



Using Enhanced Integration of CRM with MDG for Customers (MDG-C) in a CRM/ERP Data Exchange Scenario (CRM@MDG)

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SCOPE OF THIS DOCUMENT

Up to MDG 6.1, a CRM system can only integrate into MDG-C in either of the following situations:

- The CRM system is a receiving client system.
- The CRM system is connected using CRM middleware to an ERP system that is set up as an MDG client system.

As a consequence of these restrictions, the governance of master data for CRM systems integrating with MDG systems up to MDG6.1 can only occur if you implement either of the following:

- Maintenance of data in the MDG hub followed by replication to all clients.
- Use of the client maintenance scenario in ERP or CRM.

In this case, data replication can occur in either of the following ways:

- Client -> MDG hub -> Client
- Client -> ERP -> MDG hub -> ERP -> Client.

Also, data replication is restricted. One example of the restriction is the inability to replicate CRM-specific sets.

From MDG 7.0, integration between CRM systems and MDG-C supports CRM-specific data, consisting of sales data, shipping data, billing data, tax indicators, and partner functions.

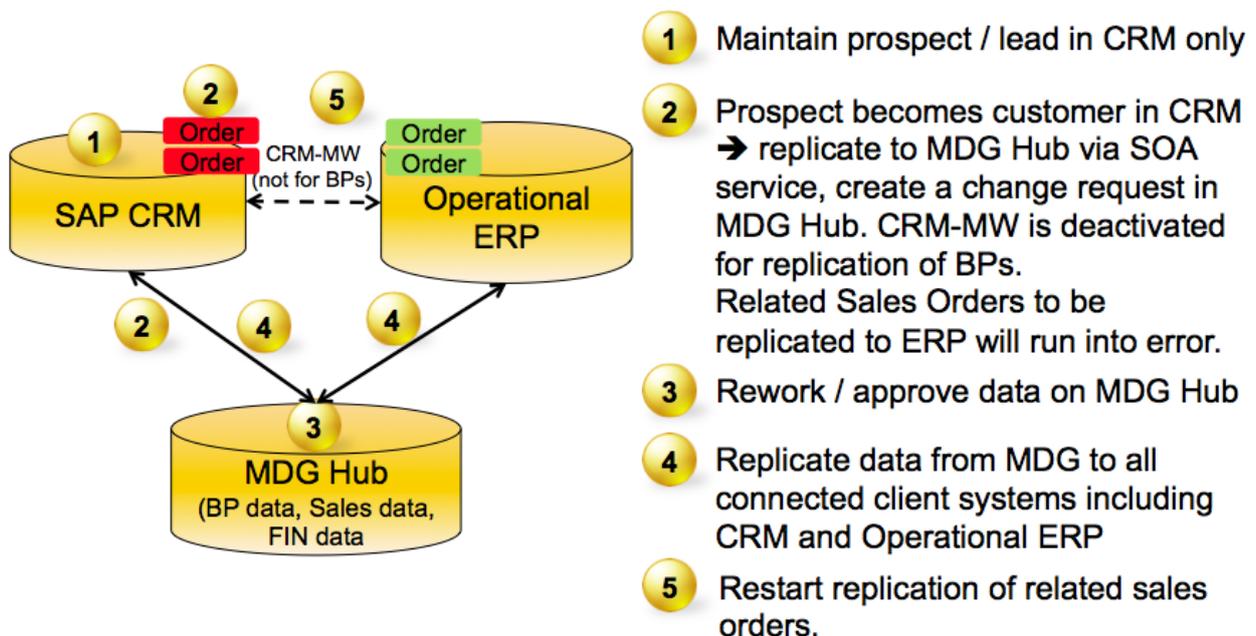
Furthermore, the MDG hub can be placed *between* CRM and ERP, either if you are implementing new CRM/ERP landscapes or if you are introducing MDG-C into existing landscapes. You can use both CRM and ERP for client maintenance, which involves replicating almost all data via the MDG hub. The data exchange of business partners between CRM and ERP does not require the CRM Middleware anymore (materials or orders still do). This document describes what has to be done to use this enhanced integration in lower releases.

The graphic below shows the scenario in which prospects in CRM are blocked from being sent to MDG, and a prospect becomes a customer that is used immediately in a CRM order:



Replication to SAP-CRM

New replication scenario btw. MDG-C & SAP-CRM / SAP-ERP



SUPPORTED RELEASES

In principle, product releases with which the integration could be used are:

- MDG hub: SAP ERP 6.0 EhP 6, MDG 6.1 or later
- CRM client: SAP CRM 7.02 or later
- ERP client: SAP R/3 Enterprise (4.70) or later

REPLICATION MODES

The communication between the CRM client system and the MDG hub system always takes place using a SOA service. Communication from the MDG hub to the ERP client uses either SOA (EhP 6 or later) or IDoc (older ERP releases).

PREREQUISITES

Whether you are working with a new system landscape or with an existing one, a number of tasks that are not covered in this guide must be completed before you can use the enhanced integration of CRM with MDG-C.

This guide does not cover the following topics:

- Setup information about data exchange in general (technically or by customizing), the system landscape, or system communication.
- The exchange of other master data or the interaction with such data (for example materials/products)
- Process integration settings (for example, organizational management).

If you are not using CRM 7.13 (or later), your CRM system has to be on SP04 (CRM 7.12) or SP09 (CRM 7.02) respectively. If your SP level is not that high, you have to implement the mentioned SP (or a higher one).

If you want to use the scenario of the order block and restart (see [Prevention of Erroneous Order Replication from CRM to ERP](#)), upgrade to at least SP04 (for CRM 7.13), SP07 (for CRM7.12), or SP12 (for CRM7.02).

If you are not using SAP ERP 6.0 EhP7 in the MDG hub system, the support package level for software component SAP_BS_FND 731 has to be at least SP07. For SAP_APPL 606, it has to be at least SP06.

STEPS THAT ARE INDEPENDENT OF THE REPLICATION MODE

1. If your CRM client system is running on NetWeaver 7.40 (or later), check whether the changes of note [1906487](#) are already there. If not, implement the note.
2. Check whether the MDG outbound module event is activated. Use transaction `CRMC_BUT_CALL_FU` to do this. If the entry for the event is missing, create the following event:
 - Event: *Business Partner Outbound* (BPOUT)
 - Object: *Business Partner and BP Relationship* (BUPX)
 - Item: 1100000
 - Function Module Name: `CRMMDG_BUPX_OUTBOUND`
3. In the MDG hub, maintain table `MDG_BP_SYS_PAR` using the maintenance view `MDGV_BP_SYS_PAR`. Enter the business system ID of your CRM client and activate the following parameters:
 - The one for tax classification mapping.
 - The one for filtering reflexive partner functions.
4. If the MDG hub system was put in between a CRM system and an ERP system for which master data exchange and process integration is already set up, delete all settings in the CRM Middleware referring to business partner replication to the corresponding ERP system. (For example, remove all business partner subscriptions in the MW Admin Console for that site).
5. In the MDG hub system, make sure that the incoming data will result in the creation of a change request:
 1. Open Customizing for Data Replication (transaction `DRFIMG`).
 2. Choose Data replication -> Define Custom Settings for Data Replication -> Define Technical Settings -> Define Technical Settings for Business Systems.
 3. Mark the entry of your CRM system (if it does not exist, create an appropriate entry with logical system and RFC connection) and choose the subdialog Define Bus. Systems, BOs.
 4. Mark the entry for BO type 147 (if it does not exist, create the entry and leave option *System Filter* deselected). Choose the subdialog *Define Bus. Systems, BOs, Communication Channel*.

5. Make sure that the entry for communication channel *Replication via Service* has the value *Staging Area* assigned as the storage replication area. If this entry does not exist, create an appropriate entry leaving the *Upd. KM* flag deselected and the time dependency option undefined.

STEPS THAT DEPEND ON THE REPLICATION MODE (MDG HUB TO ERP CLIENT)

Replication Using a SOA Service

1. In the ERP client system, check whether there is an (active) BAdI implementation called `MDG_BS_KEY_MAP_HANDLER_CUSTOM` for the enhancement implementation `MDG_BS_CUSTOM_SI_ERP` of the enhancement spot `MDG_BS_SUPPLIER_SI`.
2. If no active BAdI implementation exists, create one with an implementing customer class (for example, `ZCL_MDG_BS_CUST_KEYMAP_HANDLER`).
3. Copy the code from the attachment `ZSAVE_SUPPLIER_DATA_IN.DOCX` of note [1929736](#) into the interface method `IF_EX_MDG_BS_SUPPLIER_SI~SAVE_SUPPLIER_DATA_IN` of your class.
4. Activate the implementation.
5. Again in the ERP client system, check whether there is an (active) BAdI implementation called `MDG_BS_KEYMAP_CUST_CP_HANDLER` for the enhancement implementation `MDG_BS_CUSTOM_RELSHIP_SI_IN` of the enhancement spot `MDG_BS_BP_RELSHIP_SI`.
6. If no active BAdI implementation exists, create one with an implementing customer class (for example, `ZCL_MDG_KEYMAP_CUST_CP_HANDLER`).
7. Copy the code from the attachment `ZSAVE_RELATIONSHIP_DATA_IN.DOCX` of note [1929736](#) into the interface method `IF_MDG_BS_BP_RELSHIP_SI~SAVE_RELATIONSHIP_DATA_IN` of your class.
8. Activate the implementation.

Replication Using IDocs

1. In the MDG hub system, check whether function module `MDG_BS_ECC_CUST_GET_KEYMPPG` exists.
2. If the function module does not exist, create your own function module called `ZMDG_BS_ECC_CUST_GET_KEYMPPG` in a customer function group and copy the code from the attachment `ZMDG_BS_ECC_CUST_GET_KEYMPPG.DOCX` of note [1929736](#) (don't forget to maintain the interface accordingly).
3. Activate the function module.
4. In the ERP client system, check whether there is an (active) implementation called `MDG_ECC_CUST_CRMTBLS` for the BAdI `IDOC_DATA_MAPPER`.
5. If no active implementation exists, create your own implementation in a customer class and copy the code from the attachment `ZMDG_ECC_CUS_CRMTBLS.DOCX` of note [1929736](#).
6. Activate the implementation.
Important: In case the function module mentioned in step 1 already exists in the hub, you have to adapt the two calls in the BAdI implementation code accordingly.

FURTHER INFORMATION

Double Replication Required to Fill CRM Mapping Tables

Process integration tasks such as order replication from CRM to ERP require all CRM mapping tables to be filled (`CRMM_BUT_CUSTNO` and `CRMM_BUT_CONTNO` in the CRM client; `CRMKUNNR` and `CRMPARNR` in the ERP client). However, the central mapping information in MDG is stored in the hub system. As a result, the CRM mapping tables get filled with the information from the key mapping defined in the MDG hub. This replication setup may lead to several situations. For instance, suppose CRM mapping information is being written in the MDG hub. When the confirmation message comes back from CRM to MDG, the independent processing occurring in the ERP client, which may be running faster, might not yet find the required information to fill `CRMKUNNR`. As mentioned above, information to fill `CRMKUNNR` is needed for an order to be transferred. In this situation, you often have to trigger the replication of a customer a second time (for example, via direct send in CRM or via manual Data Replication Framework (DRF) replication in the MDG hub).

If you create a CRM order using a new business partner before the governance process finishes, or if the mapping tables are incomplete, the CRM order will have an error state.

The second manual replication is no longer necessary if your MDG hub system runs on SAP_BS_FND 7.47 SP10 or 7.31 SP16 (refer to SAP Note 2079352). The following steps have to be performed as well:

1. In table MDG_BP_SYS_PAR on the MDG hub, fill the new field „Business System of Target“ with the business system of the ERP system that acts as the actual CRM target (such as sales orders).
2. Check whether there is an active RFC destination maintained for the business system of the ERP system. You can check these settings via transaction DRFIMG. Choose *Data replication -> Define Custom Settings for Data Replication -> Define Technical Settings -> Define Technical Settings for Business Systems*.

It is not required, but may be useful to have the function module MDG_CHECK_MPG_TABLE_CRMKUNNR in the ERP target system. SAP Note 2079352 provides more information, automatic correction instructions for some releases, and a code example for other releases.

Note: This additional background replication only works when there are no errors in the original replication, all system connections are working, and there is no interference in the system communication.

Prevention of Erroneous Order Replication from CRM to ERP

Erroneous order replication is avoided automatically if you use a certain CRM support package level (see [Prerequisites](#)).

If you save a CRM order that uses a business partner in a partner function while the processing of the business partner is not finished and the CRM mapping tables have not yet been filled, the system applies a distribution lock to the CRM order. This lock is automatically removed by a background process as soon as the system creates a CRM mapping table entry. After the lock is removed, the same background process triggers the CRM middleware replication of the order to the ERP system.

So, the behavior for the user is the same as it would be outside of MDG because the CRM order is saved as usual and the replication is background functionality only. Furthermore, there are no longer erroneous business documents (or business documents containing error messages) that have to be checked.

Refer to SAP note [1975213](#) for the necessary manual steps.

SAP Note [2079352](#) provides function modules that check blocked orders to see if the automatic distribution lock is still correct. If it is not, the orders are released and sent to the ERP target system. For details on the usage, refer to the long text of the note.

Note: Only distribution locks that have been set by the automatism described in this chapter are removed.

Restriction of Governance by Filtering Business Partners in the CRM Outbound

When you send business partners to the ERP system, the most common filtering option is to filter by sales classification. Filtering by sales classification is relatively easy in the CRM Middleware data exchange (transaction `PIDE` in ERP Plugin). There is no such option in MDG.

For this scenario, there is an example code for a function module in the attachment `ZCRMMDG_BUPX_OUTBOUND_FILTER.DOCX` of note [1929736](#). Ensure you maintain the interface accordingly.

In this example code, no prospect is sent to MDG, but you can easily adapt the code to any other sales classification.

You must enter the function module in the CRM event table (transaction `CRMC_BUT_CALL_FU`) and ensure you include the following:

- Event: *Business Partner Outbound* (BPOUT)
- Object: *Business Partner and BP Relationship* (BUPX)
- Item: <a number around that of `CRMMDG_BUPX_OUTBOUND`>
- Function Module Name: `ZCRMMDG_BUPX_OUTBOUND_FILTER`

Important: if this event is active, the event for `CRMMDG_BUPX_OUTBOUND` must be inactive.

Of course, you can use any criterion to block the sending of a BP created in CRM system from the CRM system to the MDG hub. However, depending on the complexity of the criterion, it might be useful to call another function module in the event module.

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