How to... MDG-M: Best Practice for Maintenance Status

Applicable Releases:
From EHP6 FOR SAP ERP 6.0 and from SAP S/4HANA 1511

Version 1.8
March 2018
## Document History

<table>
<thead>
<tr>
<th>Document Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>First official release of this guide</td>
</tr>
<tr>
<td>1.10</td>
<td>Chapter 4.4 Alignment of field properties</td>
</tr>
<tr>
<td>1.20</td>
<td>Chapter 4.5 Period Indicator</td>
</tr>
<tr>
<td>1.30</td>
<td>Update chapter 4.4 Period Indicator</td>
</tr>
<tr>
<td>1.40</td>
<td>Update Prerequisites</td>
</tr>
<tr>
<td>1.50</td>
<td>Chapter 4.5 Influence the maintenance status</td>
</tr>
<tr>
<td>1.60</td>
<td>Small updates</td>
</tr>
<tr>
<td>1.70</td>
<td>Small updates</td>
</tr>
<tr>
<td>1.80</td>
<td>Chapter 4.5.2 and 4.5.3 Status G and Status B</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

1. BUSINESS SCENARIO.................................................................................................................. 4
2. PREREQUISITES.......................................................................................................................... 5
3. BACKGROUND INFORMATION.................................................................................................. 6
   3.1. Definition of Maintenance Status......................................................................................... 6
   3.2. Definition of Department .................................................................................................... 6
   3.3. Definition of View ............................................................................................................... 6
   3.4. Relation between Department, Maintenance Status, and Views ....................................... 6
   3.5. Determination of the Maintenance Status ......................................................................... 7
   3.6. Example for determination of maintenance status for entity MARCSALES ...................... 7
   3.7. Example for determination of minimal maintenance status with intersection set ............ 7
   3.8. Example for wrong set up of entity .................................................................................... 7
   3.9. Example for Intersection with Material type ......................................................................... 8
4. BEST PRACTICE.......................................................................................................................... 9
   4.1. New field on existing/new Entity ......................................................................................... 9
   4.2. Manufacturer Part Number ................................................................................................. 9
   4.3. Period Indicator .................................................................................................................. 9
   4.4. Alignment of field properties ............................................................................................. 9
   4.5. Influence the maintenance status ....................................................................................... 10
      4.5.1. Status E is missing ....................................................................................................... 10
      Step 1 Transformation class ..................................................................................................... 11
      Step 2 Extend SMT mapping ................................................................................................... 12
      4.5.2. Status G is undesirable ............................................................................................... 13
      4.5.3. Status B is missing ....................................................................................................... 14
1. BUSINESS SCENARIO

SAP Master Data Governance for Material (MDG-M) provides business processes to find, create, and change material master data, and to mark it for deletion. It supports the governance of material master data on a central hub and the distribution of material master data to connected operational and business intelligence systems.

The processes are workflow-driven and can include several approval and revision phases, including collaboration between all users participating in master data maintenance.

This guide provides background information about the maintenance statuses for the material master and the use of the maintenance statuses in MDG for Material. It provides also best practices and examples to influence the maintenance status.
2. PREREQUISITES

Search notes with search terms: PSTAT or maintenance status.

Check if the following SAP Notes are required and implemented in the system:

- 2461516  Functional Restrictions in MDG for Material with SAP Master Data Governance 9.1
- 2284745  Functional Restrictions in MDG for Material with SAP Master Data Governance 9.0
- 2129261  Functional restrictions in MDG-M in MDG8
- 1806108  Functional restrictions in MDG-M in MDG7 (incl. SP02)
- 2599756  MDG-M: Maintenance Status B missing when copying material from material template
- 2477974  MDG-M: Defaulting for maintenance status does not work for certain material type
- 2462838  MDG: Issue with Field Properties in the Generic genIL Adapter
- 2434235  MDG-M: Exception when SMT Mapping with fixed value is used
- 2429042  MDG-M: Maintenance Views in the Material Master after upgrade to MDG 8.0
- 2414999  Incorrect maintenance status determination for new storage location
- 2394628  Transfer of a maintenance status (PSTAT) as a template for the calculation
- 2380942  Purchasing view is not created if only "Tax Indicator for Material" field is fi
- 2344700  Further maintenance status reduction for ambiguous maintenance status
- 2326681  exclude unchanged fields when a new material is created
- 2313253  PSTAT not reduced for D status
- 2231080  Defaulting of maintenance status and change indicator settings
- 2002063  Inconsistencies in Maintenance Status Determination (5)
- 1996366  Inconsistencies in Maintenance Status Determination (4)
- 1918422  Field properties in MDGM do not consider transaction code
- 1979880  Inconsistencies in maintenance status determination 3
- 1958718  Inconsistencies in maintenance status determination 2
- 1956796  Inconsistencies in maintenance status determination
- 1899758  Wrong maintenance status for storage locations (MARD)
- 1820805  Reduction of maintenance status
- 1741251  Correction of maintenance status determination
3. BACKGROUND INFORMATION

This chapter gives you some background information about the determination of the maintenance statuses in MDG-M.

3.1. Definition of Maintenance Status

There are maintenance statuses for some material master database tables. In addition, there is an overall maintenance status for the complete material object. This overall maintenance status is made up of the maintenance statuses of the individual material master database tables.

The maintenance status is a technical field that it used by the system when determining what fields are mandatory for the material master. The maintenance status is used by ERP application areas or S/4HANA application areas to determine if the material master record can be used by those areas. Therefore, it is important that the maintenance status is set correctly.

It consists of one or more alphanumeric characters. The maintenance status is defined on field level; this is then fed up to the segment and object levels. When feeding the maintenance status upwards the system chooses the minimal subset of maintenance statuses to prevent too many dependencies.

The maintenance status of a segment may change if a field is maintained on the UI. If you maintain a particular field it is possible that this will add new characters to the maintenance status for the related segment and therefore could trigger messages to maintain additional mandatory fields.

When setting up your own entities (especially when updating and existing segment/database table with new fields) you need to be careful when configuring the maintenance statuses so that you don't lose data (due to clashes with the existing segment's field maintenance statuses) or get too many error messages for unexpected mandatory fields.

3.2. Definition of Department

A department is a key indicating which user departments have updated the material master record.

3.3. Definition of View

A view is a sub-section of the material master displaying information about the material. Examples include:

- A main screen, such as Basic Data 1 that you can select in the Select View(s) dialog box
- A secondary screen, of which there are the following types:
  - Additional screens such as Descriptions that you can access from every view
  - Screens that you can access in a view, for example, Production Versions from the MRP 4 view in the standard material master.

3.4. Relation between Department, Maintenance Status, and Views

Similar terms: Department, Maintenance Status, and Views

<table>
<thead>
<tr>
<th>Department</th>
<th>Maintenance Status</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work scheduling</td>
<td>A</td>
<td>Work Scheduling</td>
</tr>
<tr>
<td>Accounting</td>
<td>B</td>
<td>Accounting 1/2</td>
</tr>
<tr>
<td>Classification</td>
<td>C</td>
<td>Classification</td>
</tr>
<tr>
<td>MRP</td>
<td>D</td>
<td>MRPT 1/2/3/4</td>
</tr>
<tr>
<td>Purchasing</td>
<td>E</td>
<td>Purchasing, Foreign Trade: Import Data, Purchase Order Text</td>
</tr>
<tr>
<td>Production resources/tools</td>
<td>F</td>
<td>Production Resources/Tools</td>
</tr>
<tr>
<td>Costing</td>
<td>G</td>
<td>Costing 1/2</td>
</tr>
<tr>
<td>Basic data</td>
<td>K</td>
<td>Basic Data 1/2</td>
</tr>
<tr>
<td>Storage</td>
<td>L</td>
<td>General Plant Data / Storage 1/2</td>
</tr>
<tr>
<td>Forecasting</td>
<td>P</td>
<td>Forecasting</td>
</tr>
<tr>
<td>Quality management</td>
<td>Q</td>
<td>Quality Management</td>
</tr>
<tr>
<td>Warehouse management</td>
<td>S</td>
<td>Warehouse Management 1/2</td>
</tr>
</tbody>
</table>
3.5. Determination of the Maintenance Status

The maintenance statuses for the material and its segments are determined automatically during check and activation of a change request, based on the backend settings (for example OMS9 and OMSR) and coding of the material master.

If you create/change some data in one entity, then the system determines the maintenance status. The value of the maintenance status of a segment (corresponding to the backend tables MARA, MARC, MARD and MBEW) is the minimum status that allows updating the fields of the MDG-M entities provided for this segment. If the system would always use the maximal possible maintenance status for the segment, additional mandatory fields might become relevant, and this could cause additional, unwanted errors during activation.

Note that all fields of an entity are considered for maintenance status determination, but not those with an initial value (0 or space).

For example, if a field on entity MARCSALES is maintained with a value for material P-240214 in plant 0001, then the maintenance status of the MARC segment for P-240214 /0001 will contain the sales status 'V'.

3.6. Example for determination of maintenance status for entity MARCSALES

Maximal possible maintenance status for segment MARC: K, V, E, D, P, A, L, S, Q, B, G

Entity MARCSALES includes for example:

<table>
<thead>
<tr>
<th>Field</th>
<th>Maintenance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTAV</td>
<td>V</td>
</tr>
<tr>
<td>MSTDV</td>
<td>V</td>
</tr>
<tr>
<td>TRAGR</td>
<td>V</td>
</tr>
</tbody>
</table>

⇒ Minimal Maintenance Status = V
⇒ Update possible because minimal status is smaller than the maximal status

3.7. Example for determination of minimal maintenance status with intersection set

Maximal possible maintenance status for segment MARC: K, V, E, D, P, A, L, S, Q, B, G

Material Type has departments: Basic data (K), MRP (D), Work scheduling (A)

Entity ZMARCXXXX includes only field A, B, C

<table>
<thead>
<tr>
<th>Field</th>
<th>Maintenance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A, K, D, L</td>
</tr>
<tr>
<td>B</td>
<td>K, D</td>
</tr>
<tr>
<td>C</td>
<td>V, E, D, P, A, L, S, Q, B, G</td>
</tr>
</tbody>
</table>

⇒ Minimal Maintenance Status = D
⇒ Intersecting set with maintenance status from material type = D
⇒ Update possible because minimal status is smaller than the maximal status

3.8. Example for wrong set up of entity

Maximal possible maintenance status for segment MARD: D, L,

Material Type has departments: Basic data (K), MRP (D), Work scheduling (A), Storage (L)

Entity ZMARDXXXX includes only field A and B

<table>
<thead>
<tr>
<th>Field</th>
<th>Maintenance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>D, L</td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>
 Minimal Maintenance Status = D, L
 Update never possible because minimal status is equal than the maximal status

3.9. Example for Intersection with Material type

Maximal possible maintenance status for segment MARC: K, V, E, D, P, A, L, S, Q, B, G
Material Type has departments: Basic data (K), MRP (D), Work scheduling (A)
Entity ZMARCXXXX includes only field A, B, C

<table>
<thead>
<tr>
<th>Field</th>
<th>Maintenance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A, K, D, L</td>
</tr>
<tr>
<td>B</td>
<td>K, D</td>
</tr>
<tr>
<td>C</td>
<td>F</td>
</tr>
</tbody>
</table>

 Minimal Maintenance Status = K, D, F
 Update possible because minimal status is smaller than the maximal status
 Intersecting set with maintenance status from material type = K, D
 Value for Field C gets lost.

Note: The maintenance statuses (departments) assigned to the material type (OMS9) are also considered: If a status is determined that is not relevant for the given material type, this status is removed from the result.
4. BEST PRACTICE

Please observe the best practices for the following scenarios.

4.1. New field on existing/new Entity

**Symptom:**
If you enhance an SAP entity, enhance a user-defined entity, or create a new entity, ensure that the maintenance status fits into the maintenance status of the other fields of this entity.

**Example:**
Enhancing entity MATERIAL with field TRAGR add the maintenance status ‘V’ to entity MATERIAL, making weight unit and transportation group mandatory. This might not be intended, as the view might (depending on customizing) require additional mandatory fields.

**Recommendation:**
Use transaction OMSR to check your customizing and find the maintenance statuses of the fields included the entity. There you can also set fields to optional so that no fields are marked as mandatory due to the derived maintenance status.

4.2. Manufacturer Part Number

**Symptom:**
The field MPROF (Manufacturer part profile) is modelled as part of the MARAPURCH entity, which requires the maintenance status ‘E’. For a user-defined material, this maintenance status is often not necessary.

**Recommendation:**
In this case, you can remove this field from the governance scope and add a new, customer field for example to entity MATERIAL, mapping to MARA-MPROF. Similarly, MFRPN/MFRNR/BLMATN (Manufacturer Part Number/Manufacturer number/Number of firm’s own inventory-managed material) could likewise be moved to the entity MATERIAL.

4.3. Period Indicator

**Symptom:**
The field period indicator PERMRPFC is modelled as part of the MARCMRPFC entity, which requires the maintenance status ‘D’. In case you copy a material where MARC-PERKZ is maintained but not the MRP views, this will lead to unwanted maintenance status ‘D’. You will get fields mandatory like MRP type.

**Recommendation:**
Apply SAP note 2231080. Initial fields are not considered in the maintenance status determination.

4.4. Alignment of field properties

**Symptom:**
1. In OMSR, a field is mandatory/optional for creation (MM01) and read-only for change (MM02)
2. Field was maintained during creation.
3. During material change, the MDGM UI field properties consider this field open for input (uses MM01)
4. The Material_Maintain_Dark (MMD) ignores this value during activation
   a. MMD first tries to create a segment (or view) – fails, as segment already exists
   b. MMD then changes the material – changed field is read-only and therefore not updated

**Recommendation:**
MDG uses the field properties maintained in OMSR for transaction MM01.

To avoid misalignment between field properties in the UI and field properties considered in the asynchronous activation, synchronize the field properties in transaction OMSR for transactions MM01 and MM02. Otherwise, a field that is optional in the UI might be ignored during activation.
4.5. Influence the maintenance status

Based on the entered data, the system calculates the Maintenance status. If you need an additional status there are different ways to influence this, for example:

1. **Z Field solution with single maintenance status:**
   Example:
   You will be able to achieve the creation of a work scheduling department by: Enhancing MARA by adding a ZPURCH field that has a single A status in T130F. You need to map the MARA-ZPURCH field to a corresponding customer-defined field in the MATERIAL entity. This field can have a simple type like Boolean or CHAR1 and can be set by means of a BRF+ rule or derivation. The Mat API method build_maint_status then determines the A status according to T130F.

2. **Z Field for PSTAT:**
   Extend MDG-M data model with the ZZPSTAT field. Then map MARCBASIC-ZZPSTAT to MARC-PSTAT in the SMT Mapping. Example: Derive E status to ZZPSTAT if purchasing group is maintained. To do this, you must implement SAP Note 2344700.

3. **SMT Mapping Solution**
   **Symptom 1:** View Purchasing (status E) is missing.
   Using SMT transformation type Complex transformation, the status E can be added if a Purchasing Group has been maintained.
   **Symptom 2:** Only View Accounting (status B) and not View Costing (status G) should be created to avoid additional fields like MBEW-EKLAR (Costed with Quantity Structure) and MARC-LOSGR (Planned lot size). Using SMT transformation type Complex transformation, the status G can be avoided by adding status B.

The following chapters describes solution 3 with SMT Mapping in more detail.

4.5.1. Status E is missing

**Symptom:**
Due to the minimum determination approach (see also section 3.7 Example for determination of minimal maintenance status with intersection set) you might run into determination cases, where a certain status is “minimized” although it is needed for business processes.

Such a case can be identified according to the following example:

Based on the standard Customizing, the field Purchasing Group refers to maintenance status ‘D’ and ‘E’. If you want to maintain another field that only refers to status ‘D’, such as MRP Type, within the same Change Request, only maintenance status ‘D’ is determined using the minimum approach.

<table>
<thead>
<tr>
<th>Field</th>
<th>Maintenance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARC-EKGRP</td>
<td>D, E</td>
</tr>
<tr>
<td>MARC-DISMM</td>
<td>D</td>
</tr>
</tbody>
</table>

This determination behavior leads to problems about the creation of purchasing documents, which require status ‘E’.

**Recommendation:**
Precondition: SAP Notes 2344700, 2326681 and 2231080.

Field PSTAT is solely an internal field that gets filled in in the background automatically. However, it is made available with target structure MDG_BS_MAT_S_MARC used within the SMT mapping for the corresponding entity MARCPURCH. SMT mapping offers the opportunity to influence the maintenance status on MARC level using straight-forward extension approaches. Refer to the How-to Guides (available on
The SMT mapping gets called in the access class, and so is processed anytime checks, saves, or submits are carried out during the change request processing. Therefore, know possible consequences of additional maintenance status values, such as additional required field checks, will become apparent while processing a change request.

For the given example, the relevant SMT mapping would be MDG_BS_MAT_MAP_2PP. The relevant mapping step would be MDG_BS_MAT_MARCPURCH, which aims to map entity MARCPURCH from the generated source structure /MDGMM/_S_MM_PP_MARCPURCH to MDG_BS_MAT_S_MARC. In the example, the maintenance status E should be added if a Purchasing Group has been maintained. This can be achieved with an extension of mapping step MDG_BS_MAT_MARCPURCH using the SMT transformation type Complex Transformation.

**Step 1 Transformation class**

A complex transformation requires a transformation class that implements a transformation method. You need to create a normal ABAP Class that contains the interfaces IF_SMT_PREFETCH and IF_SMT_TRANSFORMATION in the interface section. The method must be a static method that is publicly visible:

The example method is called MAP_PSTAT and has following signature:
The sample code is straightforward:

```java
METHOD map_pstat.

* Here you can influence the setting of the maintenance status.
* For larger flexibility the signature has to be extended by
  additional input fields available within the generated source
  structure.
* Please be aware of any consequences, such as additional field
  checks, which come with an additionally set maintenance status!

CHECK NOT i_tkurp IS INITIAL.
  e_pstat = 'E'; "Purchasing View

ENDMETHOD
```

**Step 2 Extend SMT mapping**

Use transaction MDGIMG. Go to General Settings-> Data Modeling-> Extend Mappings-> Extend Mappings. Open the relevant mapping (here MDG_BS_MAT_MAP_2PP).

Click on Edit and select the mapping step MDG_BS_MAT_MARCPURCH. Click on Details.

Then click on Transformations and click Add. Use transformation type Complex Transformation, insert your Transformation Class and Method. The defined import and export parameters from the transformation method are offered as assignable parameters. To assign them, select the line with the import parameter and select the line with the corresponding field in the source structure table below. Then press the ‘Assign’ button. Do the
same for the export parameter and the corresponding target structure field. Press ‘Save’ to complete the complex transformation definition. Following image shows the integration of the complex transformation into the SMT mapping:

The outcome of this extension is that maintenance status ‘E’ is considered in addition to the standard status determination and is then available within both the MARC and MARA tables after activation of the change request.

It is important to mention that influencing the maintenance status requires awareness of, and accordance with, the corresponding (Customer-specific) field property Customizing. In the given example, the required field check comes up with field MTART (material type) because of the additional maintenance status ‘E’.

4.5.2. Status G is undesirable

**Symptom**

Due to the minimum determination approach the maintenance status is BG if you maintain Valuation Class, Price Unit, Price control indicator, and the Standard price. You want to avoid the view Costing. You want to avoid additional fields like MBEW-EKLAR (Costed with Quantity Structure) and MARC-LOSGR (Planned lot size).

<table>
<thead>
<tr>
<th>Fields</th>
<th>Name</th>
<th>Field PSTAT</th>
<th>PSTAT after Activation</th>
<th>Automated fields</th>
<th>Name</th>
<th>Field PSTAT</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBEW-BKLAS</td>
<td>Valuation Class</td>
<td>BG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBEW-PEINH</td>
<td>Price unit</td>
<td>BG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBEW-VPRSV</td>
<td>Price control indicator</td>
<td>BG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBEW-STPRS/VERPR</td>
<td>Standard price/</td>
<td>BG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Moving Average Price

<table>
<thead>
<tr>
<th>Status MBEW</th>
<th>BG</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARC-LOSGR</td>
<td>Planned lot size</td>
</tr>
<tr>
<td>MBEW-EKLAR</td>
<td>Costed with Quantity Structure</td>
</tr>
</tbody>
</table>

**Recommendation:**
Follow the recommendation of 4.5.1 Status E is missing.
For the given example, the relevant SMT mapping would be MDG_BS_MAT_MAP_2PP. The relevant mapping step would be MDG_BS_MAT_MBEWVALUA, which aims to map entity MBEWVALUA from the generated source structure /MDGMM/_S_MM_PP_MBEWVALUA to MDG_BS_MAT_S_MBEW.
In the example, the maintenance status B should be added. This can be achieved with an extension of mapping step MDG_BS_MAT_MBEWVALUA using the SMT transformation type Complex Transformation.
Exchange the status E in the description above with status B.

#### 4.5.3. Status B is missing

**Symptom:**
You reuse a material, that you previously created with MDG, as a copy template in the MDG Material UI. The template material has maintenance status 'BG' on table MBEW. After the activation of the newly created material, the maintenance status is reduced to 'G' (Costing) only. The Accounting view 'B' is missing.

**Solution:**