SAP Transportation Management

Integration of SAP TM and SAP Event Management

Releases:

- SAP TM 9.1
- SAP Event Management 9.0 with Support Package 4 or higher
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Icons in Body Text

<table>
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<tr>
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<td>!</td>
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Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
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<tbody>
<tr>
<td>Example text</td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation.</td>
</tr>
<tr>
<td>Example text</td>
<td>Emphasized words or phrases in body text, graphic titles, and table titles.</td>
</tr>
<tr>
<td>EXAMPLE TEXT</td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td>Example text</td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td>Example text</td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td>&lt;Example text&gt;</td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
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<td>EXAMPLE TEXT</td>
<td>Keys on the keyboard, for example, F2 or ENTER.</td>
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Integration of SAP TM and SAP Event Management

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>
<thead>
<tr>
<th>SAP Application Component</th>
<th>Example System</th>
<th>Example Client</th>
<th>Logical Name of Example System</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP Transportation Management</td>
<td>TM1</td>
<td>001</td>
<td>TM1CLNT001</td>
</tr>
<tr>
<td>SAP Event Management</td>
<td>EM1</td>
<td>001</td>
<td>EM1CLNT001</td>
</tr>
</tbody>
</table>

Prerequisites

The following applications and releases are required:

- SAP TM 9.1
- SAP Event Management 9.0 with Support Package 4 or higher

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.
1 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.
1.1 Configuring Output Management in SAP Transportation Management

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)


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.

2. For INS Related Business Objects

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


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:
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- 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.
1.2 Configuring Change Notification Agent in SAP Transportation Management

Procedure

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

Only resources with the “Relevant for Event Management” Flag in the Master Data are considered.
1.3 Registering the Inbound Queue for Updates

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.
1.4 Setting Up Freight Unit, Freight Order, Freight Booking and Transportation Unit Types

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.

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.
   - 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 ➤ Transportation 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.
1.5 Defining RFC Connection to SAP Event Management System

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.

   You have to enter a user with the user type Service. The role /SAPTRX/SAP_EM_USER must be assigned to it.

5. Save the RFC connection.
1.6 Defining Logical System for SAP Event Management

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.
1.7 Defining SAP Event Manager Definitions

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:

   o Event Manager
     Enter the appropriate ID (for example, EM1CLNT001).

   o 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.

   o SAP EM Version
     Enter SCM 4.0.

   o Local Event Manager
     Do not select the checkbox.

   o 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.

   o 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.

   o Description
     Enter any relevant descriptive text.
1.8 Checking the Business Process Type Definitions

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 ➔
   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.
1.9 Defining Application Object Type and Event Types

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 ➤ Define Used 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.

   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_TO.
   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 types:
      - ODT30_BLOCK
      - ODT20_CANCEL
      - ODT20_SCHEDULED
      - ODT20_TO_ARRIVAL
      - ODT20_TO_DEPART
      - ODT20_TO_LOAD_BEGIN
      - ODT20_TO_LOAD_END
      - ODT20_TO_POD
8. If you want to activate the Resource Tracking Visibility Scenario, the following additional event types are required:

- RES30_ARRIVAL
- RES30_COUPLING
- RES30_DECOPUPLING
- RES30_DEPARTURE
- RES30_EE_MODIFY

9. 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.

10. 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 ➤ Define Used 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.


   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).
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- 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.

   - 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.
1.10 BAdI to Optimize Communication with Event Management

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
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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
2 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.
2.1 Defining RFC Connection to SAP Transportation Management

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


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.
   - 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.
2.2 Defining Logical System for SAP Transportation Management

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.
2.3 Defining Application System

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
     Select this checkbox.
   - Description for your entry
     Enter a description.
2.4 Assigning Profile to Mapping Area

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

   
   2. Choose Assign Profile to Mapping Area.
   
   3. Choose New Entries, and enter the following data:

<table>
<thead>
<tr>
<th>Example Application System</th>
<th>Application Object Type</th>
<th>Mapping Profile</th>
<th>Error Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1CLNT001</td>
<td>ODT30_FU</td>
<td>ODT30_TOR</td>
<td>Choose Map parameters if possible, otherwise assign input parameter</td>
</tr>
<tr>
<td>TM1CLNT001</td>
<td>ODT30_TO</td>
<td>ODT30_TOR</td>
<td>Choose Map parameters if possible, otherwise assign input parameter</td>
</tr>
<tr>
<td>TM1CLNT001</td>
<td>ODT30_TU</td>
<td>ODT30_TOR</td>
<td>Choose Map parameters if possible, otherwise assign input parameter</td>
</tr>
</tbody>
</table>

2. For INS Related Business Objects

   
   2. Choose Assign Profile to Mapping Area.
   
   3. Choose New Entries, and enter the following data:

<table>
<thead>
<tr>
<th>Example Application System</th>
<th>Application Object Type</th>
<th>Mapping Profile</th>
<th>Error Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1CLNT001</td>
<td>ODT30_INS</td>
<td>ODT30_INS</td>
<td>Choose Map parameters if possible, otherwise assign input parameter</td>
</tr>
</tbody>
</table>
3. For Resource Tracking


2. Choose Assign Profile to Mapping Area.

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

<table>
<thead>
<tr>
<th>Example Application System</th>
<th>Application Object Type</th>
<th>Mapping Profile</th>
<th>Error Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1CLNT001</td>
<td>RES30RESOURCE</td>
<td>RES30RESOURCE</td>
<td>Choose Map parameters if possible, otherwise assign input parameter</td>
</tr>
</tbody>
</table>
2.5  Defining Preprocessing Functions

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.

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.


3. Under Preprocessing Functions, enter the following values

<table>
<thead>
<tr>
<th>Internal Event Code</th>
<th>Tracing ID Code Set</th>
<th>Sender Code Set</th>
<th>Sender Code ID</th>
<th>Location Code Set</th>
<th>Location Code ID 1</th>
<th>Location Code ID 2</th>
<th>Function Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELAYED_fu</td>
<td>FU</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>/SAPTRX/TMS_ADD_PARA</td>
</tr>
<tr>
<td>DELAYED</td>
<td>TO</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>/SAPTRX/TMS_ADD_PARA</td>
</tr>
<tr>
<td>DELAYED</td>
<td>TOR_TEC</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>/SAPTRX/TMS_ADD_PARA</td>
</tr>
</tbody>
</table>
2.6 Enable Multiple Tracking IDs

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 ID.

   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>
<thead>
<tr>
<th>Internal Event Code</th>
<th>Tracking ID Code Set</th>
<th>Sender Code Set</th>
<th>Sender Code ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>RES_ID ARRIV_DEST</td>
<td></td>
<td>TM</td>
<td>TM</td>
</tr>
<tr>
<td>RES_ID COUPLING</td>
<td></td>
<td>TM</td>
<td>TM</td>
</tr>
<tr>
<td>RES_ID DECOUPLING</td>
<td></td>
<td>TM</td>
<td>TM</td>
</tr>
<tr>
<td>RES_ID DEPARTURE</td>
<td></td>
<td>TM</td>
<td>TM</td>
</tr>
</tbody>
</table>
## 2.7 Assigning User to Web Transactions

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


2. Enter your user name in the dialog box Determine Work Area: Entry.

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

<table>
<thead>
<tr>
<th>Web Interface Transaction</th>
<th>User Profile</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODT30_CONS_FO</td>
<td>ODT30_CONSIGNEE_FO</td>
<td>Consignee – Freight Order Visibility Process</td>
</tr>
<tr>
<td>ODT30_CONS_FU</td>
<td>ODT30_CONSIGNEE_FU</td>
<td>Consignee – Freight Unit Visibility Process</td>
</tr>
<tr>
<td>ODT30_SHIP_FO</td>
<td>ODT30_SHIPPER_FO</td>
<td>Shipper – Freight Order Visibility Process</td>
</tr>
<tr>
<td>ODT30_SHIP_FU</td>
<td>ODT30_SHIPPER_FU</td>
<td>Shipper – Freight Unit Visibility Process</td>
</tr>
<tr>
<td>ODT30_SHIP_BO</td>
<td>ODT30_SHIPPER_BO</td>
<td>Shipper – Freight Booking Visibility Process</td>
</tr>
<tr>
<td>ODT30_INS</td>
<td>ODT30_INS</td>
<td>Instruction Tracking Visibility Process</td>
</tr>
<tr>
<td>ODT30_TU</td>
<td>ODT30_TU</td>
<td>Transportation Unit Tracking Visibility Process</td>
</tr>
<tr>
<td>RES30_RESOURCE</td>
<td>RES30_RESOURCE</td>
<td>Resource Tracking Visibility Process</td>
</tr>
</tbody>
</table>
### 2.8 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](#).

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>
<thead>
<tr>
<th>Enhancement Implementation</th>
<th>BAdI Implementation</th>
<th>Description</th>
<th>Runtime Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>/SAPTRX/GEN_EH_S_IMPL</td>
<td>/SAPTRX/GEN_EH_S_IMPL</td>
<td>Generic Implementation for BAdI /SAPTRX/BADI_EH_S</td>
<td>Inactive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To be activated for use in the following scenarios:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Instruction Tracking</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Resource Tracking</td>
<td></td>
</tr>
<tr>
<td>/SAPTRX/RTI10_EHUPD</td>
<td>/SAPTRX/RTI10_EHUPD</td>
<td>Returnable Transport Items Visibility – Before EH Update</td>
<td>Inactive</td>
</tr>
</tbody>
</table>

/SAPTRX/GEN_EH_S_IMPL is relevant for both the Instruction Tracking as well as the Resource Tracking Visibility Scenario.
3 Appendix

In this appendix you find optional settings we recommend.
3.1 Defining Alert Categories

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.

Prerequisites

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

Procedure


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>
<thead>
<tr>
<th>Element</th>
<th>Name</th>
<th>Short Description</th>
<th>ABAP Dict.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP_DELAY_DATE</td>
<td>Expected Delay Date</td>
<td>Expected Delay Date</td>
<td>DATS</td>
</tr>
<tr>
<td>EXP_DELAY_TIME</td>
<td>Expected Delay Time</td>
<td>Expected Delay Time</td>
<td>TIMS</td>
</tr>
<tr>
<td>EXP_DELAY_TZ</td>
<td>Expected Delay TZ</td>
<td>Expected Delay TZ</td>
<td>/SAPTRX/TIMEZONE</td>
</tr>
<tr>
<td>FU_ID</td>
<td>Freight Unit</td>
<td>Freight Unit</td>
<td>CHAR20</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Element</th>
<th>Name</th>
<th>Short Description</th>
<th>ABAP Dict.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP_DELAY_DATE</td>
<td>Expected Delay Date</td>
<td>Expected delay date</td>
<td>DATS</td>
</tr>
<tr>
<td>EXP_DELAY_TIME</td>
<td>Expected Delay Time</td>
<td>Expected delay time</td>
<td>TIMS</td>
</tr>
<tr>
<td>EXP_DELAY_TZ</td>
<td>Expected Delay TZ</td>
<td>Expected delay TZ</td>
<td>/SAPTRX/TIMEZONE</td>
</tr>
<tr>
<td>FO_ID</td>
<td>Freight Order</td>
<td>Freight order</td>
<td>CHAR20</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Element</th>
<th>Name</th>
<th>Short Description</th>
<th>ABAP Dict.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FU_ID</td>
<td>Freight Unit</td>
<td>Freight unit</td>
<td>CHAR20</td>
</tr>
</tbody>
</table>

**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,
3.2 Defining Alert Framework Integration with SAP Event Management

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


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.

   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 your 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 your own activity parameter ID.
   Example: Z_ODT30_DAMAGE.

3. Continue with step 3 above.

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 34].
3.3 Scheduling the Report for Trigger Processing in SAP TM

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.

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.