CNV-9002 Measurement Document

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Purpose

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

Measurement documents are used to record measurement readings on the condition of an equipment e.g. temperature. It is also used to record counter readings of an equipment e.g. Engine Running hours. These counter readings will be the trigger for maintenance plan to initiate maintenance and/or inspection work.

Conversion Scope

The scope of this document covers the approach for converting active Measurement Document from Legacy Source Systems into S/4HANA.

At Syensqo, Measurement Documents are created for Measuring Points to monitor the condition and usage of assets. They provide critical input to support condition-based and usage-based maintenance strategies. Measuring Points are created on either Functional Locations or Equipment, depending on the asset structure and monitoring requirements. The Measurement Documents are also a core component of Asset Performance Management (APM) used to monitor asset health, detect trends, and trigger condition-based or predictive maintenance actions.

The approach is to migrate the last Measurement Document for each active Measuring Point which is driving the active Maintenance Plans and Items in order to start the Maintenance Plan in S/4 HANA with the objective to continue with the cycle. For Measurement Documents related to APM, up to three years of historical data will be migrated from legacy systems to ensure seamless continuity in asset monitoring, trend analysis, and maintenance decision-making within the S/4 HANA.

Note: Digital Local Indicators (eg Sensor Data available in Startek) are not in scope for migration as these will be mass created via Custom Development Program (ERP-582)

The data from legacy system includes:

1. (Counter Plan related) Latest Measurement Document Reading for active (IMPTT-INACT<>"X") Measuring Point that is a counter (IMPTT-IND CT) and linked to an active Maintenance Plan (MMPT-POINT) and linked to Functional Location /Equipment assigned to relevant plant in scope
    a. Active Maintenance Plan is when the System Status (TJ02T-TXT04) is not "DLFL"
    b. For the relevant plants in scope, refer to Value Mapping: Plant (Maintenance Plant = Yes) (IFLOT-IWERK /EQUI-IWERK)
2. (APM Related) Measurement Documents for active (IMPTT-INACT<>"X") Measuring Points (IMPTT-MPOBJ) for Functional Locations and Equipment for the past 3 years (IMRG-IDATE), limited to:
    a. specific Technical Object Types (EQUI-EQART/IFLOT-EQART) based on Value Mapping: OTH_Technical Object Type_APM
    b. specific plant (EQUI-IWERK/IFLOT-IWERK) based on Value Mapping: OTH_Plant_APM

The data from legacy system excludes:

1. Measuring Documents with reversal indicator (IMRG-CANCL)
2. Long Text for Measurement Document

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

Illustration of relevant Measurement Document for extraction (Point 1 of relevancy criteria):

Measuring Point	Measurement Document	Date	Time	Counter Reading	Reversal Indicator
A1	001	23 Feb 2026	10 am	2010	
A1	002	1 Mar 2026	2 am	2040	
A1	003	1 Mar 2026	4 am	2050	
A1	004	25 Feb 2026	5 pm	2020	
A1	005	2 Mar 2026	3 pm	2060	X
A1	006	26 Feb 2026	4 pm	2021	X

Based on the above sample data, the following scenario and conclusion apply:

Scenario	Conclusion	Rationale

1	Measurement Document **003** is to be extracted	Latest Counter Reading without reversal indicator

List of source systems and approximate number of records

Source	Scope	Source Approx No. of Records	Target System	Target Approx No. of Records
DCT	Measurement Documents will be collected via DCT. An initial extract of the relevant Measurement Documents will be provided in google sheet format to assist business in decision making on including any relevant Measurement Documents from PF2 and WP2 as Measurement Documents in S/4 HANA. Any additional Measurement Documents that need to be created to support the new design may be added in the DCT. Please see an indication of what will be baselined from source systems below and what will be constructed in the DCT. Note: The decision to implement DCT only for Measuring Point and Measurement Document was based on the current business usage in SAP. The business has primarily been collecting relevant data outside of SAP. Additionally, it is not part of the current business process to create these Measuring Points and Measurement Documents in the system. Given that these two objects are not actively utilized and there are only a handful of Counter Based Maintenance Plans involved, the effort required to build the ETL process would not be justified at this time.	5,000	S/4HANA	5,000
DCT	Measurement Documents for plants which do not have data existing from PF2 and PF2	TBD	S/4HANA	TBD

Additional Information

Multi-language Requirement

Measurement document does not have multi language support. Measurement document text will be migrated using EN logon.

Document Management

Not Applicable

Legal Requirement

Not Applicable

Special Requirements

Not Applicable

Target Design

The technical design of the target for this conversion approach.

Table	Field	Data Element	Field Description	Data Type	Length	Requirement
IMRG	MDOCM	IMRC_MDOCM	Measurement Document	CHAR	20	Internal Number
IMRG	POINT	IMRC_POINT	Measuring Point	CHAR	12	Mandatory
IMRG	IDATE	IMRC_IDATE	Date of the Measurement	DATS	8	Mandatory
IMRG	ITIME	IMRC_ITIME	Time of Measurement	TIMS	6	Mandatory
IMRG	MDTXT	IMRC_MDTXT	Measurement Document Text	CHAR	40	Conditional
IMRG	REDCV	IMRC_RECDV	Measurement Reading in Unit of Entry	FLTP	16	Conditional
IMRG	READG	IMRC_READG	Measurement Reading/Total Counter Reading in SI Unit	FLTP	16	Conditional
IMRG	VLCOD	IMRC_VLCOD	Valuation Code	CHAR	4	Conditional
IMRG	READR	IMRC_READR	Person who Took the Measurement Reading	CHAR	12	Mandatory

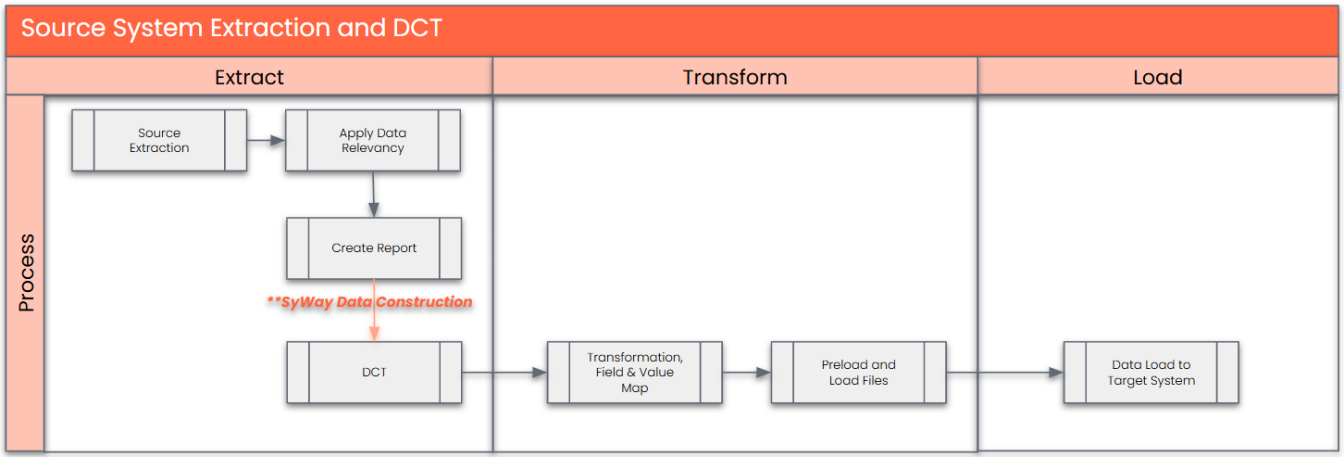
Data Cleansing

ID	Criticality	Error Message/Report Description	Rule	Output	Source System
		Not Applicable			

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

Conversion Process

The high-level process is represented by the diagram below:



Collection will be done manually in the Data Collection Template for the following scenarios:

- For sites not on SAP-PF2 or WP2 systems
- For Measurement Documents that need to be created to support the to-be design

Data Privacy and Sensitivity

Not Applicable.

Extraction

Extract data from a source into Advanced Data Migration and Management (ADMM). There are 2 possibilities:

1. The data exists. ADMM connects to the source and loads the data into ADMM . 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 ADMM 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 ADMM . This is to be conducted using DCT (Data Collection Template) in ADMM

The agreed Relevancy criteria is applied to the extracted records as reference point to identify the records that are applicable for the data construction in the DCT.

Extraction Run Sheet

Req #	Requirement Description	Team Responsible
1	Extract data from source system based on relevancy rule	SyWay Data Team
2	Google Sheet report pre-populated with PF2 and WP2 information to be generated based on relevancy criteria.	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 Measurement Document 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

Measurement Document Data Construction Rules

Field Name	Field Description	Rule
ZPLANT	Plant	Mandatory Populate the Maintenance Plant of the FL/EQ linked to the Measuring Point.
ZLEGACYMDOCM	Legacy Measurement Document	Mandatory Must be unique. This is the key
ZLEGACYPOINT	Legacy Measuring Point	Mandatory Must be an existing legacy Measuring Point in Measuring Point DCT
IDATE	Date of the Measurement	Mandatory Valid Date within the past 1 year Date Format DDMMYYYY
ITIME	Time of Measurement	Mandatory Valid Time Time Format HHMMSS
MDTXT	Measurement Document Text	Conditional Populate if information exists
RECDV	Measurement Reading in Unit of Entry	Conditional Cannot be 0 If Measuring Point is a Counter: Mandatory and cannot be greater than Counter Over Reading of Measuring Point If Measuring Point is NOT a Counter: Must be between Upper and Lower Measurement Range Limit of Measuring Point. Only can be blank if "Indicator: Valuation Code Sufficient for Measurmnt. Document" of Measuring Point is cked
ZREADG	Total Counter Reading in Unit of Entry	Conditional If Measuring Point is NOT a Counter: Leave blank If Measuring Point is a Counter: 1. Only populate if value is different from Measurement Reading 2. Total Counter Reading cannot be 0 3. Total Counter Reading must be based on the Unit of Measure in the Measuring Point
VLCOD	Valuation Code	Conditional Only populate when Measuring Point has Code Group maintained. Must be blank otherwise. Must exist in Catalog Code DCT for Catalog Code Group of Measuring Point.

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

Extraction Dependencies

Item #	Step Description	Team Responsible
	Not Applicable	

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 ADMM 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 ADMM
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 – Measurement Document	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

1. Measurement Document - DCT

Rule #	Source system	Source Table	Source Field	Source Description	Target System	Target Table	Target Field	Target Description	Transformation Logic
1	DCT	-	ZPLANT	Plant	S/4 HANA	-	-	Plant	Direct Mapping This is used to identify the Business Owner
2	DCT	IMRG	ZLEGACY MDOCM	Measurement Document	S/4 HANA	IMRG	MDOCM	Measurement Document	Internal Number
3	DCT	IMRG	ZLEGACYP OINT	Legacy Measuring Point	S/4 HANA	IMRG	POINT	Measuring Point	Value Mapping: Measuring Point
4	DCT	IMRG	IDATE	Date of the Measurement	S/4 HANA	IMRG	IDATE	Date of the Measurement	Direct Mapping
5	DCT	IMRG	ITIME	Time of Measurement	S/4 HANA	IMRG	ITIME	Time of Measurement	Direct Mapping
6	DCT	IMRG	MDTXT	Measurement Document Text	S/4 HANA	IMRG	MDTXT	Measurement Document Text	Direct Mapping
7	DCT	IMRG	REDCV	Measurement Reading in Unit of Entry	S/4 HANA	IMRG	REDCV	Measurement Reading in Unit of Entry	Direct Mapping

8	DCT	IMRG	ZREADG	Total Counter Reading in Unit of Entry	S/4 HANA	IMRG	READG	Measurement Reading/Total Counter Reading in SI Unit	If Meas Point is not Counter (IMPTT-INDCT <> "X" in DCT): Default Blank (even if value is provided in DCT) If Measuring Point is Counter: If blank, default to the value of REDCV. The below transformation is only required if the load tool does not allow the reading in Unit of Entry: If value is provided, perform the transformation below: Floating point conversion to apply for loading, including conversion to/from SI unit. Consider the unit from the Measuring Point characteristics and compare against table T006 for conversion. Explanation for conversion from Unit of Entry to SI Unit: a) Based on the UOM of the Meas Point (ATNAM from DCT) and derive the UOM from Characteristics DCT (CABN-MSEHI), retrieve record from T006-MSEHI b) With the value: > Multiply by ZAEHL, and > Divide by NENNR If Counter Reading and Total Counter Reading are not the same (REDCV<>ZREADG): This is Counter Replacement Scenario. This loading step can be achieved by setting the total counter reading externally upon counter replacement.
9	DCT	IMRG	VLCOD	Valuation Code	S/4 HANA	IMRG	VLCOD	Valuation Code	If Measuring Point - Code Group field is blank (IMPTT-CODGR in DCT), default Blank (even if value is provided in DCT) Else: Direct Mapping
10	-	-	-	-	S/4 HANA	IMRG	READR	Person who Took the Measurement Reading	Derive the value as per Value Mapping: OTH_Migration_Date Relevant Values A2D (using Object ID "9002" and Field Name = "IMRG-READR".
11					-		ZCHUNK	Export File Chunk	If Measuring Point is linked to an active Maintenance Plan, then default to "C" If Measuring Point is linked to APM, then default to "A" (Refer to relevancy criteria for logic)

List of Custom Target Reports for this object is maintained here: Conversion Specification - Custom Reports Register.

Transformation Mapping

Mapping Table Name	Mapping Table Description
OTH_Technical Object Type_APM	List of Functional Location and Equipment TOTs required for migrating historical Measurement Documents and Notifications
OTH_Plant_APM	List of Plants required for migrating historical Measurement Documents and Notifications
Measuring Point	Mapping of legacy Measuring Point to new Measuring Point

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 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 produce 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

Cutover: 9002 - Measurement Document

Configuration

Item #	Configuration Item
1	T002-Language Keys
2	T006-Units of Measurement

Conversion Objects

Object #	Preceding Object Conversion Approach
1007	Catalog Code Groups & Codes
1012	Measuring Point

Error Handling

Error Type	Error Description	Action Taken
Configuration	Invalid Language Key	Engage Functional team to expedite and fix the error in the system
Configuration	Invalid Unit of Measurement	Engage Functional team to expedite and fix the error in the system
Invalid Data	Invalid Catalog Code Group & Codes	Expedite whether the master data is available in the system
Invalid Data	Invalid Measuring Point	Expedite whether the master data is available in the system

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 Measurement Document 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 the endorsed load file.

Accuracy

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

Key Assumptions

- Measurement Document 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.
- When the Total Counter Reading is the same as the Counter Reading, the loading method for Normal Counter Reading Entry is adopted (Total Counter Reading can be left blank).
- When the Total Counter Reading is not the same as the Counter Reading, the loading method for Total Counter Reading Set Externally is adopted (both Counter Reading and Total Counter Reading is required).
- For Counter Based Plan, the last reading of the Measuring Document will be the input to the Start Counter of the Maintenance Plan Start object.
- All Measurement Document Text are loaded in English log in, as this does not make any difference when displaying the text in front end.
- The going in position for loading of Measurement Document is to combine Counter related and APM related data during the Cutover phase, judging by the speed of load which will not affect the critical path during the cutover window. If the need arises during the loading phase of the various Mock Cycles, then the loads can be split into Pre-Cutover (APM related) and Cutover (Counter related) by re-using an existing field in the system generated target.

See also

Change log

Version	Published	Changed By	Comment
CURRENT (v. 145)	**Apr 23, 2026 07:06**	**PUN-ext, Eddy**	
v. 144	Apr 07, 2026 16:51	**PUN-ext, Eddy**	

v. 143	Apr 06, 2026 10:45	**PUN-ext, Eddy**	
v. 142	Mar 17, 2026 10:15	**PUN-ext, Eddy**	CR0282-Update in Relevancy Criteria: 1. The logic used to identify APM-related Measurement D
v. 141	Mar 17, 2026 10:12	**PUN-ext, Eddy**	
v. 140	Mar 12, 2026 09:41	**PUN-ext, Eddy**	
v. 139	Mar 12, 2026 09:40	**PUN-ext, Eddy**	
v. 138	Mar 12, 2026 09:39	**PUN-ext, Eddy**	
v. 137	Mar 12, 2026 09:34	**PUN-ext, Eddy**	CR0282
v. 136	Dec 18, 2025 11:44	**PUN-ext, Eddy**	

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.

From Mar 12, 2026 to Apr 23, 2026	Actor	Type	Activity	Version
Approved	PUN-ext, Eddy	Edit	updated the page at 9:34 am	
Jan 09, 2026				
	LEIGHTON-ext, Dean	State	changed state to Approved at 8:53 am	v136
Lead Approval	LEIGHTON-ext, Dean	State	gave *POD Lead Review* approval at 8:53 am	
Dec 18, 2025				
	PUN-ext, Eddy	Edit	updated the page at 11:39 am	
	MOUSSA-ext, Eva	State	changed expiry date to '25 Dec, 2025 10:51 am' at 10:51 am	
		State	changed state to Lead Approval at 10:51 am	v136