5. **Functional Specification**

1. **Functional Description**

Some technical objects require the assignment of two fields:

- Model number.
- Manufacturer part number.

Both of which may exceed 40 characters in length. The standard fields available in S/4 HANA for the same purpose only allow for:

- 20 characters for the model number (data element TYPBZ).
- 30 characters for the manufacturer part number (data element MAPAR).

The plan is to carry out the following activities:

The plan is to- First, extend the tables that hold general data of both functional locations and equipment to add two new custom fields which will store the model number and manufacturer part number for both technical objects. These new custom fields must have a 60 70 character length.

- Second, suppress (via configuration) the display of the standard fields for model number and manufacturer part number, so that end users do not use them by mistake.
- Third, suppress the display of the standard fields for model number and manufacturer part number from the WDA and UI apps, so that end users do not use them by mistake

The extension must be made available to both types of technical objects:

- Functional locations.
- Equipment.

.

Proposed logic:

The addition of the 2 new custom fields will be carried out by using standard append structures, which are provided by SAP in order to extend or add fields to standard master or transactional data tables. In this document, we will need the following append structures to be used:

- CI_IFLOT, which is available for table IFLOT (functional locations).
- CI_EQUI, which is available for table EQUI (equipment).

The following fields will need to be added to both append structures:

Field Name	**Field Description (EN)**	**Type**	**Length**	**Input Help**	**Additional Details**
ZTYPBZ	Model Number (Ext.)	CHAR	7060	-	-
ZMAPAR	Manufacturer Part Number (Ext.)	CHAR	7060	-	-

The new fields will be visible in the following Fiori apps.

Fiori App	App Type	App ID	Location of the Custom Fields
Create Technical Object	WDA	W0029	Replace the standard fields with their custom equivalents in the “General” tab under the “Manufacturer Data” field group (see screenshot)

Change Technical Object	WDA	W0029	Same as above
Display Technical Object	WDA	W0029	Same as above
Find Technical Object	UI5	F2072	Replace the standard fields with their custom equivalents in the filter section of the report (see screenshot)
Create Functional Location	GUI	IL01	Replace the standard fields with their custom equivalents in the “General” tab under the “Manufacturer Data” field group (see screenshot)
Change Functional Location	GUI	IL02	Same as above
Display Functional Location	GUI	IL03	Same as above
Create Equipment	GUI	IE01	Same as above
Change Equipment	GUI	IE02	Same as above
Display Equipment	GUI	IE03	Same as above
Display Functional Location List	GUI	IH06	Replace the standard fields with their custom equivalents in the “General Data” screen group of the selection criteria screen and in the ALV output (see screenshot)
Display Equipment List	GUI	IH08	Same as above

The new fields should also be visible in the SAP GUI transactions (IL01, IL02..., IH06, IE01, IE02.. IH08, and in all standard lists). In the backend, the corresponding standard fields should be hidden via customizing.

In general, the objective is to have the new custom fields take the exact same location as that of their standard equivalents. In that sense, it is required that they be shown as follows:

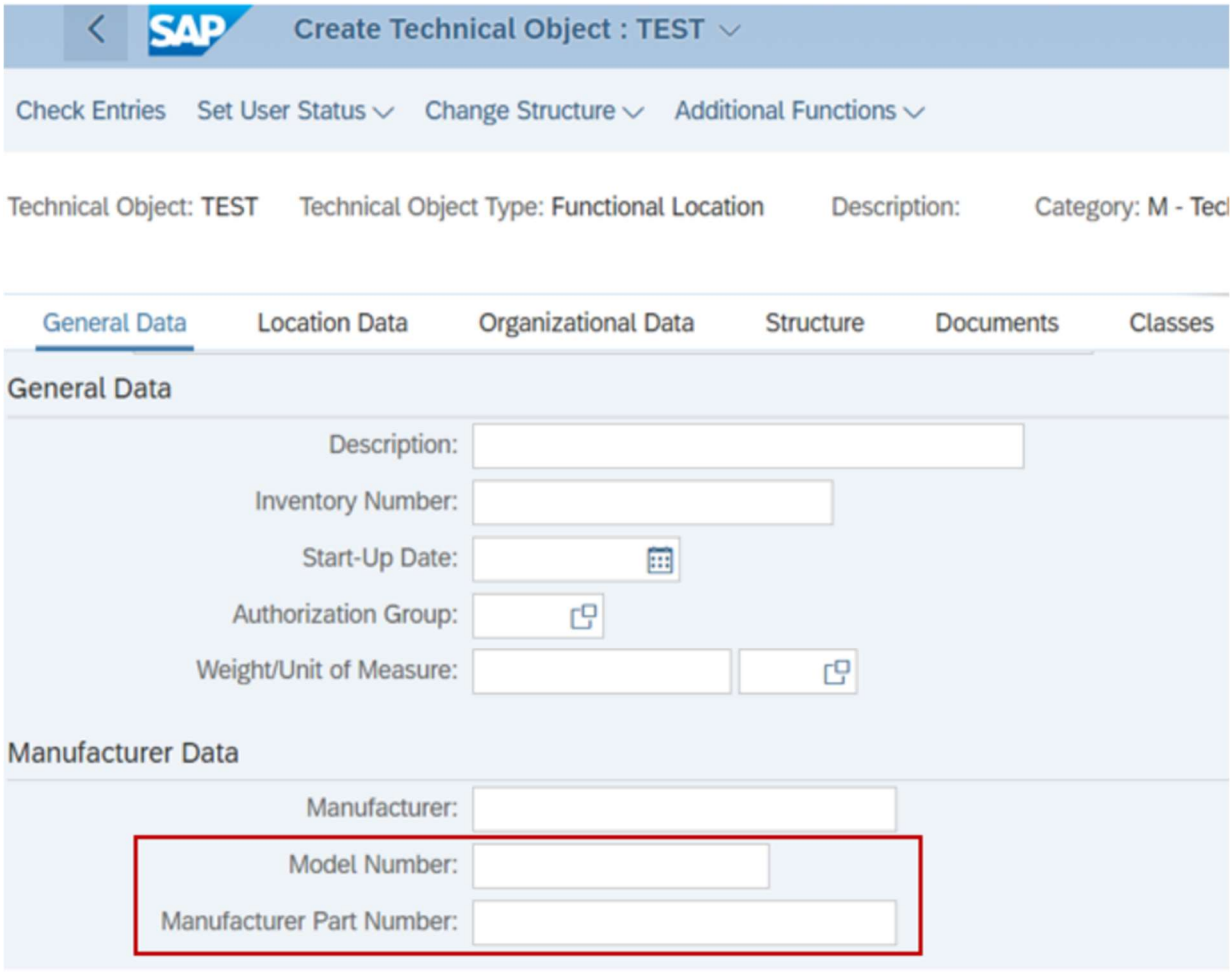


Figure 1 – Technical Object Screens (Create/change/Display)

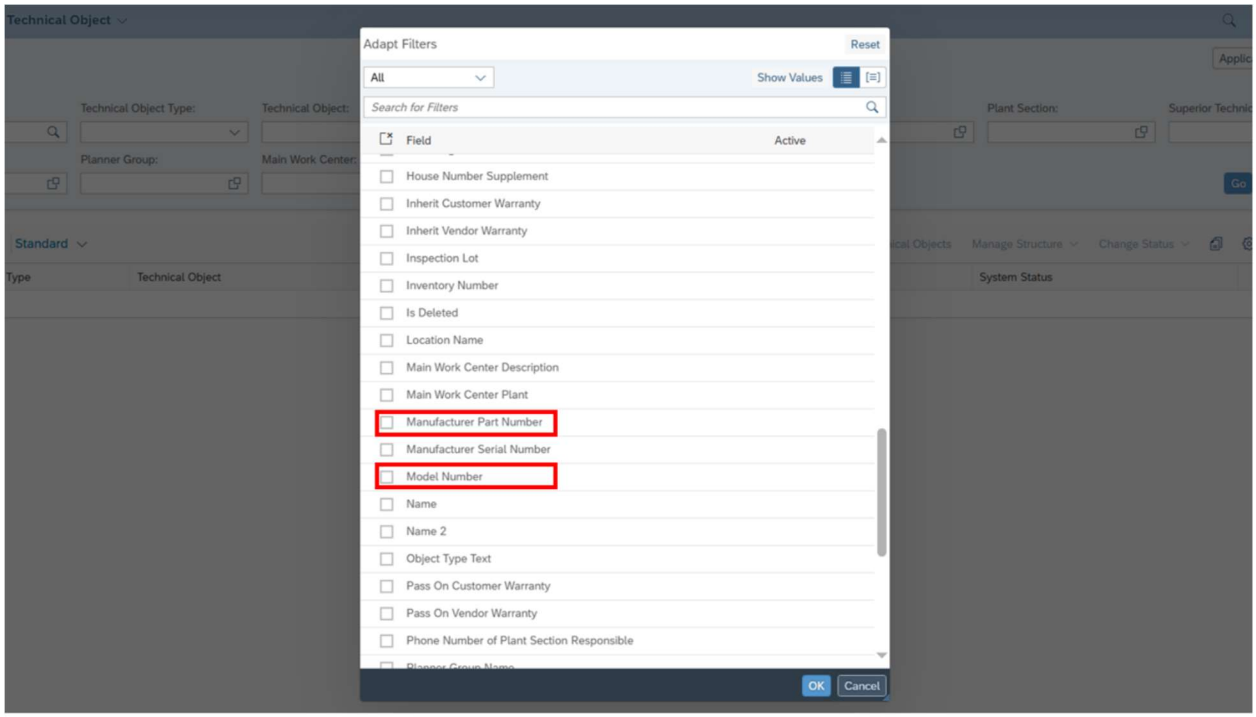


Figure 2 – Find Technical Object

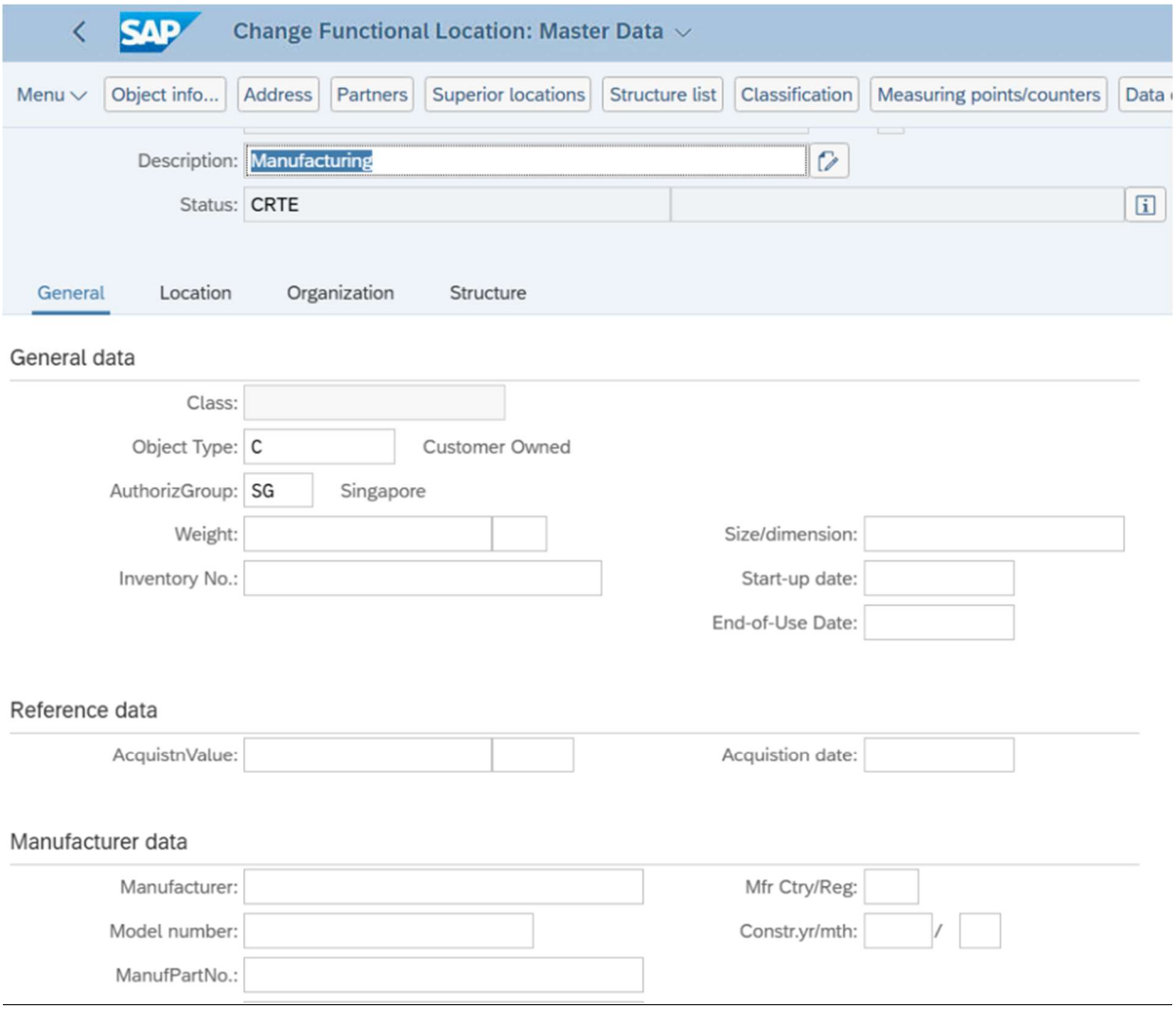


Figure 3 - Functional Location Screens (IL01/02/03)

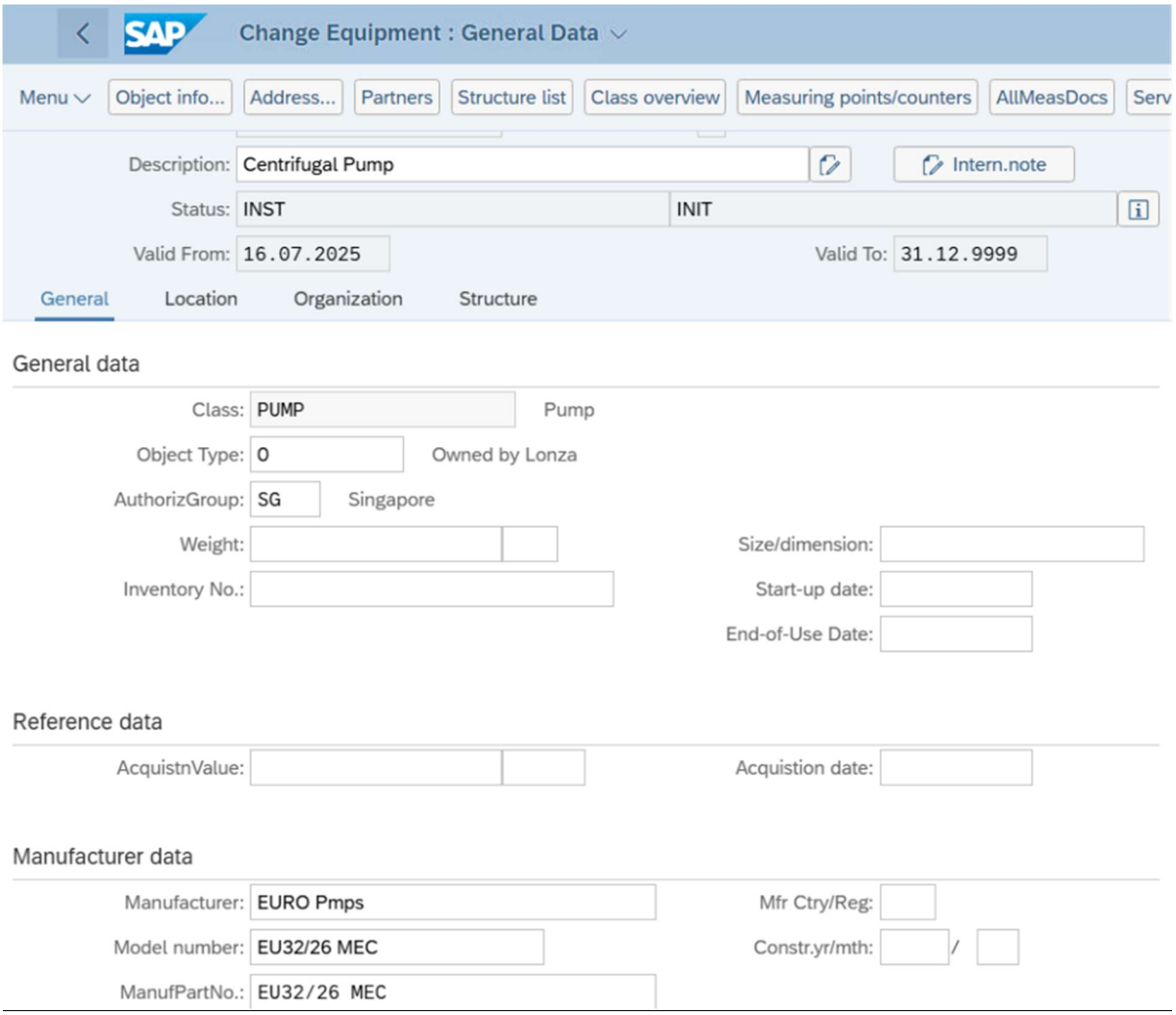


Figure 4 – Equipment Screens (IE01/02/03)

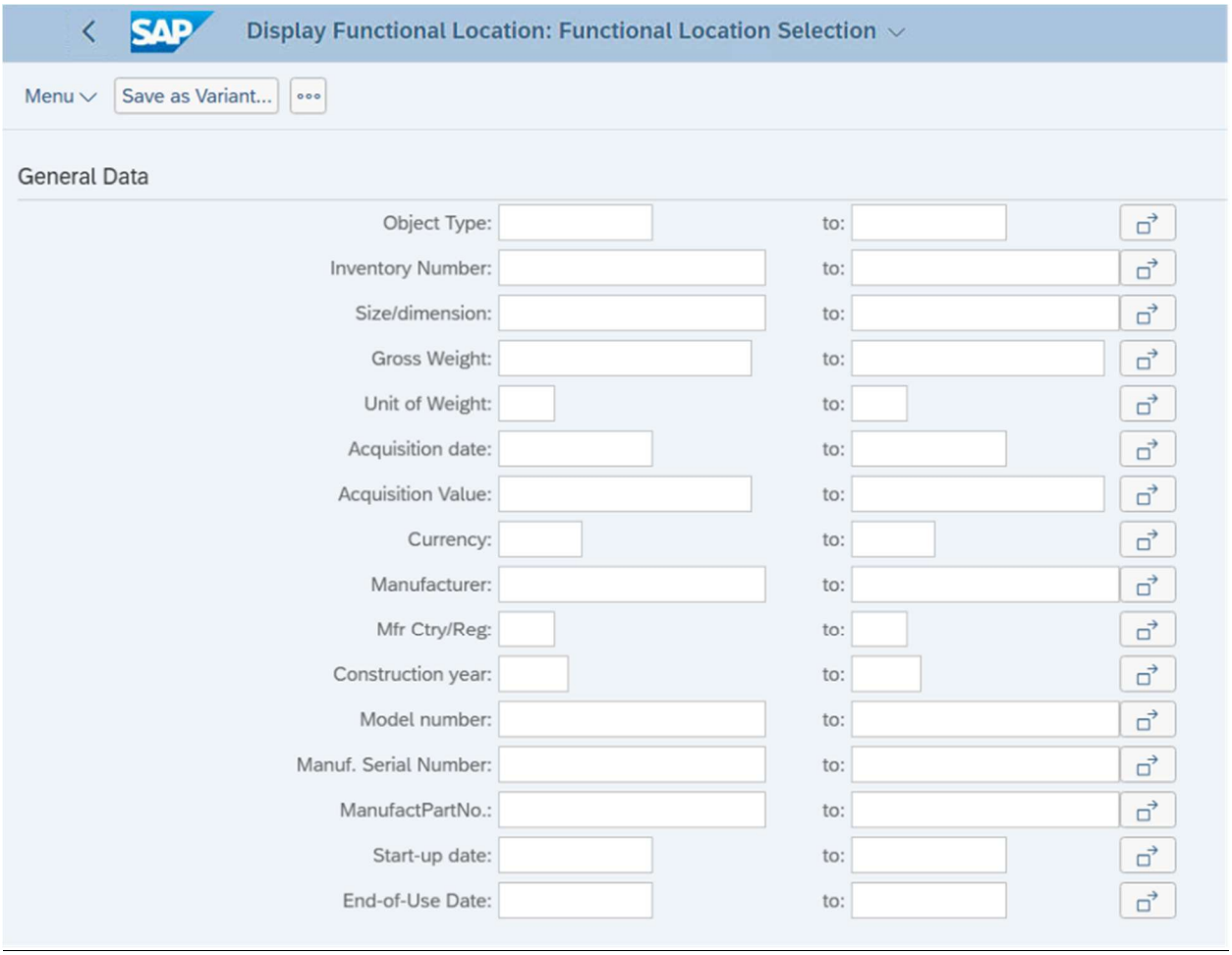


Figure 5 – Functional Location List (IH06)

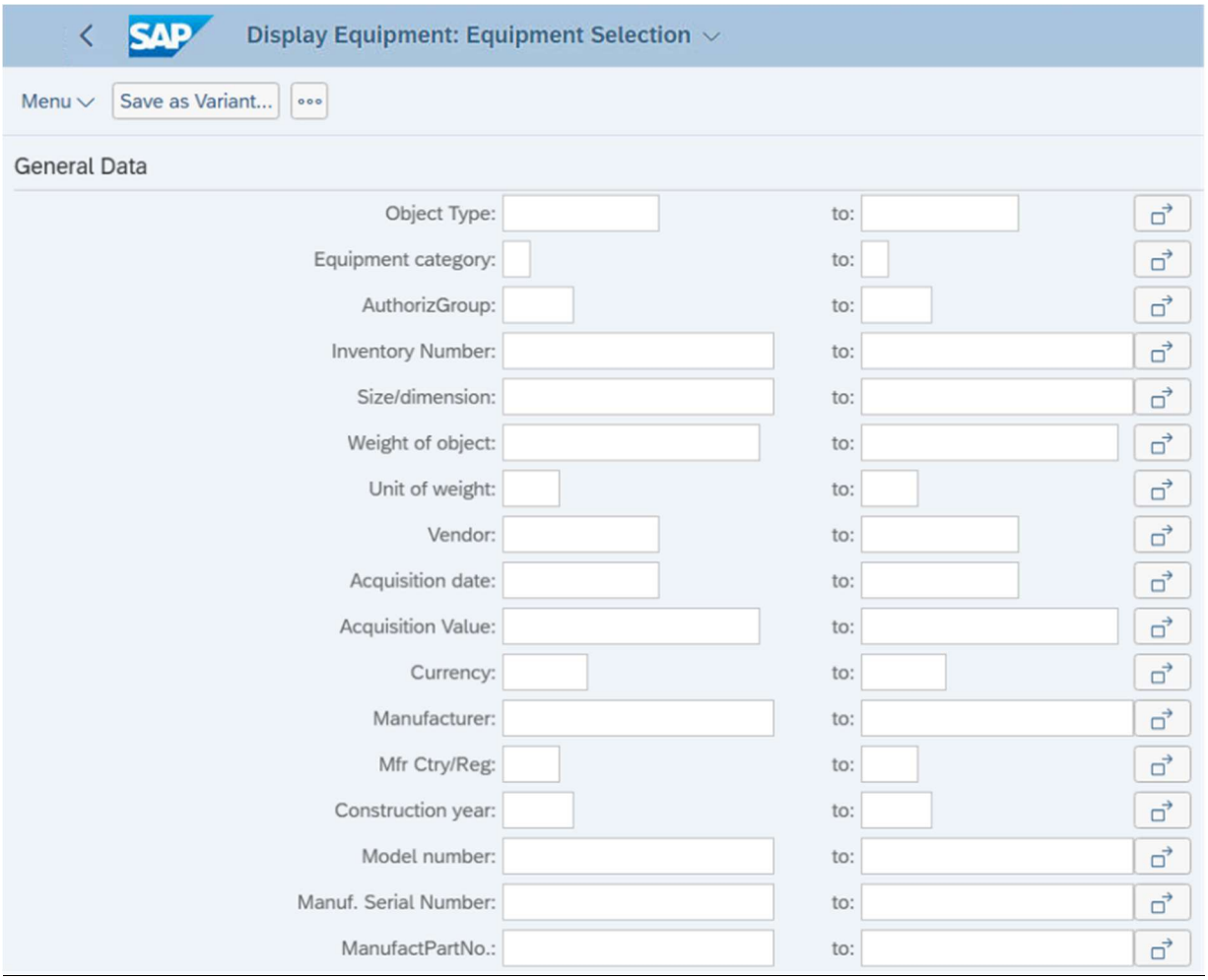


Figure 6 – Equipment List (IH08)

As explained in the table above in this same section of the document, the ALV layout must also be adapted so that is offers the new custom fields. In this case, the standard ones will not be hidden, but rather also listed. Users will be able to differentiate between the standard and the new custom ones because the new ones will have the word "(Ext.)" at the end of their descriptions (as explained before in this document).

2. Flow Diagram

N/A.

3. Unit Testing

For equipment:

Test step	Expected Result
1. Create equipment using the Create Technical Object app and assign a model number and a manufacturer part number with more than 40 and up to 60 characters in length (max 70)	Equipment is created
2. Edit the same equipment and change the model number and manufacturer part number	Equipment is updated
3. Display the same equipment and verify the last changes are in place	Last changes are displayed
4. Create equipment using the GUI app (IE01) and assign a model number and a manufacturer part number with more than 40 and up to 60 characters in length (max 70)	Equipment is created
5. Edit the same equipment using GUI app (IE02) and change the model number and manufacturer part number	Equipment is updated
6. Display the same equipment using GUI app (IE03) and verify the last changes are in place	Last changes are displayed
7. Run the Find Technical Object app with technical object type as 'Equipment' and search by model number	The report lists equipment that matches the search criteria, including the model number
8. Run the Find Technical Object app with technical object type as 'Equipment' and search by manufacturer part number	The report lists equipment that matches the search criteria, including the manufacturer part number

9. Run the equipment list report and search by model number	The report lists equipment that matches the search criteria, including the model number
10. Run the equipment list report (IH08) and search by manufacturer part number	The report lists equipment that matches the search criteria, including the manufacturer part number number
11. Change the layout of the report for all possible combinations, where both the Model Number and Manufacturer Part Number are shown, then when only one is shown, then when none of them are shown	The list will show the fields when they are required to be shown

For functional locations:

Test step	**Expected Result**
1. Create functional location using the Create Technical Object app and assign a model number and a manufacturer part number with more than 40 and up to 60 characters in length (max 70)	Functional location is created
2. Edit the same functional location and change the model number and manufacturer part number	Functional location is updated
3. Display the same functional location and verify the last changes are in place	Last changes are displayed
4. Create functional location and assign a model number and a manufacturer part number with more than 40 and up to 60 characters in length (max 70)	Functional location is created

5. Edit the same functional location and change the model number and manufacturer part number	Functional location is updated
6. Display the same functional location and verify the last changes are in place	Last changes are displayed
7. Run the Find Technical Object app with technical object type as 'Functional Location' and search by model number	The report lists functional locations that match the search criteria, including the model number
8. Run the Find Technical Object app with technical object type as 'Functional Location' and search by manufacturer part number	The report lists functional locations that match the search criteria, including the manufacturer part number
9. Run the functional location list report (IH06) and search by model number	The report lists functional locations that match the search criteria, including the model number
10. Run the functional location list report and search by manufacturer part number	The report lists functional locations that match the search criteria, including the manufacturer part number
11. Change the layout of the report for all possible combinations, where both the Model Number and Manufacturer Part Number are shown, then when only one is shown, then when none of them are shown	The list will show the fields when they are required to be shown

6. Design Specification

1. Configuration

1. Configuration reference

Configuration path **(IMG, table, …)**	Plant Maintenance and Customer Service > Master Data in Plant Maintenance and Customer Service > Technical Objects > Functional Locations > Define Field Selection for Functional Locations
	Plant Maintenance and Customer Service > Master Data in Plant Maintenance and Customer Service > Technical Objects > Equipment > Define Field Selection for the Equipment Master Record > Field Selection for Equipment (Common Fields for Equipment/Funct. Location)

2. **Workflow**

1. **Technical Reference**

Object Name	Object Type	Object Description

2. **Flow Diagram**

N/A.

3. **Steps Description**

N/A.

4. **Technical Details**

Trigger Mechanism	Mention the start condition for the workflow, e.g. on creation of a purchase document, batch program etc.
Start Condition	Example – The workflow should start only for certain document type, workflow should start only if credit amount is greater than 250000 etc.
Business Object	Mention the business object, if possible. Otherwise indicate the object in general terms (e.g., Purchase Requisition)
Standard Workflow Task / Template	In case of enhancement required for delivery workflow is required.
Level of Approval Required	
Agent Determination Technique	Role - Security Role Org Unit - HR Org Structure Custom Table - Agents in custom table Distribution Lists Unspecified - To be decided in Functional Specification Other <use to elaborate on a selection of "Other"> If the agent determination technique is different for each foreground step then please repeat this section.
Mention Logic for Agent Determination (if any)	

Notification Destination	Internal User (Mail Inbox) External User (email address)
Workflow Notifications Text	If any specific work item text/work item subject to be used.
Escalation Handling (if any)	If any deadline monitoring is to be done. Example: If approver does not approve for 3 business days notify his supervisor.
Integration with Portal	
Configuration Dependencies	Example setting up a new organization structure.
Error Handling (if any)	An exception situation could occur if workflow routes to a one position is vacant/not available (i.e. no user is assigned to that position.) If a specific report or additional information is required. Add attachment if necessary.
Substitution	

5. Authorization

<<< Explain which roles should be added or used to approve/reject and execute workflow items. Enter any custom authorization required >>>

No	Business Catalog	Authorization Parameter	Parameter Value

3. **Report**

1. **Technical Reference**

<<< Technical Object References (class, program, t-code, ...) >>>

Object Name	Object Type	Object Description

2. **Selection Screen Details**

<<< The functional designer should be able to detail exactly what he/she wants at the selection screen merely by using this table. The programmer will be able to construct the screen directly from the details in this table. Some technical knowledge will be needed for the complete production of this table>>>

Name	Type	Parameter or Select Option	Comments (Range, Single/Multiples selections, Patterns Mandatory etc.)	Default Value
	Table-Field Check Box Radio Button with Group	Parameter Select Option		
	Table-Field Check Box	Parameter Select Option		

	Radio Button with Group			

3. Desired Screen Design

<<< Enter attachment if necessary >>>

4. Technical Details

<<< Information like relevant database tables, data retrieval logic, type of report like (simple list report or ALV), sorting order, detail functionality, other display attributes, special interaction on clicking one or more columns etc. can mentioned here >>>

5. Starting Conditions

<<< When should the report be run? Does an interface need to be run before the report is valid, and (more commonly), should it be a batch only program (with added security) or is it needed on-line as well?

E.g. 'This program will be run after month-end billing.

E.g. 'This program will be run each time a sales order is saved >>>

6. Data Mapping Tables

<<< List of all the fields along with their details are to be mentioned here. Look and feel wise, a desired report design can also be specified here >>>

Field Name	Field Description	Output Length	Output Type	Format	Position	Screen No / Field Name

7. Report Example

<<< Use Attachment if necessary >>>

8. Authorization

<<< Explain which roles should be added or used for these reports. Enter any custom authorization if required >>>

No	Business Catalog	Authorization Parameter	Parameter Value

4. Interface

1. Technical Reference

<<< Technical Object References (class, program, t-code, ...) >>>

Object Name	Object Type	Object Description

2. Technical Details

Interface Name	
Direction (with respect to this system)	Inbound Outbound other If other, please specify exactly
Interface Type	Batch near real-time real-time other If other, please specify exactly
Interface Frequency	Hourly Details: Daily Details: Weekly Details: Monthly Details: Quarterly Details: Yearly Details: On-Demand Details: Other Details:
Type of Records Sent	Delta Fields Delta full-record other If other, please specify exactly
Volume (per single execution)	Average Volume: <Volume> records per interface execution Peak Volume: <Lower Volume – Upper Volume>

3. Flow logic

<<< Please explain any flow logic, calculations, rules, etc.. that should be implemented in this interface >>>

4. **Interface Data Layout**

<<< Please list the source and destination data elements, plus any mapping that will be required for this interface. If IDOC, include segment name in structure column. Excel matching this format can be attached in place of this table. >>>

Source Structure	Source Field	Description	Data Type	Length	Transformation	Target Structure	Target Field	Description	Data Type	Length	Mand/Opt.	Comments/Remarks

5. **Mapping Rules & Conversion Criteria**

<<< This section should contain any additional mapping rules and conversion criteria not covered in the previous section. >>>

6. **Special Case: Bi-Directional Real-Time Interface**

<<< If you know this interface will be a bi-directional real-time interface (i.e. the "Source" system sends and receives data in the same execution), then a second data mapping is required. If applicable, duplicate the table from Section 4.4.4 and capture the "return data" mapping rules for the "Source" system >>>

7. **Sample Data**

<<< Please provide two attachments of sample source data with the expected target data after this interface is executed. Please supply the sample data in the native format or .csv, and preferably zipped >>>

8. Data Retention

<<< In file based interfaces a "backup" copy of interface data can be retained in the middleware for each execution. This can be useful for reconciliation purposes. Please indicate the retention period for this interface. If not file based, then the source or target system must fill any data retention requirements >>>

Selection		Comments
	None	
	7 Days	
	15 Days	
	30 Days	
	Other	

9. Middleware Solution

<<< This section should contain an outline of the chosen middleware solution and the processes involved. Middleware specific configuration should be specified >>>

10. Interface Scheduling

<<< Please describe any requirements around the timing of this interface >>>

11. Authorization

<<< Explain which roles should be created / added or users / IT for reprocessing errors or ad hoc requests. Enter any custom authorization if required. Enter the file path or folder structure to which users/IT will need access to >>>

No	Business Catalog	Authorization Parameter	Parameter Value

12. Other system documentation

<<< Reference the other system's documentation, when relevant >>>

5. Conversion

1. Technical Reference

<<< Technical Object References (class, program, t-code, ...) >>>

Object Name	Object Type	Object Description

2. Technical Details

Conversion Name	

3. Conversion Data Layout

<<< Please list the source and destination data elements, plus any mapping that will be required for this conversion. If uploading from file, source structure can be omitted. Excel matching this format can be attached in place of this table. >>>

Source Structure	Source Field	Description	Data Type	Length	Transformation	Target Structure	Target Field	Description	Data Type	Length	Mand/ Opt.	Comments/Remarks

4. Mapping Rules & Conversion Criteria

<<< This section should contain any additional mapping rules and conversion criteria not covered in the previous section. >>>

5. Sample Data

<<< Please provide two attachments of sample source data with the expected target data after this conversion is executed. Please supply the sample data in the native format or .csv, and preferably zipped >>>

6. Authorization

<<< Explain which roles should be created/added or used for loading data. Enter any custom authorization if required >>>

No	Business Catalog	Authorization Parameter	Parameter Value

6. Enhancement

1. Business Add-Ins (BADIs)

BADI Property	Value/Object
System	*<<< BTP, S/4 HANA, ...>>>*
Transaction	
Enhancement Spot	
BADI Name	
Enhancement Implementation	
BADI Implementation	
Class	
Method	
Filter	
OData Service	

2. Implicit Enhancement

Property	Value/Object

Transaction	
Enhanced Object	
Implementation	

3. **User-Exits**

Property	**Value/Object**
Transaction	IL01, IL02, IL03, IE01, IE02, IE03
Main Program	
Includes	ZXTOBO01 ZXTOBO02 ZXTOBTOP ZXTOBU01 ZXTOBU02 ZXTOBZZZ
Form Routines	

4. **CDS Views Extension**

1. **Technical Reference**

Property	**Value/Object**
Original CDS View Name	

Extended CDS View Name	
Purpose of Extension	
Extension Type	☐CDS View Extension ☐Custom CDS consuming Standard CDS ☐View with Additional Associations or Joins ☐Metadata Extension
Odata Exposure	☐Yes ☐No
Input Field Parameters	
Service Definition	
Service Binding	

2. **Fields Added**

Field Name	Data Element	Source Table	Description	Annotations

5. **Function Exits**

Property	Value/Object
Transaction	

Enhancement	
Function Module Name	
Includes	

6. **Field Exits**

Property	Value/Object
Enhancement	
Main Program Name	
Function Module Name	
Field Exit Id	
Screen Number	
Screen Field Name	
Conditions for execution	

7. **Menu Exits**

Property	Value/Object
Enhancement	
Menu/Path	

Function/Transaction Code	

8. **Screen Exits**

Property	**Value/Object**
Enhancement	ZTECHOBJ
Main Program Name	SAPLXTOB
Screen Number	1000, 1001
Program Name & Sub-Screen Number	SAPLXTOB1000 SAPLXTOB1001

9. **Search Help Exits**

Field Name	**Field Description**	**Import / Export (I/E)**	**Key Field (Y/N)**	**Data Element**	**Type (CHAR, NUMC)**	**Length**	**Default Value**

10. **Search Help assignment**

Property	**Value/Object**

Standard Search Help	
Collective Search Help	
Elementary Search Help	

11. Business Transaction Events (BTE)

Property	Value/Object
Transaction	
BTE Number	
Product Name	
Function Module	

12. Custom Transaction

<<< Functional details of custom transaction can be incorporated here. Number of screens required and flow diagram can be included and provide the selection screen shot along with the table name and field name and screen shot for the required output >>>

13. Requirement routine

Menu/Submenu	
Routine number	

Business logic required	

14. Substitution

Validation Description	Fields required for validation	Point of Validation	Table used in validation	Business Rules

Substituted Field	Derived from Field	Table used in Substitution	Business Rules

15. Flow logic

<<< Please explain any flow logic, calculations, rules, etc that should be implemented in this enhancement >>>

16. Authorization

<<< Which authorization object should be used for controlled execution? Enter any custom authorization if required >>>

No	Business Catalog	Authorization Parameter	Parameter Value

7. **Form**

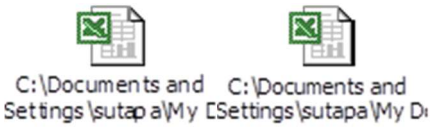
1. **Technical Reference**

<<< Technical Object References (class, program, t-code, ...) >>>

Object Name	Object Type	Object Description

2. **Form Layout**

<<< Refer to the following for an output samples for Window mapping, Label Description and Field mapping >>>



3. **Layout Windows**

Reference	Print on page	Label Position
		X :

		Y :
		X : Y :
		X : Y :
		X : Y :
		X : Y :
		X : Y :
		X : Y :

4. **Field Mapping**

Field	Field Description	Functionality	Logic	Print on page	Font	Font Format	Window

5. **Standard Texts / Text Modules**

Reference	Text	Print on page	Label Position	Font	Output Format	Font Format

6. **Translation**

Reference	Description of use (in Language1)	Description of use (in Language2)	Description of use (in Language3)	Text Module Name	Notes

7. **Layout Details**

Position of Left Margin (specify unit)	
Position of Right Margin (specify unit)	
Position of Logo (specify unit)	
Logo (specify logo)	
Position of Main Window (specify unit)	

8. **Flow logic**

<<< Please explain any flow logic, calculations, rules, etc that should be implemented in this form >>>

9. **Authorization**

<<< Explain which roles should be created/added or used for printing and testing forms. Enter any custom authorization if required >>>

No	Business Catalog	Authorization Parameter	Parameter Value

8. **Fiori Application**

1. **Header Information**

Application Title	
Application ID	
Type of Enhancement	☐Custom Application ☐ Standard Application
Development Type	*<<<Fiori Elements App ….Free Style UI5 App>>>*
Application Type	*<<<List Report, Object Page , Over view Page ,etc >>>*
UI Enhancements	☐Custom Fields Added ☐UI Layout Modified

	☐Extensibility Hook Used ☐Fragments or Views Introduced

2. Technical Reference

Object Name	Object Type	Object Description
<<< *Odata Object* >>>		
<<< *CDS View* >>>		
<<< *Custom Fields* >>>		
<<< *Catalogs* >>>		
<<< *Rules* >>>		

3. Desired Screen Design

<<< *Enter attachment if necessary* >>>

4. Technical Details

<<< *Information like relevant database tables,CDS Views,ODATA services , data retrieval logic, detail functionality, other display attributes, special interaction on clicking one or more columns etc. can mentioned here* >>>

5. Authorization

<<< *Enter Authorization Objects/fields, to be used and specific user Groups* >>>

No	Business Catalog	Name of Space (L2)	Name of Page (L3)	Name of Section (L4)	Name of App/Tile(L5)	Authorization Parameter	Parameter Value

7. Custom Tables/Structure

<<< This section should detail the attributes of any new custom table created for one of the above sections, and the properties of its fields.

NB: Existing Data Elements and/or Domains should be used whenever possible when creating custom table fields, in order to avoid unnecessary typos. In this instance, the data table row for that field should not be completed beyond 'Domain', as the remaining attributes will be default values for the selected Domain. >>>

Table Name	
Short text	
Size category	
Table maintenance allowed	
Maintenance Type	Manual / Automatic Maintenance (application table) Transportable Maintenance (customizing table)
Data class	
Buffering	

Table maintenance generation								
Authorization Group								
Change Log Enabled (Y/N) *(mandatory for GxP related table)*								
SPRO Path *(mandatory for customizing tables)*								
Field Name	**Data Element**	**Domain**	**Type**	**Length**	**Check Table-Field**	**Key Field**	**Foreign Key**	**Description**
Comments								

8. **Error Handling**

1. **Error Messages**

Error Message Number	**Error Message Text (70 characters)**	**Error Conditions**

9. Validation

1. Test Case References

<<< List the Test Case(s) used to validate the functionality / configuration covered in this document (IQ / OQ). >>>

Test Case ID	Test Case	Comment