SAP Master Data Governance

Central Governance of Material data

Based on SAP Master Data Governance on SAP S/4HANA 1709 / SAP Master Data Governance 9.1

March 2018

CUSTOMER
Preface

SAP Master Data Governance (MDG) is a state-of-the-art master data management solution, providing out-of-the-box, domain-specific master data governance to centrally create, change, and distribute, or to consolidate master data across your complete enterprise system landscape.

In this context, MDG can either run as a separate master data hub or be co-deployed on an operational system. In both cases MDG can run on:

- ECC on any DB
- ECC on HANA
- S/4HANA

From a functional perspective, SAP MDG on SAP S/4HANA 1709 correlates with the ERP 6.0-based SAP MDG 9.1 release.
Agenda

Introduction

SAP Master Data Governance Capabilities

SAP Master Data Governance Principles

Function in Detail

Integration Scenarios

Benefit from the Solution
Questions From the Manufacturing and Logistics LOB

Material Governance

- How can I establish a “maintain once – use everywhere” best practice?
- How can I reduce cost by eliminating redundant effort to maintain master data, i.e. through avoiding duplicates?
- How can I increase the quality of my material master data (i.e. classifications etc.) through central management and governance?
- How can I get consistent insight into sales, manufacturing, and procurement volumes?
- How can I accelerate availability of up-to-date master data in my business network?
- How can I get transparency on who has changed what, when and why?
- And … while accomplishing all that … how can I best leverage my investment in SAP?
Central Management of Material Master Data Drives Excellence Throughout Your Business Network

Consistent material master data across the entire business network

Documented changes along the life-cycle of a material to ensure compliance

Single version of material master data, for higher efficiency and quality

Collaborative and traceable material master data management
Agenda

Introduction

SAP Master Data Governance Capabilities

SAP Master Data Governance Principles

Function in Detail

Integration Scenarios

Benefit from the Solution
What is SAP MDG, Central Governance for Material Data?

Capabilities

Master Data Governance for material data offers a central hub-based maintenance of material master data.

To address the key business issues related to such a governance solution for master data, MDG for material follows some basic principles that are shared across the domains of MDG

- Maintain once, use many
- One standardized process to be used by everybody
- One standardized user interface for everybody
- One standardized set of business logic

In order to fulfill these principles, SAP has built a Master Data Governance solution that offers

- Central based maintenance of master data
- Workflow-driven processes that are flexible while ensuring governance and standardization
- Harmonized user interface, based upon Enterprise Portal, Business Client or Fiori Launchpad
- Data model and business logic follow the best practices of SAP and reuse existing data structures, business validations and various services
Master Data Governance Capabilities
Establish Best Quality Master Data to Optimize Business Processes

1. Deliver Out-of-the-Box
2. Integrated Object Model
3. Governance, Collaboration & Data Quality
4. Robust Data Replication
5. Re-Usability & Extensibility

SAP Master Data Governance
## Master Data Governance Capabilities

**1. Deliver Out-of-the-Box**

<table>
<thead>
<tr>
<th>Capability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low TCO</td>
<td>Full Integration to SAP systems as a client</td>
</tr>
<tr>
<td></td>
<td>Offer integration services for non-SAP client systems</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Workflow flexibility closely integrated to a framework for defining business rules</td>
</tr>
<tr>
<td>Ease of Consumption</td>
<td>Deliver a process-centric solution, with roles and a web-based user interface</td>
</tr>
<tr>
<td></td>
<td>Deliver predefined data quality services</td>
</tr>
<tr>
<td>Best Practice</td>
<td>Deliver a data model proven by several applications &amp; industries</td>
</tr>
<tr>
<td>Process Transparency</td>
<td>Reuse of existing processing logic</td>
</tr>
<tr>
<td>Integration</td>
<td>Out-of-the-box data replication mechanisms, using stable mechanisms</td>
</tr>
</tbody>
</table>
Master Data Governance Capabilities

Integrated Object Model

Identifying Material Data ~ 10 fields
- Both SAP internal (material number) as well as external standards (GTIN)

Descriptive Material Data ~ 100 fields
- Help to understand what a material is but do not control processes
- Are as different as the products of our customers
- Typically realized via Classification (rather than Field Extension)

Process Controlling Material Data ~ 1.000 fields
- Control the behavior of SAP business processes
- Proprietary to SAP applications

SAP MDG Scope includes (~ 600 fields)
- Basic Data (Purchasing, Sales, Storage, Service Parts) and Long texts / notes
- Dimensions/ alternative UOMs / GTIN/EAN handling
- Classification / Lean Classification
- Sales Organization / Distribution Channel specific data / Tax Classification
- Plant specific data (with for Inspection Setup, MRP Area, Production Version)
- Storage Location Data
- Valuation data (with Material Ledger)
- Document Assignment
- Warehouse Data

Customers can enhance the data model
Master Data Governance Capabilities

Integrated Object Model
Master Data Governance Capabilities

3 Governance, Collaboration...

Linear or distributed and workflow based

Has roles and responsibilities and also task authority (e.g., create, change, approve)

Can be adapted and tailored based on customer needs

Possibility to extend the process by adding business logic and thereby bringing in data quality

Data in process stored in a separated repository, will be transferred to operational database after final approval

Flexible enough to respect the distributed responsibilities existing in a company across various business units
Master Data Governance Capabilities

...and Data Quality

Prevent creation of duplicates for increased effectiveness and efficiency

- Checked early and embedded in the process
- High detection quality of matching using SAP HANA or Enterprise Search

Validations

- Re-use of existing validation logic
- Custom validations can be modeled and programmed (For example, code lists, simple checks, or rules using BRFplus)
Master Data Governance Capabilities

...and Data Quality

Showing what was changed
- Changes by earlier processors and own (unsaved) changes in two colors
- Previous, changed, and last saved value per attribute
- Available for all fields, including table cells, rows, navigation elements, etc.

Helps people to do their job
- Supports the processor to decide on their next action
- Supports approvers to quickly spot what they will approve
- Supports auditors to easily see what was changed

Transparency on what has happened earlier
- Change documents provide information who changed which attribute from what value to what other value by when
- Workflow logs tell who was involved in the change request process and who approved which data change
Master Data Governance Capabilities

Robust Data Replication

Replication

- Direct, pooled or manual replication to SAP and non-SAP systems
- Peer-to-peer or mediated

Replication Techniques

- DRF controlling replication mechanisms like
  - ALE for SAP S/HANA, SAP ECC, R/3 and non SAP systems
  - SOA service (only in S/4) for SAP and non SAP systems
- CIF for SAP SCM and MW for SAP CRM/SRM

Replication Features

- Flexibility to replicate selected data only to a specific client system by defining filters (controlled by DRF)
- Support of different object IDs or customizing keys between hub and client systems (via mapping in MDG or PI)
- Monitoring and error handling
Master Data Governance Capabilities

5 Reusability & Extensibility

Reuse standard content
• Reuse existing data structures and functionality of SAP Business Suite

Enhance functionality
• Be able to enhance MDG functionality based on predefined content (e.g. plant or sales data) or customer-specific extensions

Extend data structures
• Provide easy-to-use extensibility capabilities for enhancing nodes and fields
  • data models
  • user interfaces
  • processes
  • data replication
Agenda

Introduction

SAP Master Data Governance Capabilities

SAP Master Data Governance Principles

Function in Detail

Integration Scenarios

Benefit from the Solution
SAP Master Data Governance Principles

User-Centricity
- Central Maintenance of Materials
- Master data governance bundles together all activities for material master data maintenance.
- Central deployment and authorization ensures governance
- Local adaptation and personalization possible

Governance
- Change Requests With Built-In Approval Process
- Integrated process starts with a request to create or change a material, continues with processing and commenting by different expert users and stakeholders, and finishes with approval or rejection by authorized experts
- All processing steps are supported by workflow

Workflow
- Standardized but Flexible Processes Incl. Rules Management and Tracking
- The standard SAP Business Workflow is enhanced with a rule-based engine; therefore changes in responsibilities and in processes can be reflected immediately and with ease.

Architecture
- Staging Area to maintain inactive data of Material
- Active area – Holds the active data; Staging – Holds the data during the change request processing before approval
User-Centric Principle
Central Maintenance of Materials

All activities around the creation and maintenance of materials are together. Companies can establish it as the standard hub for creating and changing materials. Customers can use the SAP Enterprise Portal, SAP Business Client or Fiori Launchpad (only S/4 HANA)

Customer business challenges
- Users maintained master data in different systems
- Different transactions were necessary to execute the maintenance tasks (change, create, delete)
- Planned changes were not transparent to other systems

Business value
- Material master data governance bundles together all activities for material master data maintenance.
- Central deployment and authorization ensures governance
- Local adaptation and personalization possible
All relevant tasks reachable with one click

Easy to configure and personalize

PFCG Role
SAP_MDGM_MENU_07

Start a Change Request with for example ‘Search Material’ or ‘Create Material’
User-Centric Principle
Fiori Launchpad in S/4

All relevant tasks reachable with one click

Easy to configure and personalize

Catalog
SAP_MDG_BC_MATERIAL_DATA

Start a Change Request with for example ‘Manage Material’ or ‘Create Material’
Within the workflow inbox, Change Requests are displayed, where you are the processor.

You can personalize this list to your needs.

Multiple options are available, for example you can open the Change Request or you can forward it.

A preview of the Change Request is available.
User-Centric Principle
Workflow-Step Dependent Configuration Enables Flexible UI / Process Design

UI Configuration
Provide different User Interfaces per WF-step based on the task or knowhow of the user

Validations
Enable or disable checks / enrichments
Example: Switch off required field check in Request UI

Field properties
Set some data to read-only
Example: Expert can only maintain dimensions and the basic data are read-only

Step 1 - Request
- Simple UI
- Selected checks and enrichments

Step 2 - Check
- Expert UI
- Extended checks and enrichments

Step 3 - Approve
- Approver UI
- Full Checks
User-Centric Principle
Out-of-the-box configurations

The delivered configurations can be used as template or can be adapted in different ways.

Application MDG_BS_MAT_OVP for Single Object Maintenance

FPM Application Configurations:
- BS_MAT_INIT_07 (Initial Page)
- BS_MAT_OVP_07 (Material create)
- BS_MAT_OVP_07H (Material change)

Application MDG_BS_MAT_SEARCH for Search

FPM Application Configurations:
- MDG_BS_MAT_SEARCH_07
- MDG_BS_MAT_SEARCH_04H
Governance Principle
Change Requests With Built-In Approval Process

This function allows you to implement an integrated process of master data governance that starts with a request to create or change a material, continues with processing and commenting by different expert users and stakeholders, and finishes with approval or rejection by authorized experts.

All processing steps are supported by workflow.

Customer business challenges
• Requests and reasons for new or changed master data had to be communicated by phone or e-mail to master data specialists. They had to gather any further information in a time-consuming process from other experts and stakeholders. Follow-up processing by certain specialists had to be triggered manually. An approval process with a two man rule could not be assured.

Business value
• The approval process for maintenance of master data enables:
  • Fulfillment of compliance requirements
  • Better data quality
  • Faster and transparent decisions
  • Relevant information in one place
Governance Principle
Change Request Header

Notes and attachments can be assigned to the change request header.

Requester has to enter a description. Priority, due date and reason are optionally.

Last user can approve or reject the change request.
The data maintenance activities are bundled via a change request that is linked to a workflow. The workflow can be linear or distributed. Besides automated steps, ad hoc steps, delegation etc. can be used. The standard SAP Business Workflow is enhanced with a rule-based engine (Workflow template WS60800086); therefore changes in responsibilities and in processes can be reflected immediately and with ease. There is also a workflow template WS46000057 without BRF+, which covers the same processes.

**Workflow Principle**

Standardized but Flexible Processes Incl. Rules Management

The data maintenance activities are bundled via a change request that is linked to a workflow. The workflow can be linear or distributed. Besides automated steps, ad hoc steps, delegation etc. can be used. The standard SAP Business Workflow is enhanced with a rule-based engine (Workflow template WS60800086); therefore changes in responsibilities and in processes can be reflected immediately and with ease. There is also a workflow template WS46000057 without BRF+, which covers the same processes.

**Customer business challenges**

- Processes were unstructured and neither guided nor controlled
- High effort in data collection, change processing and issue resolution
- High TCO and low flexibility if hard-coded semi-automated processes are used

**Business value**

- Build-in guidance, monitoring and reporting using a standard workflow tool provides process and data governance
- Integrated tool for keeping data, process and issue resolution in one place
- Enhanced flexibility by integrated rules management
Workflow Principle
Rule-Based Workflow Template

Rule-Based Workflow Template

- The generic workflow template (WS60800086) is the foundation of the RBWF. The different processes are reflected by BRFplus decision tables, which are maintained in the customizing for each change request type.

- The combination of this workflow template with the BRFplus decision tables allows you to easily set up many different processes that can be flexibly changed through customizing.
Workflow Principle
Rule-Based Workflow Components

Customizing

<table>
<thead>
<tr>
<th>Type of Change Request</th>
<th>Data Model</th>
<th>Description (medium text)</th>
<th>Process</th>
<th>Single</th>
<th>Main Entity Type</th>
<th>Workflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT01</td>
<td>NN</td>
<td>Create Material</td>
<td></td>
<td></td>
<td>MATERIAL</td>
<td>WS600000086</td>
</tr>
<tr>
<td>MAT02</td>
<td>NN</td>
<td>Process Material</td>
<td></td>
<td></td>
<td>MATERIAL</td>
<td>WS600000086</td>
</tr>
<tr>
<td>MAT03</td>
<td>NN</td>
<td>Mark Material for Deletion</td>
<td></td>
<td></td>
<td>MATERIAL</td>
<td>WS600000086</td>
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<tr>
<td>MAT04</td>
<td>NN</td>
<td>Process Multiple Materials</td>
<td></td>
<td></td>
<td>MATERIAL</td>
<td>WS600000086</td>
</tr>
</tbody>
</table>

BRFplus Decision Tables

Decision Table: DT_SINGLE_VAL_MAT01

<table>
<thead>
<tr>
<th>CR Previous Step</th>
<th>Previous Action</th>
<th>Cond.</th>
<th>New CR Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 (New CR)</td>
<td>01 (New CR)</td>
<td>1</td>
<td>01 (New CR)</td>
</tr>
<tr>
<td>02 (New CR)</td>
<td>02 (New CR)</td>
<td>2</td>
<td>02 (New CR)</td>
</tr>
<tr>
<td>03 (New CR)</td>
<td>03 (New CR)</td>
<td>3</td>
<td>03 (New CR)</td>
</tr>
<tr>
<td>04 (New CR)</td>
<td>04 (New CR)</td>
<td>4</td>
<td>04 (New CR)</td>
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<tr>
<td>05 (New CR)</td>
<td>05 (New CR)</td>
<td>5</td>
<td>05 (New CR)</td>
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<tr>
<td>06 (New CR)</td>
<td>06 (New CR)</td>
<td>6</td>
<td>06 (New CR)</td>
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<tr>
<td>07 (New CR)</td>
<td>07 (New CR)</td>
<td>7</td>
<td>07 (New CR)</td>
</tr>
<tr>
<td>08 (New CR)</td>
<td>08 (New CR)</td>
<td>8</td>
<td>08 (New CR)</td>
</tr>
</tbody>
</table>

Decision Table: DT_USER_AGTE_GRP_MAT01

<table>
<thead>
<tr>
<th>Condition...</th>
<th>User Agent</th>
<th>Step Type</th>
<th>User Agent T.</th>
<th>User Agent Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>001</td>
<td>01 (Authorize Change Request)</td>
<td>US (User)</td>
<td>ANZERER</td>
</tr>
<tr>
<td>2</td>
<td>001</td>
<td>02 (Revise Change Request)</td>
<td>US (User)</td>
<td>ANZERER</td>
</tr>
</tbody>
</table>

Decision Table: DT_NON_USER_AGTE_GRP_MAT01

<table>
<thead>
<tr>
<th>Condition AI</th>
<th>Agent Group</th>
<th>Process Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>001</td>
<td>01 (Activation (Do Not Bypass Snapshots))</td>
</tr>
<tr>
<td>2</td>
<td>001</td>
<td>02 (Activation (S/H - Workflow))</td>
</tr>
<tr>
<td>3</td>
<td>001</td>
<td>03 (Roll Back Change Request))</td>
</tr>
</tbody>
</table>
Architecture Principle
Staging Area to Maintain Inactive Versions of Material Data

As long as the change request for the creation or change of a material is in progress, the attributes of the material are stored in an inactive version that exists (in the case of a change) in parallel to the active version. When the change request is approved then the data is written as the active version to the master data tables and this new or updated record is then available for business processes.

Customer business challenges
- Several users from different departments are involved in the creation of a material item
- Material items were immediately available in the system as soon as the first user saved the entries
- Many incomplete material items and partial changes could exist
- Planned changes were usually not visible to the business users

Business value
- Incomplete material (changes) are stored in an inactive version so the material can only be used in business processes when it is approved (better process quality)
- Rejected change requests don't create a material number in SAP (better data quality)
- Planned changes were usually not visible to the business users (better transparency)
Architecture Principle
Handling of Active and Inactive Data

To enable the master data governance process MDG separates
• Active data – Ready to be used by applications, can be distributed to client systems
• Inactive data – Not yet approved, currently part of a change request

Accordingly there are two separate storage locations
• Active area – Holds the active data
• Staging – Holds the data during the change request processing before approval

For optimal integration, MDG allows two modes
• Re-Use active area (re-use mode) : Existing structures of applications are used. For example, MDG for material use of the MARA table
• Generated active area (flex mode) : Tables as defined in the MDG data model are used to store active data.
Agenda

Introduction

SAP Master Data Governance Capabilities

SAP Master Data Governance Principles

Function in Detail

Integration Scenarios

Benefit from the Solution
Function in Detail

- Process Flow
- Material Processes: Search, Create Material, Duplicate Check, Display, Change Material, Side Panel, Copy, DMS and Classification Integration, Mark for Deletion
- SAP MDG Fiori Apps: Request new material and Approve new or changed material
- Processing multiple materials: Multiple Record Processing, SAP MDG Mass Processing and SAP MDG Consolidation
- MDG Framework Capabilities: Highlighting, Mass change, Parallel CR, Enrichment Spot, Governance Scope, Data Import, Key-and Value Mapping, Worklists, Data Replication, Process Analytics
- Master data remediation
Function in Detail: Process flow

External Providers

SAP Master Data Governance

- Re-use existing business logic, integrate external services for data enrichment, duplicate detection, …
- Collaboration
- Adaptable workflow
- Auditable change process

Business Processes

1. Maintain
   - Central maintenance of master data in staging area

2. Validate
   - External Services

3. Approve
   - Collaboration
   - Adaptable workflow
   - Auditable change process

4. Replicate
   - Automatic replication to non-SAP and SAP systems

5. Adapt
   - Adaptation / enrichment in local systems
Function in Detail: Material Processes

Search Functionality

- Users can search for materials that are stored in the active or in the staging area.
- Search criteria combine material attributes and classification.
- Search uses SAP HANA-based Search, Enterprise Search or alternative search providers.
- The user can start a change request for single or multi records processing directly from the results list.

Business User

**Customer business challenges**

- Search results only took operational or active data into account, not the inactive data in the staging area related to planned or future changes
- Business activities could not be directly triggered from a search result list

**Business value**

- Comprehensive search functionality simplifies daily work
- Integration into change request processing enhances productivity
- Including inactive data from staging area reduces parallel change processes
Function in Detail: Material Processes
Search Options in SAP Master Data Governance

The following options are delivered:

You can use **Enterprise Search**.
- You have installed and connected Enterprise Search either in embedded or federated form.

You can use **SAP HANA-based search**.
- You can use it in a side-by-side approach or fully embedded if MDG itself runs on an SAP HANA database.
- Follow the Configuration Guide which exists on SAP Help.
- With SAP HANA-based search for MDG, the federated search is not supported. If you require search capabilities across systems and beyond the MDG system, Enterprise Search can still be used.

The following option is not delivered:

You can use **Database Search** in exceptional cases if the two delivered options are not feasible.
- Database Search is not released to be used in the context of master data governance for material for live systems, it is only intended to be used as a temporary workaround for POC/Test purposes.
- Please follow the extension guide [Replace Enterprise Search by DB or alternative search provider](#) that also lists the limited capabilities.
## Capabilities of the Search Options of MDG for Material

### Main Features

<table>
<thead>
<tr>
<th>Topic</th>
<th>Enterprise Search</th>
<th>SAP HANA-based search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuzzy Search</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Support of Search Ranking (Score)</td>
<td>No (SAP Note 2284745)</td>
<td>Yes</td>
</tr>
<tr>
<td>Duplicate Check</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Duplicate Check with Fuzziness</td>
<td>Yes, can’t be switched off</td>
<td>Yes, configurable (defined by search view)</td>
</tr>
<tr>
<td>Long texts (multi languages)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Free-text</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Classification</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Time Dependent Classification</td>
<td>Yes</td>
<td>No (SAP Note 2284745)</td>
</tr>
<tr>
<td>Extensibility with fields</td>
<td>Yes (higher effort)</td>
<td>Yes (lower effort)</td>
</tr>
<tr>
<td>TCO</td>
<td>High (additional TREX hardware)</td>
<td>Low (embedded), High (side-by-side)</td>
</tr>
<tr>
<td>Multiple Search Views (UI)</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Function in Detail: Material Processes
Search Functionality

Consistent search UI containing all search capabilities
- Search methods easy to configure, more search methods can be added
- Search criteria combine material attributes and classification
- Drop-down lists of available fields and operators
- Add and remove search criteria (AND combination of multiple parameters)
- Search criteria can be saved using a descriptive name for quick and easy re-use
- Search for hits within active and inactive data
- Result can be downloaded to Excel
- Result list can be personalized
Function in Detail: Material Processes
Search Functionality: Copy search criteria to Change Request
Function in Detail: Material Processes
Create Material With Template, Initial Screen

- Copy from a Template: Enter Material, and if necessary a Plant, Storage Location, Sales Organization and Distribution Channel, Warehouse Number and Storage Type
- If you specify a Change Request as template than inactive data of the material is copied
- Only specified organizational levels of template are copied. Otherwise no organizational level is copied.
Several actions are possible for processing a change request (Customizing).

Workflow is controlled by the BRFplus decision tables when using the Rules based Workflow template or controlled by the Classic Workflow template.

Dedicated users or organizational units are derived for further processing.

Delivered template configuration: BS_MAT_OVP_07
Function in Detail: Material Processes
Duplicate Check

A basic duplicate check is offered to avoid the creation of already existing materials. The information on potential duplicates is provided during when checking or submitting the change requests. It can be switched on or off per workflow steps.

**Customer business challenges**
- Users often created a new material item even if the material master already existed in the system. This resulted not only in bad data quality, but also generated unnecessary cost since every master data record has its price tagged during its lifecycle.

**Business value**
- The duplicate check improves the data quality as well as the decision and business process quality in the connected systems
- Avoiding duplicates as early as possible saves time and money in the master data process
Function in Detail: Material Processes
Display Material

- Display material via WebDynpro Application Change Material
- Or display material via WebDynpro Application Search Material and click on the Material Number link
- Switch with the edit mode to create a new change request or to existing change request
Function in Detail: Material Processes
Change Material With Template, Initial Screen

- Copy from a Template: Enter Material, and if necessary a Plant, Storage Location, Sales Organization and Distribution Channel, Warehouse Number and Storage Type
- If you specify a Change Request as template than inactive data of the material is copied
- Only specified organizational levels of template are copied. Otherwise no organizational level is copied.
Function in Detail: Material Processes

Change Material

- Review Changes by showing the Change Documents, also in the Side Panel
- Several actions are possible for processing a CR (Customizing)
- Workflow is controlled by the BRFplus decision tables when using the Rules based Workflow template or controlled by the Classic Workflow template
- Dedicated users or organizational units are derived for further processing
- Delivered hierarchical template configuration: BS_MAT_OVP_07H
Function in Detail: Material Processes
BCV Side Panel Content for MDG Material

- Sales Overview: Sales orders created for the current material master.
- Production Overview: Production orders created for the current material master.
- Purchasing Overview: Purchase orders created for the current material master.
- Changes Overview: Changes raised by the current MDG change request.
Function in Detail: Material Processes
Copy organizational data

Copy organizational data
1. Mark already available organization
2. Select ‘Copy’ button
3. Select target organization(s) not yet being maintained.
4. Data is copied and can be reworked

Copy organizational data is available for
• Distribution Chains
• Plants
• Valuation Area Plant
• Warehouses
• Production Versions
• MRP Areas
Function in Detail: Material Processes
Change Material Type

- With the Material Change UI it is possible to change the Material Type
- Prerequisite: Authorization M_MATE_MTA
Function in Detail: Material Processes
Document Management System (DMS) Integration

- Display, edit and delete links to document info records
- Maintain long text information for material link
- Easy creation of new documents (and material link)
- Display document info record dependent on user/system environment
  - Using PLM Web UI
  - Using SAP GUI HTML
  - Using SAP GUI (NWBC for desktop only)
Function in Detail: Material Processes
Classification

Classification available since EhP5

Only for Material:
- MDG Single-Object Maintenance UI

UI re-used from PLM

Not mass-enabled

Restrictions (see SAP Note 2461516)

Predelivered CR-Types:
MAT01, MAT02, MAT06, MAT0A, MAT0B

Lean Classification since MDG 9.1

For Customer, Supplier and Material:
- MDG Single-Object Maintenance UI
- MDG Consolidation

Simplified UIs

Mass-enabled API

Simplified backend features to reduce complexity

Predelivered CR-Types:
MATL01, MATL02, MATL0A, MATL0B, MATLCLF

Class assignment and characteristics valuation work like normal entities in data model
Usage of lean classification in MDG-M can be configured using change request type Assign Classes List UIBB to assign multiple classes.

Enter Characteristic Values Characteristics assigned to selected classes are visible in one row and can be filled with a value. You can use the icon to clear the value.

Multiple Values Characteristics Multiple value characteristics are also visible in one row and can be recognized by ‘+’ and ‘-’ icons. You can use these icons to insert or delete rows.
Function in Detail: Material Processes

Lean Classification Features and Restrictions

Supported Features

- Derivations using BAdI CROSS_ENTITY_BADI (incl. defaulting for class types and classes)
- Checks using BRFplus
- Authorizations (incl. display authorization)
- Change Documents
- Multiple class types and class assignments
- Characteristic values: Single or multiple values, additional values, intervals, mandatory checks (required entry)

Restrictions (not supported)

- Object dependencies (preconditions, actions, selection condition, procedures)
- Overwriting of characteristic values and overwriting of inherited values
- Engineering Change Number

You can find detailed information about included/excluded features in SAP Note 2479869.
Function in Detail: Material Processes
Mark Material for Deletion

- Mark a single material for deletion
- Or set the flag on a org level
- A change request is triggered and data is copied into the staging area

- Workflow is triggered and processed the same way as for the other processes
- The deletion is limited to the material entity. Currently no remote checks about reuse of the material is done.
# Function in Detail: Fiori Apps for MDG Material

The following SAP Fiori Applications are part of SAP MDG 9.0 and SAP S/4HANA 1610

<table>
<thead>
<tr>
<th>MDG Fiori Applications</th>
<th>Backend</th>
<th>Frontend(UI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MDG Fiori Request Applications</strong></td>
<td>Lean Request for MDG Material</td>
<td>MDG7.0 SP07 Onwards OR MDG8.0 SP01 Onwards OR MDG 9.0 Onwards</td>
</tr>
<tr>
<td></td>
<td>Track status of My Requests</td>
<td></td>
</tr>
<tr>
<td><strong>MDG Fiori Approve Applications</strong></td>
<td>Approve Material</td>
<td>MG8.0 SP02 Onwards OR MDG 9.0 Onwards</td>
</tr>
</tbody>
</table>
Function in Detail: SAP MDG Fiori App

Request New Material

New Material

Reason for Request: New pump request
Material Number: T-CP.01
*Material Description: Centrifugal Pump 3 m³/hr
*Unit of Measure: EA
Additional Information: Pump Class 1. Full product capacity 3 cubic meters/hour discharge
Function in Detail: SAP MDG Fiori App

Approve Material

Approve New Material

Approve Changed Material
Function in Detail: Processing Multiple Materials

Multi-Record Processing

• Well-defined governance process with multiple workflow steps
• Typically, a collaboration of multiple processors
• Governance processes exist for single and multiple objects

Examples:
• New global contract leads to changes in multiple materials, supervisor checks and approves changes
• MRP controller checks his materials and changes stock-relevant data, production supervisor needs to agree

Mass Processing

• Interactive master data change process
• Typically ad-hoc/on-request/project-based processing by one data specialist

Examples
• Set distribution chain status of all materials of a closed sales organization
• Exchange MRP controllers
Function in Detail: Processing Multiple Materials

Multiple Record Processing

- Change selected materials when navigating from the search UI to the multiple record processing application
- Copy multiple materials with sub-objects when navigating from the search UI to the multiple record processing application
- Combined maintenance of different entity types
- List and Form UIBB’s are supported
- Example UI configurations and customizing delivered by business configuration sets
Function in Detail: Processing Multiple Materials

Multiple Record Processing Features

- Add, copy and change materials, language-dependent texts and organizational data in a change request
- Delete, remove and discard changes possible, with highlighting
- Copy with reference
- Create MuRP Change Request without selecting objects
- Add existing objects with New Button
- Several operators available in context menu (e.g. select rows with identical value)
- Highlighting changes with different colors
  - Saved changes
  - Current changes
SAP Master Data Governance, Mass Processing

Process flow

**Scope**
Describe the scope of your change by choosing the fields that you want to change.

**Selection**
Enter search criteria to select the master data objects that you want to change.
The system copies the data to a staging area for processing.

**Edit**
Edit the data using a tabular UI by changing single or multiple fields at a time.
Verify your changes based on statistical information provided by the system.

**Validation**
The system checks the validity of the data in the background.
Verify the validation results and correct the data if necessary.

**Activation**
The activation releases your changes from the staging area, so that the updated data is used in business processes.
New process to execute mass changes for all attributes

Process Steps
- Define fields to be changed
- Select materials to be changed
- Manually edit data to be changed
- Validate data against business rules
- Activate data changes

For more information, see separate Mass Processing presentation in the Learning Map.
SAP Master Data Governance, Consolidation

Process flow

Data Load
- Open to SAP HANA smart data integration, non-HANA based SAP ETL mechanisms, non-SAP ETL options, or data import from file

Initial Check
- View loaded data and check data quality based on backend customizing

Standardize
- Validate and enrich address data
- Possibility to connect to 3rd party tools for standardization and enrichment
- Usage of BRF+ for standardization and enrichment

Match
- Find duplicates based on customer-specific matching rules
- Review match result

Calculate Best Record
- Create “Best Records” based on approved match groups
- BRF+ can be used for customer-specific Best Record Calculation
- Review Best Record Calculation result

Validate
- Validate best records against backend customizing to verify whether records can be activated
- Validate against ctrl. governance checks (BAdI, BRF+)

Activate
- Provide consolidated master data for analytical or operational use
- Option to activate directly, or indirectly triggering post processing using central governance
The new process SAP MDG, Consolidation enables you to enrich and standardize your data.

The solution helps you to identify and merge duplicate records to produce the best possible master data records. You can then validate and load your newly consolidated data into your target system. You can also integrate SAP MDG, consolidation with MDG, central governance.

For more information, see separate Consolidation presentation in the Learning Map.
Function in Detail: MDG Framework Capabilities
Common Services of MDG for Material

Common services of change request processing

- Highlighting
- Mass change
- Support of parallel Change Request
- Enrichment Spot
- Governance Scope
- Key-and Value Mapping
- Import Master Data
- Worklists (My Change Request, Display Change Requests, Change Documents)
- Data Replication
- Process Analytics
Function in Detail: MDG Framework Capabilities
Highlight Changes: Field changes

Highlight Saved Changes: Supports processor to decide about next action
Highlight Unsaved Changes: Provides information what can be “un-done”.
Saved changes and unsaved changes in two different colors.

Highlighting of Table Rows
Highlighted table rows refer to changes that you can only see when navigating from a table row to the details of a dependent entity.

Tooltip Information
Field tooltip shows previous value.
Function in Detail: MDG Framework Capabilities

Mass Change

- Optionally, create a change request and submit it (typically w/o materials assigned, yet)

- Second, start the mass change and select your relevant materials by Define Selection (Step 1) and Refine Selection (Step 2)

- Step 3: Replace one or more fields with one dedicated value

- Step 4: You can review the results and then execute the change. If not yet done, you now need to assign an open mass change request that is assigned to you, or you can create a new change request
Function in Detail: MDG Framework Capabilities
Support of Parallel Change Request (Multiple Change Requests per Material at the Same Time)

Creation of material with initial Change Request
• One Change Request for create material

Parallel Change Requests for subsequent individual processing
• Parallel Change Requests for extending material
• Extend material to different organizations or change existing data in parallel to extend the material

Activation for general data and per organizational unit directly after approval
• Workflow creation for each selected organizational unit, activation after approval

Lock on entity level (interlocking)
• Instead of lock on object level only
• Change request type determines the maintainable fields
Function in Detail: MDG Framework Capabilities
Data Quality Framework for Data Enrichment Spots

Data Enrichment Spots
- Flexible framework to define enrichment spots
- Is used by SAP for example for Address Validation
- Can be used by customers to define further enhancement spots
Function in Detail: MDG Framework Capabilities
Governance Scope - Deactivate Entity Types / Fields

Governance Scope

- Only parts of the data model shall be put under governance
- Entity types / attributes can be excluded from governance
- Excluded entity types / attributes
  - can not be changed within a Change Request
  - are displayed only within the UI; can be suppressed by changing the UI configuration
  - can still be loaded to active area but not via CR / staging
  - Can easily be re-added to the governance scope afterwards
Material master data, Key- and Value-Mapping can be uploaded to the MDG system from an XML file using the MDG Import Master Data transaction. The imported material master data can be adjusted or modified in a change request. Only when the change request is approved is data written to the SAP S/4HANA material master data (which is the active area). If data quality is good, the data can also be written directly into the active area.

Customer business challenges
- No direct upload functionality was available within SAP ERP
- No governance process existed for the upload of mass data

Business value
- Upload to MDG system (Material, Key- and Value-Mapping)
- Built-in upload functionality for MDG increases the speed of updates and streamlines integration between systems
- Governance functionality avoids creation of duplicates and ensures completeness and accuracy of data
Function in Detail: MDG Framework Capabilities
Key- and Value Mapping

This feature supports the replication of data into systems with non-harmonized customizing or with heterogeneous keys for material. For example, in cases where the same material has a different material number on the master data governance (MDG) hub than on a client (key mapping), or similar material groups have a different code in hub and clients (value mapping).

Customer business challenges
• Customers built their own solutions to map the values to distribute the data correctly to different systems

Business value
• Heterogeneous system landscapes can be supplied using the key- and value-mapping functionality offered with MDG
Function in Detail: MDG Framework Capabilities

Worklists

- My Change Requests

- Display Change Requests

- Change Documents
You can decide which outbound implementation you want to use in the replication models.

- **DRF outbound implementation I_MAT**
  The IDocs MATMAS (material) and CLFMAS (classification) are sent.

- **DRF outbound implementation I_MAT_V2**
  With the new outbound implementation, the IDocs DOLMAS (document assignment), ECMREV (change number and revision level) and MATQM (inspection lot) are sent in addition to MATMAS (material) and CLFMAS (classification).

- **DRF outbound implementation 194_3 (only S/4 HANA)**
  The ProductMDMBulkReplicateRequest_Out SOAP service enables you to replicate product master records from the SAP S/4HANA to client systems.
You can decide if you want to enable direct replication or pooled replication for each combination of business object and target system. With direct replication the IDocs are sent with the activation of the change request, with pooled replication the IDocs are sent periodically using the DRF change pointer.

- **Direct Output**: Changes are directly transferred to a target system.
- **Pooled Output**: Changes are collected and transferred in a mass process at a later point in time.

You can trigger the mass process for pooled output by starting or scheduling the report Execute Data Replication (`RDRF MESSAGE OUT`) for the relevant replication models.
Function in Detail: MDG Framework Capabilities
DRF Replication Status Information

Replication Status Information

- Overview of replication status per material to all relevant target systems
- Status per target system
  - Green: OK
  - Yellow: OK, but answer from target system still pending
  - Red: Error occurred
- Detailed log per target systems available
Function in Detail: MDG Framework Capabilities

Process Reporting

- Definition of SLA: Maximum processing time per change request type and priority
- Reporting on change request duration and SLA compliance
Function in Detail: Master data remediation (only S/4HANA)
Trigger validation and remediation process for erroneous product master data

In a nutshell…
Data quality control for master data specialists seeking effective remediation of product data.

Business Value
- Enable data quality control for product data by validating data, revealing quality issues and starting the remediation process.

Process Related Capabilities:
Selection of records to be validated
- Validation results displayed in worklist
- Quality issues of product data displayed in worklist
- Filtering on specific object attributes, rule sets, groups and IDs
- Detailed description for every rule violation
- Navigation to object data
- Navigation to object maintenance applications incl. single or mass processing in MDG
Agenda

Introduction

SAP Master Data Governance Capabilities

SAP Master Data Governance Principles

Function in Detail

Integration Scenarios

Benefit from the Solution
Integration Scenarios

Integration with SAP Hybris Product Content Management (PCM)
Integration with PLM
SAP MDG-M and SAP Hybris Product Content Management (PCM)

Joint Value Proposition

SAP MDG provides central governance of master data across the product, supplier, customer, financial and custom domains.

SAP Hybris PCM is a PIM (Product Information Management) product.

For many customers looking for a complete EIM solution in the product space, both solutions are needed.

- MDG provides detailed governance, control and data quality over the creation and update of data used in transactional, analytical and reporting systems.
- SAP Hybris PCM provides product catalogs and other PIM functionality.

A joint positioning of these products in a customers landscape will provide complementary benefit to our customers and a complete product data management solution.

- MDG will govern and control core data in a landscape. For data needed in a product catalog, MDG will feed SAP Hybris PCM for further enrichment and for catalog management.
- External data can (optionally) feed SAP Hybris PCM directly if it is not needed in transactional, analytical and reporting systems.

SAP’s other EIM tools will support in an overall landscape perspective.
### SAP MDG-M and SAP Hybris Product Content Management (PCM)

**Decision Indicators for Product Data Management**

<table>
<thead>
<tr>
<th>Situation</th>
<th>Initial Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most typical scenario:</strong> Company runs Business Suite, has e.g. own production or goods logistics, maintains product data (partly) themselves, and needs PIM capabilities, e.g. catalogs</td>
<td><strong>MDG-M and Hybris PCM</strong></td>
</tr>
<tr>
<td><strong>Special ERP focus scenario:</strong> Company runs Business Suite, has no need for rich product information handling, is not going into eCommerce</td>
<td><strong>MDG-M</strong></td>
</tr>
<tr>
<td><strong>Special eCommerce focus scenario:</strong> Company resells goods from other suppliers, acquires product data from suppliers and uses catalogs or multi-channel eCommerce tools, without need to manually maintain product data, without running own warehouse logistics or production</td>
<td><strong>Hybris PCM</strong></td>
</tr>
</tbody>
</table>
SAP PLM and SAP MDG-M

Joint Value Proposition

SAP PLM allows customers to manage their product data along the entire product life cycle from idea through portfolio management, engineering, release processes and costing to handover to manufacturing and service.

SAP MDG provides central governance of master data across the material, supplier, customer, financial and custom domains.

For many customers looking for a complete solution in the product space, both solutions are needed.

- SAP PLM orchestrates the processes of managing product data
- MDG provides detailed governance, control and data quality over the creation and update of material data used in transactional, analytical and reporting systems.

A joint positioning of these products in a customers landscape will provide complementary benefit to our customers and a complete product data management solution.
SAP PLM and SAP MDG-M
Process Integration Scenarios

- Enablement for PLM integration scenarios:
  - PLM Engineering Record
  - Create New Material
  - Change Existing Material
  - Check Status Change Request

- CAD Desktop
  - Create New Material
  - Change Existing Material

- Available as SAP Consulting solution
- Concept reusable for integration into other objects
Agenda

Introduction

SAP Master Data Governance Capabilities

SAP Master Data Governance Principles

Function in Detail

Integration Scenarios

Benefit from the Solution
SAP MDG on SAP S/4HANA 1709 and SAP MDG 9.1
The efficient way towards consistency and quality of your core information assets

SAP Master Data Governance (SAP MDG) provides end-to-end processes for the entire master data lifecycle. MDG helps empower business agility with SAP HANA-based analytics and consumer-grade user experience. Built on a strong foundation, it provides improved business efficiency and process flexibility, enabling simplification.

There are two versions of the product: SAP MDG on SAP S/4HANA and SAP MDG (which technically runs on SAP ERP 6.0).

Out-of-the-box applications for central MDM
▪ SAP MDG for financial data (financial accounting / consolidation data, companies, profit & cost centers)
▪ SAP MDG for supplier data (corporate, company, and purchasing related data, partner functions)
▪ SAP MDG for customer data (corporate, company, and sales related data, partner functions)
▪ SAP MDG for material data (corporate, sales org, plant, storage, warehouse, valuation & costing data)
▪ SAP MDG for enterprise asset management data* (asset structures, work management, bills of material)
▪ SAP MDG for retail and fashion management* (single & generic article, listings, stores, DCs, procurement & sales)

Flexible framework for your own master data…
▪ …for enrichment of data models, processes, user interfaces, and to define governance for custom-objects

Master data consolidation
▪ Load, standardize, match, calculate best records (business partner, product master data or custom-objects)

State-of-the-art SAP MDM solution
▪ Compelling user experience and dedicated SAP Fiori apps e.g. for master data request and approval
▪ Advanced data standardization, search, and duplicate detection (SAP HANA as an option)
▪ Governance of master data hierarchies as a basis for trusted business insight
▪ Interactive mass processing for ad hoc or project-based bulk changes by a data specialists
▪ Process quality trends or KPI reporting and data quality analytics with remediation
▪ Data replication to all SAP and non-SAP, cloud and on-premise systems in the landscape

*) available as Solution Extension for selected SAP MDG releases
SAP MDG, Central Governance for Material Data
Integrated, Centralized Product/Material Data for Process Excellence

Material Processing

- Workflow-driven creation and change process for Materials
- Change requests steer the maintenance & approval process of new or changed data
- Document changes for audits
- Work lists organize due changes
- Adaptable user interfaces and validations can be different per workflow step if needed

Distribution

- Changes are kept inactive until approval
- They can then be distributed to operational group or local systems via DRF using ALE

Scope of Master Data

- Search, Display, Change, Creation of single Material Master Data
- Mass and multi processing of changes
- File upload for initial load, system consolidation
- Broad out-of-the-box coverage of material attributes – incl. central and classification data as well as organizational unit data
SAP’s Understanding of a State-of-the-Art
Master Data Governance Solution

Realize
Master Data Governance

Solution
Strategy

• Deliver process-centric solution
• Workflow closely integrated to a framework for defining business rules
• Full integration to SAP systems and integration services for non-SAP
• Deliver roles on a web based UI
• Deliver a Data Model proven by several applications & industries
• Reuse of existing processing logic and out-of-the box data replication mechanisms

Basic
Principles

• User-centricity: Central work center for the maintenance of materials
• Governance: Change requests with built-in approval process
• Workflow: standardized but flexible processes incl. rules management and tracking
• Architecture: Staging area to maintain inactive versions of material data

Common
Services

• Search & Display
• Create, Change, Multi-Record Processing, Mass Change, Parallel Change Requests, Mark for Deletion
• Work lists (My Change Request, Display Change Requests, Change Documents)
• Duplicate Check
• Data Replication with Key- and Value-Mapping
• File Upload / Initial Load
• Extensibility of Data Model & User Interface
• Deployment on top of operational SAP system or as standalone hub
Benefits From SAP Master Data Governance

- Up-front, central creation of master data enables high data quality and leads to significant business improvements.

- Out-of-the-box, process-centric applications provide centralized governance for master data domains such as financial data, supplier data, customer data, material data.

- Native integration with SAP using existing business logic and infrastructure leads to low TCO.

- SAP Master Data Governance provides flexibility, from configurable workflows and extensible data models, up to custom built applications.
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