

Enhancing SAP MDG Integration with SAP ECC ZPMTO Process

A Comprehensive Overview

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Introduction:

In today's fast-paced utility sector, ensuring streamlined and accurate data management for asset records is crucial. With increasing infrastructure complexity and the push toward digital transformation, manual master data management for equipment and functional locations (FLOCs) is increasingly impractical. This article delves into enhancing SAP Master Data Governance (MDG) integration with SAP ECC ZPMTO (Z-Plant Maintenance Transactional Orders) to automate data synchronization and minimize manual interventions.

Interface Overview:

We aim to build an outbound interface from Doble PowerBase that facilitates the latest equipment maintenance changes, retirements, and installation updates. These updates, recorded by Relay Testing System (RTS) users, are sent to SAP MDG for master data updates and subsequently synchronized with SAP EAM (Enterprise Asset Management).

This interface handles user interaction, system software components, and hardware devices, ensuring seamless data exchanges between different software components. Below we detail the systems involved:

System Details:

System	*Name*	*Functionality*
Type		
PowerBase	Doble PowerBase	Enterprise-wide asset management system for compliance group to review RTS results against assets.
	Source	
SAP MDG	Master Data Governance	Manages master data across the organization, providing a unified view across domains.
	Target	
SAP EAM	System, Application and Products	ERP system with tools for equipment management, maintenance planning, and execution functionality.
	Target	
SAP PO	SAP NetWeaver Process Orchestration	Facilitates exchange of information among internal and external software and systems.
	Intermediate Source	
PB Webservices	PowerBase Webservices	Contains logic for SAP interfaces, hosted on a VM in the SCE domain, performs necessary data logic, error handling, and updates.
	Intermediate	
RTS	Relay Testing System	Used offline to create test results for maintenance activities, returning results to PowerBase.
	Field Component	
ASPEN	ASPEN	Settings management software with dependencies on the interface before invocation for ESIN work orders.
	Supplementary	
Protection Suite	Protection Suite	Used to test relays, consumes a subset of SAP asset data and returns results to RTS.
	Field Component	

Process Flow:

1. Field Data Collection:

RTS collects and updates equipment data in the field.

Data is uploaded to PowerBase, triggering updates sent to SAP MDG via SAP PO.

2. Data Synchronization:

SAP MDG updates are then synchronized with SAP EAM, ensuring an enterprise-wide consistent view of equipment master data.

3. Interface Trigger:

PowerBase admins configure which fields trigger outbound exports to SAP.

Configurable limitations (e.g., specific functional locations) ensure targeted data updates.

4. Error Handling and Monitoring:

Managed across Doble PB, SAP MDG, and SAP EAM utilizing existing monitoring mechanisms.

-Splunk and SAP PO tools alert system administrators to any errors or synchronization issues.

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Requirements for Maintenance Plans Data Creation

Objectives:

Simplify the process for creating maintenance plan data associated with equipment or functional location records,

ensuring automated plan creation based on predefined business rules.

Scenarios for Consideration:

1. Creation/Installation of Equipment and Functional Locations:

Criteria: Equipment/FLOCs created or installed within the past week with status MPTC (Maintenance Plan to be created).

Actions: Create and approve maintenance plans, update status to MPCR (Maintenance Plan created), and uncheck MPTI (Maintenance Plan to be inactive).

2. Retired/Dismantled Equipment:

Criteria: Equipment/FLOCs retired/dismantled within the past week, having status MPTI and system status INAC. Actions:

Remove equipment from maintenance plans, set plan status to INAC, update associated statuses.

3. Error Handling:

Errors will be documented and sent to a predefined substation list for resolution.

Maintenance Plan Categories for Substations:

Single Cycle: AIR, Contact Res (CRES), DGA, HPOT, CBA, DISM, OTA, XFMR MM, TINS.

Strategy/Multi-Counter: CBM, LTCI, II, REGL.

Detailed Process Steps:

1. New Equipment:

Criteria: Specific object types and status MPTC.

Actions: Create/auto-approve maintenance plans and change requests to set the status to MPCR.

2. New Functional Location:

Criteria: Specific FLOC object types and status MPTC.

Actions: Create/auto-approve relevant maintenance plans and change requests.

3. Removal:

Criteria: Specific equipment/FLOC types and status MPTI.

Actions: Approve change requests to set the status to INAC and clear user status.

Assumptions:

Maintenance plans against the level 3 Functional Location hierarchy are manually created. User status profiles for FLOC and equipment (MPTC, MPCR, MPTI, MPNR) are used across the system.

Implementation Steps and Best Practices:

1. Configuration: Set up the interface triggers and data mapping in PowerBase and SAP systems. Conduct training sessions for PowerBase admins and relevant staff on updating and managing configurations.

2. Data Validation: Implement stringent data validation mechanisms to avoid duplication and ensure accurate updates.

3. Monitoring & Alerts:

Integrate tools like Splunk for consistent monitoring and error handling. Establish clear protocols for alerting the IT support team and administrators of any discrepancies.

4. Testing & Deployment:

Conduct thorough testing cycles to ensure seamless integration and synchronization.

Monitor the initial deployment phase closely and gather user feedback for improvements.

Conclusion:

The integration of SAP MDG with SAP ECC ZPMTO and the enhancement for automatic maintenance plan data creation represents a significant advancement in enterprise asset management. By automating data synchronization and simplifying maintenance plan creation, organizations can achieve greater data integrity, operational efficiency, and regulatory compliance.