.** (lower half of the screen)
You can select any number of checkboxes here.

The business processes that you can execute for each of these object statuses is also defined in status management. If, for example, you set a piece of equipment to inactive, the status display informs you which business processes are still allowed (green traffic light), which will trigger a warning message (yellow traffic light), and which are forbidden (red traffic light) (see Figure 4.3).

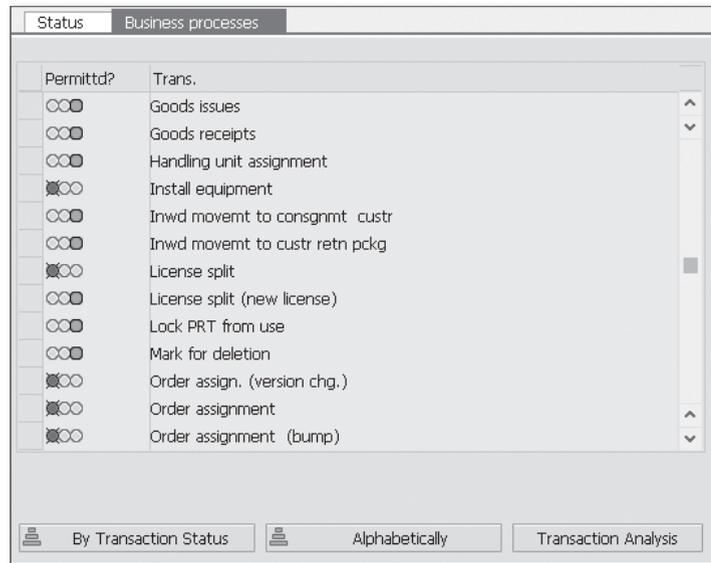


Figure 4.3 Business Processes

You can define a user status for the following objects:

- ▶ Equipment and serial numbers
- ▶ Functional locations
- ▶ Notifications
- ▶ Orders and order operations

For the sake of simplicity, let's consider the example of a piece of equipment to illustrate status management. However, status management can be used in a similar manner for all other objects.

Prerequisites

There are no special prerequisites.

Customizing Paths

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • DEFINE USER STATUS

PLANT MAINTENANCE AND CUSTOMER SERVICE • MAINTENANCE AND SERVICE PROCESSING • MAINTENANCE AND SERVICE ORDERS • GENERAL DATA • USER STATUS FOR ORDERS • DEFINE STATUS PROFILE

PLANT MAINTENANCE AND CUSTOMER SERVICE • MAINTENANCE AND SERVICE PROCESSING • MAINTENANCE AND SERVICE NOTIFICATIONS • NOTIFICATION PROCESSING • USER STATUS FOR NOTIFICATIONS • DEFINE STATUS PROFILE

Transaction

OIBS

You always access the same Customizing function irrespective of which Customizing path you call or whether you use the transaction.

Settings

When you call the Customizing function, you first obtain an overview of all status profiles irrespective of which application or object they are valid for. In other words, you see not only the status profiles for maintenance objects, but also all defined status profiles. If you now create a new status profile, you define each status in succession (see Figure 4.4).

Stat...	Status	Short Text	Lon...	Init...	Lowes...	Highes...	Posi...	Prio...	Auth. code
	BL	Equipment blocked for o...	<input type="checkbox"/>	<input type="checkbox"/>					
	DOC	Documentation available	<input type="checkbox"/>	<input type="checkbox"/>					
	ECO	Equipment eco friendly	<input type="checkbox"/>	<input type="checkbox"/>			2	2	
	EX	EX proof necessary	<input type="checkbox"/>	<input type="checkbox"/>					
	SRV	Serviceagreements avala...	<input type="checkbox"/>	<input type="checkbox"/>					
1	PLA	Equipment in planning	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	2	1	1	
2	TST	Equipment in test	<input type="checkbox"/>	<input type="checkbox"/>	2	5	1	1	
3	RDY	Equipment ready to use	<input type="checkbox"/>	<input type="checkbox"/>	3	6	1	1	
4	REP	Equipment in repair	<input type="checkbox"/>	<input type="checkbox"/>	3	6	1	1	
5	ST	Equipment on stock	<input type="checkbox"/>	<input type="checkbox"/>	3	6	1	1	
6	SCRP	Equipment scrapped	<input type="checkbox"/>	<input type="checkbox"/>	3	6	1	1	

Figure 4.4 Status Profile: Status

The statuses *without* a status number are sorted on the upper half of the screen, while the statuses *with* a status number are sorted on the lower half of the screen (according to the status number).

Status numbers are used for the following reasons:

- ▶ Statuses with a status number are mutually exclusive. In the example shown, a piece of equipment can be ready to use (status number 3) or in repair (status number 4).
- ▶ You generally use the statuses with a status number to map a process (e.g., execution of a planned repair order). In the example shown, virtually the entire life cycle of a piece of equipment, that is, from planning and operation through to scrapping, is mapped.
- ▶ One of these statuses (generally the status with the lowest status number) is selected as the initial status and later automatically set in the object. In this case, PLA is the initial status.
- ▶ If you set a specific status with a status number, you can only change to another status if it's within the upper and lower limits defined for the status number. If, in the example shown, the piece of equipment is assigned the status EQUIPMENT IN REPAIR (status number 4), the next status must lie between 3 (EQUIPMENT READY TO USE) and 6 (EQUIPMENT SCRAPPED). It's not possible to return to 2 (EQUIPMENT IN TEST).

If you want to assign business processes to a status, double-click the status, and choose  to add new entries. For each status, you can define how the relevant business process is to be handled (see Figure 4.5):

- ▶ **ALLOWED**
The business process is explicitly allowed.
- ▶ **WARNING**
The system issues a warning when you execute the business process.
- ▶ **FORBIDD.**
The business process is forbidden.

Finally, you must ensure that the status profile can also be used by the relevant object category. Choose **OBJECT TYPES** to display a list of all object types associated with status management (see Figure 4.6), and then select the relevant object type. You can also permit the same status profile for several object types. For example,

you can make a status profile available for both equipment and functional locations. However, you can also use a different status profile for notifications, orders, and order operations.

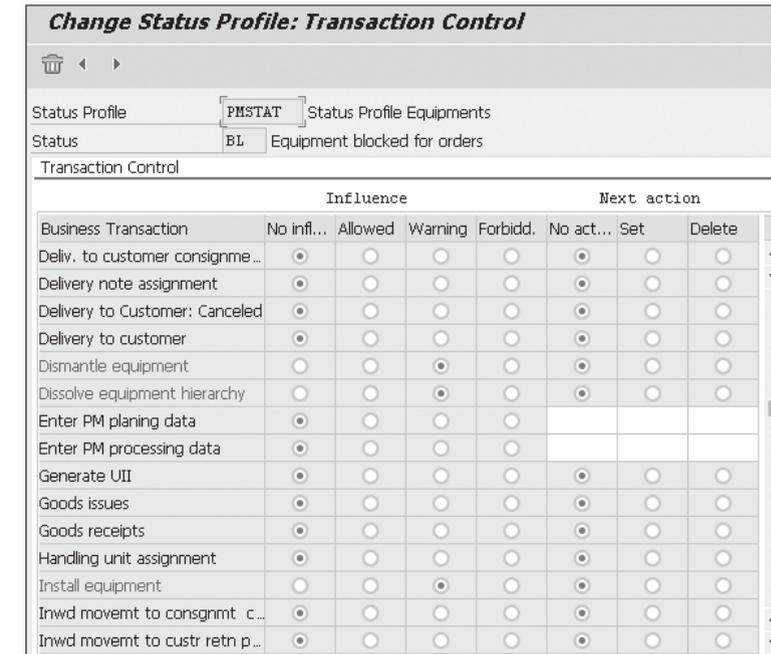


Figure 4.5 Status: Business Processes

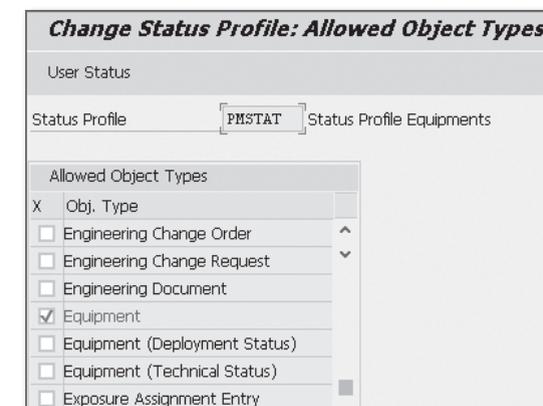


Figure 4.6 Status Profile: Object Categories

You then use special object-based Customizing functions to assign a status profile to an object (e.g., ASSIGN USER STATUS PROFILE TO EQUIPMENT CATEGORY or DEFINE FUNCTIONAL LOCATION CATEGORY).

[+] Make Good Use of the Status Profile Options

A purposeful status definition enables you to control in detail which business functions are to be allowed or forbidden for which object and in which situation.

It also enables you to search for objects (e.g., to display all equipment currently being planned).

4.3 Number Assignment

A number must be assigned to each data record. Apart from a few exceptions (e.g., functional locations), you adopt a similar approach to number assignment for all objects in the SAP system. You must manually assign a unique number to each object, or you must allow the system to assign a unique number. The following number assignment options are available:

- ▶ **Internal number assignment**
The system automatically assigns consecutive numbers within a predefined number range.
- ▶ **External number assignment**
The user assigns the numbers manually.

Define Number Ranges

You use this Customizing function to define the type of number assignment for each object. The procedure described here is used for the following maintenance objects:

- ▶ Equipment
- ▶ Serial numbers
- ▶ Object links
- ▶ Material numbers
- ▶ Notifications
- ▶ Orders
- ▶ Measuring points and counters

- ▶ Measurement documents
- ▶ Master warranties
- ▶ Task lists
- ▶ Maintenance plans

For the sake of simplicity, let's continue to consider the example of a piece of equipment to illustrate number assignment. However, a similar approach to number assignment is adopted for all other objects.

Groups are always used in conjunction with number assignment. Here, several object types (e.g., several equipment categories, notification types, or order types) are combined together to form a group. You can then define an internal and external number range for the group. In the example shown, several equipment categories can belong to the same group and therefore have the same number range (see Figure 4.7).

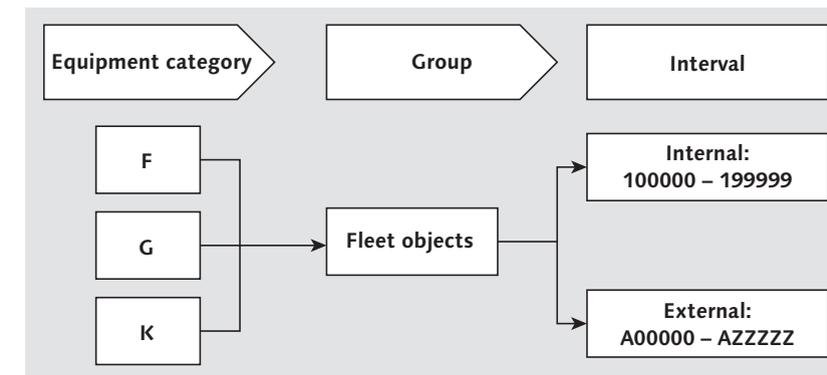


Figure 4.7 Number Assignment: Groups

Prerequisites

You must define the object types (e.g., equipment categories, order types, and notification types) beforehand.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • EQUIPMENT • EQUIPMENT CATEGORIES • DEFINE NUMBER RANGES

Please note that different objects have different Customizing paths.

Transaction

OIEN

Different objects also have different transactions (e.g., Transaction IW20 (notifications), Transaction OION (orders), Transaction IN20 (object links), Transaction BG20 (warranties), Transaction OIL4 (general maintenance task lists), and Transaction IP20 (maintenance plans).

Settings or Recommended Settings

If you want to define a number range for a group, proceed as follows:

1. After you call the Customizing function, choose  Groups.

An overview appears of which groups exist and which object types (in this case, equipment categories) are assigned to which groups or which object types aren't assigned yet (see Figure 4.8).

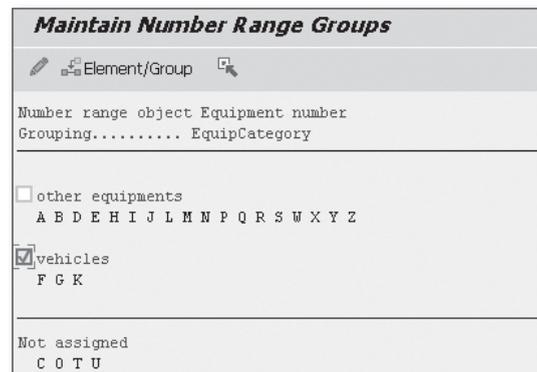


Figure 4.8 Number Range Groups

2. Use the menu option GROUP • INSERT GROUP to create a new group. At the same time, the system prompts you to define some number ranges, namely an internal number range and/or an external number range (see Figure 4.9).
3. If you now want to assign an equipment category to the group, double-click the equipment category, select the group, and choose .

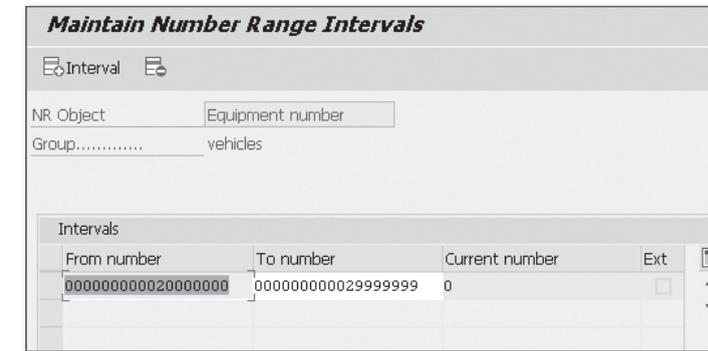


Figure 4.9 Number Ranges

4. Use the menu option INTERVALS • MAINTAIN to make subsequent changes to the number range intervals.
5. Use the menu option GROUP • MAINTAIN TEXT to subsequently change the name of the group.

Define Short Numbers

For usability purposes, you should define numbers that are as short as possible. Your users will thank you for only having to enter a 6-digit number (e.g., 800123) rather than a 12-digit number (e.g., 800121232343).

[+]

4.4 Warranties

A warranty is a commitment from a manufacturer, vendor, or salesperson to a customer that services are guaranteed for a particular period of time, without the customer being billed. A warranty always refers to a technical object (functional location, equipment, or serial number).

Warranties are used in the following areas:

- ▶ Equipment and serial numbers
- ▶ Functional locations
- ▶ Notifications
- ▶ Orders

If you want to assign warranties to technical objects and then use these warranties in maintenance processing, the following Customizing functions are available to you.

Check Warranty Categories

You use this Customizing function to define whether you are the guarantor or warrantee.

Prerequisites

There are no special prerequisites.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • WARRANTIES • CHECK WARRANTY CATEGORIES

Transaction

GM01

Settings or Recommended Settings

In the standard SAP delivery, a distinction is made between the following warranty categories (see Figure 4.10):

- ▶ **Warranty category I (inbound)**
This warranty category exists if you are the warrantee.
- ▶ **Warranty category O (outbound)**
This warranty category exists if you are the guarantor.

WarrantyCateg.	Class.active
I	<input checked="" type="checkbox"/>
O	<input checked="" type="checkbox"/>

Figure 4.10 Warranty Categories

Delete Customer Warranties

Delete warranty category O because, in SAP EAM, you are generally only the warrantee and never have to manage warranties granted to customers.

[+]

Define Warranty Types

You use this Customizing function to define whether you want to manage one or more warranty types for a warranty category. For example, for warranty category I (inbound), you can define one warranty type for a manufacturer warranty and another warranty type for a vendor warranty.

Prerequisites

You must define the warranty categories beforehand. If you want to assign a partner determination procedure and status profile, you must also define them beforehand.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • WARRANTIES • DEFINE WARRANTY TYPES

Settings or Recommended Settings

If you want to distinguish between vendor warranties and manufacturer warranties, you can define two warranty types for this purpose (see Figure 4.11).

W.	WarrCat.	Text	D.Box Not.	D.Box Order	D.Box Inv.
1	0 Guarantor (customer)	Customer warranty	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	I Warrantee (vendor/manufac...	Vendor warranty	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	I Warrantee (vendor/manufac...	Manufacturer warranty	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Figure 4.11 Warranty Types

For each warranty type, define the following:

- ▶ Do you want the system to display a dialog box when you open a notification?
- ▶ Do you want the system to display a dialog box when you open an order?
- ▶ Do you want to assign a status profile?
- ▶ Do you want to assign a partner determination procedure?



Vendor Warranties and Manufacturer Warranties

As a precaution, you should always create two warranty types for the inbound warranty category:

- ▶ One for the manufacturer warranty
- ▶ One for the vendor warranty

Define Warranty Counters

You use this Customizing function to define counters for use in warranty processing. However, this Customizing function is only necessary if you work with master warranties or performance-based warranties. You don't require counters if you enter only basic warranty data (start and end dates) directly in the technical object (piece of equipment or functional location).

Prerequisites

You must define the counters as characteristics in the classification system beforehand.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • WARRANTIES • DEFINE WARRANTY COUNTERS

Transaction

GM04

Settings or Recommended Settings

When you create a master warranty, the system automatically proposes the counters marked as DEFAULT. Furthermore, if you want to measure time, you should always specify a counter that you've defined as a time-dependent counter (see Figure 4.12).

Warranty counter	Default	TimeDepend.
FLOW		
OPH		
WARRANTY_KILOMETERS		
WARRANTY_TIME	X	X

Figure 4.12 Warranty Counters

4.5 Measuring Points and Counters

Measuring points mark those locations at which the current condition of an asset is described (e.g., temperature, number of revolutions, pressure, level of contamination, and viscosity). At individual measuring points, you can specify target values as well as upper- and/or lower limits. Measuring points are a basic prerequisite for condition-based maintenance.

Counters are the tools you can use in the SAP system to represent the wear and tear of an object, consumption, or the reduction of an object's useful life (e.g., an odometer, operation hours counter, numbers of pieces, and output in tons). Counters are a basic prerequisite for performance-based plant maintenance.

Measuring points and counters are used in the following locations within the system:

- ▶ Pieces of equipment and serial numbers
- ▶ Functional locations
- ▶ Task lists
- ▶ Maintenance plans
- ▶ Order confirmations

If you want to assign measuring points and counters to technical objects and then use them in maintenance processing, several Customizing functions are available to you.

Make System Settings for Measuring Points and Measurement Documents

You use this Customizing function to define global system settings. In the current SAP version, however, there is only one – the generation of interval documents.

What are interval documents? If you use the measurement document transfer, difference measurement documents are transferred to the subordinate pieces of equipment when you enter a measurement document for a functional location. In the example shown in Figure 4.13, 14 measurement documents are generated for the pieces of equipment installed at functional location K1-M each time you enter a measurement document for the functional location. Therefore, in the case of larger assets, the system may easily generate several hundred measurement documents each time you enter one measurement document.

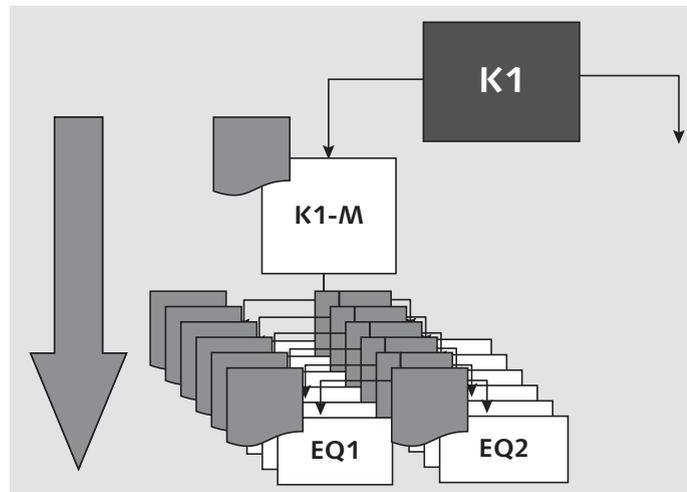


Figure 4.13 Measurement Document Transfer

If you don't want this to happen, you can activate interval documents. Then, a single *interval document* is created (and updated repeatedly) for the length of time that the piece of equipment is installed at the functional location. Therefore, the interval document represents a recurring document that is repeatedly overwritten

with the latest data. A new interval document is only generated if the installation location of the piece of equipment changes.

Prerequisites

There are no special prerequisites.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • MEASURING POINTS, COUNTERS AND MEASUREMENT DOCUMENTS • MAKE SYSTEM SETTINGS FOR MEASURING POINTS AND MEASUREMENT DOCUMENTS

Settings or Recommended Settings

Set the TRANSFER GENERATES INTERVAL DOCUMENTS indicator (see Figure 4.14).

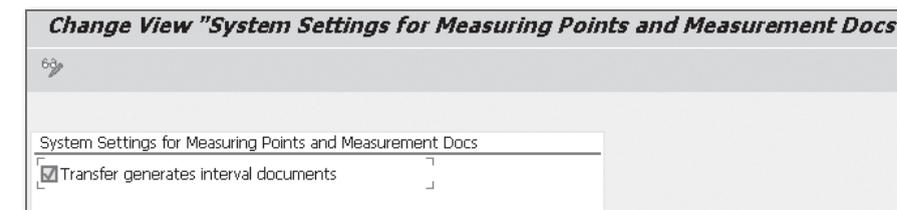


Figure 4.14 Interval Documents

Define Measuring Point Categories

You must assign a *measuring point category* to each measuring point and counter. The measuring point category, in turn, assigns certain controlling attributes to the measuring point or counter. You use this Customizing function to define the measuring point categories and therefore generic attributes that should apply to measuring points and counters.

Prerequisites

If you want to assign catalogs, you must maintain them beforehand.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • MEASURING POINTS, COUNTERS AND MEASUREMENT DOCUMENTS • DEFINE MEASURING POINT CATEGORIES

Settings

You can use the measuring point category to assign the following attributes to a measuring point or counter (see Figure 4.15):

- ▶ **MEASPOSUNIQNSS**
This determines whether you want the measurement position to be *unique*. You use the measurement position to define the installation position of the measuring point associated with the measuring point object, for example, measurement position 1 (measurement of inside temperature) or measurement position 2 (measurement of outside temperature). You can use the uniqueness check for measurement positions to prevent a measurement position from being defined several times for each object. The following settings are available to you: 0 = no check, 1 = check at object level, and 2 = check at client level.
- ▶ **CATALOG TYPE**
This is used when entering the measurement reading to record the inspection results (e.g., C = damage codes).
- ▶ **MEASRGE MESSAGE**
This determines the system response that occurs when the measurement range limits are exceeded: blank = no message, W = warning message, or E = error message.
- ▶ **TOLPERIOD (SEC)**
This specifies which tolerance period is permitted when entering future measurement readings if, in the event of a data transfer from an external system, the external server has a different system time than the SAP system. The tolerance period is specified in seconds.
- ▶ **LINEAR ASSET**
This determines whether you can enter linear data for a measuring point.

Change View "Measuring Point Category": Details	
MeasPtCategory	M
Description	MeasPoint (general)
MeasPosUniqnss	2
Catalog type	C
MeasRge message	W
TolPeriod (sec)	90,000
Linear Asset	<input type="checkbox"/>

Figure 4.15 Measuring Point Category

Other Customizing functions are available for controlling the measuring points and counters. However, they have already been described previously as generic functions:

- ▶ **CREATE NUMBER RANGES FOR MEASURING POINTS**
Number assignment is explained in detail in Section 4.3. Because measuring point numbers are only assigned internally, create only one number range, namely 01.
- ▶ **CREATE NUMBER RANGES FOR MEASUREMENT DOCUMENTS**
Number assignment is explained in detail in Section 4.3. Because measurement document numbers are only assigned internally, create only one number range, namely 01.
- ▶ **DEFINE FIELD SELECTION FOR MEASURING POINTS AND MEASUREMENT DOCUMENTS**
Field selection is explained in detail in Section 4.9.
- ▶ **SET LIST EDITING FOR MEASURING POINT LISTS**
For more information about the technique used to design lists, see Section 4.10.
- ▶ **SET LIST EDITING FOR MEASUREMENT DOCUMENT LISTS**
For more information about the technique used to design lists, see Section 4.10.

4.6 Permits

For some technical objects, certain regulations or conditions must be taken into account when using them or performing maintenance work. You can define such

regulations for a technical object as permits. These permits must be granted for the orders during maintenance processing. Important permits in plant maintenance include the following:

- ▶ Fire permits
- ▶ Notifications of environmental protection
- ▶ Welding permits
- ▶ Drivers' licenses
- ▶ Fire protection permits
- ▶ Vat access permits
- ▶ Activation authorizations
- ▶ Technical inspection certificates
- ▶ Explosion protection zones

Permits are used in the following locations:

- ▶ Pieces of equipment and serial numbers
- ▶ Functional locations
- ▶ Orders

The Customizing functions available to you for use with permits are described next.

Define Permit Categories

You use this Customizing function to define permit categories. You can use the permit category to group permits together. Therefore, to facilitate this, you must assign each permit to a permit category. However, the permit categories aren't used for controlling; rather, they are used only for grouping and selection purposes.

Prerequisites

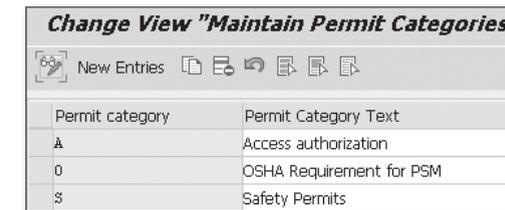
There are no specific prerequisites.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • PERMITS • DEFINE PERMIT CATEGORIES

Settings

Defines the groups according to their individual requirements (see Figure 4.16).



Permit category	Permit Category Text
A	Access authorization
0	OSHA Requirement for PSM
S	Safety Permits

Figure 4.16 Permit Categories

4.7 Partners

By default, the SAP system knows only a few organizational units that you can assign to a technical object or order (e.g., maintenance planner group and responsible work center).

By defining *partners*, you can considerably expand these competencies and responsibilities and specify them in greater detail. A partner can be an individual or legal entity, and is either an internal organizational unit (e.g., departments, cost centers, or persons) or an external organizational unit (e.g., vendors, manufacturers, or service providers).

Partners are used in the following locations:

- ▶ Pieces of equipment and serial numbers
- ▶ Functional locations
- ▶ Notifications
- ▶ Orders

Figure 4.17 shows the following procedure for assigning partners to technical objects or processing objects:

- ▶ The *partner type* is predefined by SAP and always contains a database table (customer, contact person, vendor, user, personnel number, organizational unit, and position).
- ▶ In Customizing (DEFINE PARTNER DETERMINATION PROCEDURE AND PARTNER FUNCTION), you can freely define *partner functions* with reference to a partner

type. For example, you can define partner functions such as the manufacturer, plant vendor, and service provider, and refer all functions to the *Vendor* database table.

- ▶ You can freely define a *partner determination procedure*. This is a grouping of partner functions that specifies which partner functions are permitted or must always be specified. For example, you can determine that the manufacturer and vendor must always be specified for a piece of equipment, but that the service provider is an optional specification.

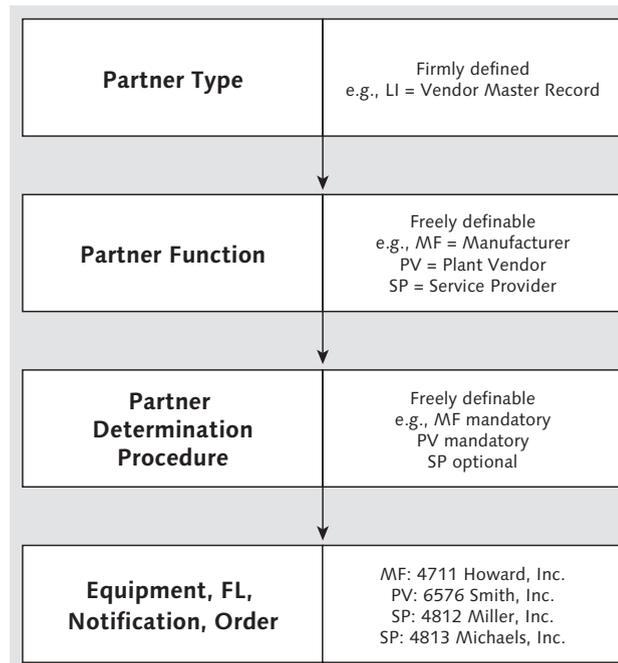


Figure 4.17 Partner

Define Partner Determination Procedure and Partner Function

You use this Customizing function to define partner functions. In particular, you use it to define the partner type to which a partner function is to belong. Furthermore, you can also use this Customizing function to define the partner determination

procedures and to assign the corresponding partner functions to a partner determination procedure.

Prerequisites

There are no specific prerequisites.

Customizing Paths

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • PARTNERS • DEFINE PARTNER DETERMINATION PROCEDURE AND PARTNER FUNCTION

PLANT MAINTENANCE AND CUSTOMER SERVICE • MAINTENANCE AND SERVICE PROCESSING • MAINTENANCE AND SERVICE NOTIFICATIONS • NOTIFICATION CREATION • PARTNERS • DEFINE PARTNER DETERMINATION PROCEDURE AND PARTNER FUNCTION

PLANT MAINTENANCE AND CUSTOMER SERVICE • MAINTENANCE AND SERVICE PROCESSING • MAINTENANCE AND SERVICE ORDERS • PARTNERS • DEFINE PARTNER DETERMINATION PROCEDURE AND PARTNER FUNCTION

Transaction

VOP2

Choose PLANT MAINTENANCE, and then click  Change Partner .

Settings

You use the PARTNER FUNCTIONS function (see Figure 4.18) to define the partner functions that you require in technical objects or processing objects.

Take Care When Editing Partner Functions

You use the Customizing function DEFINE PARTNER FUNCTIONS to maintain not only partner functions in SAP EAM, but also all partner functions used in the SAP system (e.g., in QM or customer service).



Part...	Name	Part...	Inc...	Hig...	Uni...	Hie...
FS	Freight service agt	LI	08		<input type="checkbox"/>	
TL	Head of lading	PE	09		<input type="checkbox"/>	
TR	Cleaning firm (T.)	LI	08		<input type="checkbox"/>	
TU	Envelope serv. agent	LI	08		<input type="checkbox"/>	
TV	Insurance (T.)	LI	08		<input type="checkbox"/>	
TZ	Customs agent	LI	08		<input type="checkbox"/>	
CA	Contract Address	LI	08		<input type="checkbox"/>	
SE	Sales employee	PE	09		<input type="checkbox"/>	
VU	User Responsible	US			<input type="checkbox"/>	
VW	Person Responsible	PE	09		<input type="checkbox"/>	
W1	Senior Approver	US			<input type="checkbox"/>	
W2	HSE Function	US			<input type="checkbox"/>	
W4	Operation Supervisor	US			<input type="checkbox"/>	
W5	Skilled Worker	US			<input type="checkbox"/>	
W6	Area Technician	US			<input type="checkbox"/>	
W7	CCR Worker	US			<input type="checkbox"/>	
W8	External Service	LI	08		<input type="checkbox"/>	
SH	Ship-to party	KU	07		<input type="checkbox"/>	
GS	Goods Supplier	LI	08		<input type="checkbox"/>	
Y1	Sales representative	PE	09		<input type="checkbox"/>	

Figure 4.18 Partner Functions

You assign each partner function to a partner type. From an SAP EAM perspective, the following partner types are relevant:

- ▶ PE = person
- ▶ US = SAP system user
- ▶ LI = vendor
- ▶ S = position
- ▶ O = organizational unit

You use the PARTNER DETERMINATION PROCEDURES function to maintain the partner determination procedures that you require, and you use the FUNCTIONS IN DETERMINATION function to assign the partner functions required in each case

(see Figure 4.19). You also define the following attributes here (the four indicators from left to right):

- ▶ NO CHANGE POSSIBLE
Whether it will be possible to change the partner retroactively.
- ▶ PARTNER MANDATORY
Whether the partner function is to be mandatory.
- ▶ UNIQUE
Whether the partner function is unique (i.e., the partner function isn't permitted to be assigned to the same object repeatedly).
- ▶ APPOINTMENTS
Whether an appointment is to be entered in the employee's calendar.

Part...	Funct	Name	No ...	Part...	Uni...	App...
PM	AB	Department resp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	HR	Manufacturer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	VN	Vendor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	MB	Notif. Process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	PR	Position Responsible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	SV	Service Company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	VU	User Responsible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	VW	Person Responsible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 4.19 Partner Determination Procedure

Customizing Functions for the Field Selection for Partners

You use these Customizing functions to define which fields are to be displayed for which partner type at their place of use (e.g., in the equipment master or order).

Prerequisites

You must define partner functions for each partner type beforehand.

Customizing Paths

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • BASIC SETTINGS • PARTNERS

PLANT MAINTENANCE AND CUSTOMER SERVICE • MAINTENANCE AND SERVICE PROCESSING • MAINTENANCE AND SERVICE NOTIFICATIONS • NOTIFICATION CREATION • PARTNERS FIELD SELECTION FOR LIST DISPLAY OF PARTNER DATA

Then, the following Customizing functions are available to you:

- ▶ DEFINE FIELD SELECTION FOR LIST DISPLAY OF VENDOR DATA
- ▶ DEFINE FIELD SELECTION FOR HR DATA LIST DISPLAY
- ▶ DEFINE FIELD SELECTION FOR ORGANIZATIONAL UNIT LIST DISPLAY
- ▶ DEFINE FIELD SELECTION FOR POSITION LIST DISPLAY
- ▶ DEFINE FIELD SELECTION FOR LIST DISPLAY OF USER DATA
- ▶ DEFINE FIELD SELECTION FOR ADDRESS DATA LIST DISPLAY

Transactions

- ▶ OIR1 – Customer Data
- ▶ OIR2 – Vendor Data
- ▶ OIR3 – HR Data
- ▶ OIR4 – Contact Persons
- ▶ OIR5 – Organizational Units
- ▶ OIR6 – Positions
- ▶ OIR7 – User Data
- ▶ OIR8 – Address Data

Settings

Figure 4.20 shows the settings for the vendor field selection. However, these are representative of all other settings for field selections. Here, you define which fields are to be invisible as well as the display positions for those fields that you want to display.

Field desc.	DispPosition	Invisible
Client		<input checked="" type="checkbox"/>
Name	1	<input type="checkbox"/>
Name 2		<input checked="" type="checkbox"/>
Name 3		<input checked="" type="checkbox"/>
Name 4		<input checked="" type="checkbox"/>
City	3	<input type="checkbox"/>
District		<input checked="" type="checkbox"/>
Postal Code	2	<input type="checkbox"/>
PO Box Post Cde		<input checked="" type="checkbox"/>
Country		<input checked="" type="checkbox"/>
Region		<input checked="" type="checkbox"/>
Street	4	<input type="checkbox"/>
PO Box		<input checked="" type="checkbox"/>
Language		<input checked="" type="checkbox"/>
Telephone	5	<input type="checkbox"/>
Fax		<input type="checkbox"/>

Figure 4.20 Partner Type: Field Selection

4.8 Documents

Many companies want to link the technical objects and/or processing objects with documents such as design drawings, work instructions, checklists, images, inspection instructions, exploded drawings, measuring and control technology profiles, 3D models, and so on.

In the SAP system, you can manage your documents as document master records (Transactions CV01N to CV04N). Within these document master records, you define a link to the original documents (e.g., a link to the storage location of the CAD file or a link to the file server for Microsoft Office documents) whereby the link is retained or the original documents are uploaded to an SAP database.

In SAP EAM, documents are used in the following objects:

- ▶ Pieces of equipment and serial numbers
- ▶ Functional locations
- ▶ Bills of material (BOMs)

- ▶ Notifications
- ▶ Orders
- ▶ Task lists

The next section doesn't describe the Customizing required for the full scope of functions in the SAP document management system because, for pure plant maintenance purposes, it's generally sufficient to define a reduced scenario and to configure the necessary Customizing. This scenario looks as follows:

- ▶ To differentiate this scenario from other application areas, you want this scenario to have its own *document type*.
- ▶ Furthermore, you want to be able to use it for *plant maintenance objects* only.
- ▶ To prevent other enterprise areas from encroaching on this scenario, you want to create a separate *secure storage area* in the SAP system and store the original documents there.
- ▶ All other functions in the SAP document management system (e.g., status profiles and versioning) don't play any role here.

We'll discuss how to map this scenario in Customizing next.

Define Document Types

You use this Customizing function to configure the basic settings for a document type (e.g., number assignment or object links).

Prerequisites

You must define the number ranges (external and internal) beforehand.

Customizing Path

CROSS-APPLICATION COMPONENTS • DOCUMENT MANAGEMENT • CONTROL DATA • DEFINE DOCUMENT TYPES

Settings

Figure 4.21 shows the basic settings for a document type.

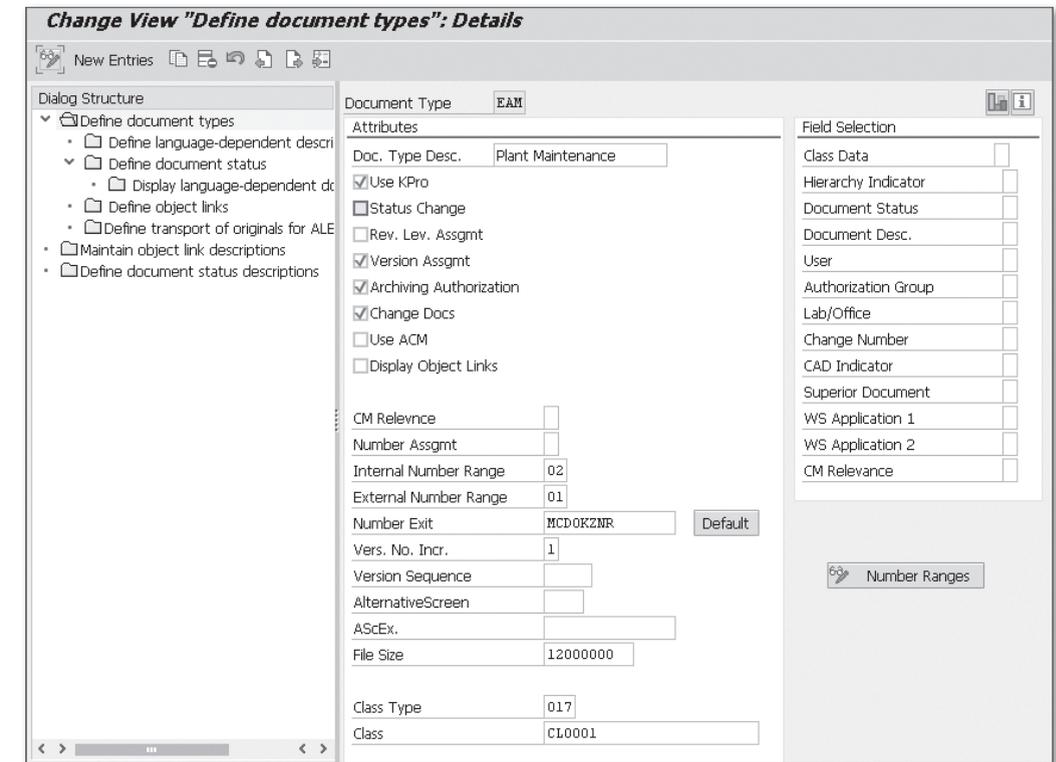


Figure 4.21 Document Type: Basic Settings

The following describes how to configure these settings from an SAP EAM perspective:

- ▶ **USE KPRO**
This indicator controls the use of Knowledge Provider to store original files in defined storage systems (known as content repositories). If you define a new document type, you should use only Knowledge Provider to control file storage. Don't set this indicator retroactively for a document type. If original files are already maintained for a document type, and Knowledge Provider wasn't used previously to control file storage, the system can no longer manage these original files.
- ▶ **VERSION ASSGMT**
If you set this indicator, the system assigns the new version number automatically. Because version numbers are rarely used in plant maintenance, version 00 is automatically assigned for the document.

- ▶ **ARCHIVING AUTHORIZATION**
This indicator controls whether the original files can be archived.
- ▶ **CHANGE DOCS**
Set this indicator if you want to use change documents to log changes to the document info record.
- ▶ **INTERNAL NUMBER RANGE/EXTERNAL NUMBER RANGE**
You use the number range controls to assign the external and internal number ranges.
- ▶ **FILE SIZE**
The specifications in relation to the maximum file size are relevant only if you don't use KPro to store the files.

You use the subfunction **DEFINE DOCUMENT STATUS** (see Figure 4.22) to define the status to be used. In SAP EAM, you generally don't need to use a multilevel status profile such as those used in product development. You require only a status that has activated the **RELEASE FLAG** indicator so that the document can be used in other business processes.

Change View " Define document status": Details

New Entries

Dialog Structure

- Define document types
 - Define language-dependent descriptions
 - Define document status
 - Display language-dependent descriptions
 - Define object links
 - Define transport of originals for ALE
 - Maintain object link descriptions
 - Define document status descriptions

Document Type: **EAM**

Document Status: **FR** [New Status]

Status: **RL**

Status text: **Released**

Attributes

Object Check Complete for ECM

Release Flag Distr. lock

Content version Check-In Required

Check in

Fld sel. [.]

Status type [.]

Prev. 1 [.]

Prev. 2 [.]

Prev. 3 [.]

Prev. 4 [.]

Prev. 5 [.]

Prev. 6 [.]

Workflow Task

Object Type [.]

Object ID [.]

Program exit [.] Immed.

Form routine [.]

SignStrat. [.]

Figure 4.22 Document Type: Status

You use the subfunction **DEFINE OBJECT LINKS** (see Figure 4.23) to define the SAP objects to which documents of this document type can be assigned.

From an SAP EAM perspective, these are the following:

- ▶ Equipment (EQUI)
- ▶ Functional locations (IFLOT)
- ▶ Reference functional locations (IRLOT)
- ▶ Object links (INET)
- ▶ Materials (MARA)
- ▶ Plant materials (MARC)
- ▶ Measuring points (IMPTT)
- ▶ Notifications (PMQMEL)
- ▶ Tasks (IMAV)
- ▶ Orders (PMAUFG)
- ▶ Order operations (PMAFVC)
- ▶ BOM headers (STKO_DOC)
- ▶ BOM items (STPO_DOC)
- ▶ Task lists (PMPLKO)

Change View " Define object links": Overview

New Entries

Dialog Structure

- Define document types
 - Define language-dependent descriptions
 - Define document status
 - Display language-dependent descriptions
 - Define object links
 - Define transport of originals for ALE
 - Maintain object link descriptions
 - Define document status descriptions

T...	Object	Object Desc.	Scr. No.	Val. Obj.	1:n ratio
EAM	EQUI	Equipment Master	204		<input type="checkbox"/>
EAM	IFLOT	Functional Location	205		<input type="checkbox"/>
EAM	PMQMEL	Maintenance Notific.	235		<input type="checkbox"/>
EAM	STPO_DOC	BOM Item	257		<input type="checkbox"/>

Figure 4.23 Document Type: Object Links

Don't set the 1:N RATIO indicator. If you do, this means that you can only assign a single document of this document type to the object. Generally, this doesn't make sense.

Maintain Storage System

You use this Customizing function to define the storage location (known as the content repository) for the original files. The system uses these storage systems for documents whose document type allows for storage via Knowledge Provider.

Prerequisites

If you want to use your own database tables to physically store documents, you must define these beforehand in Transaction SE11. Furthermore, their structure must correspond to the structure of the database Table SDOKCONT1.

Customizing Path

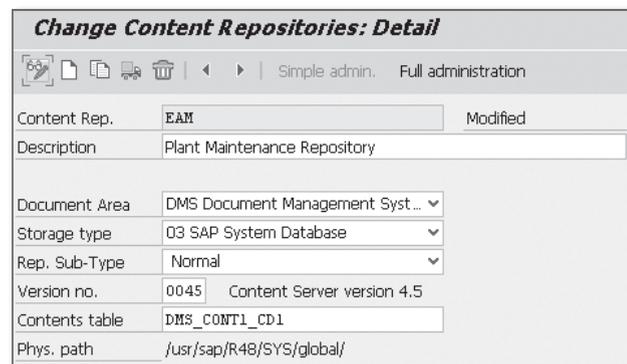
CROSS-APPLICATION COMPONENTS • DOCUMENT MANAGEMENT • GENERAL DATA • SETTINGS FOR STORAGE SYSTEMS • MAINTAIN STORAGE SYSTEM

Transaction

OAC0

Settings

Figure 4.24 shows the settings for a storage system.



Change Content Repositories: Detail	
Content Rep.	EAM Modified
Description	Plant Maintenance Repository
Document Area	DMS Document Management Syst...
Storage type	03 SAP System Database
Rep. Sub-Type	Normal
Version no.	0045 Content Server version 4.5
Contents table	DMS_CONT1_CD1
Phys. path	/usr/sap/R48/SYS/global/

Figure 4.24 Storage System

The following describes how to configure these settings from a plant maintenance perspective:

- ▶ The database of the SAP system should be the STORAGE TYPE.
- ▶ You should always select the latest VERSION NO. for the database interface (currently 0045).
- ▶ The CONTENTS TABLE is the database table in which the documents are stored. You can define this table as a client-specific or cross-client table. You must define your own database tables in Transaction SE11 beforehand.

Maintain Storage Category

You use this Customizing function to set up one or more logical views (storage categories) of a storage system (content repository). Having several views of the same storage system enables you to store the original files in a highly structured manner.

Prerequisites

You must define the content repository (storage system) beforehand.

Customizing Path

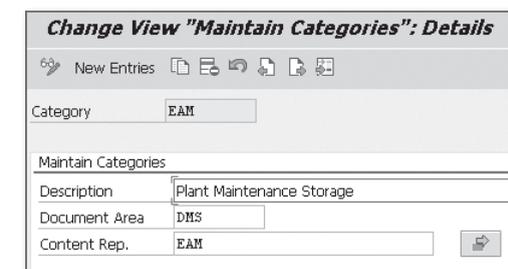
CROSS-APPLICATION COMPONENTS • DOCUMENT MANAGEMENT • GENERAL DATA • SETTINGS FOR STORAGE SYSTEMS • MAINTAIN STORAGE CATEGORY

Transaction

OACT

Settings

Figure 4.25 shows you how to assign a category to a content repository.



Change View "Maintain Categories": Details	
Category	EAM
Maintain Categories	
Description	Plant Maintenance Storage
Document Area	DMS
Content Rep.	EAM

Figure 4.25 Storage Category

Define Workstation Application

For all file types that you want to use in SAP EAM (e.g., PDF, JPG, DWG, and DOC), you must use this Customizing function to specify the application to which they belong as well as how you want to control these file types.

Prerequisites

You must install the necessary programs for starting the relevant file types beforehand.

Customizing Path

CROSS-APPLICATION COMPONENTS • DOCUMENT MANAGEMENT • GENERAL DATA • DEFINE WORKSTATION APPLICATION

Settings

Figure 4.26 shows an overview table of all applications and associated file types. The standard SAP delivery already contains a large number of applications and file types, which you should check for accuracy and completeness. If the necessary file types don't exist, you must add the corresponding new entries to this table.

Change View "Define workstation application": Overview

New Entries

Dialog Structure

- Define workstation application
 - Define workstation application
 - Define templates for original
 - Setup office integration

A...	Description	Suffix	ArchID	StartAuth	NoRena...	File format
ACD	Autocad	dwg	D3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.dwg,*.dxf
AV1	Video example	avi	D3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.avi
AVI	Video-Player for windows	avi	D3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.avi
BMP	Bitmap-Files	bmp	*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.bmp
BOD	BOD Informationen	bod		<input type="checkbox"/>	<input checked="" type="checkbox"/>	.bod
CAT	CATIA V5	*,*	*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	*.*
CGM	CGM Graphic	cgm	*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.cgm
DAT	DAT Files (for Reach IMD...	dat		<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.dat
DGN	Microstation J	dgn		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	*.dgn,*.*
DOC	Winword	doc	*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.doc,*.rtf,*..
DXF	Data Exchange Format	dxf		<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.dxf
EXE	Exe-File		D3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
GIF	GIF-Files	gif	*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*.gif

Figure 4.26 Work Station Applications: Overview

As an example, Figure 4.27 shows the detail screen for the application JPG. Here, the following is important:

- ▶ **FILE FORMAT**
Be sure to assign *all* potential file formats (e.g., DOC application with the file formats DOC, DOCX, and RTF, among others).
- ▶ **START AUTHORIZATION**
Select this indicator so that the application starts immediately after you double-click the file (e.g., a PDF in the equipment master) and is permitted to display the document.

Change View "Define workstation application": Details

New Entries

Dialog Structure

- Define workstation application
 - Define workstation application
 - Define templates for original
 - Setup office integration

Workstation application

WS application:

Description:

Archive identificatio:

File suffix for appl.:

File format:

MIME type:

Appl. Icon:

Start Authorization

You cannot rename temporary files

Dialog when overwriting

Data check off

Delete file after check-in

Original model

Addnl Files

Content version

Connection to Knowledge Warehouse

RFC Destination:

Info category:

Figure 4.27 Workstation Applications: Detail Screen

You use the DEFINE WORKSTATION APPLICATION IN NETWORK subfunction to define which program is to start when a certain file type is called. In Figure 4.28, this is shown for JPEG files.

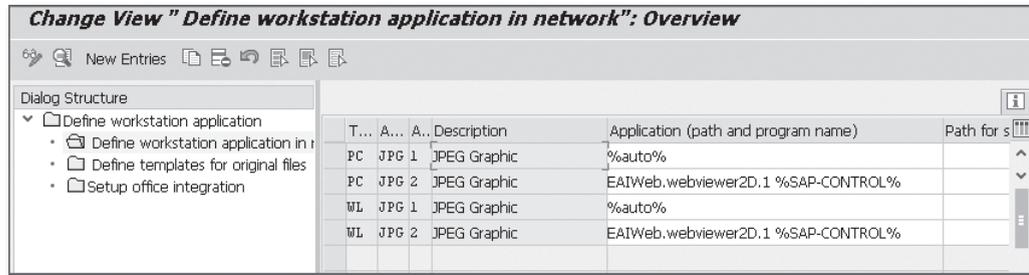


Figure 4.28 Define Workstation Application in Network

Note the following regarding this subfunction:

- ▶ It always makes sense to specify "%auto%" as the first alternative so that the workstation then automatically uses the general MIME technology to search for the correct program.
- ▶ As a second alternative, enter a specific path for the program that you want to start.

For certain purposes, SAP also provides integrated viewers that can be called using a predefined string (e.g., 2D CAD drawings via *EAIWeb.webviewer2D.1 %SAP-CONTROL%*, 3D CAD drawings via *EAIWeb.webviewer3D.1 %SAP-CONTROL%*, or right hemisphere files via *%VIEWER-CONTROL% %SAPPROVIS%*).

4.9 Field Selection

You use field selections to define attributes for each object type. For example, you can determine the following:

- ▶ Which field must be maintained
- ▶ Whether the field is merely a display field
- ▶ Whether it's a normal entry field
- ▶ Whether the field is to be hidden

Furthermore, you can and should base the field selection on *influencing fields*.

The field selection technique is available to you for almost all SAP objects. From an SAP EAM perspective, they are, in particular:

- ▶ Equipment and serial numbers
- ▶ Functional locations and reference functional locations
- ▶ Materials
- ▶ Notifications
- ▶ Orders, order operations, and components
- ▶ Completion confirmations
- ▶ Measuring points and measurement documents
- ▶ Maintenance plans
- ▶ Task lists
- ▶ Work centers

Customizing Functions for Field Selection

For each of the preceding objects, the system has separate Customizing functions for controlling the field selection. However, the technique is always the same. Next we'll discuss this technique using the example of the field selection for functional locations.

Prerequisites

If you want to base the field selection on influencing fields (e.g., the field selection for a functional location is based on the *functional location category* or the field selection for an order is based on the *order type*), you must define these influencing factors beforehand.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • FUNCTIONAL LOCATIONS • DEFINE FIELD SELECTION FOR FUNCTIONAL LOCATIONS

Transactions

- ▶ OIAE for functional location-specific data
- ▶ OIAF for fields that are common to both the functional location and the piece of equipment

Furthermore, for the field selection, separate transactions are assigned to all other objects; for example, Transaction OIAD (Equipment), Transaction OIWO (Maintenance Plans), Transaction OP5A – OP5H (Task Lists), Transaction OIAL (Notifications), Transaction OIAN (Order Header Data), Transaction OIOPD (Order Operations), or Transaction OIZN (Completion Confirmations).

Settings

You use the FIELD SELECTION FOR SPECIAL FUNCTIONAL LOCATION FIELDS subfunction to define the field selection for fields that concern the functional location only.

You use the FIELD SELECTION FOR FUNCTIONAL LOCATION (COMMON EQUIPMENT/LOCATION FIELDS) subfunction to define those fields that are common to both the functional location and the piece of equipment.

After you select the function and choose , you access an overview of all influencing fields. In the case of the functional location, the following fields are suitable:

- ▶ The activity category (ADD, CHANGE, and/or DISPLAY)
- ▶ The object type
- ▶ The functional location category

In particular, the functional location category is frequently selected so that the field selection is based on this category. You then have the following options for each field (see Figure 4.29):

- ▶ INPUT
The field is a normal entry field.
- ▶ REQ.
The field is a required entry field.
- ▶ DISP.
The field is a display only field.
- ▶ HIDE
The field is hidden.
- ▶ HiLi
The field is highlighted (in a different color).

Field Selection: Influencing Field

Delete value | Influencing | Modifiable | Screen groups | Influences

Screen group: Data for technical objects
Influencing field: FunctLocCategory
Contents: 

Modified fields						
Modifiable field	Field name	Input	Req.	Disp.	Hide	HiLi
ABC indicator	ITOB-ABCKZ	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Acquisition Value	ITOB-ANSWT	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Acquisition date	ITOB-ANSDT	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Asset	ITOB-ANLNR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>
AuthorizGroup	ITOB-BEGRU	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Business Area	ITOB-GSBER	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Catalog profile	ITOB-RBNR	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Company Code	ITOB-BUKRS	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Construction month	ITOB-BAUMM	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Construction type	ITOB-SUBMT	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Construction year	ITOB-BAUJJ	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Controlling Area	ITOB-KOKRS	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Cost Center	ITOB-KOSTL	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>
Country of manufact.	ITOB-HERLD	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>

Figure 4.29 Field Selection: Functional Location

If you want to base the field selection on several influencing fields (e.g., on the functional location category and object type), two influencing factors then apply to a field. SAP has clearly defined priority rules for such cases (see Figure 4.30).

	-	*	+	.
-	-	-	-	-
*	-	*	*	*
+	-	*	+	+
.	-	*	+	.

- = Hide field
 * = Display field
 + = Required entry field
 . = Normal entry field

Figure 4.30 Field Selection: Priority Rules

The priority rules are explained here:

▶ **Priority 1: Hide**

If one of the influencing factors defines a field as a field that is to be hidden, it's hidden irrespective of the field selection control for other influencing fields.

▶ **Priority 2: Display**

If it's not hidden, and an influencing factor defines it as a display field, it becomes a display field, even if other influencing factors define it as a required entry or normal entry field.

▶ **Priority 3: Required**

If it's not a hidden field or display field, and an influencing factor defines it as a required entry field, it becomes a required entry field, even if other influencing factors define it as a normal entry field.

▶ **Priority 4: Normal**

If no influencing factor defines it elsewhere, this field remains a normal entry field.

Highlighting fields in color isn't subject to any priority rules. If an influencing factor defines a field as highlighted, it's flagged with another color.

4.10 List Variants

In SAP EAM, a large number of lists are available to you. SAP provides lists for the following objects:

- ▶ Equipment (IE05, IH08)
- ▶ Fleet objects (IE36, IE37)
- ▶ Serial numbers (IQ08, IQ09)
- ▶ Functional locations (IL05, IH06)
- ▶ Reference functional locations (IL15, IH07)
- ▶ Object links for functional locations (IN15, IN16)
- ▶ Object links for equipment (IN18, IN19)
- ▶ Materials (IH09)
- ▶ Notifications (IW28, IW29)

- ▶ Notification items (IW68, IW69)
- ▶ Activities (IW64, IW65)
- ▶ Tasks (IW66, IW67)
- ▶ Orders (IW38, IW39)
- ▶ Order operations (IW37, IW49)
- ▶ Completion confirmations (IW47)
- ▶ Measuring points (IK07, IK08)
- ▶ Measurement documents (IK17, IK18)
- ▶ Maintenance plans (IP15, IP16)
- ▶ Maintenance items (IP17, IP18)
- ▶ Task lists (IA08, IA09)

In the case of all lists, a large number of Customizing functions for selecting and determining the layout of the lists are available to you, each of which is described next.

Customizing Functions for Configuring Lists

You can use these Customizing functions to define the following presettings for all users:

- ▶ Determine all potential selection fields.
- ▶ Set specific values for the selection fields.
- ▶ Perform the field selection for the list display.

These settings apply to all users who haven't created their own user-specific variants or don't use other general variants.

Similarly, list editing, which is introduced here, applies to all aforementioned objects. For the sake of simplicity, we'll use the example of a functional location to illustrate the list editing technique.

Prerequisites

Generally, there are no prerequisites. If, however, you want to define a selection or display variant that makes reference to other Customizing functions (e.g., functional location category), you must define it beforehand.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • FUNCTIONAL LOCATIONS • SET LIST EDITING FOR FUNCTIONAL LOCATIONS

Transaction

OIW6

Furthermore, separate transactions are generally assigned to all other Customizing functions for list editing; for example, Transaction OIYC (Equipment), Transaction OIYH (Serial Numbers), Transaction OIWW (Maintenance Plans), Transaction OIW5 (Maintenance Dates), Transaction OIWO (Task Lists), Transaction OIWI (Notifications), Transaction OIWL (Orders), Transaction OIWU (Operations), or Transaction OIW3 (Completion Confirmations).

Settings

When you execute the Customizing function, you obtain the following three subfunctions:

- ▶ LIST FOR SELECTION SCREEN: DISPLAY MODE
- ▶ LIST FOR SELECTION SCREEN: CHANGE MODE
- ▶ MAINTAIN LIST FOR FIELD SELECTION

You should first maintain the selection screen. Then, depending on your selection, you'll obtain a list of all potential selection fields. You can then choose **Variant Attributes** to access the detail screen. Here, you can decide how to proceed for each field. The settings on this screen have the following meaning (see Figure 4.31):

- ▶ **PROTECT FIELD**
If selected, the relevant selection criterion is write protected at runtime (e.g., if a user starts the variant).
- ▶ **HIDE FIELD**
If selected, the relevant selection criterion is hidden when a user starts a variant or changes the values.
- ▶ **HIDE FIELD 'BIS'**
If selected, the same applies here as in **HIDE FIELD**, and then it's not possible to specify an interval.

▶ **REQUIRED FIELD**

If selected, a value must be entered for the relevant selection criterion when the user starts a variant.

Selection Scrns	Field name	Type	Protect field	Hide field	Hide field 'BIS'	Save field without values	Switch GPA off	Required field
1.000	Functional Location	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.000	Partner Function	P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Partner	P	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Selection Profile	P	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Class Type	P	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Include Subordinate Classes	P	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Class	P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Segment	S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Start Point	S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	End Point	S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Length	S	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.000	Unit of Measure	P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 4.31 Functional Location: Selection Variant

You use the subfunction **MAINTAIN FIELD SELECTION LIST** to determine the layout of the standard list. You can then choose **Variant Attributes** to access a dialog box in which you can configure these settings (see Figure 4.32):

- ▶ **DISPLAYED COLUMNS**
Which fields are to be displayed?
- ▶ **SORT ORDER**
According to which criteria is the list to be sorted?
- ▶ **FILTER**
Is a filter to be used?
- ▶ **VIEW**
Do you want to output an SAP list or an Excel table?

► **DISPLAY**

For example, do you want a striped pattern, or do you want to optimize the column width?

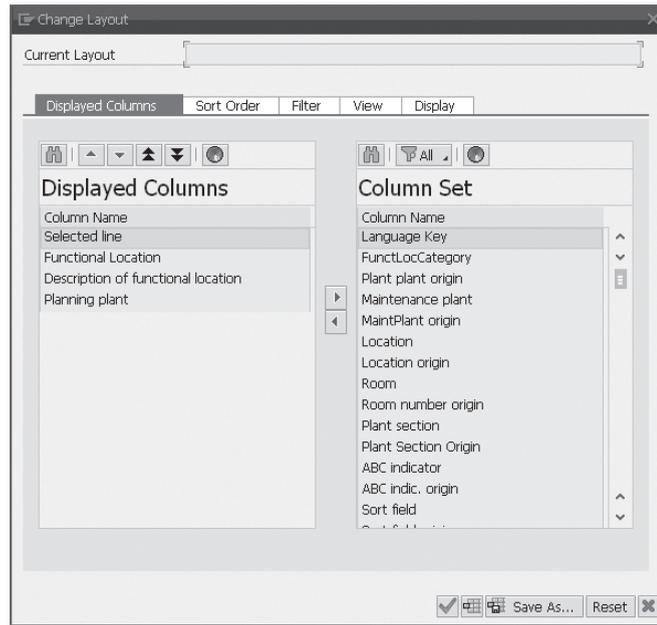


Figure 4.32 Functional Location: List Variant

4.11 Multilevel Lists

From an SAP EAM perspective, multilevel lists are available for the following:

- Equipment (IE07)
- Functional locations (IL07)
- Reference functional locations (IH18)
- Notifications (IW30)
- Orders (IW40)
- Task lists (IA10)

In the case of a list object (e.g., a functional location), multilevel lists are used to display other objects (e.g., orders, notifications, and documents) for a functional location.

Customizing Functions for the Field Selection for Multilevel List Displays

You use this Customizing function to adjust the presettings for multilevel lists. Here, you define which fields are to be displayed for which objects. These settings apply to all users who haven't created their own user-specific variants or don't use other general variants.

The multilevel list technique is available to you for all of the preceding SAP objects. For the sake of simplicity, we'll use the example of a functional location to illustrate the multilevel list technique.

Prerequisites

There are no specific prerequisites.

Customizing Path

PLANT MAINTENANCE AND CUSTOMER SERVICE • MASTER DATA IN PLANT MAINTENANCE AND CUSTOMER SERVICE • TECHNICAL OBJECTS • FUNCTIONAL LOCATIONS • FIELD SELECTION FOR MULTILEVEL LIST DISPLAYS OF FUNCTIONAL LOCATION

The following subfunctions are available for the individual objects:

- DEFINE FIELD SELECTION FOR FUNCTIONAL LOCATION FIELDS
- DEFINE FIELD SELECTION FOR EQUIPMENT USAGE DATA FIELDS
- DEFINE FIELD SELECTION FOR EQUIPMENT MASTER DATA FIELDS
- DEFINE FIELD SELECTION FOR PARTNER DATA FIELDS
- DEFINE FIELD SELECTION FOR NOTIFICATION DATA FIELDS
- DEFINE FIELD SELECTION FOR ORDER DATA FIELDS
- DEFINE FIELD SELECTION FOR CLASS DATA FIELDS
- DEFINE FIELD SELECTION FOR CHARACTERISTIC DATA FIELDS
- DEFINE FIELD SELECTION FOR DOCUMENT MANAGEMENT FIELDS
- DEFINE FIELD SELECTION FOR OBJECT LINK DATA FIELDS
- DEFINE FIELD SELECTION FOR MEASURING POINT AND COUNTER FIELDS

- ▶ DEFINE FIELD SELECTION FOR MEASUREMENT DOCUMENT AND COUNTER READING FIELDS
- ▶ DEFINE FIELD SELECTION FOR PERMIT FIELDS

Settings

Figure 4.33 shows the settings for the order segment in the multilevel list for functional locations. However, these are representative of all other objects.

Field desc.	DisPPosition	Invisible
Order	1	<input type="checkbox"/>
Order Type		<input type="checkbox"/>
Order category		<input checked="" type="checkbox"/>
Currency		<input checked="" type="checkbox"/>
Entered by	4	<input type="checkbox"/>
Created on	3	<input type="checkbox"/>
Changed by		<input type="checkbox"/>
Changed on		<input type="checkbox"/>
Description	2	<input type="checkbox"/>
Long txt exists		<input type="checkbox"/>
Company Code		<input type="checkbox"/>
Plant		<input type="checkbox"/>
Business Area		<input type="checkbox"/>
CO Area		<input type="checkbox"/>

Figure 4.33 Field Selection: Multilevel List for Functional Locations (Order Segment)

- ▶ DISPOSITION
You define, as a presetting, the position at which the field is to appear. By default, fields without an item number aren't displayed. When designing their individual layouts, users can change or delete the item number as well as enter an item number for other fields so that they are displayed.
- ▶ INVISIBLE
You define whether the field is to be invisible for user-specific list designs. If a field is invisible, a user can't select it for his variant.

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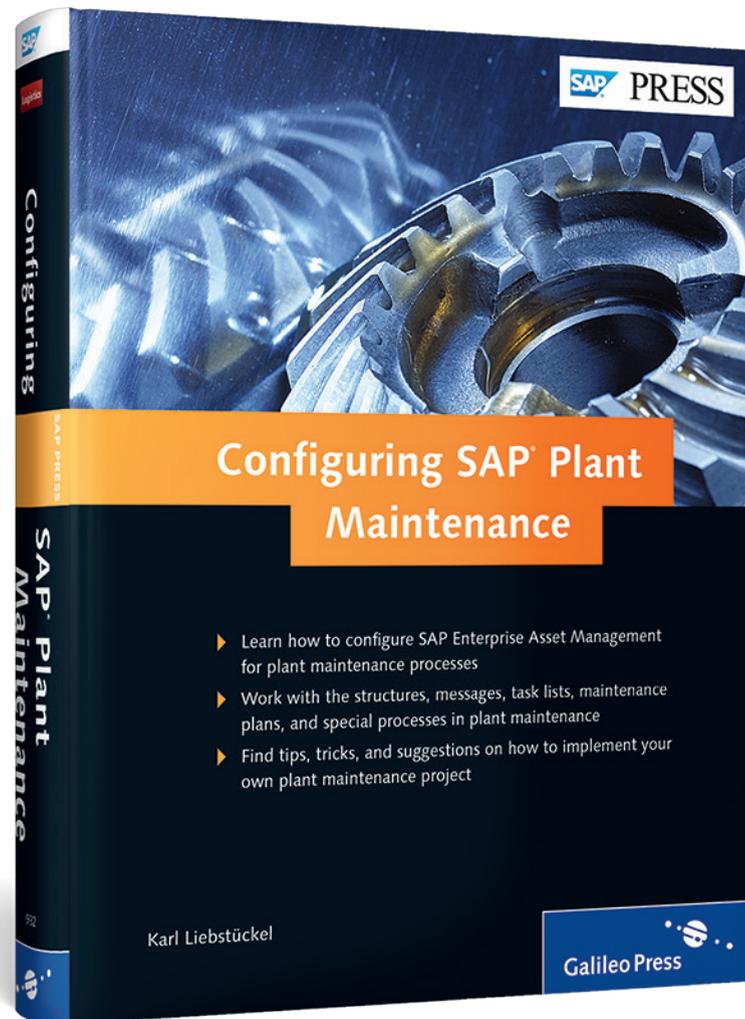
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Karl Liebstückel

Configuring SAP Plant Maintenance

639 Pages, 2014, \$69.95/€69.95

ISBN 978-1-59229-932-4

 www.sap-press.com/3487



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