KDD058 - Finance Enterprise Structure

Status	Approved
Owner	PUN-ext, Eddy
Stakeholders	ERGUIZA-ext, Pinky Love TEE-ext, Paul JOSHI-ext, Aditya VILARES, ines LEIGHTON-ext, DeanSARUKAN-ext, Ayse STEFAN ESCU-ext, Aurelia MOUSSA-ext, Eva HUSSAN-ext, Nishin

Purpose

The purpose of this document is to define the conversion approach to create Bill of Material in S/4 HANA.

In Syensqo's SAP S/4HANA environment, the Bill of Materials (BOM) defines the structured list of components required to perform a specific maintenance task, build an assembly, or manufacture a product. Each BOM represents a hierarchical breakdown of items - materials, assemblies, or parts - along with their respective quantities and usage context.

In the maintenance and asset management domain, three types of BOMs are utilized:

- Functional Location BOM – Linked to a specific technical location, outlining the parts typically required for maintenance activities at that location.
- Equipment BOM – Associated with a particular equipment asset, detailing spare parts and components relevant to its structure or maintenance.
- Material BOM – Tied to a material number, commonly used in manufacturing or for assemblies that are consumed or produced.

For rotable materials—such as repairable or reusable components—always refer to the corresponding Equipment or Functional Location Bill of Materials (BOM). Only components that are specific to that individual Equipment or Functional Location and not commonly used across other similar assets, should be included. This ensures that the BOM accurately reflects asset-specific configurations and supports targeted maintenance planning.

Conversion Scope

The scope of this document covers the approach for converting active Bill of Material from Legacy Source Systems into S/4HANA following the Bill of Material Master Data Design Standard.

A Bill of Materials (BOM) is a structured list of components, spare parts, or assemblies required for maintenance activities on technical objects like equipment or functional locations. It helps streamline maintenance planning, spare parts procurement, and work order execution.

The data from legacy system includes:

1. BOM Category (STKO-STLTY):
    a. E-Equipment BOM (EQST-EQUNR) for relevant Equipment
    b. M-Material BOM (MAST-MATNR) for relevant Assembly
    c. T-Functional Location BOM (TPST-TPLNR) for relevant Functional Location where the To-Be Category (IFLOT-FLTYP) = "A" and EquipmentInstallationIsAllowed (ILOA-IEQUI) = "X"
2. BOM Usage (EQST-STLAN/MAST-STLAN/TPST-STLAN) = Plant Maintenance
3. BOM Item Category (STPO-POSTP) = I, L, N or T
4. Material BOM with the latest Alternative BOM (MAST-STLAL), if multiple alternative BOMs exist
5. BOM Component (STPO-IDNRK) for relevant Material / Assembly
6. BOM Component (STPO-IDNRK) for non-Assembly is extended to the relevant plant based on the BOM Header Plant (TPST-WERKS/EQST-WERKS/MAST-WERKS)
7. BOM Component (STPO-IDNRK) for non-Assembly, only Material Type (MARA-MTART) with the following to-be values based on Material Type Mapping:

- ZIND
- NLAG
- UNBW

The data from legacy system excludes:

1. BOM with BOM Item where there is no relevant Material / Assembly in the Component field (STPO-IDNRK)
2. BOM where the BOM Header (MAST-MATNR) is Assembly and all the BOM items (STPO-IDNRK) are Assembly
3. BOM Header with deletion indicator checked (STKO-LKENZ="X")
4. BOM Header with deletion flag checked (STKO-LOEKZ="X")
5. BOM Item with deletion indicator checked (STPO-LKENZ="X")
6. Previous Alternative BOM (MAST-STLAL) for Material BOM with more than one Alternative BOM

For further explanation, a Material BOM for relevant Assembly excludes BOM Assembly Header (MAST-MATNR) that are not assigned to Functional Location (IFLOT-SUBMT), Equipment (EQUZ=SUBMT) or Task List (PLKO-ISTRU).

The following are not in scope for BOM Conversion:

1. Document Info Record

2. Long Text
3. BOM Item Category T (Text Item)

List of Tables to extract for this object is maintained here: Extract Table Register.

Scenarios for Migration from Legacy (PF2,WP2)

Scenario	Legacy	To-Be Approach
1	Functional Location BOM or Equipment BOM with at least 1 BOM Component which has relevant Material (not Assembly).	Migrate BOM as-is, with the legacy values mapped to the to-be values.
2	Material BOM (where Header is relevant Assembly) and the Assembly is assigned to relevant Functional Location / Equipment / Task List. There is at least 1 BOM Component which has relevant Material (not Assembly).	1. Migrate BOM as-is. (The Assembly in the BOM Header is migrated as a Sub Assembly. A new Construction Type is created in the Construction Type DCT) and assigned to the Functional Location / Equipment / Task List. 2. Create a new BOM in the BOM DCT with the Construction Type (above) as the BOM Header and Sub Assembly (above) as the BOM Item.
3	Material BOM (where Header is Assembly) and the Assembly is a sub-item of another BOM.There is at least 1 BOM Component which has relevant Material (not Assembly) This BOM is a sub item of another BOM, and the top level BOM is assigned to relevant Functional Location / Equipment / Task List. Example: BOM Level 1 > Assigned to relevant Functional Location BOM Level 2 > BOM Header and BOM Components are Assembly ... Lowest Level BOM > BOM Header is Assembly, BOM Component is relevant Material	1. A new Construction Type is created in the Construction Type DCT) and assigned to the Functional Location / Equipment / Task List. 2. Create a new BOM in the BOM DCT with the lowest level BOM - Sub Assembly as the BOM Header 3. Create a new BOM in the BOM DCT with the Construction Type (above) as the BOM Header and Sub Assembly (above as the BOM Item. Notes: To-Be Design of BOM only allows maximum 3 levels of BOM: 1. Level 1 - Construction Type 2. Level 2 - Sub Asembly 3. Level 3 - Material (Stocked / Non-Stocked)
4	Material BOM (where Header is Assembly) and the Assembly is a sub-item of another BOM.There is at least 1 BOM Component which has relevant Material (not Assembly) This BOM is a sub item of another BOM, however the top level BOM is **not** assigned to relevant Functional Location / Equipment / Task List. Example: BOM Level 1 > **Not** assigned to relevant Functional Location / Equipment / Task List BOM Level 2 > BOM Header and BOM Components are Assembly ... Lowest Level BOM > BOM Header is Assembly, BOM Component is relevant Material	BOM and all levels of BOMs are not relevant for migration. If required, Level 1 BOM Header needs to be assigned to a relevant Functional Location / Equipment / Task List.
5	Material BOM (where Header is Assembly) and the Assembly is not assigned to Functional Location / Equipment / Task List.	BOM is not relevant for migration. If required, BOM Header needs to be assigned to a relevant Functional Location / Equipment / Task List.

List of source systems and approximate number of records

Source	Scope	Source Approx No. of Records	Target System	Target Approx No. of Records

PF2, WP2	Relevant BOM will be extracted from PF2 and WP2	10,000	S/4 HANA	10,000
DCT	BOM for plants which do not have data existing from PF2 and PF2 Additional BOM originating from PF2 and WP2 (if required).	10,000	S/4HANA	10,000

Additional Information

Multi-language Requirement

Direct update of short text , log text in desired language i.e User log on language.

Document Management

Not Applicable

Legal Requirement

Not Applicable

Special Requirements

Not Applicable

Target Design

The technical design of the target for this conversion approach.

1. BOM Header

Table	Field	Data Element	Field Description	Data Type	Length	Requirement
Fields specific to Functional Location BOM						
TPST	TPLNR	TPLNR	Functional Location	CHAR	30	Mandatory for Functional Location BOM
TPST	WERKS	WERKS_D	Plant	CHAR	4	Mandatory for Functional Location BOM
TPST	STLAN	STLAN	BOM Usage	CHAR	1	Mandatory for Functional Location BOM
Fields specific to Equipment BOM						
EQST	EQUNR	EQUNR	Equipment	CHAR	18	Mandatory for Equipment BOM
EQST	WERKS	WERKS_D	Plant	CHAR	4	Mandatory for Equipment BOM
EQST	STLAN	STLAN	BOM Usage	CHAR	1	Mandatory for Equipment BOM
Fields specific to Material BOM						
MAST	MATNR	MATNR	Material Number	CHAR	40	Mandatory for Material BOM
MAST	WERKS	WERKS_D	Plant	CHAR	4	Mandatory for Material BOM
MAST	STLAN	STLAN	BOM Usage	CHAR	1	Mandatory for Material BOM
Generic fields for BOM Header						
STKO	DATUV	DATUV	Valid-From Date	DATS	8	Mandatory
STKO	BMENG	BASMN	Base quantity	QUAN	13	Mandatory
STKO	STLST	STLST	Bill of Material Status	CHAR	2	Mandatory

2. BOM Item

Table	Field	Data Element	Field Description	Data Type	Length	Requirement
STPO	POSNR	SPOSN	BOM Item Number	CHAR	4	Mandatory
STPO	POSTP	POSTP	Item category (bill of material)	CHAR	1	Mandatory
STPO	IDNRK	IDNRK	BOM component	CHAR	40	Mandatory

STPO	MENGE	KMPMG	Component Quantity	QUAN	13	Mandatory
STZU	ZTEXT	CSTEXT	BOM Description	CHAR	40	Mandatory
STPO	POTX1	POTX1	BOM Item Text (Line 1)	CHAR	40	Conditional
STPO	POTX2	POTX2	BOM Item Text (Line 2)	CHAR	40	Conditional
STPO	SANKA	CS_SANKA	Indicator for Relevancy to Costing	CHAR	1	Mandatory
STPO	STKKZ	STKKZ	PM assembly indicator	CHAR	1	Conditional

Data Cleansing

ID	Criticality	Error Message/Report Description	Rule	Output	Source System
1001-001	C1	Relevant BOM Component Quantity is Zero or Negative.	Bill of Material as per Relevancy Criteria with BOM Item where the Material is not blank and Quantity <= 0.	BOM Header, Plant, BOM Item Number, Material, Component Quantity	PF2/WP2
1001-002	C3	No Component linked to Bill of Material. These BOMs are not relevant for migration.	Bill of Material whereby there is no BOM Item with relevant Material / Assembly as BOM Component.	Functional Location, Equipment, Material, BOM Category, Usage, Item Number, Item Category, Material Number, Quantity, Document Type Document Part, Document Version, Document Number, Item Text 1, Item Text 2.	PF2/WP2
1001-003	C3	Relevant BOM with BOM Component which is not relevant. These BOMs are migrated but the selected components are not relevant for migration.	Bill of Material whereby the BOM Component is a Material and not relevant to be migrated.	Functional Location, Equipment, Material, BOM Category, Usage,Item Number, Item Category, Material Number, Quantity	PF2/WP2
1001-004	C3	Functional Location BOM assigned to non-relevant Functional Location (based on Category and Equipment Installation check). These BOMs are not relevant for migration.	Bill of Material for relevant Plant with BOM Category (T-Functional Location) and with no Deletion Indicator but are assigned to non relevant Functional Location.	Functional Location, Plant, BOM Category, Usage	PF2/WP2
1001-005	C3	Equipment BOM assigned to non-relevant Equipment. These BOMs are not relevant for migration.	Bill of Material for relevant Plant with BOM Category (E-Equipment) and with no Deletion Indicator but are assigned to non relevant Equipment.	Equipment, Plant, BOM Category, Usage	PF2/WP2
1001-006	C3	Relevant Functional Location BOM with blank Plant. For these BOMs, the Plant will be defaulted from the Functional Location Plant.	Bill of Material with BOM Category (T-Functional Location) assigned to relevant Functional Location with blank Plant	Functional Location, Plant, BOM Category, Usage	PF2/WP2
1001-007	C3	Relevant Equipment BOM with blank Plant. For these BOMs, the Plant will be defaulted from the Equipment Plant.	Bill of Material with BOM Category (E-Equipment) assigned to relevant Equipment with blank Plant	Equipment, Plant, BOM Category, Usage	PF2/WP2
1001-008	C3	Material BOM with previous Alternative BOM are not relevant for migration.	Bill of Material with BOM Category (M-Material) for relevant plant with more than 1 Alternative BOM, report all the previous Alternative BOM except for the latest	Material, Plant, BOM Category, Usage, Alternative BOM	PF2,WP2
1001-009	C3	Material BOM with at least one BOM Item with Stocked / Non-Stocked Material whereby the Header Material is not a relevant Assembly. These BOMs are not relevant for migration.	Bill of Material with BOM Category (M-Material) for relevant plant with 1 or more Stocked / Non-Stocked Material whereby the Header Material is not a relevant Assembly	Material, Plant, BOM Category, Usage, Alternative BOM, Item Number, Item Category, Material Number, Quantity	PF2, WP2
1001-010	C3	Relevant BOM with BOM Item Category T (Text Item). These BOMs are migrated but the selected Text Items are not relevant for migration.	Bill of Material whereby the BOM Item is a Text Item and not relevant to be migrated.	Functional Location, Equipment, Material, BOM Category, Usage,Item Number, Item Category, Material Number, Quantity, Item Text 1, Item Text 2	PF2/WP2
1001-011	C3	Relevant BOM with BOM Item Category D (Document Item). These BOMs are migrated but the selected Document Items are not relevant for migration.	Bill of Material whereby the BOM Item is a Document Item and not relevant to be migrated.	Functional Location, Equipment, Material, BOM Category, Usage ,Item Number, Item Category, Material Number, Quantity, Document Type Document Part, Document Version, Document Number	PF2/WP2

Conversion Process

The high-level process is represented by the diagrams below.

The following represents the high-level process for Source System Extraction:

? Unknown Attachment

The following represents the high-level process for DCT:

? Unknown Attachment

Data Privacy and Sensitivity
Not Applicable.

Extraction

Extract data from a source into Syniti Migrate. There are 2 possibilities:

1. The data exists. Syniti Migrate connects to the source and loads the data into Syniti Migrate. There are 3 methods:
    a. Perform full data extraction from relevant tables in the source system(s).
    b. Perform extraction through the application layer.
    c. Only if Syniti Migrate cannot connect to the source, data is loaded to the repository from the provided source system extract/report.
2. The data does not exist (or cannot be converted from its current state). The data is manually collected by the business directly in Syniti Migrate. This is to be conducted using DCT (Data Collection Template) in Syniti Migrate

The agreed Relevancy criteria is applied to the extracted records to identify the records that are applicable for the Target loads.

Extraction Run Sheet

Req #	Requirement Description	Team Responsible
1	Extract data from source system based on relevancy rule.	SyWay Data Team

Selection Screen

Selection Ref Screen	Parameter Name	Selection Type	Requirement	Value to be entered/set
Not Applicable				

Data Collection Template (DCT)

Target Ready Data Collection Template will be created for data with exception of some fields which require transformation as mentioned in the transformation rule.

Delta Data Management: Initial collection will be done via the report and one-time load to the DCT will be performed. Any delta after the initial collection within the DCT will require business to take due diligence to ensure any subsequent delta cleansing is verified and aligned within the DCT.

Note: All rules specified below should be documented as a **tooltip** in the DC Page.

Format:

- **Line 1:** Mandatory / Conditional
- **Line 2:** Remaining text

1. BOM Header Data Construction Rules

Field Name	Field Description	Rule

2. BOM Item Data Construction Rules

Field Name	Field Description	Rule

Note: List of DCTs is maintained here: Conversion Specs Register (DCT & Cleansing Report)

Extraction Dependencies

Item #	Step Description	Team Responsible
1	Relevancy Criteria for Functional Location	SyWay A2D Data Team
2	Relevancy Criteria for Equipment	SyWay A2D Data Team
3	Relevancy Criteria for PM Assembly / Construction Type	SyWay A2D Data Team

Transformation

The Target fields are mapped to the applicable Legacy field that will be its source, this is a 3-way activity involving the Business, Functional team and Data team. This identifies the transformation activity required to allow Syniti Migrate to make the data Target ready:

1. Perform value mapping and data transformation rules.
    a. Legacy values are mapped to the to-be values (this could include a default value)
    b. Values are transformed according to the rules defined in Syniti Migrate
2. Prepare target-ready data in the structure and format that is required for loading via prescribed Load Tool. This step also produces the load data ready for business to perform Pre-load Data Validation

Transformation Run Sheet

Item #	Step Description	Team Responsible
1	Obtain DCT Sign-off from Business.	SyWay Data Team
2	In dspMigrate, select the wave – S4/HANA – Plant Maintenance	Syniti
3	Go to Process Area Launch and Process the Object – BOM	Syniti
4	Review and Validate Error and Preload Reports	Syniti
5	Execute the transformation to prepare the target tables	Syniti
6	Validate data from pre-load and error reports	Business/Data owner
7	Generate load files	Syniti

Transformation Rules

Rule #	Source system	Source Table	Source Field	Source Description	Target System	Target Table	Target Field	Target Description	Transformation Logic

** TAKE NOTE:

1. UOM difference
2. Component after dedupe

Transformation Mapping

Mapping Table Name	Mapping Table Description
Material Type	Mapping of legacy Material Types to target system value

List of Transformation Mappings with additional details is maintained here: Transformation Mappings

Transformation Dependencies

List the steps that need to occur before transformation can commence

Item #	Step Description	Team Responsible
1	Ensure DCT tables completeness	SyWay Data Team
2	Ensure all Transformation mappings are up to date.	SyWay Data Team

Pre-Load Validation

Project Team

Completeness

Task	Action
Verify Record Count	Data team to verify that the total number of relevant records from the source systems is equal to the total number of records in the Preload and Load Sheets.

Accuracy

Task	Action
Conversion Accuracy	Data team to verify that all fields below meet pass the checks: 1. Mandatory Fields 2. Field and Value Mapping Correctness 3. Null Checks 4. Text Length Checks
Review error reports	Review and correct the errors. Achieve a zero-error record count as much as possible. Raise defects for data remediated and requiring a correction in the source data.

Business

Completeness

Task	Action
Verify Record Count	Business team to verify that the total number of relevant records from the source systems is equal to the total number of records in the Preload and Load Sheets.

Accuracy

Task	Action
Conversion Accuracy	Business to verify that all the data in the load table/file is accurate as per endorsed transformation/mapping rules (and signed-off data)

Load

The load process includes:

1. Execute the automated data load into target system using load tool or product the load file if the load must be done manually
2. Once the data is loaded to the target system, it will be extracted and prepared for Post Load Data Validation

Load Run Sheet

Item #	Step Description	Team Responsible
1	Ensure Pre-load sign-offs are obtained.	SyWay Data team
2	Go to the load tool and select the correct load Program.	SyWay Data team
3	Proceed with Data load.	SyWay Data team
4	Validate few records loaded by accessing standard transactions	SyWay Data team
5	Generate the post load reports in the tool.	SyWay Data team
6	Log errors as defects, if any and address resolutions. Close defects.	SyWay Data team
7	Resolve defects by reupload and re-generate post load reports if necessary.	SyWay Data team
8	Business to validate the post load files as part of post-load validation, raise data defects or provide the post-load sign-off.	Business
9	Repeat steps 5 to 7 if necessary.	SyWay Data team

Load Phase and Dependencies

Pre-Cutover

Configuration

Item #	Configuration Item
1	T001W-Plants/Branches
2	T006-Units of Measurement
3	T415S-Bill of Material Status

Conversion Objects

Object #	Preceding Object Conversion Approach
1003	Functional Location
1002	Equipment
2010	Material - General Plant Data / SLoc Data
1010	Construction Type

Error Handling

Error Type	Error Description	Action Taken

Post-Load Validation

Project Team

Completeness

Task	Action
Verify Count	Data team to verify the record count created in target S/4 HANA by accessing post load reports in dspMigrate or standard reports from S/4 HANA.
Verify Logs	Check if there is data that failed to load and perform the necessary actions (e.g. register as post load issue, or attempt to load the record again, etc.).

Accuracy

Task	Action
Conversion Accuracy	Data team to verify that the Bill of Material data in target S/4 HANA were loaded correctly via dspMigrate post load reports or standard reports from S/4 HANA.

Business

Completeness

Task	Action
Verify Count	Download Post Load Reports from dspMigrate and verify that the record count loaded in the target S/4 HANA is the same count as of the endorsed load file.

Accuracy

Task	Action
Conversion Accuracy	Verify that the Bill of Material data in target S/4 HANA were loaded correctly via dspMigrate post load reports or standard reports from S/4 HANA.

Key Assumptions

- Master Data Standard is up to date as on the date of documenting this conversion approach and data load.
- is in scope based on data design and any exception requested by business.
- Data cleansing has met the required percentage threshold for the specified mock cycle and all preparation activities have been completed.
- Data entries in DCT are target-ready data unless a specific transformation rule is stated for that field in the transformation rules.

See also

Change log

Version	Published	Changed By	Comment
CURRENT (v. 54)	**Sept 18, 2024 14:48**	**WENNINGER-ext, Sascha**	
v. 53	Sept 17, 2024 05:31	**WENNINGER-ext, Sascha**	
v. 52	Sept 16, 2024 12:25	**BECHTER-ext, Alex**	
v. 51	Sept 16, 2024 10:35	**BECHTER-ext, Alex**	
v. 50	Sept 16, 2024 10:33	**BECHTER-ext, Alex**	
v. 49	Sept 05, 2024 04:27	**BECHTER-ext, Alex**	
v. 48	Sept 05, 2024 04:25	**BECHTER-ext, Alex**	
v. 47	Sept 04, 2024 11:32	**BECHTER-ext, Alex**	
v. 46	Aug 16, 2024 09:05	**BECHTER-ext, Alex**	
v. 45	Aug 16, 2024 09:02	**BECHTER-ext, Alex**	

Go to Page History

Workflow history

Title	Last Updated By	Updated	Status
There are no pages at the moment.			

Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

Sept 30, 2024	Actor	Type	Activity	Version
Approved	FALL-ext, Cheikh	State	changed state to Approved at 9:27 am	v54
Pending SteerCo Review	FALL-ext, Cheikh	State	gave *Final Approval* approval at 9:27 am	
		State	changed expiry date to '14 Oct, 2024 09:27 am' at 9:27 am	
		State	changed state to Pending SteerCo Review at 9:27 am	v54
Pending Stakeholder Review	FALL-ext, Cheikh	State	gave *Stakeholder Review* approval at 9:27 am	
Sept 18, 2024				

	WENNINGER-ext, Sascha	Edit	updated the page at 2:48 pm	
		State	changed expiry date to '25 Sept, 2024 12:48 pm' at 12:48 pm	
		State	changed state to Pending Stakeholder Review at 12:48 pm	v54
Edited following DA Endorsement	WENNINGER-ext, Sascha	State	gave *Minor change* approval at 12:48 pm	
		State	changed state to Edited following DA Endorsement at 12:48 pm	v54