

PUBLIC

How-To: Best Practice for Maintenance Status

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1.00	First official release of this guide
1.10	Chapter 4.4 Alignment of Field Properties
1.20	Chapter 4.5 Period Indicator
1.30	Update chapter 4.4 Period Indicator
1.40	Update Prerequisites
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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. MDG offers change request (CR)-based processing of master data with integrated workflow, staging, approval, activation, and distribution.

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 Background Information

In this chapter, you will find information about the determination of the maintenance statuses in MDG-M.

2.1 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 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 statues 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 statues) or get too many error messages for unexpected mandatory fields.

Note: As of SAP S/4HANA 2023, custom Z-fields are no longer taken into account when determining the maintenance status.

2.2 Definition of Department

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

2.3 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.

2.4 Relation Between Department, Maintenance Status, and Views and Fiori Facet

Additional information for the Material Master and its departments can be found here:

https://help.sap.com/docs/SAP S4HANA ON-

PREMISE/f7fddfe4caca43dd967ac4c9ce6a70e4/46c3b853dcfcb44ce10000000a174cb4.html

Additional information for the Manage Product Master App can be found here:

https://help.sap.com/docs/SAP S4HANA ON-

PREMISE/bc6b9325fedd4344a84412b2195064fa/0483875792f25c08e10000000a441470.html

Similar terms: Department, Maintenance Status, Views, and Fiori Facet

Department	Maintenance Status	Views in MMxx transactions	Fiori Facet in 'Manage Product Master Data' App
Work scheduling	Α	Work Scheduling	Work Scheduling
Accounting	В	Accounting 1/2	Valuation Area
Classification	С	Classification	Classification
MRP	D	MRP1/2/3/4	Plants -> MRP Data
Purchasing	Е	Purchasing, Foreign Trade: Import Data, Purchase Order Text	Purchasing (MARA) Plants -> Purchasing
Production resources/tools	F	Production Resources/Tools	Production Resources / Tools
Costing	G	Costing 1/2	Plants -> Costing
Basic data	K	Basic Data 1/2	General Information
Storage	L	General Plant Data / Storage 1/2	Storage (MARA) Plants -> Storage Locations
Forecasting	Р	Forecasting	Plants -> Forecasting
Quality management	Q	Quality Management	Plants -> Quality Management
Warehouse management	S	Warehouse Management 1/2	Warehouse Management
Sales	V	Sales: Sales Org. Data 1/2, Sales: General/Plant Data, Foreign Trade: Export Data, Sales Text	Sales (MARA) Distribution Chains Plants -> Sales (MARC)
Plant stocks	Х		
Storage location stocks	Z		

2.5 Determination of the Maintenance Status

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

Until SAP S/4HANA 2022 MDG determines the maintenance status:

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.

As of SAP S/4HANA 2023 (Business Function: MDG_MATERIAL_13) the Unified Product API determines the maintenance status:

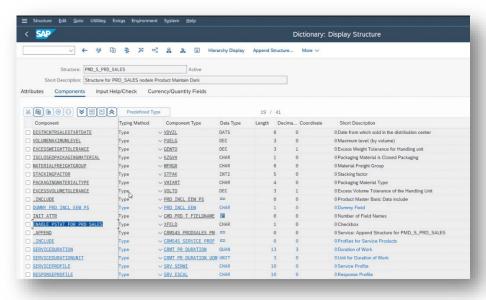
MDG doesn't determine the status anymore as the Unified Product API is used. The logic to determine the maintenance status is done in a slightly different way. Now the fields are grouped in CDS nodes. The PSTAT is calculated using the node of the structure which has a its own maintenance status. For example, structure I PRODUCTSALESDELIVERY points to PSTAT status V.

There are also some additional calculations. Some parent nodes like I PRODUCT,

 $\label{lem:condition} \begin{tabular}{ll} $\tt I_PRODUCTVALUATIONBASIC$ get a status brought from the child nodes. For example $\tt I_PRODUCTVALUATIONBASIC$: if only fields from $\tt I_PRO$

<code>I_PRODUCTVALUATIONCOSTING</code> are filled then G, if only fields from <code>I_PRODUCTVALUATIONACCT</code> then B, if from both then BG. There are also some special logics such as the minimum <code>MARC</code> status: special handling for A, if A is not allowed, then E and V.

However, the status can be influenced by filling a special field (for example <code>ENABLE_PSTAT_FOR_PRD_SALES</code> for Sales). The maintenance status of the structure is used when at least one standard field or the field <code>ENABLE_PSTAT_FOR_xxx</code> is filled. The status is determined only by the standard fields and this field; custom Z-fields are not considered.



2.5.1 Example for Determination of Maintenance Status for Entity MARCSALES

The maximum possible Maintenance Status for segment MARC: K, V, E, D, P, A, L, S, Q, B, G Entity MARCSALES includes for example:

Field	Maintenance Status
MSTAV	V
MSTDV	V
TRAGR	V

- → The minimum Maintenance Status = V
- → Update possible because minimum status is smaller than the maximum status

As of SAP S/4HANA 2023: I_PRODUCTSALES determines V.

2.5.2 Example for Determination of Minimal 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:

Field	Maintenance Status
Α	A, K, D, L
В	K, D
С	V, E, D, P, A, L, S, Q, B, G

- → The minimum Maintenance Status = D
- → Intersecting set with Maintenance Status from material type = D
- → Update possible because the minimum status is smaller than the maximum status

As of SAP S/4HANA 2023: Customer-specific Z-fields are not considered.

2.5.3 Example for Intersection With Material Type

The maximum 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:

Field	Maintenance Status
Α	A, K, D, L
В	K, D
С	F

- → The minimum Maintenance Status = K, D, F
- → Update possible because the minimum status is smaller than the maximum 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.

As of SAP S/4HANA 2023: If a CDS structure is filled that has a maintenance status that is not relevant for the given material type, the data will be lost.

3 Best Practice

Please observe the best practices for the following scenarios.

3.1 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.

As of SAP S/4HANA 2023: The Unified Product API determines the maintenance status from the corresponding CDS nodes.

3.2 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 type, 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/BMATN (manufacturer part number/manufacturer number/number of firm's own inventory-managed material) could likewise be moved to the entity MATERIAL.

As of SAP S/4HANA 2023: The Unified Product API determines the maintenance status from the corresponding CDS nodes.

3.3 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. During activation the value is ignored
 - a. first tries to create a segment (or view) fails, as segment already exists
 - b. 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 <code>OMSR</code> for transactions <code>MM01</code> and <code>MM02</code>.

Otherwise, a field that is optional in the UI might be ignored during activation.

3.4 Influence the Maintenance Status up to SAP S/4HANA 2022

Based on the entered data, the MDG calculates the maintenance status until SAP S/4HANA 2022. 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 A status according to T130F is determined.

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.

3.4.1 Status E is Missing (Relevant up to SAP S/4HANA 2022)

As of SAP S/4HANA 2023: MARC-EKGRP only has status E (I_PRODUCTPLANTPROCUREMENT). Therefore, status E is determined.

Symptom (up to SAP S/4HANA 2022):

Due to the minimum determination approach (also see section 3.7 Example for Determination of Minimal 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.

Field	Maintenance Status
MARC-EKGRP	D, E
MARC-DISMM	D

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

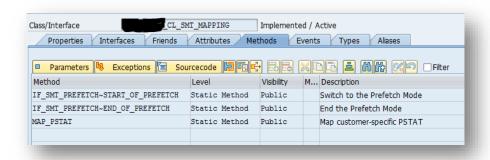
entity MARCPURCH. SMT mapping offers the opportunity to influence the maintenance status on MARC level using straight-forward extension approaches. For information about the basic enhancement approach for SMT mappings, see the how-to guides (available at https://community.sap.com/topics/master-data-governance-of-material-data).

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.

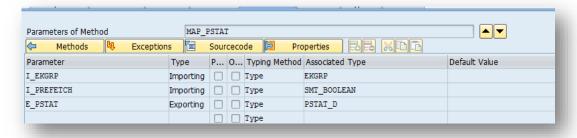
For the given example, the relevant SMT mapping would be MDG_BS_MAT_MAP_2PP. The relevant mapping step would be MDG_BS_MAT_MARCPURCH, which aims to map entity MARCPURCH from the generated source structure /MDGMM/_S_MM_PP_MARCPURCH to MDG_BS_MAT_S_MARC. In the example, the maintenance status E should 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 <code>IF_SMT_PREFETCH</code> and <code>IF_SMT_TRANSFORMATION</code> 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:



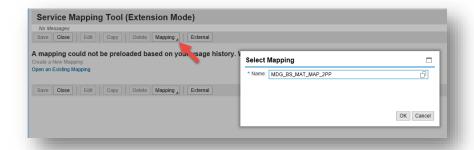
The sample code is straightforward:

```
MAP PSTAT
Method
                                                                  Active
        METHOD map pstat.
     2
     3

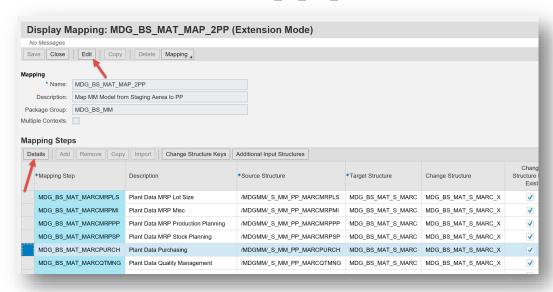
atural ^+ Here you can influence the setting of the maintenance status.
          * For larger flexibility the signature has to be extended by
     5
          * additional input fields available within the generated source
          * structure.
          * Please be aware of any consequences, such as additional field
     9
         * checks, which come with an additionally set maintenance status!
    10
    11
              CHECK NOT i ekgrp IS INITIAL.
    12
              e pstat = 'E'. "Purchasing View
    13
            ENDMETHOD.
    14
```

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).

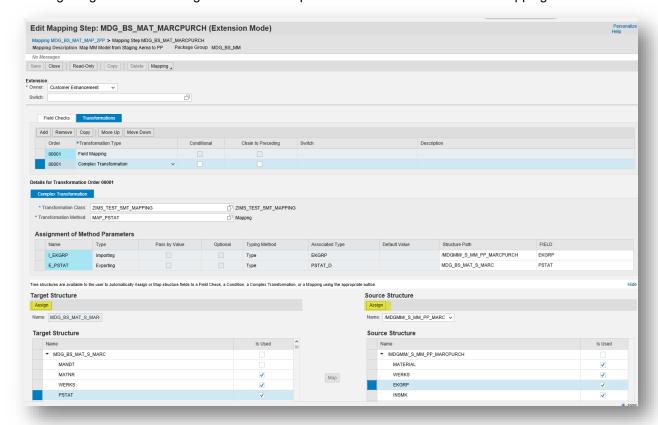


Click on Edit and select the mapping step MDG BS MAT MARCPURCH. Click on Details.



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 come ups with field MTART (material type) because of the additional maintenance status E.

3.4.2 Status G is Undesirable (Relevant up to SAP S/4HANA 2022)

As of SAP S/4HANA 2023, this is no longer relevant. As the fields MBEW-BKLAS, MBEW-PEINH, MBEW-VPRSV, MBEW-STPRS/ VERPR are in I PRODUCTVALUATIONACCT, only status B is determined.

Symptom (up to SAP S/4HANA 2022):

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).

Fields	Name	PSTAT	PSTAT after Activation	Automated fields	Name	PSTAT	Reason
MBEW- BKLAS	Valuation Class	BG					
MBEW- PEINH	Price unit	BG					
MBEW- VPRSV	Price control indicator	BG					
MBEW- STPRS/ VERPR	Standard price/ Moving Average Price	BG					
Status MBEW			BG				
				MARC- LOSGR	Planned lot size	G	If PSTAT G on MARC,
							then LOSGR >= MBEW-PEINH
				MBEW- EKLAR	Costed with Quantity Structure	G	<pre>If PSTAT G and T134-EKALR = X (Customizing), then MBEW- EKLAR = X</pre>

Recommendation:

Follow the recommendation of 4.5.1Status E is missing.

For the given example, the relevant SMT mapping would be <code>MDG_BS_MAT_MAP_2PP</code>. The relevant mapping step would be <code>MDG_BS_MAT_MBEWVALUA</code>, which aims to map entity <code>MBEWVALUA</code> from the generated source structure <code>/MDGMM/SMMPPMBEWVALUA</code> to <code>MDGBSMATSMBEW</code>.

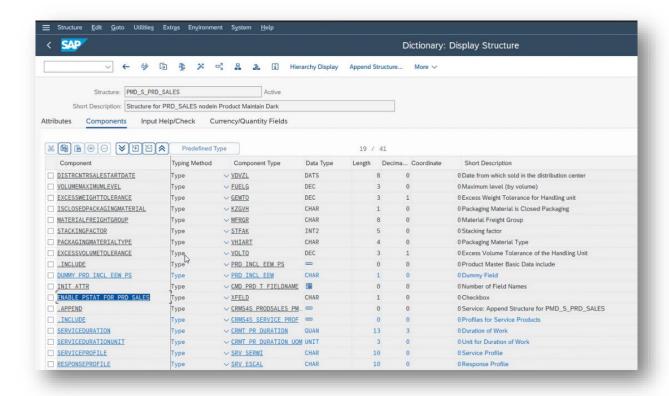
In the example, the maintenance status B should be added. This can be achieved with an extension of mapping step MDG_BS_MAT_MBEWVALUA using the SMT transformation type **Complex Transformation**. Exchange the status E in the description above with status B.

3.5 Influence the Maintenance Status as of SAP S/4HANA 2023

As of SAP S/4HANA 2023, the Unified Product API determines the maintenance status from the corresponding CDS nodes. However, customer-specific Z-fields are not considered.

Therefore, the options described in chapter 3.4 Influence the Maintenance Status up to SAP S/4HANA 2022 no longer work.

The maintenance status of the structure is only determined when at least one standard field or the field <code>ENABLE_PSTAT_FOR_XXX</code> is filled. If you want the mandatory field checks to be executed anyway, you can use <code>BADI_MATERIAL_CHECK</code> or use Validation Rules of MDG Data Quality Management. For more information see chapter MDG, Data Quality Management Validation Rules in How-To Guide Maintain Check and Derivation Rules or SAP Help Managing Validation Rules.



4 Additional Information

4.1 Further Reading

4.1.1 Information on SAP MDG on SAP S/4HANA

- Exchange knowledge: SAP Community | Q&A | Blog
- Try SAP Master Data Governance on S/4HANA for free: Trial Version
- Learn more: Latest Release | Webinars | Help Portal | How-to Information | Key Presentations

4.1.2 SAP Roadmap Explorer

• Please see the <u>roadmap for SAP Master Data Governance</u>

4.1.3 Related Information

• Learn more: Floorplan Manager for Web Dynpro ABAP | How to Adapt FPM | FPM Blog | How-to Information | Service Mapping Tool | SAP S/4HANA Cookbook CVI

4.2 SAP Notes

In addition to the detailed explanations written in this document, please see the following SAP Notes for further important information.

Note	Description
3194967	MDG Customer Connection 2021 for S/4HANA 2022
3043582	MDG Customer Connection 2020
3134600	MDG-M: Supported fields in Data Model MM
1806108	Functional restrictions in MDG-M in MDG7 (incl. SP02)
2129261	Functional restrictions in MDG-M in MDG8
2284745	Functional Restrictions in MDG for Material with SAP Master Data Governance 9.0
2461516	Functional Restrictions in MDG for Material with SAP Master Data Governance 9.1
2656693	Functional Restrictions in MDG for Material in SAP Master Data Governance 9.2 and on SAP S/4HANA 1809
2816571	Functional Restrictions in MDG for Material on SAP S/4HANA 1909
2948873	Functional Restrictions in MDG for Material on SAP S/4HANA 2020
3070012	Functional Restrictions in MDG for Material on SAP S/4HANA 2021
3219945	Functional Restrictions in MDG for Material on SAP S/4HANA 2022
2479869	Usage of Lean Classification with SAP Master Data Governance
<u>1619534</u>	How to Create, Enhance and Adapt FPM Applications
1637249	MDG: Information for efficient message processing
2105467	MDG Performance
<u>2561461</u>	Scope of support for SAP Master Data Governance (MDG)
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
1918422	Field properties in MDGM do not consider transaction code
2002063	Inconsistencies in Maintenance Status Determination (5)
1996366	Inconsistencies in Maintenance Status Determination (4)
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

Search notes with search terms: PSTAT or maintenance status.