How-To Guide: EAM Equipment Material Serialization Special considerations while design and manage serial numbers in MDG and Transactional Systems

Applies to

EAM Solutions by Prometheus Group

Summary

This document is about how do one ensure equipment/Material/serial numbers created in transactional system/s are created and mapped for long term usage.

Unique serial numbers and their maintenance can be achieved by below activities.

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Introduction

Equipment, material, and serial numbers are used in various industries across Logistics functions. Functionality used to identification of individual instances of Materials and accurate tracking of individual materials / equipment.

MDG EAM Material serialization process implemented to have synchronous equipment data between MDG and transactional systems.

Various Logistics processes Serial numbers can be generated and when serial numbers are generated business can activate equipment manually (T-code IQ01/IQ02) and or using configuration settings in Serialisation profile/Procedures “Serial Number With/Without Equipment Requirement”

Equipment master created during serial number creations (automatic and manual both), there is a need to bring those master data to master data governance because of below two main reasons

- Data Enrichment:
  Equipment generated in transactional systems do not have complete details to support long term maintenance, hence there is a need to enrich the equipment master data with additional attributes like Maintenance / Planning Plant, manufacturer, Location, Authorization Group, Plant sections, Cost center etc., these are essential details for maintenance of equipment
- Single source of truth that is MDG system
  Often busines struggling to identify various equipment scattered in transactional system, and there by impacting regular / preventive maintenance of equipment, which are installed/stored in warehouse. Hence it is essential to keep MDG system and transaction system in synch.

Applicable product versions

This process is applicable for SAP MDG EAM Prometheus Group solutions Release MDG EAM 1909 and onward product releases

Detailed steps required to ensure equipment/serial numbers are unique across MDG/ Transactional systems

Assumptions

- Business can be able to segregate serialized equipment under separate equipment category which business has to realign the concept of equipment category.
- Like various present category of equipment Machines, test equipment, fleets, PRTs etc, if there is a need to manage serial number for any of other categories, we have to bring that equipment in Special category: Serialized equipment
- Do not allow users to use manual allocation of serial numbers which are reserved for this Category of equipment
- Users are not allowed to use master data t-codes IL01, IL02, IE02, IE4N transactions to change masters, which should always route via MDG.

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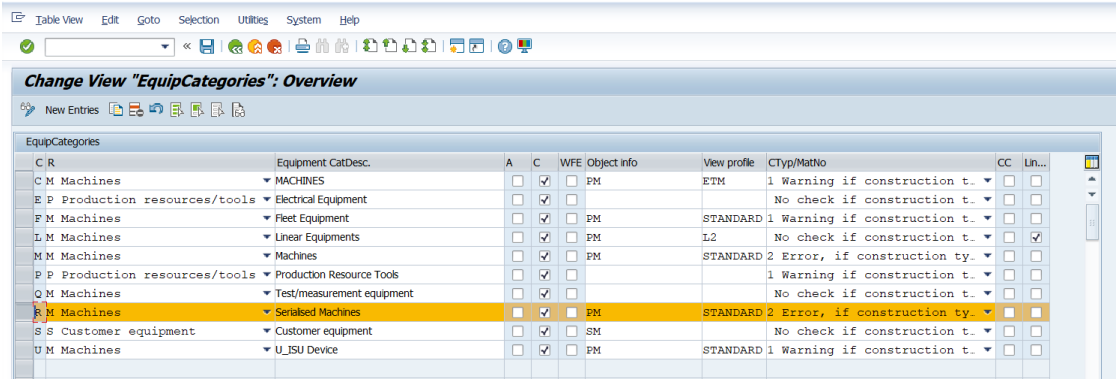
Pre-requisite configurations

Define equipment category (in Both MDG and Transactional System)

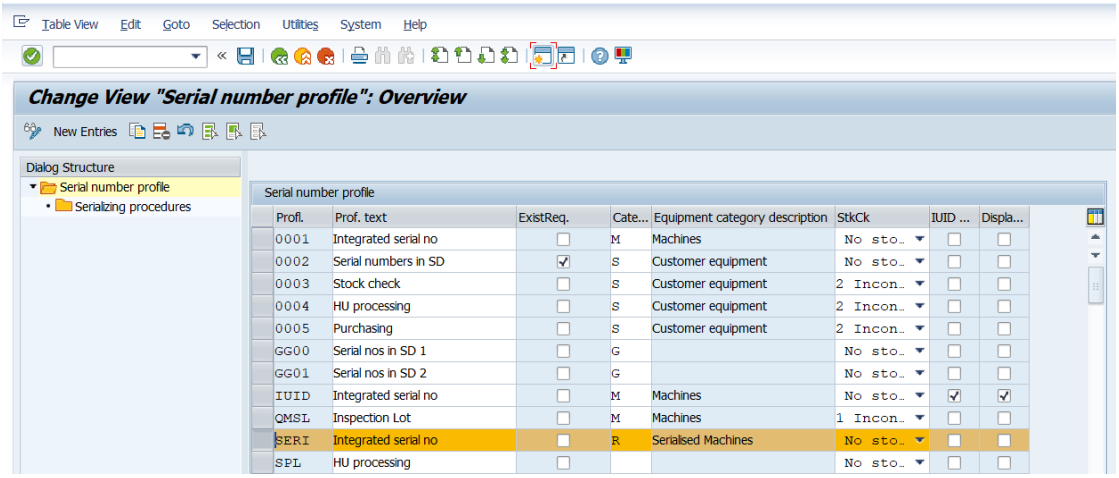
Create a separate Category X: for serialized equipment with menu path: SPRO→ Plant Maintenance and Customer Service→Master Data in Plant Maintenance and Customer Service→Technical Objects→Equipment→Equipment Categories



C	R	Equipment CatDesc.	A	C	WFE	Object info	View profile	CTyp/MatNo	CC	Lin...
C	M	Machines	☐	☑	☐	PM	ETM	1 Warning if construction t…	☐	☐
E	P	Production resources/tools	☐	☑	☐			No check if construction t…	☐	☐
F	M	Machines	☐	☑	☐	PM	STANDARD	1 Warning if construction t…	☐	☐
L	M	Machines	☐	☑	☐	PM	L2	No check if construction t…	☐	☑
M	M	Machines	☐	☑	☐	PM	STANDARD	2 Error, if construction ty…	☐	☐
P	P	Production resources/tools	☐	☑	☐			1 Warning if construction t…	☐	☐
Q	M	Machines	☐	☑	☐	Test/measurement equipment		No check if construction t…	☐	☐
R	M	Machines	☐	☑	☐	PM	STANDARD	2 Error, if construction ty…	☐	☐
S	S	Customer equipment	☐	☑	☐	SM		No check if construction t…	☐	☐
U	M	Machines	☐	☑	☐	PM	STANDARD	1 Warning if construction t…	☐	☐

Serialization profile/procedure settings (In both MDG and Transactional Systems)

- Choose equipment category to be used “X-Serialized equipment category”
- Select Equipment: Required: 02: Always propose equipment with your intended serial procedures



Profl.	Prof. text	ExistReq.	Cate...	Equipment category description	StkCk	IUID ...	Displa...
0001	Integrated serial no	☐	M	Machines	No sto…	☐	☐
0002	Serial numbers in SD	☑	S	Customer equipment	No sto…	☐	☐
0003	Stock check	☐	S	Customer equipment	2 Incon…	☐	☐
0004	HU processing	☐	S	Customer equipment	2 Incon…	☐	☐
0005	Purchasing	☐	S	Customer equipment	2 Incon…	☐	☐
GG00	Serial nos in SD 1	☐	G		No sto…	☐	☐
GG01	Serial nos in SD 2	☐	G		No sto…	☐	☐
IUID	Integrated serial no	☐	M	Machines	No sto…	☑	☑
QMSL	Inspection Lot	☐	M	Machines	1 Incon…	☐	☐
SERI	Integrated serial no	☐	R	Serialised Machines	No sto…	☐	☐
SPL	HU processing	☐			No sto…	☐	☐

Maintain Configuration Tables (Tcode : SM30) for Activating Single Change request for Multiple equipment generated at transactional system.

Maintain Table :

/UGI/EQ_MS_CRTYP,

/UGI7/EQ_MS_CRTY

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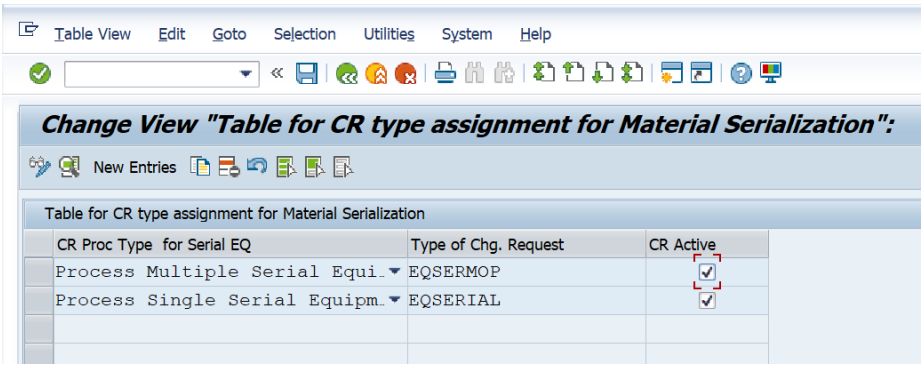

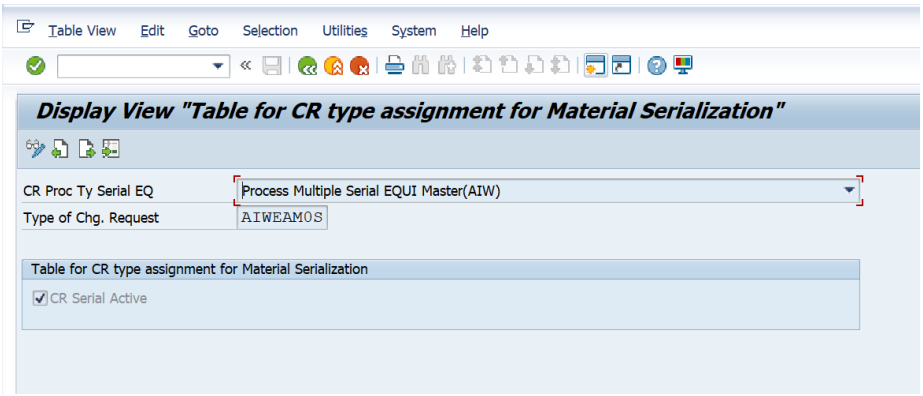

Possible Setting			Individual Equipment created(via IQ01 example)	Multiple Equipment Created under single Document posting (Via MIGO example)
SOP	MOP	MOCR		
X	X	X	SOP CR will be created	MOCR will be created
X			SOP CR will be created	SOP CR's will be created
	X	X	MOCR will be created	MOCR will be created
	X		MOP CR will be created	MOP CR will be created
		X	MOCR will be created	MOCR will be created
X	X		SOP CR will be created	MOP CR will be created
X		X	SOP CR will be created	MOCR will be created

Additional Features delivered as part of MDG EAM AIW 2021

EAM SOP

- SOP – EAM 9.2
  - This SOP process was supported effective from EAM 9.2
  - We had delivered a new CR TYPE 'EQSERIAL' with single step level approval process
- AS part of EAM 2021
  - This SOP process will continue to function as is
  - Customer can still create Change requests with SOP CR TYPE even though group of equipment's posted under single document and this can achieved by disabling the MOP/MOCR check boxes (via SM30 - /UGI/EQ_MS_CRTYP, /UGI7/EQ_MS_CRTY) . This option is given to honor the existing functionality as is.
  - In case if there are equipment created individually(for ex via IQ01) and if the SOP check box is active , system always creates SOP CR even though MOP/MOCR is enabled.

- It is allowed to use the custom SOP CR Type also .

EAM MOP :

- This MOP CR process for Material serialization is introduced from EAM 2021 .
- We are delivering a new CR type 'EQSLMASS' with single step level approval process
- Customer should activate the check box (CR Active) for MOP process via (via SM30 - /UGI/EQ_MS_CRTYP) with new CR type EQSLMASS to enable the creation a single MOP CR for group of equipment's for given document.
- Creating MOP Change request is possible eventhough equipment is created individually by just disabling the SOP process (via SM30 /UGI/EQ_MS_CRTYP)
- Customer can change the CR type to either standard delivered MOP CR Type and is it allowed to configure with custom CR type also .

AIW MOCR :

- AS part of AIW 2021
  - This MOCR process for Material serialization is introduced from AIW 2021 .
  - We are reusing existing CR type 'AIWEAM0S' as template as we cannot activate MOCR process in single step approval process as there are multiple entities/approval process is involved.
  - Customer should activate the check box (CR Active) for MOCR process via (via SM30 - /UGI7/EQ_MS_CRTY) with CR type AIWEAM0S to enable the creation a MOCR for group of equipment's for given document.
  - Creating MOCR Change request is possible eventhough equipment is created individually by just disabling the SOP process (via SM30 /UGI/EQ_MS_CRTYP)
  - Customer can change the CR type to either standard delivered Parallel AIW CR/Hybrid AIW CR and iit is allowed to configure with custom CR type also .
  - MOCR process is priority over MOP process

Maintain Number ranges for Object Equipment (Tcode OIEN-Edit Intervals equi_nr)

For MDG System

- Maintain separate Number range reserved for serialized equipment and if more than one transactional system, number range should consider all transactional equipment number ranges
- Number range must be set as External number

If you have three transactional system

- Transactional System 1 : 10000000- 20000000
- Transactional System 2: 20000000- 30000000
- Then Source equipment category: 10000000-30000000

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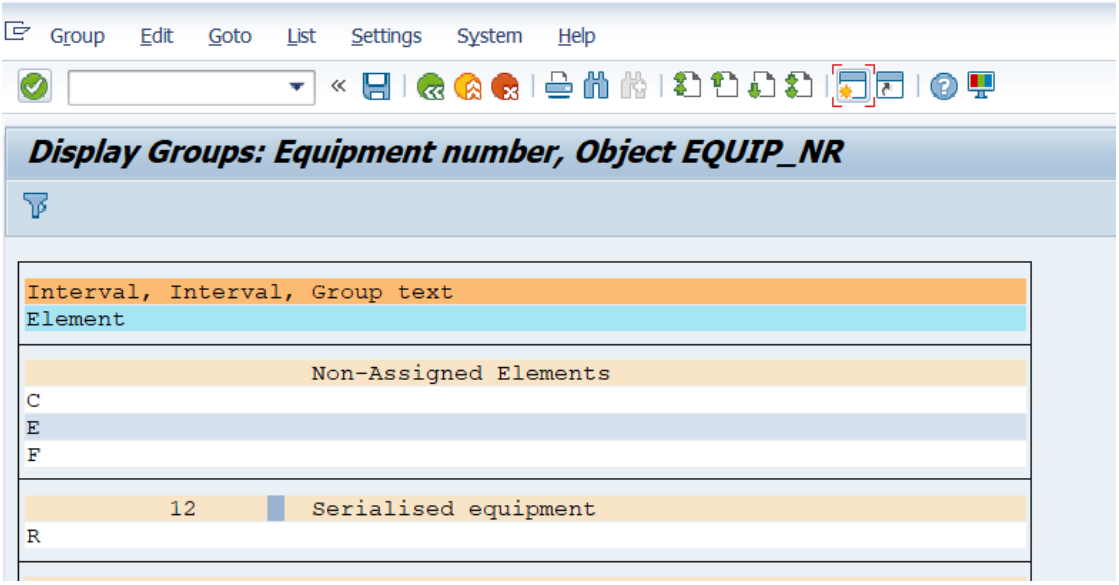
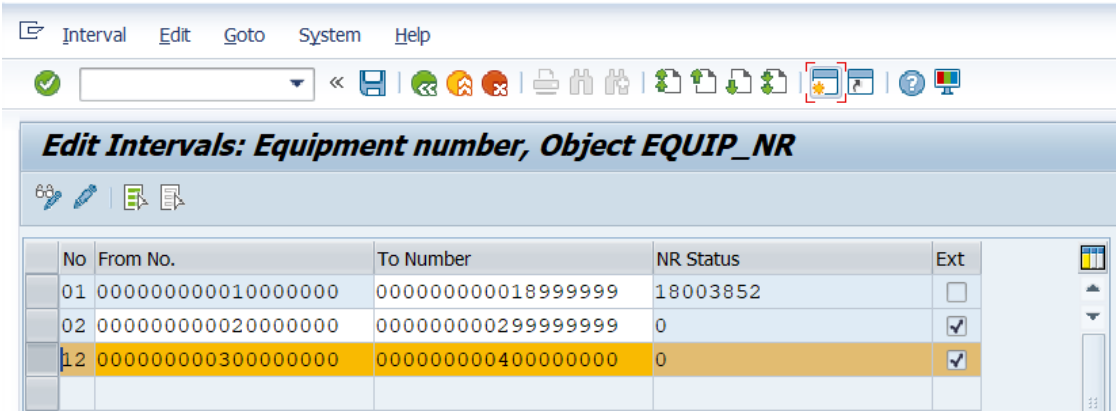
Example MDG Equipment Number range



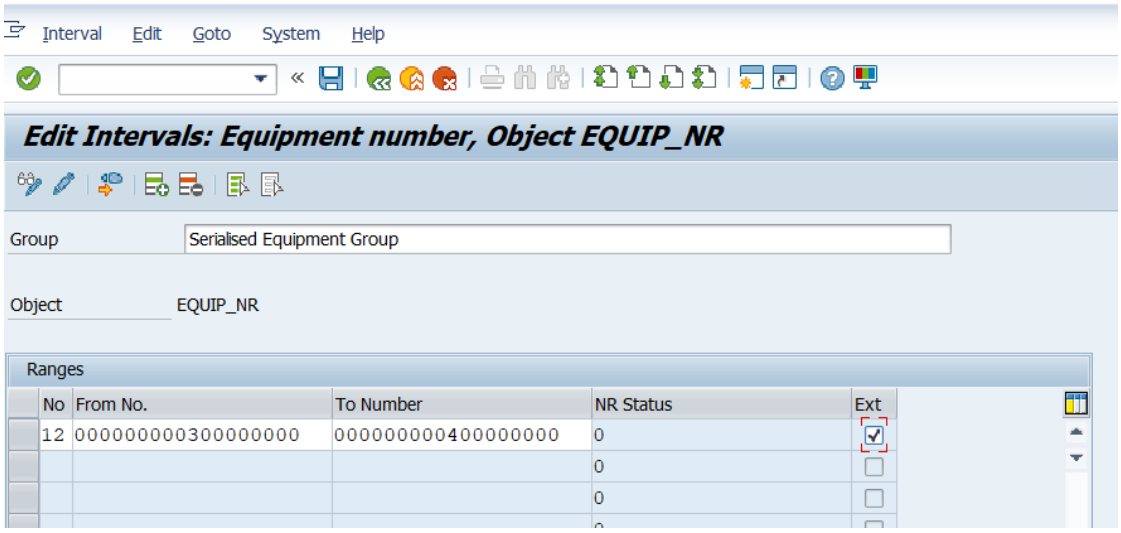


Example Transactional system Equipment Number range

For Transactional System

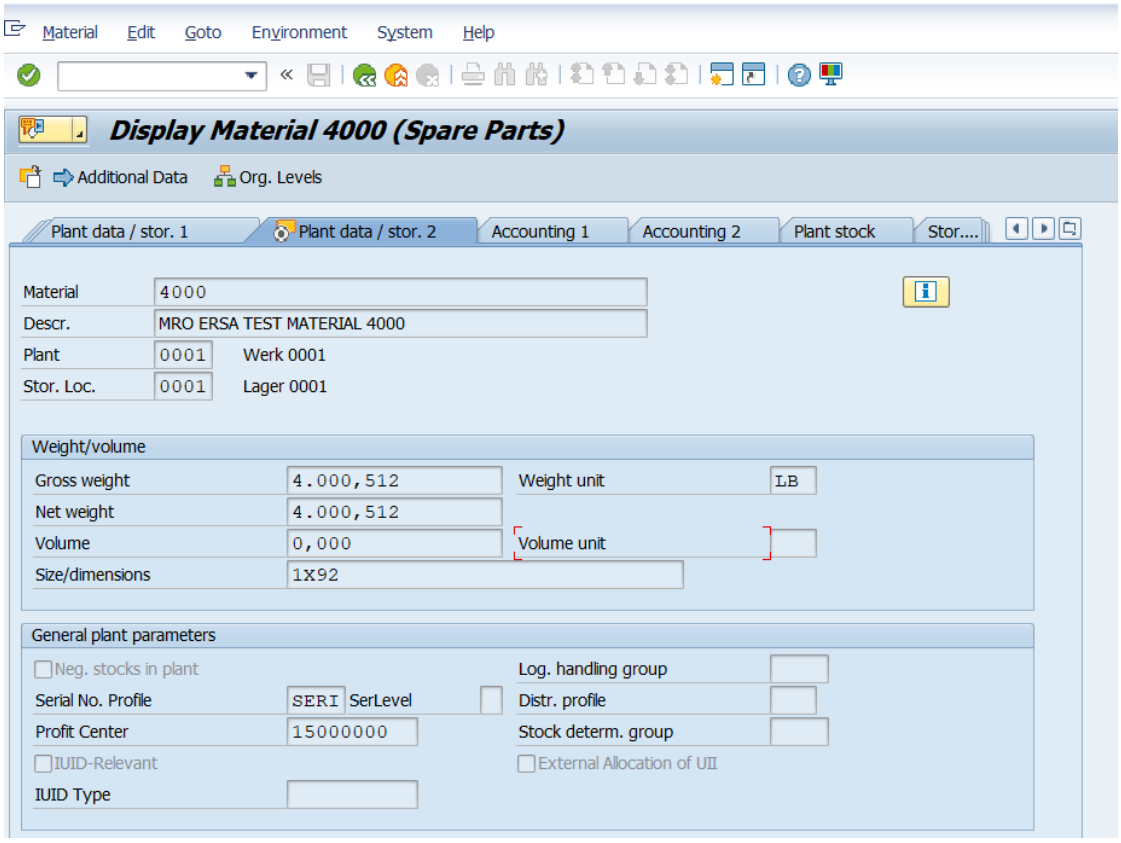
- Overlapping of equipment Object number ranges for the new category across different transactional system should not be used
- Number ranges can be set as internal or external.

Example MDG Equipment Number range

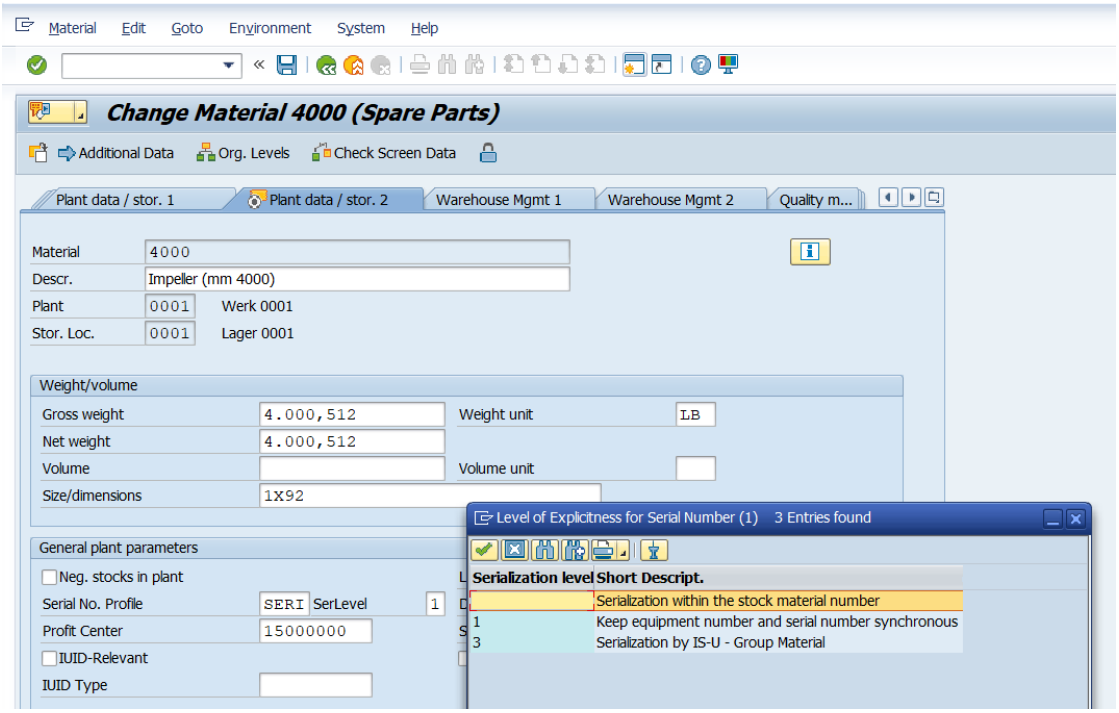


Master Data Set up

Material Master in MDG system:



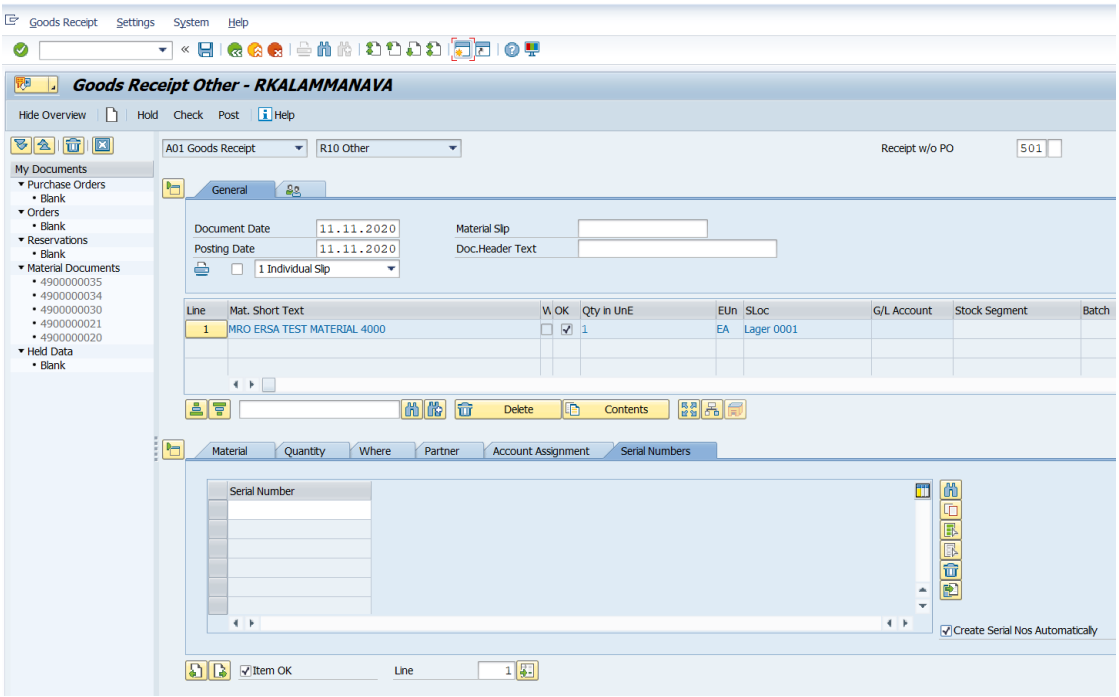
Material Master in Transactional system:



Example Process steps for equipment created during Goods receipt

Goods Receipt MIGO

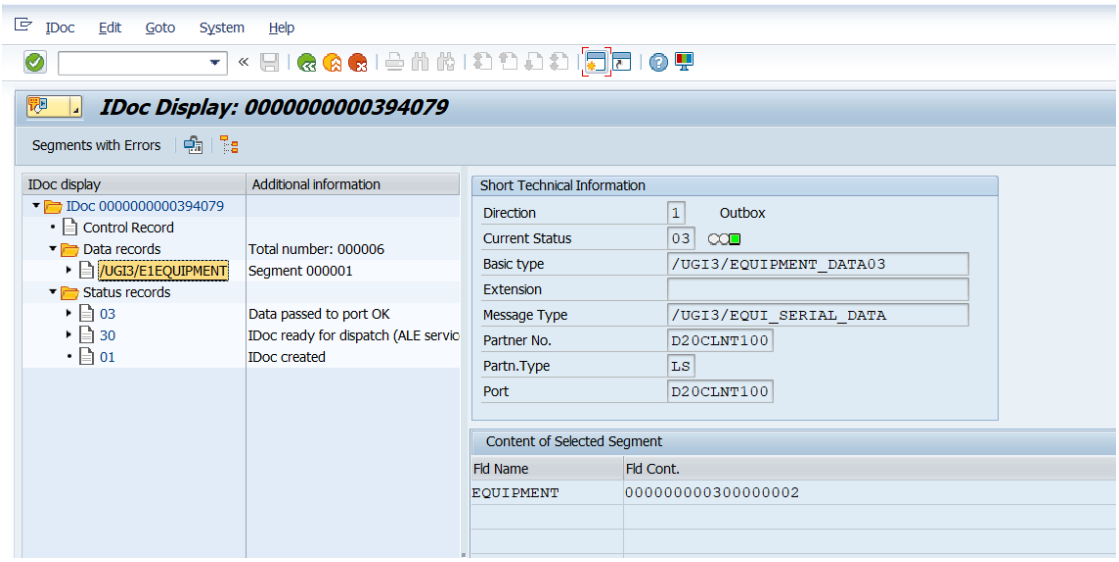
During Goods receipt, System creates numbers which is same as equipment number



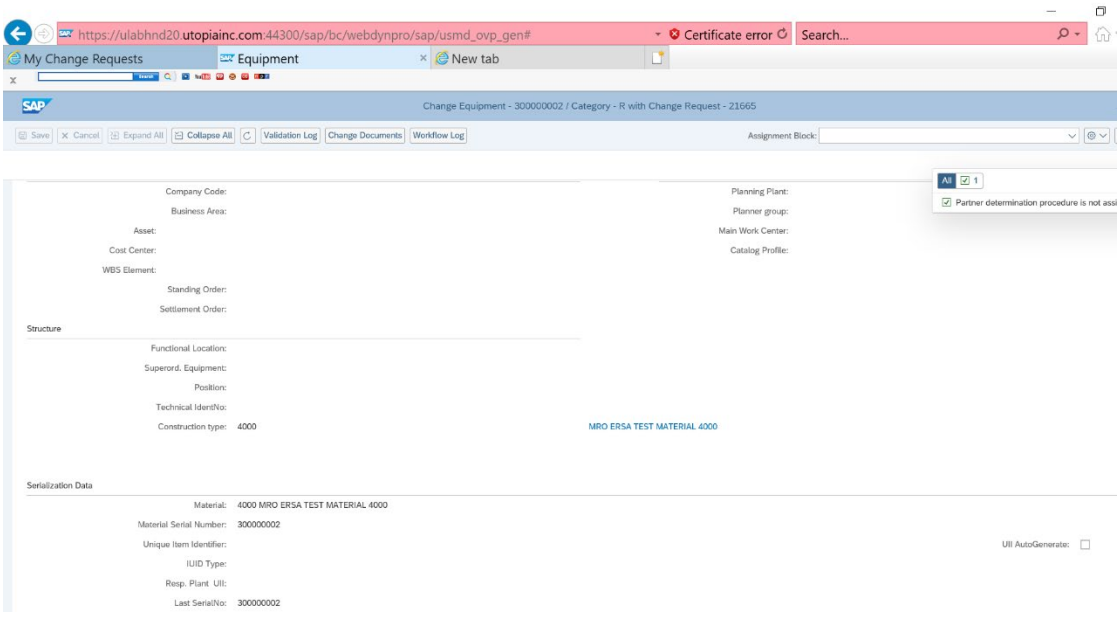
Generate Outbound Idoc to create Change request in MDG

Run uProgram : /UGI3/CREATE_IDOC_EQUIP_SERIAL to capture equipment details

Outbound Idoc in Transactional system



Change request processing in MDG (Equipment enrichment)



Change request processing in MDG for Multiple equipment (Equipment enrichment)

Please note that EAM2021 onwards customer can generate single Change request for Multiple Equipment generated at transactional system.

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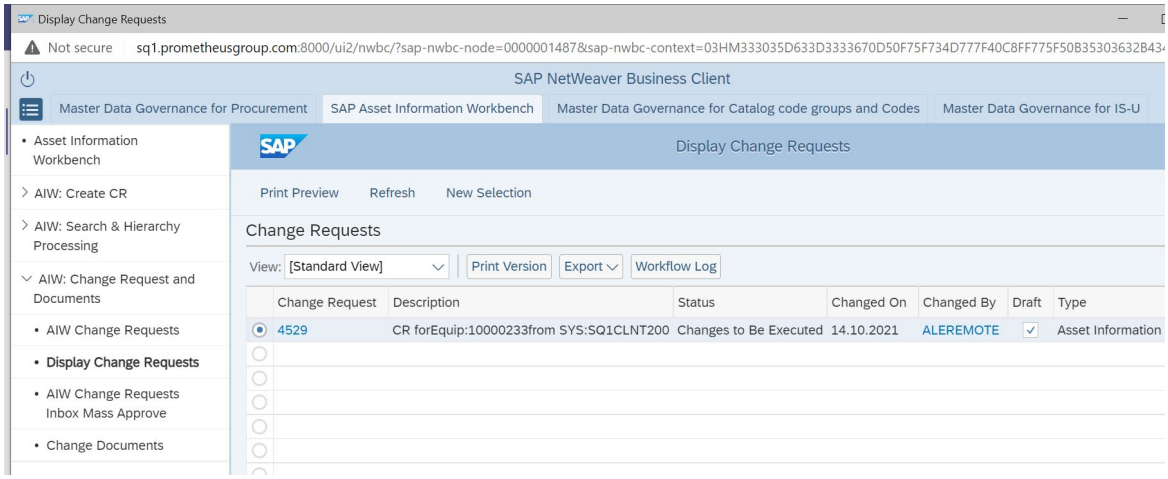
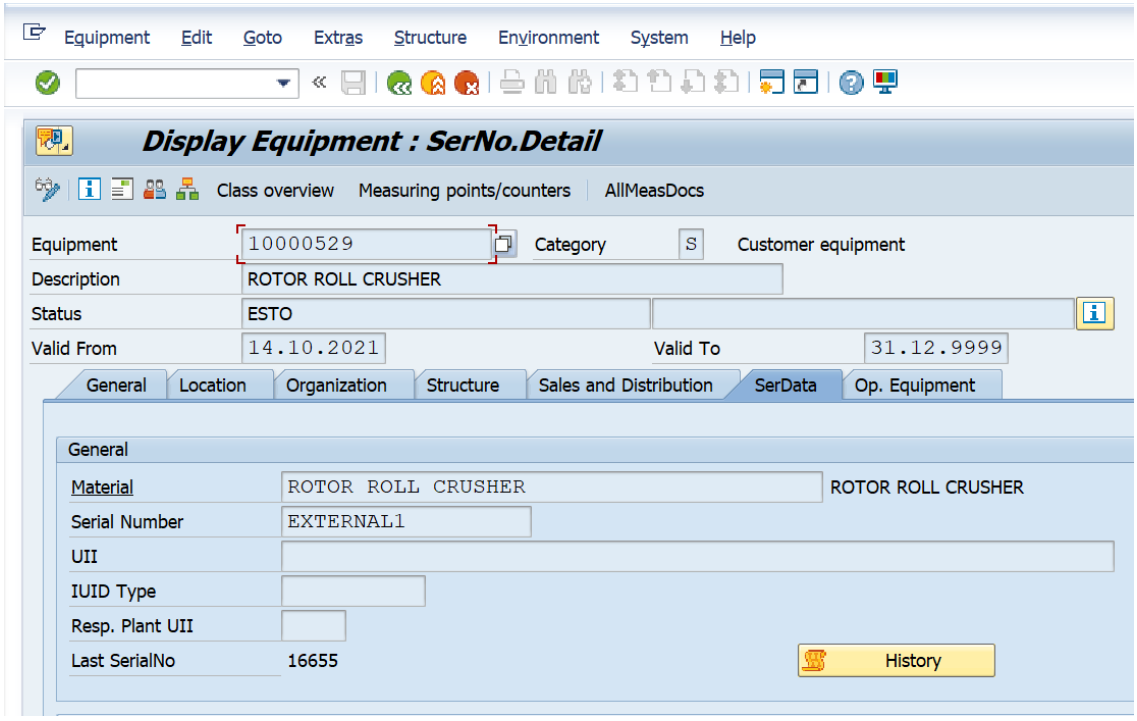
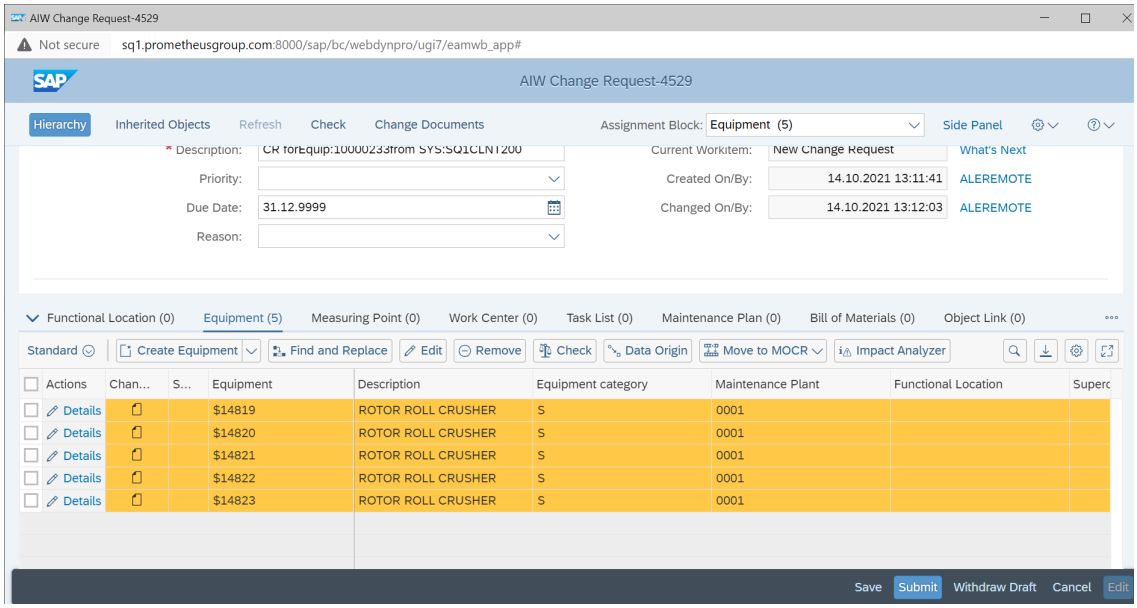
Refer pre-requisite settings required for enabling these functionalities.

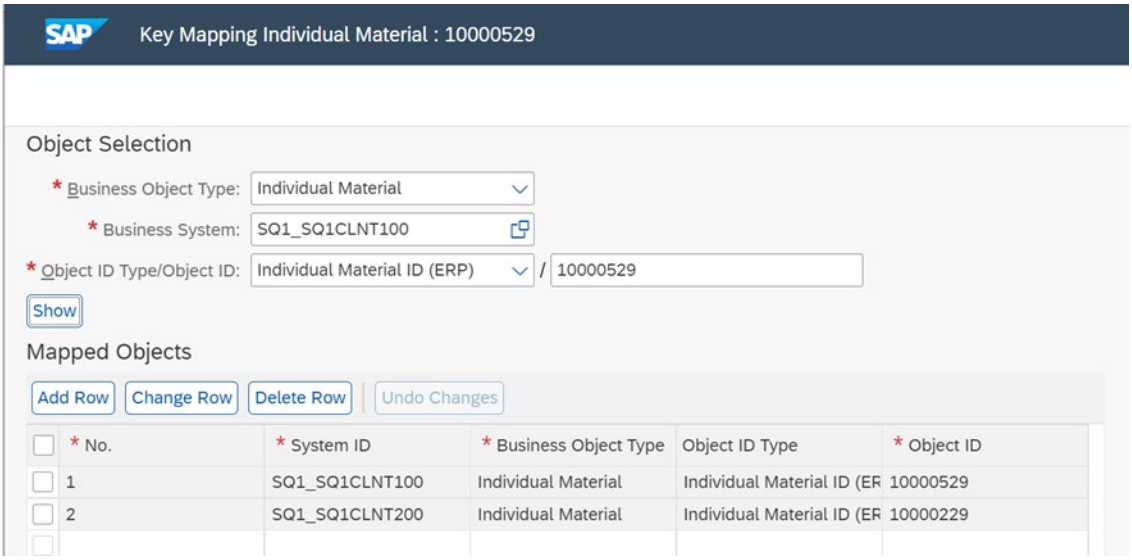






Key mapping

System establishes key mapping automatically for the equipment from transactional system and MDG created equipment



Replication back to Transactional after enrichment

After approval of change request, enriched equipment will replicate back to transactional system which is normal MDG replication process.

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