

**PUBLIC** 

# How-To: Setup and Enhance the SAP HANA-Based Search for Material

Applicable Releases: All

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## 1. BUSINESS SCENARIO

SAP Master Data Governance provides business processes to find, create, change, and mark master data for deletion. It supports the governance of master data in a central hub and the distribution to connected operational and business intelligence systems.

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

A users can search for materials that are stored in the active or in the staging area. The search criteria combine material attributes and classification. The search uses SAP HANA-Based Search, Enterprise Search or alternative search providers.

As of MDG 7.0 it is also possible to use SAP HANA-Based Search as search provider. If you have extended the data model MM and want to search with these new fields you have to extend the search.

This guide provides background information about the SAP HANA-Based Search and describes how to configure it if you have extended the data model.



#### 2. GENERAL INFORMATION

# **Function in Detail: Material Processes**

Search Options in SAP Master Data Governance

The following options are delivered:

You can use SAP HANA-based search.

- You can use it in a side-by-side approach or fully embedded if MDG itself runs on an SAP HANA database.
- Follow the Configuration Guide which is available on <u>SAP Help</u>.
- With SAP HANA-based search for MDG, the federated search is not supported. If you require search capabilities across systems and beyond the MDG system, Enterprise Search can still be used.

You can use Enterprise Search.

· You have installed and connected Enterprise Search either in embedded or federated form.

The following option is not delivered:

You can use Database Search in exceptional cases if the two delivered options are not feasible.

- Database Search is not released to be used in the context of master data governance for material for live systems –
  it is only intended to be used as a temporary workaround for POC/Test purposes.
- Please follow the extension guide Replace Enterprise Search by DB or alternative search provider which also lists the limited capabilities.

# SAP Online Help:

https://help.sap.com/docs/SAP\_S4HANA\_ON-PREMISE/6d52de87aa0d4fb6a90924720a5b0549/580b16faff944c77a4ac02b832e666ff.html

Guide available on the MDG Community (https://www.sap.com/documents/2015/07/60c49158-5b7c-0010-82c7-eda71af511fa.html)

# 3. COMPARISON: ENTERPRISE SEARCH AND SAP HANA SEARCH

Capabilities of the Search Options of MDG for Material  Main Features				
Topic	Enterprise Search	SAP HANA-based search		
Fuzzy Search	Yes	Yes		
Support of Search Ranking (Score)	No (SAP Note 2284745)	Yes		
Duplicate Check	Yes	Yes		
Duplicate Check with Fuzziness	Yes, can't be switched off	Yes, configurable (defined by search view)		
Long texts (multi languages)	Yes	Yes		
Free-text	Yes	Yes		
Classification	Yes	Yes		
Time-Dependent Classification	Yes	No (SAP Note 2284745)		
Extensibility with fields	Yes (higher effort)	Yes (lower effort)		
TCO	High (additional TREX hardware)	Low (embedded), High (side-by-side)		
Multiple Search Views (UI)	No	Yes		



#### 4. UPGRADE SAP HANA SEARCH

We recommend installing the highest available version of the SAP HANA database.

Note: If you use SAP HANA-Based Search for Material Master then you must run the report program MDG HDB MAT MIGRATE LONGTEXT to build the longtext for search after upgrade.

Note: With MDG on S/4HANA, if you use SAP HANA-Based Search for Material Master then you must run the report program MDG\_HDB\_MAT\_MIGRATE\_LONGTEXT to build the longtext for search before you use the SAP HANA-Based Search.

#### 5. RESTRICTIONS

There is a restriction in class CL\_MDG\_BS\_MAT\_HDB\_SEARCH which does not allow to use an entity which has no persistent table.

The following is a list of entities that are read-only or cannot be selected for search.

- MLANSALES (Tax Classification for Sales) and MLANPURCH (Tax Classification for Purchasing), as sthey do not have any persistent table, but rather use structures STEUMM and STEU
- MATCHGMNG (Material Change Management)
- DRADTXT (Document Link Test)



#### 6. STEP BY STEP EXPLANATION

The following explanation shows you how to set up the SAP HANA-Based Search. Follow the SAP online help to set up SAP HANA-Based search.

#### SAP Online Help:

https://help.sap.com/docs/SAP\_S4HANA\_ON-PREMISE/6d52de87aa0d4fb6a90924720a5b0549/580b16faff944c77a4ac02b832e666ff.html

# Configuring SAP HANA-Based Search for MDG:

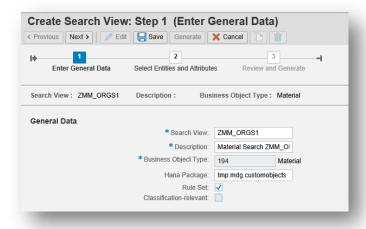
https://help.sap.com/docs/SAP\_S4HANA\_ON-PREMISE/6d52de87aa0d4fb6a90924720a5b0549/e0de68cd46914e3797762c43cba621bd.html

## 6.1. Save and Generate Delivered Search Views

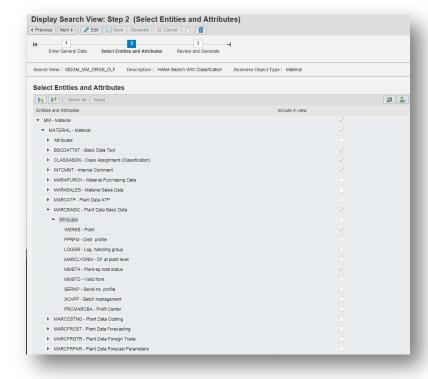
Select the templates Search View MDGM\_MM\_ORGS or MDGM\_MM\_ORGS\_CLF (with classification), choose *Edit*, assign a SAP HANA content repository package such as ztmp.mdg.material, choose *Save* and *Generate*.

#### 6.1.1. Provide the General Data Information

Select Rule Set checkbox only if you like to generate the rule set.



Select the Attributes for the Search View.



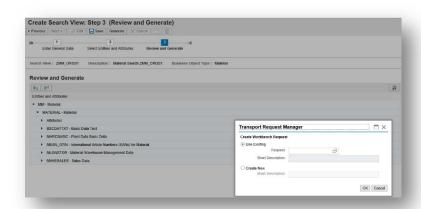


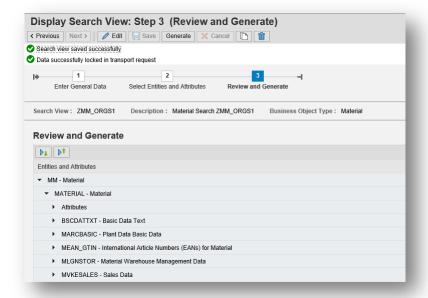
Check the included entities and attributes. If you need other entities or attributes, create a new search view according chapter 6.2 Create, Save and Generate new Search Views.

# 6.1.2. Save Search View

In Step 3, choose Save and create workbench request.

**NOTE**: Entities having the same key attributes cannot be selected together on the UI for rule set generation. For example, WERKS is a key attribute of MARCPURCH and MARDSTOR. Hence, only one such entity can be selected for rule set generation.

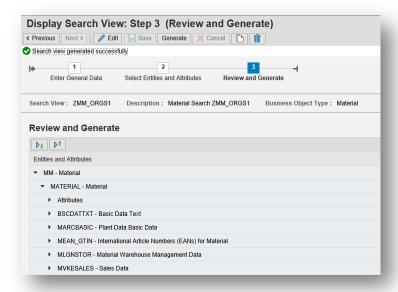






# 6.1.3. Generate

Choose the Generate button to generate the SAP HANA views and rule set.



After you generated the search view it can be manually edited within the SAP HANA Studio to update the search properties of an attribute. If the search view is regenerated later, the new search view overwrites the manually updated search view. That means, you have to update the attributes again manually.

You can create a search rule set during the search view generation if you want the search to be performed based on search rule sets. If you choose the create ruleset option for a reuse model, a union SQL view is created on the attribute view in SAP HANA. This search rule set can also be manually updated according to the business requirements of the users after it is generated. If the search view is edited at a later date and is regenerated, the search rule set will not be regenerated/overwritten; it has to be manually adjusted.

You must manually check out the generated search rule set to the Project Explorer view of the SAP HANA Studio Administration Console before it can be edited to change any parameter, such as the fuzzy value or weight of an attribute, and activate it to enable search based on this modified search rule set.

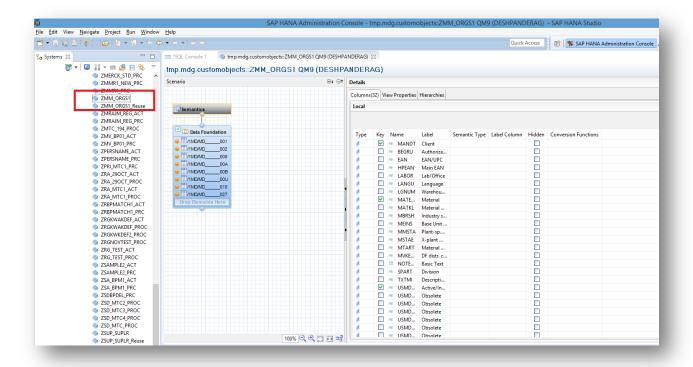
The information below provides detailed description of how to create, generate and modify SAP HANA search views and rule sets to suit your business needs.

#### 6.1.4. SAP HANA Studio

Go to the SAP HANA Studio and check the generated Views (optional step). For this, go to SAP HANA Administration Console. Go to Systems  $\rightarrow$  <system name>  $\rightarrow$  Content  $\rightarrow$  SAP Hana Package name given above (for example ztmp  $\rightarrow$  mdg  $\rightarrow$  material).

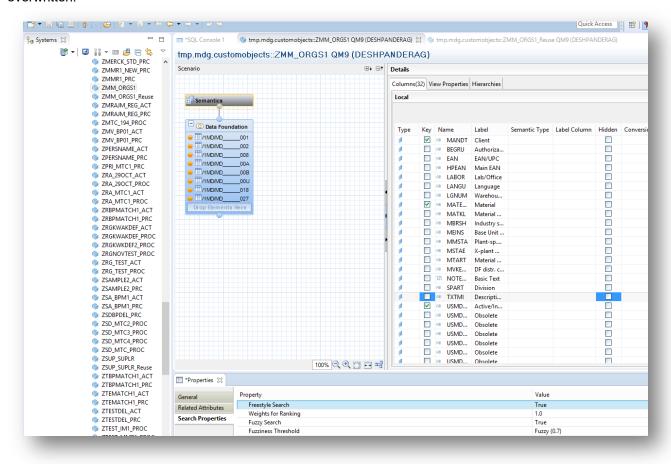
You will see two attributes views.





You may customize the generated views by adding fields or removing fields. You may also change the search properties of any field. Save and activate the customized view.

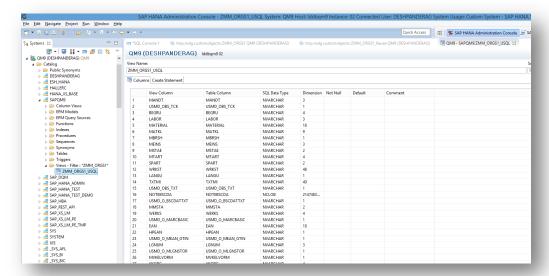
**NOTE**: If you re-generate the view within the SAP HANA Search generation UI then the manual modifications are overwritten.





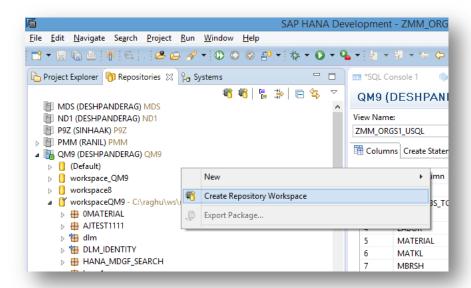
Check the generated Union SQL View (optional step).

Go to Catalog  $\rightarrow$  <schema name (e.g., SAPQM9)>  $\rightarrow$  Views. You will see a union SQL view (for example, ZMM\_ORGS1\_USQL).

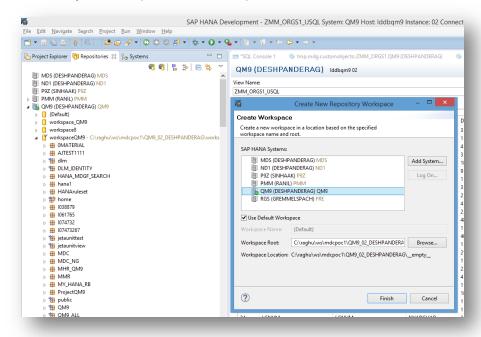


Check the generated Search Rule Set and update it to your business scenario, if required.

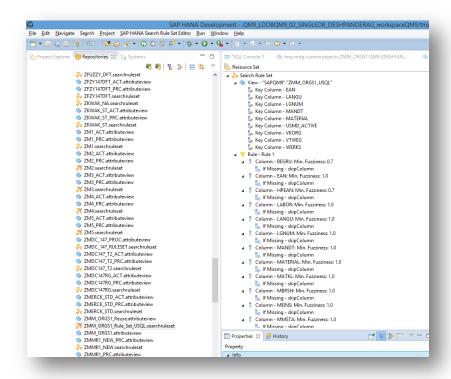
For this, go to SAP HANA Development view. Go to *Repositories* and right-click and select *Create Repository Workspace* 



Select the system and provide the workspace name.



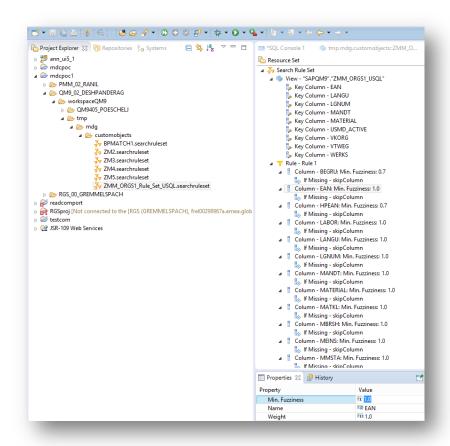
Go to your workspace folder and go to the SAP HANA package (For example,  $tmp \rightarrow mdg \rightarrow customobjects$ ). You will see the search ruleset (For example ZMM\_ORGS1\_Rule\_Set\_USQL.searchruleset). Double-click on the rule set to check out the same.



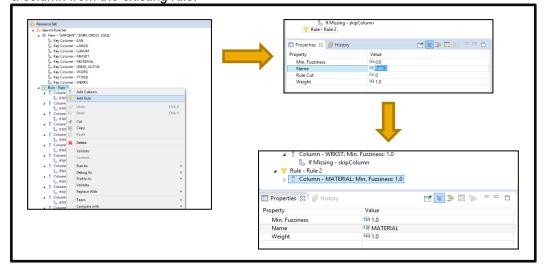
Modify the Rule Set (if required).

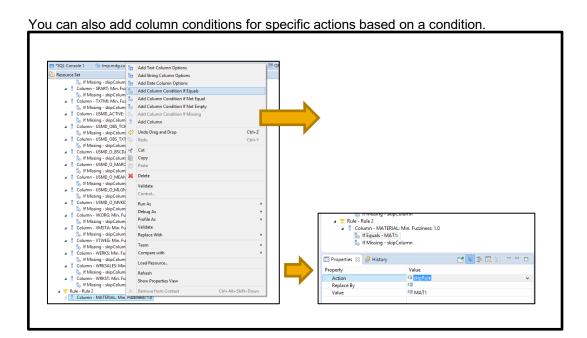
Go to Project Explorer and your workspace. Go to the SAP HANA package (For example,  $tmp \rightarrow mdg \rightarrow customobjects$ ). Modify the properties for any attribute according to your business requirements.





You can also add a column (attribute) or add a rule and define the search criteria. You can add a column or drag/drop a column from the existing rule.





Save and activate the customized Rule Set.

#### 6.2. Create, Save and Generate new Search Views

You can also copy an existing search view and edit it before generating the new search view. Include other entities or attributes.

You have extend your MDG Material data model (MM). There are following scenarios possible how you can extend it.

## A. Extend with existing attributes (reuse):

Extend the data model with existing fields of the reuse table. Example: Fields HUTYP or ETIAR of MARA table.

# B. Extend with custom attributes (reuse):

Extend the data model with custom fields that are in reuse. Example: new fields ZZBRAND and ZZPRODTYPE defined by customer in backend MARA table.

# C. Extend with custom entities (reuse):

Extend the data model with a custom entity that is defined in reuse. Example: new table ZMDG\_BUPA defined in reuse.

# D. Extend with existing entities (based on flexible entities):

The data model is extended with a new entity but the data for this resides not in the underlying SAP database tables but in the MDG-generated tables.

See Extensibility Guides on the SAP MDG Community. https://community.sap.com/topics/master-data-governance/how-to#central-governance-of-material-data

# 6.2.1. Model Extension with Attributes (Case A and B)

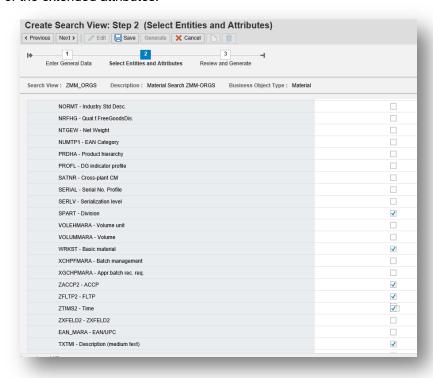
If you generate a new search view, the added attributes are automatically available.

If you extend the MM data model they will be visible for selection automatically in the Step 2 of the SAP HANA Search generation UI. For a new Search configuration you can select the model extended attributes for HANA search.

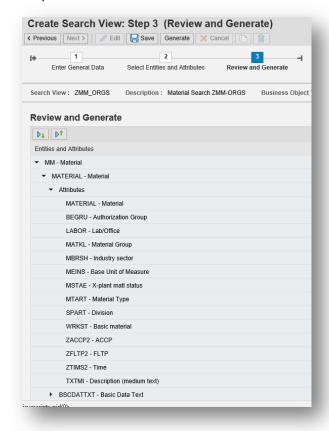


If you want to include the model extended attributes to an existing SAP HANA Search view then you must open the search view in edit mode and make the selection in Step 2. Saving and regenerating the search view will include the new fields into the views.

In the below screen you will see that the extended attributes are available for selection. In Step 2 perform the selection of the extended attributes.

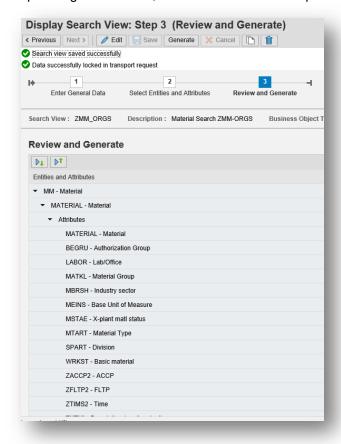


In Step 3 review and save the data.

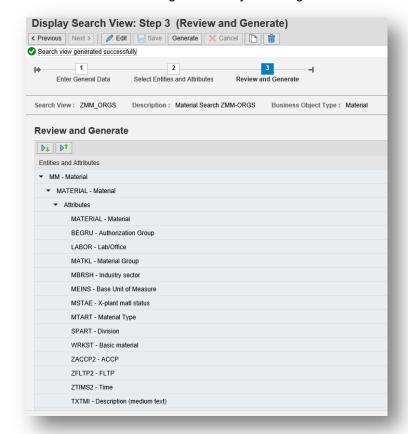




On pressing Save button, select the workbench request and the configuration is saved.

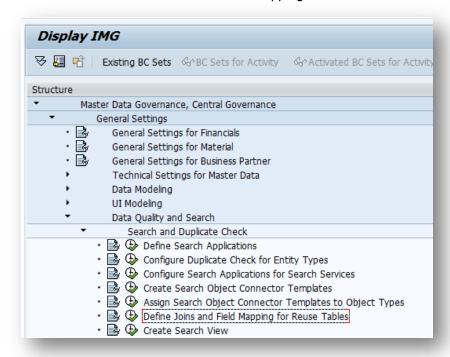


The SAP HANA views are generated by choosing Generate.

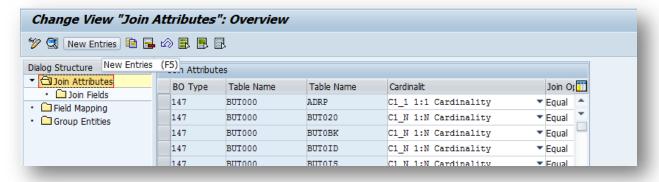


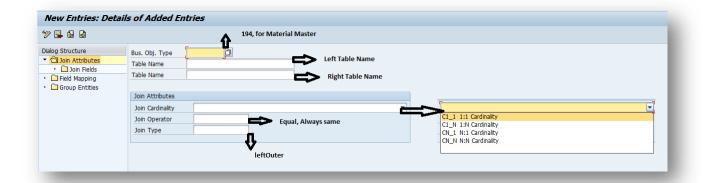
# 6.2.2. Model Extension with Reuse Entity (Case C)

Maintain entries in Define Joins and Field Mapping for Reuse Tables.

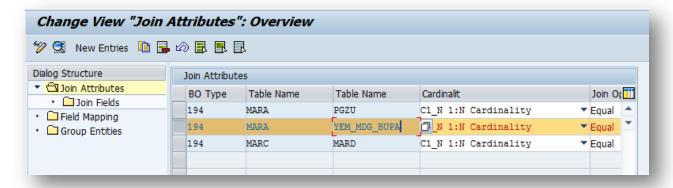


Execute activity Define Joins and Field Mapping for Reuse Tables. Select Join Attributes, choose New Entries.

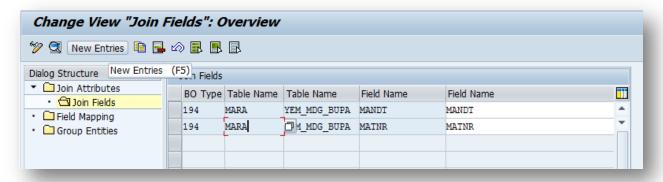




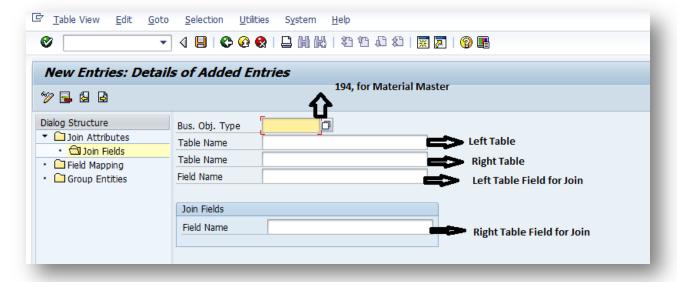
Select Join Attributes to maintain Join Fields.



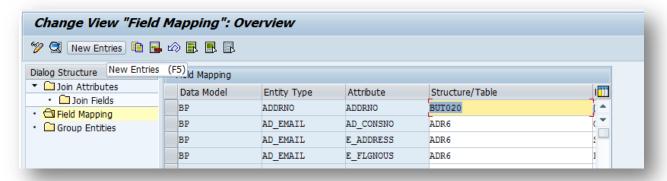
Choose Join Fields on the left side of the tree for the selected Join Attributes. Choose New Entries.

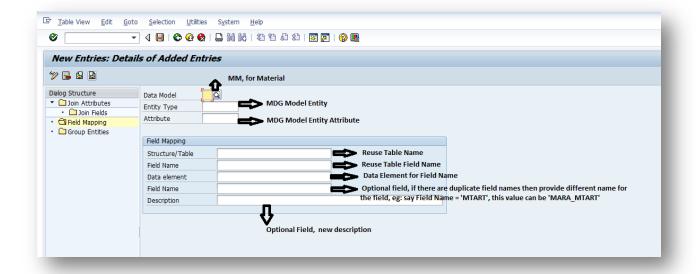


Maintain Join Fields.



Maintain Field Mappings. Choose New Entries.





For creating a search view refer to section above.

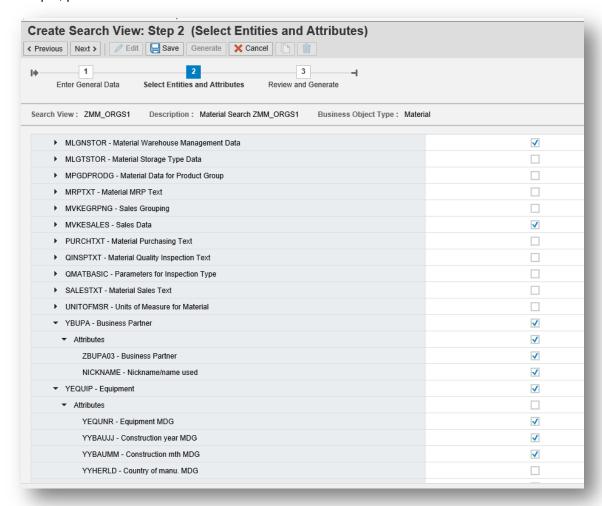
The extended entities and attributes of the MM data model will be visible for selection automatically in the Step 2 of the SAP HANA Search generation UI. For a new Search configuration you can select the model extended attributes for SAP HANA search.

If you want to include the model extended attributes to an existing SAP HANA Search view then you must open the search view in edit mode and make the selection in Step 2. Saving and regenerating the search view will include the new fields into the views.

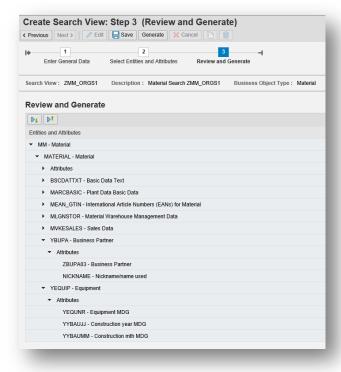
In the below screen you will see that the extended entities YBUPA and YEQUIP and attributes in them are available for selection.



In Step 2, perform the selection of the extended entities and attributes.

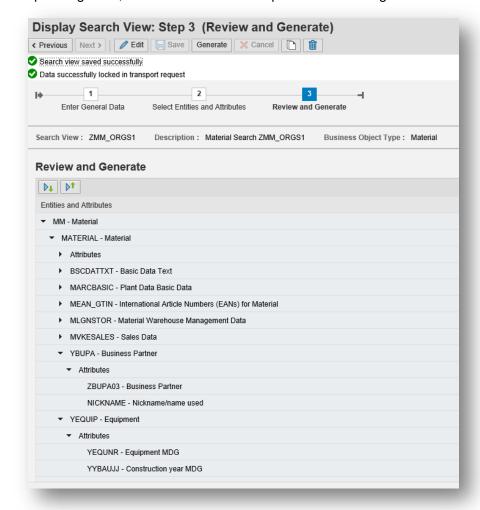


In Step 3, review and save the data.



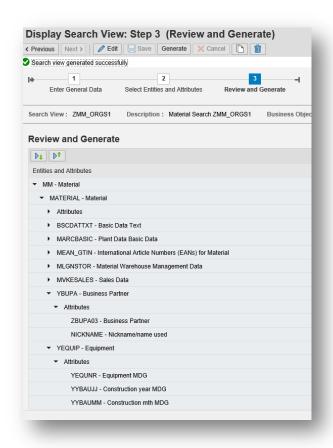


On pressing Save, select the workbench request and the configuration is saved.



The SAP HANA views are generated when you choose Generate.





# 6.2.3. Model Extension with Flex Entity (Case D)

SAP HANA Search supports Flex Entities at Main Entity Level only, also including multiple levels.

Model: MM Main Entity: MATERIAL

Supported Scenarios:

Scenario 1:

**MATERIAL** 

FLEX\_ENTITY\_1

• • •

FLEX\_ENTITY\_n

Scenario 2:

MATERIAL

FLEX\_ENTITY\_1

FLEX\_ENTITY\_2

•

FLEX\_ENTITY\_n

٠..

FLEX\_ENTITY\_11



# 6.3. Customizing for search attributes



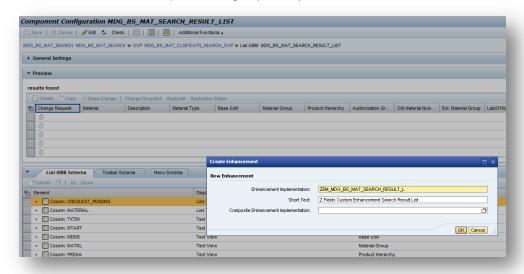
You can customize the fields in the drop down of the search attributes. Check that the new fields are not disabled for search in this Customizing; the check boxes for *No Selection* are unchecked.

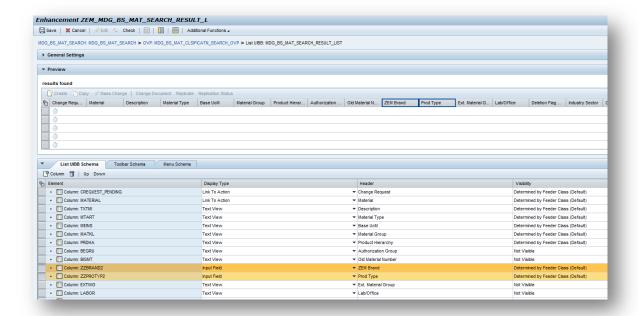
# 6.4. Enhance UIBB MDG\_BS\_MAT\_SEARCH\_RESULT\_LIST

## Scenario:

You want to see the added fields in the search results list.

You can choose in the Floorplan Manager (FLUID) all attributes from entities with relation 1:1 to entity MATERIAL.







# 7. ADDITIONAL INFORMATION

# 7.1. Further Reading

# Information on SAP MDG on SAP S/4HANA

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

# **SAP Roadmap Explorer**

• Please see the roadmap for SAP Master Data Governance

#### **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

## 7.2. SAP Notes

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

Note Number	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
<u>2656693</u>	Functional Restrictions in MDG for Material in SAP Master Data Governance 9.2 and on SAP S/4HANA 1809
<u>2816571</u>	Functional Restrictions in MDG for Material on SAP S/4HANA 1909
<u>2948873</u>	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
2339846	Missing Switch BC Set Entries for Material Search Views



2281401	Decoupling MDG Material from Enterprise Search as provider
2302716	SEARCH: Set default search method
2338571	Dump when starting MDG material applications using HANA search provider
2336787	Search: COPY function results in navigation to wrong target or to termination o
2334229	SEARCH: Program termination when clicking on change request icon in search result
2319339	SEARCH: Class type not reset if warning popup is closed
2302716	SEARCH: Set default search method
2338571	Dump when starting MDG material applications using HANA search provider
2336787	Search: COPY function results in navigation to wrong target or to termination o
2334229	SEARCH: Program termination when clicking on change request icon in search result
2319339	SEARCH: Class type not reset if warning popup is closed
2301378	Search: Application inadvertently closed
2287809	SEARCH: Value help vanishes for some fields after changing search method
2287775	SEARCH: Not all saved searches displayed after RESET
2284453	SELECT: Disable buttons if search does not return results
2274076	SEARCH: Minor correction for search UI
2245830	SEARCH: 'Search Criteria' panel displayed two times



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