How-To Guide: Extensibility for EAM and SAP Asset Information Workbench (End to End Process)

Applies to

SAP MDG EAM Extension by Prometheus Group.

SAP Asset Information Workbench (AIW) by Prometheus Group

Summary

SAP Master Data Governance for EAM provides an out-of-the-box solution for the central management of various master data objects such as Equipment Master, Functional Location, Material BOM, Maintenance Plan, Measuring Point, Work Center, and Task List. In addition, SAP Master Data Governance also provides the flexibility to customize the solution, in cases where the pre-delivered content does not match customer requirements entirely.

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1. Introduction

This guide explains about the end-to-end process of extending the standard data model with custom fields.

2. Scenario

2.1. High-Level Requirements

The business requires the new attributes called "User Detail" as part of the UGI EAM /AIW for Equipment Master. You want to extend the (Type1) entity type EQUI to include attributes: ZZNAME, ZZID.
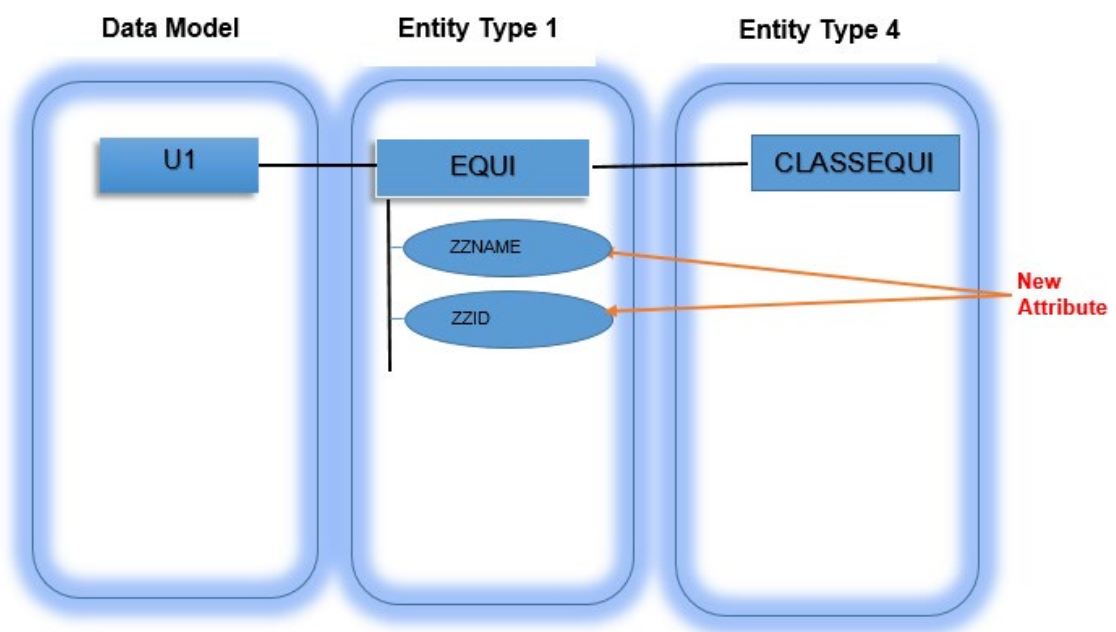

Figure 1: Data Model – Equipment (Scope of 2016 Delivery) with custom attributes 'ZZNAME" and "ZZID"

2.2. Governance Process

The default governance process delivered with UGI EAM is used for this example. No changes to the governance process are necessary as part of this scenario.
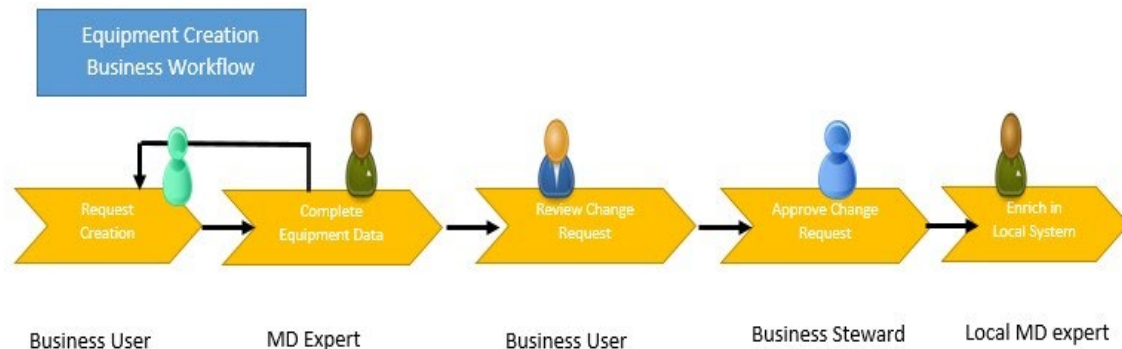
Figure 2: Equipment processing in Master Data Governance

2.3. Implementation

Two major building blocks make up the implementation of the entity type extension. In the first phase, you extend the UGI EAM data model. In the second phase, you extend the user interface to include the new entity type.

The following flow diagram displays the detailed implementation steps. It is recommended to use it as an orientation. Each box in the diagram corresponds to a section in this guide in which you find detailed execution instructions.
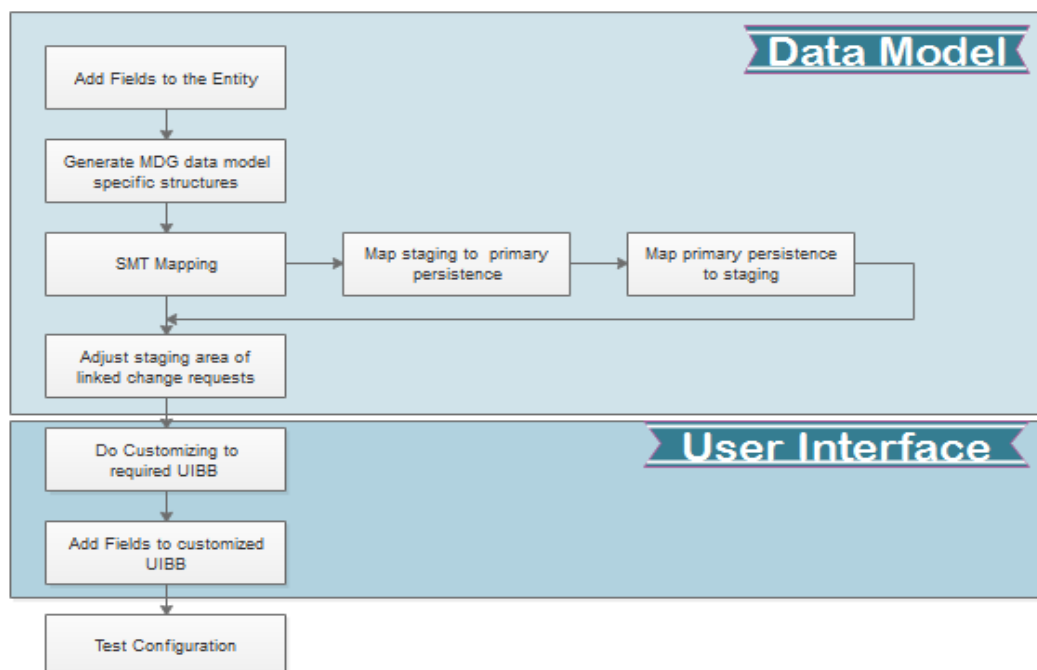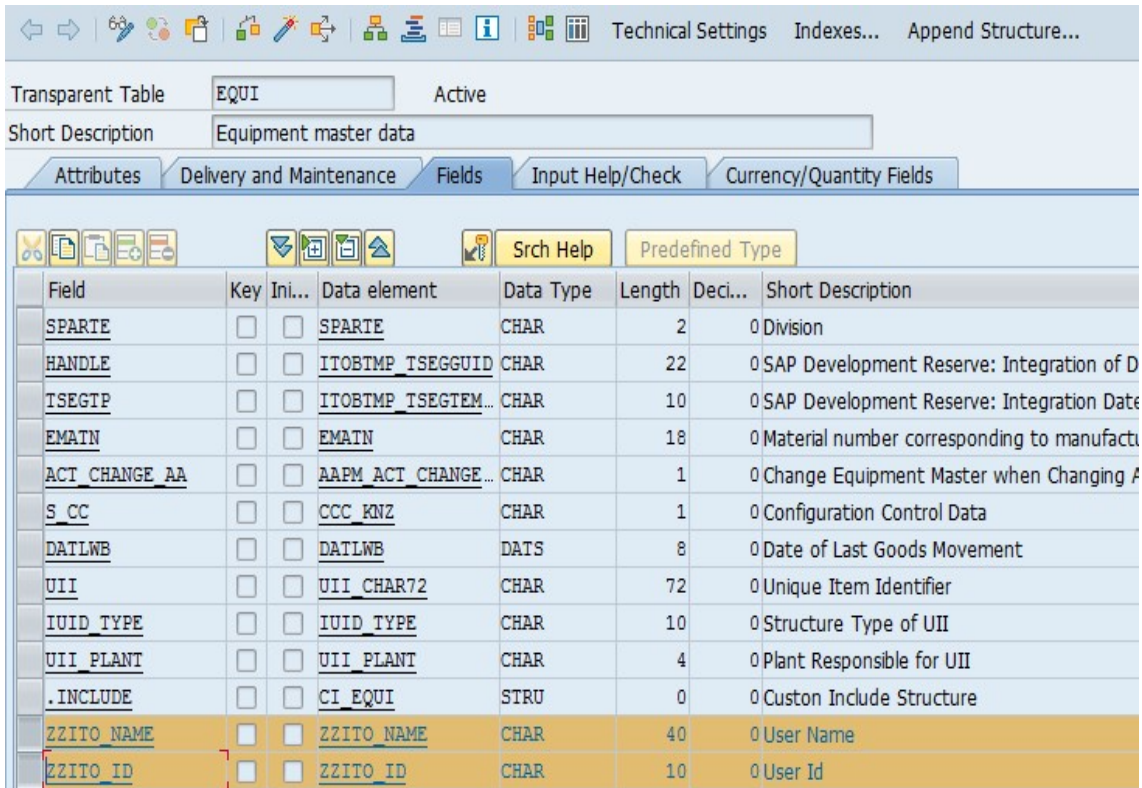
Figure 3: Implementation steps for re-use Entity-Type extension

2.3.1. Data Model Extension

To extend the AIW data model for Equipment (U1) by the additional attributes ZZNAME and ZZID. The following fields from EQUI table should be modeled as attribute of entity type in MDG.

Figure 4: Include new fields to EQUI table

2.3.2. Add Attributes to Existing Entity Type

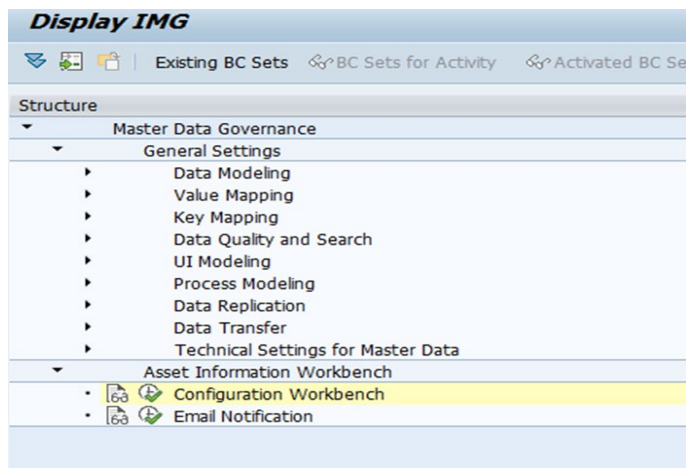Use the following steps to add attributes to the existing Entity Type:

1. Log in the system for cross-client maintenance and start customizing Master Data Governance (Transaction code: MDGIMG).
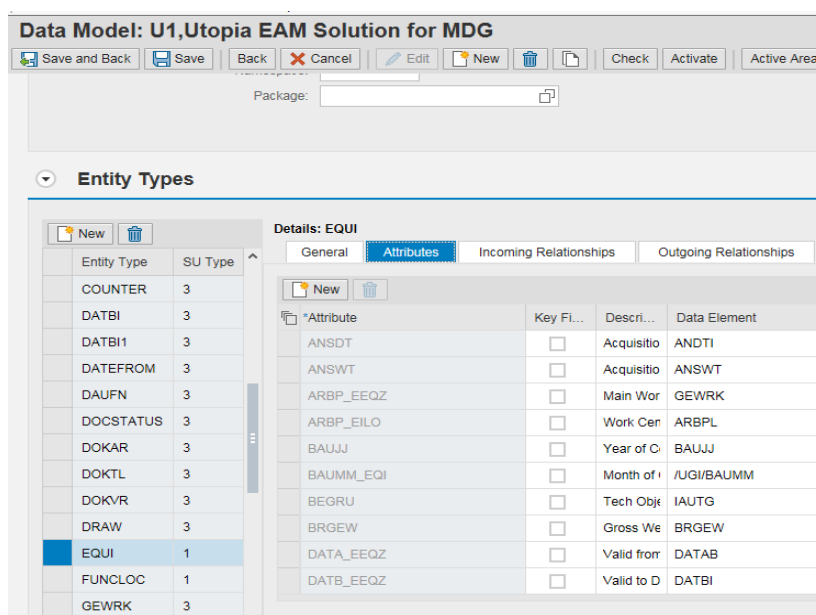2. Go to General Settings > Configuration Workbench.

3. Select Data Model "U1" and click the hyperlink.

Entity Types are displayed on the left-hand side panel.
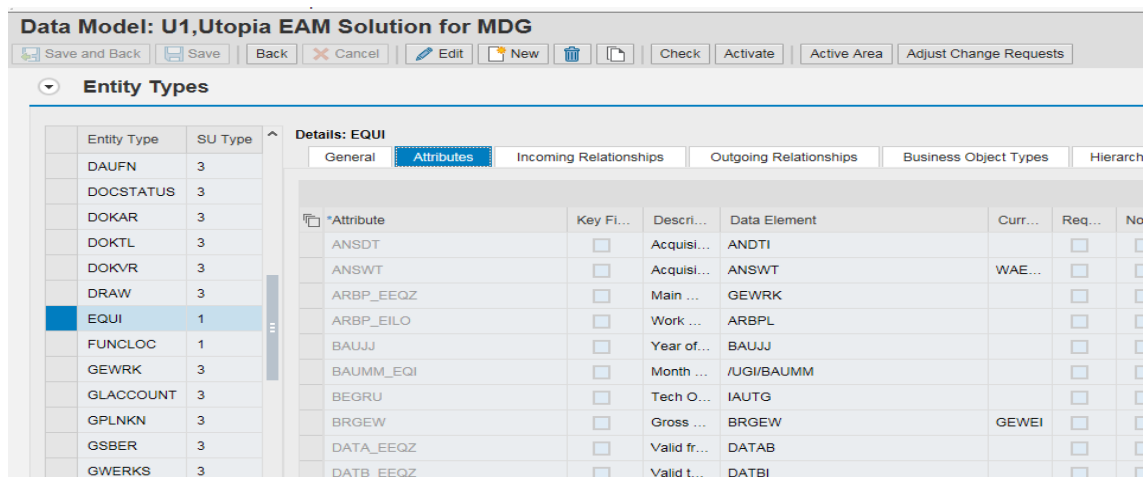
4. Select the entity "EQUI" and click "Edit".
5. Select the "Attributes" tab and click "New".

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6. Add the attributes of Entity Type "EQUI" as displayed in the following screen:

7. Save your settings.

ℹ **Note**

It is recommended to assign a search help to Data Element in exceptional circumstances. The input helps to execute the search help instead of reading the data in the check table or the fixed values of the data element's domain.

8. Activate the extended Data Model.

9. Make Change Request adjustments.

2.3.3. Generate MDG Data Model-Specific Structures

In general, if you change a Data Model (for example, if you change attributes of entity types or relationships) you need to regenerate the structures. You can assign a prefix and a package directly in the data model. Then the structures are generated automatically with the activation of the data model.
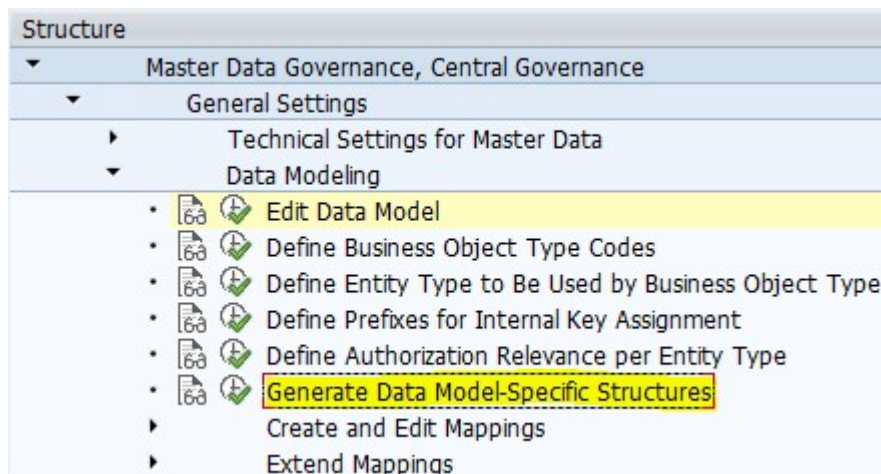
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Since the MDG data model was changed, the tables need to be regenerated. In this customizing activity, for each Data Model and entity type, you generate technical structures and tables in the ABAP dictionary. The system uses these structures internally for implementing the staging area.

To generate these Data Model Specific structures, follow the steps as described.
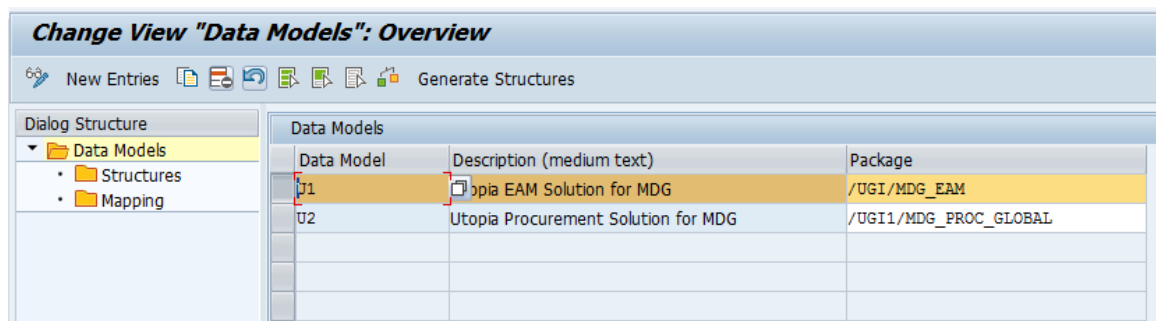
ⓘ Note

In general, if you change a data model (for example, if you change attributes of entity types or relationships); you need to regenerate the structures.

1. Start Customizing for Master Data Governance (transaction MDGIMG).
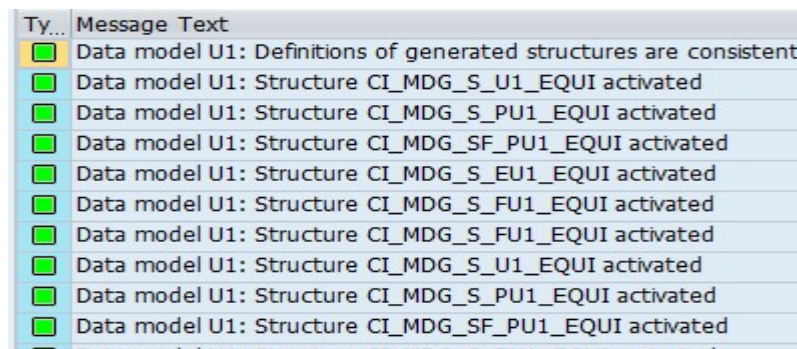2. Go to General Settings > Data Modeling > Generate Data Model > Specific Structures.

Structure
▼ Master Data Governance, Central Governance
▼ General Settings
▶ Technical Settings for Master Data
▼ Data Modeling
• 📄 ✅ Edit Data Model
• 📄 ✅ Define Business Object Type Codes
• 📄 ✅ Define Entity Type to Be Used by Business Object Type
• 📄 ✅ Define Prefixes for Internal Key Assignment
• 📄 ✅ Define Authorization Relevance per Entity Type
• 📄 ✅ Generate Data Model-Specific Structures
▶ Create and Edit Mappings
▶ Extend Mappings

3. Select the row with the data model "U1" and click "Generate Structures".

Change View "Data Models": Overview

⚙ New Entries 📋 🗐 🕘 📑 📑 📑 🗄 Generate Structures

Dialog Structure	Data Models		
▼ 📁 Data Models	Data Model	Description (medium text)	Package
• 📁 Structures	U1	📄 opia EAM Solution for MDG	/UGI/MDG_EAM
• 📁 Mapping	U2	Utopia Procurement Solution for MDG	/UGI1/MDG_PROC_GLOBAL
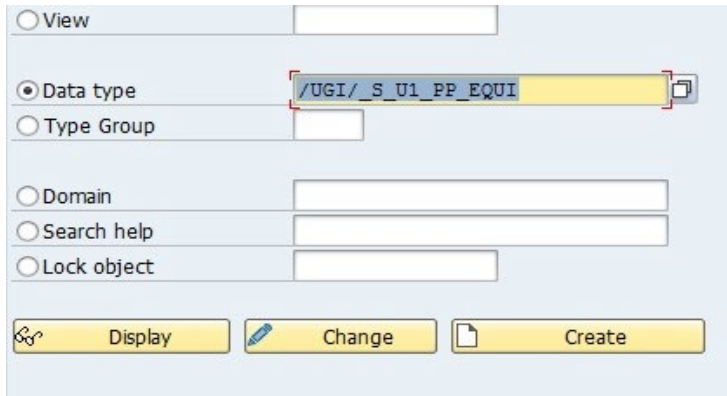
The following screen is displayed.

4. Verify that your structures are generated successfully.

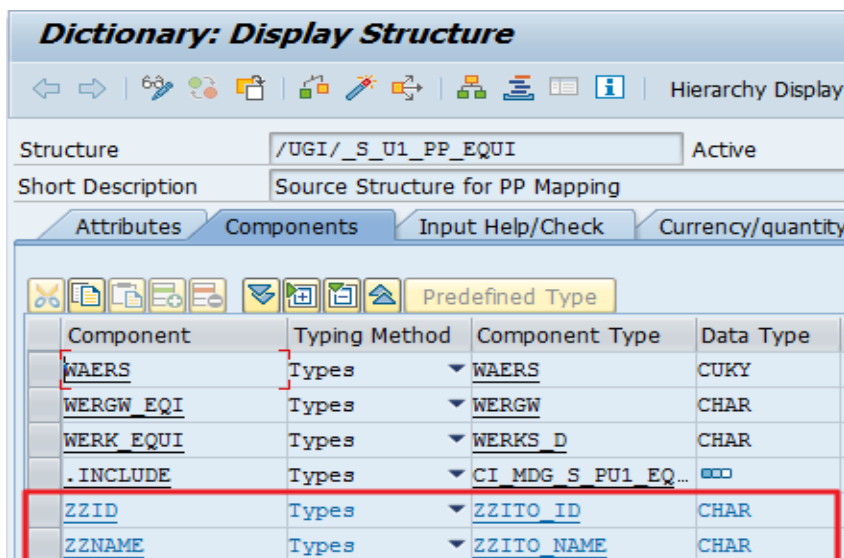| Ty...	Message Text
🟧	Data model U1: Definitions of generated structures are consistent
🟩	Data model U1: Structure CI_MDG_S_U1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_PU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_SF_PU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_EU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_FU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_FU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_U1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_PU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_SF_PU1_EQUI activated
🟩	Data model U1: Structure CI_MDG_S_FU1_EQUI activated

To verify that one of the active area mapping structures is successfully generated with new fields, go to the transaction code (t-code) SE11 and display structure as /UGI/_S_U1_PP_EQUI by entering the details as displayed in the following screen.

You have now verified that the structure and /UGI/_S_U1_PP_EQUI has been generated as displayed in the following screen.

2.3.4. SMT Mapping

You extend mappings by creating new transformations (complex transformations, field mappings) and field checks for them or by editing them.

ℹ Note

When the mappings are saved, the system generates the corresponding coding. Ensure that all the relevant structures are ready before you start.

2.3.4.1. SMT Mapping – Get Mapping Names from Data Model U1

Use the following steps to get SMT mapping names:

1. Log in to the system for cross-client maintenance and Start Customizing for Master Data Governance (transaction MDGIMG).
2. Go to General Settings >Data Modelling >Generate Data Model Specific Structures
3. Select Data Model "U1" and double-click on "Mapping".

Note that the two SMT mappings for Entity Type "EQUI" as displayed in the following screen.

2.3.4.2. SMT Mapping – Primary Persistence for Staging

Use the following steps to extend primary persistence to staging structures:

1. Log into the system for cross-client maintenance and start Customizing for Master Data Governance (transaction MDGIMG).

2. Go to General Settings > Data Modelling > Create and Edit Mappings > Create and Edit Mappings.

i Note

For new Entity Types, it is recommended to create a new mapping. When extending existing Entity Types, it is recommended to extend the existing mapping.
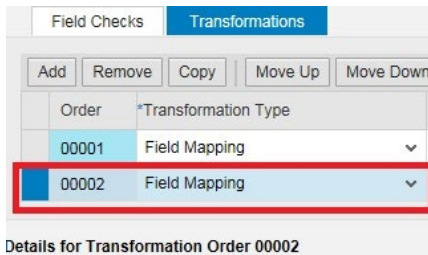
3. Extend mapping /UGI/MDG_SMT_EQUI_ECC2MDG_MAP.

4. Select the mapping step and choose "Details" to map the fields as displayed in the following screen.

The following screen is displayed.

5. Click the "Transformations" tab and click on "Add".

6. Select "Transformation Type" as "Field Mapping".

7. Assign Target Structure /UGI/_S_U1_PP_EQUI custom field to Source Structure EQUI custom fields.

8. Click "Save" to save your changes.

2.3.4.3. SMT Mapping – Staging to Primary Persistence

Use the following steps for SMT mapping

1. Extend mapping /UGI/MDG_SMT_EQUI_MDG2ECC_MAP.

2. Select the mapping step and select "Details".
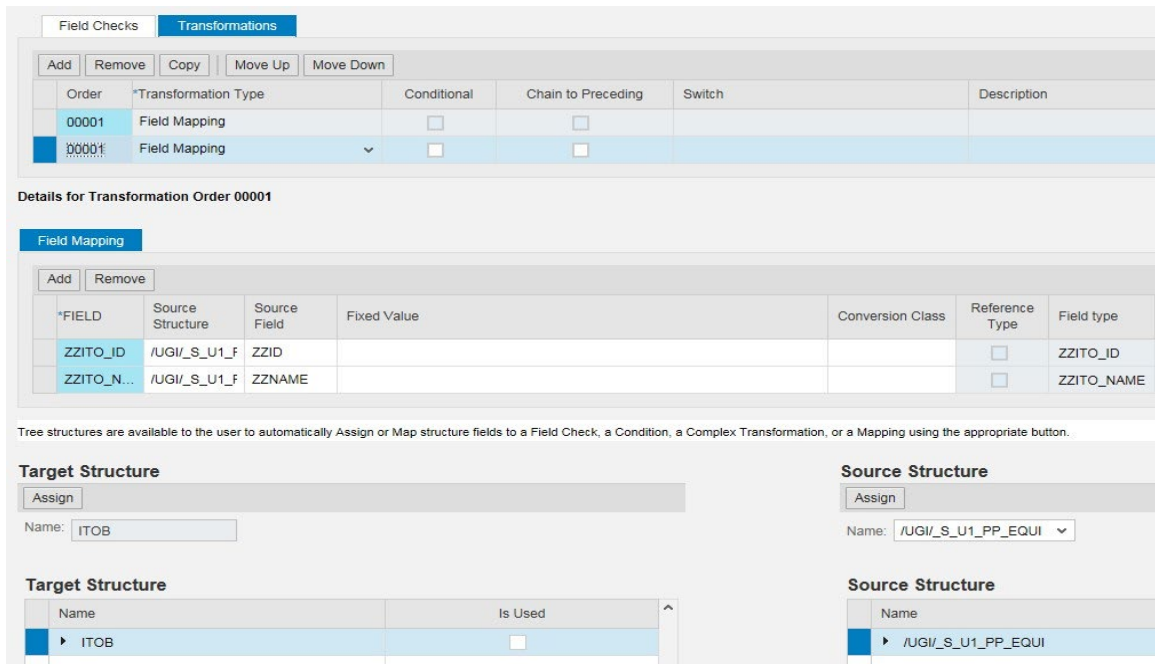
3. Map the fields as displayed in the following screen.

4. Add a mapping step. Assign Target Structure ITOB and assign Source Structure /UGI/_S_U1_PP_EQUI.
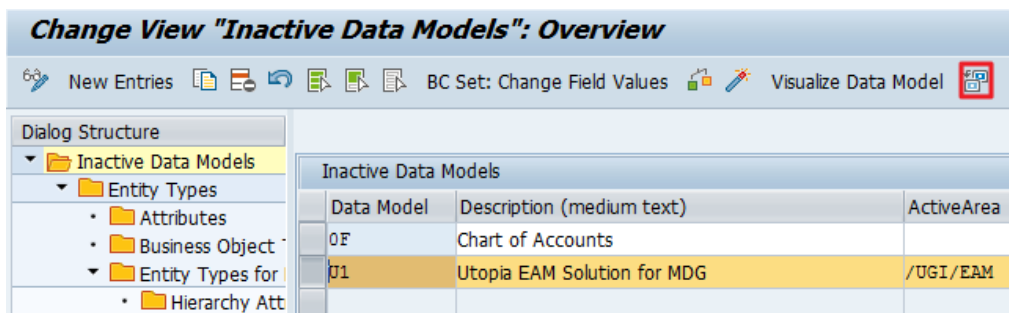
5. Click "Save" to save your changes.

2.3.5. Adjust Staging Area of Linked Change Requests

This step is necessary to adjust any open Change Requests after you have changed the data model.

Use the following steps to adjust the staging area of linked Changed Requests.

1. Start Customizing for Master Data Governance (t-code MDGIMG).
2. Go to General Settings > Data Modelling > Edit Data Model.
3. Select data model "U1" and double click on Entity Types.
4. Choose the Adjust staging area of linked "Change Request".

The pop-up window is displayed.
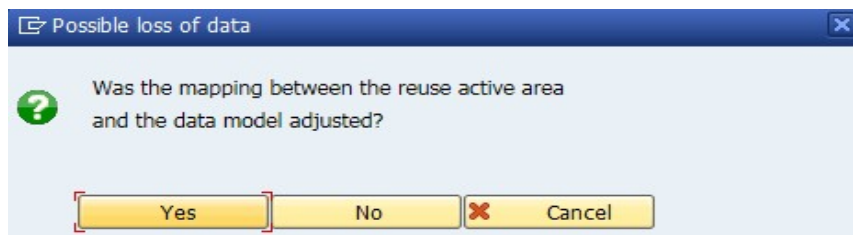
5. Click "Yes".

The following message appears.

i Note

The user DDIC should exist in all relevant clients.

2.3.6. Extending the UI Configuration

To display the extended data model entity fields in the UI, it is required to customize the UI as explained in this section.

2.3.6.1. Customizing UI: Adding Fields to Create Equipment Screen

Use the following steps to customize the UI configuration:
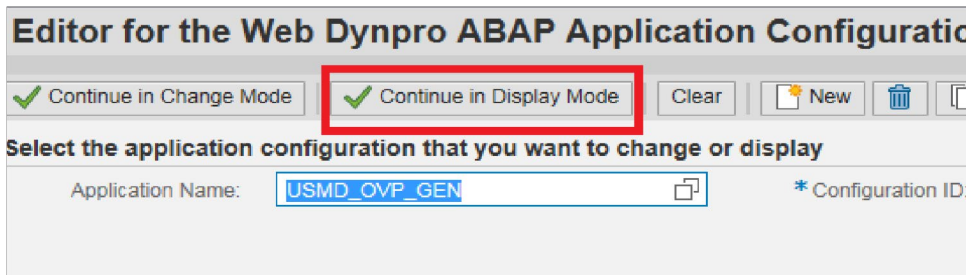
1. Start t-code SE80.
2. From the drop-down list, select Package and in the input field, type /UGI/MDG_EAM_EQUIP.
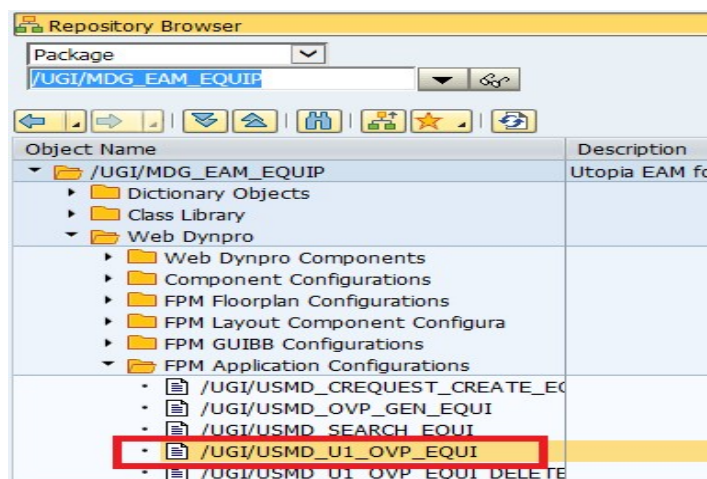
3. Navigate to Web Dynpro >Application Configurations >/UGI/USMD_U1_OVP_EQUI.
4. Click "Start Configurator".

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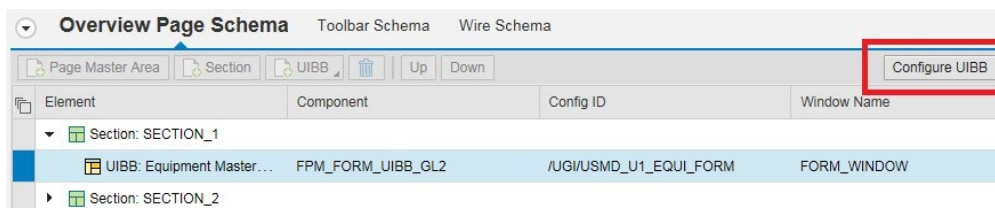
The following screen is displayed.

5. Click "Continue in Display Mode".

6. Click on the Configuration Name: /UGI/USMD_U1_EQUI_OVP.
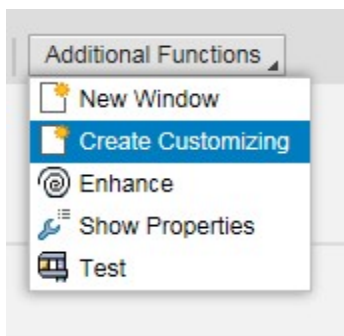
7. In the Overview Page Schema tab, select the UIBB where you want to add new attributes.

8. Click "Configure UIBB".

9. Click on Additional Functions > Create Customizing.

The following pop-up screen is displayed with the Config ID displayed by default.

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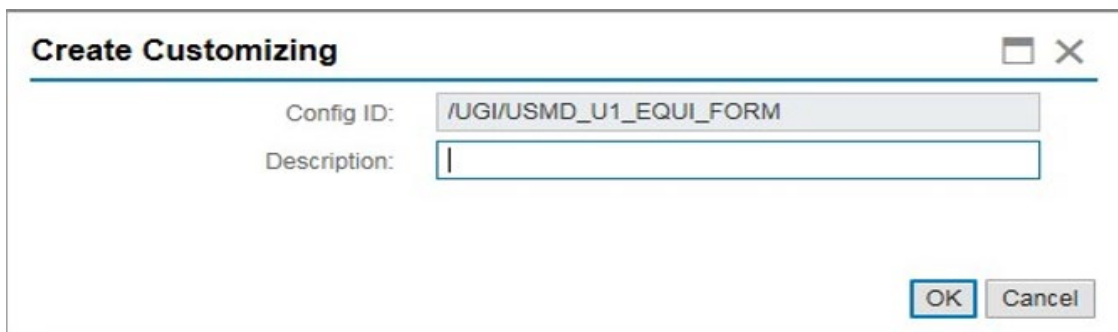
10. Type the description of the Config ID and click "OK".

The Create Equipment screen is displayed to add new fields.

Equipment Extension			
User ID:			
User Name:			

2.4. Testing the UGI EAM Equipment Configuration

ⁱ Note

If you extend the data model according to the guidelines described below, but the fields are not populated when you activate the data model, see SAP Note 1641867 - Values for extension field missing after CR activation.

2.4.1. Process

Use the following steps to test your configuration:

1. Start the UGI Equipment UI using the following URL (replace the parameters host, port and client-id to match your landscape):

   https://<host>:<port>/sap/bc/webdynpro/sap/ usmd_ovp_gen?
   ACTION=CREATE&FPM_EDIT_MODE=E&saplanguage=EN&WDCONFIGURATIONID=Z_US
   MD_U1_OVP_EQUI#

2. Start t-code PFCG and enter the role name /UGI/_MDGEAM_REQ.

3. Click "Display".

4. Select the "Menu" tab.

5. Start transaction PFCG and enter the role name /UGI/_MDGEAM_REQ.

6. Click "Display".

7. Select the Menu tab. In the hierarchy window navigate to Role Menu > Master Data Governance for EAM > Change Requests > Equipment Master > Single Object Processing.

8. Right-Click on Create Equipment and select "Execute" from the drop-down.
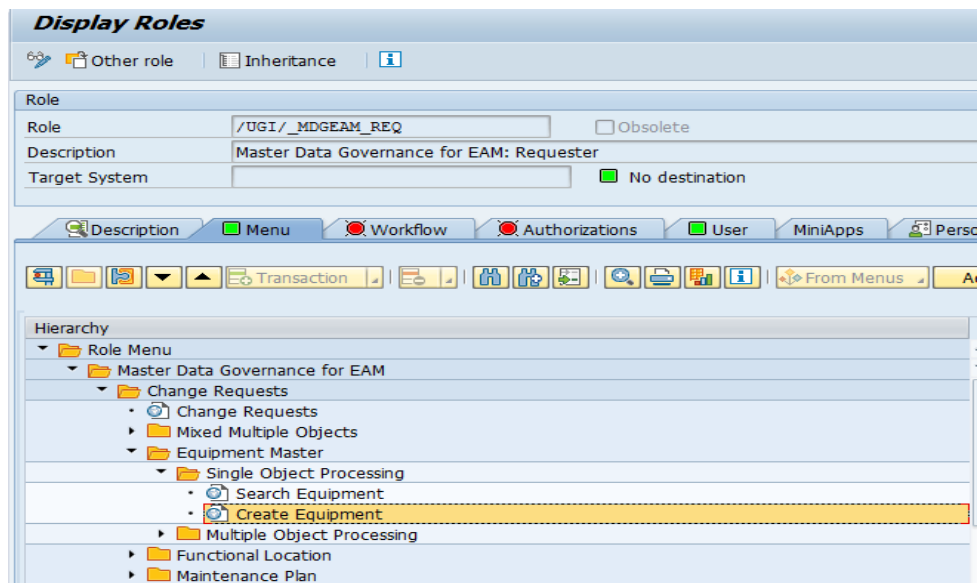
9. Create Equipment with User Name and User ID. The created equipment is displayed as in the following screen.
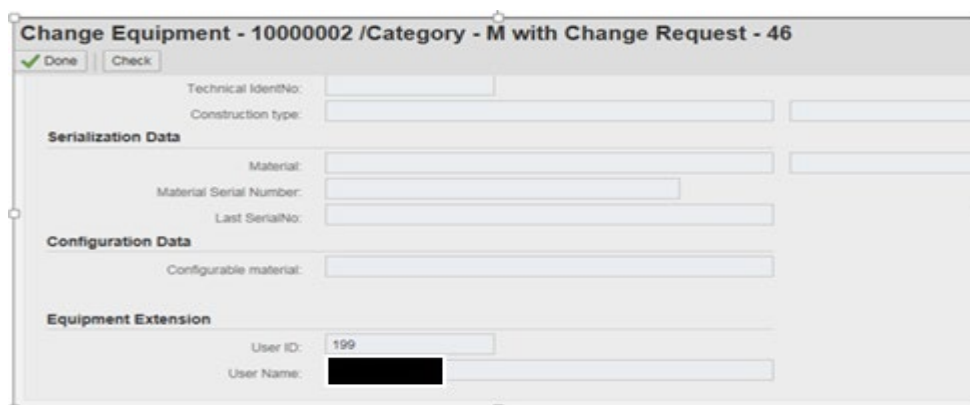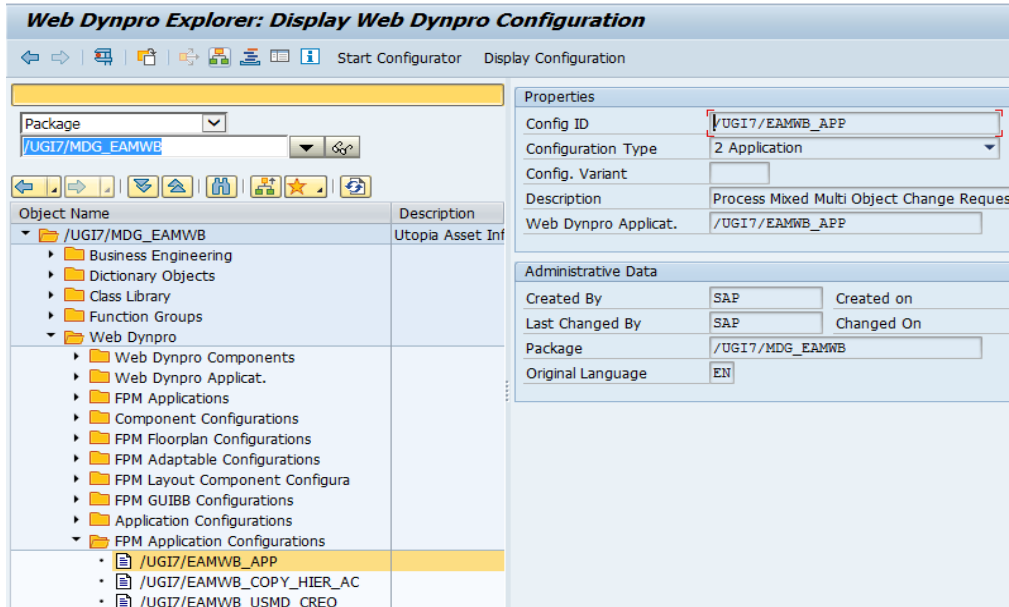
10. Save and Submit the CR.

11. Finalize processing and Approve.

   After activation, use t-code IE03 to verify attributes that are transferred correctly as displayed in the following screen.
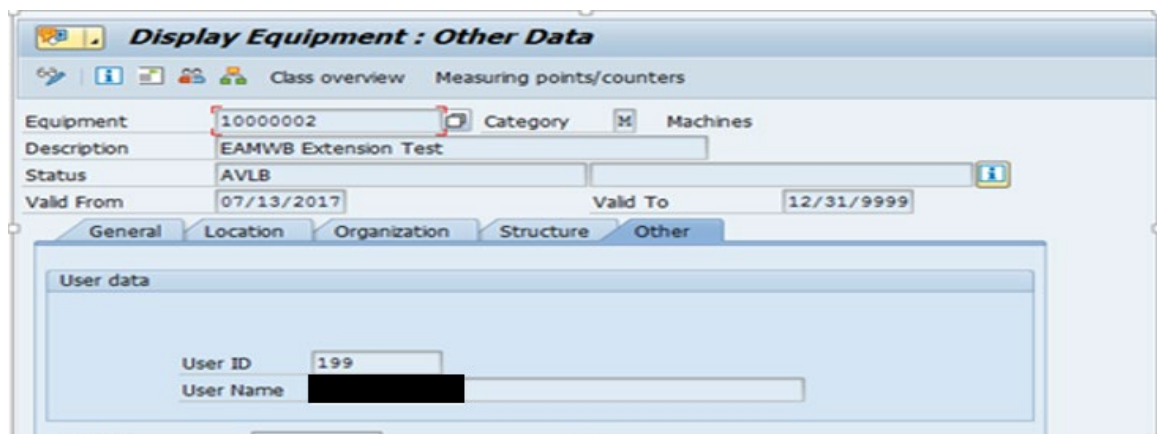
2.5. Adding Extended fields to Asset Information Workbench

1. Start t-code SE80.
2. In the drop-down, select Package and enter /UGI7/EAMWB_APP.
3. Navigate to Web Dynpro >Application Configurations >/UGI7/EAMWB_APP.

4. Click "Continue" in Display Mode.
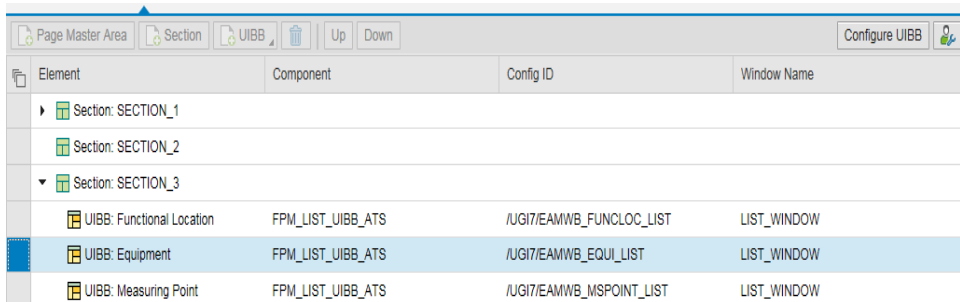
5. Click on the configuration /UGI7/EAMWB_OVP_COMP.

6. Select the UIBB where you want to add new attributes.
7. Click "Configure UIBB".
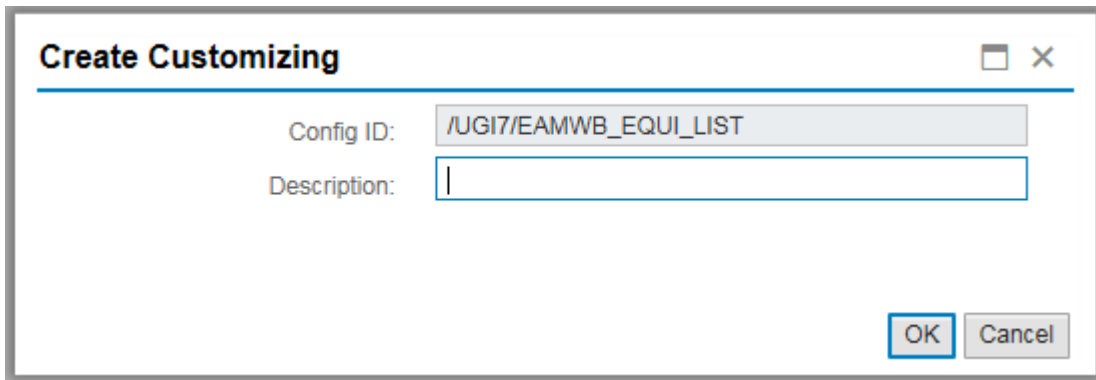
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8. Click on Additional Functions > Create Customizing.

9. The following pop-up screen is displayed with the config id displayed by default.

10. Type the description of the Config ID.
11. Click "OK" to create the customizing configuration.
12. Add new columns to the list UIBB.

13. Click "Save" to save your changes.

2.5.1. Testing the AIW Configuration

ℹ Note

If you extend the data model according to the guidelines shown below, but the fields are not populated when you activate the data model, see SAP Note 1641867 - Values for extension field missing after CR activation.

2.5.2. Process

Use the following steps to test your configuration.
1. Start the UGI Equipment UI using the following URL (replace the parameters host, port and client-id to match your landscape):

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https://<host>:<port>/sap/bc/webdynpro/sap/ usmd_ovp_gen?
ACTION=CREATE&FPM_EDIT_MODE=E&saplanguage=EN&WDCONFIGURATIONID=/UGI/
MDG_EAM_EQUIP I#

2. Start t-code PFCG and enter the role name /UGI7/AIW_MENU.

3. Click "Display".

4. Select the "Menu" tab.

5. In the hierarchy window, navigate to Role Menu > Master Data Governance for AIW Workbench > AIW > Create AIW Change Request.

6. Right-Click on Create AIW Change Request and select "Execute" from the drop-down list.
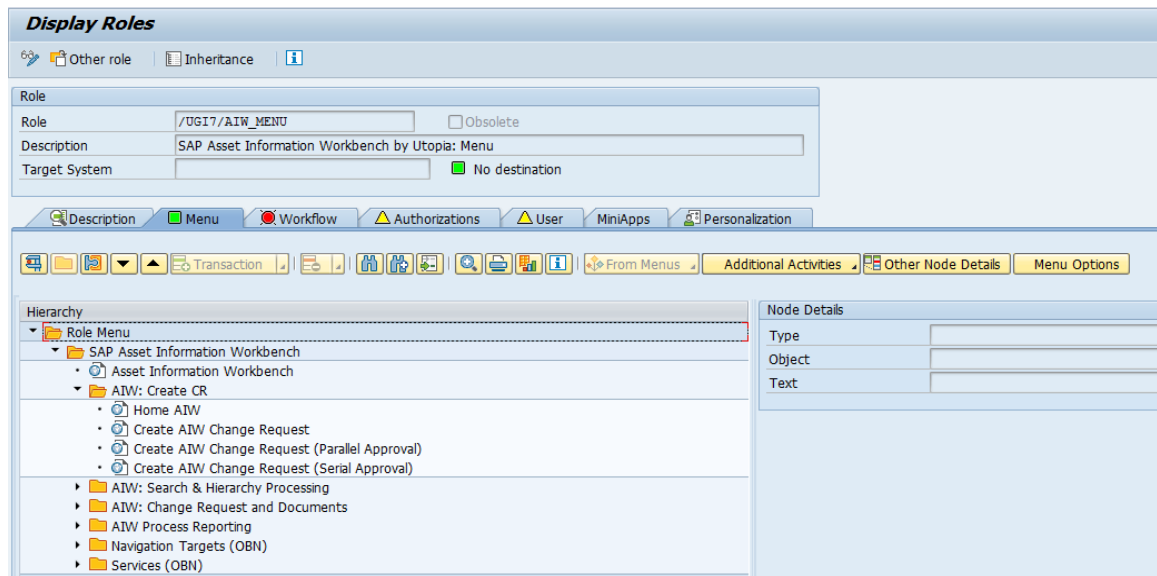
The following pop-up screen is displayed.
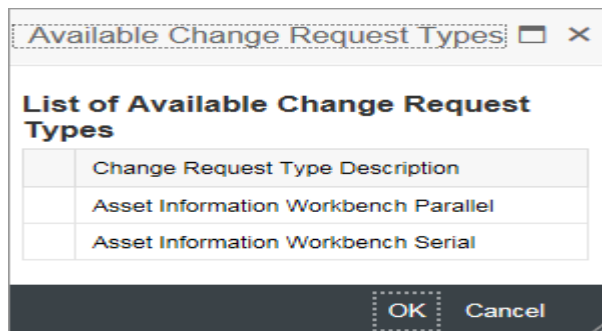
7. Select Asset Information Workbench Parallel and click "OK". The following screen is displayed.
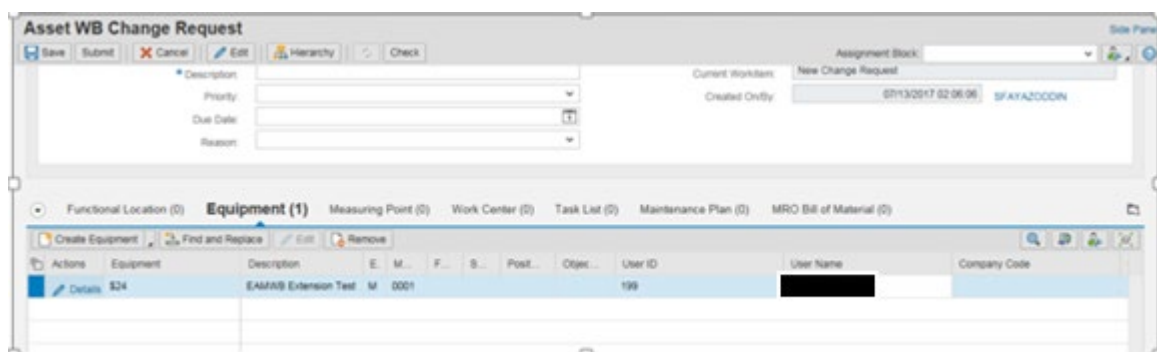
8. Save and Submit the CR.

9. Finalize processing and Approve.

   After activation use t-code IE03 to verify attributes that are transferred correctly as displayed in the following screen.
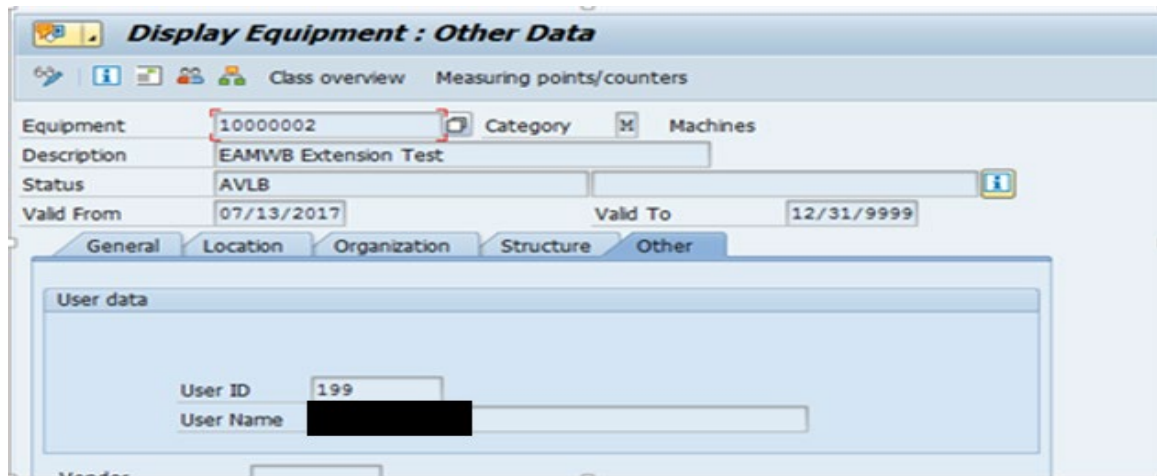
2.6. Adding Extended Fields to POWL

The POWL view can be enhanced to add columns in the UI. The following screen is the sample enhancement to add an additional field in the Equipment table/section.

1. Start t-code SE80 and navigate to the component controller of the Web Dynpro component /UGI7/MDG_EAMWB_POWL_INBX.

2. Click on the menu option Controller > Enhance.
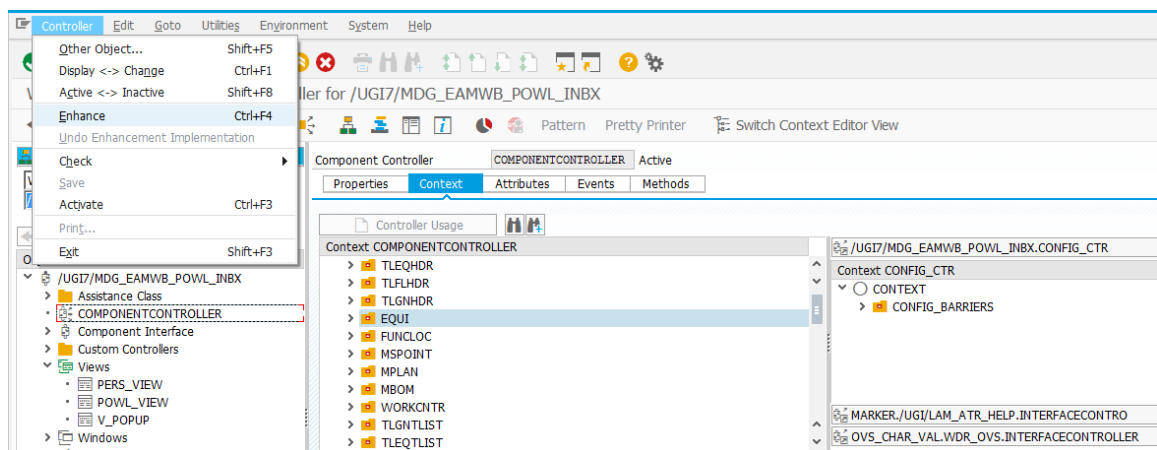
3. Create Enhancement Implementation and save in a package.
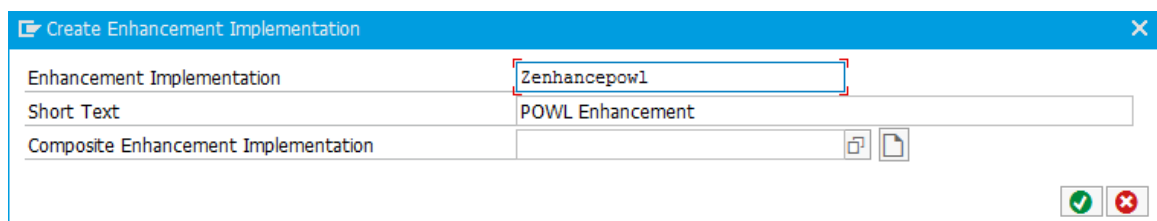
4. Select "EQUI" node and right-click on "Create" and select "Attribute".
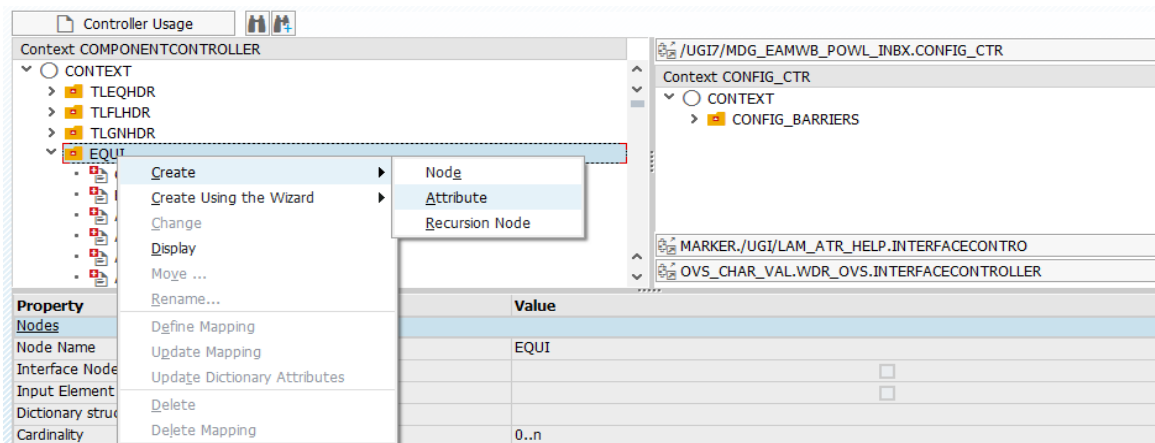
The attribute in the "Property" section is displayed.
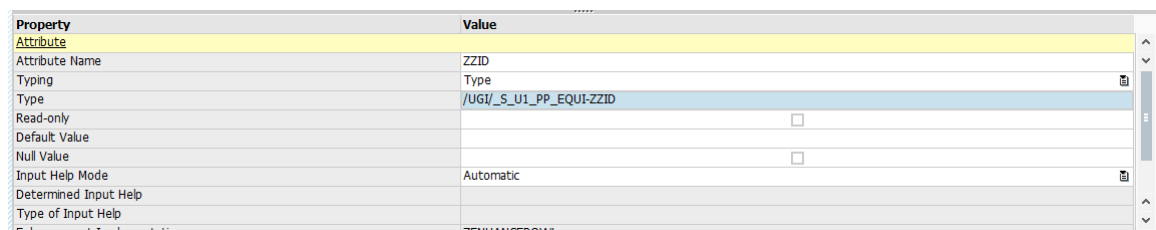
5. Enter the attribute details and save and activate the object.

6. Navigate to POWL_WINDOW and click on the menu View >Enhance and select the Enhancement implementation.
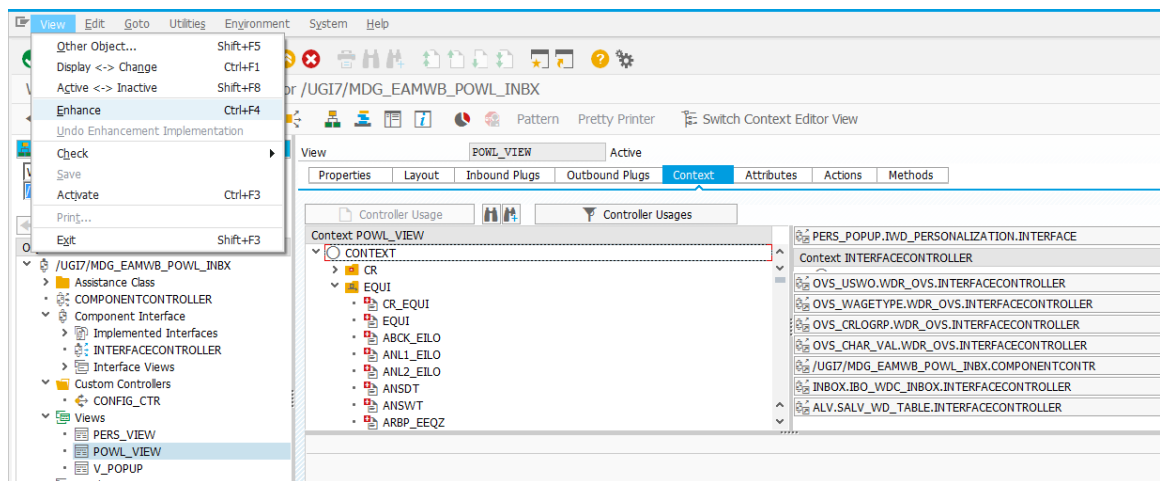
7. Navigate to the Context tab of view POWL_VIEW and right-click on Context >EQUI and click on Update Mapping.
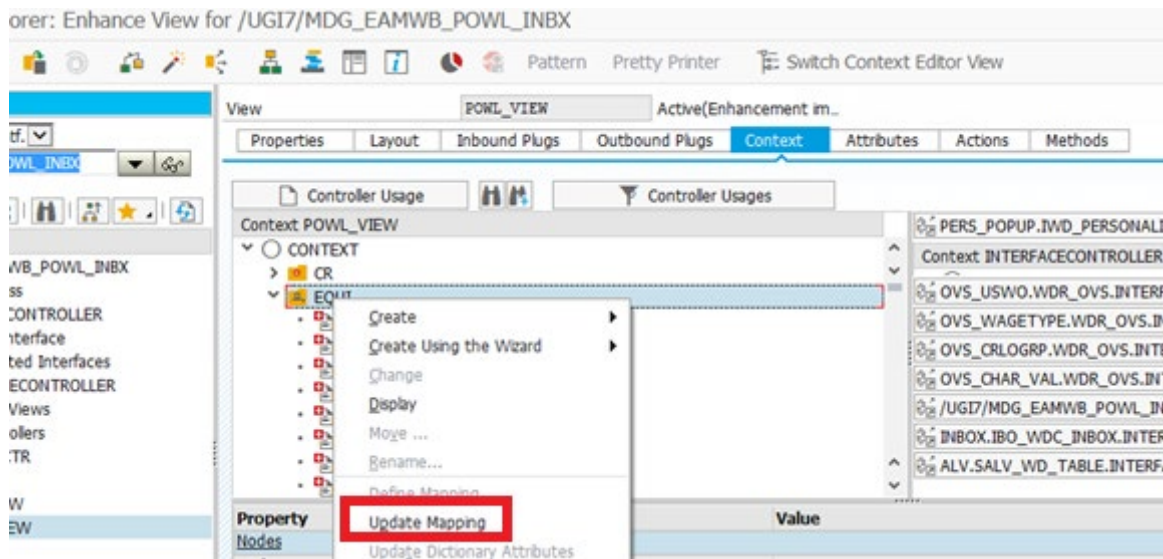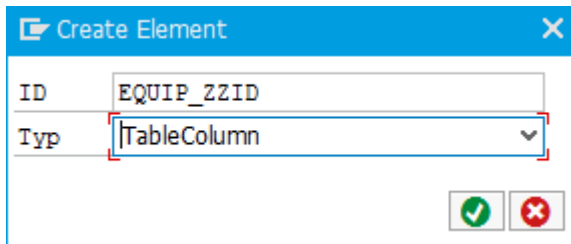
The added attribute is visible in the view within the "EQUI" node.
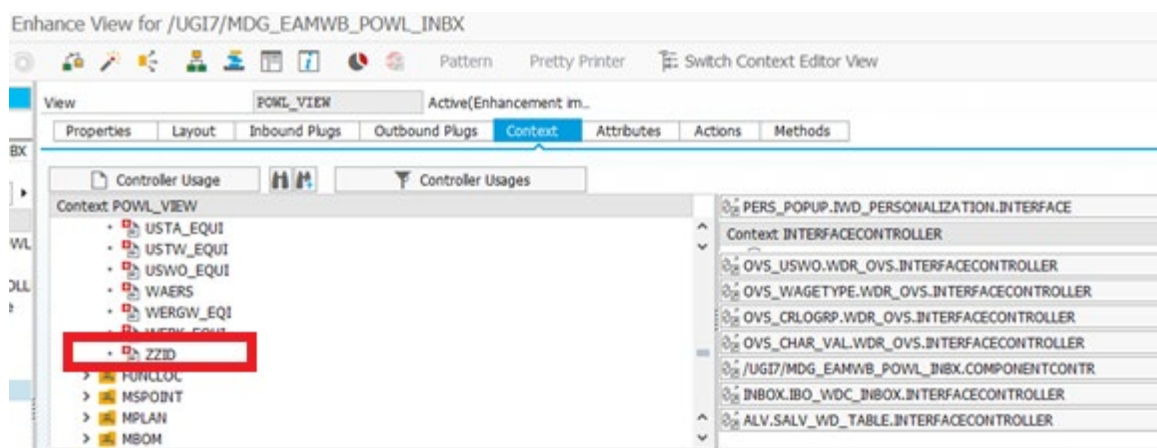
8. Navigate to the Layout section. Right-Click on the table where you want to add the new field in the UI and select "Insert Group Column".
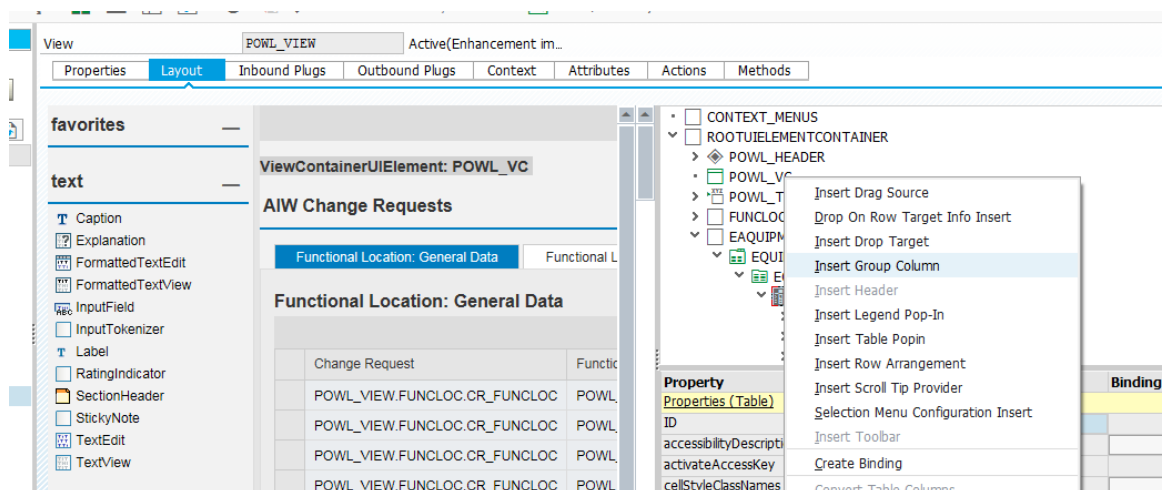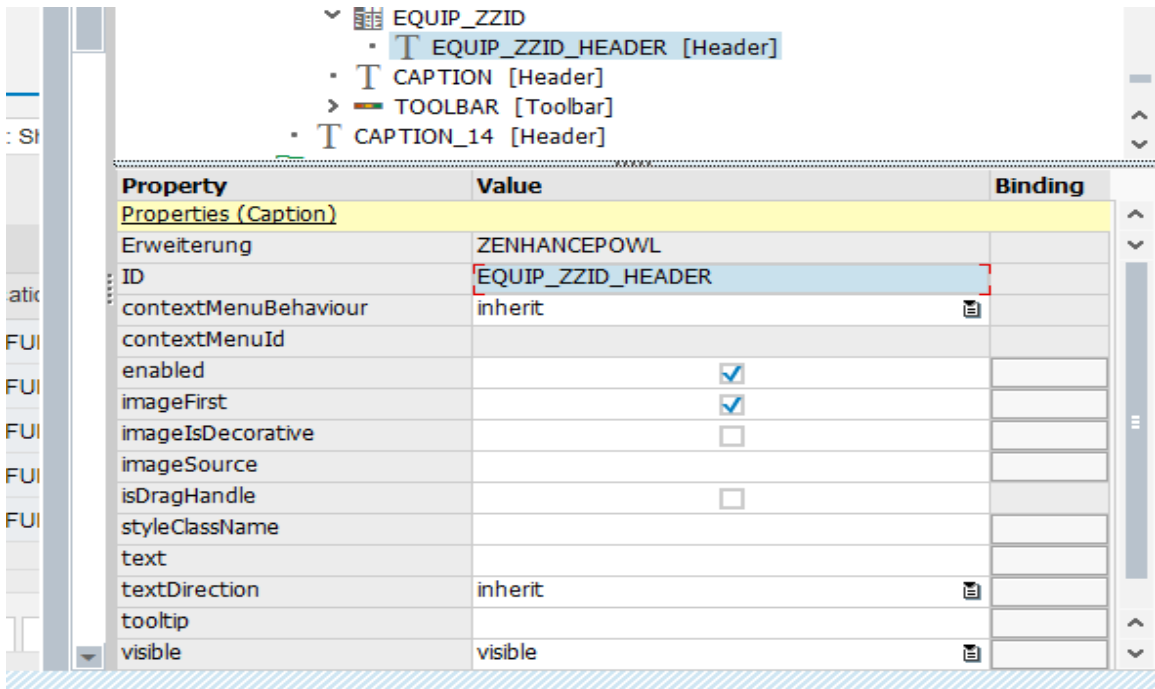
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The "Create Element" pop-up window is displayed.

9. Click "Continue". The following screen is displayed.

10. Enter the required details in the "Property" screen and create the caption for the header.

11. Right-Click on table column and select "Insert Cell Editor" and create an input field for the table column.
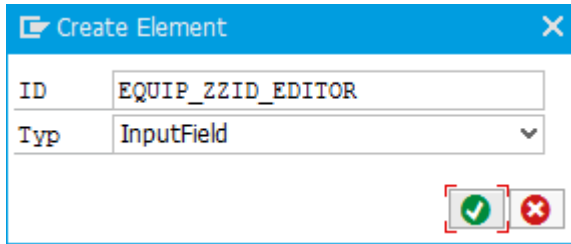
The "Create Element" pop-up window is displayed.
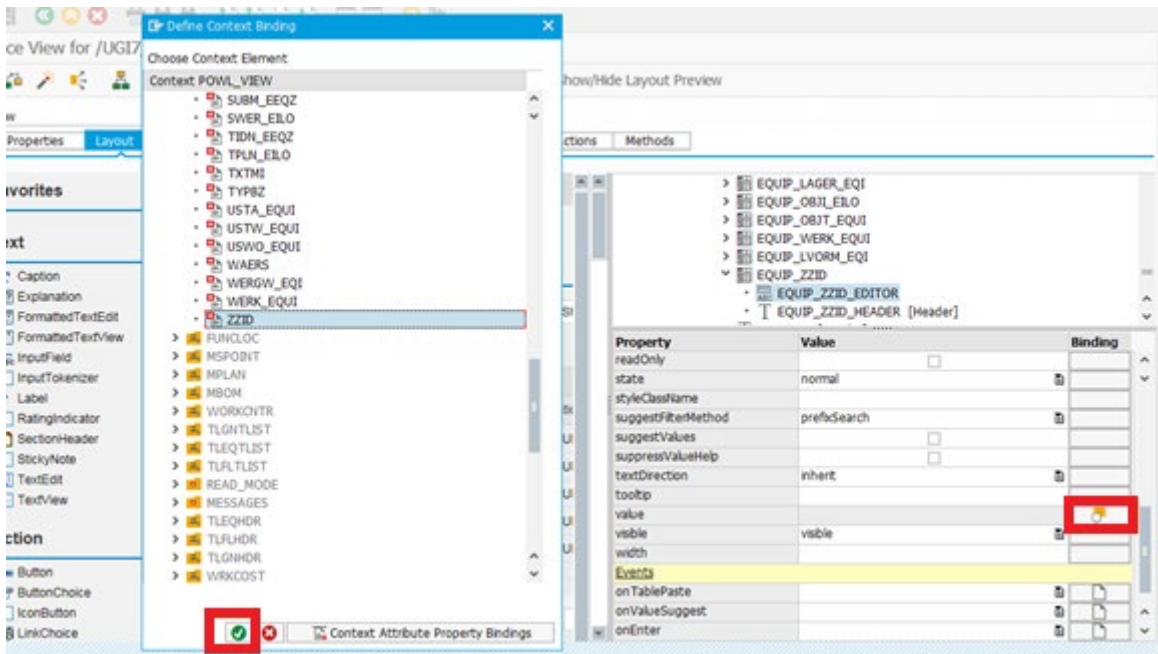
12. Click "Continue".

13. Maintain the mandatory binding by selecting the correct field (context attribute ZZID in the context EQUI) that needs to be displayed in the UI.
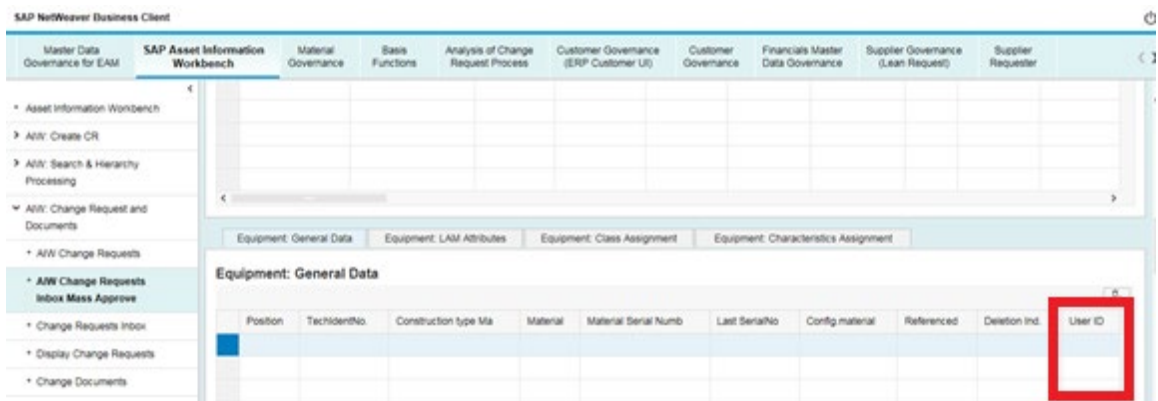
14. Enter the attribute details and save and activate the object.

15. Launch the POWL application to view the added field in the Equipment POWL table.

2.7. AIW Cross Search Extensibility

The extensibility helps the user to add the attribute in the selection criteria for AIW cross-search provided the attribute is available in the HANA Search View.

1. Click on the HANA Search View /UGI7/EAM_AIW_EQ", Master Data Governance > General Settings > Data Quality and Search > Search and Duplicate Check > Create Search View.

2. Click Edit at the top then click Next.

3. Click "Expand All".

4. Check the attribute in "Include in view" column so that it is available in F4 Help during AIW cross-search configuration. For example, Acquisition date is selected as an example.

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5. Click "Save" to save the changes in relevant TR.

6. Click Next.

7. Click Generate to generate the search view.

8. Go to Master Data Governance > Asset Information Workbench >AIW Cross Object Search.

9. Select the Search ID as UGI7 and double-click on Search Fields.

10. Click on "New Entries" to provide Search Attribute name and Description.

The data element and Search Help column are optional which can be provided based on business user requirement to trigger the cross-search.

11. Click Save to save the changes in the relevant TR.

12. Select the Search field and double-click on Search Field Mapping.
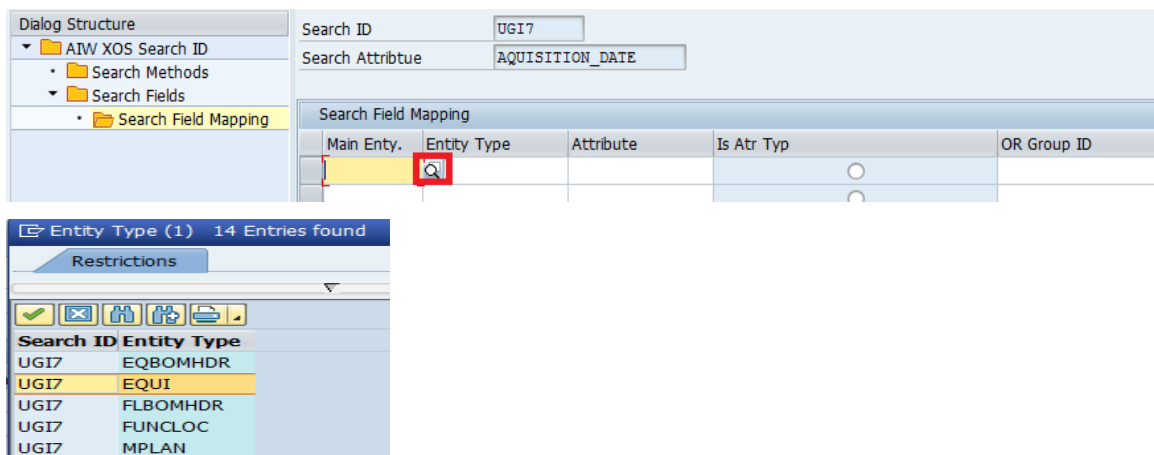
13. Click on "New Entries" at the top to provide search field mapping through F4 search helps.

14. Select Main Entity as EQUI.
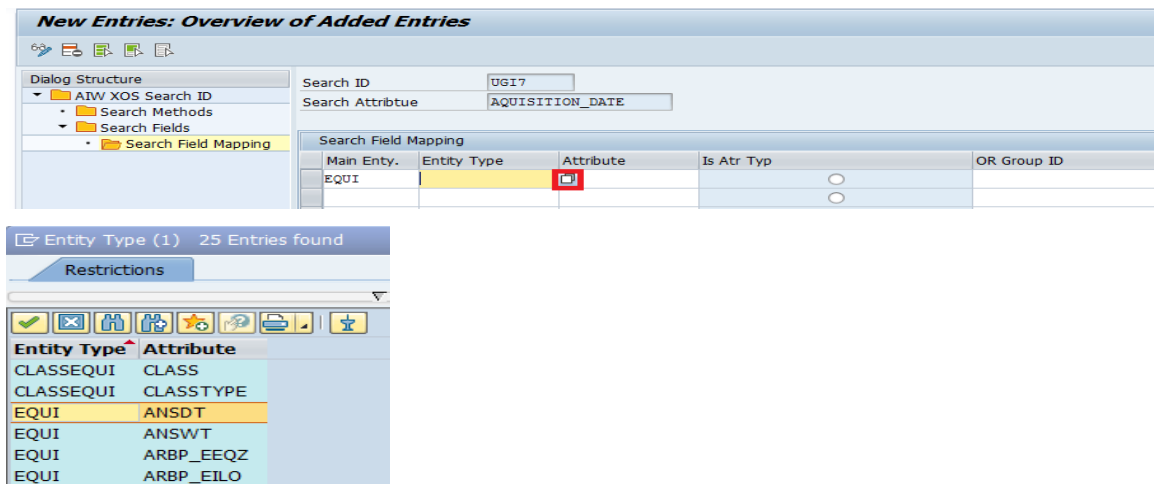
15. Click on F4 Help for Entity type to provide the attribute that needs to be mapped.
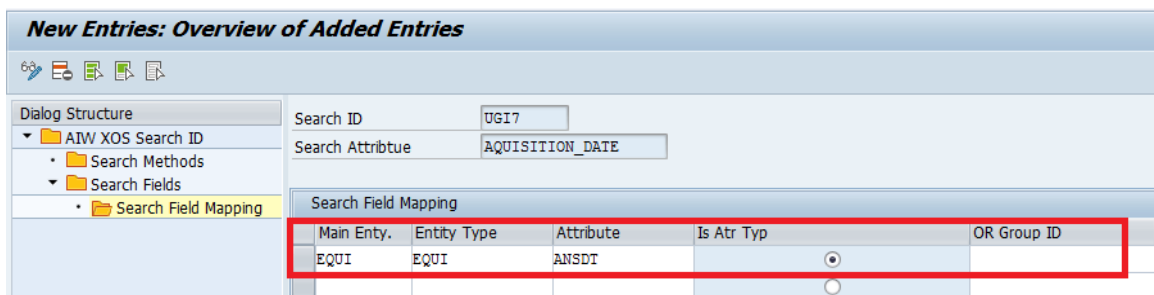
16. Select "Is Atr Typ" radio button if no data element is entered for the search field. It is to mark the common attribute that will be searched across the entities.

    ⅰ Note

    OR Group ID is optional which is entered where multiple attributes with the same domain are present for one main entity. The application performs the cross-search based on the OR condition with attribute values if OR Group ID is maintained. OR Group Ids should be unique per main entity per search attribute.
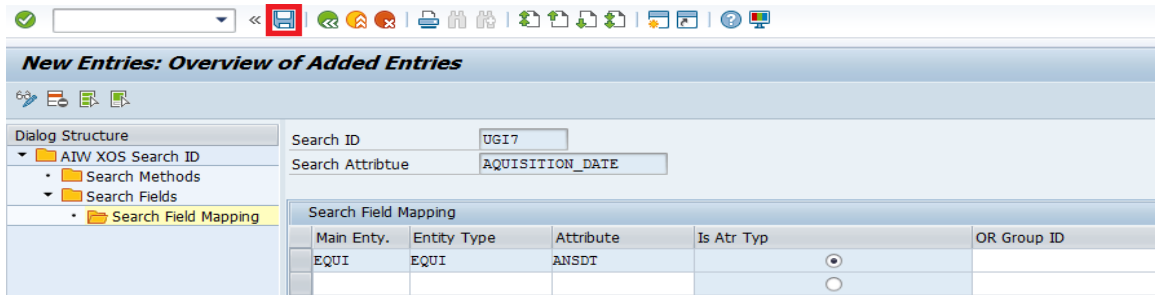
17. Click "Save" to save the changes.
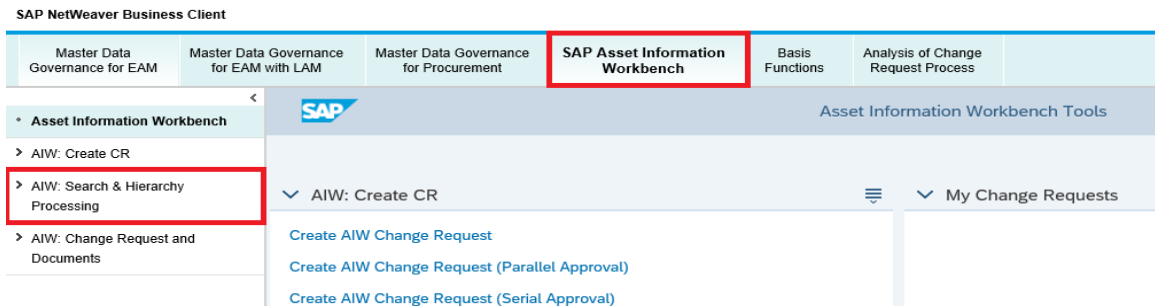
18. Go to t-code NWBC > Click Asset Information Workbench > Click AIW Search & Hierarchy Processing.

19. Select Cross Object Search by clicking on the drop-down provided for Search Object selection.
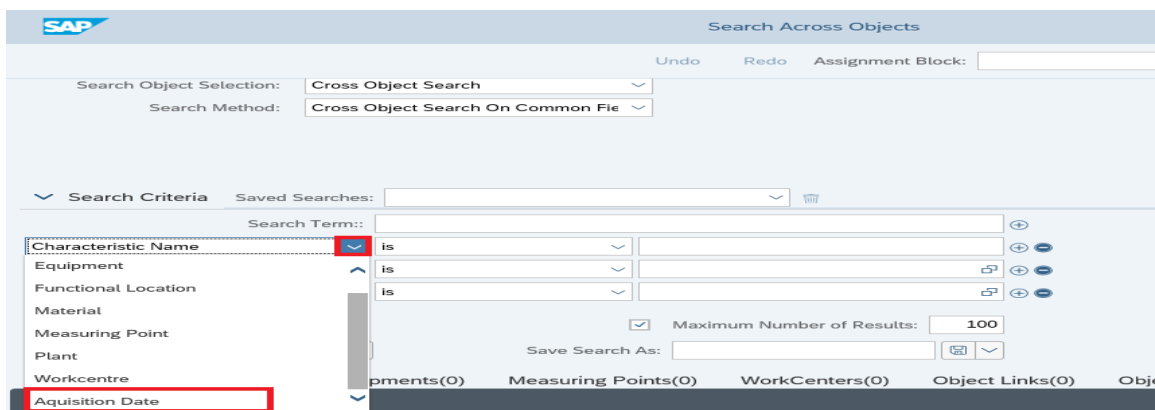
20. Go to the selection criteria and click the drop-down to find the new attribute.

    Acquisition Date is displayed in the list.