

How to extract additional Parameter for the EM – TM Integration

Applies to:

SAP Event Management 9.2
SAP Transportation Management 9.2 and higher releases

Summary

Using the standard scenarios to track freight documents from SAP Transportation Management with SAP Event Management there was no possibility to enhance the propagation of event messages from SAP EM to SAP TM. The standard activity TM_MAINTAIN_EXEC_INF in SAP EM used a fixed subset of event message header and expected event data when calling SAP TM function module /SCMTMS/EXECINFO_PROCESS. The interface of this function module did not offer any enhancement possibilities.

With the new functionality provided with SAP EM 9.2 and SAP TM 9.2 it is possible to send additional data to SAP TM by defining extraction profiles. In SAP TM the additional data can either be persisted in enhancement fields of node EXECUTIONINFORMATION and/or can be used in custom logic by implementing BAdI /SCMTMS/TOR_EVENT_PROC (Providing Execution Data for Transportation Activities).

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Documents

SAP NOTE	2188910 - No possibility to include additional parameter in the activity function TM_MAINTAIN_EXEC_INF
SAP NOTE	1976948 - Update for document "Integration of SAP TM and Event Management"
SCN Blog	SAP TM Enhancement Blog http://scn.sap.com/blogs/SAP_TM_Enhancements?start=0
SAP Transportation Management 9.x Enhancement Guide	https://scn.sap.com/docs/DOC-64011 For the latest version please always check SAP TM Enhancement Blog

Pre-requisites

SAP Event Management	SAP EM 9.2 SP 04 or SAP Note 2188910
SAP Transportation Management	SAP TM 9.2 SP04 SAP TM 9.3 SP02 or SAP note 2189600

Overview

Following steps are required to define and use customer specific extraction profiles in SAP EM:

1. Define Extraction Profile: TA /SAPTRX/TSC0TMMAP
2. Adjust the rule set activity used for creating or updating Execution Information in TM: TA /SAPTRX/TSC0TR
3. Enhance of Execution Information Node
4. Adopt BAdI logic in SAP TM (optional)

Define Extraction Profile

Define a new extraction profile → run TA /SAPTRX/TSC0TMMAP

Change View "TM Extraction Profile": Overview				
Dialog Structure				
TM Extraction Profile	TM Extraction Profile			
TM Extraction Param	Extraction Profile	Evm. Ext. Table ID	Eh. Ext. Table ID	Description
	TEST	ODT20_EVM	ODT20	Additional Parameter Freight Order and Freight Booking

Figure 1 Extraction Profile

Choose the additional parameters to be extracted. Following parameter types are supported:

- Event Handler Control Parameter
- Event Handler Info Parameter
- Event Handler System Parameter
- Event Message Header Parameter
- Event Message Parameter

To be able to select Event Handler System Parameters and Event Message Parameters assign the Ext. Table IDs to the extraction profile.

Change View "TM Extraction Parameters": Overview			
Dialog Structure			
TM Extraction Profile	Extraction Profile	TEST	
TM Extraction Param	TM Extraction Parameters		
	Extraction Parameter Name	Parameter Type	Source Parameter Name
	Z_CNTRL_PARAM1	C EH Control Parameter	RESP_EMAIL_ADDR
	Z_EVM_HDR1	H EV Header Parameter	EVITST
	Z_EVM_PARAM1	E EV Message Parameter	ODI30_EVM_LATITUDE
	Z_INFO_PARAM1	I EH Info Parameter	COMM_VALUE_CURR
	Z_SYSTEM_PARAM1	S EH System Parameter	ODI20_TOR_ID

Figure 2 Extraction Profile Parameters

Adjust the rule set activity

A new parameter "EXTRACT_PROFILE" was introduced for activity function TM_MAINTAIN_EXEC_INF. The corresponding activities must be adjusted if the extraction profile should be used.

Run TA /SAPTRX/TSC0TR and choose the multitask activities which need to be adjusted.

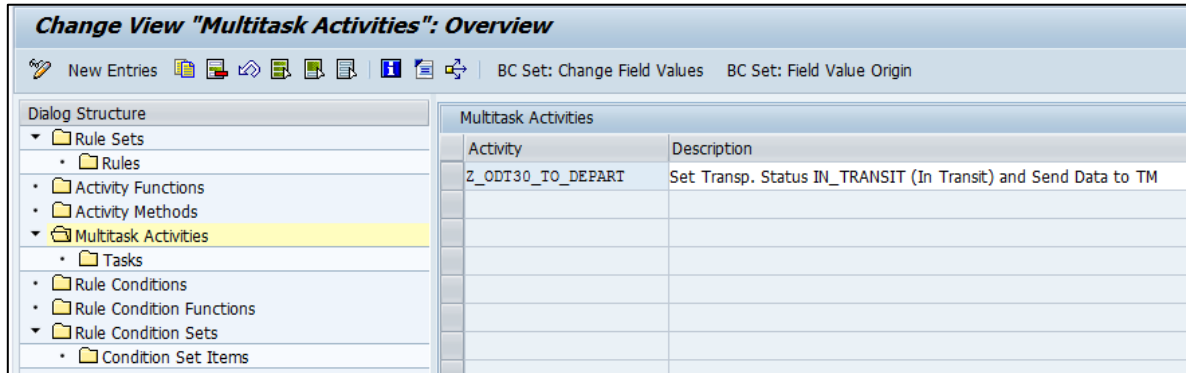


Figure 3 Rule Set - Multitask Activity

In the task which references the activity TM_MAINTAIN_EXEC_INF specify the relevant extraction profile.

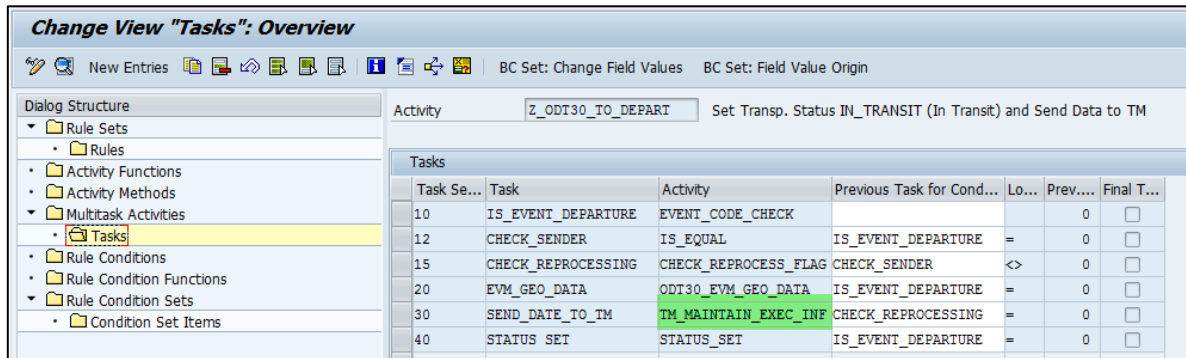


Figure 4 Rule Set - Multitask Activity - Task Overview

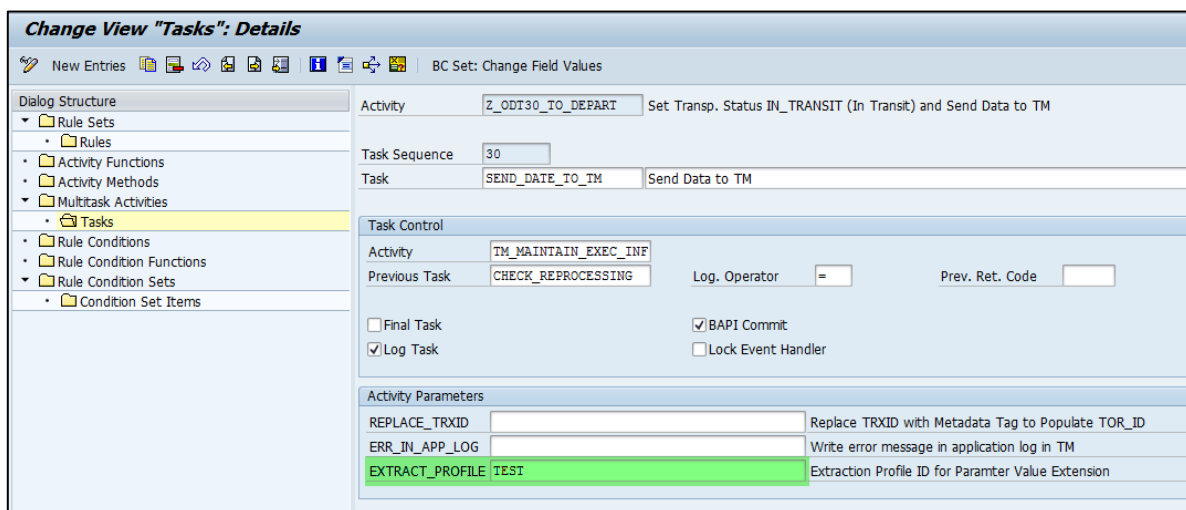


Figure 5 Rule Set - Multitask Activity - Task Details

SAP TM Execution information creation or update

The process is triggered from SAP EM when executing the ruleset activity TM_MAINTAIN_EXEC_INFO. Within this process the additional parameters are extracted accordingly to the defined extraction profile. Via remote function call the function module /SCMTMS/EXECINFO_PROCESS is called which is used to process the data in SAP TM. While the standard process updates the execution information node customers can build their own logic on top.

If the parameters extracted in SAP EM have identical names as the components of the extension include or they refer to the quantity related standard fields the parameters are mapped 1:1 and automatically persisted. Pre-requisite is that node EXECUTIONINFORMATION has been enhanced by using the extension include.

Customers must ensure that the data from SAP EM which is mapped to the fields of the extension include will not cause a type conflict or for example is reduced as the parameter values from the extraction table is char length 255.

Parameter values for which no field with identical name is available cannot be persisted automatically. BAdI /SCMTMS/TOR_EVENT_PROC can be implemented to handle these parameters..

For information on how to enhance nodes of business object /SCMTMS/TOR please check the [SAP Transportation Management 9.x Enhancement Guide](#) chapter “BOPF Enhancement Workbench”.

Information on how to add additional fields to the TM User Interface can be found in chapter “Enhancing the User Interface”.

Extension Include for the EXECUTIONINFORMATION

Below you can find an example which corresponds to the additional parameters defined in the extraction profile. Using the [above extraction profile](#) in the multitask activities and having this extension include in place the extracted parameters would be persisted automatically.

The screenshot displays the SAP Business Object Detail Browser for the Business Object /SCMTMS/TOR. The left pane shows the Node Structure tree, where the node EXECUTIONINFORMATION (Execution Data) is highlighted. The right pane shows the configuration for this node, including Node Name (EXECUTIONINFORMATION), Description (Execution Data), Node Type (N Standard Node), and various settings like Node Can Be Loaded Separately and Node Can Be Enhanced. The Data Model section shows the Data Structure as /SCMTMS/S_TOR_EXEC and the Extension Include as /SCMTMS/INCL_EEW_TOR_EXEC.

Business Object Detail Browser	Description
Business Object /SCMTMS/TOR	Transportation Order
Node Structure	
ROOT	Root Node
ATTACHMENTFOLDER	Attachment Folder
CC_CHG_TR	ChangeController: Change Information
CHARGE_DISTRIBUTION	
CONFIRMATIONHISTORY	Subcontracting Confirmation History
CUSTOMS_ACTIVITY	Customs Activity
DIRECT_SHIPMENT_OPTIONS	Alternatives for direct shipments
DOCREFERENCE	Document Reference
EXECUTIONINFORMATION	Execution Data
EXECUTIONATT	Execution Attachments
EXECUTIONNOTES	Execution Notes
EXECUTIONINFORMATION_TR	Combined Execution Information
HANDLING_CODE	Handling Codes
HOUSE_SHIPMENT	House Shipment / House B/L node
ITEM_TR	Items of the Transportation Order
LCADDRESS	Letter of Credit Conform Address
ORGUNIT_BP_RESTRICTION	ORGUNIT and BP restrictions
OVERVIEW	transient overview of logistical data
PARTY	Parties on Root node level
RANKINGLIST	Ranking List
STOP	Stop
SUMMARY	Additional Info for TOR Root
TENDERING	Tendering
TEXTCOLLECTION	Text Collection
TRANSPORTCHARGES	Transportation Charges

Node	Persistence Attribute Mapping	Property Change Trigger
Node Name	EXECUTIONINFORMATION	
Description	Execution Data	
Node Type	N Standard Node	
Standard Node Cat.	80E0ED0A0C021DDE8CE0A4D63338COD3 EXEC	
Node Can Be Loaded Separately	<input checked="" type="checkbox"/>	
Node Can Be Locked Separately	<input checked="" type="checkbox"/>	
Transient Node	<input type="checkbox"/>	
Subtree Properties used	<input checked="" type="checkbox"/>	
Node Can Be Enhanced	<input checked="" type="checkbox"/>	
Data Model		
Data Structure	/SCMTMS/S_TOR_EXEC	
Transient Structure		
Combined Structure	/SCMTMS/S_TOR_EXEC_K	
Combined Table Type	/SCMTMS/T_TOR_EXEC_K	
Extension Include	/SCMTMS/INCL_EEW_TOR_EXEC	
Extension Incl.(tr.)		
Sec.key for Key		
Sec.key for Root Key	PARENT_KEY	

Figure 6 BOPF Node Structure

Structure	/SCMTMS/INCL_EEW_TOR_EXEC		Active			
Short Description	TOR: Execution Area Extension					
Attributes	Components	Entry help/check	Currency/quantity fields			
Predefined Type		1 / 7				
Component	Typing Method	Component Type	Data Type	Length	Deci...	Short Description
EEW_TOR_EXEC	1 Types	DUMMY	CHAR	1		0 Dummy function in length 1
.APPEND	1 Types	ZDANIEL_TEST	CHAR	0		0 Daniels Execution Append
Z_SYSTEM_PARAM1	1 Types	CHAR50	CHAR	50		0 Comment
Z_EVM_PARAM1	1 Types	CHAR50	CHAR	50		0 Comment
Z_CNTRL_PARAM1	1 Types	CHAR50	CHAR	50		0 Comment
Z_INFO_PARAM1	1 Types	CHAR50	CHAR	50		0 Comment
Z_EVM_HDR1	1 Types	CHAR50	CHAR	50		0 Comment

Figure 7 BOPF Extension Include

Adopt BAdI logic in SAP TM

The additional parameters which are extracted from SAP EM can be used to update the TM TOR Execution Information node. The standard logic maps the parameter 1:1 from IT_TOR_ACTUAL_EM_DATA-EM_ADD_PARAMETER table to the enhancement fields of node EXECUTIONINFORMATION with the same name or the quantity related standard fields:

- QUA_WEI_VAL with QUA_WEI_UNI
- QUA_VOL_VAL with QUA_VOL_UNI
- QUA_PCS_VAL with QUA_PCS_UNI
- QUA_PCS2_VAL with QUA_PCS2_UNI

If this logic does not meet the requirements BAdI /SCMTMS/TOR_EVENT_PROC of enhancement spot /SCMTMS/TOR_EVENT_PROC_SPOT can be used to implement the required logic.

IMG → SAP Transportation Management → Business Add-Ins (BAdIs) for Transportation Management → Integration → Tracking and Tracing of Processes and Documents → BAdI: Providing Execution Data for Transportation Activities.

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