Integration of SAP TM and SAP Event Management

SAP

Content

1 Legal Disclaimer

> ⚠ **Caution**
>
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2 Integration of SAP TM and SAP Event Management

Use

This configuration guide provides you with the necessary information for configuring the integration of SAP Transportation Management (SAP TM) and SAP Event Management.

Most of the configuration described in this guide is already preconfigured in the SAP TM and the SAP Event Management systems. However, due to individual system landscapes and business data, you need to make some changes in the implementation phase.

In this configuration guide, we use the following example systems and clients:

Table 1:

SAP Application Component	Example System	Example Client	Logical Name of Example System
SAP Transportation Management	TM1	001	TM1CLNT001
SAP Event Management	EM1	001	EM1CLNT001

Prerequisites

The following applications and releases are required:

- SAP TM 9.2 and higher
- SAP Event Management 9.2

> **i Note**
>
> SAP Note 1976948 Update for document "Integration of SAP TM and Event Management". This note identifies the latest version of this document. Periodically new versions are made available, for example when corrections are necessary, or best practices emerge. Please always check this note to ensure that you have the latest version available.

3 Settings in SAP Transportation Management

This section describes the configuration settings that are required in the SAP TM system for the integration with the SAP Event Management system.

3.1 Configuring Output Management in SAP Transportation Management

Use

You use this procedure to maintain the output management adapter for a given business object (BO) node.

Procedure

1. For TOR Related Business Objects

This procedure refers to the following Transportation Management business objects:

- Freight Unit (technical name FU)
- Transportation Unit (technical name TU)
- Freight Order (technical name TO)
- Freight Booking (technical name BO)

1. In Customizing for SAP TM, choose ▷ *Cross-Application Components* ▷ *Processes and Tools for Enterprise Applications* ▷ *Reusable Objects and Functions for BOPF Environment* ▷ *PPF Adapter for Output Management* ▷ *Maintain Output Management Adapter Settings* ▷.
2. Choose the dialog structure *Direct Output Agents (w/o PPF & w/o History)*.
3. Select the entry with the following data:
   - Business object: `/SCMTMS/TOR`
   - Node: `ROOT`
   - Agent name:`SEND_EM_DATA_FROM_TOR`
   - Output type: The recommendation is to use output type `Has Uncritical o/p Process after Commit (background)`.
     For further information regarding the available direct output agents and the available output types, see SAP Note 1842397 ✈ Different direct output agents available for data extraction.
4. Choose *Details*.
5. Select the *Enable* checkbox.

6. Choose the dialog structure *Nodes for Before Image*.
7. Create entries for the following sub nodes of node ROOT of business object `/SCMTMS/TOR`:
   - `EXECUTIONINFORMATION`
   - `ITEM_TR`
   - `STOP`
8. Save your entries.

2. For INS Related Business Objects

This procedure refers to the Transportation Management business object instructions (standard operating procedures).

1. In Customizing for SAP TM, choose ▸ *Cross-Application Components* ▸ *Processes and Tools for Enterprise Applications* ▸ *Reusable Objects and Functions for BOPF Environment* ▸ *PPF Adapter for Output Management* ▸ *Maintain Output Management Adapter Settings* ▸.
2. Choose the dialog structure *Direct Output Agents (w/o PPF & w/o History)*.
3. Select the entry with the following data for the INS related business object:
   - Business object: `/SCMTMS/INSTRUCTION`
   - Node: `INSTRUCTIONS`
   - Agent name: `SEND_EM_DATA_FROM_INS`
   - Output type: `Has Uncritical o/p Process after Commit (background)`.
4. Choose *Details*.
5. Select the *Enable* checkbox.
6. Save your entries.

3.2 Configuring Change Notification Agent in SAP Transportation Management

You can use this Customizing activity to make settings for the change notification agent (CNA). For the Resource Tracking Visibility Scenario the Resource Master Data is extracted using the CNA. The Resource EH in SAP Event Management will be complemented with Event Data from the TM Freight Units, Freight Orders, Freight Bookings, and Transportation Units.

1. Resource Tracking

1. In Customizing for SAP TM, choose ▸ *SAP Transportation Management* ▸ *SCM Basis* ▸ *Master Data* ▸ *Change Notification Agent* ▸ *Maintain Change Notification Agent* ▸.
2. In the Dialog Structure select Applications and App. ID "TM_EM_RES".
3. Navigate to Assign Applications to Objects and check the Active/Inactive Box for the "TM_EM_RES" Application and Object ID "RES_H".
4. Ensure that the following are checked:
   - New
   - Deleted
   - BIMG Relevant

> **ⅰ Note**
>
> Only resources with the "Relevant for Event Management" Flag in the Master Data are considered.

3.3 Registering the Inbound Queue for Updates

Context

You use this procedure to register the inbound queue for updates from SAP Event Management to SAP TM.

Procedure

1. In SAP TM, start the transaction `SMQR`.
2. Choose *Registration*.
3. On the dialog box, enter **EM*** in the *Queue Name* field.
4. Save your entries.

3.4 Setting Up Freight Unit, Freight Order, Freight Booking and Transportation Unit Types

Use

For the integration of SAP TM and SAP Event Management you need to set up the Freight Unit type, Freight Order type, Freight Booking type and Transportation Unit type.

> **ⅰ Note**
>
> For Instruction Integration no additional configuration is required. Instruction tracking is activated by the customizing for the Application Interface -> Event Management relevance and PPF direct Output Agent enablement.

Procedure

Settings for Freight Unit Types

1. In Customizing for SAP TM, choose ▶ *Transportation Management* ❯ *Planning* ❯ *Freight Unit* ❯ *Define Freight Unit Types* ❯.
2. Choose the freight unit that is to be tracked with SAP Event Management.
3. Enter the following data:
   - Under *Execution Settings* next to *Execution Tracking Relevance*, choose **Execution Tracking with External Event Management**.
   - Under *Event Management Settings* next to *Application Object Type* enter **ODT30_FU**.
     This is the application object that is to be tracked on the application system.
   - Under *Event Management Settings* next to *Last Expected Event*, choose the last expected event (for example, **UNLOAD_END**). If this last expected event is sent from the destination stop of a business document, this document is finished from an execution perspective.

Settings for Freight Order Types

1. In Customizing for SAP TM, choose ▶ *Transportation Management* ❯ *Freight Order Management* ❯ *Freight Order* ❯ *Define Freight Order Types* ❯.
2. Choose the freight order type that is to be tracked with SAP Event Management.
3. Enter the following data:
   - Under *Execution Settings* next to *Execution Tracking Relevance*, choose **Execution Tracking with External Event Management**.
   - *Propagate Execution Info*: This checkbox specifies whether an event that is reported for a freight order is to be propagated to the predecessor document (a freight unit in the visibility process). Select this checkbox to enable the propagation of events to the predecessor document.
   - Under *Event Management Settings* next to *Application Object Type* enter **ODT30_TO**.
     Alternatively, if you want to use the Freight Order Visibility app, you must specify application object type **ODT40_TO**
   - Under *Event Management Settings* next to *Last Expected Event* choose the last expected event (for example, **UNLOAD_END**). If this last expected event is sent from the destination stop of a business document, this document is finished from an execution perspective.

Settings for Freight Booking Types

1. In Customizing for SAP TM, choose ▶ *Transportation Management* ❯ *Freight Order Management* ❯ *Freight Booking* ❯ *Define Freight Booking Types* ❯.
2. Choose the freight booking type that you want to be tracked with SAP Event Management.
3. Choose *New Entries*, and edit or enter the following data:
   - Under *Execution Settings* next to *Execution Tracking Relevance*, choose **Execution Tracking with External Event Management**.
   - *Propagate Execution Info*: This checkbox specifies whether an event that is reported for a freight booking is to be propagated to the predecessor document (a freight unit in the visibility process). Select this checkbox to enable the propagation of events to the predecessor document.
   - Under *Event Management Settings* next to *Application Object Type* enter **ODT30_TO**.
   - Under *Event Management Settings* next to *Last Expected Event* choose the last expected event (for example, **UNLOAD_END**). If this last expected event is sent from the destination stop of a business document, this document is finished from an execution perspective.

Settings for Transportation Unit Types

1. In Customizing for SAP TM, choose ▌ *Transportation Management* ❭ *Planning* ❭ *Tranportation Unit* ❭ *Define Transportation Unit Types* ❭.
2. Choose the transportation unit type that you want to be tracked with SAP Event Management.
3. Choose *New Entries*, and edit or enter the following data:
   - Under *Execution Settings* next to *Execution Tracking Relevance*, choose **Execution Tracking with External Event Management**.
   - *Prop. Execution Info*: This checkbox specifies whether an event that is reported for a transportation unit is to be propagated to the predecessor document (a freight unit in the visibility process). Select this checkbox to enable the propagation of events to the predecessor document.
   - Under *Event Management Settings* next to *Application Object Type* enter **ODT30_TU**.
   - Under *Event Management Settings* next to *Last Expected Event* choose the last expected event (for example, **DECOUPLING**). If this last expected event is sent from the destination stop of a business document, this document is finished from an execution perspective.

3.5 Defining RFC Connection to SAP Event Management System

Context

The RFC connection to SAP Event Management and the definition of the logical system serve as base definitions for connecting all systems to the SAP TM system.

You can use this procedure to define which of the connected systems is a SAP Event Management system.

Procedure

1. In Customizing for SAP TM, choose ▌ *Integration with Other SAP Components* ❭ *Event Management Interface* ❭ *Define System Configuration* ❭ *Define RFC Connection to SAP EM* ❭.
2. Choose *Create*, and enter the following data:
   - RFC destination (example: EM1CLNT500)
   - Connection type: **3** (Connection to ABAP System)
   - Description for your RFC connection
3. On the *Technical Settings* tab page, enter the following data:
   - Target Host
     This is the host name of your SAP Event Management system (for example, emsystem.wdf.sap.corp).
   - System Number

This is the SAP system number of your SAP Event Management system (for example, 29).

4. On the *Logon & Security* tab page, enter the client, the user (for example, `ALEREMOTE`), and the password.

> **i Note**
>
> You have to enter a user with the user type *Service*. The role */SAPTRX/SAP_EM_ADMIN* must be assigned to it.

5. Save the RFC connection.

3.6   Defining Logical System for SAP Event Management

Context

You use this procedure to define the logical system in which SAP Event Management is located.

Procedure

1. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define System Configuration* ❯ *Define Logical System* ❯.
2. Choose *New Entries*, and enter the following data:
   - ○ Logical System
     Enter your logical system (for example, `EM1CLNT500`).
   - ○ Name
     Enter the name of your logical system.

3.7   Defining SAP Event Manager Definitions

Context

You use this procedure to define which of the connected systems is an SAP Event Management System.

Procedure

1. In Customizing for SAP TM, choose ▌▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define Application Interface* ❯ *Define SAP EM* ❳.

2. Choose *New Entries* and enter the following data:
   - Event Manager
     Enter the appropriate ID (for example, `EM1CLNT001`).
   - EM Logical System
     Enter the ID of the logical system of your SAP Event Management system that you defined in the previous chapter (for more information, see *Defining Logical System for SAP Event Management*); example: `EM1CLNT001`.
   - SAP EM Version
     Enter **`SCM 4.0`**.
   - Local Event Manager
     Do not select the checkbox.
   - Logical Destination
     Enter the name of the RFC destination (SAP Event Management system) that you created in the previous (for more information, see *Defining Logical System for SAP Event Management*); example, `EM1CLNT001`.
   - Synchronous Communication to Event Manager
     Deselect this checkbox to improve performance.
     Select this checkbox for test purposes only. In a productive environment, we strongly recommend using asynchronous communication.
   - Description
     Enter any relevant descriptive text.

3.8 Checking the Business Process Type Definitions

1. For TOR Related Business Objects

1. In Customizing for SAP TM, choose ▌▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define Application Interface* ❯ *Define Business Process Types* ❳.
2. In the *Define Business Process Types* table, select the entry for the business process type `TMS_TOR`.
3. Make sure that the *EH Create* and *EMsg Send* checkboxes are selected.

2. For INS Related Business Objects

1. In Customizing for SAP TM, choose ▌▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define Application Interface* ❯ *Define Business Process Types* ❳.
2. In the *Define Business Process Types* table, select the entry for the business process type `TMS_INS`.

3. Make sure that the *EH Create* and *EMsg Send* checkboxes are selected.

3. For Resource Tracking Master Data Objects

1. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define Application Interface* ❯ *Define Business Process Types* ▶.
2. In the *Define Business Process Types* table, select the entry for the business process type `TMS_RES`.
3. Make sure that the *EH Create* and *EMsg Send* checkboxes are selected.

3.9 Defining Application Object Type and Event Types

Use

You use this procedure to specify the business process types and the related application object types for your event management-relevant processes.

Procedure

1. For TOR Related Business Objects

1. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define Application Interface* ❯ *Define Business Process Types* ▶.
    1. In the *Define Used Business Process Types* table, select the entry for the business process type `TMS_TOR`.
    2. Make sure that the *EH Create* and *EMsg Send* checkboxes are selected.
2. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ❯ *Event Management Interface* ❯ *Define Application Interface* ❯ *Define Used Bus. Prc. Types, Appl. Obj. Types, and Event Types* ▶.
    1. In the *Define Used Business Process Types* screen, choose *Define Used Business Process Types*.
    2. In the *Define Used Business Process Types* table, select the entry of the business process type `TMS_TOR`.
    3. Choose *Define Application Object Types*.
    4. Specify the application object types `ODT30_FU` and `ODT30_TU`.
    5. Also, specify either the application object type `ODT30_TO`, or if you want to use the Freight Order Visibility app, `ODT40_TO`.
    6. For each application object type, specify the following data:
        ○ In the *Event Manager* field, enter the ID of your SAP Event Management system (for example, `EM1CLNT001`).
        ○ Select the *EM Relevance of Appl. Obj* checkbox.
    7. Choose *Define Event Types*.

8. Specify the following event types:
   - `ODT30_BLOCK`
   - `ODT20_CANCEL`
   - `ODT20_SCHEDULED`
   - `ODT20_TO_ARRIVAL`
   - `ODT20_TO_DEPART`
   - `ODT20_TO_LOAD_BEGIN`
   - `ODT20_TO_LOAD_END`
   - `ODT20_TO_POD`
   - `ODT20_TO_POPU`
   - `ODT20_TO_UNL_BEGIN`
   - `ODT20_TO_UNL_END`
   - `ODT30_UNBLOCK`
   - `ODT30_COUPLING`
   - `ODT30_DECOUPLING`
9. If you want to activate the Resource Tracking Visibility Scenario, the following additional event types are required:
   - `RES30_ARRIVAL`
   - `RES30_COUPLING`
   - `RES30_DECOUPLING`
   - `RES30_DEPARTURE`
   - `RES30_EE_MODIFY`
10. For each event type, specify the following data:
    - In the *Event Manager* field, enter the ID of your SAP Event Management system (for example, `EM1CLNT500`).
    - Select the *EM Relevance of Event Type* checkbox.
    - To improve performance, select the *Appl. Log Deact.* checkbox for all object types.
11. Save your entries.

2. For INS Related Business Objects

1. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ▶ *Event Management Interface* ▶ *Define Application Interface* ▶ *Define Business Process Types* ▶.
   1. In the *Define Used Business Process Types* table, select the entry for the business process type `TMS_INS`.
   2. Make sure that the *EH Create* and *EMsg Send* checkboxes are selected.
2. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ▶ *Event Management Interface* ▶ *Define Application Interface* ▶ *Define Used Bus. Prc. Types, Appl. Obj. Types, and Event Types* ▶.
   1. In the *Define Used Business Process Types* screen, choose *Define Used Business Process Types*.
   2. In the *Define Used Business Process Types* table, select the entry of the business process type `TMS_INS`.
   3. Choose *Define Application Object Types*.
   4. Specify the application object type `ODT30_INS`.
   5. For each application object type, specify the following data:
      - In the *Event Manager* field, enter the ID of your SAP Event Management system (for example, `EM1CLNT001`).
      - Select the *EM Relevance of Appl. Obj* checkbox.

6. Choose *Define Event Types*.
7. Specify the following event type:
   - `ODT30_INS_EXEC`
8. For this event type, specify the following data:
   - In the *Event Manager* field, enter the ID of your SAP Event Management system (for example, `EM1CLNT001`).
   - Select the *EM Relevance of Event Type* checkbox.
   - To improve performance, select the *Appl. Log Deact.* checkbox for all object types.
9. Save your entries.

3. For Resource Tracking Master Data Objects

1. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ❭ *Event Management Interface* ❭ *Define Application Interface* ❭ *Define Business Process Types* ❭.
   1. In the *Define Used Business Process Types* table, select the entry for the business process type `TMS_RES`.
   2. Make sure that the *EH Create* and *EMsg Send* checkboxes are selected.
2. In Customizing for SAP TM, choose ▶ *Integration with Other SAP Components* ❭ *Event Management Interface* ❭ *Define Application Interface* ❭ *Define Used Bus. Prc. Types, Appl. Obj. Types, and Event Types* ❭.
   1. In the *Define Used Business Process Types* screen, choose *Define Used Business Process Types*.
   2. In the *Define Used Business Process Types* table, select the entry of the business process type `TMS_RES`.
   3. Choose *Define Application Object Types*.
   4. Specify the application object type `RES30_RESOURCE`.
   5. For each application object type, specify the following data:
      - In the *Event Manager* field, enter the ID of your SAP Event Management system (for example, `EM1CLNT001`).
      - Select the *EM Relevance of Appl. Obj* checkbox.
   6. Choose *Define Event Types*.
   7. Specify the following event type:
      - `RES30_EE_MODIFY`
   8. For this event type, specify the following data:
      - In the *Event Manager* field, enter the ID of your SAP Event Management system (for example, `EM1CLNT001`).
      - Select the *EM Relevance of Event Type* checkbox.
      - To improve performance, select the *Appl. Log Deact.* checkbox for all object types.
   9. Save your entries.

3.10   BAdI to Optimize Communication with Event Management

Context

This Business Add-In (BAdI) can be used in the Integration with Event Management (TM-INT-EM) component.

BAdI Methods

- SET_BADI_WORK_MODE
  Use this method to control the work mode of a BAdI. Set the work mode for the corresponding BAdI method using the parameter CT_WORK_MODE.
- CALL_EVENT_MGR
  Add custom logic to fill the application tables and trigger communication with Event Management. Using this method you can re-sort and enrich the data for Event Management and execute separate calls to initiate different queues from TM to Event Management.
- GET_ADDITIONAL_DATA
  Retrieve Additional Data for Event Manager Communication. If the available number of application tables for the used business process type are not sufficient, this method can be used to add more tables to the table container.
- PREVENT_EVENT_MSG_SENDING Set Indicator to Prevent Event Message Sending. If in certain cases the sending of Event Messages can be prevented the performance can be improved.
- AVOID_RETRIEVAL_OF_APPL_TABLES
  Set indicators to avoid retrieval of unnecessary data. If not all data of the defined application tables that are defined in the standard are necessary, indicators can be set to avoid the retrieval of this data.

To call any of the methods, you must first implement that method and in addition implement method /SCMTMS/ IF_COMMON_BADI~SET_BADI_WORK_MODE (see the BAdI method documentation). All the BAdI methods are called when communication with SAP Event Management is initiated.

More Information

For more information, see the following:

- Documentation in the system
- SAP note 1935617 where you can also check in which support package of which release it is available.

Example Implementations

For example implementations, see the following:

- /SCMTMS/SPLIT_TOR_DATA_BY_TYPE: Send TOR Data Split in Packages per TOR Type
  Method /SCMTMS/IF_COMMON_BADI~SET_BADI_WORK_MODE: Set Work Mode of BAdI
  Method /SCMTMS/IF_SEND_TOR_DATA~CALL_EVENT_MGR: Fill Application Table and Event Manager Communication
- /SCMTMS/GET_ADDITIONAL_DATA: Get Additional Data
  Method /SCMTMS/IF_COMMON_BADI~SET_BADI_WORK_MODE: Set Work Mode of BAdI
  Method /SCMTMS/IF_TOR_SEND_DATA~GET_ADDITIONAL_DATA: Retrieve Additional Data for Event Manager Communication

- /SCMTMS/PREVENT_EVMSG_SENDING: Prevent Event Message Sending
  Method /SCMTMS/IF_COMMON_BADI~SET_BADI_WORK_MODE: Set Work Mode of BAdI
  Method /SCMTMS/IF_SEND_TOR_DATA~PREVENT_EVENT_MSG_SENDING: Set Indicator to Prevent Event
  Message Sending
- AVOID_RETRIEVAL_OF_APPL_TABLES: Avoid unnecessary data retrieval for standard integration
  Method /SCMTMS/IF_COMMON_BADI~SET_BADI_WORK_MODE: Set Work Mode of BAdI
  Method /SCMTMS/IF_SEND_TOR_DATA~AVOID_RETRIEVAL_OF_APPL_TABLES: Set indicators to avoid
  retrieval of unnecessary data

4 Settings in SAP Event Management

This section describes the configuration settings that are required in the SAP Event Management system for the integration with the SAP Transportation Management system.

4.1 Defining RFC Connection to SAP Transportation Management

Context

The RFC connection to the SAP TM system and the definition of the logical system serve as base definitions for connecting all systems to the application system.

You can use this procedure to define which of these connected systems is a SAP TM system.

Procedure

1. In Customizing for SAP Event Management, choose ▌▶ *Event Management* ❯ *General Settings in SAP Event Management* ❯ *Define RFC Connection to Application System* ❯.
2. Choose *Create*.
3. Enter the following data:
   - RFC destination (for example, TM1CLNT001)
   - Connection type: **3**
   - Description for your RFC connection
4. On the *Technical Settings* tab page, enter the following data:
   - Target Host
     This is the host name of your SAP TM system (for example, tmsystem.wdf.sap.corp).
   - System Number
     This is the host SAP system number of your SAP TM system (for example, 29).
5. On the *Logon & Security* tab page, enter the client, user (for example, ALEREMOTE), and password.

   > **ℹ Note**
   >
   > You have to enter a user with the user type *Service*. This means for example, a local copy of role */scmtms/ process_administrator* that has all the required authorizations.

6. Save your entries.

4.2 Defining Logical System for SAP Transportation Management

Context

You use this procedure to define the logical system in which SAP TM is found.

Procedure

1. In Customizing for SAP Event Management, choose ▎▶ *Event Management* ❯ *General Settings in SAP Event Management* ❯ *Define Logical System* ▎.
2. Choose *New Entries* and enter the following data:
    -   Logical System
        Enter your logical system for SAP Transportation Management, for example, `TM1CLNT001`.
    -   Name
        Enter the name of the logical system.

4.3 Defining Application System

Context

The RFC connection to the application system and the definition of the logical system are the base definitions for connecting all systems to the SAP Event Management system.

You use this procedure to specify which one of these connected systems is an application system.

Procedure

1. In Customizing for SAP Event Management, choose ▌▶ *Event Management* ❯ *General Settings in SAP Event Management* ❯ *Define Application System* ❚.

2. Choose *New Entries* and enter the following data:

   - Application System
     Enter your SAP TM system (for example, `TM1CLNT001`).
   - Logical System
     Enter the logical name of the SAP TM system (for example, `TM1CLNT001`).
   - Destination
     Enter the RFC connection for the SAP TM system (for example, `TM1CLNT001`).
   - Local Application System
     Do not select this checkbox.
   - Synchronous Communication to Event Manager
     Select this checkbox for test purposes only. In a productive environment, we recommend to use asynchronous communication.
   - Acknowledge EH Post

   > **➡ Recommendation**
   >
   > For integration with SAP TM, do not select this checkbox! This particularly applies to high-volume scenarios. For the required prerequisites and further details see SAP note 2235954 ⬂.
   >
   > Instead, make sure that either:
   >
   > - all applicable SAP notes have been implemented or
   > - all the required support packages are installed in your SAP EM and SAP TM systems.

   - Description for your entry
     Enter a description.

4.4 Assigning Profile to Mapping Area

Use

By defining mapping profiles, you standardize the parameter information transferred from the application system to the SAP Event Management system. This enables you to display different parameter names from various application systems in a standardized way in SAP Event Management.

If required, in the mapping profile you assign the parameter value sets, which you have defined for the control and info parameters or which SAP has predefined for the system parameters.

You can specify default values for parameter mapping and for the type of mapping used for the parameters.

You assign the mapping profiles using the application system and the application object type.

Procedure

1. For TOR Related Business Objects

1. In Customizing for SAP Event Management, choose ▶ *Event Management* ❯ *Event Handlers and Event Handler Data* ❯ *Parameters* ❯ *Define Parameter Mapping* ◢.
2. Choose *Assign Profile to Mapping Area*.
3. Choose *New Entries*, and enter the following data:

Table 2:

Example Application System	Application Object Type	Mapping Profile	Error Mode
TM1CLNT001	ODT30_FU	ODT30_TOR	Choose *Map parameters if possible, otherwise assign input parameter*
TM1CLNT001	ODT30_TO	ODT30_TOR	Choose *Map parameters if possible, otherwise assign input parameter*
TM1CLNT001	ODT30_TU	ODT30_TOR	Choose *Map parameters if possible, otherwise assign input parameter*
TM1CLNT001	ODT40_TO	ODT40_TO	Choose *Map parameters if possible, otherwise assign input parameter*

2. For INS Related Business Objects

1. In Customizing for SAP Event Management, choose ▶ *Event Management* ❯ *Event Handlers and Event Handler Data* ❯ *Parameters* ❯ *Define Parameter Mapping* ◢.
2. Choose *Assign Profile to Mapping Area*.
3. Choose *New Entries*, and enter the following data:

Table 3:

Example Application System	Application Object Type	Mapping Profile	Error Mode
TM1CLNT001	ODT30_INS	ODT30_INS	Choose *Map parameters if possible, otherwise assign input parameter*

3. For Resource Tracking

1. In Customizing for SAP Event Management, choose ▶ *Event Management* ❯ *Event Handlers and Event Handler Data* ❯ *Parameters* ❯ *Define Parameter Mapping* ◢.
2. Choose *Assign Profile to Mapping Area*.

3. Choose *New Entries*, and enter the following data:

Table 4:

Example Application System	Application Object Type	Mapping Profile	Error Mode
`TM1CLNT001`	`RES30_RESOURCE`	`RES30_RESOURCE`	Choose *Map parameters if possible, otherwise assign input parameter*

4.5 Defining Preprocessing Functions

Context

To ensure that delayed events for Freight Orders, Freight Bookings, and Freight Orders are replicated to Transportation Management, some entries in the preprocessing functions are required.

> **i Note**
>
> Delay Events are not replicated to Transportation Management. For more information, see SAP Note 1527790.

Procedure

1. To import and activate the required entries for the preprocessing functions, use business configuration set `/SAPTRX/BC_V_EHPPF – Preprocessing Plug-In Functions`.

   Start transaction `scpr20` and activate BC set `/SAPTRX/BC_V_EHPPF`.

2. In Customizing of SAP Event Management, choose ▶ *Event Management* ❭ *Event Messages, Status Queries, and Web Interface* ❭ *Define Criteria for Event Message Processing* ❭.

3. Under *Preprocessing Functions*, the following values should be available:

Table 5:

Internal Event Code	Tracing ID Code Set	Sender Code Set	Sender Code ID	Location Code Set	Location Code ID 1	Location Code ID 2	Function Module
DELAYED	TO	*	*	*	*	*	/SAPTRX/ TMS_ADD_P ARA
DELAYED	TOR_TEC	*	*	*	*	*	/SAPTRX/ TMS_ADD_P ARA
DELAYED_FU	FU	*	*	*	*	*	/SAPTRX/ TMS_ADD_P ARA

4.6 Enable Multiple Tracking IDs

Context

For the Resource Tracking Visibility Scenario Event Messages, TM Objects (Freight Order, Freight Unit, Freight Booking, Transportation Unit) are relevant for each of the resources that have been assigned in SAP TM. To activate the functionality to process a single event message for multiple EHs in Event Management, each event must be registered in the *Enable Multiple Tracking IDs* table.

Procedure

1. To import and activate the required entries for the Multiple Tracking IDs setting, use business configuration set */SAPTRX/BC_RES30_V_EVMMT- Multiple Tracking IDs*.

   Start transaction `scpr20` and activate BC set `/SAPTRX/BC_RES30_V_EVMMT` (available with SAP Event Management 9.0 Support Package 5 or higher).

   Alternatively, you can enter the values manually in Customizing for *SAP Event Management*, choose ▶ *Event Management* ▶ *Event Messages, Status Queries, and Web Interface* ▶ *Define Criteria for Event Message Processing* ▶.

2. To enable Multiple Tracking IDs enter the following values:

Table 6:

Internal Event Code	Tracking ID Code Set	Sender Code Set	Sender Code ID
RES_ID	ARRIV_DEST	TM	TM
RES_ID	COUPLING	TM	TM
RES_ID	DECOUPLING	TM	TM
RES_ID	DEPARTURE	TM	TM

4.7 Assigning User to Web Transactions

Context

You assign a user to a Web interface transaction and to an existing user profile so the appropriate Web layout for sending event messages and querying event handler information is available.

Depending on your scenario, assign the relevant Web transaction to your user. The possible combinations of Web transaction ID and user profile are provided below.

Procedure

1. In Customizing for *SAP Event Management*, choose ▌▶ *Event Management* ❯ *Event Messages, Status Queries, and Web Interface* ❯ *Web Interface* ❯ *Assign User Profiles and Web Interface Transactions to Users* ❯.
2. Enter your user name in the dialog box *Determine Work Area: Entry*.
3. Choose *New Entries*, and enter the following data:

Table 7:

Web Interface Transaction	User Profile	Description
ODT30_CONS_FO	ODT30_CONSIGNEE_FO	Consignee – Freight Order Visibility Process
ODT30_CONS_FU	ODT30_CONSIGNEE_FU	Consignee – Freight Unit Visibility Process
ODT30_SHIP_FO	ODT30_SHIPPER_FO	Shipper – Freight Order Visibility Process

Web Interface Transaction	User Profile	Description
ODT30_SHIP_FU	ODT30_SHIPPER_FU	Shipper – Freight Unit Visibility Process
ODT30_SHIP_BO	ODT30_SHIPPER_BO	Shipper – Freight Booking Visibility Process
ODT30_INS	ODT30_INS	Instruction Tracking Visibility Process
ODT30_TU	ODT30_TU	Transportation Unit Tracking Visibility Process
RES30_RESOURCE	RES30_RESOURCE	Resource Tracking Visibility Process

For event handler type ODT40_TO, no Web Interface Transaction or Web Dynpro user profiles exist as the Freight Order Visibility app is used to display the data in this use case.

4.8 BAdI to Update Event Handler Data

Business Add-In (BAdI) implementation /SAPTRX/GEN_EH_S_IMPL is shipped inactive. This is the BAdI implementation for instruction display for date information. To use the ODT30_INS – Instruction Visibility Process Implementation, activate the corresponding BAdI implementation, /SAPTRX/GEN_EH_S_IMPL.

To activate this BAdI, in Customizing for *SAP Event Management*, choose ▶ *Event Management* ❯ *Business Add-Ins for Event Management* ❯ *BAdI: Update Event Handler Data* ❯

> ℹ **Note**
>
> Due / Alert / Completion dates for an Instruction record are sent on Expected Event level only for display purposes. This information is read and displayed on Event Handler level.

Table 8:

Enhancement Implementation	BAdI Implementation	Description	Runtime Behavior
/SAPTRX/GEN_EH_S_IMPL	/SAPTRX/GEN_EH_S_IMPL	Generic Implementation for BAdI /SAPTRX/BADI_EH_S	Inactive To be activated for use in the following scenarios: • Instruction Tracking • Resource Tracking
/SAPTRX/RTI10_EHUPD	/SAPTRX/RTI10_EHUPD	Returnable Transport Items Visibility – Before EH Update	Inactive

Enhancement Implementation	BAdI Implementation	Description	Runtime Behavior
`/SAPTRX/ODATA_FIORI_APPS`	`/SAPTRX/ODATA_FIORI_APPS`	Freight Order Visibility app	Inactive

> ℹ **Note**
>
> - `/SAPTRX/GEN_EH_S_IMPL` is relevant for both the Instruction Tracking as well as the Resource Tracking Visibility Scenario.
> - `/SAPTRX/ODATA_FIORI_APPS` is relevant for the Freight Order Visibility app.
> - If you want to use Instruction Tracking, Resource Tracking and the Freight Order Visibility app together, you need to merge the BadI Implementations `/SAPTRX/ODATA_FIORI_APPS` and `/SAPTRX/GEN_EH_S_IMPL`.

5 Settings for SAP Event Management Apps

This chapter describes the configuration steps necessary for the analytical and transactional apps for SAP Event Management.

5.1 Settings for Freight Order Visibility App

Use

The Freight Order Visibility app gives details of freight orders (FOs) including event handler and event message information. It also allows the reporting of expected and unexpected events.

The app can be used as an additional UI for SAP Event Management on any supported database. However, for optimum performance we recommend that it is used in a configuration where SAP Event Management is installed on a SAP HANA database.

The Freight Order Visibility app is a transactional app that is based on SAP Fiori technology that leverages the SAP UI5 Framework and the SAP NetWeaver Gateway.

SAP NetWeaver Gateway:

- is used to establish a connection from the Fiori Front end to the SAP Back end systems
- connects business users to SAP systems. It serves as an entrance to the existing SAP Event Management system via the EM OData service.

Procedure

After installing the Freight Order Visibility app, you must implement the following configuration steps.

> i Note
>
> The Freight Order Visibility app only works with the specific TM-EM freight order visibility scenario `ODT40_TO`. That means you must specify application object type `ODT40_TO`.

Prerequisite

Install, configure and activate the SAP NetWeaver Gateway.

- For more information on the SAP NetWeaver Gateway, see the SAP Help Portal under ▶ *SAP NetWeaver Gateway* ◢.
- For more information on SAP NetWeaver Gateway deployment see the SAP Note 1942072 ☁ SAP NetWeaver Gateway 2.0 Support Package Stack Definition.

a) Assign User Roles

In the system where SAP NetWeaver Gateway is installed, app users need the following role assigned:

- `SAP_EM_TCR_T`

In the SAP Event Management backend system, app users need the following additional role to execute the EM OData Service:

- `SAP_FO_VISIBILITY_APP`

Depending on your system landscape, the SAP NetWeaver Gateway and SAP Event Management backend system can be installed on the same or distributed systems.

b) Activate EM OData Service

1. Set Up

To activate the EM OData service, navigate in Customizing under SAP NetWeaver ▶ *Gateway* ▶ *OData Channel* ▶ *General Settings* ▶ *Administration* ▶ *Activate and Maintain Services* ▶ or start transaction `/n/iwfnd/ maint_service`

2. Add Service

- Select the SAP System Alias depending on the System where the EM OData service can be found
- *Technical Service Name* specify `/SAPTRX/EM_SRV` or External Service Name `EM_SRV`
- Click *Get Services*
- Select the service entry and click *Add Selected Services*

More details can be found on the SAP Help Portal under ▶ *SAP NetWeaver Gateway* ▶ *SAP NetWeaver Gateway Developer Guide* ▶ *OData Channel* ▶ *Basic Features* ▶ *Service Life-Cycle* ▶ *Activate and Maintain Services* ▶.

3. Test Service

- After adding the Service go back to the *Activate and Maintain Services* screen
- Select the *EM OData Service* from the list
- In the ICF Nodes area select the OData entry and select *Call Browser*

The Browser should return some metadata of the EM OData Service without an error message.

c) Master Data System for Filter Descriptions

Pre-requisite: Set up an entry in *Define Application System* for the corresponding system. If the required system is missing, create a new entry in transaction `/saptrx/tsc0ao` or navigate in Customizing under ▶ *Event Management* ▶ *General Settings in SAP Event Management* ▶ *Define Application System* ▶.

In the Event Handler Types used together with the Freight Order Visibility app, specify the Master Data System which is used for retrieving master data descriptions for filter descriptions, such as for Locations and Business Partners.

Navigate in Customizing under ▶ *Event Management* ▶ *Event Handlers and Event Handler Data* ▶ *Event Handlers* ▶ *Define Event Handler Types* ▶.

Set the MD System for the Event Handler Type `ODT40_TO`.

d) Table Analysis (TAANA) - Filter Values

You use the table analysis (TAANA) to distribute the table entries to the selected fields. A table analysis counts the table entries and assigns the number of entries found to the selected field values (for example, organizational units or periods). You use Analysis Variants to determine the fields for the table analysis.

In the Freight Order Visibility app when using a filter description such as for Carrier, the table analysis aggregates the table entries to distinct rows. When retrieving the values for the filter description the EM tables are already pre-analyzed and the required values can be extracted.

For more information about Table Analysis, see the SAP Help Portal ▌ *SAP Business Suite* ❯ *SAP ERP 6.0* ❯ *EHP7* ❯ ❯ *Table Analysis* ▐ .

To schedule the TAANA analysis variants:

- Run transaction `TAANA`

Filter Values for System Parameter used in filer descriptions:

- Run Table Analysis (F8)
- Select Table Name: `/SAPTRX/V_ODTTO`
- Variant: `ODT40_EH_EXTENSION`
- Choose *Processing Options*
- Enter – Run the Analysis

Filter Values for Expected Event Parameter used in filter description (Location Data):

- Run Table Analysis (F8)
- Select Table Name: `/SAPTRX/V_H_EXP`
- Variant: `ODT40_LOCATION`
- Choose *Processing Options*
- Enter – Run the Analysis

Filter Values for Expected Event Parameter used in filter description (Event Code Data):

- Run Table Analysis (F8)
- Select Table Name: `/SAPTRX/V_H_EXP`
- Variant: `ODT40_EVENT_CODE`
- Choose *Processing Options*
- Enter – Run the Analysis

Hints:

- To make sure that the filter values are updated, schedule the TAANA analysis runs daily. When setting up the table analysis, choose the *Processing Options*, `In the Background` and set up a daily job for the analysis run.
- To regulate the space of the table analyses used on the database, setup a reorganization of the table analysis using transaction `TAANA` then `Utilities` and `Reorganize Analysis`. For more information, see SAP Note 2034063 Deletion of old table analyses in the background.

Starting The App

- Start the Fiori Launchpad on your Gateway System.
- The *Track Freight Orders* Tile should be visible on your Launchpad under *Transportation Manager (EM)*. If the Tile does not appear, add it from the *Tile Catalog*.
- Double click the Tile to start the app.

6 Appendix

In this appendix you find optional settings we recommend.

6.1 Defining Alert Categories

Prerequisites

You have implemented SAP Note 1680711 🔧 (Missing Alert Categories for Activity Parameter IDs) and SAP Note 1534724 🔧 (for the alert "Damage").

Context

SAP Event Management can also track the Delay/Damage unexpected event. If this event occurs, SAP Event Management sends an alert to an alert recipient (for example, an e-mail address).

If your scenario requires the system to send alerts to an alert recipient, you must configure the settings as follows.

Procedure

1. In Customizing for *SAP Event Management,* choose ▐▶ *Event Management* ❯ *Reactions to Event Messages* ❯ *Define Alert Framework Connection* ❯ *Define Alert Categories* ❮.
2. Under *All Classifications*, choose *EM: Alert in SAP EM*, or create your own classification.
3. Within the classification you just selected or created, create the following alert categories based on these examples:

   3.1 Alert Category When Freight Unit is Delayed

   Properties tab page:

   - Alert Category: `Z_SCEM_ODT30_DELAY_FU`
   - Description: *Send E-Mail with Delay Information of Freight Unit*
   - Classification: If necessary, create your own classification
   - Priority: *High*

Container tab page:

Table 9:

Element	Name	Short Description	ABAP Dict.
EXP_DELAY_DATE	Expected Delay Date	Expected Delay Date	DATS
EXP_DELAY_TIME	Expected Delay Time	Expected Delay Time	TIMS
EXP_DELAY_TZ	Expected Delay TZ	Expected Delay TZ	/SAPTRX/TIMEZONE
FU_ID	Freight Unit	Freight Unit	CHAR20

Long and Short Text tab page:

○ Message title: *Delayed Arrival of Freight Unit &FU_ID&*
○ Long text (e-mail/fax):
Dear Sir or Madam:
Your freight unit `&FU_ID&` has been delayed
Estimated date/time:
Date: `&EXP_DELAY_DATE&`
Time: `&EXP_DELAY_TIME&`
TZone: `&EXP_DELAY_TIMEZONE&`
Kind regards,

3.2 Alert Category When Freight Order is Delayed

Properties tab page:

○ Alert Category: `Z_SCEM_ODT30_DELAY_FO`
○ Description: *Send E-Mail with Delay Information of Freight Order*
○ Classification: EM: If necessary, create your own classification.

Container tab page:

Table 10:

Element	Name	Short Description	ABAP Dict.
EXP_DELAY_DATE	Expected Delay Date	Expected delay date	DATS
EXP_DELAY_TIME	Expected Delay Time	Expected delay time	TIMS
EXP_DELAY_TZ	Expected Delay TZ	Expected delay TZ	/SAPTRX/TIMEZONE
FO_ID	Freight Order	Freight order	CHAR20

Long and Short Text tab page:

○ Message title: *Delayed Arrival of Freight Order &FO_ID&*
○ Long text (e-mail/fax):
Dear Sir or Madam:
Your freight order `&FO_ID&` has been delayed

Estimated date/time:
Date: `&EXP_DELAY_DATE&`
Time: `&EXP_DELAY_TIME&`
TZone: `&EXP_DELAY_TIMEZONE&`
Kind regards,

3.3 Alert Category When Freight Unit Is Damaged

Properties tab page:

○ Alert Category: `Z_SCEM_ODT30_DAMAGE`
○ Description: *SCEM: Send E-Mail with Damage Information of Freight Unit*
○ Classification: *EM: Alert in SAP EM*
○ Priority: *High*
○ Application Pac: `SAPLET`

Container tab page:

Table 11:

Element	Name	Short Description	ABAP Dict.
`FU_ID`	Freight Unit	Freight unit	`CHAR20`

Long and Short Text tab page:

○ Message title: *Freight Unit &FU ID& Damaged*
○ Long text (e-mail/fax):
  Dear Sir or Madam:
  Your freight unit `&FU_ID&` has been damaged.
  Kind regards,

6.2 Defining Alert Framework Integration with SAP Event Management

Use

You specify which alert category the system uses and how the container elements for this alert category are filled from SAP Event Management. This enables you to use the Alert Framework for notification purposes in certain situations, for example, in the event of a delay or contamination.

Prerequisites

You have implemented SAP Note 1534724 for the entry `ODT_DAMAGE`.

You have defined the Alert Framework Connection in the Customizing of SAP Event Management.

Procedure

In Customizing for SAP Event Management, choose ▌▶ *Event Management* ❯ *Reactions to Event Messages* ❯ *Define Alert Framework Connection* ❯ *Define Alert Framework Integration to SAP Event Management* ▶ .

Freight Unit Is Delayed

1. Select `ODT30_DELAY_FU`.
2. Copy the selected entry, and rename it to create your own activity parameter ID. Example: `Z_ODT30_DELAY_FU`.
3. Enter the alert category you defined. For more information, see the chapter *Defining Alert Categories*.
4. Specify the communication method, for example *Internet E-Mail Address*.
5. Specify the communication data. Here you enter an SAP Event Management parameter.

> **ℹ Note**
>
> For business objects that relate to the freight order, control parameter `RESP_EMAIL_ADDR` is populated with the e-mail address of the person responsible. If this e-mail address is unavailable, the parameter is populated with the e-mail address of the user who made the last change, provided that this user is defined in the user master data.

6. Choose *Enter*, and choose *copy all* to copy the entry with all dependent entries.

Freight Order Is Delayed

1. Select `ODT30_DELAY_FO`.
2. Copy the selected entry, and rename it to create you own activity parameter ID. Example: `Z_ODT30_DELAY_FO`.
3. Continue with step 3 above.

Freight Unit Is Damaged

1. Select `ODT30_DAMAGE`.
2. Copy the selected entry, and rename it to create you own activity parameter ID. Example: `Z_ODT30_DAMAGE`.
3. Continue with step 3 above.

> **ℹ Note**
>
> To trigger and send an alert message, you must call the `Alert` framework. To do so, add the activity `ALERT_CREATE` to the corresponding rule set and reference the `activity parameter ID` with the parameter `Actvty. ID` such as `Z_ODT30_DELAY_FU` that you created in Customizing activity *Define Alert Framework Integration to SAP Event Management*.
>
> For more information, see Defining Alert Categories [page 29].

6.3   Scheduling the Report for Trigger Processing in SAP TM

Use

SAP TM saves event messages from SAP Event Management in the receiving business documents. SAP TM processes the events as follows:

- Forward event to a business document
- Change the *execution* status of the business document

If a business document (for example, freight order) is locked, the SAP TM system cannot perform the above actions. Instead, the system creates a trigger for each failed action. SAP TM uses report `/SCMTMS/PROCESS_TRIGGER_BGD` to execute the triggers and perform the actions with as little delay as possible.

Procedure

1. Call the transaction for scheduling reports.
2. Schedule and run report `/SCMTMS/PROCESS_TRIGGER_BGD` periodically.

> ➡ Recommendation
>
> To make sure that business documents in the system are updated with their new status regularly, run the report often, for example, every 10 minutes.

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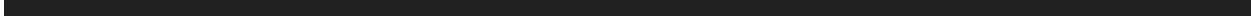
**go.sap.com/registration/
contact.html**

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