



PUBLIC

How-To: Read Approval Info for Master Data by Calling MDG API

Applicable Releases:

From EHP6 for SAP ERP 6.0 and from S/4HANA 1511

Version 2.0

August 2023

Document History

Document Version	Description
1.0	First official release of this guide
1.1	Update new SAP Community links
2.0	Layout and links update (Aug 2023)

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1 Business Scenario

SAP Master Data Governance (MDG) provides business processes to find, create, change, and mark master data for deletion. It supports the governance of master data in a central hub and the distribution to connected operational and business intelligence systems.

The processes are workflow-driven and can include several approval and revision phases, and the collaboration of all users participating in the master data maintenance.

MDG offers change request (CR)-based processing of master data with integrated workflow, staging, approval, activation, and distribution.

Domain-specific content (data models, user interfaces, workflows) is part of the standard delivery for several application areas. It is a common requirement from customers to adapt the MDG data models to their specific needs.

The processes are workflow-driven and can include several approval and revision phases with the collaboration of all users participating in the master data processing.

In the G/L Account area, MDG-F is also known for its SOX (Sarbanes-Oxley Act) compliance. Customers implement MDG-F to fulfill the SOX requirement.

In MDG-F, the end user can navigate to a change document from the object search result list. From the change document he can then navigate to a change request and from there he can further navigate to the approval log (workflow log). For these standard functions, there are steps needed to get the approval information for master data.

If you want to create a custom UI to list audit info by object, this document provides all necessary APIs and sample code how to call them using the example of G/L Account.

Additionally, all these APIs are valid for all MDG master data. If you are required to do the same for other MDG objects, you only have to replace G/L Account with your object.

2 Implementation

Prerequisite: You are using standard MDG-F data model 0G for your G/L Account management and standard/extended MDG workflow or rule based workflow.

2.1 Read G/L Account Information

2.1.1 G/L Account Definition

To get the correct G/L Account, you need a search screen to enter the search criteria. Therefore, you need a structure to define the search criteria or any account attribute to be listed in the search result list. With the standard data model 0G, there are several generated structures that can be used for your UI definition:

/MDG/_S_0G_PP_ACCOUNT: Chart of Account data

/MDG/_S_0G_PP_ACCCCDET: Company Code data

The following screenshot shows the MDG 7.0 data structure for Chart of Account data. In lower releases there will probably be fewer fields and in higher releases more fields, but this should not make a big difference for your usage.

Structure

/MDG/_S_0G_PP_ACCOUNT

Active

Short Description


Source Structure for PP Mapping

Attributes

Components

Entry help/check

Currency/quantity fields



Predefined Type

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Component	Typing Method	Component Type	Data Type	Length	Deci...	Short Description
COA	Types	KTOPL	CHAR	4	0	Chart of Accounts
ACCOUNT	Types	USMDZ1_ACCOUNT	CHAR	10	0	Account
ACCBLCREA	Types	USMDZ1_XSPEA	CHAR	1	0	Indicator: account is blocked for creation ?
ACCBPLPLAN	Types	USMDZ1_XSPEP	CHAR	1	0	Indicator: account blocked for planning ?
ACCBLPOST	Types	USMDZ1_XSPFB	CHAR	1	0	Indicator: Is Account Blocked for Posting?
ACCCDEL	Types	USMDZ1_XLOEV	CHAR	1	0	Indicator: Account marked for deletion?
ACCGRPACC	Types	USMDZ1_KTOKS	CHAR	4	0	G/L Account Group
ACCNEWACC	Types	USMDZ1_ACCOUNTN	CHAR	10	0	New Account
ACCPLTYP	Types	GVTYP	CHAR	2	0	P&L statement account type
ACCRESPP	Types	USMDZ1_RESP_PER...	CHAR	20	0	Person Responsible
ACCRESPU	Types	USMDZ1_RESP_USER	CHAR	12	0	User Responsible
ACCTYP	Types	USMDZ1_ACCTYP2	CHAR	1	0	Account Type
COMPACC	Types	USMDZ1_COMPANY	CHAR	6	0	Company
FSIACC	Types	USMDZ1_FSI	CHAR	10	0	Group Account
FSIACCSTA	Types	USMDZ1_FSISTAT	CHAR	10	0	Statistical Group Account
FUNCACC	Types	FKBER	CHAR	16	0	Functional Area
TXILG	Types	USMD_TXTILG	CHAR	60	0	Description (long text)
TXISH	Types	USMD_TXTISH	CHAR	20	0	Description (short text)
USMD_ENT_CHNG_AT	Types	USMD_ENTITY_CHA...	DEC	15	0	Changed On
USMD_ENT_CHNG_BY	Types	USMD_ENTITY_CHA...	CHAR	12	0	Changed By
USMD_ENT_CRID_AT	Types	USMD_ENTITY_CRE...	DEC	15	0	Created On
USMD_ENT_CRID_BY	Types	USMD_ENTITY_CRE...	CHAR	12	0	Created By
.INCLUDE	Types	CI_MDG_S_POG AC...		0	0	

2.1.2 Search Account

To get the existing account using search criteria, you can use data model method IF_USMD_MODEL~READ_CHAR_VALUE. In the following, you can find an example code for your reference.

```
DATA: lr_model TYPE REF TO if_usmd_model_ext.
DATA: lt_sel TYPE usmd_ts_sel.
DATA: ls_sel TYPE usmd_s_sel.
DATA: lr_data TYPE REF TO data.
FIELD-SYMBOLS: <lt_data> TYPE SORTED TABLE.
FIELD-SYMBOLS: <ls_data> TYPE any.
CONSTANTS: lc_incl TYPE ddsign VALUE 'I'.
CONSTANTS: lc_equal TYPE ddoption VALUE 'EQ'.
CONSTANTS: lc_model TYPE usmd_model VALUE '0G'.
CONSTANTS: lc_fld_account TYPE usmd_fieldname VALUE 'ACCOUNT'.
* Get model instance
CALL METHOD cl_usmd_model_ext=>get_instance
EXPORTING
    i_usmd_model = lc_model
IMPORTING
    eo_instance = lr_model.

CALL METHOD lr_model->create_data_reference
EXPORTING
```

```

i_fieldname = lc_fld_account
i_struct = lr_model->gc_struct_key
if_table = abap_true
i_tabtype = lr_model->gc_tabtype_sorted
IMPORTING
  er_data = lr_data.
ASSIGN lr_data->* TO <lt_data>.
* Convert end user input into selection for read method
* Here is only simple example
*-----
ls_sel-sign = lc_incl.
ls_sel-option = lc_equal.
CLEAR lt_sel.
ls_sel-fieldname = 'ACCTYP'.
ls_sel-low = '2'.
INSERT ls_sel INTO TABLE lt_sel.
*-----
* Read Account by selection criteria
CALL METHOD lr_model->read_char_value
EXPORTING
  i_fieldname = lc_fld_account
  it_sel = lt_sel
  i_readmode = if_usmd_model_ext=>GC_READMODE_ALL_INACT
IMPORTING
  et_data = et_data.

```

2.2 Read Change Request and Approval Information

2.2.1 Read Change Request by G/L Account Key

In MDG, a change request is the central place to get all information. Therefore, in order to get the approval information, we have to read a change request first. Method IF_USMD_CREQUEST_API~RETRIEVE_CREQUEST helps you to get this information. In the following, you can find an example code how to get the information.

```

DATA:
  lt_entity TYPE usmd_ts_value,
  ls_entity_value TYPE usmd_s_value,
  lt_crequest TYPE usmd_ts_crequest.
CONSTANTS:
  lc_model TYPE usmd_model VALUE '0G',
  lc_fld_coa TYPE usmd_fieldname VALUE 'COA',
  lc_fld_account TYPE usmd_entity VALUE 'ACCOUNT',
  lc_entity_account TYPE usmd_entity VALUE 'ACCOUNT'.
* Set Key
ls_entity_value-fieldname = lc_fld_coa.
ls_entity_value-value = 'INT'.
INSERT ls_entity_value INTO TABLE lt_entity.
ls_entity_value-fieldname = lc_fld_account.
ls_entity_value-value = '0000113100'.
INSERT ls_entity_value INTO TABLE lt_entity.
* Read Change request by object
cl_usmd_crequest_api=>if_usmd_crequest_api~retrieve_crequest(
  EXPORTING
    iv_model = lc_model
    iv_entity = lc_entity_account
    it_entity_key = lt_entity
    if_activeonly = abap_false
  IMPORTING
    et_crequest = lt_crequest ).

```

2.2.2 Read Workflow Log by Change Request

Finally, you are ready to read the approver(s) and approval user decision for G/L Account.

The following methods can be used here:

- Get the workflow item of the change request:
CL_USMD4_CREQUEST_PROTOCOL =>WORKITEMS_TO_OBJECT
- Get the work item details:
CL_USMD4_CREQUEST_PROTOCOL =>GET_WORKITEM_DETAIL

In the following, you can find a sample code how to get this information:

```
CONSTANTS: lc_bor_bus2250 TYPE swo_objtyp VALUE 'BUS2250',
  lc_index   TYPE swc_index VALUE '000000',
  BEGIN OF lcs_witype,
    w TYPE sww_witype VALUE 'W', "Dialog task
    b TYPE sww_witype VALUE 'B', "Background tasks
    f TYPE sww_witype VALUE 'F', "Subworkflow
  END OF lcs_witype.
FIELD-SYMBOLS: <ls_items>   TYPE swr_wihdr.

DATA: lt_items      TYPE usmd4_t_swr_wihdr,
  lt_message_struct TYPE usmd4_t_swr_mstruc,
  lt_simple_container TYPE usmd4_t_swr_cont,
  ls_wf_result       TYPE usmd4_s_alv_wf_result,
  ls_message_struct  TYPE swr_mstruc,
  ls_workitem_detail TYPE swr_widtl,
  l_action            TYPE usmd_crequest_action,
  ls_simple_container TYPE swr_cont,
  l_objkey            TYPE swo_typeid,
  l_return_code       TYPE sysubrc.

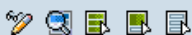
* Build object key of BOR object
CONCATENATE iv_cr_number lc_index INTO l_objkey.
* Get list of workflow(s) to current change request
CALL METHOD cl_usmd4_crequest_protocol=>workitems_to_object
EXPORTING
  i_objtype   = lc_bor_bus2250
  i_objkey    = l_objkey
  i_top_level_items = ''
IMPORTING
  e_return_code = l_return_code
CHANGING
  t_worklist    = lt_items.
CHECK l_return_code EQ 0.
* Get only the dialog workitem
LOOP AT lt_items ASSIGNING <ls_items> WHERE wi_type = lcs_witype-w.
*@@@ Approver info stores in WI_AAGENT (username) and WI_AA_NAME (user description)
* To get the approval user decision, need to read workflow item details
CLEAR: ls_wf_result, ls_workitem_detail.
CALL METHOD cl_usmd4_crequest_protocol=>get_workitem_detail
EXPORTING
  i_workitem_id = <ls_items>-wi_id
IMPORTING
  e_workitem_detail = ls_workitem_detail
  e_return_code     = l_return_code
CHANGING
  t_message_struct = lt_message_struct.
* Check result
CHECK l_return_code EQ 0.
* Get detail information of current workitem for user decisions
CLEAR: l_return_code, lt_message_struct, lt_simple_container.
CALL METHOD cl_usmd4_crequest_protocol=>read_container
EXPORTING
```

```

i_workitem_id=<ls_items>-wi_id
IMPORTING
e_return_code=l_return_code
CHANGING
t_simple_container=lt_simple_container.
*Check result
CHECK l_return_code EQ 0.
*Read the result of a user decision if available
READ TABLE lt_simple_container INTO ls_simple_container
    WITH KEY element = 'ACTION_RESULT'.
IF sy-subrc EQ 0 AND
    NOT ls_simple_container-value IS INITIAL.
    l_action = ls_simple_container-value.
*-----
*@@@ Description of User decision could be read from table USMD220T and
*it could be stored in ls_wf_result-ddtext
*-----
ENDIF.
*Workitem information to result list
ls_wf_result-ws_id=<ls_items>-wi_id.
MOVE-CORRESPONDING ls_workitem_detail TO ls_wf_result.
MOVE-CORRESPONDING <ls_items> TO ls_wf_result.
APPEND ls_wf_result TO et_wf_log.
ENDLOOP.

```

Table USMD220C stores description of action results (data element: USMD_CREQUEST_ACTION)

Display View "Edit Actions": Overview				
				
Edit Actions				
Action	Description	Pushbutton Text	Quick Info Text	
01	Agree	Agree	Agree	
02	Disagree	Disagree	Disagree	
03	Approve	Approve	Approve	
04	Reject	Reject	Reject	
05	Finalize Processing	Finalize Processing	Finalize Processing	
06	Send for Revision	Send for Revision	Send for Revision	
07	Resubmit	Resubmit	Resubmit	
08	Withdraw	Withdraw	Withdraw	
09	Activate	Activate	Activate	
10	Send for Revision	Send for Revision	Send for Revision	
21	Successfully executed	N/A	N/A	
22	Successfully executed with warning	N/A	N/A	
23	Failed	N/A	N/A	
31	Activation successful	N/A	N/A	
32	Activation failed	N/A	N/A	
33	Activation failed for snapshot	N/A	N/A	
80	MDG Example: Check Landing Quota	Check Quota	Check Landing Quota by Specialist	

3 Additional Information

3.1 Further Reading

3.1.1 Information on SAP MDG on SAP S/4HANA

- Exchange knowledge: [SAP Community](#) | [Q&A](#) | [Blog](#)
- Try SAP Master Data Governance on S/4HANA for free: [Trial Version](#)
- Try SAP Master Data Governance on S/4HANA on the SAP Cloud Appliance Library: [S/4HANA 2022 FPS1](#)
- Learn more: [Latest Release](#) | [Help Portal](#) | [How-to Information](#) | [Key Presentations](#)

3.1.2 SAP Roadmap Explorer

- Please see the [roadmap for SAP Master Data Governance](#)

3.1.3 Related Information

- Learn more: [Floorplan Manager for Web Dynpro ABAP](#) | [How to Adapt FPM](#) | [FPM Blog](#) | [How-to Information](#) | [Service Mapping Tool](#) | [SAP S/4HANA Cookbook CVI](#)

3.2 SAP Notes

In addition to the detailed explanations written in this document, please see the following SAP Notes for further important information.

Note	Description
2021246	MDG-F: (Un-) Supported Fields in Data Model OG
1619534	How to Create, Enhance and Adapt FPM Applications
1637249	MDG: Information for efficient message processing
2105467	MDG Performance
2561461	Scope of support for SAP Master Data Governance (MDG)